

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,
MELBOURNE.

OFFICIAL
YEAR BOOK
OF THE
COMMONWEALTH OF AUSTRALIA,
CONTAINING AUTHORITATIVE STATISTICS FOR THE PERIOD
1901-1908
AND CORRECTED STATISTICS FOR THE PERIOD 1788 TO 1900.

No. 2.—1909.

PUBLISHED UNDER THE AUTHORITY OF THE MINISTER OF HOME AFFAIRS,
BY
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COMMONWEALTH STATISTICIAN.



BY AUTHORITY.

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PREFACE.

By the Constitution of the Commonwealth of Australia, the Commonwealth is empowered "to make laws for the peace, order, and good government, of the Commonwealth, with respect to," *inter alia*, "Census and Statistics." In exercising the power so conferred, a "Census and Statistics Act" was passed in 1905, and in the year following the "Commonwealth Bureau of Census and Statistics" was created. The publication here presented is the second authoritative Year Book issued under the Federal Constitution.

This Year Book furnishes corrected statistics for the whole period of Australian settlement, viz., from 1788 to 1908. Wherever space has permitted, detailed statistics have been furnished for each year since Federation, viz., from 1901 to 1908. In the few instances where this has proved impracticable, reference will be necessary to Year Book No. 1. The inclusion, as stated, of the total available information in the more important branches of statistics enables this publication to be used wherever it is desired to make a comparative survey of the unfolding of this portion of the British Empire. Not only are the results given for the Commonwealth as a whole, but also for each component State.

The general arrangement of the publication corresponds with that of Year Book No. 1, and is shewn in the synopsis on pp. ix. to xiii. immediately following. This arrangement has been widely commended, and will be substantially adhered to in future issues.

In addition, however, to what may be called purely statistical matter, it is intended that each issue shall contain special articles dealing at length with some particular subject or subjects of more or less permanent interest. It would be undesirable as well as impracticable to repeat these year after year, seeing that it would unduly increase the size of the publication. It was stated, therefore, in the preface to Year Book No. 1 that, as a rule, only a brief condensation of the special articles would appear in subsequent issues of the Year Book, or they might be omitted altogether. Consistently with this intention considerable changes will be found to have been made. In many cases the articles in Year Book No. 1 have been reduced to synopses; in other cases matter has been wholly deleted, and new matter introduced in lieu thereof, and specially important subjects have been more exhaustively discussed.

Among the subjects on which new articles have been introduced, the following may be specially mentioned:—The Exploration of Australia, The Constitutions of the States, The Hydrology of Australia, The Development of Australia's Trade with the East, The Customs Tariff 1908, Kindergarten Education, Administrative Government, Public Lighting, Papua, and Local Option. Other sections, including those on Land Tenure and Settlement, Manufacturing Industries, Commerce, and Railways, have been considerably elaborated. A number of new maps have also been inserted, including the following:—The Progress of Exploration of Australia, Geological map, Orographical map, and Australia and New Guinea. Various additions and improvements have also been made to the graphs.

Through the co-operation of the various State Bureaux with the Commonwealth Bureau it has been possible to considerably advance the accuracy, and in general the intrinsic value, of Australian Statistics, and the collection of data is being continually improved.

It has been found desirable to deal with the subject matter from a threefold aspect, viz.:—

- (i.) The development of the component States.
- (ii.) The progress of Australia as a whole from the earliest times.
- (iii.) The statistical comparison of Australia with other leading countries of the world.

In the endeavour to supply reliable details of this character, considerable difficulties have been experienced, more particularly as regards the early years of Australian colonisation, and although assistance has been cordially rendered not only by the State Statistical Bureaux, but also by other State Departments that were in a position to help, the results obtained must in many cases be considered as roughly approximate only. No effort is spared, however, to embody the most reliable information available.

A feature of this publication is the use made of maps and diagrams. The changing boundaries of the various States, the course of exploration, the orography and geology of the territory, the distribution of the population of Australia, of its rainfall, etc., the development of its railway system, and similar facts can be properly appreciated only by the use of maps. In like manner the progress of events, the characteristics of growth and decline, can in general be grasped much more readily graphically than numerically. The diagram or "graph" is a direct picture in which the relative magnitudes are preserved and by which instantaneous comparisons are made possible. For the more accurate examinations of statistical data, however, numerical results are also given *in extenso*.

The development of Australia has been in many instances very remarkable, and this could be shown only by tables and graphs dating back to its beginning in 1788. In most cases accurate data are not available for years much before 1860. In such cases, therefore, it seemed sufficient at present to give continuous results from that year onwards.

PREFACE.

The great mass of material embodied in this Year Book has been carefully examined, but it would be idle to hope that all error has been avoided. The Commonwealth Statistician desires to express his appreciation of the opportunity afforded him of perfecting the matter and arrangement of the Year Book, by those who have been kind enough to point out any defects or make any suggestions.

The corresponding years indicated in various sections of this book do not always necessarily refer to the same period. Though the years specified ordinarily refer to the calendar years, in certain sections—*e.g.*, the sections on *Railways*, and on *Commonwealth, State, and Private Finance*—the years indicated generally refer to the financial years ended the 30th June. Again, as regards the section on *Agricultural Production*, the year ordinarily ends on the 31st March, while in the section on *Local Government* the financial years of local bodies in the several States end at various dates.

Recent information on returns, which have come to hand since the various sections have been sent to press, may be found in the Appendix.

In conclusion, the Commonwealth Statistician desires to express his cordial thanks to the State Statisticians, and to the responsible officers of the various Commonwealth and State Departments, who have kindly, and often at considerable trouble, supplied all desired information.

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Commonwealth Statistician.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS.

31st March, 1909.

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CORRIGENDA.

- Page 55, line 33, after "recalled" insert "8th September, 1908."
- „ 223, first table, 1905 Rate of Infantile Mortality, Males, read "90.62."
- „ 319, second last column in table, Residential Lots, Insert "9" after "19."
- „ 364, first table, 1907, New South Wales, for "395,370" read "362,042;" Commonwealth, for "1,065,420" read "1,032,092."
- „ 367, last line, New South Wales, for "6,304,692" read "5,185,057;" Commonwealth, for "11,999,918" read "10,880,283."
- „ 399, line 15, for "2,237,978" read "2,287,978."
- „ 399, line 16, for "894,923," read "894,623."
- „ 772, Number of Money Orders Paid, Western Australia, 1903, for "190,155" read "100,155."
- „ 810, first table, last column, for "6034" read "7034."
- „ 969, first table, Votes recorded, total 1901, for "38,077" read "38,087."
- „ 1010, last item Loan Expenditure 1901-2, for "*4293," read "*—4293."

OFFICIAL STATISTICS.

COMMONWEALTH OF AUSTRALIA YEAR BOOK, 1901 to 1908,

With Corrected Statistics for Earlier Years.

SECTION I.

STATISTICAL ORGANISATION AND SOURCES OF INFORMATION.

§ 1. Introduction.

1. **Development of Australian Statistics.**—In the first issue of the Commonwealth Official Year Book (No. 1, 1901-1907),¹ an account was given of the origin and development of the statistical methods of Australia from the earliest times to the organisation of the Commonwealth Bureau of Census and Statistics; *vide* pp. 1 to 16 therein. It will suffice here to mention that statistical compilation in Australia originated in the necessity of producing "Blue Books" for the information of the Home Government. The granting of Responsible Government extended the field of statistics required to be collected, and changed somewhat the administrative arrangements for statistical compilation. Certain branches, for example, were early relegated to the various Registrars-General. Finance was ordinarily dealt with by the Treasuries; Trade, by the Customs Departments; and in general each Department prepared statistics for itself. Owing to this, State Statistical Departments came ultimately to be organised largely as collecting agencies of official and general information. The effort of each State, however, was independent.

A short historical sketch was given in the Year Book (pp. 2 to 5), shewing how each State Bureau, and that of New Zealand, was actually developed, and a brief reference was made to the publications issued by the various Bureaux.

Although even from the earliest times the desirableness of uniformity in statistical compilation was recognised, and some effort was also made to bring it about, it was practically inevitable, in the absence of any co-ordinating authority, that divergencies of technique should arise, and that these divergencies should introduce difficulties in the way of so combining State statistics, as to get a satisfactory statistic for Australia as a whole. Individualising tendencies were only partially combated by the various conferences of State Statisticians, namely, in 1861, 1875, 1890, 1900, 1902, and 1903. (See hereunder).

1. All references to pages in this section will be to Year Book No. 1, 1901-1907.

STATISTICAL CONFERENCES.

| Date of Conference. | Place of Meeting. | Colonies or States represented. | Object of Conference. |
|---------------------|-------------------|---|---|
| October, 1861 ... | Melbourne | New South Wales, Queensland, South Australia, Victoria. | To secure uniformity in the collection and compilation of statistics. |
| January, 1875 ... | Hobart ... | New South Wales, South Australia, Tasmania, Victoria. | To secure uniformity in the collection and compilation of statistics. |
| March, 1890 ... | Hobart ... | New South Wales, South Australia, Tasmania, Victoria, New Zealand. | To secure uniformity in the collection and compilation of census returns. |
| February, 1900 | Sydney ... | New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia, New Zealand. | To found a uniform basis for the estimation of population and to secure the collection and compilation of census on uniform principles. |
| January, 1902 ... | Hobart ... | New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia, New Zealand. | To secure uniformity in the preparation of statistical returns. |
| September, 1903 | Melbourne | New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia. | To secure uniform methods in the statistics of population. |
| Nov., Dec., 1906 | Melbourne | Commonwealth, and each State therein and New Zealand. | Co-ordination of the entire statistical effort of the Commonwealth and State Bureaux. |

(i.) *Creation of the Commonwealth Bureau of Census and Statistics.* In 1906 the Commonwealth Bureau of Census and Statistics was created under the authority of the Census and Statistics Act of 1905, the provisions of which were stated *in extenso* in Year Book No. 1, pp. 8 to 11. The Act deals with administration, with the taking of the census, with the collection of statistics generally, and with the obligations of the public to conform to the requirements of the Act itself. Prior to the creation of the Commonwealth Bureau, it was nearly always difficult, and often impossible, to combine the statistics of the several States, because the basis and whole technique of collection were fixed practically without regard to the necessities of compilation for Australia as a whole.

(ii.) *Statistical Conference, 1906.* It became evident that this state of things could no longer continue, and a conference under the presidency of the Commonwealth Statistician, attended by statistical representatives of each State and New Zealand, was held in November and December, 1906, for the purpose of devising a scheme under which statistical collection would become satisfactory for the study of the affairs of the Commonwealth, as well as those of its constituent parts. It was recognised that the statistical organisation should be such as to secure the following advantages, viz.:—

- (i.) Identity of categories under which the facts are to be collated.
- (ii.) Substantial identity in the method of collection.
- (iii.) Uniformity in the scheme of presenting the facts collected.
- (iv.) Simultaneity of collection where possible.

An account of the *personnel* of the conference, of the more salient points of the Commonwealth Statistician's address, and a *resumé* of the conference resolutions are given in Year Book No. 1, pp. 13-16. The main features of these resolutions were as follows:—

- (i.) In the interests alike of each State and the Commonwealth the collection and compilation of statistical information by the State Statistical Bureaux

should be co-extensive, and, within the limits indicated by the adopted forms, uniform in respect of method, order, and date of compilation; and each State Bureau should be equipped so as to make it possible to respond to this demand.

- (ii.) Excepting in the case of information confidentially collected, or compilation confidentially made for the State or Commonwealth Governments, the whole of the statistical information in each Statistical Bureau should be immediately available to the Commonwealth or State Statisticians.
- (iii.) In order to secure uniformity in the compilation and interpretation of statistical data, a complete scheme of instructions should be drafted by the Commonwealth Statistician for general adoption.
- (iv.) The classification of causes of death prepared by the International Institute of Statistics should be adopted.¹
- (v.) A quinquennial enumeration of population is necessary, owing to the rapid movement of population in Australia.
- (vi.) A monthly record of Interstate Trade should be furnished.
- (vii.) Statistics of production should be so published as never to disclose the operations of individual establishments, and, in general, in order to engender the necessary confidence in the minds of informants as to the strictly impersonal nature of statistical inquiries, and so secure readiness to furnish accurate information, the customary statistical practice of maintaining absolute secrecy should, under no circumstances, be departed from.
- (viii.) Statistical publications of the Commonwealth and States should, as far as possible, be of uniform sizes, and uniform as to order of subject matter.
- (ix.) Trade statistics should be published for each calendar year, classified under categories, and in statistics of export the State of origin should be shewn.
- (x.) All questions of mathematical method, mode of determining means, etc., shall be decided for all States by the Commonwealth Statistician.

Effect is gradually being given to these resolutions as opportunity offers. The Statistics of Trade and Customs for 1906 were published under the alphabetical arrangement, in response to the request of the Trade and Customs Department. For the 1907 trade statistics they have been classified under the categories referred to, viz.:—

CATEGORIES OF ITEMS, TRADE AND CUSTOMS STATISTICS.

| Class No. | Class No. |
|---|---|
| (i.) Foodstuffs of Animal Origin, but excluding Living Animals | (xiv.) Metals (unmanufactured) and Ores |
| (ii.) Foodstuffs of Vegetable Origin | (xv.) Metals, partly manufactured |
| (iii.) Beverages (non-alcoholic) and Substances used in making | (xvi.) Metals (manufactured), including Machinery |
| (iv.) Spirits and Alcoholic Liquors, including Spirits for Industrial Purposes, and Pharmaceutical Preparations dutiable as Spirits | (xvii.) Leather and Manufactures of Leather, and substitutes therefor; also Indiarubber and India-rubber Manufactures |
| (v.) Tobacco and preparations thereof | (xviii.) Wood and Wicker, raw and manufactured |
| (vi.) Live Animals | (xix.) Earthenware, Cements, China, Glass, and Stoneware |
| (vii.) Animal Substances (mainly unmanufactured) not Foodstuffs | (xx.) Paper and Stationery |
| (viii.) Vegetable Substances and Fibres | (xxi.) Jewellery, Timepieces, and Fancy Goods |
| (ix.) Apparel, Textiles, and Manufactured Fibres | (xvii.) Optical, Surgical, and Scientific Instruments |
| (x.) Oils, Fats, and Waxes | (xxiii.) Drugs, Chemicals, and Fertilizers |
| (xi.) Paints and Varnishes | (xxiv.) Miscellaneous |
| (xii.) Stones and Minerals used industrially | (xxv.) Excise. |
| (xiii.) Specie | |

1. The Commonwealth Statistician translated the necessary nosological classification, and it was published early in 1907.

2. Sources of Information.—(i.) *State Statistical Bureaux.* The State Statistical Bureaux now collect and arrange such information as they supply, under a common method, and according to uniform categories. The State Bureaux, therefore, have a double function, viz., they collect—(a) for their immediate requirements as States, and (b) as integral parts of the Commonwealth. The collections are made—(i.) by the police, (ii.) by special collectors, (iii.) by direct demand for returns, and (iv.) by compilation from official departmental reports.

(ii.) *Commonwealth and State Departments.* All statistical compilations of Commonwealth and State Departments are forwarded as soon as published, and occasionally in manuscript prior to publication, to the “Commonwealth Bureau of Census and Statistics,” for the purpose of facilitating official statistical compilation on behalf of the Commonwealth. This matter is more fully referred to in § 2, hereinafter, *q.v.*

(iii.) *Scientific and Technical Experts.* The services of scientific and technical experts are requisitioned where necessary, so that the whole of the information published under the auspices of the Commonwealth will be as authoritative and accurate as it is possible to make it.

(iv.) *Authority conferred on State Statisticians.* Where their Governments have formally entered into the necessary arrangements, the State Statisticians have been duly constituted as officers under the Commonwealth Census and Statistics Act.

(v.) *Supply of Information to the Commonwealth Statistician.* The Census and Statistics Act enacts, under penalty, that when persons are required by the Commonwealth Statistician so to do, they shall furnish him with information in any matters relating to population, vital, social, and industrial affairs; relating to employment and non-employment; to imports and exports, both oversea and interstate; to postal and telegraphic matters; to factories, mines, and any other productive industries, including agricultural, horticultural, viticultural, dairying, and pastoral; to banking, insurance, and finance; to railways, tramways, shipping, and transport generally; to land tenure, and occupancy generally; as well as to any additional matters which may be prescribed by regulation. Apart from rendering returns on the proper form, every person is required to answer all questions asked him by the Statistician or other officer authorised by the Statistician, in regard to any branch of statistics required by the Act to be collected. In order to facilitate inquiries “the Statistician or any officer authorised in writing by him may, at any time during working hours, enter any factory, mine, workshop, or place where persons are employed, and may inspect any part of it, and all plant and machinery used in connection with it, and may make such inquiries as are necessary” for the requisite information, and penalties are prescribed for hindering the Statistician or his authorised officers in the execution of their duty.

3. Maintenance of Secrecy.—It is desirable that it should be publicly recognised that accurate information supplied to a statistical office under promise of secrecy can never, under any circumstances, be used against the individual supplying it, and under no circumstances whatever will the Statistician disclose to any authority the affairs of individuals or of individual businesses, or of small groups of businesses, where, through inference, the affairs of an individual business would be virtually disclosed. In this connection it may be pointed out that the following resolutions of the 1906 Conference of Statisticians have been accepted by the Commonwealth and State Governments, viz.:—

- (i.) That in conformity with statistical practice, and for the purpose of engendering the necessary confidence in the minds of informants as to the strictly impersonal nature of statistical inquiries, and of thus securing increased readiness on their part to supply correct information, through which alone statistical accuracy is attainable, it is desirable that the details of the statistics of production should in no case be so published as to reveal the operations of individual establishments.

- (ii.) That it is further desirable that information obtained under promise of secrecy, express or implied, should not, under any circumstances be divulged.

A statistical office is, in respect of the affairs of individuals, and of individual businesses, an office in which absolute secrecy is maintained. Its inquiries are invariably impersonal, and it should be publicly known that no other Government department, as, for example, Customs, Excise, or Taxation, either land or income, can, under any circumstances whatever, make use of the statistical departments in order to acquire detailed information otherwise unavailable. All persons may therefore feel assured that they may render correct information without regard to any possible ulterior consequences.

4. **Accuracy Essential.**—It is needless to add that it is important that statistical information should be perfectly accurate, and any person who knowingly makes, on any form or document filled up or supplied, or in answer to any question asked him under the authority of the Census and Statistics Act, any statement which is untrue in any material particular, is liable to a penalty of £50. It is regrettable that census and other statistical results contain intrinsic evidence of deliberate misstatements. For example, the statement of age in census papers is often erroneous, probably, amongst other reasons, because it is not recognised that accurate data are essential for the preparation of the valuable tables necessary for forming judgments in various matters, for example, deducing the probability of life for both sexes at each age, or for determining the premium payments which a safe life insurance policy ought to require.

§ 2. Statistical Publications of Australia.

The official statistical publications of Australia may be divided bibliographically into two main divisions, viz.:—(1) Commonwealth publications dealing both individually and collectively with the several States of the Commonwealth, and (2) State publications dealing with individual States only. Besides these there are a large number of publications issued regularly, which, though not wholly statistical, necessarily contain a considerable amount of statistical information. These are included in the lists given hereunder.

1. **Commonwealth Publications.**—Commonwealth publications may be grouped under two heads, viz.:—(i.) Publications issued by the Commonwealth Statistician, and (ii.) departmental reports and papers.

(i.) *Publications Issued by the Commonwealth Statistician.* The following is a list of statistical publications issued from the Commonwealth Bureau of Census and Statistics since its inauguration and up to 30th June, 1908:—

Finance; Bulletin No. 1, 1901 to 1907.

Population and Vital Statistics; Bulletin No. 1, Population, 1901 to 1906.

Population and Vital Statistics; Bulletin No. 2, Commonwealth Demography, 1901 to 1906.

Population and Vital Statistics; Bulletins Nos. 3 to 5, issued quarterly, commencing quarter ended 31st March, 1907.

Production; Bulletin No. 1, 1901 to 1906.

Shipping and Oversea Migration for 1906.

Trade, Customs, and Excise Revenue for 1906; Parts I. and II.

Trade, Shipping, and Oversea Migration; Bulletins Nos. 1 to 13, issued monthly, commencing January, 1907.

Transport and Communication; Bulletin No. 1, 1901 to 1906.

Year Book of the Commonwealth; No. 1, 1901 to 1907.

(ii.) *Commonwealth Departmental Reports and Papers.* The following official reports and papers containing statistical matter have been issued since the inauguration of the Commonwealth:—

British New Guinea, Reports for 1904-5 and 1905-6.

Budget, 1901-2 to 1907-8.

Commonwealth Meteorologist. Climate and Meteorology of Australia; Bulletin No. 1.

Contract Immigrants Act 1905 and Immigration Restriction Acts 1901-5; Returns for Years 1902 to 1907.

Director of Naval Forces; Report for 1906.

Electoral Statistics of Commonwealth Elections; 1903 and 1906.

Estimates; 1901-2 to 1907-8.

Inspector-General of Military Forces; Reports, 1905 to 1907.

Military Board; Reports, 1905 and 1906.

Naturalisation Act 1903; Returns.

Patent Statistics; 1904 to 1907.

Public Service Commissioner; Reports, 1901-4 and 1905, and Public Service Lists, 1903 to 1907.

Representation Act 1905; Returns.

Trade and Customs Returns, 1903 to 1905; compiled by the New South Wales Government Statistician for the Minister for Customs.

Treasurer's Statements and Reports of Auditor-General, 1901-2 to 1906-7.

Treasury Statements of Receipts and Expenditure, issued quarterly in the *Commonwealth Gazette*.

2. State Publications.—The chief statistical publications of each State issued since Federation may be most conveniently grouped under the following heads, viz.:—(a) Publications issued by the Government Statist, (b) departmental reports and papers, and (c) reports and statements of local and public bodies. These are set out hereunder for each State:—

(i. **New South Wales.**—(a) *Publications by Government Statistician:*—

The Wealth and Progress of New South Wales, 1900-1.

The Seven Colonies of Australasia, 1901-2.

A Statistical Account of Australia and New Zealand, 1902-3, 1903-4.

The Official Year Book of New South Wales, 1904-5, 1905-6.

Six States of Australia and New Zealand (annual statistics), 1901 to 1905.

Monthly Statistical Bulletin, 1905 to 1908.

Statistical Registers, 1901 to 1907.

Census of New South Wales, 1901.

Vital Statistics, 1901 to 1907.

Agricultural and Live-stock Statistics, 1901 to 1907.

Statistical View of the Progress of New South Wales during 50 years, 1856 to 1906.

(b) *Departmental Papers:*—

Annual Reports of—

Australian Museum

Board of Public Health.

Chief Medical Officer

Commissioner of Railways

Comptroller-General of Prisons

Director of Botanical Gardens and Domains

Department of Agriculture

Department of Crown Lands

Department of Mines and Agriculture

Department of Police

Department of Public Works

Fisheries Board

Forestries Branch

Government Savings Bank

Inspector-General of Insane

Labour Commissioners

Minister of Public Instruction

National Art Gallery

Pharmacy Board

Public Library

| | |
|---|--|
| Public Service Board | Superintendent of Carpenterian Reformatory |
| Registrar of Friendly Societies, Building Societies, and Trade Unions | University of Sydney |
| State Children's Relief Board | Western Land Board. |

The Estimates.

Public Accounts and Report of the Auditor-General.

(c) *Reports and Statements of Local Bodies* :—

| | |
|---|-------------------------------------|
| Hunter District Water Supply and Sewerage Board | Sydney Harbour Trust |
| Metrop'lit'n Bd. of Water Supply & Sewerage | Town Clerk of the City of Sydney |
| | Annual Statements of Municipalities |

(ii.) **Victoria.**—(a) *Publications by the Government Statist* :—

Statistical Registers, 1901 to 1907.

The Victorian Year Books, 1902 to 1906.

Quarterly Statistical Abstracts, 1904 to 1908.

Statistics of Manufactories, Works, etc., 1901 to 1906.

Australasian Statistics, 1901-2, with Summaries for Previous Years.

The First Fifty Years of Responsible Government in Victoria, 1856 to 1906.

(b) *Departmental Papers* :—

Accounts of the Trustees of Agricultural Colleges and the Council of Agricultural Education.

Annual Reports of—

| | |
|---|---|
| Actuary for Friendly Societies on Trade Unions | Inspector-General of Penal Establishments and Gaols |
| Board for the Protection of Aborigines | Inspector-General of Savings Banks |
| Board of Public Health | Lands Purchase and Management Board |
| Chief Inspector of Explosives | Marine Board of Victoria |
| Commissioner of Crown Lands and Survey | Minister of Public Instruction |
| Conservator of Forests | Public Service Commissioner |
| Council of Judges | Registrar of Friendly Societies |
| Department of Agriculture | Railway Commissioners |
| Government Astronomer | Secretary for Mines |
| Inspector of Factories, Workrooms, and Shops | State Rivers and Water Supply Commission |
| Inspector-General of the Insane | Trustees of the Public Library, Museums, and National Gallery |
| Inspector of Neglected Children and Reformatory Schools | Vice-Chancellor of Melbourne University. |

The Budget.

Returns under the Banks and Currency Act 1890, the Companies Act 1890, and the Electric Light and Power Act 1896.

Statement of Expenditure under the Constitution Statute.

The Estimates.

Treasurer's Statement and Report of the Auditor-General.

(c) *Reports of Local Bodies* :—

| | |
|--|--|
| Annual Reports of the Melbourne Harbour Trust Commission | Statement of Accounts of the Melbourne and Metropolitan Board of Works |
| Annual Reports of the Fire Brigades Board | Annual Statements of Municipal and Shire Councils. |

(iii.) **Queensland.**—(a) *Publications by Government Statistician* :—

The Queensland Official Year Book, 1901.

The Census of 1901.

A.B.C. of Queensland Statistics, 1905 to 1907.

Statistical Registers, 1901 to 1907.

Stock List, 1901 to 1907.

Reports on Agricultural and Pastoral Statistics, on the Sugar Crops, on Vital Statistics, on the Wheat Crop, and on Live Stock.

(b) *Departmental Papers* :—

Annual Reports of the—

Agent-General

Auditor-General under the Supreme Court

Funds Act 1895

Auditor-General under the Queensland

National Bank Act 1896

Benevolent Asylums

Brisbane Board of Waterworks

Bureau of Sugar Experiment Stations

Chief Protector of Aborigines

Chief Inspector of Factories and Shops

Commissioner for Public Health

Commissioner of Income Tax

Commissioner of Police

Commissioner for Railways

Comptroller-General of Prisons

Curator of Intestate Estates

Department of Agriculture

Department of Public Works

Department of Public Lands

Director of Labour

Director of Forests

Engineer for Harbours and Rivers

Hydraulic Engineer on Water Supply

Immigration Agent

Inspector of Orphanages

Inspector of Hospitals for the Insane

Manager of the Government Savings Bank

Medical Officers of Hospitals

Marine Department

Official Trustees in Insolvency

Pacific Island Immigration

Parliamentary Committees

Police Investment Board

Public Service Board

Registrar of Friendly Societies, Building

Societies, and Trade Unions

Secretary for Public Instruction

Trustees of the Public Library

Trustees of the National Art Gallery

Trustees of the Agricultural Bank

Under-Secretary for Mines.

The Estimates.

Reports of the Auditor-General.

Treasurer's Financial Statement.

(c) *Reports and Statements of Local Bodies.*

(iv.) **South Australia.**—(a) *Publications by the Under-Secretary and Government Statistician* :—

Statistical Registers, 1901 to 1907.

The Census of 1901.

Annual Reports on Agricultural and Live-stock Statistics.

(a) *Departmental Papers* :—

Annual Reports of the—

Actuary on Friendly Societies, (1900-1904).

Agent-General

Audit-Commissioner

Chief Inspector of Stock

Commissioner of Police

Commissioner of Railways

Commissioners of the National Park

Conservator of Forests

Department of Agriculture

Department of Public Works

Destitute Board

Gaols and Prisons

Government Astronomer

Government Resident of Northern Territory

Governors of the Public Library, Museum, and Art Gallery

Hospital for the Insane

Inspector of Factories

Inspector of Fisheries

Marine Board

Minister for Education

Registrar of Births, Deaths, and Marriages

State Children's Council

Surveyor-General

Trustees of the Savings Bank.

The Estimates.

Financial Statement of the Treasurer.

(c) *Reports and Statements of Local Bodies* :—

Reports of Hospitals.
Schools of Mines and Industries.

(v.) **Western Australia.**—(a) *Publications by Government Statistician* :—

The Census of 1901.
Statistical Registers, 1901 to 1907.
Monthly Statistical Abstracts, 1901 to 1908.
Year Books of Western Australia, 1900-03, 1902-4, 1905 Part).
Quarterly Reports on Population and Vital Statistics.
Crop and Live Stock Returns.

(b) *Departmental Papers* :—

Annual Reports of the—

| | |
|--|---|
| Aborigines Department | Government Savings Bank |
| Agent-General | Government Labour Bureau |
| Agricultural Bank | Harbour and Light Department |
| Art Galleries | Inspector of Prisons |
| Chief Inspector of Factories | Inspector-General of Insane |
| Chief Inspector of Explosives | Land Titles Department |
| Chief Inspector of Fisheries | Museum and Art Gallery |
| Commissioner of Police | Public Library |
| Commissioner of Railways | Public Service Commissioner |
| Customs Collector and Registrar of Shipping | Registrar of Friendly Societies |
| Department of Agriculture | Registrar of Friendly Societies in connection with Trade Unions |
| Department of Public Health | Stock Department |
| Department of Public Works | Superintendent of Charities and Inspector of Industrial and Reformatory Schools. |
| Department of Lands and Surveys | Surveyor-General |
| Department of Mines | The Industrial Conciliation and Arbitration Act, 1902, by Registrar of Friendly Societies |
| Department of Woods and Forests | |
| Education Department | |
| Government Analyst | |
| Government Astronomer | |
| | |
| The Estimates. | |
| Public Accounts and Report of the Auditor-General. | |

(c) *Reports and Statements of Local Bodies* :—

| | |
|--|---|
| Cemetery Boards | Metropolitan Waterworks Board |
| Fire Brigades | Municipalities, Road Boards, and Boards of Health |
| Fremantle Harbour Trust Commissioners | Public Hospitals. |
| Fremantle Municipal Tramways and Electric Lighting Board | Waterworks Boards (country) |

(vi.) **Tasmania.** (a) *Publications by Government Statistician and Registrar-General* :—

The Census of 1901.
Statistical Registers, 1901 to 1907.
Reports on Vital Statistics and Migration, 1901 to 1907.
Reports on Agricultural and Live Stock Statistics, 1901 to 1907.
Statistical Summaries, 1901 to 1907.

(b) Departmental Papers:—

Annual Reports of the—

| | |
|--|--|
| Agent-General | Hobart and Launceston Gaols |
| Charitable Grants Department | Inspector of Machinery |
| Chief Inspector of Stock | Lands and Survey Department |
| Commissioner of Taxes | Museum and Botanical Gardens |
| Department of Agriculture | Police Department |
| Department of Education | Public Library |
| Department of Mines | Public Service Board |
| Department of Neglected Children | Recorder of Titles |
| Department of Public Health | Registrar of Friendly Societies and Trade Unions |
| Engineer-in-Chief of Public Works | Savings Bank |
| Explosives Department | Secretary for Mines |
| Fire Brigade Board | University of Tasmania. |
| General Manager of Government Railways | |
| The Budget. | |
| The Estimates—Finance 1906-7. | |
| Public Debts Sinking Fund. | |
| Report of the Auditor-General. | |
| Financial Statement of the Treasurer. | |

(c) Reports and Statements of Local Bodies:—

| | |
|--------------------|--------------------------|
| Country Libraries | Life Assurance Societies |
| Harbour Trusts | Marine Boards |
| Hospitals | Municipalities. |
| Industrial Schools | |

SECTION II.

DISCOVERY, COLONISATION, AND FEDERATION OF
AUSTRALIA.

§ 1. Early Knowledge of Australia.

1. **Introduction.**—It is proposed to give here only a brief summary of the more important facts relating to the early history of Australian discovery. A more complete account of this subject, together with bibliographical references thereto, may be found in Year Book No. 1 (pp. 44 to 51).

2. **Early Tradition.**—It would appear that there was an early Chaldean tradition as to the existence of an Austral land to the south of India. Rumours to that effect in course of time found their way to Europe, and were probably spread by voyagers from Indian seas, more especially by the Greek soldiers who accompanied Alexander the Great [B.C. 356-323] to India. References to this *Terra Australis* are found in the works of Ælianus [A.D. 205-234], Manilius [probably a contemporary of Augustus or Tiberius Cæsar], and Ptolemy [A.D. 107-161]. The precise period at which Australia was first discovered by Europeans is not known. In some of the maps of the first period of the Middle Ages there is evidence which might warrant the supposition of the knowledge of the existence of a *Terra Australis*, while a less indefinite idea of the Austral land appears in the maps and manuscripts of the fourteenth and fifteenth centuries.

3. **Discovery of Australia.**—The Venetian traveller, Marco Polo [1254-1324], and Nicolo de' Conti [circa 1440], refer to a land called *Java Major*, which there is little doubt was Australia. On the Mappamundi in the British Museum, of not later date than 1489, there is a coast-line which can be none other than the west coast of Australia. Martin Behaim's globe, the oldest known globe extant, constructed in 1492, also shews part of Australia's coast-line, and a wooden globe in Paris bears an inscription to the effect that the *Terra Australis* was discovered in 1499. It is possible, however, that this term was also applied to the regions now known as Terra del Fuego, so that but little weight can be attached to this reference.

In the Dauphin map [about 1530-1536] Australia is referred to as *Jave la Grande*.

The last decade of the fifteenth century and the commencement of the sixteenth saw numerous expeditions equipped in the ports of Spain and Portugal for the purpose of exploiting the new world. The Portuguese rounded Cape Horn and pushed eastward. The Spaniards, relying on the scientific conclusion that the world was spherical, attempted to get to the east by deliberately starting out west, Magalhaens by so doing reaching the Philippine Islands in 1581. It would appear, however, that for some reason all definite information regarding the *Terra Australis* was suppressed.

It may be mentioned that in 1606, de Quiros, on reaching Espiritu Santo, thought that he had come to this great land of the South, and therefore named the island *La Australia del Espiritu Santo*. De Torres, who was with him, passed through the straits which now bear his name, and proceeded to the Philippine Islands, thus marking the close of Spanish activity in the work of Australian discovery.

With the decline of Portuguese and Spanish naval supremacy came the opportunity of the Dutch for discovery. Cornelius Wytfliet's map, of which there was an English edition, published at Louvain in 1597, indicates roughly the eastern and western coasts of Australia, as well as the Gulf of Carpentaria. The following passage, which occurs in the book just referred to, is perhaps the first distinct account that we have of Australia:—"The *Australis Terra* is the most southern of all lands. It is separated from New Guinea by a narrow strait. Its shores are hitherto but little known, since, after one voyage and another, that route has been deserted and seldom is the country visited, unless when sailors are driven there by storms. The *Australis Terra* begins at one or two degrees from the equator, and is maintained by some to be so great an extent that, if it were thoroughly explored, it would be regarded as a fifth part of the world."

The Dutch East India Company, established in 1602, sent the *Duyfken* from Bantam to explore the islands of New Guinea, and the commander of that vessel made the first authentic discovery of the great South Land, the region he visited being a little to the south west of Cape York. The country was found for the most part desert; some of the crew were murdered by the blacks, and from want of provisions the expedition was obliged to turn back. Dirck Hartog, in the *Eendracht* in 1616, sailed along a considerable part of the west coast. The Dutch vessels, *Pera* and *Arnhem*, in 1623, discovered Arnhem Land, the peninsula on the western side of the Gulf of Carpentaria, which was so named in compliment to Peter Carpenter, Governor to the Dutch East India Company.

English enterprise was early shewn, viz., by Sir William Courteen petitioning James I., in 1624, for the privilege of erecting colonies in the *Terra Australis*, a petition which probably was not granted. In 1627, Pieter Nuyts, commander of the *Gulde Zeepaert*, sailed from Cape Leeuwin and sighted the whole shore of the Great Australian Bight. In 1628, De Witt, commander of the *Vianen*, discovered land on the north-west, viz., in about latitude 21° S. The *Batavia*, commanded by Francis Pelsart, was wrecked on the western coast of Australia in 1629. Pelsart was the first to carry to Europe an authentic account of the west coast of Australia, which, however, he described in the most unfavourable terms. His journal contains what is probably the first description of the kangaroo given by any white explorer. Gerrit Pool, commanding the yachts *Amsterdam* and *Wesel*, visited the Gulf of Carpentaria in 1636.

Abel Janszoon Tasman, in command of two vessels, the *Heemskirk* and *Zeehaen*, set out in 1642 to ascertain the extent of the great southern continent. He named Van Diemen's Land, imagining it to be part of Australia proper, and sailing north-easterly discovered New Zealand. In his second voyage in 1644, Tasman visited the northern coasts of Australia, but made no discoveries of importance. The period of Dutch discoveries may be said to have ended with Tasman's second voyage, and, with the decline of Dutch maritime power, their interest in Australian discovery vanished. It may, however, be pointed out, that William de Vlamingh landed at the mouth of the Swan River at the end of 1696, and in 1705 a Dutch exploring squadron under Martin van Delft visited and named parts of the north-west coast of Australia.

4. Discoveries by the English.—The north-western shores of Australia were first visited by William Dampier, in the *Cygnets*, in 1688. In describing the country Dampier stated that he was certain that it joined neither Asia, Africa, nor America. In 1699 he again visited Australia, in command of H.M.S. *Roebuck*, and on his return to England published an account in which a description is given of trees, flowers, birds, and reptiles observed, and of encounters with natives.

It was a question at the end of the seventeenth century whether Tasmania and New Zealand were parts of Australia, or whether they were separated from it, but themselves formed part of a great Antarctic Continent. Captain James Cook's first voyage, though primarily undertaken for the purpose of observing the transit of Venus from Otaheite, had also for its objective to ascertain whether the unexplored part of the southern hemisphere be only an immense mass of water or contain another continent. In command of H.M.S. *Endeavour*, a barque of 370 tons burthen, carrying about eighty-five persons, and accompanied by Sir Joseph Banks, Dr. Solander the naturalist, Green the astronomer,

draughtsmen, and servants, Cook, after observing the transit of Venus at Otaheite, turned towards New Zealand, sighting that land on the 8th October, 1769,¹ in the neighbourhood of Poverty Bay. Circumnavigating the North and South Islands, he proved that New Zealand was connected neither with the supposed Antarctic continent nor with Australia, and took formal possession thereof in the name of the British Crown. On the 20th of April, 1770,¹ at 6 a.m., Cook sighted the Australian mainland at a place he called Point Hicks, naming it after his first-lieutenant, who first saw it. Coasting northwards, Botany Bay was discovered on the 29th April, 1770.¹ The *Endeavour* dropped anchor, and Cook landed on the following day. On the 2nd May, 1770,¹ a seaman named Sutherland died and was taken ashore to be buried; he was probably the first British subject buried on Australian soil. Cook sailed along the coast in a northerly direction for nearly 1300 miles, until the 12th June, 1770,¹ when the *Endeavour* was seriously damaged by striking a coral reef in the vicinity of Trinity Bay. Repairs occupied nearly two months, and the *Endeavour* then again set her course to the north, sailing through Torres Straits and anchoring in the Downs on the 14th June, 1771.¹ In 1772 Cook was put in command of the ships *Resolution* and *Adventure*, with a view of ascertaining whether a great southern continent existed, and having satisfied himself that, even if it did, it lay so far to the south as to be useless for trade and settlement, he returned to England in 1774. Cook's last voyage was undertaken in 1776, and he met his death on the 14th February, 1779, by which date practically the whole coast of Australia had been explored. The only remaining discovery of importance to be made was the existence of a channel between Tasmania and Australia. This was discovered by Flinders and Bass in 1798.

The most complete examination of the early history of discovery in the region of Australia is the "Critical, Documentary, and Historical Investigation concerning the Priority of Discovery in Australasia by Europeans before the Arrival of Lieut. James Cook in the *Endeavour* in the year 1770," by George Collingridge, Esquire. 4to, pp. 376, + xv. Sydney, 1895.

§ 2. The Taking Possession of Australia.

1. **Annexation of Eastern Part of Australia.**—Although as far back as 1503 a French navigator named J. Binot Paulmier, Sieur de Gonneville, claimed to have landed on the west coast of Australia, and similar claims were put forward by the French and Portuguese in respect of alleged discoveries in 1531 and 1601 by Guillaume le Testre and Manoel Godinho de Eredia respectively, it was not until the 23rd August, 1770, that the history of Australia was brought into political connection with western civilisation. It was on that date that Captain Cook took possession "of the whole eastern coast, from lat. 38° to this place, lat. 10½° S., in right of His Majesty King George the Third." Cook, however, proclaimed British sovereignty only over what are now the eastern parts of New South Wales and Queensland, and formal possession, on behalf of the British Crown, of

1. *Correct dates of Captain Cook's Log.* After the 180° meridian of longitude had been passed, and owing to no allowance having been made for westing, the various log-books of this voyage are in error one day as to dates. Thus those in Captain Cook's private log, in his official log, in Gunner Forwood's, Pickersgill's, Clerke's, Wilkinson's, and Bootie's Journals, in the Palliser copy of Cook's log, and in Wharton's publication, all need correction by adding one day to the date given: that is, the 19th should read the 20th, etc. The anonymous log, doubtless Green's, is erroneously supposed by the author of the "Historical Records of New South Wales," to have been corrected for westing, see the foot-note on page 269 therein. The facts are as follows:—What was known as "ship time" began a day earlier than under the present system of astronomical reckoning, that is to say, Jan. 1 began at noon Dec. 31. The "Astronomical day," however, was a whole day later than the *ship's day*: thus what would be assigned to the 24th in Cook's Journal would appear in Green's Journal as the 23rd. (See "Captain Cook's Journal", 1768-71, by Captain W. J. L. Wharton, R.N., F.R.S., London, 1893, preface pp. xii., xiii.) There can be no doubt as to the need of the correction in the dates, since on reaching Batavia the log reads:—"Wednesday 10th, according to our reckoning, but by the people here Thursday 11th." (Op. Cit., pp. 352-3.) Attention was drawn to this matter by Mr. P. de Jersey Grut in the "Argus," Melbourne, May 15, 18 and 22, 1907.

the whole of the eastern part of the Australian Continent and Tasmania was not taken until the 26th January, 1788. It was on this last date that Captain Phillip's commission, first issued to him on the 12th October, 1786, and amplified on the 2nd April, 1787, was read to the people whom he had brought with him in the "First Fleet."

A full historical account of the period referred to may be found in the "Historical Records of New South Wales," vol. I., parts 1 and 2.

2. Original Extent of New South Wales.—The commission appointed Phillip "Captain-General and Governor-in-Chief in and over our territory called New South Wales, extending from the Northern Cape or extremity of the coast called Cape York, in the latitude of ten degrees thirty-seven minutes south, to the southern extremity of the said territory of New South Wales or South Cape, in the latitude of forty-three degrees thirty-nine minutes south, and of all the country inland westward as far as the one hundred and thirty-fifth degree of east longitude reckoning from the meridian of Greenwich, including all the islands adjacent in the Pacific Ocean within the latitudes aforesaid of ten degrees thirty-seven minutes south and forty-three degrees thirty-nine minutes south."

Although in November, 1769, Captain Cook had taken possession of the North Island of New Zealand, and in January, 1770; also of the South Island, it is a matter of doubt whether, at the time when Captain Phillip's commission was drawn up, New Zealand was considered as one of the "islands adjacent in the Pacific Ocean." The facts that under the Supreme Court Act (Imperial) of 1823 British residents in New Zealand were brought under the jurisdiction of the court at Sydney, while in 1839 there was a proposal on the part of the British Government to appoint a Consul in New Zealand, would leave this an open question, as nothing more than extra-territorial jurisdiction may have been intended. Various hoistings of flags notwithstanding, New Zealand does not appear to have unequivocally become British territory until 1840. In that year, on the 29th January, Captain Hobson arrived at the Bay of Islands. On the following day he read the commission, which extended the boundaries of the colony of New South Wales so as to embrace and comprehend the Islands of New Zealand. On the 5th February the Treaty of Waitangi, made with the native chiefs, was signed. Finally, on the 21st May, British sovereignty over the Islands of New Zealand was explicitly proclaimed. From that date until the 3rd May, 1841, New Zealand was indubitably a dependency of New South Wales.

3. Annexation of Western Australia.—In June, 1825, Lieut. - General Sir R. Darling, then Governor of New South Wales, sent Major Lockyer, with a party numbering about 75, to found a settlement at King George III. Sound. The expedition sailed from Sydney on the 9th November, 1826, and landed at the Sound on the 25th December following and hoisted the British flag. On the 17th January, 1827, Captain Gilbert in H.M.S. *Success* was despatched from Sydney to re-victual the settlement. A party from the vessel explored the Swan River on the 8th March, and King George's Sound was reached on the 2nd April. On the 2nd May, 1829, Captain Fremantle hoisted the British flag on the south head of the Swan River, and took possession of "all that part of New Holland which is not included within the territory of New South Wales." Thus, before the middle of 1829 the whole territory, now known as the Commonwealth of Australia, had been constituted a dependency of the United Kingdom.

For a fuller account of the discovery and annexation of Western Australia reference may be made to the Western Australian Year Book, 1902-4, pp. 1 to 30.

§ 3. The Creation of the Several Colonies.

1. **New South Wales as Original Colony.**—From what has been said, the mainland of Australia was, in Governor Phillip's commission of 1786, originally as shewn on map No. 1, that is, it was divided by the 135th meridian of east longitude into two parts. The earliest colonists believed that Van Diemen's Land—the present State of Tasmania—was actually joined to the mainland, and it was not till 1798 that the contrary was known. In that year, by sailing through Bass Straits, Flinders proved that it was an island. The territory of New South Wales, as originally constituted, and of New Zealand, which may be included, although Cook's annexation was not properly given effect to until 1840, was thus :—

| | Square Miles. |
|---|---------------|
| Australia, east of 135° longitude east | 1,454,312 |
| Van Diemen's Land | 26,215 |
| New Zealand | 104,471 |
| Total | 1,584,998 |

The western part of Australia, not then annexed, comprised originally 1,494,054 square miles.

2. **Separation of Van Diemen's Land.**—In 1825, Van Diemen's Land, as Tasmania was then called, was politically separated from New South Wales, being constituted a separate colony on the 14th June of that year. This reduced the area of New South Wales and its territorial dependencies by 26,215 square miles, that is, to 1,558,783 square miles.

3. **Extension of New South Wales Westward.**—In 1827 the western or inland boundary of New South Wales was extended westward to the 129th meridian,¹ thus increasing its area by 518,134 square miles, and making it, including New Zealand and excluding Tasmania, 2,076,917 square miles, or excluding also New Zealand, 1,972,446 square miles.

4. **Western Australia constituted a Colony.**—The territory annexed by Captain Fremantle in 1829, viz., "all that part of New Holland which is not included within the territory of New South Wales," extended eastward to the 129th meridian, and comprised 975,920 square miles. The constitution of this area into the Colony of Western Australia, now one of the six States of the Commonwealth, was the consequence of Fremantle's act. By it the annexation of the whole of the Continent of Australia by the British Crown was completed. The Australian colonies at this time were as indicated in the following table, and illustrated by map No. 2:—

| Colony. | Date of Annexation. | Date of Creation. | Date of First Permanent Settlement. | Area. Square mile. |
|--|---------------------|-------------------|-------------------------------------|--------------------|
| New South Wales (including New Zealand) | 1770 | 1786 | 1788 | 2,076,917 |
| Van Diemen's Land | | 1825 | 1803 | 26,215 |
| Western Australia | 1829 | 1829. | 1829 | 975,920 |

5. **Creation of South Australia as a Province.**—On the 15th August, 1834, the Act 4 and 5 William IV., cap. 95, was passed, creating South Australia a "province," and on

¹ See "The Annotated Constitution of the Australian Commonwealth," by Quick and Garran, 1901, page 35.

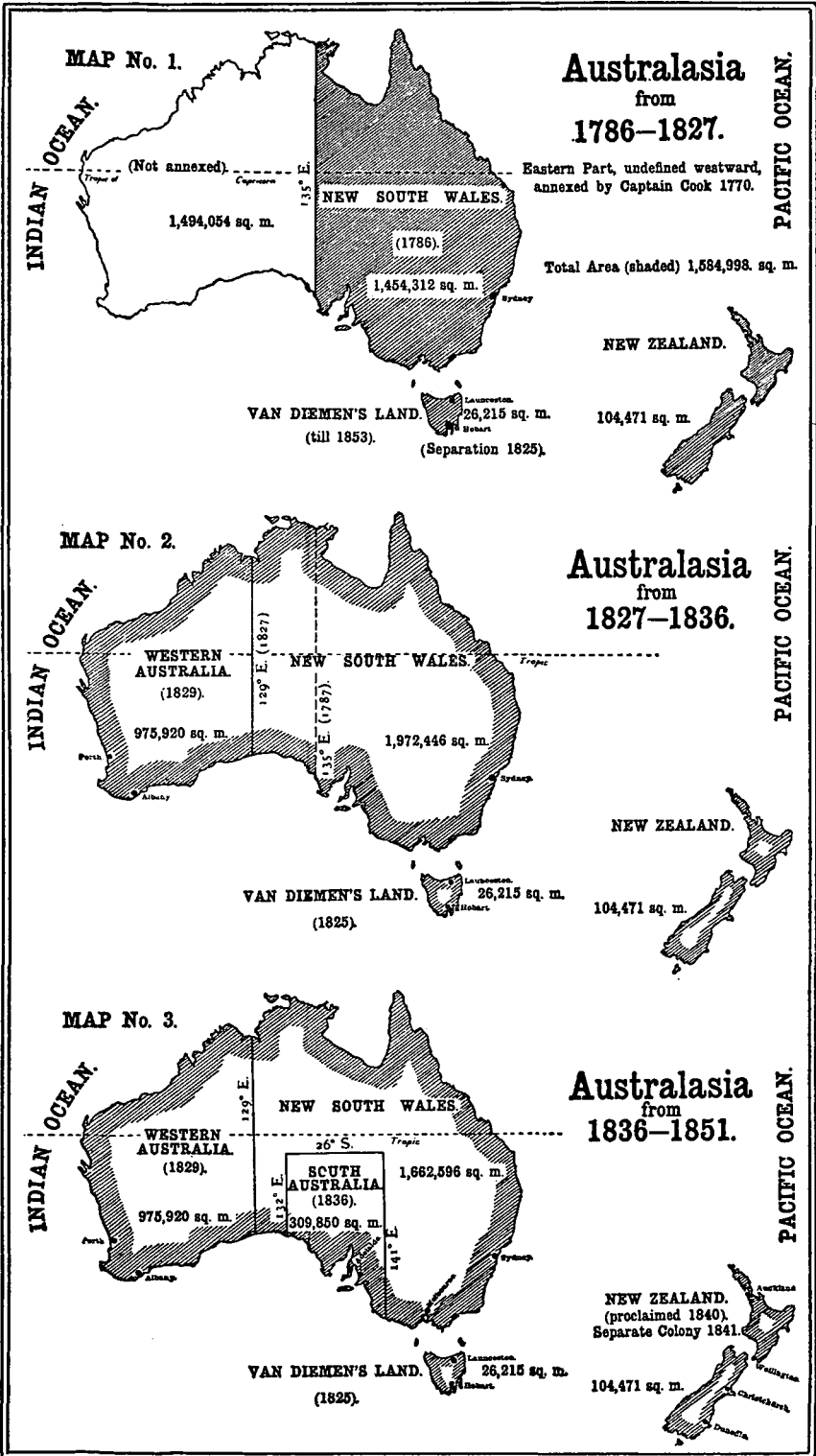
the 28th December, 1836, settlement took place. The new colony embraced 309,850 square miles of territory, which, lying south of the 26th parallel of south latitude, and between the 141st and 132nd meridians of east longitude, was up to that time included within the territory of New South Wales, as will be seen on reference to map No. 3. Thus the area of New South Wales and New Zealand was reduced to 1,767,067 square miles.

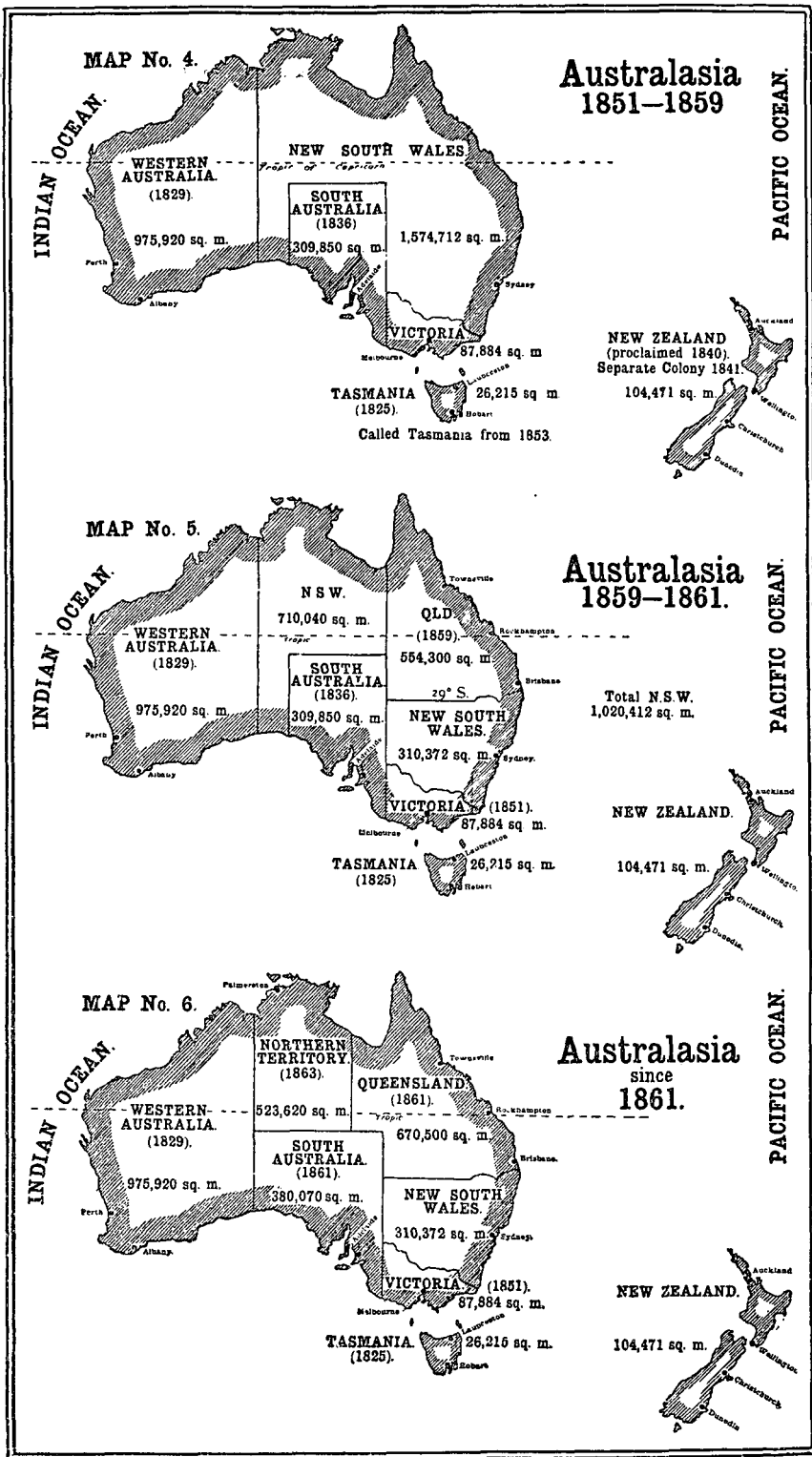
6. Separation of New Zealand.—New Zealand, nominally annexed by Captain Cook and formally declared by proclamation in 1840 as a dependency of New South Wales, was, by letters patent of the 16th November of that year, constituted a separate colony under the powers of the Act 3 and 4 Vic., cap. 62, of the 7th August, 1840. Proclamation of the separation was made on the 3rd May, 1841. The area of the colony is 104,471 square miles, and its position in reference to Australia is shewn on map No. 4. This separation reduced the political territory of New South Wales to 1,662,596 square miles. See map No. 3.

7. Separation of Victoria.—In 1851, what was known as the "Port Phillip District" of New South Wales, was constituted the Colony of Victoria, "bounded on the north and north-east by a straight line drawn from Cape Howe to the nearest source of the River Murray, and thence by the course of that river to the eastern boundary of the colony of South Australia." The area of the new colony is 87,884 square miles, and its separate existence took effect from the 1st July, 1851, upon the issuing of the writs for the first election of elective members of the Legislative Council. This reduced the territory of New South Wales to 1,574,712 square miles, as indicated on map No. 4.

8. Separation of Queensland.—In 1859 letters patent issued on the 6th June constituted what was then known as the Moreton Bay District of New South Wales a separate colony, under the name of Queensland. The territory originally comprised in the new colony was described in the letters patent as being so much of the colony of New South Wales as lies northward of a line commencing on the sea coast at Point Danger, in latitude about 28° 8' south, running westward along the Macpherson and Dividing Ranges and the Dumaresq River to the MacIntyre River, thence downward to the 29th parallel of south latitude, and following that parallel westerly to the 141st meridian of east longitude, which is the eastern boundary of South Australia, together with all the adjacent islands, their members, and appurtenances in the Pacific Ocean. In Year Book No. 1 it was stated that the western boundary of the new colony was defined by the letters patent of the 6th June, 1859, as being "the 141st meridian of longitude from the 29th to the 26th parallel, and thence the 138th meridian north to the Gulf of Carpentaria." Further investigations have, however, shewn that this statement is incorrect, and that the western boundary was not specifically defined at all. The western limits of the new colony were, however, defined by inference from the fact that its area comprised the territory to the northward of a line extending as far west as the 141st meridian of east longitude, *i.e.*, the 141st meridian was the western boundary. The area of the new colony thus constituted was 554,300 square miles. By this separation the remaining territory of New South Wales was divided into two parts, *viz.*, one of 310,372 square miles, the present State, and another of 710,040 square miles, of which 116,200 square miles is now a part of Queensland, 523,620 square miles is the Northern Territory, and 70,220 square miles is now a part of South Australia. These facts are shewn on map No. 5.

9. No further Creation of Colonies.—Since the separation of Queensland, no other creation of colonies has taken place in Australia, though the boundaries of New South Wales, Queensland, and South Australia were later altered. The dates of foundation of the Australasian colonies, and their areas at the close of 1859, were therefore as hereunder:—





| Colony. | Date of Annexation. | Date of Creation. | Date of First Permanent Settlement. | Area. Square Miles. |
|--------------------------|---------------------|-------------------|-------------------------------------|----------------------|
| New South Wales | 1770 | 1786 | 1788 | 904,212 |
| Tasmania | 1770 | 1825 | 1803 | 26,215 |
| South Australia | 1770 | 1834 | 1836 | 309,850 |
| Victoria | 1770 | 1851 | 1834 | 87,884 |
| Queensland | 1770 | 1859 | 1824 | 670,500 |
| Western Australia | 1829 | 1829 | 1829 | 975,920 |
| New Zealand | 1840 | 1841 | 1814 ? | 104,471 ¹ |

1. By proclamation dated 10th June, 1901, the area of the Dominion was increased by 280 square miles, making it now 104,751 square miles, by the inclusion of the Cook Group and other islands.

10. **The Changing Boundaries of the Colonies.**—When, on the 15th August, 1834, the Imperial Government constituted the province of South Australia, there lay between its western boundary and the eastern boundary of Western Australia (as proclaimed by Fremantle in 1829) a strip of country south of the 26th parallel of south latitude, and between the 132nd and 129th meridians of east longitude, legally included within the territory of New South Wales. The area of this territory, frequently but improperly referred to as “No Man’s Land,” has been calculated to cover approximately 70,220 square miles.¹ On the 10th October, 1861, by the authority of the Imperial Act 24 and 25 Vic., cap. 44, the western boundary of South Australia was extended so as to cover this strip, and to coincide with the eastern boundary of Western Australia—the 129th meridian. By letters patent dated the 13th March, 1861, forwarded by the Colonial Secretary to the Governor of Queensland on the 12th April, 1862, the area of Queensland was increased by the annexation of “so much of the colony of New South Wales as lies to the northward of the 26th parallel of south latitude, and between the 141st and 138th meridians of east longitude, together with all and every the adjacent islands, their members, and appurtenances, in the Gulf of Carpentaria.” The area of South Australia was therefore increased by 70,220 square miles, and became 380,070 square miles, while the area of Queensland, increased by 116,200 square miles, became 670,500 square miles. The territories of these two States thus became as represented in map No. 6. Nearly two years after this accession of territory, viz., on the 6th July, 1863, the Northern Territory, containing 523,620 square miles—also formerly a part of New South Wales²—was, by letters patent, brought under the jurisdiction of South Australia, whose area was thus increased to 903,690 square miles; whilst that of New South Wales was diminished by these additions to South Australia, and by the separation of the colonies of New Zealand, Victoria and Queensland, till its area became only 310,372 square miles. The territories of Tasmania, Western Australia, and the three other separated colonies, with the exception of some minor islands added to Queensland, remain as originally fixed.³

11. **Australasia, 1863 to 1900.**—The immense area generally known as Australasia had thus, by 1863, been divided into seven distinct colonies, the areas of which are shewn below:—

From the 1st January, 1901, the colonies mentioned above, with the exception of New Zealand, have become federated under the name of the “Commonwealth of Australia,” the designation of “Colonies” being at the same time changed into that of “States.” The total area of the Commonwealth is, therefore, 2,974,581 square miles, or about equal

1. The calculation has been made in this Bureau. The area has usually been left unstated in references to the territory, but when approximations have been given the margin of error seems to have been somewhat large.

2. A military post had been formed on Melville Island in 1825. This was transferred about 1827 to Raffles Bay, and some years later to Port Essington. The settlement at Port Essington was like its predecessors, under the command of Sir Gordon Bremer, and was designed, in addition, as a harbour of refuge for distressed vessels. It was finally abandoned in 1849.

3. The facts and maps here given are in substantial though not in complete accordance with the illustrated statement shewing the subdivision of Australia between 1787 and 1863, issued by the Department of Lands, Sydney, 1904.

to the area of the United States of America, exclusive of Alaska, or to that of all Europe, less about one-third of Russia.

DATE OF CREATING THE SEVERAL COLONIES.

| Colony. | Year of Formation into Separate Colony. | Present Area in Square Miles. | Colony. | Year of Formation into Separate Colony. | Present Area in Square Miles. |
|--|---|-------------------------------|--------------------------------------|---|-------------------------------|
| New South Wales ... | 1786 | 310,372 | New Zealand ... | 1841 | 104,471 ¹ |
| Tasmania ... | 1825 | 26,215 | Victoria ... | 1851 | 87,884 |
| Western Australia ... | 1829 | 975,920 | Queensland ... | 1859 | 670,500 |
| South Australia (proper) ² | 1834 | 380,070 | Northern Territory ³ | 1863 | 523,620 |
| Commonwealth | | ... | 2,974,581 square miles. | | |
| Australasia ... | | ... | 3,079,052 square miles. ³ | | |

1. Now 104,751 square miles: increased 10th June, 1901.

2. South Australia with the Northern Territory is 903,690 square miles.

3. Now 3,079,332 square miles.

The evolution of the various States will be seen in the accompanying diagrams.

12. **British New Guinea or Papua.**—Under the administration of the Commonwealth, but not included in it, is British New Guinea or *Papua*, finally annexed by the British Government in 1884, and for a number of years administered by the Queensland Government but transferred to the Commonwealth by proclamation on the 1st September, 1906, under the authority of the Papua Act (Commonwealth) of 16th November, 1905. The area of Papua is about 90,540 square miles.

§ 4. The Exploration of Australia.¹

(A) Eastern Australia.

1. **Earliest Tours of Exploration, 1788 to 1791.**—When the first settlement was established at Sydney in 1788 practically nothing was known of the nature even of the immediate interior or the surrounding country. It was not long, however, before CAPTAIN PHILLIP and his officers took steps to investigate a considerable area of country in the immediate neighbourhood of the settlement. The first excursion undertaken by Phillip was on the 2nd March, 1788, when he went to Broken Bay, whence he returned after an absence of eight days. In April Phillip again started off on a tour of examination. Landing at Shell Cove, near the North Head of Port Jackson, he penetrated about fifteen miles from the coast, and obtained his first view of the inland mountains, the northernmost of which he named the Carmarthen Hills and the southernmost the Lansdowne Hills. A noticeable landmark between the north and south elevations of these hills he called Richmond Hill. Phillip was strongly impressed with the idea that these mountains must contain the source of a large river, in search of which he consequently set off on the 22nd April. His efforts, however, did not meet with success,

1. See "The Historical Records of New South Wales," Vols. I. to VII., edited by F. M. Bladen; Rusden's "History of Australia," Vols. I. to III.; "Explorers of Australia," by E. Favenc; Map of Australia shewing Routes of Exploration, published by the Department of Lands and Survey, Melbourne, May, 1888; Year Book of Western Australia, 1902-4.

and after pushing westward for thirty miles, when he came in sight of land which promised to be richly cultivable, he was obliged to turn back through want of provisions.

(i.) *Discovery of the Hawkesbury River.* In June, 1789, Phillip again turned his attention to the exploration of the country. In company with CAPTAIN HUNTER and some of his officers, he proceeded to Broken Bay, and there, after examining numerous branches of the harbour, he discovered a river which he named the Hawkesbury, and which he explored as far as the foot of the hill which he had previously named Richmond Hill, when it was found that the river divided into two branches (one known later as the Nepean, the other as the Grose). The distant mountains, over which hung a blue haze, were named the Blue Mountains.

(ii.) *Captain Tench's Discoveries.* During the same month—June, 1789—in which the Hawkesbury River was discovered, CAPTAIN WATKIN TENCH discovered the Nepean River. The next and last excursion undertaken by Phillip was in April, 1791, when, accompanied by Captain Tench and LIEUTENANT DAWES, he set out in a westerly direction and examined the country towards the foot of the Blue Mountains. In the following month Tench and Dawes ascertained definitely that the Nepean was a tributary of the Hawkesbury.

The names of PATERSON, JOHNSON, PALMER, and LAING are also associated with exploration on the Hawkesbury.

(iii.) *Discovery of the Hunter River.* Towards the end of the year 1797, LIEUTENANT J. SHORTLAND was sent on an expedition along the coast in a northerly direction from Port Jackson. He went as far north as Port Stephens, and on his return journey discovered and named the River Hunter.

2. French Voyages of Exploration, 1788 to 1802.—Towards the close of the 18th century the French, who were supposed to covet territory in Australia, sent out several exploring expeditions. While "the first fleet" was still in Botany Bay, two French vessels, the *Boussole* and the *Astrolabe*, which had been sent out on a voyage of discovery under the command of LA PÉROUSE, put in to refit. Shortly after his arrival at Botany, PÈRE LE RECEVEUR, the naturalist of the expedition, died, and was buried on the shore of the Bay, a monument marking his last resting-place. After a stay of two months La Pérouse sailed away, and nothing further was heard of his expedition until about fifty years later, when it was surmised that his ships had been wrecked at one of the islands in the neighbourhood of the New Hebrides. In 1792 the French Admiral D'ENTRECASTEAUX was in Australian waters with two ships, searching for La Pérouse. D'Entrecasteaux spent some time on the coast of Tasmania, and named several places. In 1800 the French Republic fitted out two ships, *Le Géographe* and *Le Naturaliste*, obtaining passports from the English Government recommending the commander, CAPTAIN BAUDIN, to the British authorities in New South Wales. The expedition, having examined parts of the coasts of Van Diemen's Land and of what is now Victoria, arrived in Port Jackson in 1802. Although there were various rumours afloat as to the intention of the French to establish a settlement in Australia, nothing came of them, and the expedition left Sydney in November, 1802. It was chiefly in consequence of these and of later rumours to the same effect that steps were taken by the British to form settlements at various places on the Australian coasts.

3. Bass and Flinders, 1796 to 1803.—In June, 1796, SURGEON BASS set out on an expedition to the Blue Mountains, and succeeded in ascending the highest point he could find, whence, however, he was able to see only other ranges of mountains. Foiled in his expedition to the mountains, Bass took to exploration by water. With FLINDERS he had previously, in 1795, undertaken a voyage in a boat 8 feet long, which they named the "Tom Thumb," their object being to discover a supposed river to the south of Sydney. The river turning out to be only an arm of the sea, which they named Port Hacking, they proceeded as far as the Tom Thumb Lagoon, in the Illawarra district, whence they returned to Sydney.

(i.) *Discovery of Bass Straits.* In 1797 Bass sailed in an open whaleboat, and examined the coast southward from Sydney, discovering the mouth of the Shoalhaven and the inlet to Twofold Bay. Passing round Cape Howe and Wilson's Promontory, he then explored an inlet which he named Western Port. Bass was then convinced of the existence of the straits which now bear his name. On the 7th October, 1798, accompanied by Flinders and a crew of eight seamen, he set sail in the sloop *Norfolk*, of 25 tons, from Sydney. The island of Tasmania was circumnavigated and various places on its coasts were visited and named.

In 1799 FLINDERS sailed in the *Norfolk* northwards from Sydney as far as Hervey Bay, making a survey of the coast as he proceeded.

(ii.) *Voyage of the "Investigator."* On the 7th December, 1801, Flinders in command of H.M.S. *Investigator* sighted Australia in the vicinity of Cape Leeuwin, and commenced a survey of the coast of the Great Australian Bight. He sighted and named a number of promontories and inlets as far as Encounter Bay, where he met the French vessel *Le Géographe*, which had come from Bass Straits and was proceeding westward in her examination of the coast. On his way to Sydney Flinders entered Port Phillip, not knowing that it had been already discovered by MURRAY. (See 4 below.) The *Investigator* arrived in Port Jackson on the 10th May, 1802, and proceeding on her voyage, was the first vessel to completely circumnavigate the Australian continent. Flinders was eventually detained at Mauritius by the French as a prisoner of war for over six years, during which time the French expedition under Baudin took credit for his discoveries.

4. **Discovery of Port Phillip, 1801.**—The first landing effected in Victoria was in 1797, from a vessel wrecked on one of the Furneaux Islands. Three of the sailors, out of a total of seventeen, reached Sydney overland. Early in the year 1800 the English Government sent out the brig *Lady Nelson* for service in New South Wales, under the command of LIEUTENANT GRANT, who sighted Australia on the 3rd December, 1800. Grant named Cape Northumberland, Mount Gambier, Cape Bridgewater, Cape Nelson, Portland Bay, and Cape Otway, but passing at night from Cape Otway to Cape Liptrap failed to sight Port Phillip Heads. For some months after his arrival at Sydney the *Lady Nelson* was used for surveying purposes by GRANT and BARRALLIER. In November, 1801, ACTING-LIEUTENANT MURRAY was sent in the *Lady Nelson* to trace the coast between Point Schanck and Cape Otway. On the 5th January, 1802, Murray sighted the entrance to a large harbour, which he did not however enter, owing to stress of weather, until the 15th February, on his return from King Island. Murray named the harbour Port King, after GOVERNOR KING, who, however, changed the name to Port Phillip. Flinders shortly after entered Port Phillip on his way to Sydney, after his meeting with the French exploring expedition. (See above.)

In February, 1803, CHARLES ROBBINS in the schooner *Cumberland*, accompanied by GRIMES, the Surveyor-General of New South Wales, surveyed the Yarra for many miles above the present site of Melbourne.

5. **Explorations in Tasmania, 1803 to 1807.**—In September, 1803, LIEUTENANT BOWEN arrived at Risdon Cove on the Derwent, and founded the settlement of Hobart, while the settlement at Port Dalrymple (Launceston) was established in November, 1804, the district having been first explored by WILLIAM COLLINS in the commencement of the same year. During the following months the surrounding country was explored by LIEUTENANT-COLONEL PATERSON, who had the *Lady Nelson* at his disposal for survey purposes. In February, 1807, LIEUTENANT LAYCOCK succeeded in travelling overland from Launceston to Hobart and back again.

6. **The Blue Mountains, 1802 to 1813.**—For many years after the foundation of the colony in New South Wales settlement was confined, on the west by the inaccessible barrier formed by the Blue Mountains, and on the north and south by broken sandstone ridges, to a belt of country about 40 miles wide and 80 miles long. Most of the early

efforts in the direction of exploration were aimed at surmounting the ranges on the west. Unsuccessful attempts were made on several occasions between the years 1802 and 1805, notably by BARRALLIER and CALEY. According to his chart Barrallier, in 1802, reached a point 105 miles west of Lake Illawarra. However far these explorers succeeded in piercing the mountains, the verdict at that date was that they had not been passed, and until the year 1813 they were regarded as forming an impassable barrier to the extension of colonisation towards the west. At last, in 1813, GREGORY BLAXLAND, accompanied by W. C. WENTWORTH and LIEUTENANT LAWSON, by adhering to the ridge which formed the divide between the tributaries of the northern bank of the Warragamba River and the affluents of the Grose, succeeded in effecting a passage over the Blue Mountains, and from the summit of a high hill, afterwards called Mount Blaxland, the explorers obtained an extensive view of the pasture lands stretching towards the west. Blaxland's discoveries were most far-reaching in their effects. Not only did they open up the rich plains round Bathurst to settlement, but also marked the commencement of a new era of exploration and progress.

7. **Evans and Oxley, 1813 to 1823.**—In November, 1813, GEORGE WILLIAM EVANS, Deputy-Surveyor of Lands, following on the tracks of Blaxland's expedition, crossed the mountains and discovered and named the Fish and Campbell Rivers. The united stream he christened the Macquarie, and he followed its course for 98½ measured miles from the termination of Blaxland's journey. Evans reached the Nepean on his return journey on the 8th January, 1814. The work of making a road over the range was immediately proceeded with, and was completed as far as Bathurst in 1815.

(i.) *The Lachlan River Discovered, 1815.* On the 13th May, 1815, Evans again set out from Bathurst on an exploring expedition. Proceeding first in a southerly and then in a westerly direction, he discovered and named the Lachlan River. At the furthest point reached he carved his name and the date on a tree.¹ On the 12th June he returned to Bathurst.

In May, 1817, JOHN OXLEY, the Surveyor-General, accompanied by EVANS, ALLAN, CUNNINGHAM, CHARLES FRAZER, and nine others, explored a considerable part of the Lachlan, but being eventually stopped by swamps, the expedition returned to Bathurst via the Macquarie River in the following August.

(ii.) *Oxley's Expedition to the Macquarie River and the Liverpool Plains, 1818.* In June, 1818, OXLEY was sent with EVANS, DR. HARRIS, and CHARLES FRAZER to explore the Macquarie River. After proceeding for about 130 miles Oxley was again stopped by swamps, and determined to make for the eastern coast. Crossing the Castlereagh River he reached the Arbutnot Range, and skirting the base of Mount Exmouth, the explorers emerged on splendid pastoral country. Oxley called the locality Liverpool Plains. On the 2nd September they reached a river, which Oxley named the Peel, and on the 23rd of the same month they climbed a peak from which a view of the sea was obtained, and which was hence called Mount Seaview. The Hastings River and Port Macquarie were discovered and named, and after much hardship the settlement at Port Stephens was reached on the 1st November, 1818.

(iii.) *Discovery of Brisbane River, 1822-3.* In 1822 Sir Thomas Brisbane despatched JOHN BINGLE on the sloop *Sally* in search of a large river, supposed to exist between Port Macquarie and Sandy Cape. Bingle landed in Moreton Bay and established friendly communications with the natives, who had not hitherto seen a white man. In October, 1823, OXLEY was despatched in the cutter *Mermaid* to further examine the east coast. After discovering and naming the Tweed and Boyne Rivers, Oxley entered Moreton Bay and rowed for about fifty miles up a river which he named the Brisbane. This was Oxley's last voyage of exploration, and he arrived back in Port Jackson on the 13th December, 1823.

1. This tree was inadvertently ring-barked and killed. The shield of wood bearing the inscription is preserved in the Australian Museum at Sydney, and is the oldest marked tree in Australia.

8. **Stirling and Currie, 1823.**—In 1823 CAPTAINS STIRLING and CURRIE, in the course of an expedition to the southward, discovered the district which they called the Brisbane Downs, but which is now known as the Monaro Plains.

9. **Hamilton Hume, 1814 to 1824.**—In 1814 HAMILTON HUME, the first Australian-born explorer, when only seventeen years old, made his way with a brother and a black boy through Bargo Brush and explored the country around Berrima. Two years later he discovered and named Lake George, and afterwards discovered the Goulburn Plains and Lake Bathurst. About this time the Shoalhaven river was also discovered, probably either by HUME or MEEHAN.

(i.) *Discovery of the Hume or Murray River, 1824.* On the 14th October, 1824, HUME, accompanied by WILLIAM HILTON HOVELL, a retired coasting captain, started off from Lake George with the intention of reaching the Southern Ocean. On the 19th October the Murrumbidgee¹ was reached. As they proceeded the Snowy mountains came in sight, and the expedition bore to the westward, skirting the mountain ranges.

The Hume or Murray and the Ovens Rivers, and Mount Disappointment, were discovered and named, and on the 3rd December another river, named by them the Hovell, but now called the Goulburn, was discovered. On the 16th December, the expedition reached the Southern Ocean at the spot where Geelong now stands. This expedition had a great and immediate influence on the extension of Australian settlement. Later on Hume joined Sturt in his explorations. (See 11. below.)

10. **Allan Cunningham, 1817 to 1829.**—On his return from the expedition, on which he accompanied Oxley to the Lachlan River in 1817, Cunningham commenced the first of five coastal voyages, which he undertook with CAPTAIN P. P. KING, around most of the Australian continent. These voyages were made first in the *Mermaid* and later on in the *Bathurst*, and lasted from 1817 to 1822. King's instructions were to continue the coastal surveys commenced by Flinders. He commenced his survey on the north-west coast. Exmouth Bay, Nichol Bay, Port Essington, and Van Diemen's Gulf were explored, and Melville Island was discovered. Later King surveyed parts of the Tasmanian coasts, and of the eastern and western coasts of Australia.

(i.) *First Inland Exploration, 1823.* On the 31st March, 1823, Cunningham set out from Bathurst to discover a pass leading to the Liverpool Plains from the Upper Hunter; a route which had been sought for in vain by LAWSON and SCOTT in the previous year. This pass he discovered and named Pandora's Pass, and the valley leading to it he named Hawkesbury Vale. Cunningham returned to Bathurst on the 27th June.

(ii.) *Discovery of the Darling Downs, 1827.* In May, 1827, Cunningham set off on an expedition from Segenhoe, a station on one of the tributaries of the Hunter River. He traversed the affluents of the Namoi and the Gwydir, discovered the Darling Downs and returned to Segenhoe on the 28th July. In 1828 Cunningham went by sea to Moreton Bay, from where he set out by land with the object of connecting with his former camp on the Downs. He explored the sources of the Brisbane River and connected his two expeditions through an opening in the ranges, which opening was known as Cunningham's Gap.

11. **Charles Sturt, 1828 to 1830.**—In 1828 GOVERNOR DARLING selected for the command of another exploring party CAPTAIN CHARLES STURT, of H.M. 39th Regiment. With this leader HAMILTON HUME was associated.

(i.) *Discovery of the Darling, 1828.* In 1828, during a period of drought, the expedition started for that part of the Macquarie River where Oxley had found a vast swamp. An attempt by Sturt to follow the course of the Macquarie, which had dwindled to a small muddy channel, failed. The River Darling was then discovered and

1. But little is known regarding the discovery of the Murrumbidgee. Its existence was probably communicated by the blacks to the pioneer settlers in 1819 or 1820. In 1823 Currie and Ovens traced the upper courses of the Murrumbidgee and sighted the Australian Alps.

named, and its course descended for many miles, but the water was found to be salt. On the 7th April, 1829, Sturt finally returned to the depôt at Mount Harris, having ascertained that the Macquarie and Castlereagh Rivers, and, inferentially, the Namoi, Gwydir, and Darling Down Rivers, flowed into the newly-discovered Darling River.

(ii.) *The Murray River Expedition, 1829-1830.* Sturt was again commissioned in 1829 to explore the more southern rivers. He was accompanied by GEORGE MACLEAY. Forming a depôt on the Murrumbidgee, near its junction with the Lachlan, Sturt went down the river in a boat. He passed the junction of the Hume River, but failing to recognise it, rechristened it the Murray. Sturt then traced the Murray to its junction with the Darling, and then followed the Murray to its mouth in Lake Alexandrina in Encounter Bay. Sturt thus connected his overland journey with the discoveries of Flinders and other coastal explorers. On the 20th March, 1830, Sturt, after enduring great privations, reached the camp from which he had started.

Further explorations of Sturt are referred to in a later part of this section. (See B. *Central Australia*, 3.)

12. **Marine Surveys of H.M.S. "Beagle," 1826 to 1843.**—In the meantime maritime discovery had been followed up by CAPTAINS WICKHAM and STOKES in H.M.S. *Beagle*, which, during part of her voyages, carried with her MR. CHARLES DARWIN. The Great Barrier Reef, as well as many parts of the Australian coasts and other regions in the southern seas, were visited and examined. In 1838 the Fitzroy River (north-west coast) was discovered and in the following year the Burdekin, Victoria, and Adelaide Rivers were found and named. In 1839 Port Darwin was also discovered and named. In the Gulf of Carpentaria the Flinders and Albert Rivers were discovered and named by Captain Stokes in 1841.

13. **Sir Thomas Mitchell, 1831 to 1836.**—On the 21st November, 1831, MAJOR (afterwards Sir) THOMAS L. MITCHELL, who had been appointed Surveyor-General in succession to Oxley, left Liverpool Plains on an expedition to discover a river which had been reported by a runaway convict named CLARKE to follow a north-west course to the north coast of Australia. No confirmation of the convict's story could be found, but Mitchell discovered the lower courses of the Peel (The Namoi), Gwydir, and Dumaresq Rivers, and identified the Upper Darling.

In a minor expedition in 1833 Mitchell explored the country between the Bogan and Macquarie Rivers. On another expedition in 1835 he traced the Darling 300 miles down from Bourke.

(i.) *Overland Exploration to Cape Northumberland, 1836.* In 1836 Mitchell was despatched again to survey the Darling more effectually. Following the course of the Lachlan he reached the Murrumbidgee, the Murray, and the junction of the latter with the Darling. Returning up the Murray he left it at Mount Hope, ascended the Loddon, discovered the Avoca River on the 10th July, and turning southward on the 31st July he discovered a river which he called the Glenelg. He also discovered the Campaspe and Wimmera Rivers. He finally reached the coast near Cape Northumberland on the 20th August, 1836. The region in the neighbourhood of the Loddon he named "Australia Felix." On his return journey Mitchell visited Portland Bay, where he found that the Henty family, from Van Diemen's Land, had been established for about two years. Ascending Mount Macedon, Mitchell saw and identified Port Phillip.

(ii.) *Discovery of the Barcoo River, 1845-6.* Some years elapsed before Mitchell undertook any further work of exploration. In the meantime other explorers—notably GREY, EYRE, McMILLAN, WICKHAM, STOKES, STURT, and LEICHHARDT—had been on the field, and had made numerous discoveries. (See below.) On the 15th December, 1845, Mitchell started from the Buree with EDMUND B. KENNEDY as his second in command. From the Macquarie River Mitchell made his way to the Narran, the Balonne, and the Culgoa. He ascended the Balonne, passed the junction of the Maranoa, and reaching the Cogoon followed it to its sources. Turning westward, he further ex-

plored the Maranoa and discovered the Warrego. Proceeding to the north he discovered the Belyando and the Barcoo, the latter of which he named the Victoria, and which he then believed to be the same as that discovered by Captain Stokes in the *Beagle*.

14. **McMillan, 1839 to 1840.**—ANGUS MCMILLAN was the discoverer of the Gippsland district in Victoria. Starting on the 20th May, 1839, he explored the country watered by the Buchan River, and the upper reaches of the Tambo River. Later in the same year he followed the Tambo down its course to its mouth in the lakes of the south coast. He named Lake Victoria, and then turning west he discovered and named the Nicholson and Mitchell Rivers. On the 23rd January, 1840, he again set out and after discovering and naming the Macallister River, he explored the country as far as the Latrobe River.

15. **Count Strzelecki, 1840.**—In 1840 STRZELECKI explored the Gippsland districts, part of which McMillan had just traversed. Strzelecki first ascended the south-eastern portion of the main dividing range, and named Mount Kosciusko. On the 27th March, he met McMillan on the Tambo, and pushing westward he succeeded in reaching Western Port. Strzelecki discovered and named the Latrobe River, and also Lake King, which McMillan found but thought to be Corner Inlet.

16. **Leslie and Russell, 1840 to 1841.**—In 1840 PATRICK LESLIE set out with stock from the most northerly settled district (New England) in New South Wales, and formed a station on the Condamine River. In 1841 STUART RUSSELL followed that river for over a hundred miles, and adopted the opinion—eventually proved to be true—that the Condamine was a tributary of the Darling, and did not, as had hitherto been supposed, flow into the Pacific Ocean.

17. **Leichhardt, 1844 to 1845.**—On the 1st October, 1844, LUDWIG LEICHHARDT, a Prussian by birth, started from Jimbour Station on the Darling Downs, accompanied by six white and two black men, with the object of making his way overland to Port Essington. Leaving the Condamine River he discovered the Dawson River, and passing westward found and named the Peak Downs. There he discovered and named the Planet and Comet Rivers, and Zamia Creek. On the 10th January, 1845, he found and named the Mackenzie River, and later on the Isaacs, Suttor, Burdekin, Lynd, and Mitchell Rivers. Deviating from the Mitchell River, the expedition followed the coast of the Gulf of Carpentaria in a westerly direction. On the 28th June the party were attacked by the natives, and the naturalist, GILBERT, was killed near the river which now bears his name. After crossing and naming the Leichhardt, Nicholson, McArthur, Limmen Bight, and Roper Rivers, the worn-out travellers reached the settlement of Victoria, at Port Essington, on the 17th December, 1845.

After an expedition in 1847 to the country between the Darling Downs and the Peak Range, and to the Cogoon River, Leichhardt determined to endeavour to cross the continent from east to west. Early in 1848 he therefore equipped another party, consisting of himself, HENTIG, CLASSEN, DONALD STUART, KELLY, and two natives. Leichhardt started from McPherson's Station on the Cogoon, now perhaps better known as Muckadilla Creek. Since the residents of that station lost sight of him, no sure clue as to his fate or as to the fate of his companions has ever come to light. His last letter is dated the 3rd April, 1848, from McPherson's Station, but in that letter he did not mention his intended route. His plan was believed to be to pierce straight to the west, and, if necessary, to diverge northwards to the rivers of the Gulf of Carpentaria. Various expeditions were fitted out to ascertain the fate of Leichhardt and his companions. Probably the only authentic trace of the party was that found by A. C. (afterwards Sir Augustus) GREGORY, in charge of the second Leichhardt Search Expedition in 1858. (See below.) In the neighbourhood of the Barcoo River in lat. 24° 35' S., and long. 136° 6' E., Gregory found a tree marked with the letter L, and indications of a camp having been established there by Leichhardt.

18. **Kennedy, 1847 to 1848.**—EDMUND B. KENNEDY, as a Government surveyor, accompanied Mitchell on his last expedition. On his return from that expedition, Kennedy

was sent out, in 1847, to follow the course of the newly discovered Victoria River (the Barcoo). Kennedy identified the Barcoo and Victoria Rivers and Cooper's Creek as one and the same river. He discovered and named the Thomson River, and reached the head of the Warrego River.

(i.) *Exploration of Cape York Peninsula, 1848.* Kennedy next attempted to make his way up the eastern coast of the Cape York Peninsula. The expedition, however, came to a tragic ending. In May, 1848, Kennedy landed at Rockingham (in Queensland). He intended, with his party of twelve men, to examine the eastern spurs of the mountains in the peninsula and to make the coast at Port Albany where a ship was to meet him. On the 9th December, after great hardships, the expedition reached Weymouth Bay. Leaving there the main body of his men, Kennedy pushed forward to send back the schooner, which was awaiting them with relief. Kennedy gained the Escape River, where he was murdered by the blacks. His native boy, JACKY-JACKY, alone escaped, and conducted the relief ship back to the remainder of the expedition, where it was found that only two survived, the rest having died under the hardships to which they were exposed or having been killed by the blacks.

19. **A. C. Gregory, 1846 to 1858.**—The three brothers, A. C., H. C., and F. T. GREGORY, won considerable distinction in the work of exploration in Australia. H. C. Gregory was usually associated with his brother Augustus C. Gregory, but Frank Gregory carried on work chiefly in Western Australia (see below) as an independent explorer.

(i.) *Early Explorations in Western Australia, 1846.* A. C. Gregory's earliest explorations were in Western Australia. In 1846 he discovered and named Lake Moore, and later in the same year he conducted the "Settler's Expedition" with the object of finding pastoral country on the Gascoyne River. A considerable extent of both pastoral and agricultural country was discovered, and a vein of galena was found on the Murchison. The expedition did not, however, succeed in penetrating any distance beyond the Murchison, and re-entered Perth on the 17th November, 1846. Later Gregory made a journey to Champion Bay.

(ii.) *Explorations in Northern Australia, 1855-6.* In 1855 the Imperial Government voted £5000 for the purposes of further exploration of the interior of Australia, and of searching for Leichhardt's expedition. A. C. Gregory was placed in command, and left Moreton Bay for Point Pearce, near the mouth of the Victoria River, on the 12th August, 1855. Following the course of the Fitzmaurice River, the Victoria was reached on the 17th October. After excursions had been made in various directions Gregory started on an expedition to the interior on the 4th January, 1856. After following the course of the Victoria he then turned to the south-west and discovered and named Sturt's Creek, which he traced for 300 miles. Retracing his steps, he examined the eastern tributaries of the Victoria, and then started on the return journey overland to Moreton Bay. On the Elsey, a tributary of the Roper, he discovered the remains of what was probably one of Leichhardt's camps. Gregory for some distance followed a course parallel to the Gulf of Carpentaria, which he left at the Gilbert River, and thence made his way across to the settled districts south of the Fitzroy. He reached Brisbane on the 16th December, 1856.

(iii.) *Exploration in Western Queensland, 1858.* In March, 1858, from Euroomba Station, on the Dawson, Gregory again set out on an expedition, the main object of which was to search for Leichhardt. After exploring the districts near the Barcoo and Thomson Rivers, he struck a south-westerly course and traced Strzelecki's Creek as far as Lake Blanche, whence he went on to Adelaide.

20. **Later Exploration of the North-east, 1859 to 1872.**—After Kennedy's ill-fated expedition the main portion of eastern Australia was fairly well known. Certain parts of what is now Queensland, however, still remained unexplored.

(i.) *Frederick Walker, 1862.* In 1862 FREDERICK WALKER, a pioneer squatter in the districts of Southern Queensland, set out on an expedition in Western Queensland in

search of Burke and Wills. (See B. *Central Australia*, 7.) Proceeding in a northerly direction, he passed the Barcoo and Thomson Rivers and came to the head of the Flinders River. He pushed on as far as the Albert River, and on his return journey he traced the course of the Saxby, a tributary of the Flinders.

(ii.) *Exploration of River Burdekin Districts, 1859 to 1860.* In 1859 G. E. DALRYMPLE explored the coastal country north of Rockhampton as far as the Burdekin, and later traced that river down to the sea. In 1860 a party consisting of Messrs. CUNNINGHAM, SOMER, and three others explored the upper reaches of the Burdekin.

(iii.) *F. and A. Jardine, 1864.* In 1864 two brothers, FRANK AND ALEC JARDINE, with three companions, four natives, and a number of stock, set out from Carpentaria Downs, then the furthest station to the north, on the Einasleigh River, to make their way overland to the newly-established settlement of Somerset, near Cape York. Following first the Einasleigh and then the Staaten River, the expedition pushed its way along the west of the York Peninsula, and finally succeeded in reaching Somerset.

(iv.) *William Hann, 1872.* The last remaining unexplored district in Eastern Australia, namely, the tract of country near the base of the York Peninsula, was examined by WILLIAM HANN, a pioneer squatter of the Burdekin, in 1872. Hann discovered and named the Tate, Walsh, and Palmer Rivers. Proceeding northward he ascended the mountains and sighted the Pacific at Princess Charlotte Bay. On his return journey he discovered and named the Normanby River.

This expedition practically completed the exploration of Eastern Australia. The gold discoveries on the Palmer River, in Queensland, following soon after, led to a considerable amount of minor exploration being carried out by prospectors, whose labours are, however, unrecorded.

(b) Central Australia.

1. *Early Settlement of South Australia, 1836 to 1839.*—In 1836 COLONEL LIGHT surveyed the shores of St. Vincent's Gulf, and selected the site for the settlement at Adelaide. In the same year MITCHELL (see A. *Eastern Australia*, 13, above) had succeeded in travelling overland from the Darling to Cape Northumberland, and the settlers found little difficulty in driving stock from various parts of New South Wales to the new country. A great deal of minor exploration was done by these pioneers. CHARLES BONNEY, accompanied by G. H. EBDEN, led the way across to the Port Phillip settlement with sheep in 1837, and was shortly followed by others, among whom may be mentioned HAMILTON, GARDINER, and LANGBOURNE. Very soon this overlanding of stock was extended to Adelaide, CHARLES BONNEY and JOSEPH HAWDON being the first, in 1838, to undertake the journey. In 1839 Bonney succeeded in opening a new route overland to Adelaide. Leaving the Goulburn he made his way to the Grampian Mountains, where he struck the Wannon and then the Glenelg. He discovered and named Lake Hawdon, and also Mounts Muirhead and Benson, and thence made his way to Adelaide, via Lincepede Bay.

2. *Edward John Eyre, 1838 to 1841.*—EYRE'S first expedition was an overland journey from Mount Alexander to Adelaide with stock in 1838, during which expedition he discovered and named Lake Hindmarsh. He next explored the country in the neighbourhood of Mount Arden to the N.N.E. of Spencer's Gulf, and on the 5th August, 1839, he left Port Lincoln intending to penetrate as far as possible to the westward. He pushed his way to within nearly 50 miles of the Western Australian border, and on his return journey discovered and named Lake Torrens.

(i.) *Overland Journey to Western Australia, 1840-1.* On the 18th June, 1840, Eyre again left Adelaide, and after fruitless efforts to reach the interior in a northerly direction, and after discovering and naming Mounts Deception and Hopeless, he determined to push through to King George's Sound, accompanied by his overseer BAXTER, and three

native boys. Baxter was murdered by two of the natives, who then deserted, and after great hardships Eyre and the remaining native succeeded in reaching Thistle Cove, where they sighted the French vessel *Mississippi*, commanded by Captain Rossiter.¹ After recruiting his health, Eyre finally reached Albany in July, 1841.

(ii.) *Progress of Settlement and Exploration.* After Eyre's explorations at the head of Spencer's Gulf settlers soon spread in a northerly direction from Adelaide. Amongst the pioneers are to be found the names of HAWKER, HUGHES, CAMPBELL, ROBINSON, HEYWOOD, and HORROCKS. Particulars of their expeditions in search of grazing country have not been preserved.

3. **Sturt's Later Explorations, 1844 to 1845.**—CHARLES STURT, whose explorations in Eastern Australia have been mentioned above (see A. *Eastern Australia*, 11), set out in 1844, accompanied by JOHN MCDOUALL STUART and others, on an expedition to reach the centre of the continent. Sturt's plan was to follow the Darling as far as Laidley's Ponds, and then to strike north-west. The expedition arrived at Laidley's Ponds on the 11th October, 1844, and moving slowly forward reached the Barrier Range on the 27th January, 1845. Here the expedition stayed until the 17th July, Sturt vainly trying to find an opening leading to a permanent supply of water. He attained in one excursion a latitude of 28° 9' S., and was then within thirty miles of Cooper's Creek, then undiscovered, but returned baffled to his camp. The party suffered greatly from the heat and want of water. POOLE, the assistant surveyor, died and was buried at the foot of the hill now known as Mount Poole, three and a half miles from Depôt Camp. The details of their struggles cannot be here recounted. Forming a new depôt at a place called Fort Grey, where McDouall Stuart was left in charge, Sturt again pressed forward to the north-east. Crossing Strzelecki's, Leichhardt's, and Cooper's Creeks, he came to the Great Stony Desert, thence discovering and following Eyre's Creek he reached his furthest point in lat. 24° 30' S. and long. 137° 58' E. in September. In the following month he made another unsuccessful effort due north. Summer was approaching and he had to retreat. On the 21st December, 1845, after enduring great privations the expedition arrived at the camp of the relief-party under PIESSE, at Williorara.

4. **Exploration in South Australia, 1851 to 1857.**—A considerable amount of exploration work was done in South Australia during the year 1857. The formation of Lake Torrens was formerly supposed to be of a horseshoe character, extending from the west round to what is now known as Lake Frome in the east. In 1851 two squatters, OAKDEN and HULKES, found suitable grazing country west of Lake Torrens. In 1856 B. HERSCHEL BABBAGE, a Government surveyor, explored the country to the north-east of Lake Torrens and discovered and named Lake Blanche. In 1857 the district between Lakes Macfarlane and Torrens was visited by CAMPBELL, who discovered and named the Elizabeth Creek. In April of the same year GOYDER, the Deputy Surveyor-General, examined the country near Lake Torrens and found the water of the lake quite fresh. During the same year these districts were explored by COLONEL FREELING, the Surveyor-General; by STEPHEN HACK, who discovered Lake Gairdner; by MAJOR WARBURTON, who discovered the Davenport Range; by SWINDEN, MILLER, and DULTON, and by DELISSER and HARDWICKE.

5. **Discovery of Lake Eyre by B. H. Babbage, 1858.**—In 1858 an expedition was sent out under BABBAGE by the South Australian Government to examine the country between Lakes Torrens and Gairdner. Babbage traced Chambers Creek into Lake Eyre, and was thus the first discoverer of this lake, which he originally called Lake Gregory. He also proved the isolation of Lake Torrens from the other lakes in the basin.

6. **J. M. Stuart, 1858 to 1862.**—JOHN MACDOUALL STUART accompanied Captain Sturt on his last expedition as a draughtsman. His next expedition was in 1858, when he

1. The French whaler *Mississippi* was the first foreign vessel to enter Port Lincoln. Rossiter Vale, in the neighbourhood of Port Lincoln, was so named after the captain of the *Mississippi* by Captain Hawson and William Smith, who discovered it in about 1839.

discovered Chambers Creek, to the south of Lake Eyre, and returned to Port Augusta via Fowler's Bay. In April, 1859, he again set out, accompanied by HERGOTT and others. The Hergott Springs were discovered, as was also the Neale River, which Stuart traced for some distance. In November of the same year Stuart made a third expedition in the vicinity of Lake Eyre.

(i.) *First Attempt to Cross the Continent, 1860.* In 1860 Stuart, accompanied by only three men with thirteen horses, started from Chambers Creek with the object of crossing the continent from south to north. From the Neale River Stuart followed a N.N.W. course, and discovering and naming the Frew, Fincke and Stevenson Creeks, Chambers Pillar, and the McDonnell Range, he camped at the centre of Australia on the 22nd April, 1860, about two miles and a half to the south-west of a hill, which he called Central Mount "Sturt," but which is now erroneously called "Stuart."¹ Failing to find the head of the Victoria River, Stuart turned back and, after an encounter with the natives at Attack Creek, he reached Brodie's camp at Hamilton Springs on the 26th August.

(ii.) *Journey Across the Continent, 1861-2.* In 1861 the South Australian Government voted £2500 to organise a better equipped expedition to cross the continent. Stuart was placed in command, and on the 12th April he arrived at the Bonney. On the 4th May he reached the Ashburton Range, and on the 23rd he discovered and named the Newcastle Waters. Failing to discover a clear way to the north he returned to Adelaide, which place, however, he left in less than a month in order to make another departure north from Chambers Creek. On the 14th April, 1862, he was at the northern end of Newcastle Waters, and discovered Frew's Pond. Reaching the head of the Daly Waters, he worked his way eastward to a creek he named the Strangways. Thence he crossed the Roper, and on the 10th July he reached the Adelaide River, discovered in 1839 by Wickham and Stokes. (See above A, *Eastern Australia*, 12.) On the 25th July, 1862, he reached the sea at Chambers Bay. On the return journey the expedition was in great straits from want of water, but finally reached Adelaide in December, 1862. Along Stuart's track there is now erected the trans-continental telegraph line.

7. Burke and Wills Expedition, 1860 to 1861.—In 1860 funds were provided in Melbourne partly by the Government and partly by private subscription, amounting in all to £12,000, for the purpose of sending an expedition northward to explore the country to the Gulf of Carpentaria. ROBERT O'HARA BURKE, an inspector of police in Victoria, was placed in command, with G. J. LANDELLS as his second and WILLIAM JOHN WILLS as surveyor and astronomical observer. Ten Europeans and three Sepoys, together with numerous horses, wagons, and camels, accompanied the expedition, which left Melbourne in August, 1860. Before reaching Menindie, on the Darling, Landells quarrelled with Burke, and resigned, Wills becoming second in command and an overseer named WRIGHT succeeding Wills. On the 19th October, 1860, Burke, Wills, with six men and five horses, and sixteen camels, left Menindie for Cooper's Creek. Wright accompanied them for two hundred miles to indicate the route, and then returned to Menindie, to take charge of the main body. On the 11th November, Burke reached Cooper's Creek, where a site for a depôt was chosen and named Fort Wills. Here Burke encamped to await the arrival of the main body. As there were no signs of Wright's arrival, Burke, on the 16th December, started with Wills, KING and GRAY, taking six camels, a horse, and provisions for three months, to push forward to the Gulf of Carpentaria. The others, under BRAHE, were left at Fort Wills to wait three months for him. From the diaries kept by Burke and Wills which were eventually recovered, it appears that they proceeded almost due north. Crossing the river now known as the Diamantina and the northern dividing range, they reached the Flinders River in February, 1861, and followed it down to the mangroves and salt water. Debarred from a view of the open sea, they commenced their return journey,

1. Stuart's manuscript reads Central Mount Sturt, but was mis-read by the publishers of his diary. See Favenc's "Explorers of Australia," p. 180.

during which Gray died. At last on the 21st April the three survivors re-entered the *dépôt* at Fort Wills only to find it deserted. Some provisions and a letter signed by Brahe were however unearthed. It appeared that Wright had never reached Fort Wills, his advance having miscarried. An unsuccessful attempt to reach Mount Hopeless was then made by Burke and his companions. Their subsequent misfortunes and sufferings cannot be here recounted. All the horses and camels having died and their provisions being exhausted, the explorers existed for some days on food provided by the natives. Towards the end of June both Burke and Wills died, and King alone survived until rescued by Howitt's party on the 15th September. In the meantime Brahe had fallen in with Wright on the 29th April, at Bulloo. As soon as it became known that Burke, with his three companions, had not been heard of since the 16th December, 1860, various relief expeditions were organised. A. W. HOWITT was sent out from Melbourne with a search party. Queensland sent out two relief expeditions—the *Victoria*, a steam sloop, was sent up to the mouth of the Albert River, having on board WILLIAM LANDBOROUGH, with GEORGE BOURNE as second in command, while the other expedition, under FREDERICK WALKER, left the furthest station in the Rockhampton district. From South Australia JOHN MCKINLAY set out to cross the continent to the north.

(i.) *Howitt's Relief Expedition, 1861.* On the 4th July, 1861, A. W. HOWITT set out in search of Burke. On the 13th July he reached Cooper's Creek and on the 15th he discovered King. Howitt then returned to Melbourne, but on the 9th December he again set out for the *dépôt* at Cooper's Creek to recover the bodies of Burke and Wills. These he found and with them returned by way of Adelaide, which place he reached in December, 1862, the same month in which McDouall Stuart returned from his trans-continental journey.

(ii.) *Queensland Relief Expeditions under Walker and Landsborough, 1861.* From the western Rockhampton district an expedition set out under FRED. WALKER, a commandant of mounted natives under the Queensland Government. Striking a north-west course from the Barcoo, he descended the Norman, crossed the Flinders River, and found the tracks of Burke's camels descending northwards and returning southwards. He reached the sea at the Albert River, where the *Victoria* was awaiting him, and then returned overland to Rockhampton.

Another expedition, under WILLIAM LANDBOROUGH, went by sea in the *Firefly*, convoyed by the *Victoria*. Landsborough ascended the Albert River and discovered and named the Gregory and Herbert (subsequently rechristened the Georgina) Rivers, and also Lakes Frances and Mary. After learning that Walker had discovered Burke's tracks, Landsborough descended the Thomson River, crossed the Barcoo, and came to a station on the Warrego, where he learnt the fate of Burke and his companions.

(iii.) *South Australian Relief Party under McKinlay, 1861-2.* On the 26th October, 1861, JOHN MCKINLAY, a South Australian grazier, started from Adelaide in command of a relief party. From Lake Torrens he struck north and crossed the lower end of Cooper's Creek. After discovering Gray's body, McKinlay sent a messenger to Blanch Water to bring back rations for a prolonged journey. The messenger returned with news of the rescue of King and the deaths of Burke and Wills. McKinlay then started north and traced the course of the Diamantina River for some distance. Reaching the Leichhardt River, he traced it to its mouth and then crossed on to the head of the Burdekin, where he reached a cattle station on the 2nd August, 1862. The results of McKinlay's explorations were of great value in opening up Central Australia.

8. Major Warburton, 1873.—In 1873 an expedition was sent out by Thomas Elder and Walter Hughes, South Australian colonists, under the command of MAJOR WARBURTON, with the object of travelling through from Central Mount Stuart to Perth. On the 15th April, 1873, the expedition left Alice Springs for Burt's Creek, whence they struck to the westward. On the 5th June they crossed the Western Australian boundary. Proceeding to the north-west in an unsuccessful attempt to find Sturt's Creek, which

Gregory had discovered in 1856—(see A. *Eastern Australia*, 19.)—Warburton at last succeeded, after nearly perishing through want of water, in reaching a creek at the head of the Oakover River, which he followed till a station was reached in December, 1873.

9. **W. C. Gosse, 1873.**—On the 23rd April, 1873, WILLIAM CHRISTIE GOSSE, Deputy Surveyor-General of South Australia, left Alice Springs in command of the "Central and Western Exploring Expedition," with the object of reaching Perth. After passing both Warburton's tracks and those of Giles (see below), Gosse reached the westernmost spurs of the McDonnell Range. He made several ineffectual attempts to penetrate to the west, but was obliged to turn back. His homeward course was by way of the Musgrave Ranges. He discovered and named the Marryat, and traced the Alberga to within sixty miles of the transcontinental telegraph line, whence he reached Charlotte Waters Station.

10. **Ernest Giles, 1872 to 1876.**—ERNEST GILES' first expedition was in 1872, when, with two companions—CARMICHAEL and ROBINSON—he started from Chambers Pillar and discovered Lake Amadeus and Mount Olga. He then unsuccessfully attempted to force his way through the deserts to the settlements of Western Australia.

(i.) *Attempted Overland Expedition to Perth, 1873.* In 1873 GILES, accompanied by W. H. TIETKINS and two others, set off from the Alberga and made another effort to penetrate the western deserts. His furthest point west was long. 125° 35' E., whence he was forced to return to Adelaide.

(ii.) *Overland Journey to Perth and back, 1875-6.* In 1875 Giles set out on another expedition, financed by SIR THOMAS ELDER. Giles was again accompanied by Tietkins, setting off from Beltana, Giles' route lay in the vicinity of lat. 30° S. On the 4th November, 1875, the expedition arrived at an outside sheep-station in the settled districts of Western Australia. Giles' return journey was by way of the Murchison, Gascoyne, and Ashburton Rivers, the last of which he followed to its head. Thence striking to the south of east he arrived at the Peake telegraph station.

11. **Later Explorations.**—After Giles' expedition of 1876, the chief work of exploration in South Australia and the Northern Territory had been completed. There were still, however, considerable tracts of country which had not been explored.

(i.) *Lewis, 1874.* In 1874 LEWIS, a surveyor, who had accompanied Warburton in 1873, explored the country in the neighbourhood of Lake Eyre and the Diamantina River.

(ii.) *Hodgkinson, 1875.* In 1875 W. O. HODGKINSON, in charge of an expedition sent out by the Queensland Government, examined the country around Eyre Creek and the Georgina River, and discovered the Mulligan River.

(iii.) *Buchanan and Scarr, 1878.* In 1878 NATHANIEL BUCHANAN explored the country lying between the Georgina and the overland telegraph line, and discovered an important creek now known as Buchanan's Creek. In the same year this strip of unknown land was further explored by FRANK SCARR, a Queensland surveyor.

(iv.) *Favenc, 1878-83.* In 1878 an expedition was sent out from Queensland under ERNEST FAVENC, in connection with a project for a railway line from Brisbane to Port Darwin. Favenc explored the country between the Georgina and Diamantina Rivers, and then striking Buchanan's Creek, discovered and named Corella Lagoon. Thence proceeding to the north, the expedition, after exploring some good pastoral country, reached Powell's Creek Station in January, 1879. In 1883 Favenc explored the heads of several of the rivers of the Gulf of Carpentaria. He traced the course of the Macarthur, and discovered and named the Kilgour River. In 1888-9 he explored the head waters of the Gascoyne and Ashburton Rivers in Western Australia.

(v.) *Other Explorers.* Other explorers whose names should be mentioned in connection with the later exploration of Central Australia are:—(a) H. V. BARCLAY, who, in

1877, discovered and named the Jervois Ranges and the Hale, the Plenty, the Marshall, and the Arthur Rivers. (b) ADAM JOHNS and PHILLIP SAUNDERS, who started from Roeburne in 1876 and crossed to the overland line in South Australia. (c) DAVID LINDSAY, who, in 1883, led an expedition sent out by the South Australian Government to complete the survey of Arnhem's Land. (d) O'DONNELL and CARR-BOYD, who, in 1883, left the Katherine River and pushed across into Western Australia. (e) H. STOCKDALE; who travelled from Cambridge Gulf to the south through the Kimberley district in 1884. (f) W. H. TIETKINS, who had accompanied Giles as second. In 1889 Tietkins was placed in charge of the Central Australian Exploring Expedition. He explored the country to the north and west of Lake Amadeus, and discovered and named the Kintore and the Bonython Ranges. g ALFRED SEARCY, who, from 1882 to 1896 visited many parts of the coast and rivers of the Northern Territory. (h) HUBBE, in 1896, was sent out by the South Australian Government to open up, if possible, a stock route between Oodnadatta and Coolgardie. He reached Coolgardie in August. Though fair water was found in several places, the country was for the most part dry and covered with spinifex.

(c) Western Australia.

1. **Early Discoveries.**—In 1791 GEORGE VANCOUVER, in command of H.M.S. *Discovery*, found and named St. George's Sound. On the 25th December, 1826, MAJOR LOCKYER, with a detachment of soldiers, landed at King George's Sound to form a settlement, under instructions from SIR RALPH DARLING, then Governor of New South Wales. The settlement was established in order to forestall the French, who, it was rumoured, intended to occupy the harbour. Early in 1827 CAPTAIN JAMES STIRLING and CHARLES FRAZER examined and reported upon the Swan River districts with a view to forming a settlement there. In 1829 CAPTAIN FREMANTLE landed at the mouth of the Swan River and took possession of the country. A month later Stirling arrived with the first settlers.

In November, 1829, ALEXANDER COLLIE and LIEUTENANT PRESTON explored the coast between Cockburn Sound and Géographe Bay, and in the following month DR. J. B. WILSON, R.N., discovered and named the Denmark River.

(i.) *Captain Roe, 1830-1848.* JOHN SEPTIMUS ROE, the Surveyor-General of the new colony, accompanied Captain P. King on his explorations of the north and north-west coasts of Australia in 1818, and was a member of King's expedition in 1821. In 1830 Roe explored the country in the neighbourhood of Cape Naturaliste, Port Leschenault, and between the Collie and Preston Rivers. During the year 1832 Roe and Sir James Stirling, in H.M.S. *Sulphur*, were occupied in surveying the south coast. In 1835, Roe examined the country between the headwaters of the Kalgan and Hay Rivers. In 1836 he led an expedition to explore the country to the north and east of Perth, and in 1839 he rescued Grey's expedition (see below). In 1848 he made an attempt to penetrate to the eastward, and traced the course of the Pallinup River for some distance.

In the meantime CAPTAINS WICKHAM and STOKES, in H.M.S. *Beagle* (see A. *Eastern Australia* above), had completed a series of coastal surveys on the north-west coast, discovering the Fitzroy and Adelaide Rivers.

(ii.) *Other Early Explorers.* In 1830 GOVERNOR STIRLING and CAPTAIN CURRIE explored the vicinity of Cape Leeuwin, and determined on the site of Port Augusta. In the same year ENSIGN R. DALE explored the country to the east of the Darling Range. He traced the courses of the Avon and Helena Rivers, and explored as far east as Mount Caroline. In 1831 he examined the country fifty miles to the north and south of Mount Bakewell. In 1831 CAPTAIN BANNISTER travelled overland from Perth to King George's Sound, and W. K. SHENTON explored the Collie River. In the same year J. G. BUSSELL traversed the country between the Swan River and Port Augusta, and LIEUTENANT PRESTON made an excursion in a whaleboat to Point d'Entrecasteaux, and thence by land to the Murray River. In 1832 Alexander Collie explored the districts between

Albany and French River, and near King George's Sound. In 1833 F. WHITFIELD traced the Helena River to its source, and ALFRED HILLMAN, surveyor, explored the country between Albany and Nornalup Inlet. In 1834 G. F. MOORE traced the Swan River to its source, and in 1836 he discovered the Moore River. In May, 1836, LIEUTENANT BUNBURY explored the country between the mouths of the Dale and Williams Rivers, and later in the same year he crossed from Pinjarra to the Williams.

2. **Grey, 1837 to 1839.**—In December, 1837, an exploring party under CAPTAIN (afterwards SIR) GEORGE GREY and LIEUTENANT LUSHINGTON, landed at Hanover Bay, on the north-west coast, with the object of making their way to Perth. The Glenelg River was discovered and traced, but being unable to find a pass through the mountains Grey returned to the coast and thence to Perth. In January, 1839, Grey explored the country between the Williams and the Leschenault Rivers.

(i.) *Coastal Explorations, 1839.* In February, 1839, Grey set out on an expedition to examine Shark's Bay, and to make excursions inland. Landing at Bernier Island, they proceeded to Dorre Island, and thence landed on the mainland near the mouth of the Gascoyne River. The misfortunes encountered and the hardships undergone may be read in Grey's published narrative.¹ Grey, with two or three picked men, succeeded in making his way along the coast as far as Perth, where a relief expedition was organised by ROE. Grey discovered the Grey, Buller, Chapman, Greenough, Arrowsmith, Hutt, Bowyer, Murchison, and Gascoyne Rivers.

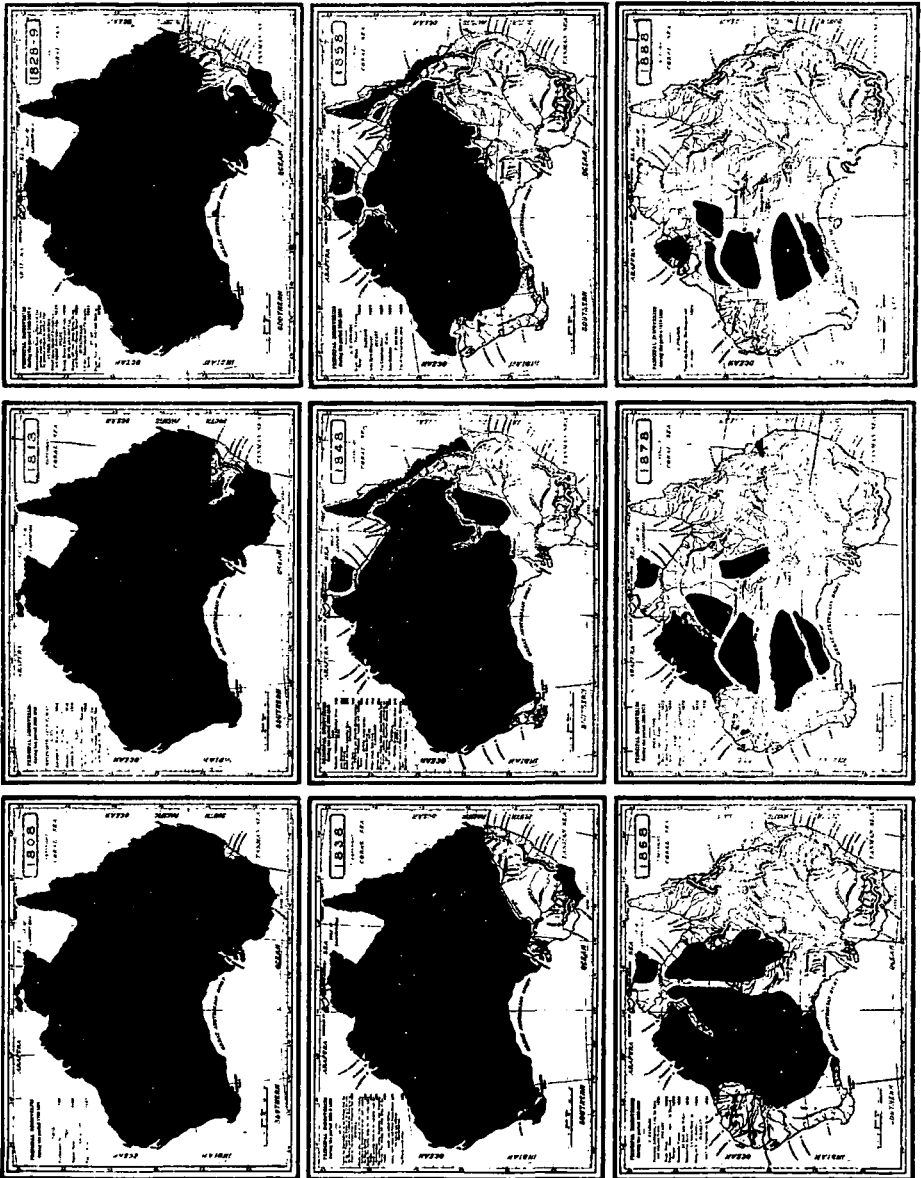
3. **R. Austin, 1854.**—In 1854 ROBERT AUSTIN, Assistant Surveyor-General of Western Australia, was sent in charge of an inland exploring party, with a view to the discovery of minerals or navigable water, and to search for agricultural or pastoral country in the Gascoyne district. He reached Cowcowing Lake on the 16th July, and thence made his way directly north, as far as a lake which he named Lake Austin. Finding the upper tributaries of the Murchison waterless, Austin succeeded with great difficulty in reaching the Geraldine Mine, where a small settlement had been formed to work the vein of galena discovered by A. C. Gregory. (See A. *Eastern Australia*, 19.) Thence he returned to Perth.

4. **F. T. Gregory, 1857 to 1861.**—In March, 1857, FRANK T. GREGORY, brother of Augustus Gregory, whose explorations have already been referred to (see A. *Eastern Australia*, 19, above), examined the upper reaches of the Murchison River. On the 16th April, 1858, he left the Geraldine Mine with the object of penetrating to the Gascoyne. He traced the Murchison River for many miles, and then struck off on a north-easterly course until, on the 6th May, he reached the Gascoyne. This river he descended to its mouth, and also discovered and named its tributary, the Lyons, which he traced as far as Mount Augustus. Retracing his steps, Gregory finally reached Perth on the 10th July, 1858.

In 1861 Gregory set out on another expedition, subsidised by the Imperial Government, to explore the north-western districts. Having disembarked at Nichol Bay, the party started on the 25th May, 1861. Gregory discovered and traced the Fortescue, and then, striking south, found and named the Ashburton River. Returning to Nichol Bay, he again set out in August, and discovered the Shaw, De Grey, and Oakover Rivers. He returned to Nichol Bay on the 18th October, 1861.

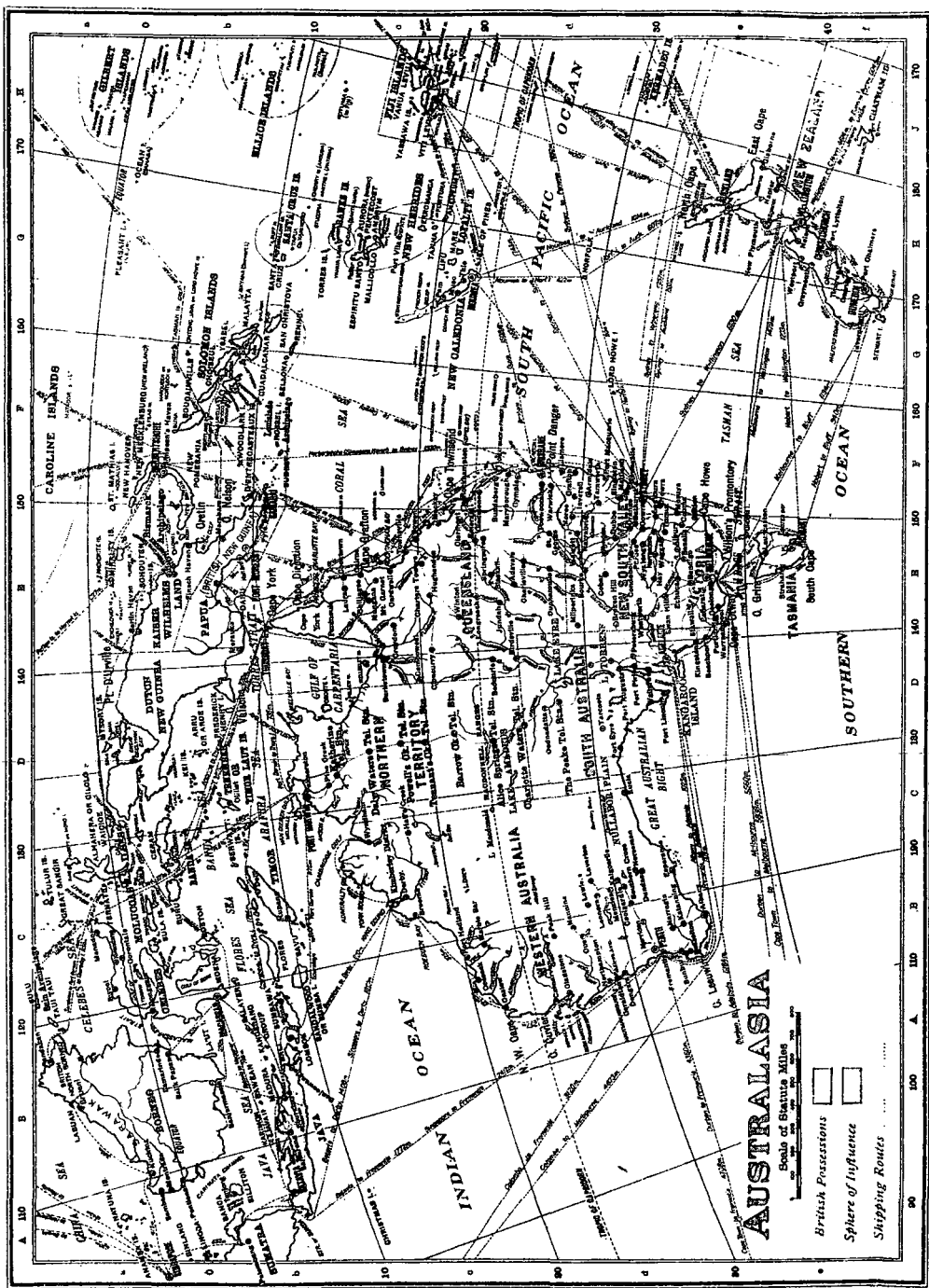
5. **Sir John Forrest, 1869 to 1883.**—On the 26th April, 1869, JOHN (now Sir John) FORREST, formerly an officer of the Survey Department of Western Australia, left Yarraging, the furthest station to the east, on an expedition to investigate certain reports that the blacks had killed some white men in the interior. These reports were found to have originated in the discovery of the skeletons of some horses which died during Austin's expedition. Forrest discovered and named Lake Barlee, and penetrated to the east some distance past Mount Margaret. He returned to Perth on the 6th August, 1869.

1. "Captain Grey's Travels in North-west and Western Australia." London: T. and W. Boone, 1841.



PROGRESS OF AUSTRALIAN EXPLORATION.

The above maps compiled by Mr. E. Favenc shew decennially the progress of discovery from 1808 to 1888. The dark shade shews the area of unexplored territory.



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(i.) *Coastal Journey from the West to Adelaide, 1870.* In 1870 Forrest was placed in command of an expedition, the object of which was to cross to Adelaide by way of the shores of the Great Australian Bight. On the 30th March, 1870, he left Perth, accompanied by his brother, ALEXANDER FORREST, and four others. A coasting schooner, the *Adur*, accompanied the expedition, calling at Esperance Bay, Israelite Bay, and Eucla. After a short trip inland Forrest left Eucla on the 14th July, and passing through South Australian territory he reached Adelaide on the 27th August, 1870.

(ii.) *Overland Journey from the West to Overland Telegraph Line, 1874.* Early in April, 1874, John Forrest, accompanied by his brother Alexander and four others, set out from Geraldton to endeavour to cross to the overland telegraph line. Taking a north-easterly course, he struck and traced the Murchison, and thence reached Weld Springs, where he had an encounter with the blacks. On the 27th September the expedition reached the telegraph line at a point some distance to the north of the Peake Station, and thence arrived at Adelaide on the 3rd November.

(iii.) *Later Explorations, 1883.* In 1883 Forrest landed at Roebuck Bay and examined a large portion of the Kimberley Division. He also investigated Cambridge Gulf and the lowest part of the Ord River.

6. Alexander Forrest, 1871 to 1879.—ALEXANDER FORREST accompanied his brother on two expeditions referred to above. In 1871 he took charge of a private expedition to search to the eastward for pastoral country, and penetrated inland for 600 miles.

(i.) *Overland Journey to Telegraph Line, 1879.* In 1879 Alexander Forrest led an expedition from the DeGrey River to the overland telegraph line of South Australia. He left the DeGrey on the 25th February and reached Beagle Bay on the 10th April. Thence he followed the coast as far as the Fitzroy, which he ascended as far as the King Leopold Range. Following up the Margaret River he reached a tableland which he called Nicholson Plains. After discovering and naming the Ord River he reached the Victoria River on the 18th August, and after much suffering and privation eventually reached the Daly Waters Station.

7. David Lindsay and L. A. Wells, 1891 to 1892.—LINDSAY'S explorations in Arnhem's Land in 1883 have already been referred to (see B. *Central Australia*, 11. v. (c)). In 1891 an expedition was sent out by Sir Thomas Elder, under the leadership of Lindsay, its purpose being to complete the exploration of Australia. Lindsay, accompanied by L. A. Wells and others, left Warrina on the 2nd May, 1891, and proceeded via Fort Müller to Mount Squires, whence a south-west course was taken to Queen Victoria's Spring. Fraser's Range was reached, whence a westerly course to the Murchison was taken. On the 1st January, 1892, the expedition reached its destination.

A flying trip was made by L. A. WELLS into the district lying between Giles' track of 1876 and Forrest's route of 1874. Wells discovered several ranges of hills and some good pastoral country. He completed the examination of what was practically the whole of the still unexplored districts in about six weeks, from the 23rd February to the 4th April, 1892.

8. The Calvert Expedition under L. A. Wells, 1896 to 1897.—On the 16th July, 1896, L. A. Wells, in command of the Calvert Expedition, started from Lake Way to examine the country between the East Murchison and Fitzroy Rivers. Striking a north-easterly course, Wells reached the Fitzroy near Mount Tuckfield on the 6th November, having, however, lost two of his companions—C. F. WELLS and G. LINDSAY JONES—who had been sent on a flying trip to the north-west from Separation Well. The bodies of the missing men were subsequently found by Wells.

9. The Carnegie Expedition, 1896 to 1897.—On the 20th July, 1896, an expedition equipped and led by the HON. DAVID CARNEGIE set off from near Lake Darlôt to strike

across the continent in a north-easterly direction. The objects of the expedition were: (a) extension of geographical knowledge, (b) to discover a practical stock-route between Kimberley and Coolgardie, and (c) the discovery of auriferous country. In the last two objects the expedition was unsuccessful. Carnegie, having discovered several springs on his way, reached the northern settlements at Hall's Creek. He then followed Sturt's Creek as far as Gregory's Salt Sea, and then kept a southerly course to Lake Macdonald. The expedition returned to Lake Darlôt, via the Rawlinson Range, on the 15th July, 1897.

10. Later Exploration in the North-West.—During the latter part of the 19th century various expeditions were sent out to explore those parts of the north-west of the continent, which still remained unknown.

(i.) *O'Donnell and Carr-Boyd, 1883-96.*—In 1883, W. J. O'DONNELL and W. CARR-BOYD, whose explorations have already been referred to (see B. *Central Australia*, 11, v. (d)), explored the country from the overland telegraph line in the direction of Roeburne and found good pastoral country. In 1896, Carr-Boyd, accompanied by DAVID BREARDON, explored the country near the Rawlinson Ranges. He also made several excursions between the southern goldfields of Western Australia and the South Australian border.

(ii.) *H. F. Johnston, 1884.* In the same year H. F. JOHNSTON, G. R. TURNER, and E. T. HARDMAN surveyed the country from Mount Pierre on the Fitzroy to the junction of the Negri and Ord, and discovered and named the Mary and Elvire Rivers. In the following year Johnston, accompanied by C. Y. NYULASY, further examined the country near Spencer Gulf.

(iii.) *F. S. Brockman, 1901.* In April, 1901, the Western Australian Government despatched a party under F. S. BROCKMAN, Controller of the Field Survey Staff, with CHARLES CROSSLAND as second in command, to explore the extreme north end of the State lying between the 17th and 14th parallels of latitude and west from the 128th meridian. The party was accompanied by GIBB MAITLAND, the Government Geologist, and by DR. F. M. HOUSE, as naturalist, and was successful in securing full information as to the geographical, geological, and botanical details of the districts traversed. From Wyndham, Brockman proceeded to the Charnley River, and thence to the tributary waters of the Glenelg and Prince Regent Rivers. The Moran and King Edward Rivers were discovered and traced. A large area (6,000,000 acres) of basaltic pastoral country was also discovered.

(iv.) *F. H. Hann, 1896-1907.* In 1896 FRANK H. HANN, a Queensland squatter, started from Lawn Hill, on the Gulf of Carpentaria, to prospect the north-west interior of Western Australia for pastoral country. Striking the Ord River, he followed it up to Hall's Creek. After an unsuccessful attempt to reach the head of the Oakover River, a course was made for Derby along the Fitzroy River. From Derby, Hann went to Broome, Condon, and Roeburne. Later on he crossed the King Leopold Range and traced and named some of the tributaries of the Fitzroy. In 1903 Hann made the first of several trips from Laverton to Oodnadatta. On the 20th November, 1906, he left Laverton on an expedition to Oodnadatta, with the objects (a) of proving the possibility of opening up a stock route between these two places, and (b) of demonstrating the existence of gold-bearing lodes. Hann reached Oodnadatta on the 13th February, 1907, having followed generally a route some distance to the south of Sir John Forrest's track in 1874. Though large stretches of well grassed country were discovered, many of the so-called "springs" were found to be dry. Hann reported that a practicable stock route between Laverton and Oodnadatta could be opened up by sinking wells, and he also succeeded in obtaining a number of mineral specimens from gold-bearing lodes.

(v.) *Other Explorers.* Other explorers whose names are connected with the exploration of Western Australia are:—GEORGE ELIOT, who, in 1839, explored the country between the Williams and Leschenault; WILLIAM NAIRNE CLARK, who, in 1841, discovered immense jarrah and karri forests in the south-west; R. H. BLAND (1842); H.

LANDOR (1842); LIEUTENANT HELPMAN (1844); CAPTAIN H. M. DENHAM (1858); B. D. CLARKSON, C. E. and A. DEMPSTER, and C. HARPER (1861); C. C. HUNT and RIDLEY (1863); R. J. and T. C. SHOLL (1865); A. MCRAE (1866); PHILLIP SAUNDERS and ADAM JOHNS (1876); H. STOCKDALE (1884); H. ANSTEY (1887); F. NEWMAN and W. P. GODDARD (1890); J. H. ROWE (1895); C. A. BURROWS and A. MASON (1896); HUGH RUSSELL (1897); and JOHN MUIR (1901).

§ 5. The Constitutions of the States.¹

1. **Introduction.**—The subject of "General Government" is dealt with in Section XXV. of this Book, but it has been thought desirable to here give a brief statement of the constitutional history of Australia, with a view to shewing how the present Constitutions of the States have been built up.

2. **Early Constitutional History.**—The earliest statute relating to Australia was passed in the year 1784, for the purpose of empowering the King in Council to appoint places in Australia to which convicts might be transported. By an Order in Council dated the 6th December, 1786, His Majesty's "territory of New South Wales, situated on the east part of New Holland," was appointed such a place. Captain Phillip, who was appointed the first Governor and Vice-Admiral of the territory, was empowered by his commission and letters patent to make ordinances for the good government of the settlement. By an Act passed in 1787 authority was given for the establishment of a court of criminal jurisdiction at Sydney. In the early days of settlement the Governor's power was almost absolute, and his rule virtually despotic, tempered by his own discretion and by the knowledge that he was responsible to the Imperial authorities for any maladministration. By Acts passed in 1819, 1821, and 1822, the Governor was given limited powers to impose local taxation in the shape of Customs duties on spirits, tobacco, and other goods imported into the colony.

(i.) *The First Constitutional Charter.* In 1823 an Act was passed authorising the creation of a Council, consisting of from five to seven persons charged with certain legislative powers of a limited character. This was the first constitutional charter of Australia, and was later improved and amended by an Act passed in 1828, and applying both to New South Wales and to Van Diemen's Land, which had been politically separated in 1825.

(ii.) *First Representative Legislature.* In 1842 an important measure was passed by the Imperial Government, establishing, for the first time in Australia, a Legislature partly, but not wholly, representative in character. It was enacted that there should be within the colony of New South Wales a Legislative Council, to consist of thirty-six members, twelve of whom were to be nominated by the Sovereign and twenty-four elected by the inhabitants of the colony. The Act contained provisions defining the legislative functions of the Council, and regulated the giving or withholding of the Royal assent to Bills passed by the Council. This Act did not grant responsible government to New South Wales; the heads of the Departments and other public officers continued to hold their offices at the pleasure of the Crown, as represented by the Governor. The new Council was opened by Sir George Gipps, on the 1st August, 1843.

(iii.) *The Australian Colonies Government Act, 1850.* The next important Act relating to representative government in Australia is the Australian Colonies Government Act, passed in 1850. The two main objects of this Act were (a) the separation of the Port Phillip District from New South Wales, and (b) the establishment of an improved system of government in all the Australian colonies. For New South Wales, for the separated Victoria, for Van Diemen's Land, and for South Australia, similar Legislatures

1. See "The Annotated Constitution of the Australian Commonwealth," Quick and Garran; Jenks' "Government of Victoria"; Rusden's "History of Australia."

were prescribed. The general provisions of the Act provided that the existing Legislature in New South Wales should decide the number of members of which a new Council was to consist in that colony, and should perform the same task for Victoria. On the issue of the writs for the first election in Victoria, separation was to be deemed complete. One-third of the number of members of the Council in each colony was to be nominated by the Crown. The existing Legislatures in Van Diemen's Land and South Australia were to decide as to the number of members in the new Council in each, but they were not to exceed twenty-four. Power was given to the Governor and Legislative Council in each colony to alter the qualifications of electors and members as fixed by the Act, or to establish, instead of the Legislative Council, a Council and a House of Representatives, or other separate Legislative Houses, to be appointed or elected by such persons and in such manner as should be determined, and to vest in such Houses the powers and functions of the old Council. The powers and functions of the Councils under this Act were as follows:—(a) to make laws for the peace, order, and good government of the colony, (b) to impose taxation, including the imposition of Customs duties, and (c) to appropriate to the public service the whole of the public revenue arising from taxes, duties, rates, and imposts. The restrictions on the powers and functions of the Councils were as follows:—(a) that no such law should be repugnant to the law of England, (b) that no such law should interfere with the sale and appropriation of Crown lands, (c) that no Customs duties of a differential character should be imposed, and (d) that it should not be lawful for the Council to pass any Bill appropriating to the public service any sum of money for any purpose unless the Governor should have previously recommended that provision for such appropriation be made.

3. The Constitution of New South Wales.—After the Act just referred to had been proclaimed, an Electoral Bill for New South Wales was passed increasing the number of members of the Council from thirty-six to fifty-four, of whom thirty-six were to be elective and eighteen nominee members. The extraordinary increase in the wealth and prosperity of the colony owing to the discovery of gold, soon imparted new and unforeseen features to its political and social conditions. In 1851 a remonstrance was despatched by the Legislative Council of New South Wales to the Secretary of State for the Colonies, in which objection was taken to the form of Constitution which the Imperial authorities proposed to grant under the Act of 1850, on the grounds (a) that it did not place the control of all revenue and taxation entirely in the hands of the Colonial Legislature, (b) that all offices of trust and emolument should be filled by the Governor and Executive Council, unfettered by instructions from the Secretary of State for the Colonies, and (c) that plenary powers of legislation should be conferred on the Colonial Legislature. In 1852 the Secretary of State for the Colonies, in a despatch to the Governor of New South Wales, promised to give effect to the wishes of the Legislative Council, and suggested that the Legislative Council should proceed to frame a Constitution resembling that of Canada and based on a bi-cameral Legislature. A select committee of the Council was accordingly appointed to draft a Constitution, and as a result of the deliberations of this body the new Constitution was, on the 21st December, 1853, adopted by the Council and transmitted to the Secretary of State for the Colonies. As it contained provisions in excess of the powers conferred by the Act of 1850, the Bill could not receive the Royal assent, but had to be introduced into the Imperial Parliament. With some amendments the Bill was passed by the Imperial Government and received the Royal assent on the 16th July, 1855. It is now known as the New South Wales Constitution Act 1855, and under its provision a fully responsible system of government was granted. The entire management and control of Crown lands was conferred on the New South Wales Parliament, while the provisions of former Acts respecting the allowance and disallowance of Bills were preserved. Subject to the provisions of the Act, power to make laws amending the Constitution was given to the New South Wales Parliament. The first Parliament, under the new Constitution, was opened by Sir William T. Denison, on the 22nd May, 1856. The Constitution was amended by Acts passed in 1857, 1884, and 1890, these Acts being repealed and consolidated by the Constitution Amendment Act of 1902. The last amending Act was passed in 1908.

4. The Constitution of Victoria.—After the proclamation of the Australian Colonies Government Act of 1850, the old Legislative Council of New South Wales met on the 28th March, 1851, for the purpose of making electoral and judicial arrangements required to bring the new Act into force in Victoria. Two Acts were passed specially concerning Victoria. The first provided for the continuation of the powers and functions of all public officers resident within the Port Phillip District until removed or reappointed by the Government of Victoria. The other Act provided that the Legislative Council of Victoria should consist of thirty members, ten nominees and twenty elective. On the 1st July, 1851, writs for the election of the elective members of the new Legislative Council of Victoria were issued and separation became complete. On the 15th July Mr. La Trobe was appointed the first Lieutenant-Governor of the colony. The powers and functions of the new Council were, under the Act of 1850, similar to those of the reorganised Legislative Council of New South Wales. The next important stage in the constitutional history of Victoria was that which was consummated by the attainment of a fully responsible system of government. Reference has already been made to the rapid advance in the population, wealth, and material prosperity of Australia consequent on the discovery of gold, and to the lead taken by the Legislature of New South Wales in the movement for an extension of constitutional power. In 1853 a despatch, similar to that received by the Governor of New South Wales (see above), was received by the Lieutenant-Governor of Victoria from the Secretary of State for the Colonies. A Constitution was drafted by a committee of the Legislative Council, and it was embodied in a Bill which was passed and reserved for the Queen's assent on the 28th March, 1854. This Bill contained clauses similar to those of the New South Wales Bill relating to the assent of the Governor to bills and the Sovereign's power to disallow the same; to the sale and appropriation of Crown lands; and to the amendment of the Constitution by the Victorian Parliament. As the new Constitution contained provisions beyond those authorised by the Act of 1850 a special Enabling Act was necessary. The Bill was passed and assented to on the 16th July, 1855, and the new Constitution was proclaimed on the 23rd November following. Several amendments have since been made, chiefly with reference to the term of membership and the qualifications of members and electors. In 1890 the Constitution Amendment Act was passed, repealing and consolidating all previous amendments. The last amending Act was passed in 1903.

5. The Constitution of Queensland.—As part of New South Wales, the Moreton Bay District enjoyed the benefits of responsible government under the Constitution Act of 1855. For electoral purposes the district was, in 1856, divided into eight electorates, returning nine members to the Legislative Assembly of New South Wales.

By an Act passed in 1842 the Queen was empowered to erect into a separate colony any part of the territory of New South Wales lying to the northward of 26° south latitude, which was altered by the Australian Colonies Government Act 1850 to 30° south latitude. By the New South Wales Constitution Act 1855 the power previously granted to alter the northern boundary of New South Wales was distinctly preserved, and Her Majesty was authorised, by letters patent, to erect into a separate colony any territory which might be so separated. It was further enacted that Her Majesty, either by such Letters Patent or by Order in Council, might make provision for the government of any such new colony, and for the establishment of a Legislature therein, in manner as nearly resembling the form of government and legislature established in New South Wales as the circumstances of the new colony would permit. The separation was effected by Letters Patent dated the 6th June, 1859, and the Constitution of the new colony was embodied in an Order in Council of the same date.

The Order in Council provided that there should be within the colony of Queensland a Legislative Council and a Legislative Assembly, with the advice and consent of which Her Majesty should have power to make laws for the peace, welfare, and good government of the colony in all cases whatsoever. The powers and functions granted to this Legislature were substantially the same as those granted to New South Wales and Victoria under their respective Constitution Acts, and similar restrictions were imposed. The first Parliament under the new Constitution was convened on the 29th May, 1859.

There have been several amendments of the Constitution, the dates of the amending Acts being as follows:—1867, 1871, 1874, 1890, 1896, and 1905.

6. The Constitution of South Australia.—The creation of South Australia as a Province has already been referred to above (see p. 15.) In the exercise of the provisions of the Act, by which the Province was created, a governor, a judge, seven commissioners, and other officials, were appointed. The Governor, with the concurrence of the Chief Justice, the Colonial Secretary, and the Advocate-General, or two of them, was authorised to make laws and impose taxes. The control of the Crown lands was placed in the hands of the Commissioners. In 1841 the settlement being involved in financial difficulties, a loan was advanced by the British Government. Under an Act passed in 1842 the system of government was remodelled; the colonisation commissioners were abolished, and the Province became a Crown colony. The Queen was empowered to constitute a nominated Legislative Council, consisting of the Governor and seven other persons resident in the colony, with power to make laws for the good government thereof. This system of government continued in force until the inauguration of a new scheme under the provisions of the Australian Colonies Government Act 1850, referred to above.

In 1838 the Legislative Council of South Australia, in pursuance of the powers conferred by the Act of 1850, passed a Bill to establish a bi-cameral Legislature for South Australia. The Royal assent was, however, refused on the ground that the Bill contained a provision limiting the right of the Crown in respect to the disallowance of Bills, which provision was in excess of the powers conferred by the Act of 1850. In 1855 a new Legislative Council, partly elective and partly nominee, having been duly constituted, a second Bill, based on the Tasmanian Constitution Bill, to create a bi-cameral legislature, was passed and duly received the Royal assent in 1856. This Act, known as the South Australian Constitution Act 1856, confers no legislative powers except by reference to the Act of 1850. In order to ascertain the principal legislative powers and functions of the Parliament of South Australia reference must therefore be made to the Australian Colonies Government Act 1850, defining the legislative powers and functions of the Council for which it was substituted (see p. 35 above). The first session of the new Parliament commenced on the 22nd April, 1857, during the Governorship of Sir Richard Graves McDonnell.

The legislative powers of the South Australian Parliament have been considerably enlarged by several Imperial Acts. In 1855 an Act was passed authorising the Legislature of each of the Australian colonies to sell, dispose of, and legislate with reference to Crown lands in the colony. In 1865 the Colonial Laws Validity Act removed the common law restriction which prevented colonial legislators from passing any law repugnant to the law of England. In 1873 the prohibition contained in the Australian Colonies Government Act 1850 was, by the Australian Colonies Duties Act, abolished as far as intercolonial duties were concerned. There have been a large number of amendments to the Constitution, the dates of the amending Acts being as follows:—1870, 1872, 1873, 1876, 1881, 1882, 1887, 1888, 1889, 1890, 1892, 1893, 1894, 1896, 1899, 1901, and 1902.

7. Constitution of Western Australia.—In 1829 the first Imperial Act relating to the Government of Western Australia was passed. By that Act the King in Council was empowered to make and constitute, and to authorise any three or more persons resident within the settlements to make and constitute laws, institutions, and ordinances for the peace, order, and good government of the settlements in Western Australia. By an Order in Council dated the 1st November, 1830, the first Executive Council was constituted, while in the following year a Legislative Council, which consisted at first solely of members of the Executive Council, was formed. This system of government remained unaltered for many years, though the numbers of members of both Councils were increased from time to time. In August, 1870, the nominee Legislative Council was dissolved and writs were issued (under the Australian Colonies Government Act 1850, the provisions of which did not apply to Western Australia until that colony was able to defray its own expenses) for the election of a Council to consist of twelve elected and six nominated members. These numbers were again increased from time to time until the

last Legislative Council under the old form of government, which expired on the 21st October, 1890, consisted of twenty-six members, of whom four were official members, five were nominees of the Crown, and seventeen were elected by the different constituencies. As far back as 1873 a movement was commenced in Western Australia for responsible government as it existed in the eastern colonies. In 1889 the Legislative Council was dissolved and a general election took place, the principal question being the introduction of responsible government. A resolution in favour of the change was passed by the new Council without dissent, and a Constitution providing for the creation of a bi-cameral Legislature was accordingly drafted. In August, 1890, an enabling Bill received the Royal assent, and responsible government was proclaimed in the colony on the 21st October, 1890. Under this Act the Legislative Council was a nominative chamber, subject to the provision that after the expiration of six years, or as soon as the colony acquired a population of 60,000, the Council should be constituted by election. The first Parliament under the new Constitution met on the 30th December, 1890. On the 18th July, 1893, the population of the colony being then over 60,000, the Legislature of Western Australia passed an Act to amend the Constitution, abolishing the nominee Council and substituting one elected by the qualified inhabitants of the colony. The present Constitution of Western Australia differs but little from those of the other States of the Commonwealth. It has been amended by Acts passed in 1893, 1894, 1896, 1899, and 1900.

8. Constitution of Tasmania.—Under an Order in Council dated the 14th June, 1825, and made in pursuance of the provisions of an Act passed in 1823, Van Diemen's Land, as it was known until the year 1853,¹ was separated from New South Wales and was proclaimed a separate colony. A Lieutenant-Governor was appointed, and an Executive and a Legislative Council were called into existence, the latter being on the same model as that introduced into the other colonies at the earliest stages of their constitutional progress. It was not until the Imperial Act of 1850 was passed, that a system of representative government was introduced into Tasmania. The provisions of that Act have already been briefly indicated (see p. 35) and will not be here repeated. A Constitution Bill was drafted and passed by the Legislative Council, and was assented to and proclaimed on the 24th October, 1856.

The Constitution of South Australia was based upon that of Tasmania, and the remarks made above with reference to the Constitution of the former State apply equally to the Constitution of the latter State.

The first Parliament under the new Constitution was opened on the 2nd December, 1856. The Constitution has been amended by Acts passed in 1870, 1884, 1885, 1890, 1900, 1903, and 1906.

9. Enlarged Legislative Powers.—The legislative powers and functions of the Parliaments of the States of the Commonwealth are in fact larger than they appear in the face of the Constitution Acts, inasmuch as contributory powers have been granted from time to time by Imperial Statutes. It is not within the scope of this work to enter into a consideration of the provisions of these Statutes. Among them, however, in addition to those already referred to (see "Constitution of South Australia" above), the following may be mentioned:—

Admiralty Offences (Colonial) Act 1860
Army Act 1881
Coinage Offences (Colonies) Act 1851
Colonial Copyright Act 1847
Colonial Marriages Act 1865

Colonial Naval Defence Act 1865
Extradition Acts 1870
Merchant Shipping Act 1894
Naturalisation Act 1870

1. In the year 1853, on the acquiescence of the Imperial Government in the cessation of transportation (finally abolished in 1857, by 20 and 21 Vic. c. 3), the name Tasmania was generally and voluntarily adopted instead of Van Diemen's Land. (See Quick and Garran's "Annotated Constitution of the Australian Commonwealth," p. 61.)

§ 6. The Federal Movement in Australia.

1. **Early Stages in the Federal Movement.**—A summary is given in Year Book No. 1 (pp. 17 to 21) of the "Federal Movement in Australia" from its earliest inception to its consummation. Only a synopsis of this will be given here.

Notwithstanding that, owing to the circumstances of their growth, the initial tendency in Australia was naturally toward the individualistic evolution of the several settlements, from the earliest period there was a clear recognition of the importance of intercolonial reciprocity. Governor Fitzroy, in 1846, and Earl Grey, in 1847, saw that there were questions which affected "Australia collectively, the regulation of which in some uniform manner, and by some single authority, may be essential to the welfare of them all," and a "central legislative authority for the whole of the Australian colonies" was actually contemplated. Even as far back as 1849, a Privy Council Committee recommended a uniform tariff, and the constituting of one of the Governors as Governor-General of Australia, Sir Charles Fitzroy being actually appointed as "Governor-General of all Her Majesty's Australian Possessions." The office, however, was nominal rather than actual, and expired in 1861. Dr. Lang's idea of "a great federation of all the colonies of Australia" was put forward in 1852, and a Victorian committee in 1853 advocated the value of the General Assembly of Delegates for the whole of Australia.

The need of union was urged by the *Sydney Morning Herald* in 1854, and, though in 1857 Wentworth sought to bring about the creation of a Federal Assembly, an "Enabling Bill" which was drafted turned out to be unacceptable to Her Majesty's Government. In the same year Mr. (afterwards Sir) Charles Gavan Duffy secured the appointment of a select committee of the Victorian Legislative Assembly to consider the necessity of a federal union of the Australasian colonies. The need for such union was unanimously affirmed, the general opinion being that it should not be longer delayed. In the same year a select committee of the New South Wales Legislative Council also considered this question, fully recognising that antagonisms and jealousies were likely to arise through delay.

Union was in a fair way toward realisation when the advent of the Cowper Administration destroyed all chance of attaining it, owing to the antagonism of Mr. Cowper and Mr. (afterwards Sir) James Martin. South Australia, also in the same year, and Queensland in 1859, were both unfavourable to the federal scheme. A second attempt by Mr. Duffy to bring about a conference in 1860 failed also.

Tariff differences, however, compelled political attention to the matter, and in 1862 correspondence was opened up by South Australia regarding tariff uniformity. By means of intercolonial conferences between 1863 and 1880 some degree of uniformity in legislation and a measure of concerted administration were realised. In March, 1867, Mr. (afterwards Sir) Henry Parkes expressed himself as follows:—" . . . The time has arrived when these colonies should be united by some federal bond. . . . There are questions projecting themselves . . . which cannot be dealt with by . . . individual Governments. . . . I believe it will lead to a permanent federal understanding." A Bill passed, however, was shelved by the Home Government.

2. **The Federal Council.**—The conference of November, December, 1880, and January, 1881, recommended the creation of a Federal Council, believing that the time had not arrived for a Federal Constitution with a Federal Parliament. Up till 1883, however, every effort proved abortive, but in November of that year a convention, at which the seven colonies and Fiji were represented, met in Sydney. A Bill to establish a Federal Council for Australasia, drafted by Mr. (now Sir) Samuel Griffith, was, after some modification by a committee of the convention, adopted. In July and August, 1884, the Crown was addressed, praying for the enactment of a Federal Council Act. New South Wales and New Zealand, however, held aloof, the view of Sir Henry Parkes being that a "council" would impede the way for a sure and solid federation. The Bill introduced

by the Earl of Derby in the House of Lords on the 23rd April, 1885, became law on the 14th August as "The Federal Council of Australasia Act 1885." The Council's career, however, soon shewed that it could not hope to be effective, and it met for the last time in January, 1899.

3. Formative Stages of the Federal Movement.—So far Australia has happily enjoyed peace, but as early as 1878 the necessity for federal defence was vividly brought into Australian consciousness, and arrangements for naval protection were entered into with the Imperial Government. These were ratified by the Australasian Naval Force Act. Queensland, however, did not come into line until as late as 1891.

Early in 1889 Sir Henry Parkes had confidentially suggested to Mr. Duncan Gillies the necessity for a Federal Parliament and Executive. Unable to accept the latter's suggestion that New South Wales should give its adhesion to the Federal Council, the former statesman urged the institution of "a National Convention for the purpose of devising and reporting upon an adequate scheme of Federal Government." This led to the Melbourne Conference of 6th February, 1890. It was at the banquet on this occasion that, in proposing "A United Australasia," Mr. James Service pointed out that the tariff question was "a lion in the path," which federationists must either slay, or by which they must be slain; in the reply to which Sir Henry Parkes made use of his historic phrase, *the crimson thread of kinship runs through us all*. Certain elements of doubt being expressed as to the motives underlying the movement, Sir Henry Parkes said:—"We desire to enter upon this work of Federation without making any condition to the advantage of ourselves, without any stipulation whatever, with a perfect preparedness to leave the proposed convention free to devise its own scheme, and, if a central Parliament comes into existence, with a perfect reliance upon its justice, upon its wisdom, and upon its honour I think an overwhelming majority of my countrymen will approve of the grand step of uniting all the colonies under one form of beneficent government, and under one national flag."

The first National Australasian Convention, under Sir Henry Parkes' presidency, was convened on the 2nd March, 1891, all the colonies and New Zealand being represented. The Bill then drafted was considered by the Parliaments of New South Wales, Victoria, South Australia, and Tasmania, but not by those of Queensland, Western Australia, and New Zealand, and though the parliamentary process of dealing with the matter failed, federal sentiment was strengthening. The collapse of the "land boom" had made apparent how intimately the interests of each colony are related; and the dangers of disunion became impressively obvious. The Australian Natives' Association took up the federal cause with enthusiasm, Federation leagues were established, the issues were widely and intelligently discussed. The late Sir George Dibbs' unification scheme helped to make the issue a real one.

At the Conference of Premiers at Hobart on the 29th January, 1895, it was agreed that federation "was the great and pressing question of Australian politics," and that "the framing of a Federal Constitution" was an urgent duty. The resuscitation of the whole matter led to the passing of Enabling Acts. In New South Wales the Act received the Royal assent on the 23rd December, 1895; South Australia anticipated this by three days; the Tasmanian Bill was passed on the 10th January, 1896, the Victorian on the 7th March, 1896; Western Australia fell into line on the 27th October. The "People's Federal Convention," held at Bathurst, N.S.W., in November, 1896, gave a considerable impulse to the movement; to wait longer for Queensland was considered unnecessary, and the 4th March, 1897, was fixed as the date for the election of federal representatives for New South Wales, Victoria, South Australia, and Tasmania. Western Australia followed suit, and on the 22nd March the representatives met at Adelaide.

The discussions made it evident that the federal point of view had advanced considerably. Constitutional, Finance, and Judiciary Committees were appointed, and a Bill drafted. This, reported to the Convention on the 22nd April, was adopted on the following day, and the Convention adjourned till September. The Parliaments of New South Wales, Victoria, South Australia, Tasmania, and Western Australia discussed the question before the Sydney Session of the Convention, which opened on the 2nd September, 1897.

The business of the Convention involved the general reconsideration of the whole Bill, and the consideration of no less than 286 suggested amendments. This work gave a definitive character to that of the Melbourne Session of 1898, extending from the 20th January to the 17th March, the necessity of reaching a final decision giving to its deliberations corresponding weight.

4. Votes on the Question of Federating.—Eleven weeks after this last convention the first popular vote was taken on Federation in New South Wales, Victoria, South Australia, and Tasmania. Though the decision was overwhelming in favour of Federation in three of the States, and there was a distinct majority in its favour in New South Wales, the majority was legally insufficient. On the 22nd January, 1899, the Premiers of the six colonies met at Melbourne in a conference initiated by the Right Honourable G. H. Reid, P.C., and seven amendments were made in the Bill. This step virtually effected the solution of the few outstanding difficulties which could in any way be regarded as fundamental.

On the occasion of the second popular vote Queensland also joined in, and the general majority in favour of Federation was more than doubled, that for New South Wales itself having been more than quadrupled when compared with the first vote. The following table shews the two results:—

VOTES FOR AND AGAINST FEDERATION.

| | | N.S.W. | Victoria. | Sth. Aust. | Tas. | Qld. | TOTALS |
|----------|-----------------------------|---------|-----------|------------|--------|--------|---------|
| 1st Vote | { For Federation ... | 71,595 | 100,520 | 35,800 | 11,797 | — | 219,712 |
| | { Against „ ... | 66,228 | 22,099 | 17,320 | 2,716 | — | 108,363 |
| | { Majority ² ... | 5,367 | 78,421 | 18,480 | 9,081 | — | 111,349 |
| 2nd Vote | { For Federation ... | 107,420 | 152,653 | 65,990 | 13,437 | 38,488 | 377,988 |
| | { Against „ ... | 82,741 | 9,805 | 17,053 | 791 | 30,996 | 141,386 |
| | { Majority ... | 24,679 | 142,848 | 48,937 | 12,646 | 7,492 | 236,602 |

5. Enactment of the Constitution.—The Secretary of State for the Colonies (the Right Honourable Joseph Chamberlain) expressed the hope on the 22nd December, 1899, that a delegation of the federating colonies should visit England on the occasion of the submission of the Commonwealth Bill to the Imperial Parliament. The delegation consisted of Mr. (now Sir) Edmund Barton (N.S.W.), Mr. Alfred Deakin (Vic.), Mr. C. C. Kingston (S.A.), Sir P. O. Fysh (Tas.), and later Mr. S. H. Parker was appointed delegate for Western Australia and Mr. W. P. Reeves for New Zealand. After discussion as to whether there should be some modification in the Bill, it was introduced into the House of Commons on the 14th May; the second reading was moved on the 21st of the same month; the discussion in committee commenced on the 18th June; and the Royal assent was given on the 9th July, 1900.

On the 31st July a referendum in Western Australia on the question of federating gave the result:—For, 44,800; against, 19,691; that is to say, a majority of 25,109 in favour of union. On the 21st August both Houses of Parliament in that State passed addresses praying that it might be included as an original State of the Commonwealth.

On the 17th September, 1900, Her Majesty Queen Victoria signed the proclamation declaring that on and after the first day of January, 1901, the people of New South Wales, Victoria, South Australia, Queensland, Tasmania, and Western Australia should be united in a Federal Commonwealth, under the name of the Commonwealth of Australia.

7. Creation of the Commonwealth.

1. **The Act.**—The Commonwealth of Australia Constitution Act, 63 and 64 Vic., Chapter 12, namely, an Act to constitute the Commonwealth of Australia, which, as already stated, received the Royal assent on the 9th July, 1900, is given in Year Book No. 1 *in extenso* (pp. 21 to 37). The division of the Constitution is as follows:—

Chapter I.—The Parliament:—

Part I.—General.

Part II.—The Senate.

Part III.—The House of Representatives.

Part IV.—Both Houses of Parliament.

Part V.—Powers of the Parliament.

Chapter II.—The Executive Government.

Chapter III.—The Judicature.

Chapter IV.—Finance and Trade.

Chapter V.—The States.

Chapter VI.—New States.

Chapter VII.—Miscellaneous.

Chapter VIII.—Alteration of the Constitution.

The Schedule.

2. **Summary of the Commonwealth Constitution.**—These chapters may be summarised as follows:—

CHAPTER I.—THE PARLIAMENT.

PART I.—GENERAL (SECTIONS 1 TO 6).

The legislative power of the Commonwealth is vested in the Federal Parliament, consisting of the Sovereign, the Senate, and the House of Representatives. A Governor-General, appointed by the King, represents His Majesty in the Commonwealth, and exercises, subject to the Constitution, such powers and functions as His Majesty is pleased to assign to him. The salary of the Governor-General is fixed at £10,000 per annum until otherwise provided by Parliament. The Governor-General may appoint the times for holding the sessions of Parliament; he may prorogue Parliament, and may dissolve the House of Representatives.

PART II.—THE SENATE (SECTIONS 7 TO 23).

Until Parliament otherwise provides, there are to be six senators for each original State, chosen by the people of the State voting as one electorate. Equal representation of the original States must be maintained, and no original State may have less than six senators. The senators are chosen for a term of six years. The qualification for electors of senators is the same as the qualification for electors of members of the House of Representatives. Provision is made whereby half the senators for each State vacate their seats at the expiration of three years in the case of the election of a new Senate. The qualifications of a senator are the same as those of a member of the House of Representatives. The place of a senator becomes vacant if he fails to attend the meetings of the Senate, without permission, for two consecutive months of any session. At least one-third of the whole number of senators must be present in order to constitute a meeting of the Senate.

PART III.—THE HOUSE OF REPRESENTATIVES (SECTIONS 24 TO 40).

The number of members of the House of Representatives is, as nearly as practicable, twice the number of senators, and the numbers of members elected in the several States are in proportion to the respective populations of the States, unless otherwise determined by Parliament. The House is elected for three years, but may be sooner dissolved by the Governor-General. Until Parliament otherwise provides, qualifications for membership are as follows:—(a) Members must be of the full age of twenty-one years, must be qualified for the franchise of the House, and must have been resident within the Commonwealth for at least three years, and (b) must be natural-born British subjects or for at least five years naturalised under a law of the United Kingdom, or of a colony which has become or becomes a State, or of the Commonwealth, or of a State. A member vacates his seat if he fails to attend the meetings of the House, without permission, for two consecutive months in any session. Until Parliament otherwise pro-

vided, the qualification for the franchise of the House of Representatives was in each State the same as that for the franchise of the more numerous House of Parliament in the State, but each elector could vote only once.¹

PART IV.—BOTH HOUSES OF PARLIAMENT (SECTIONS 41 TO 50).

Any adult person who is qualified to vote at elections for the more numerous House of Parliament of a State cannot be prevented by any law of the Commonwealth from voting at elections for either of the Commonwealth Houses of Parliament. A person subject to certain disqualifications, such as being attainted of treason, being an undischarged bankrupt, holding an office of profit under the Crown (except as a Minister of State or as an officer or member of the naval or military forces of the Commonwealth), or having a pecuniary interest in any agreement with the Commonwealth Public Service (except as a member of a company), may not be elected or sit as a member of either House. Until the Parliament otherwise provided, each senator and each member of the House of Representatives received an allowance of £400 a year.² The powers and privileges of members of both Houses are as declared by Parliament, and until declared are the same as those of the Commons House of Parliament of the United Kingdom. Each House may make rules and orders with respect to—(a) The mode in which its powers, privileges, and immunities may be exercised and upheld, and (b) the order and conduct of its business and proceedings, either separately or jointly with the other House.

PART V.—POWERS OF THE PARLIAMENT (SECTIONS 51 TO 60).

The Commonwealth Parliament has, subject to the Constitution, power to make laws for the peace, order, and good government of the Commonwealth with respect to—

- (i.) Trade and commerce with other countries, and among the States:
- (ii.) Taxation; but so as not to discriminate between States or parts of States:
- (iii.) Bounties on the production or export of goods, but so that such bounties shall be uniform throughout the Commonwealth:
- (iv.) Borrowing money on the public credit of the Commonwealth:
- (v.) Postal, telegraphic, telephonic, and other like services:
- (vi.) The naval and military defence of the Commonwealth and of the several States, and the control of the forces to execute and maintain the laws of the Commonwealth:
- (vii.) Lighthouses, lightships, beacons and buoys:
- (viii.) Astronomical and meteorological observations:
- (ix.) Quarantine:
- (x.) Fisheries in Australian waters beyond territorial limits:
- (xi.) Census and statistics:
- (xii.) Currency, coinage, and legal tender:
- (xiii.) Banking, other than State banking; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money:
- (xiv.) Insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned:
- (xv.) Weights and measures:
- (xvi.) Bills of exchange and promissory notes:
- (xvii.) Bankruptcy and insolvency:
- (xviii.) Copyrights, patents of inventions and designs, and trade marks:
- (xix.) Naturalisation and aliens:
- (xx.) Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth:
- (xxi.) Marriage:
- (xxii.) Divorce and matrimonial causes; and in relation thereto, parental rights, and the custody and guardianship of infants:

1. The franchise qualification was determined by the Commonwealth Franchise Act 1902.

2. By the Parliamentary Allowances Act 1907, assented to on the 28th August, the amount of the allowance was increased to £600 a year.

- (xxiii.) Invalid and old-age pensions:
- (xxiv.) The service and execution throughout the Commonwealth of the civil and criminal process and the judgments of the Courts of the States:
- (xxv.) The recognition throughout the Commonwealth of the laws, the public Acts and records, and the judicial proceedings of the States:
- (xxvi.) The people of any race, other than the aboriginal race in any State, for whom it is deemed necessary to make special laws:
- (xxvii.) Immigration and emigration:
- (xxviii.) The influx of criminals:
- (xxix.) External affairs:
- (xxx.) The relations of the Commonwealth with the islands of the Pacific:
- (xxxi.) The acquisition of property on just terms from any State or person for any purpose in respect of which the Parliament has power to make laws:
- (xxxii.) The control of railways with respect to transport for the naval and military purposes of the Commonwealth:
- (xxxiii.) The acquisition, with the consent of a State, of any railways of the State on terms arranged between the Commonwealth and the State:
- (xxxiv.) Railway construction and extension in any State with the consent of that State:
- (xxxv.) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State:
- (xxxvi.) Matters in respect of which this Constitution makes provision until the Parliament otherwise provides:
- (xxxvii.) Matters referred to the Parliament of the Commonwealth by the Parliament or Parliaments of any State or States, but so that the law shall extend only to States by whose Parliaments the matter is referred, or which afterwards adopt the law:
- (xxxviii.) The exercise within the Commonwealth, at the request or with the concurrence of the Parliaments of all the States directly concerned, of any power which can at the establishment of this Constitution be exercised only by the Parliament of the United Kingdom or by the Federal Council of Australasia:
- (xxxix.) Matters incidental to the execution of any power vested by this Constitution in the Parliament or in either House thereof, or in the Government of the Commonwealth, or in the Federal Judicature, or in any department or officer of the Commonwealth.

The Parliament has also, subject to the Constitution, exclusive power to make laws for the peace, order, and good government of the Commonwealth with respect to—

- (i.) The seat of Government of the Commonwealth, and all places acquired by the Commonwealth for public purposes:
- (ii.) Matters relating to any department of the public service the control of which is by this Constitution transferred to the Executive Government of the Commonwealth:
- (iii.) Other matters declared by this Constitution to be within the exclusive power of the Parliament.

Proposed laws appropriating revenue or moneys, or imposing taxation, may not originate in the Senate, and the Senate may not amend proposed laws either (a) imposing taxation, (b) appropriating money for the ordinary annual services of the Government, or (c) so as to increase any proposed charge or burden on the people.

If the House of Representatives passes any proposed law, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, and if after an interval of three months the House of Representatives, in the same or the next session, again passes the proposed law with or without any amendments which have been made, suggested or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may dissolve the Senate and the House of Representa-

tives simultaneously. But such dissolution may not take place within six months before the date of the expiry of the House of Representatives by effluxion of time.

If after such dissolution the House of Representatives again passes the proposed law, with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may convene a joint sitting of the members of the Senate and of the House of Representatives.

The members present at the joint sitting may deliberate and vote together upon the proposed law as last proposed by the House of Representatives, and upon amendments, if any, which have been made therein by one House and not agreed to by the other, and any such amendments which are affirmed by an absolute majority of the total number of the members of the Senate and House of Representatives shall be taken to have been carried, and if the proposed law, with the amendments, if any, so carried is affirmed by an absolute majority of the total number of members of the Senate and House of Representatives, it shall be taken to have been duly passed by both Houses of the Parliament, and shall be presented to the Governor-General for the Queen's assent.

When a proposed law passed by both Houses of the Parliament is presented to the Governor-General for the Queen's assent, he shall declare, according to his discretion, but subject to this Constitution, that he assents in the Queen's name, or that he withholds assent, or that he reserves the law for the Queen's pleasure.

The Governor-General may return to the House in which it originated any proposed law so presented to him, and may transmit therewith any amendments which he may recommend, and the Houses may deal with the recommendation.

The Queen may disallow any law within one year from the Governor-General's assent, and such disallowance on being made known by the Governor-General by speech or message to each of the Houses of the Parliament, or by proclamation, shall annul the law from the day when the disallowance is so made known.

CHAPTER II.—THE EXECUTIVE GOVERNMENT (SECTIONS 61 TO 70).

The executive power of the Commonwealth is vested in the Queen and is exercisable by the Governor-General as the Queen's representative, and extends to the execution and maintenance of the Constitution, and of the laws of the Commonwealth.

The Executive Council advises the Governor-General in the government of the Commonwealth, and the members of the Council are chosen and summoned by the Governor-General and sworn as Executive Councillors, and hold office during his pleasure. The Governor-General may appoint officers to administer such departments of State of the Commonwealth as the Governor-General in Council may establish. Such officers hold office during the pleasure of the Governor-General. They are members of the Federal Executive Council, and are the Queen's Ministers of State for the Commonwealth. After the first general election no Minister of State may hold office for a longer period than three months unless he is or becomes a senator or a member of the House of Representatives. Until the Parliament otherwise provides, the Ministers of State may not exceed seven in number, and their joint salaries may not exceed £12,000 a year. The command-in-chief of the naval and military forces of the Commonwealth is vested in the Governor-General as the Sovereign's representative, while the appointment and removal of all officers of the Executive Government is vested in the Governor-General in Council, unless the appointment is delegated by the Governor-General in Council or by a law of the Commonwealth to some other authority.

On a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments of the public service in each State shall become transferred to the Commonwealth :—¹

| | |
|-------------------------------------|---|
| Posts, telegraphs, and telephones : | Lighthouses, lightships, beacons, and buoys : |
| Naval and military defence : | Quarantine. |

¹ As to departments transferred and dates of transfer, see Section XIX.—COMMONWEALTH FINANCE, § 1, 2, hereafter.

But the departments of customs and of excise in each State shall become transferred to the Commonwealth on its establishment.

CHAPTER III.—THE JUDICATURE (SECTIONS 71 TO 80).

The judicial power of the Commonwealth is vested in a Federal Supreme Court, to be called the High Court of Australia, and in such other federal courts as the Parliament creates, and in such other courts as it invests with federal jurisdiction. The High Court shall consist of a Chief Justice, and so many other Justices, not less than two, as the Parliament prescribes. The Justices of the High Court and of the other courts created by the Parliament—

- (i.) Are to be appointed by the Governor-General in Council :
- (ii.) May not be removed except by the Governor-General in Council, on an address from both Houses of the Parliament in the same session, praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii.) May receive such remuneration as the Parliament may fix : but the remuneration shall not be diminished during their continuance in office.

The High Court has jurisdiction, with such exceptions and subject to such regulations as the Parliament prescribes, to hear and determine appeals from all judgments, decrees, orders, and sentences—

- (i.) Of any Justice or Justices exercising the original jurisdiction of the High Court :
- (ii.) Of any other federal court, or court exercising federal jurisdiction ; or of the Supreme Court of any State, or of any other court of any State from which at the establishment of the Commonwealth an appeal lies to the Queen in Council :
- (iii.) Of the Interstate Commission, but as to questions of law only :

and the judgment of the High Court in all such cases is final and conclusive.

Until the Parliament otherwise provides, the conditions of and restrictions on appeals to the Queen in Council from the Supreme Courts of the several States are applicable to appeals from them to the High Court.

No appeal may be made to the Queen in Council from a decision of the High Court upon any question, howsoever arising, as to the limits *inter se* of the Constitutional powers of the Commonwealth and those of any State or States, or as to the limits *inter se* of the Constitutional powers of any two or more States, unless the High Court certify that the question is one which ought to be determined by Her Majesty in Council.

The High Court has original jurisdiction in all matters :—(i.) Arising under any treaty : (ii.) Affecting consuls or other representatives of other countries : (iii.) In which the Commonwealth, or a person suing or being sued on behalf of the Commonwealth, is a party : (iv.) Between States, or between residents of different States, or between a State and a resident of another State : (v.) In which a writ of Mandamus or prohibition or an injunction is sought against an officer of the Commonwealth : while Parliament may make laws conferring original jurisdiction on the High Court in any matter—(i.) Arising under the Constitution or under any laws made by the Parliament : (ii.) Of Admiralty and maritime jurisdiction : (iii.) Relating to the same subject matter claimed under the laws of different States.

CHAPTER IV.—FINANCE AND TRADE (SECTIONS 81 TO 105).

On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, passed to the Executive Government of the Commonwealth. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, of the net revenue of the Commonwealth from duties of customs and of excise not more than one-fourth is to be applied annually by the Commonwealth towards its expenditure. The balance, in accordance with the Constitution, is to be paid to the several States, or

applied to the payment of interest on debts of the several States taken over by the Commonwealth.

Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth, and on the imposition of such duties, trade, commerce, and intercourse among the States shall be absolutely free,¹ and the power of the Commonwealth Parliament to impose duties of customs and excise, and to grant bounties on the production or export of goods, shall become exclusive.

Until the imposition of uniform duties of customs it was provided that—

- (i.) The Commonwealth should credit to each State the revenues collected therein by the Commonwealth.
- (ii.) The Commonwealth should debit to each State—(a) The expenditure therein of the Commonwealth incurred solely for the maintenance or continuance as at the time of transfer, of any department transferred from the State to the Commonwealth. (b) The proportion of the State, according to the number of its people, in the other expenditure of the Commonwealth.
- (iii.) The Commonwealth should pay to each State month by month the balance (if any) in favour of the State.

During the first five years after the imposition of uniform duties of customs, and thereafter until the Parliament otherwise provides—(i.) The duties of customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State: (ii.) Subject to the last sub-section, the Commonwealth shall credit revenue, debit expenditure, and pay balances to the several States as prescribed for the period preceding the imposition of uniform duties of customs.

After five years from the imposition of uniform duties of customs, the Parliament may provide, on such basis as it deems fair, for the monthly payment to the several States of all surplus revenue of the Commonwealth, and during a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit.

The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to the State Government railways. The Commonwealth may not, however, by any law or regulation of trade, commerce, or revenue give preference to one State over another, nor by any law or regulation of trade or commerce abridge the right of a State to the reasonable use of rivers for conservation or irrigation.

CHAPTER V.—THE STATES (SECTIONS 106 TO 120).

The Constitution of each State of the Commonwealth, subject to the Constitution, continues as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be, until altered in accordance with the Constitution of the State. Every power of the Parliament of a Colony which has become or becomes a State, unless it is by this Constitution exclusively vested in the Parliament of the Commonwealth or withdrawn from the Parliament of the State, continues as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be, and every law in force in a Colony which has become or becomes a State, and relating to any matter within the powers of the Parliament of the Commonwealth, subject to the Constitution, continues in force in the State: and, until provision is made in that behalf by the Parliament of the Commonwealth, the Parliament of the State has such powers of alteration and of repeal in respect of any such law as the Parliament of the Colony had until the Colony became a State.

1. Uniform customs duties were imposed by the Customs Tariff Act 1902 (see Section XV., COMMERCE, § 2, hereafter).

When a law of a State is inconsistent with a law of the Commonwealth, the latter prevails, and the former, to the extent of the inconsistency, is invalid.

The Parliament of a State may surrender any part of the State to the Commonwealth; and upon such surrender, and the acceptance thereof by the Commonwealth, such part of the State becomes subject to the exclusive jurisdiction of the Commonwealth.

After uniform duties of customs have been imposed, a State may levy on imports or exports, or on goods passing into or out of the State, such charges as may be necessary for executing the inspection laws of the State; but the net produce of all charges so levied shall be for the use of the Commonwealth; and any such inspection laws may be annulled by the Parliament of the Commonwealth.

CHAPTER VI.—NEW STATES (SECTIONS 121 TO 124).

The Parliament may admit to the Commonwealth or establish new States, and may upon such admission or establishment make or impose such terms and conditions, including the extent of representation in either House of the Parliament, as it thinks fit.

The Parliament may make laws for the government of any territory surrendered by any State to and accepted by the Commonwealth, or of any territory placed by the Queen under the authority of and accepted by the Commonwealth, or otherwise acquired by the Commonwealth, and may allow the representation of such territory in either House of the Parliament to the extent and on the terms which it thinks fit.

The Parliament of the Commonwealth may, with the consent of the Parliament of a State, and the approval of the majority of the electors of the State voting upon the question, increase, diminish, or otherwise alter the limits of the State, upon such terms and conditions as may be agreed on, and may, with the like consent, make provision respecting the effect and operation of any increase or diminution or alteration of territory in relation to any State affected.

A new State may be formed by separation of territory from a State, but only with the consent of the Parliament thereof, and a new State may be formed by the union of two or more States or parts of States, but only with the consent of the Parliaments of the States affected.

CHAPTER VII.—MISCELLANEOUS (SECTIONS 125 TO 127).

The seat of Government of the Commonwealth shall be determined by the Parliament, and shall be within territory which shall have been granted to or acquired by the Commonwealth, and shall be vested in and belong to the Commonwealth, and shall be in the State of New South Wales, and be distant not less than one hundred miles from Sydney. Such territory shall contain an area of not less than one hundred square miles, and such portion thereof as shall consist of Crown lands shall be granted to the Commonwealth without any payment therefor. The Parliament shall sit at Melbourne until it meet at the seat of Government.

The Queen may authorise the Governor-General to appoint any person, or any persons jointly or severally, to be his deputy or deputies within any part of the Commonwealth.

CHAPTER VIII.—ALTERATION OF THE CONSTITUTION (SECTION 128).¹

The Constitution may not be altered except in the following manner:—

The proposed law for the alteration thereof must be passed by an absolute majority of each House of the Parliament, and not less than two nor more than six months after its passage through both Houses the proposed law must be submitted in each State to the electors qualified to vote for the election of members of the House of Representatives.

¹ The Constitution has been altered by the following Acts:—The Referendum (Constitution Alteration) Act 1906; The Constitution Alteration (Senate Elections) Act 1906.

But if either House passes any such proposed law by an absolute majority, and the other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, and if after an interval of three months the first-mentioned House in the same or the next session again passes the proposed law by an absolute majority with or without any amendment which has been made or agreed to by the other House, and such other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, the Governor-General may submit the proposed law as last proposed by the first-mentioned House, and either with or without any amendments subsequently agreed to by both Houses, to the electors in each State qualified to vote for the election of the House of Representatives.

When a proposed law is submitted to the electors the vote is taken in such manner as the Parliament prescribes. And if in a majority of the States a majority of the electors voting approve the proposed law, and if a majority of all the electors voting also approve the proposed law, it is presented to the Governor-General for the Queen's assent.

No alteration diminishing the proportionate representation of any State in either House of the Parliament, or the minimum number of representatives of a State in the House of Representatives, or increasing, diminishing, or otherwise altering the limits of the State, or in any manner affecting the provisions of the Constitution in relation thereto, can become law unless the majority of the electors voting in that State approve the proposed law.

3. The Royal Proclamation.—The preceding Act received the Royal assent on the 9th July, 1900. This made it lawful (see Sec. 3) to declare that the people of Australia should be united in a Federal Commonwealth. This proclamation, made on the 17th September, 1900, constituted the Commonwealth as from the 1st January, 1901: it reads as follows:—

BY THE QUEEN.

A PROCLAMATION.

(Signed) VICTORIA R.

WHEREAS by an Act of Parliament passed in the Sixty-third and Sixty-fourth Years of Our Reign intituled, "An Act to constitute the Commonwealth of *Australia*," it is enacted that it shall be lawful for the Queen, with the advice of the Privy Council, to declare by Proclamation, that, on and after a day therein appointed, not being later than One Year after the passing of this Act, the people of *New South Wales, Victoria, South Australia, Queensland, and Tasmania*, and also, if Her Majesty is satisfied that the people of *Western Australia* have agreed thereto, of *Western Australia*, shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

And whereas We are satisfied that the people of *Western Australia* have agreed thereto accordingly.

We therefore, by and with the advice of Our Privy Council, have thought fit to issue this Our Royal Proclamation, and We do hereby declare that on and after the First day of *January* One thousand nine hundred and one, the people of *New South Wales, Victoria, South Australia, Queensland, Tasmania, and Western Australia* shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

Given at Our Court at *Balmoral* this Seventeenth day of *September*, in the Year of Our Lord One thousand nine hundred, and in the Sixty-fourth Year of Our Reign.

GOD SAVE THE QUEEN.

§ 8. Commonwealth Legislation.

1. **The Commonwealth Parliaments.**—The first Parliament of the Commonwealth was convened by proclamation dated 29th April, 1901, by His Excellency the late Earl of Hopetoun, Governor-General. It was opened on the 9th May by H.R.H. the Duke of Cornwall and York, who had been sent to Australia for that purpose by His Majesty the King; the Rt. Hon. Sir Edmund Barton, P.C., G.C.M.G., K.C., being Prime Minister. It was dissolved on the 23rd November, 1903. The second Parliament was convened on the 2nd March, 1904, by His Excellency the Rt. Hon. Baron Northcote, G.C.M.G., G.C.I.E., C.B.; the Hon. Alfred Deakin being Prime Minister. The third session closed on the 12th October, 1906, and Parliament was dissolved on the 8th November, 1906. The third Parliament was convened on the 20th February, 1907, and met on that day and the following day only. It was prorogued on the 22nd February, the prorogation eventually extending to the 13th July, 1907, on which day the second session commenced. The Debates of these Parliaments will be found in Volumes I. to XXXV. of the Parliamentary Debates, as follows:—

| | | | | |
|--------------------|----------------------|-------|----------|-----------------------|
| First Parliament, | 1st Session | Vols. | I. to | XII., pp. 1 to 16,744 |
| " | " | " | XIII. " | XVII., " 1 " 6,440 |
| Second Parliament, | 1st Session | " | XVIII. " | XXIV., " 1 " 8,618 |
| " | " | " | XXV. " | XXX., " 1 " 7,461 |
| " | " | " | XXXI. " | XXXV., " 1 " 6,491 |
| Third Parliament, | 1st and 2nd Sessions | " | XXXVI. | |

2. **The Several Administrations.**—The following tabular statements shew the names of the several Governors-General, and the constitution of the Ministries which have directed the administration of the affairs of the Commonwealth since its creation:—

(a) GOVERNORS-GENERAL.

- Rt. Hon. EARL OF HOPETOUN, P.C., K.T., G.C.M.G., G.C.V.O. Sworn 1st January, 1901; recalled 9th May, 1902, left Melbourne 2nd July, 1902.
- Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Act. Governor-General). Sworn 17th July, 1902.
- Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Governor-General). Sworn 9th January, 1903; recalled 21st January, 1904.
- Rt. Hon. HENRY STAFFORD BARON NORTHCOTE, G.C.M.G., G.C.I.E., C.B. Sworn 21st January, 1904; recalled
- Rt. Hon. WILLIAM HUMBLE EARL OF DUDLEY, P.C., G.C.M.G., G.C.V.O., etc. Sworn 9th September, 1908.

(b) BARTON ADMINISTRATION, 1st January, 1901, to 24th September, 1903.

| DEPARTMENTS. | MINISTERS. |
|----------------------------------|--|
| External Affairs | Rt. Hon. SIR EDMUND BARTON, P.C., G.C.M.G., K.C. |
| Attorney-General | Hon. ALFRED DEAKIN. |
| Home Affairs | { Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 11/8/03). |
| Treasury | { Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (from 11/8/03). |
| Trade and Customs | { Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G. |
| Defence | { Rt. Hon. CHARLES CAMERON KINGSTON, P.C., K.C. (resigned 24/7/03) |
| Postmaster-General | { Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (from 11/8/03). |
| Vice-President Executive Council | { The Hon. SIR JAMES ROBERT DICKSON, K.C.M.G. (died Jan. 1901). |
| Without Portfolio | { Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 10/8/03). |
| | { Hon. JAMES GEORGE DRAKE (from 10/8/03). |
| | { Hon. JAMES GEORGE DRAKE (to 10/8/03). |
| | { Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (from 10/8/03). |
| | { Hon. RICHARD EDWARD O'CONNOR, K.C. |
| | { Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (till 9/8/03). |

(c) DEAKIN ADMINISTRATION, 24th September, 1903, to 26th April, 1904.

| DEPARTMENTS. | MINISTERS. |
|--------------------------------|--|
| External Affairs | Hon. ALFRED DEAKIN. |
| Trade and Customs | Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. |
| Treasury | Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G. |
| Home Affairs | Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. |
| Attorney-General | Hon. JAMES GEORGE DRAKE. |
| Postmaster-General | Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. |
| Defence | Hon. AUSTIN CHAPMAN. |
| Vice-President Executive C'ncl | Hon. THOMAS PLAYFORD. |

(d) WATSON ADMINISTRATION, 27th April to 17th August, 1904.

| DEPARTMENTS. | MINISTERS. |
|--------------------------------|----------------------------------|
| Treasurer | Hon. JOHN CHRISTIAN WATSON. |
| External Affairs | Hon. WILLIAM MORRIS HUGHES. |
| Attorney-General | Hon. HENRY BOURNES HIGGINS, K.C. |
| Home Affairs | Hon. EGERTON LEE BATCHELOR. |
| Trade and Customs | Hon. ANDREW FISHER. |
| Defence | Hon. ANDERSON DAWSON. |
| Postmaster-General | Hon. HUGH MAHON. |
| Vice-President Executive C'ncl | Hon. GREGOR MCGREGOR. |

(e) REID-MCLEAN ADMINISTRATION, 18th August, 1904, to 5th July, 1905.

| DEPARTMENTS. | MINISTERS. |
|--------------------------------|---|
| External Affairs | Rt. Hon. GEORGE HOUSTOUN REID, P.C., K.C. |
| Trade and Customs | Hon. ALLAN MCLEAN. |
| Attorney-General | Hon. SIR JOSIAH HENRY SYMON, K.C.M.G., K.C. |
| Treasury | Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G. |
| Home Affairs | Hon. DUGALD THOMSON. |
| Defence | Hon. JAMES WHITESIDE MCCAY. |
| Postmaster-General | Hon. SYDNEY SMITH. |
| Vice-President Executive C'ncl | Hon. JAMES GEORGE DRAKE. |

(f) SECOND DEAKIN ADMINISTRATION, 5th July, 1905.

| DEPARTMENTS. | MINISTERS. |
|--------------------------------|--|
| External Affairs | { Hon. ALFRED DEAKIN. Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (acting from 12/3/'07). Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (acting from 10/7/'07). |
| Attorney-General | { Hon. ISAAC ALFRED ISAACS, K.C. (to 12/10/'06). Hon. LITTLETON ERNEST GROOM (from 13/10/'06). |
| Trade and Customs | { Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 30/7/'07). Hon. AUSTIN CHAPMAN (from 30/7/'07). |
| Treasurer | { Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 30/7/'07). Hon. SIR WILLIAM JOHN LYNE (from 30/7/'07). |
| Postmaster-General | { Hon. AUSTIN CHAPMAN (to 30/7/'07). Hon. SAMUEL MAUGER (from 30/7/'07). |
| Defence | { Hon. THOMAS PLAYFORD (to 24/1/'07). Hon. THOMAS THOMSON EWING (from 24/1/'07). |
| Home Affairs | { Hon. LITTLETON ERNEST GROOM (to 13/10/'06). Hon. THOMAS THOMSON EWING (from 13/10/'06 to 24/1/'07). Hon. JOHN HENRY KEATING (from 24/1/'07). |
| Vice-President Executive C'ncl | { Hon. THOMAS THOMSON EWING (to 13/10/'06). Hon. JOHN HENRY KEATING (from 13/10/'06 to 20/2/'07). Hon. ROBERT WALLACE BEST (from 20/2/'07). |
| Honorary Minister | Hon. J. HUME COOK (from 28/1/08). |

3. **The Course of Legislation.**—The actual legislation by the Commonwealth Parliament is indicated in alphabetical order in "Vol. VI. of the Acts of the Parliament of the Commonwealth of Australia, passed in the session of 1907, with Tables, Appendixes and Indexes." A "Chronological Table of Acts passed from 1901 to 1907, shewing how they are affected by subsequent legislation or lapse of time" is also given, and further "A Table of Commonwealth Legislation," for the same period, "in relation to the several provisions of the Constitution," is furnished. Reference may be made to these for complete information. The nature of this legislation, however, and its relation to the several provisions of the Constitution of the Commonwealth are set forth in the following, specially prepared, tabular statement:—

(a) ANALYTIC TABLE OF COMMONWEALTH LEGISLATION.

FROM 1901 TO JUNE, 1908, IN RELATION TO THE SEVERAL PROVISIONS OF THE CONSTITUTION.¹

| Section of Constitution. | Short Title of Commonwealth Act.* |
|--------------------------|--|
| | AMENDMENT OF THE CONSTITUTION. Constitution Alteration (Senate Elections) 1906. |
| | PARLIAMENTARY AND ELECTORAL LAW. |
| 8—30 | PARLIAMENTARY FRANCHISE— Commonwealth Franchise Act 1902. |
| 9—34 | ELECTIONS— Commonwealth Electoral Acts 1902-1906. Senate Elections Act 1903. |
| 24 | DETERMINATION OF NUMBER OF MEMBERS OF HOUSE OF REPRESENTATIVES— Representation Act 1905. |
| 47 | DISPUTED ELECTIONS AND QUALIFICATIONS— Commonwealth Electoral Acts 1902-1906. Disputed Elections and Qualifications Act 1907. |
| 48 | ALLOWANCES TO MEMBERS— <i>Parliamentary Allowances Act 1902.*</i> Parliamentary Allowances Act 1907. |
| 49 | PRIVILEGES OF PARLIAMENT— Parliamentary Papers Act 1908. |
| | GENERAL LEGISLATION. |
| 51—(i.) | TRADE AND COMMERCE—EXTERNAL AND INTERSTATE— Sea Carriage of Goods Act 1904 [Bills of Lading]. Secret Commissions Act 1905. Commerce (Trade Descriptions) Act 1905 [<i>Merchandise Marks</i>]. Australian Industries Preservation Acts 1906-1907 [<i>Trusts and Dumping</i>]. |
| (ii.) | TAXATION— <i>Machinery Acts—</i> Customs Act 1901. Beer Excise Act 1901. Distillation Act 1901. Excise Act 1901. Spirits Act 1906. Excise Procedure Act 1907. <i>Tariff Acts—</i> Excise Tariff 1902; amended by Sugar Rebate Abolition Act 1903, Excise Tariff 1905, Excise Tariff (Amendment) 1906, and Excise Tariff 1908. Excise Tariff 1906 [<i>Agricultural Machinery</i>]. Excise Tariff 1906 [<i>Spirits</i>]. Excise Tariff 1908; amended by Excise Tariff (Starch) 1908. <i>Customs Tariff 1902.*</i> <i>Customs Tariff 1906 [Agricultural Machinery].*</i> Customs Tariff (South African Preference) 1906; amended by Customs Tariff 1908 (s. 9). Customs Tariff 1908; amended by Customs Tariff Amendment 1908. |

1. This Table has been specially prepared by the Secretary of the Attorney-General's Department, Robert Randolph Garran, Esquire, M.A., C.M.G., Barrister-at-Law, etc.

* Acts whose short titles are printed in italics with a * have been repealed.

| Section of Constitution. | Short Title of Commonwealth Act.* |
|--------------------------|---|
| (iii.) | BOUNTIES ON PRODUCTION OR EXPORT— Sugar Bounty Act 1903. Sugar Bounty Act 1906. Bounties Act 1907. |
| (v.) | POSTAL, TELEGRAPHIC, AND TELEPHONIC SERVICES— Post and Telegraph Act 1901. Wireless Telegraphy Act 1905. Post and Telegraph Rates Act 1902. Tasmanian Cable Rates Act 1906. |
| (vi.) | NAVAL AND MILITARY DEFENCE— Naval Agreement Act 1903. Defence Acts 1903-1904. |
| (viii.) | ASTRONOMICAL AND METEOROLOGICAL OBSERVATIONS— Meteorology Act 1906. |
| (ix.) | QUARANTINE— Quarantine Act 1908. |
| (xi.) | CENSUS AND STATISTICS— Census and Statistics Act 1905. |
| (xiv.) | INSURANCE— Life Assurance Companies Act 1905. |
| (xviii.) | COPYRIGHT, PATENTS, DESIGNS, AND TRADE MARKS— Patents Act 1903. Patents Act 1906. Trade Marks Act 1905. Copyright Act 1905. Designs Act 1906. |
| (xix.) | NATURALIZATION AND ALIENS— Naturalization Act 1903. |
| (xx.) | CORPORATIONS—FOREIGN, TRADING, AND FINANCIAL— Australian Industries Preservation Act 1906. |
| (xxiii.) | INVALID AND OLD-AGE PENSIONS— Invalid and Old-age Pensions Act 1908. |
| (xxiv.) | SERVICE AND EXECUTION THROUGHOUT COMMONWEALTH OF PRO- CESS AND JUDGMENTS OF STATE COURTS— Service and Execution of Process Acts 1901-1905. |
| (xxv.) | RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901. |
| (xxvi.) | PEOPLE OF ANY RACE, OTHER THAN ABORIGINAL—SPECIAL LAWS— Pacific Island Labourers Act 1901-1906. Commonwealth Franchise Act 1902 (s. 4). Naturalization Act 1903 (s. 5). |
| (xxvii.) | IMMIGRATION AND EMIGRATION— Immigration Restriction Acts 1901-1905. Pacific Island Labourers Act 1901-1906. Contract Immigrants Act 1905. |
| (xxix.) | EXTERNAL AFFAIRS— Extradition Act 1903. |
| (xxx.) | RELATIONS WITH PACIFIC ISLANDS— Pacific Island Labourers Act 1901-1906. |
| (xxxi.) | ACQUISITION OF PROPERTY FOR PUBLIC PURPOSES— <i>Property for Public Purposes Acquisition Act 1901.*</i> Seat of Government Act 1904. Lands Acquisition Act 1906. |

* Acts whose short titles are printed in italics with a * have been repealed.

| Section of Constitution. | Short Title of Commonwealth Act.* |
|--------------------------|--|
| (xxxii.) | CONTROL OF RAILWAYS FOR DEFENCE PURPOSES— Defence Act 1903 (ss. 64-66, 80, 120). |
| (xxxv.) | CONCILIATION AND ARBITRATION FOR THE PREVENTION AND SETTLEMENT OF INDUSTRIAL DISPUTES EXTENDING BEYOND THE LIMITS OF ANY ONE STATE— Commonwealth Conciliation and Arbitration Act 1904. |
| (xxxix.) | MATTERS INCIDENTAL TO THE EXECUTION OF POWERS— Acts Interpretation Act 1901. Acts Interpretation Act 1904. Amendments Incorporation Act 1905. Rules Publication Act 1903. Commonwealth Public Service Act 1902, <i>amended by Commonwealth Public Service Amendment Act 1903.</i> Jury Exemption Act 1905. Royal Commissions Act 1902. Evidence Act 1905. Commonwealth Salaries Act 1907. |
| EXECUTIVE GOVERNMENT. | |
| 67 | APPOINTMENT AND REMOVAL OF OFFICERS— Commonwealth Public Service Act 1902, <i>amended by Commonwealth Public Service Amendment Act 1903</i> |
| THE JUDICATURE. | |
| '71—80 | CONSTITUTION AND PROCEDURE OF THE HIGH COURT— Judiciary Act 1903-1907. High Court Procedure Act 1903, <i>amended by High Court Procedure Amendment Act 1903.</i> |
| 73 | APPELLATE JURISDICTION OF THE HIGH COURT— Judiciary Act 1903-1907. Papua Act 1905 (s. 43). Copyright Act 1905 (s. 73). Designs Act 1906 (s. 39). |
| 76 | (i.) ORIGINAL JURISDICTION OF HIGH COURT— <i>(1) In matters arising under the Constitution or involving its interpretation</i> Judiciary Act 1903 (s. 30). <i>(2) In matters arising under Laws made by the Parliament—</i> Customs Act 1901 (ss. 221, 227, 245). Excise Act 1901 (ss. 6, 109, 134). Post and Telegraph Act 1901 (ss. 29, 43). Commonwealth Electoral Act 1902 (s. 193). Defence Act 1903 (s. 91). Patents Act 1903 (ss. 47, 58, 67, 84-87, 111). Commonwealth Conciliation and Arbitration Act 1904 (s. 31). Trade Marks Act 1905 (ss. 4, 34, 35, 44, 45, 70-72, 95, etc.). Australian Industries Preservation Act 1906 (ss. 10, 11, 13, 21, 22, 26). Referendum (Constitution Alteration) Act 1906 (ss. 27, 31). Lands Acquisition Act 1906 (ss. 10, 11, 24, 36-39, 45, 46, 50, 54, 56, 59). |
| 77—(ii.) | EXCLUDING JURISDICTION OF STATE COURTS— Judiciary Act 1903-1907 (ss. 38, 38A, 39, 57, 54). |
| (iii.) | INVESTING STATE COURTS WITH FEDERAL JURISDICTION— Judiciary Act 1903 (ss. 17, 39, 68). Customs Act 1901 (ss. 221, 227, 245). Excise Act 1901 (ss. 6, 109, 134). Post and Telegraph Act 1901 (ss. 29, 43). Commonwealth Electoral Act 1902 (s. 193). Defence Act 1903 (s. 91). |

* Acts whose short titles are printed in italics with a * have been repealed.

| Section of Constitution. | Short Title of Commonwealth Act.* |
|--------------------------|---|
| | Patents Act 1903 (ss. 30, 47, 58, 67, 75-77, 84-87, 111). Trade Marks Act 1905 (ss. 34, 35, 44, 45). Copyright Act 1905 (s. 73). Designs Act 1906 (s. 39). |
| 78 | RIGHT TO PROCEED AGAINST COMMONWEALTH OR STATE— Judiciary Act 1903 (ss. 53-67). |
| | FINANCE. |
| 93 | PAYMENT TO STATES—TRANSITION PERIOD— Surplus Revenue Act 1908. |
| 94 | DISTRIBUTION OF SURPLUS— Surplus Revenue Act 1908. |
| | THE STATES. |
| 118 | FAITH AND CREDIT TO STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901. |
| 119 | PROTECTION OF STATES FROM INVASION AND VIOLENCE— Defence Act 1903 (s. 51). |
| | TERRITORIES. |
| 122 | GOVERNMENT OF TERRITORIES— Papua Act 1905. |
| | MISCELLANEOUS. |
| 125 | SEAT OF GOVERNMENT— Seat of Government Act 1904. |
| 128 | ALTERATION OF CONSTITUTION— Referendum (Constitution Alteration) Act 1906. Constitution Alteration (Senate Elections) Act 1906. |

* Acts whose short titles are printed in italics with a * have been repealed.

SECTION III.

PHYSIOGRAPHY.

§ 1. General Description of Australia.

1. **Geographical Position.**—The Australian Commonwealth includes Australia proper lying in the Southern Hemisphere, an island continent, and Tasmania, in all an area of about 2,974,581 square miles, the mainland alone containing about 2,948,366 square miles. Bounded on the west and east by the Indian and Pacific Oceans respectively, it lies between longitudes 113° 9' E. and 153° 39' E., while its northern and southern limits are the parallels of latitude 10° 41' S. and 39° 8' S., or including Tasmania, 43° 39' S. On its north are the Timor and Arafura Seas and Torres Strait, on its south the Southern Ocean and Bass Strait.¹

(i.) *Tropical and Temperate Regions.* Of the total area of Australia the lesser portion lies within the tropics. Assuming, as is usual, that the latitude of the Tropic of Capricorn is 23° 30' S.², the areas within the tropical and temperate zones are approximately as follows:—

AREAS OF TROPICAL AND TEMPERATE REGIONS OF STATES WITHIN TROPICS.

| | Queensland. | Northern Territory. | Western Australia. | Total. |
|--|-------------|---------------------|--------------------|------------|
| | Sq. miles. | Sq. miles. | Sq. miles. | Sq. miles. |
| Within Tropical Zone | 359,000 | 426,320 | 364,000 | 1,149,320 |
| Within Temperate Zone | 311,500 | 97,300 | 611,920 | 1,020,720 |
| Ratio of Tropical part to whole State ... | 0.535 | 0.814 | 0.373 | 0.530 |
| Ratio of Temperate part to whole State ... | 0.465 | 0.186 | 0.627 | 0.470 |

Thus the tropical part is roughly about one half (0.530) of the three territories mentioned above, or about five-thirteenths of the whole Commonwealth (0.386). See hereafter Meteorology 1.

2. **Area of Australia compared with that of other Countries.**—That the area of Australia is greater than that of the United States of America, that it is four-fifths of that of Canada, that it is more than one-fourth of the area of the whole of the British Empire, that it is nearly three-fourths of the whole area of Europe; that it is about 25 times as large as any one of the following, viz., the United Kingdom, Hungary, Norway, Italy, the Transvaal, and Ecuador, are facts which are not always adequately realised. It is this great size, taken together with the fact of the limited population, that gives to the problems of Australian development their unique character, and its clear comprehension is essential in any attempt to understand those problems.

1. The extreme points are "Steep Point" on the west, "Cape Byron" on the east, "Cape York" on the north, "Wilson's Promontory" on the south, or, if Tasmania be included, "South East Cape." The limits, according to the 1903-4 edition of "A Statistical Account of Australia and New Zealand," p. 2; and, according to Volume XXV. of the "Encyclopedia Britannica," p. 787; are respectively 113° 5' E., 153° 16' E., 10° 39' S., and 39° 11½' S., but these figures are obviously defective.

2. Its correct value for 1908.0 is 23° 27' 4".5.

The relative magnitudes may be appreciated by a reference to the following table, which shows how large Australia is compared with the countries referred to, or *vice versa*. Thus, to take line 1, we see that Europe is about $1\frac{1}{4}$ times (1.29776) as large as Australia, or that Australia is about three-quarters (more accurately 0.78) of the area of Europe.

SIZE OF AUSTRALIA
IN COMPARISON WITH THAT OF OTHER COUNTRIES.

| Commonwealth of Australia | ... | 2,974,581 square miles. | |
|---|------------|---|---|
| Country. | Area. | Australian Commonw'lth in comparison with— | In com- parison with Australian C'wealth. |
| Continents— | sq. miles. | | |
| Europe | 3,860,303 | 0.78 | 1.29776 |
| Asia | 16,959,481 | 0.18 | 5.70147 |
| Africa | 11,405,803 | 0.26 | 3.83442 |
| North and Central America and West Indies | 8,549,509 | 0.35 | 2.87419 |
| South America | 7,310,914 | 0.41 | 2.46788 |
| Australasia and Polynesia | 3,455,399 | 0.86 | 1.16164 |
| Total, exclusive of Arctic and Antarctic Conts. | 51,571,409 | 0.06 | 17.33736 |
| Europe— | | | |
| Russia (inclusive of Poland, Ciscaucasia & Finland) | 2,122,527 | 1.40 | 0.71355 |
| Austria-Hungary (incl. of Bosnia & Herzegovina) | 261,035 | 11.39 | 0.08776 |
| Germany | 208,780 | 14.25 | 0.07011 |
| France | 207,054 | 14.37 | 0.06969 |
| Spain | 194,770 | 15.27 | 0.06548 |
| Sweden | 172,876 | 17.21 | 0.05812 |
| Norway | 124,130 | 23.96 | 0.04173 |
| United Kingdom | 121,390 | 24.50 | 0.04081 |
| Italy | 110,659 | 26.88 | 0.03720 |
| Turkey (inclusive of Bulgaria and Crete) | 106,830 | 27.85 | 0.03591 |
| Denmark (inclusive of Iceland) | 55,348 | 53.73 | 0.01861 |
| Rumania | 50,720 | 58.65 | 0.01705 |
| Portugal | 35,490 | 83.82 | 0.01193 |
| Greece | 25,014 | 118.91 | 0.00841 |
| Servia | 18,650 | 159.49 | 0.00627 |
| Switzerland | 15,976 | 186.22 | 0.00537 |
| Netherlands | 12,648 | 235.29 | 0.00425 |
| Belgium | 11,373 | 261.78 | 0.00382 |
| Montenegro | 3,630 | 819.67 | 0.00122 |
| Luxemburg | 998 | 2941.18 | 0.00034 |
| Andorra | 175 | 16997.61 | 0.00006 |
| Malta | 117 | 25423.76 | 0.00004 |
| Liechtenstein | 65 | 45793.55 | 0.00002 |
| San Marino | 38 | 78278.45 | 0.00001 |
| Monaco | 8 | 371822.63 | ... |
| Gibraltar | 2 | 1487290.50 | ... |
| Total, Europe | 3,860,303 | 0.78 | 1.29776 |
| Asia— | | | |
| Russia (inclusive of Transcaucasia, Siberia, Steppes, Transcaucasia, Turkestan and inland waters) | 6,525,130 | 0.45 | 2.19364 |
| China and Dependencies | 4,277,170 | 0.70 | 1.43791 |
| British India | 1,087,124 | 2.74 | 0.36547 |
| Independent Arabia | 966,700 | 3.08 | 0.32499 |
| Turkey (including Samos) | 693,790 | 4.29 | 0.23324 |
| Feudatory Indian States | 679,393 | 4.38 | 0.22840 |
| Persia | 628,000 | 4.74 | 0.21112 |

| Country. | Area. | Australian Commonwealth in comparison with— | In com- parison with Australian C'wealth. |
|---|------------|--|---|
| ASIA (continued)— | | | |
| Dutch East Indies | 584,611 | 5.09 | 0.19654 |
| Afghanistan | 250,000 | 11.90 | 0.08405 |
| Siam | 212,200 | 14.02 | 0.07134 |
| Japan (inclusive of Formosa, Pescadores, and Southern Sakhalin) | 190,534 | 15.61 | 0.06405 |
| Philippine Islands (inclusive of Sulu Archipelago) | 127,853 | 23.27 | 0.04298 |
| Laos | 98,400 | 30.23 | 0.03308 |
| Omán | 82,000 | 36.27 | 0.02757 |
| Bokhara | 80,000 | 37.19 | 0.02689 |
| British Borneo and Sarawak | 73,100 | 40.70 | 0.02457 |
| Korea | 71,000 | 41.89 | 0.02387 |
| Nepál | 54,000 | 55.10 | 0.01815 |
| Annam | 52,100 | 57.08 | 0.01752 |
| Tonking | 46,000 | 64.68 | 0.01546 |
| Cambodia | 37,400 | 79.55 | 0.01257 |
| Federated Malay States | 26,380 | 112.74 | 0.00887 |
| Ceylon | 25,330 | 117.37 | 0.00852 |
| Khiva | 22,320 | 133.33 | 0.00750 |
| Cochin China... .. | 20,000 | 148.81 | 0.00672 |
| Bhután | 16,800 | 176.99 | 0.00565 |
| Aden and Dependencies | 9,080 | 327.87 | 0.00305 |
| French Siam | 7,800 | 381.68 | 0.00262 |
| Timor, etc. | 7,330 | 406.50 | 0.00246 |
| Cyprus | 3,580 | 833.33 | 0.00120 |
| Goa, Damaõ, and Diu | 1,638 | 1818.18 | 0.00055 |
| Straits Settlements | 1,600 | 1851.85 | 0.00054 |
| Hong Kong and Dependencies | 390 | 7692.31 | 0.00013 |
| Wei-hai-wai | 280 | 10623.50 | 0.00009 |
| Kiauchau | 200 | 14872.91 | 0.00007 |
| French India (Pondicherry, etc.) | 196 | 15176.43 | 0.00007 |
| Labuan | 30 | 99152.70 | 0.00001 |
| Italian Concession, Tientsin | 18 | 165254.50 | 0.00001 |
| Macao, etc. | 4 | 743643.25 | ... |
| Total, Asia | 16,959,481 | 0.18 | 5.70147 |
| Africa— | | | |
| French Sahara | 1,944,000 | 1.53 | 0.65354 |
| Turkey (inclusive of Egypt and Soudan) | 1,748,900 | 1.70 | 0.58795 |
| Congo Independent State | 900,000 | 3.31 | 0.30256 |
| French Congo | 850,000 | 3.50 | 0.28575 |
| Angola | 484,800 | 6.14 | 0.16298 |
| Rhodesia | 435,000 | 6.83 | 0.14633 |
| German East Africa | 384,180 | 7.74 | 0.12915 |
| Senegambia and Niger | 370,000 | 8.04 | 0.12439 |
| Algeria | 343,500 | 8.66 | 0.11548 |
| German South-west Africa | 322,450 | 9.23 | 0.10840 |
| Portuguese East Africa | 293,400 | 10.14 | 0.09864 |
| Cape Colony | 276,990 | 10.74 | 0.09312 |
| Bechuanaland Protectorate | 275,000 | 10.82 | 0.09245 |
| Northern Nigeria Protectorate | 256,400 | 11.60 | 0.08620 |
| Madagascar and adjacent Islands | 228,000 | 13.05 | 0.07665 |
| Uganda Protectorate | 223,500 | 13.31 | 0.07514 |
| Morocco | 219,000 | 13.58 | 0.07362 |
| Abyssinia | 200,000 | 14.87 | 0.06724 |
| Kamerun | 191,130 | 15.56 | 0.06425 |
| British East Africa Protectorate | 175,590 | 16.94 | 0.05903 |
| Ivory Coast | 120,000 | 24.79 | 0.04034 |
| Gold Coast Protectorate | 119,260 | 24.94 | 0.04009 |

| Country. | Area. | Australian Commonwealth in comparison with— | In com- parison with Australian C'wealth. |
|---|-------------------|--|---|
| AFRICA (continued)— | | | |
| Transvaal | 117,730 | 25.27 | 0.03958 |
| Italian Somaliland | 100,000 | 29.74 | 0.03362 |
| French Guinea | 95,000 | 31.31 | 0.03194 |
| Eritrea | 88,500 | 33.61 | 0.02975 |
| Southern Nigeria and Protectorate | 77,260 | 38.51 | 0.02597 |
| Rio de Oro, etc. | 70,000 | 42.50 | 0.02353 |
| British Somaliland | 68,000 | 43.74 | 0.02286 |
| Dahomey | 65,000 | 45.77 | 0.02185 |
| Tunis | 64,600 | 46.04 | 0.02172 |
| Orange River Colony | 50,390 | 59.03 | 0.01694 |
| Liberia | 43,000 | 69.16 | 0.01446 |
| Nyasaland Protectorate | 40,980 | 72.57 | 0.01378 |
| Natal | 35,370 | 84.10 | 0.01189 |
| Togoland | 33,700 | 88.26 | 0.01133 |
| Sierra Leone and Protectorate | 30,000 | 99.11 | 0.01009 |
| Portuguese Guinea | 13,940 | 213.22 | 0.00469 |
| French Somali Coast, etc. | 12,000 | 248.14 | 0.00403 |
| Basutoland | 10,290 | 289.02 | 0.00346 |
| Rio Muni, etc. | 9,800 | 303.95 | 0.00329 |
| French Senegal | 9,070 | 327.87 | 0.00305 |
| Gambia Protectorate | 3,620 | 819.67 | 0.00122 |
| Cape Verde Islands | 1,480 | 2000.00 | 0.00050 |
| Zanzibar | 1,020 | 2941.18 | 0.00034 |
| Réunion | 970 | 3030.30 | 0.00033 |
| Mauritius and Dependencies | 840 | 3571.43 | 0.00028 |
| Fernando Po, etc. | 780 | 3846.15 | 0.00026 |
| Comoro Islands | 620 | 4761.91 | 0.00021 |
| St. Thomas and Prince Islands | 360 | 8262.73 | 0.00012 |
| Seychelles | 150 | 19330.54 | 0.00005 |
| Mayotte, etc. | 140 | 21247.01 | 0.00005 |
| St. Helena | 46 | 64664.80 | 0.00002 |
| Ascension | 34 | 87487.68 | 0.00001 |
| Spanish North and West Africa | 13 | 228813.92 | ... |
| Total, Africa | 11,405,803 | 0.26 | 3.83452 |
| North and Central America and West Indies— | | | |
| Canada | 3,745,570 | 0.79 | 1.25919 |
| United States | 2,970,230 | 1.00 | 0.99854 |
| Mexico | 767,005 | 3.88 | 0.25785 |
| Alaska | 590,884 | 5.03 | 0.19864 |
| Newfoundland and Labrador | 162,730 | 18.28 | 0.05471 |
| Nicaragua | 49,200 | 60.46 | 0.01654 |
| Guatemala | 48,290 | 61.61 | 0.01623 |
| Greenland | 46,740 | 63.65 | 0.01571 |
| Honduras | 46,250 | 64.31 | 0.01555 |
| Cuba | 44,000 | 67.61 | 0.01479 |
| Costa Rica | 18,400 | 161.55 | 0.00619 |
| San Domingo | 18,045 | 164.74 | 0.00607 |
| Haiti | 10,204 | 291.55 | 0.00343 |
| British Honduras | 7,560 | 393.70 | 0.00254 |
| Salvador | 7,225 | 411.52 | 0.00243 |
| Bahamas | 4,400 | 675.68 | 0.00148 |
| Jamaica | 4,210 | 704.23 | 0.00142 |
| Porto Rico | 3,435 | 869.57 | 0.00115 |
| Trinidad and Tobago | 1,870 | 1587.30 | 0.00063 |
| Leeward Islands | 700 | 4166.67 | 0.00024 |
| Guadeloupe | 688 | 4323.52 | 0.00023 |
| Windward Islands | 670 | 4439.67 | 0.00023 |

| Country. | Area. | Australian Commonwealth in comparison with— | In comparison with Australian C'wealth. |
|---|-------------------|---|---|
| N. & C. AMERICA & W. INDIES (continued)— | | | |
| Curaçao and Dependencies | 403 | 7381.09 | 0.00014 |
| Martinique | 380 | 7827.84 | 0.00013 |
| Turks and Caicos Islands | 170 | 17497.54 | 0.00006 |
| Danish West Indies | 138 | 21564.94 | 0.00005 |
| St. Pierre and Miquelon | 92 | 32332.40 | 0.00003 |
| Bermudas | 20 | 148729.05 | 0.00001 |
| Total, N. and C. America and W. Indies... | 8,549,509 | 0.35 | 2.87421 |
| South America— | | | |
| Brazil (inclusive of Acré)... | 3,292,991 | 0.90 | 1.10704 |
| Argentine Republic | 1,135,840 | 2.62 | 0.38185 |
| Peru | 695,733 | 4.28 | 0.23389 |
| Bolivia | 605,400 | 4.91 | 0.20352 |
| Colombia | 444,980 | 6.68 | 0.14959 |
| Venezuela | 364,000 | 8.17 | 0.12237 |
| Chile | 307,620 | 9.67 | 0.10342 |
| Ecuador | 116,000 | 25.64 | 0.03900 |
| Paraguay | 98,000 | 30.35 | 0.03295 |
| British Guiana | 90,280 | 32.95 | 0.03035 |
| Uruguay | 72,210 | 41.19 | 0.02428 |
| Dutch Guiana | 46,060 | 64.60 | 0.01548 |
| Panamá | 33,800 | 88.03 | 0.01136 |
| French Guiana | 30,500 | 97.56 | 0.01025 |
| Falkland Islands | 6,500 | 456.62 | 0.00219 |
| South Georgia | 1,000 | 2974.58 | 0.00034 |
| Total, South America | 7,340,914 | 0.41 | 2.46788 |
| Australasia and Polynesia— | | | |
| Commonwealth of Australia | 2,974,581 | 1.00 | 1.00000 |
| Dutch New Guinea | 151,789 | 19.60 | 0.05103 |
| New Zealand and Dependencies | 104,751 | 28.39 | 0.03522 |
| Papua | 90,540 | 32.85 | 0.03044 |
| German New Guinea | 70,000 | 42.50 | 0.02353 |
| Bismarck Archipelago | 20,000 | 148.73 | 0.00672 |
| British Solomon Islands | 8,360 | 355.87 | 0.00281 |
| Fiji | 7,740 | 384.62 | 0.00260 |
| New Caledonia and Dependencies | 7,650 | 389.11 | 0.00257 |
| Hawaii | 6,449 | 460.83 | 0.00217 |
| New Hebrides | 5,000 | 594.92 | 0.00168 |
| German Solomon Islands | 4,200 | 709.22 | 0.00141 |
| French Establishments in Oceania | 1,520 | 1960.78 | 0.00051 |
| German Samoa | 1,000 | 2974.58 | 0.00034 |
| Caroline and Pelew Islands | 560 | 5311.75 | 0.00019 |
| Tonga | 390 | 7627.13 | 0.00013 |
| Marianne Islands | 250 | 11898.32 | 0.00008 |
| Guam | 200 | 14872.91 | 0.00007 |
| Gilbert Islands | 180 | 16525.45 | 0.00006 |
| Marshall Islands | 150 | 19830.54 | 0.00005 |
| Samoa (U.S.A. part) | 79 | 37652.92 | 0.00003 |
| Norfolk Island | 10 | 297458.10 | ... |
| Total, Australasia and Polynesia | 3,455,399 | 0.86 | 1.16164 |
| British Empire... | 11,437,496 | 0.26 | 3.84508 |

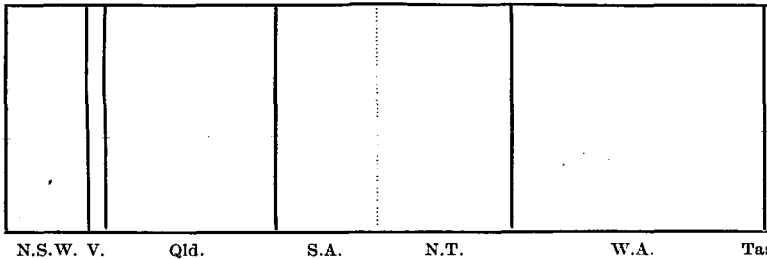
3. **Relative Size of Political Subdivisions.**—As already stated, Australia is divided into six States, the areas of which, in relation to one another and to the total of Australia, are shewn in the following table :—

RELATIVE SIZES OF STATES AND COMMONWEALTH.

| State. | Area. | Ratio which the Area of each State bears to that of other States and Commonwealth. | | | | | | |
|---------------|------------|--|-----------|---------|---------------|----------|----------|---------|
| | | N.S.W. | Victoria. | Q'land. | S.A. (Total.) | W. Aust. | Tas. | C'with. |
| | Sq. miles. | | | | | | | |
| N.S.W. ... | 310,372 | 1.000 | 3.532 | 0.463 | 0.344 | 0.318 | 11.840 | 0.104 |
| Victoria ... | 87,884 | 0.283 | 1.000 | 0.131 | 0.097 | 0.090 | 3.352 | 0.030 |
| Queensland | 670,500 | 2.160 | 7.629 | 1.000 | 0.742 | 0.687 | 25.577 | 0.225 |
| S.A. (total) | 903,690 | 2.912 | 10.283 | 1.348 | 1.000 | 0.926 | 34.472 | 0.304 |
| S.A. (proper) | (380,070) | (1.225) | (4.325) | (0.567) | (0.421) | (0.389) | (14.498) | (0.128) |
| N. Terr. ... | (523,620) | (1.687) | (5.958) | (0.781) | (0.579) | (0.537) | (19.974) | (0.176) |
| W. Aust. ... | 975,920 | 3.144 | 11.105 | 1.455 | 1.080 | 1.000 | 37.228 | 0.328 |
| Tasmania ... | 26,215 | 0.085 | 0.298 | 0.039 | 0.029 | 0.027 | 1.000 | 0.009 |
| Total ... | 2,974,581 | 9.584 | 33.847 | 4.436 | 3.292 | 3.048 | 113.469 | 1.000 |

Thus, looking at the top line, New South Wales is seen to be over three-and-a-half times as large as Victoria (3.532) and less than one-half the size of Queensland (0.463) : or again, looking at the bottom line, the Commonwealth is shewn to be more than nine-and-a-half times as large as New South Wales (9.584), and nearly thirty-four times as large as Victoria (33.847).

These relative magnitudes are shewn in the small diagram below. It may be added that Papua (or British New Guinea), with its area of 90,540 square miles, is 0.030 of the area of the Commonwealth.



4. **Coastal Configuration.**—There are no striking features in the configuration of the coast: the most remarkable indentations are the Gulf of Carpentaria on the north and the Great Australian Bight on the south. The York Peninsula on the extreme north is the only other remarkable feature in the outline. In Year Book No. 1 an enumeration of the features of the coast-line of Australia is given on pp. 60 to 68. This is not here repeated.

(i.) *Coast-line.* The lengths of coast-line, exclusive of minor indentations, both of each State and of the whole continent, are shewn in the following table :—

SQUARE MILES OF TERRITORY PER MILE OF COAST-LINE.

| State. | Coast-line. | Area ÷ Coast-line | State. | Coast-line. | Area ÷ Coast-line. |
|--------------------|-------------|-------------------|----------------------------|-------------|--------------------|
| | Miles. | Sq. miles. | | Miles. | Sq. miles. |
| New South Wales... | 700 | 443 | South Australia ... | 1,540 | 247 |
| Victoria ... | 680 | 129 | Western Australia | 4,350 | 224 |
| Queensland ... | 3,000 | 223 | Continent ¹ ... | 11,310 | 261 |
| Northern Territory | 1,040 | 503 | Tasmania ... | 900 | 29 |

1. Area 2,948,366 square miles.

For the entire Commonwealth this gives a coast-line of 12,210 miles, and an average of 244 square miles for one mile of coast-line. According to Strelbitski, Europe has only 75 square miles of area to each mile of coast-line, and, according to recent figures, England and Wales have only one-third of this, viz., 25 square miles.

(ii.) *Historical Significance of Coastal Names.* It is interesting to trace the voyages of some of the early navigators by the names bestowed by them on various coastal features—thus Dutch names are found on various points of the Western Australian coast, in Nuyts' Archipelago, in the Northern Territory, and in the Gulf of Carpentaria; Captain Cook can be followed along the coasts of New South Wales and Queensland; Flinders' track is easily recognisable from Sydney southwards, as far as Cape Catastrophe, by the numerous Lincolnshire names bestowed by him; and the French navigators of the end of the eighteenth and the beginning of the nineteenth century have left their names all along the Western Australian, South Australian, and Tasmanian coasts.

5. **Hydrology of Australia.**—It is not the function of this Year Book to furnish in any one number a complete geographical account of Australia, but, as previously indicated (Year Book No. 1), it is intended each year to give the most complete available information concerning some special geographical element. In this number an enumeration of the rivers and their approximate lengths is selected.

On the whole, Australia is a country with a limited rainfall. This is immediately evident on studying its river systems, its lakes, and its artesian areas. Its one large river system is that of the Murray and Darling Rivers, of which the former stream is the larger and more important. Many of the rivers of the interior run only after heavy rains. Depending almost entirely on rainfall, a consequence of the absence of high mountains, they drain large areas with very varying relation as between rainfall and flow. Thus it has been estimated that not more than 10 per cent. of the rainfall on the "catchment-area" of the Darling River above Bourke (N.S.W.) discharges itself past that town. The rate of fall is often very slight.

(i.) *Rivers.* The rivers of Australia may be divided into two great classes, those of the coastal plains, with moderate rates of fall, and those of the central plains, with very slight fall. Of the former not many are navigable for any distance from their mouths, and some are difficult of access or inaccessible from the sea on account of bars.

The two longest rivers of the northern part of the eastern coast are the Burdekin, discharging into Upstart Bay, with a catchment area of 53,500 square miles; and the Fitzroy, which reaches the sea at Keppel Bay, and drains about 55,600 square miles. The Hunter is the largest coastal river of New South Wales, draining about 11,000 square miles, before it empties itself at Newcastle. The Murray River, with its great tributary, the Darling, drains a considerable part of Queensland, the major part of New South Wales, and a large part of Victoria. It debouches into the arm of the sea known as Lake Alexandrina, on the eastern side of the South Australian coast. The total length of the Murray is about 1600 miles, 400 being in South Australia, and 1200 constituting the boundary between New South Wales and Victoria.¹

The total length of the Darling-Murray from the source of the Darling to the mouth of the Murray is 2310 miles.¹

The rivers on the north-west coast of Australia (Western Australia) are of considerable size, e.g., the Murchison, Gascoyne, Ashburton, Fortescue, DeGrey, Fitzroy, Drysdale, and Ord. So also are those in the Northern Territory, e.g., Victoria and Daly. The former of these, estimated to drain 90,000 square miles, is said to be navigable by the largest vessels for 50 miles.

The rivers on the Queensland side of the Gulf of Carpentaria are also of considerable size, e.g., Gregory, Leichhardt, Cloncurry, Gilbert, Mitchell, etc.

Owing to the small fall of many of the interior rivers, in wet seasons they may flood hundreds of miles of country, while in dry seasons they form a mere succession of water-

1. These distances were differently given in Year Book No. 1, but have since been measured on large scale maps, with the results as shewn.

holes, or are entirely dry. It is this fact that explains the apparently conflicting reports of the early explorers, one regarding the interior as an inland sea, and another as a desert.

The rivers of Tasmania have short and rapid courses, as the configuration of the territory indicates.

The following table¹ gives a list of the principal rivers in each State together with their approximate lengths, and shews moreover the tributary systems and the lengths of the tributaries:—

A comparison of the different sources of official information as to the lengths of the rivers of the Commonwealth shewed considerable discrepancies, even in important and well-known rivers. These discrepancies were relatively so large that it seemed desirable to re-estimate the lengths by using the largest scale maps available, and following all the bends of the rivers. This was carefully done for all the States by two methods—the mean of the two results, differing very slightly, being taken.

In the case of Queensland, South Australia, and Tasmania, the Lands Departments of those States were good enough to supply the lengths: where these substantially agreed with those computed as indicated, the lengths furnished were adopted. In the very few cases where the discrepancy was large, the result computed in the Bureau was retained in preference.

For purposes of reference, the following table has been prepared shewing the magnitude of the discrepancy:—

COMPARISON OF PUBLISHED LENGTHS OF VARIOUS RIVERS IN THE COMMONWEALTH.

| River. | C'wealth Official Year Book, No. 2. | Statistical Account of Aust. & N.Z., 1903-4. (Coghlan.) | Notes on the Colony of Victoria, 1875. (Hayter.) | Victorian Year Book, 1906-7. (Drake.) |
|---------------------------------|--|---|---|--|
| | Miles. | Miles. | Miles. | Miles. |
| Murray (between Vict. & N.S.W.) | 1,200 | 1,250 | 670 | 980 |
| Murray (total length) ... | 1,600 | 1,719 | ... | 1,300 |
| Clarence | 190 | 240 | ... | ... |
| Macleay | 160 | 200 | ... | ... |
| Manning | 150 | 100 | ... | ... |
| Hunter | 340 | over 200 | ... | ... |
| Hawkesbury | 335 | over 390 | ... | ... |
| Shoalhaven | 220 | 260 | ... | ... |
| Murrumbidgee | 1,050 | 1,350 | ... | ... |
| Lachlan | 850 | 700 | ... | ... |
| Snowy (in New South Wales) ... | 170 | 180 | ... | ... |
| Snowy (in Victoria) | 95 | 120 | 85 | ... |
| Mitta Mitta | 125 | 175 | 90 | 175 |
| Ovens | 110 | 140 | 100 | 140 |
| Goulburn | 280 | 345 | 230 | 345 |
| Campaspe | 100 | 150 | 85 | 150 |
| Loddon | 155 | 225 | 150 | 225 |
| Avoca | 140 | 163 | 130 | 163 |
| Wimmera | 155 | 228 | 135 | 228 |
| Yarra Yarra | 115 | 150 | 90 | 150 |
| Hopkins | 135 | 155 | 110 | 155 |
| Glenelg | 280 | 280 | 205 | 281 |
| Barwon | 75 | ... | 70 | 95 |
| Werribee | 60 | ... | 55 | 70 |
| Saltwater | 65 | ... | 70 | 170 |
| La Trobe | 70 | ... | 90 | 140 |
| Macalister | 110 | ... | 65 | 115 |
| Thompson | 60 | ... | ... | 100 |
| Mitchell | 60 | ... | 60 | 80 |
| Tambo | 90 | ... | 85 | 120 |

1. The information is given in much greater detail than is possible on any but the largest maps, and is, therefore, not generally available. The series of Year Books will thus furnish detailed information of the several geographical features of Australia.

APPROXIMATE LENGTHS OF PRINCIPAL RIVERS OF THE COMMONWEALTH.

R. signifies tributary on right bank, and L. on left bank.

5A. New South Wales.—Starting at the south-western extremity and going easterly, northerly, and westerly.

| MILES | —Murrumbidgee River (continued) | MILES |
|--|---|-------|
| Murray River (total length between New South Wales and Victoria) | L. Goodradigbee River | 60 |
| R. Anabranch of Darling | R. Molonglo River | 90 |
| R. Darling River (joins Murray 150 miles from S.A. border) | R. Umaralla Creek | 90 |
| L. Talyawalka (Anabranch) | R. Kyalite Edward River | 280 |
| R. Warrego River (joins Darling 950 miles from mouth), N.S.W. portion | L. Wakool River | 240 |
| R. Irrara Creek | R. Yarrien Creek | 100 |
| R. Culgoa River (joins Darling 1070 miles from mouth), N.S.W. portion | R. Niemur River | 90 |
| L. Birrie River | L. Merran Creek | 60 |
| L. Bogan River (joins Darling 1075 miles from mouth) | R. Moulamein or Billabong Creek | 400 |
| R. Duck River | R. Yanko Creek | 190 |
| R. Gunningbar Creek | R. Tuppal Creek | 60 |
| L. Bulbodney Creek | R. Swampy Plain River | 40 |
| R. Bokhara River | Snowy River (upper portion called Eucambene River), N.S.W. portion | 170 |
| L. Marra Creek | R. Mumbra Creek | 30 |
| L. Crooked Creek | L. Delegete Creek | 60 |
| L. Macquarie River (joins Darling 1260 miles from mouth) | L. McLaughlin River | 60 |
| R. Castlereagh River | L. Bobundara Creek | 35 |
| L. Nedgera Creek | R. Wullwye Creek | 30 |
| L. Mowlina Creek | Wallagaraugh River | 30 |
| R. Marthagay Creek | Towamba River | 50 |
| R. Merri Merri Creek | Bega or Bemboka River | 55 |
| R. The Big Warrambool River | L. Brogo River | 35 |
| L. Namoi River (joins Darling 1360 miles from mouth) | Tuross River | 70 |
| R. Pian Creek | Clyde River | 80 |
| L. Baradine Creek | Shoalhaven River | 220 |
| L. Dubbo Creek | R. Mongarlowe River | 40 |
| L. Peel River | Hawkesbury River | 335 |
| L. Thalaba Creek | L. Colo River | 60 |
| D. Meei or Gywdir River (joins Darling 1460 miles from mouth) | R. Capertee River | 60 |
| L. Moomin Creek | R. Nepean River | 45 |
| L. Boomi River | R. Nattai River | 35 |
| L. Gil Gil Creek | R. Cox's River | 80 |
| L. Whalan Creek | Hunter River | 340 |
| L. Croppa Creek | L. Williams River | 100 |
| L. Macintyre River (to junction of Dumaresq River) | L. Paterson River | 100 |
| R. Severn River | R. Goulburn River | 140 |
| R. Murrumbidgee River (joins Murray 430 miles from S.A. border) | L. Wybung Creek | 50 |
| R. Lachlan River (joins Murrumbidgee 130 miles from mouth) | L. Kria Creek | 50 |
| R. Marrowie Creek | R. Dart Brook | 40 |
| R. Willandra Billabong Creek | R. Isis River | 70 |
| L. Euglo Creek | Karuah River | 50 |
| R. Goobang Creek | Myall River | 30 |
| R. Mandagery Creek | Wollomba River | 45 |
| R. Boorowa River | Manning River | 150 |
| R. Abercrombie River | L. Dingo Creek | 40 |
| R. Crookwell River | R. Barrington River | 75 |
| L. Old Man Creek | L. Nowendoc River | 65 |
| L. Bullenbung Creek | L. Barnard River | 90 |
| R. Houlaghan's Creek | Hastings River | 110 |
| L. Yaven Yaven Creek | L. Maria River | 30 |
| R. Billabong Creek | R. Ellenborough River | 30 |
| L. Adelong Creek | Macleay River | 160 |
| L. Tumut River | R. Apsley River | 90 |
| | L. Chandler River | 55 |
| | Bellinger River | 60 |
| | Clarence River | 190 |
| | R. Orara River | 80 |
| | R. Nymboida River | 110 |
| | L. Mann River | 90 |
| | R. Timbara River | 95 |
| | Richmond River | 160 |
| | Tweed River | 40 |
| | Narran River (N.S.W. portion) | 100 |
| | Paroo River (N.S.W. portion) | 103 |

5B. Victoria.—Starting at the north-eastern extremity and going westerly, southerly, and easterly.

| | | | |
|---|-------|--------------------------------|-----|
| Murray River (total length between New South Wales and Victoria) | 1,200 | —Mitta Mitta River (continued) | |
| L. Corryong Creek | 45 | R. Gibbo Creek | 20 |
| L. Cudgewa Creek | 50 | L. Wombat Creek | 20 |
| L. Cooyatong Creek | 20 | L. Bundarra Creek | 30 |
| L. Mitta Mitta River | 125 | L. Kiewa River | 70 |
| R. Tallangatta Creek | 30 | R. Big River | 40 |
| L. Little Snowy Creek | 20 | L. Indigo Creek | 25 |
| L. Snowy Creek | 25 | L. Doma Mungi River | 40 |
| | | L. Ovens River | 110 |

| | MILES | | MILES |
|--------------------------|-------|---------------------------------|-------|
| —Ovens River (continued) | | | |
| L. King River | 75 | Shaw River | 25 |
| R. Hodgson's Creek | 20 | Moyne River | 40 |
| L. Whorouly Creek | 25 | Merri River | 30 |
| L. Buffalo River | 50 | L. Drysdale Creek | 20 |
| R. Myrtle Creek | 20 | Hopkins River | 135 |
| L. Buckland River | 30 | L. Mount Emu Creek | 170 |
| L. Tullah Creek | 20 | L. Salt Creek | 25 |
| L. Broken Creek | 125 | R. Gray's Creek | 20 |
| R. Black Creek | 50 | R. Bushy Creek | 20 |
| L. Tsheeca Creek | 20 | Fiery Creek | 75 |
| L. Goulburn River | 280 | Curdie's Creek | 55 |
| R. Broken River | 105 | Gellibrand River | 65 |
| R. Stony Creek | 40 | Thomson's Creek | 20 |
| L. Seven Creeks | 50 | Barwon River | 75 |
| R. Castle Creek | 40 | L. Moorabool River | 35 |
| R. Muddy Creek | 20 | L. Yarra-wee River | 50 |
| R. Hughes Creek | 40 | L. Warrambone Creek | 60 |
| L. Sugarloaf Creek | 20 | Little River | 30 |
| L. Dabyminga Creek | 25 | Werribee River | 60 |
| L. Yea River | 35 | L. Lerderderg River | 25 |
| L. Acheron River | 30 | Yarra Yarra River | 115 |
| R. Delatite River | 55 | R. Saltwater River | 65 |
| L. Big River | 20 | R. Plenty River | 30 |
| R. Howqua River | 40 | L. Dandenong Creek | 30 |
| R. Jamieson River | 25 | R. Watts River | 20 |
| L. Campaspe River | 100 | Bass River | 35 |
| R. Mt. Pleasant Creek | 20 | Powlett River | 30 |
| L. Coliban River | 45 | Bruthen Creek | 20 |
| L. Loddon River | 155 | Merriman's Creek | 55 |
| R. Muirabit River | 25 | La Trobe River | 70 |
| R. Pyramid Creek | 95 | L. Thompson River | 60 |
| L. Bullabul Creek | 25 | L. Macalister River | 110 |
| R. Bradford Creek | 20 | Avon River | 50 |
| L. Bet Bet Creek | 40 | Perry River | 35 |
| Avoca River | 140 | Tom's River | 20 |
| L. Cherry Tree Creek | 20 | Mitchell River | 60 |
| Tyrrell Creek | 85 | L. Wentworth River | 55 |
| Avon River | 75 | L. Dargo River | 75 |
| L. Richardson River | 30 | L. Wonnangatta River | 85 |
| Yarriambiack Creek | 80 | L. Wongungarra River | 35 |
| Wimmera River | 155 | Nicholson River | 45 |
| L. Norton Creek | 30 | Tambo River | 90 |
| L. Mackenzie River | 45 | L. Little River | 20 |
| L. Concongella Creek | 25 | Boggy Creek | 30 |
| Glenelg River | 280 | Snowy River (Victorian portion) | 95 |
| L. Crawford River | 40 | R. Murrindah River | 30 |
| L. Stokes River | 30 | L. Broadbent Creek | 20 |
| L. Wannon River | 150 | L. Mountain Creek | 20 |
| L. Chetwynd River | 25 | L. Jingallala River | 35 |
| L. Mather's Creek | 20 | R. Toonginbooka River | 30 |
| Surry River | 25 | Bemm River | 20 |
| Fitzroy River | 25 | Cann River | 25 |
| L. Darlot's Creek | 25 | Thurra River | 20 |
| Enumerala River | 70 | Genoa River | 50 |

5C. Queensland.—Starting at the north-western extremity and going easterly, northerly, southerly, and westerly.

| | | | |
|----------------------|-----|-----------------------------|-----|
| Settlement Creek | 50 | Albert River (continued) | |
| Lagoon Creek | 100 | R. Landsborough Inlet | 12 |
| Cliffdale Creek | 100 | Leichhardt River | 300 |
| Nicholson River | 130 | R. Gorge Creek | 20 |
| R. Gregory River | 160 | R. Charley Creek | 24 |
| R. Dariel Creek | 16 | L. Paroo Creek | 32 |
| R. Goonooma Creek | 32 | L. Surprise Creek | 28 |
| L. Ixion Creek | 20 | R. Prospector Creek | 29 |
| L. Verdon Creek | 20 | R. Cabbage Tree Creek | 32 |
| R. O'Shanassy River | 80 | L. Coppermine Creek | 26 |
| R. Morstone Creek | 14 | L. St. Paul Creek | 24 |
| L. Youl Creek | 8 | L. Eureka Creek | 16 |
| R. Harris Creek | 30 | L. Mistake Creek | 56 |
| R. Thornton River | 40 | L. Gunpowder Creek | 96 |
| L. Thornton Creek | 34 | L. Myally Creek | 45 |
| L. Magenta Creek | 34 | L. Sandy Creek | 52 |
| R. Seymour River | 45 | R. Mittigoody Creek | 24 |
| R. Victor Creek | 10 | L. Fiery Creek | 86 |
| R. Police Creek | 32 | R. Alexandira River | 110 |
| L. Macadam Creek | 20 | R. Lagoon Creek | 30 |
| R. Tozer Creek | 8 | Disaster Inlet | 25 |
| L. Lawn Hill Creek | 112 | Morning Inlet | 22 |
| L. Elizabeth Creek | 72 | R. M. Creek | 25 |
| Albert River | 40 | L. Punchbowl Creek | 18 |
| L. Beames Creek | 48 | Flinders River | 520 |
| R. Barclay River | 35 | L. White Mountain Creek | 12 |
| R. Twelve Mile Creek | 36 | R. Galah or Porcupine Creek | 60 |
| R. Saltwater Arm | 6 | R. Canterbury Creek | 16 |
| R. Millar Creek | 52 | R. Betts Gorge Creek | 44 |

APPROXIMATE LENGTHS OF PRINCIPAL RIVERS:

| | MILES | | MILES |
|-----------------------------|-------|------------------------------------|-------|
| Flinders River (continued) | | Accident Inlet (continued) | |
| R. Stewart's Creek ... | 30 | R. Crooked Creek ... | 22 |
| L. Walker Creek ... | 64 | L. Fitzmaurice Creek ... | 30 |
| L. Eastern Creek ... | 35 | Smithburne River ... | 40 |
| R. Dutton River ... | 100 | Van Diemen River ... | 25 |
| R. Chasin Creek ... | 22 | Gilbert River ... | 312 |
| R. Pine Tree Creek ... | 28 | R. Styx River ... | 10 |
| L. Station Creek ... | 12 | R. Granite Creek ... | 18 |
| R. Camulla Creek ... | 14 | L. Mica Schist Creek ... | 15 |
| R. Deepwater Creek ... | 10 | L. Conglomerate Creek ... | 12 |
| R. Spinifex Creek ... | 14 | R. Percy River ... | 24 |
| R. Yanko Creek ... | 28 | R. Robertson River ... | 76 |
| R. Tunis Creek ... | 18 | L. Left branch Robertson River ... | 10 |
| R. Alexander Creek ... | 36 | L. Oaky Creek ... | 17 |
| R. Hazlewood Creek ... | 34 | L. Little Robertson River ... | 20 |
| R. Stawell River ... | 150 | L. Agate Creek ... | 24 |
| R. McDougall Creek ... | 26 | R. Townley Creek ... | 12 |
| R. Rokehurst Creek ... | 24 | R. Western Creek ... | 10 |
| L. Poison Creek ... | 16 | R. Crooked Creek ... | 5 |
| R. Loth Creek ... | 25 | L. Langdon River ... | 35 |
| R. Woolgar River ... | 60 | L. B Creek ... | 6 |
| L. Patience Creek ... | 24 | R. Black Gin Creek ... | 12 |
| L. Hampstead Creek ... | 26 | L. Little River ... | 32 |
| L. Cecil Creek ... | 16 | R. Einasleigh River ... | 260 |
| L. Alick Creek ... | 124 | R. Bundock Creek ... | 18 |
| L. Rupert Creek ... | 57 | R. Lee Creek ... | 40 |
| L. Cloncurry River ... | 280 | R. Lagoon Creek ... | 24 |
| L. Maggie Creek ... | 16 | L. Copperfield River ... | 100 |
| R. Farley Creek ... | 12 | R. Crooked Creek ... | 5 |
| R. Gorge Creek ... | 8 | L. Dumbano Creek ... | 10 |
| L. Sandy Creek ... | 16 | R. Middle Creek ... | 12 |
| L. Spring Creek ... | 30 | L. Christmas Hill Creek ... | 12 |
| R. Florence Creek ... | 26 | R. East Creek ... | 15 |
| L. Cattle Creek ... | 18 | L. Oak River ... | 10 |
| L. Malbon River ... | 45 | L. McMillan Creek ... | 9 |
| L. Limestone Creek ... | 10 | R. Junction Creek ... | 45 |
| L. Duck Creek ... | 22 | R. Elizabeth Creek ... | 60 |
| R. Martin Creek ... | 20 | R. Parallel Creek ... | 33 |
| L. Slaty Creek ... | 18 | L. Cattle Creek ... | 24 |
| R. Snake Creek ... | 20 | L. Silent Creek ... | 23 |
| L. Chinaman Creek ... | 16 | L. Etheridge River ... | 96 |
| L. Table Creek ... | 20 | L. Delaney River ... | 25 |
| R. Gipsy Creek ... | 24 | L. Sandy Creek ... | 25 |
| R. Williams River ... | 100 | R. Middle Creek ... | 60 |
| L. Roberts Creek ... | 6 | Vanrook Creek ... | 95 |
| L. Elder Creek ... | 22 | Macaroni Creek ... | 53 |
| L. Canal Creek ... | 21 | Staaten River ... | 170 |
| L. Eliza Creek ... | 14 | R. Cockburn Creek ... | 50 |
| L. Mount Margaret Creek ... | 20 | L. Pandanus Creek ... | 70 |
| R. Eastern Creek ... | 120 | L. Emu Creek ... | 62 |
| L. Sadowa Creek ... | 64 | R. Maramie Creek ... | 48 |
| L. Gilliat River ... | 110 | R. Bloodwood Creek ... | 36 |
| R. Wild Duck Creek ... | 34 | L. Pelican Creek ... | 60 |
| L. McKinlay River ... | 90 | Nassau River ... | 25 |
| L. Dingding Creek ... | 10 | R. Dunbar Creek ... | 12 |
| R. Rangeview Creek ... | 18 | R. Scrutton River ... | 45 |
| L. Boorama Creek ... | 32 | L. Rocky Creek ... | 19 |
| R. Martin Creek ... | 20 | Magnificent Creek ... | 42 |
| L. Nora Creek ... | 46 | Mitchell River ... | 350 |
| L. Holy Joe Creek ... | 44 | R. Big Mitchell Creek ... | 5 |
| L. Fullarton River ... | 80 | R. Little Mitchell Creek ... | 6 |
| L. Dugald River ... | 120 | L. Granite Creek ... | 6 |
| R. Middle Creek ... | 62 | L. Dora Creek ... | 4 |
| R. Coralla River ... | 130 | L. Black Gin Creek ... | 6 |
| L. Cameron River ... | 25 | R. Rifle Creek ... | 30 |
| R. Malakoff Creek ... | 20 | R. Station Creek ... | 6 |
| R. Tommy Creek ... | 38 | R. Mary Creek ... | 7 |
| L. Topsy Creek ... | 12 | R. McLeod River ... | 18 |
| L. Dismal Creek ... | 80 | R. Spencer Creek ... | 8 |
| R. Branch Creek ... | 36 | R. Campbell Creek ... | 8 |
| R. Saxby River ... | 250 | R. Desailly Creek ... | 4 |
| L. Express Creek ... | 56 | L. Lizzie Creek ... | 8 |
| R. Mill Mill Creek ... | 42 | L. Wolstencroft Creek ... | 7 |
| L. Cockatoo Creek ... | 25 | L. Hodgkinson River ... | 54 |
| L. Wondoola Creek ... | 26 | R. Columbia Creek ... | 3 |
| L. Armstrong Creek ... | 32 | R. Explorer Creek ... | 2 |
| Bynoe River ... | 40 | L. Spring Creek ... | 2 |
| Norman River ... | 260 | R. Caledonia Creek ... | 9 |
| L. Spear Creek ... | 86 | R. Deep Creek ... | 2 |
| R. Clara River ... | 145 | L. Little River ... | 8 |
| R. Yappar River ... | 135 | L. Mt. Mulligan Creek ... | 5 |
| L. Brown Creek ... | 58 | R. Eastern Hodgkinson ... | 15 |
| R. Clarina Creek ... | 57 | L. Little Watson Creek ... | 14 |
| R. Macrossan River ... | 25 | R. St. George River ... | 60 |
| R. Carron River ... | 100 | R. Right-hand branch St. George R. | 18 |
| R. Walker Creek ... | 87 | L. Limestone Creek ... | 12 |
| Brannigan Creek ... | 20 | L. Dry Creek ... | 20 |
| Accident Inlet ... | 10 | R. Little Mitchell River ... | 30 |

APPROXIMATE LENGTHS OF PRINCIPAL RIVERS.

| | MILES | | MILES |
|----------------------------------|-------|--------------------------------|-------|
| Mitchell River (continued) | | Bizant River | 16 |
| R. Sandy Creek | 16 | Normanby River | 162 |
| R. Rocky Creek | 8 | L. Lakes Creek | 16 |
| L. Walsh River | 180 | R. East Normanby River | 48 |
| L. Emu Creek | 40 | L. Laura River | 70 |
| L. Brown Creek | 54 | L. Mosman River | 30 |
| L. Lynd River | 170 | L. Little Laura River | 36 |
| L. Mero Creek | 15 | Normanby River (continued) | |
| L. Fossil Brook Creek | 25 | L. Kennedy River | 70 |
| R. Pinnacle Creek | 26 | R. Jack River | 16 |
| R. Tate River | 80 | Marrett River | 12 |
| R. California Creek | 20 | Jeannie River | 36 |
| L. Rocky Tate River | 30 | Starcke River | 20 |
| R. Palmer River | 190 | McIvor River | 32 |
| R. Little Palmer River | 13 | L. Morgan River | 12 |
| L. Right-hand branch Palmer R. | 15 | Endeavour River | 30 |
| R. Left-hand branch Palmer River | 32 | L. North branch | 11 |
| L. Sandy Creek | 34 | L. Right-hand branch | 9 |
| R. King Creek | 24 | Annun River | 30 |
| R. Alice River | 70 | R. Trevehan Creek | 10 |
| Coleman River | 140 | Esk River | 7 |
| Edward River | 60 | Bloomfield River | 30 |
| Holroyd River | 16 | Daintree River | 26 |
| Lukin River | 140 | R. Stewart Creek | 6 |
| Kendal River | 70 | Saltwater Creek | 12 |
| Archer River | 170 | Mossman River | 12 |
| L. Croll Creek | 20 | R. South Mossman River | 8 |
| L. Bourne Creek | 18 | Mowbray River | 10 |
| R. Irvine Creek | 16 | Barron River | 70 |
| R. Geikie Creek | 32 | L. Mazzlin Creek | 11 |
| R. Picaninny Creek | 36 | R. Severin Creek | 10 |
| L. Coen River | 65 | L. Rocky Creek | 14 |
| L. Running Creek | 20 | R. Tinaroo Creek | 13 |
| Watson River | 65 | L. Granite Creek | 20 |
| R. Lagoon Creek | 16 | R. Clohesy River | 14 |
| R. Say Creek | 18 | L. Flaggy Creek | 15 |
| L. Gumbol Creek | 25 | Trinity Inlet | 5 |
| L. Kokialah Creek | 15 | Russell River | 38 |
| Embley River | 28 | L. Babinda Creek | 11 |
| R. Kurraccoo Creek | 18 | L. Mulgrave River | 44 |
| R. Brownstone Creek | 6 | L. Little Mulgrave River | 8 |
| R. Spring Creek | 7 | R. Tringilburra Creek | 16 |
| L. Hey River | 12 | Johnstone River (North branch) | 60 |
| Mission River | 24 | Johnstone River (South branch) | 30 |
| R. Myall Creek | 30 | Moresby River | 10 |
| Ponnefather Creek | 10 | Liverpool Creek | 20 |
| Batavia River | 160 | Maria Creek | 8 |
| R. Sefton Creek | 20 | Hull River | 10 |
| L. Clayhole Creek | 16 | Tully River | 65 |
| L. Capsize Creek | 28 | R. Davidson River | 8 |
| R. Schramm Creek | 10 | L. Banyan Creek | 8 |
| L. Lydia Creek | 24 | Murray River | 30 |
| L. Cox Creek | 46 | Dallachy Creek | 9 |
| R. Nimrod Creek | 27 | Wreck Creek | 10 |
| Ducie River | 30 | Kennedy Creek | 14 |
| R. Palm Creek | 24 | R. Meunga Creek | 6 |
| R. North Alice Creek | 44 | R. Attie Creek | 5 |
| Dulhunty River | 52 | Five Mile Creek | 5 |
| Skardon River | 36 | Damper Creek | 4 |
| R. McDonnell Creek | 6 | Herbert River | 150 |
| Jardine River | 80 | R. Wild River | 30 |
| L. McHenry River | 26 | L. Millstream Creek | 28 |
| Cowal Creek | 12 | L. Blunder Creek | 42 |
| Kennedy River | 20 | R. Rudd Creek | 18 |
| Escape River | 10 | L. Blencoe Creek | 6 |
| Henderson River | 10 | R. Garrawalt Creek | 16 |
| Macmillan River | 44 | R. Stone River | 28 |
| Pascoe River | 55 | Palm Swamp | 21 |
| Lockhart River | 28 | Trebonne Creek | 26 |
| L. Greyhound Creek | 10 | Saltwater Creek | 10 |
| Nesbit Creek | 12 | Rollingstone Creek | 7 |
| R. Leo Creek | 9 | Leichhardt Creek | 9 |
| Chester River | 8 | Alice River | 20 |
| Rocky Creek | 16 | Black River | 17 |
| Massy Creek | 12 | Bohle River | 15 |
| Dinner River | 20 | Ross River | 30 |
| L. Breakfast Creek | 20 | Alligator Creek | 12 |
| Stewart River | 45 | Crocodile Creek | 7 |
| L. Station Creek | 7 | Houghton River | 55 |
| L. Little Stewart Creek | 6 | L. Reid River | 20 |
| Balclutha River | 28 | L. Serpentine Creek | 18 |
| Annie River | 40 | Barratta Creek | 48 |
| North Kennedy River | 76 | Plantation Creek | 19 |
| R. Therrimburi Creek | 10 | Burdekin River | 440 |
| L. Station Creek | 23 | R. Anthill Creek | 24 |
| L. Sandy Creek | 14 | R. Reedy Creek | 10 |
| L. Morehead River | 65 | R. Dry Creek | 26 |
| R. Hann River | 52 | R. Gray Creek | 40 |
| R. Wangow Creek | 20 | | |

APPROXIMATE LENGTHS OF PRINCIPAL RIVERS.

| | MILES |
|----------------------------|-------|
| Burdekin River (continued) | |
| R. Clarke River | 84 |
| L. Gregory River | 20 |
| R. Yates Creek | 36 |
| L. Broken River | 35 |
| R. Emu Creek | 24 |
| R. Maryvale Creek | 38 |
| L. Douglas Creek | 25 |
| L. Running River | 16 |
| L. Star River | 18 |
| R. Big Star River | 28 |
| L. Little Star River | 24 |
| R. Basalt River | 80 |
| R. Lolworth Creek | 84 |
| L. Keelbottom Creek | 42 |
| R. Dillon Creek | 40 |
| L. Fanning River | 35 |
| R. Broughton River | 24 |
| L. Pandanus Creek | 25 |
| L. Kirk River | 20 |
| R. Suttor River | 190 |
| R. Rockingham Creek | 20 |
| L. Suttor Creek | 44 |
| L. Eaglefield Creek | 50 |
| R. Verbena Creek | 20 |
| L. Logan Creek | 45 |
| L. Belyando River | 205 |
| L. Native Companion Creek | 125 |
| L. Alpha Creek | 80 |
| L. Dunda Creek | 62 |
| L. Carmichael Creek | 48 |
| R. Mistake Creek | 122 |
| L. Bully Creek | 48 |
| L. Cape River | 160 |
| R. Amelia Creek | 42 |
| L. Broadley Creek | 50 |
| L. Campaspie River | 96 |
| R. Blowhard Creek | 33 |
| L. Rollston River | 38 |
| R. Bowen River | 96 |
| R. Broken River | 48 |
| R. Bogie River | 60 |
| R. Kirknie Creek | 10 |
| Wangaratta Creek | 13 |
| Rocky Pond Creek | 14 |
| Molongle Creek | 20 |
| Elliot River | 30 |
| Euri Creek | 30 |
| Don River | 52 |
| Duck Creek | 14 |
| Edenlassie Creek | 17 |
| Gregory River | 16 |
| Proserpine River | 30 |
| O'Connell River | 28 |
| L. Andromache River | 24 |
| Blackrock Creek | 17 |
| Murray Creek | 28 |
| Victor Creek | 7 |
| Seaforth Creek | 6 |
| Pioneer River | 40 |
| L. Cattle Creek | 32 |
| Baker's Creek | 13 |
| Sandy Creek | 28 |
| Alligator Creek | 17 |
| Plane Creek | 15 |
| Marion Creek | 14 |
| Basin Creek | 15 |
| West Hill Creek | 15 |
| Carmila Creek | 16 |
| Cattle Creek | 12 |
| Clairview Creek | 17 |
| St. Lawrence Creek | 22 |
| Waverley Creek | 24 |
| Styx River | 40 |
| L. Montrose Creek | 14 |
| L. Granite Creek | 22 |
| R. Tooloombah Creek | 28 |
| R. Stoodleigh Creek | 14 |
| Herbert Creek | 120 |
| Fitzroy River | 174 |
| R. Dawson River | 312 |
| R. Hutton Creek | 52 |
| R. Eurombah Creek | 72 |
| L. Kinnoul Creek | 16 |
| R. Juandah Creek | 68 |
| L. Palm Tree Creek | 50 |
| R. Cockatoo Creek | 47 |
| R. Cracow Creek | 14 |
| R. Castle Creek | 40 |

| | MILES |
|--------------------------|-------|
| Dawson River (continued) | |
| R. Lonesome Creek | 35 |
| R. Granville Creek | 32 |
| R. Herbert Creek | 24 |
| L. Mackenzie River | 170 |
| R. Comet River | 80 |
| R. Brown River | 50 |
| R. Arcadia Creek | 25 |
| R. Clematis Creek | 45 |
| L. Christmas Creek | 23 |
| L. Consuelo Creek | 42 |
| L. Meteor Creek | 60 |
| R. Planet Creek | 85 |
| R. Humboldt Creek | 38 |
| L. Minerva Creek | 42 |
| R. Sirius Creek | 34 |
| L. Nogoia River | 180 |
| L. Claude River | 48 |
| R. Buckland Creek | 46 |
| L. Balmy Creek | 34 |
| R. Vandyke Creek | 92 |
| R. Separation Creek | 16 |
| L. Anakie Creek | 10 |
| R. Stony Creek | 20 |
| L. Theresa Creek | 130 |
| L. Crinum Creek | 16 |
| R. Burngrove Creek | 30 |
| R. Blackwater Creek | 50 |
| L. Cooroora Creek | 34 |
| L. Roper's Creek | 56 |
| R. Parker Creek | 20 |
| L. Junee Creek | 30 |
| L. Isaacs River | 152 |
| R. Grosvenor Creek | 31 |
| L. North Creek | 33 |
| R. Campbell Creek | 45 |
| L. Develin Creek | 48 |
| R. Rolf Creek | 44 |
| L. Connor's River | 56 |
| R. Murray Creek | 22 |
| L. Collaroy Creek | 20 |
| R. Funnel Creek | 68 |
| L. Melaleuca Creek | 36 |
| R. Gogango Creek | 36 |
| R. Emu Creek | 12 |
| R. Moah Creek | 17 |
| R. Rosewood Creek | 15 |
| L. Glenroy Creek | 11 |
| L. Marlborough Creek | 24 |
| L. Princhester Creek | 18 |
| L. Planted Creek | 15 |
| L. Canoon Creek | 8 |
| L. Alligator Creek | 44 |
| L. Moore's Creek | 6 |
| R. Gavial Creek | 34 |
| L. Nankin Creek | 13 |
| Raglan Creek | 54 |
| Calliope River | 52 |
| L. Alma Creek | 12 |
| R. Running Creek | 10 |
| L. Harper Creek | 12 |
| R. Oaky Creek | 18 |
| L. Larcombe Creek | 21 |
| R. Double Creek | 16 |
| R. Clyde Creek | 14 |
| Auckland Inlet | 3 |
| South Trees Inlet | 12 |
| Boyne River | 60 |
| L. Glassford Creek | 20 |
| L. Ridler Creek | 18 |
| L. Degalgil Creek | 26 |
| R. Norton Creek | 9 |
| R. Eastern Boyne River | 16 |
| L. Futter Creek | 24 |
| R. Iveragh Creek | 14 |
| Round Hill Creek | 6 |
| Baffle Creek | 65 |
| R. Three Mile Creek | 16 |
| R. Banksia Creek | 16 |
| R. Granite Creek | 40 |
| R. Murray Creek | 15 |
| L. Euleilah Creek | 14 |
| R. Bottle Creek | 18 |
| Littabella Creek | 20 |
| Kolan River | 92 |
| R. Gin Gin Creek | 52 |
| L. Yandaran Creek | 13 |
| Burnett River | 250 |
| R. Splinter Creek | 50 |

APPROXIMATE LENGTHS OF PRINCIPAL RIVERS.

| | MILES | | MILES |
|----------------------------------|-------|---|-------|
| Burnett River (continued) | | Brisbane River (continued) | |
| R. Three Moon Creek | 78 | R. Anduramba or Ivory's Creek | 30 |
| R. Rawbelle River | 65 | R. Cressbrook Creek | 36 |
| R. Auburn River | 60 | R. Perseverance Creek | 15 |
| R. Boyne River | 120 | L. Crow's Nest Creek | 8 |
| R. Stuart River | 68 | L. Stanley River | 54 |
| L. Binjour Creek | 14 | L. Neurum Creek | 10 |
| R. Barambah Creek | 130 | R. Sandy Creek | 18 |
| L. Sunday Creek | 34 | R. Kilcoy Creek | 15 |
| R. Degilbo Creek | 20 | R. Sheep Station Creek | 16 |
| L. Perry River | 28 | L. Oaky Creek | 9 |
| L. St. Agnes Creek | 18 | L. Reedy Creek | 14 |
| Elliott River | 28 | R. Esk Creek | 9 |
| Burrum River | 24 | L. Northbrook Creek | 12 |
| L. Cherwell River | 16 | R. Lockyer Creek | 56 |
| L. Isis River | 20 | R. Murphy's Creek | 10 |
| L. Agnes Vale Creek | 16 | L. Alice Creek | 15 |
| L. Oaky Creek | 15 | R. Flagstone Creek | 18 |
| L. Gregory River | 34 | R. Ma Ma Creek | 24 |
| R. Sandy Creek | 32 | R. Tenthill Creek | 24 |
| Strathdees or Bulbi Creek | 7 | L. Blackfellows Creek | 20 |
| Mary River | 165 | R. Laidley Creek | 34 |
| L. Little Yabba Creek | 17 | L. Buaraba Creek | 30 |
| R. Obi Obi Creek | 30 | R. Bremer River | 50 |
| R. Belli Creek | 12 | L. Western Creek | 14 |
| L. Yabba Creek | 52 | R. Franklin Vale Creek | 12 |
| R. Skyring Creek | 10 | R. Warrill Creek | 44 |
| L. Kandanga Creek | 33 | R. Reynolds Creek | 20 |
| R. Traveston Creek | 3 | R. Purga Creek | 22 |
| L. Amamoor Creek | 28 | R. Deebling Creek | 8 |
| R. Six Mile Creek | 16 | R. Bundanba Creek | 15 |
| R. Deep Creek | 10 | R. Six Mile Creek | 6 |
| L. Pie Creek | 12 | R. Woogaroo Creek | 12 |
| L. Glastonbury Creek | 18 | R. Opossum Creek | 6 |
| L. Widgee Creek | 27 | L. Moggill Creek | 12 |
| R. Curra Creek | 15 | R. Oxley Creek | 28 |
| L. Wide Bay Creek | 50 | R. Norman Creek | 6 |
| L. Munna Creek | 53 | L. Breakfast Creek | 10 |
| L. Ooramera Creek | 15 | R. Bulimba Creek | 16 |
| R. Gutchy Creek | 20 | Tingalpa Creek | 12 |
| L. Myrtle Creek | 19 | Hilliard's Creek | 8 |
| L. Graham Creek | 10 | Eprapah Creek | 8 |
| R. Tinana Creek | 68 | Logan River | 96 |
| L. Saltwater Creek | 10 | L. Burnett's Creek | 24 |
| L. Susan River | 14 | R. Palen Creek | 12 |
| Tin Can Inlet | 15 | L. Tamrookum Creek | 8 |
| Noosa River | 30 | R. Christmas Creek | 24 |
| R. Kin Kin Creek | 20 | L. Knapps Creek | 15 |
| R. Cooloothin Creek | 4 | R. Spring Creek | 10 |
| R. Ringtail Creek | 7 | L. Allan's Creek | 20 |
| Maroochy River | 17 | L. Teviot Brook | 55 |
| L. North Maroochy River | 14 | R. Scrubby Creek | 8 |
| L. Yandina Creek | 10 | R. Henderson's Creek | 8 |
| L. Coolum Creek | 5 | R. Albert River | 54 |
| R. Petrie Creek | 14 | R. Cainbale Creek | 15 |
| R. Eudlo Creek | 9 | R. Coburg River | 30 |
| Mountain Creek | 8 | R. Cedar Creek | 12 |
| Mooloolah River | 20 | Pimpama River | 14 |
| Caboolture River | 26 | Coomera River | 35 |
| L. Wararba Creek | 12 | Nerang River | 34 |
| Burpengary Creek | 17 | Mudgeeraba Creek | 20 |
| North Pine River | 30 | Tallebuggera Creek | 15 |
| R. Leacy Creek | 9 | Currumbin Creek | 14 |
| L. Terrors Creek | 7 | Severn River (to Tenterfield Creek) | 48 |
| R. Kobble Creek | 10 | (to Macintyre River) | 20 |
| L. Sideling Creek | 8 | R. Broadwater Creek | 15 |
| R. South Pine River | 20 | L. Quartpot Creek | 14 |
| R. Samford Creek | 6 | L. Bald Rock Creek | 15 |
| L. Cedar Creek | 10 | R. Pike Creek | 65 |
| R. Chinaman Creek | 4 | R. Alpin Creek | 15 |
| Cabbage Tree Creek | 10 | R. Brush Creek | 28 |
| Nundah Creek | 8 | R. Macintyre Brook | 86 |
| Serpentine Creek | 7 | L. Bracker Creek | 30 |
| Brisbane River | 200 | R. Canning Creek | 34 |
| R. West branch of Brisbane River | 18 | L. Catfish Creek | 22 |
| R. Cooyar Creek | 64 | Barwon or Macintyre River (along boundary of State) | 120 |
| L. Yarraman Creek | 22 | R. Callandoon branch | 50 |
| R. Taromeo Creek | 15 | R. Weir River | 200 |
| L. Paradise Creek | 6 | L. Western Creek | 50 |
| L. Avoca Creek | 20 | L. Yarrill Creek | 50 |
| L. Monsildale Creek | 30 | L. Commonor Creek | 76 |
| L. Kangaroo Creek | 12 | R. Warrill Creek | 22 |
| R. Emu Creek | 60 | Little Weir River | 16 |
| R. Pierce's Creek | 10 | Moonie River | 215 |
| L. Bum Bum Creek | 10 | L. Toombilla Creek | 32 |
| R. Salty Waterholes Creek | 12 | R. Parrie Moolan Creek | 25 |
| R. Nukinenda Creek | 10 | R. Wongle Wongle Creek | 28 |
| L. Spring Creek | 10 | R. Farawell Creek | 32 |
| L. Neara Creek | 10 | | |

APPROXIMATE LENGTHS OF PRINCIPAL RIVERS.

| | MILES |
|-------------------------------------|-------|
| Moonie River (continued) | |
| R. Teelba Creek | 48 |
| R. Thombly Creek | 24 |
| Narran River | 32 |
| Bokhara River | 32 |
| Balonne Minor River and Murri Murri | 32 |
| Balonne River | 175 |
| L. Condamine River | 320 |
| R. Emu Creek | 30 |
| R. Swan Creek | 24 |
| L. Rosenthal Creek | 28 |
| L. Sandy Creek | 25 |
| R. Glengallan Creek | 25 |
| R. Dalrymple Creek | 35 |
| R. King's Creek | 45 |
| L. Thane's Creek | 35 |
| L. Canal Creek | 35 |
| L. Spiers Creek | 15 |
| R. North branch Condamine River | 50 |
| R. Oaky Creek | 60 |
| R. Myall Creek | 50 |
| R. Jimbour Creek | 45 |
| L. Wilkie Creek | 40 |
| L. Braemar Creek | 18 |
| R. Cooranga Creek | 40 |
| L. Kogan Creek | 28 |
| R. Jingt Jingt Creek | 50 |
| R. Charley Creek | 46 |
| L. Wambo Creek | 45 |
| L. Wiamilla Creek | 22 |
| L. Undulla Creek | 56 |
| L. Bagot Creek | 12 |
| L. Cobblegum Creek | 20 |
| L. Murilla Creek | 32 |
| R. Dogwood Creek | 120 |
| R. Bottle-tree Creek | 18 |
| R. Wallan Creek | 30 |
| L. Coolumboola Creek | 20 |
| R. Drillham Creek | 30 |
| R. Dulacca Creek | 28 |
| R. Tchanning Creek | 68 |
| R. Yuleba Creek | 82 |
| R. Wallumbilla Creek | 52 |
| L. Grimman Creek | 20 |
| R. Bungil Creek | 92 |
| R. Yalabone Creek | 52 |
| L. Weribone Creek | 10 |
| R. Cogoon Creek | 42 |
| L. Donga Creek | 34 |
| R. Tartulla Creek | 38 |
| R. Maranoa River | 275 |
| R. Western branch | 36 |
| R. Billin Creek | 30 |
| L. Merrivale River | 96 |
| L. Apple-tree Creek | 30 |
| R. Mannandilla Creek | 40 |
| L. Basalt Creek | 18 |
| R. Womalilla Creek | 40 |
| L. Amby Creek | 36 |
| Ballandool River | 40 |
| R. Briarie Creek | 24 |
| Culgoa River (Queensland portion) | 70 |
| R. Wallam Creek | 184 |
| L. Neabul Creek | 36 |
| R. Mungallala Creek | 245 |
| R. Nebine Creek | 176 |
| L. Patterson Creek | 80 |
| R. Widgegoara Creek | 120 |
| Noorama Creek | 115 |
| Thurrulgoonia Creek | 50 |
| Blackfellow Creek | 32 |
| Tuen Creek | 32 |
| Owanganow Creek | 14 |
| Warrego River (Queensland portion) | 365 |
| R. Nive River | 112 |
| R. Ward River | 115 |
| R. Langlo River | 112 |
| L. Angellala River | 136 |
| R. Nemunmulla Creek | 60 |
| Cuttaburra Creek | 64 |
| Paroo River | 228 |
| L. Quilberry Creek | 36 |
| R. Beechal Creek | 70 |
| L. Mirraparoo Creek | 36 |
| R. Yowah Creek | 60 |
| Mirintu Creek | 48 |
| Titheroo Creek | 24 |
| Booka Booka Creek | 32 |
| Bulloo River | 370 |

| | MILES |
|---|-------|
| ulloo River (continued) | |
| L. Blackwater Creek | 42 |
| R. Durella Creek | 32 |
| R. Nickavilla Creek | 36 |
| L. Winbin Creek | 58 |
| R. Coornil Paroo Creek | 52 |
| L. Goora Goora Creek | 28 |
| R. Moble Creek | 60 |
| R. Moolianna Creek | 44 |
| R. Gumbo Creek | 52 |
| R. Macintyre Creek | 30 |
| R. Neerebah Creek | 30 |
| R. Pitteroo Creek | 36 |
| Warry Warry Creek | 50 |
| Cooper's Creek | 370 |
| R. Thomson River | 240 |
| L. Cornish Creek | 44 |
| R. Tower Hill Creek | 38 |
| R. Landsborough Creek | 116 |
| R. Bangall Creek | 64 |
| R. Bradley Creek | 46 |
| L. Aramac Creek | 82 |
| L. Black Gin Creek | 48 |
| L. Wellshot Creek | 24 |
| L. Ernestine Creek | 32 |
| R. Darr River | 100 |
| R. Maneroo Creek | 64 |
| L. Catherine Creek | 64 |
| L. Tocal Creek | 36 |
| R. Acheron Creek | 38 |
| R. Vergemont Creek | 116 |
| R. Warbroccan Creek | 36 |
| R. Carella Creek | 36 |
| L. Bostock Creek | 40 |
| R. Wurungla Creek | 48 |
| L. Barcoo River | 310 |
| R. Birkhead Creek | 40 |
| L. Macfarlane Creek | 36 |
| L. Boree Creek | 44 |
| L. Ravensbourne Creek | 72 |
| R. Douglas Ponds Creek | 56 |
| R. Alice River | 144 |
| L. Jordan Creek | 64 |
| R. Lagoon Creek | 28 |
| L. Patrick Creek | 40 |
| L. Thornleigh Creek | 68 |
| R. Wild Horse Creek | 52 |
| L. Fallundilly Creek | 48 |
| L. Pemberley Creek | 30 |
| L. Minster Creek | 20 |
| L. Powell Creek | 90 |
| L. Wombunderry Channel (or Eastern branch) | 116 |
| L. Tooratchie Creek | 24 |
| L. Wilson River | 190 |
| Brown's Creek | 36 |
| Diamantina River | 468 |
| L. Western River | 84 |
| R. Oondooroo Creek | 28 |
| R. Mills Creek | 72 |
| L. Mistake Creek | 36 |
| L. Lydia Creek | 20 |
| R. Wokingham Creek | 90 |
| L. Cameron Creek | 24 |
| R. Cadell Creek | 72 |
| L. Kell Creek | 36 |
| L. McBride Creek | 40 |
| R. Mackunda Creek | 68 |
| L. Mayne River | 100 |
| L. Binburi Creek | 32 |
| R. North Creek | 44 |
| L. Eden Creek | 32 |
| L. Edkins Creek | 48 |
| L. Farrar's Creek | 200 |
| Eyre Creek | 260 |
| R. Georgina River (including the part in South Australia) | 368 |
| L. Buckley River | 88 |
| L. Templeton River | 100 |
| L. Yaringa Creek | 72 |
| L. Moonah Creek | 88 |
| L. St. Ronans Creek | 50 |
| R. Pituri Creek | 40 |
| L. Burke River | 160 |
| L. Mort River | 52 |
| R. Wills Creek | 92 |
| L. Hamilton River | 160 |
| R. Mulligan River | 192 |

5D. **South Australia.**—Starting at the south-eastern extremity and going westerly and northerly.

| | MILES. | | MILES. |
|---|--------|---------------------------------------|--------|
| Murray River (South Australian portion) | 400 | Hindmarsh River | 15 |
| Onkaparinga River | 60 | Innan River | 17 |
| Stuart River | 17 | Cygnat River | 38 |
| Torrens River | 50 | Willochra River | 110 |
| Little Para Creek | 20 | Pasmore River | 100 |
| Gawler River | 80 | Frome River | 150 |
| Light River | 100 | Clayton River | 55 |
| Wakefield River | 65 | Cooper or Barcoo River (S.A. portion) | 300 |
| Broughton River | 90 | Warburton River (S.A. portion) | 275 |
| Tod River | 26 | Treuer or Macumba River | 145 |
| Bremer River | 40 | Neale's River | 200 |
| Angas River | 26 | Officer River | 100 |
| Finniss River | 30 | | |

5E. **Northern Territory.**—Starting at the north-eastern extremity and going westerly and southerly.

| | | | |
|----------------------|-----|-----------------------|-----|
| McArthur River | 125 | South Alligator River | 100 |
| Limmen Bight River | 140 | Mary River | 100 |
| Roper River | 260 | Adelaide River | 110 |
| R. Strangway's River | 85 | Daly River | 225 |
| L. Chambers Creek | 85 | Fitzmaurice River | 100 |
| R. The Birdum Creek | 120 | Victoria River | 350 |
| Goyder River | 90 | L. Wickham River | 75 |
| Liverpool River | 80 | L. Gordon River | 65 |

5F. **Western Australia.**—Starting at north-eastern extremity and going westerly, southerly, and easterly.

| | | | |
|----------------------|-----|---|-----|
| Ord River | 300 | Asburton River (continued) | |
| L. Bow River | 80 | R. Duck River | 75 |
| Pentecost River | 50 | R. Hardey River | 135 |
| L. Chamberlain River | 125 | Lyndon River | 140 |
| Durrack River | 160 | Gascoyne River | 475 |
| Drysdale River | 275 | R. Lyons River | 225 |
| King Edward River | 150 | Wooramel River | 150 |
| R. Carson River | 85 | Murchison River | 440 |
| Moran River | 50 | L. Sanford River | 110 |
| Isdell River | 115 | L. Roderick River | 80 |
| Lennard River | 165 | Greenough River | 170 |
| Fitzroy River | 325 | Moore River | 100 |
| L. Jurgurra River | 90 | Swan River (upper portion called Avon Riv.) | 240 |
| L. Christmas River | 165 | L. Helena River | 40 |
| L. Margaret River | 430 | Murray River | 70 |
| R. Adcock River | 75 | Collie River | 60 |
| R. Hann River | 130 | Preston River | 40 |
| De Grey River | 190 | Blackwood River | 190 |
| L. Shaw River | 135 | Warren River | 55 |
| L. Coorgan River | 110 | Frankland River | 80 |
| R. Oakover River | 180 | Kalgan River | 65 |
| Turner River | 75 | Pallinup River | 75 |
| Yule River | 140 | Cairdner River | 70 |
| Fortescue River | 340 | Fitzgerald River | 40 |
| Robe River | 75 | Phillips River | 45 |
| Cane River | 65 | Oldfield River | 50 |
| Asburton River | 220 | Young River | 40 |
| L. Henry River | 75 | Lort River | 50 |

5G. **Tasmania.**—Starting at the north-eastern extremity and going westerly, southerly, easterly, and northerly.

| | | | |
|--|-----|-----------------|----|
| Ringarooma River | 62 | Franklin River | 16 |
| Boobyalla River | 26 | Rubicon River | 22 |
| Tomahawk River | 16 | Mersey River | 60 |
| Great Forester River | 38 | L. Dasher River | 17 |
| Brid River | 26 | Don River | 20 |
| Little Forester River | 27 | Forth River | 52 |
| Piper's River | 30 | L. Dove River | 14 |
| Tamar River (formed by junction of North and South Esks) | 40 | Gawler River | 15 |
| North Esk River | 45 | Leven River | 50 |
| R. St. Patrick's River | 30 | Blythe River | 30 |
| South Esk River | 120 | Emu River | 24 |
| L. Lake River | 45 | Cam River | 25 |
| L. Macquarie River | 73 | Inglis River | 25 |
| R. Elizabeth River | 35 | Detention River | 15 |
| R. Nile River | 25 | Black River | 16 |
| R. Ben Lomond River | 18 | Duck River | 17 |
| L. St. Paul River | 28 | Montague River | 23 |
| | | Welcome River | 14 |

| | MILES | | MILES |
|---|-------|--------------------------|-------|
| Arthur River | 63 | Old River | 16 |
| L. Frankland River | 27 | Lune River | 16 |
| L. Helder River | 24 | Esperance River | 14 |
| L. Hellyer River | 23 | Huon River | 106 |
| Pieman River (formed by junction of the Murchison and Mackintosh Rivers) | 40 | R. Picton River | 30 |
| Mackintosh River | 22 | Derwent River | 107 |
| Murchison River | 23 | L. Jordan River | 58 |
| Little Henty River | 14 | R. Styx River | 22 |
| Henty River | 25 | R. Russell's Falls River | 24 |
| King River | 31 | L. Clyde River | 45 |
| Gordon River | 90 | L. Ouse River | 62 |
| R. Franklin River | 61 | L. Dee River | 20 |
| L. Sprent River | 23 | L. Nive River | 40 |
| R. Denison River | 31 | Coal River | 40 |
| L. Wedge River | 16 | Carlton River | 16 |
| Spero River | 22 | Prosser River | 25 |
| Wanderer River | 16 | Little Swanport River | 33 |
| Mainwaring River | 18 | Lisdillon River | 12 |
| Rocky River | 18 | Meredith River | 13 |
| Giblin River | 14 | Swan River | 22 |
| Davey River | 23 | Apsley River | 16 |
| R. Hardwood River | 22 | Scamander River | 16 |
| Spring River | 18 | George River | 29 |
| North River | 14 | Anson River | 22 |
| | | Great Mussel Roe River | 31 |

(ii.) *Lakes.* The "lakes" of Australia may be divided into three classes, viz., (a) true permanent lakes; (b) lakes which being very shallow, become mere morasses in dry seasons, or even dry up and finally present a cracked surface of salt and dry mud, and (c) lakes which are really inlets of the ocean, opening out into a lake-like expanse.

The second class (b) is the only one which seems to demand special mention. These are a characteristic of the great central plain of Australia. Some of them (*e.g.*, Lake Torrens, Gairdner, Eyre, Frome) are of considerable extent.

(iii.) *Artesian Areas.* A considerable tract of the plain country of New South Wales and of Queensland carries a water-bearing stratum, usually at a great depth. A large number of artesian bores have been put down, from which there is now a considerable efflux. These are of great value, and render large areas available which otherwise would be difficult to occupy even for pastoral purposes. Western Australia has also an artesian area of considerable magnitude.

The distribution of the rivers and lakes, and the approximate boundaries of the artesian basin, are shewn on the accompanying map.

The statistics relating to artesian bores will be given *in extenso* hereinafter, viz., in the section dealing with Water Conservation.

6. **Orography.**—Owing to the absence of any very high mountain chains, and to the great depression in the centre of Australia, the average elevation of the Australian continent over the level of the surrounding oceans is less than that of any of the other continents. This average, however, has not yet been estimated with any degree of precision.

(i.) *General Description of the Surface.* A section through the continent from east to west, at the point of its greatest breadth, shews first a narrow belt of coastal plain. This plain, extending north and south along the whole eastern coast, is well watered by rivers. Of variable width, seldom more than sixty or seventy miles, and occasionally only a few miles or disappearing altogether, its average may, nevertheless, be taken as about forty to fifty. From this the Great Dividing Range, or Australian Highlands, extending from the north of Queensland to the south of New South Wales, and thence sweeping westward through Victoria, rises often sharply, and frequently presents bold escarpments on its eastern face. The descent on its western slopes is gradual, until in the country to the north of Spencer's Gulf the plain is not above the sea-level, and occasionally is even below it. Then there is another almost imperceptible rise until the mountain ranges of Western Australia are reached, and beyond these another strip of coastal plain.

The great central plain is the most distinctive feature of the Australian continent, and its climatic peculiarities are doubtless to be largely ascribed thereto.

(ii.) *Mountain Systems.* The main mountain feature of Australia is the Great Dividing Range, which runs along the whole eastern coast of the continent, and can be

traced over the islands of Torres Straits to New Guinea, while in the South one branch sweeps westwards towards the boundary of Victoria and South Australia, and the other—the main branch—finds its termination in Tasmania.

This main mountain system is, at no place, more than 250 miles from the eastern coast-line, and it approaches to within 27 miles. On the whole it is much closer to the coast in both New South Wales and Victoria than it is in Queensland, the corresponding average distances being about 70, 65, and 130 miles respectively.

The mountains of Australia are of relatively small altitude. Thus in Queensland the Great Dividing Range reaches a height above sea-level of only 5440 feet (Mount Bartle Frere). In New South Wales Mount Kosciusko is only about 7300 feet, and Mount Bogong in Victoria only about 6510 feet high. The fact that there are no high mountains in Australia is also an important element in considering its climate.

There is no connection between the mountains of the eastern and other States of Australia. In South Australia there are two peaks rising to about 3005 feet (Mount Remarkable and Mount Brown); and in Western Australia the height of 3800 feet (Mount Bruce) is attained. In Tasmania the greatest height is only 5070 feet (Cradle Mountain).

It may be of interest to observe that at one time Tasmania was doubtless connected with the mainland. As the Great Dividing Range can in the north be traced from Cape York across Torres Straits to New Guinea, so can its main axis be similarly followed across the shallow waters of Bass Straits and its islands from Wilson's Promontory to Tasmania, which may be said to be completely occupied by ramifications of the chain. The central part of the island is occupied by an elevated plateau, somewhat triangular in shape, and presenting bold fronts to the east, west, and north. This does not extend in any direction more than about sixty miles. The plateau rests upon a more extensive tableland, the contour of which closely follows the coast-line, and occasionally broadens out into low-lying tracts not much above sea-level. The extreme south of the island is rugged in character.

The positions of the mountain ranges are shewn on the map, specially illustrating Australian orography.

§ 2. The Geology of Australia.

1. **General.**—The geology of different parts of Australia has, naturally, been studied with varying degrees of thoroughness. The great area to be covered, the difficulties to be encountered, and the limited time so far available, are obvious. Instead of attempting, therefore, to present in bold outline a general picture of Australian Geology, it is proposed to give authoritative, independent sketches of the geology of each State, notwithstanding that this will necessarily involve some degree of repetition.

A knowledge of the main features of Australian physical geography will be assumed, and references thereto consequently reduced to a minimum.

2. **Geology of New South Wales.**¹—In physical configuration New South Wales may be divided into three regions, viz.:—(1) The narrow coastal plain on the east; (2) the Great Dividing Range and its associated table-lands; and (3) the western plains. These will first be individually referred to.

(i.) *The Main Dividing Range.* The main dividing range or table-land of New South Wales is composed for the main part of Paleozoic sediments, together with granitic and other igneous rocks; that portion of it, however, which is situated to the westward of Maitland, Sydney, and Wollongong, is capped with Mesozoic strata, viz., the Hawkesbury series, forming the covering of the principal coal basin.

1. This article is contributed by E. F. Pittman, Esquire, A.R.S.M., Under Secretary for Mines, New South Wales, Government Geologist of New South Wales, sometime Lecturer, etc., on Mining University of Sydney.

(ii.) *The Coastal Plains.* The coastal plains, which extend from the eastern foothills of the Dividing Range to the ocean, and which vary in width from a mile or two up to 150 miles, contain two coal-bearing basins, the chief of which extends from the neighbourhood of Maitland on the north to the Shoalhaven River on the south. This coal basin consists of the Permo-Carboniferous coal measures overlaid by the Hawkesbury (Triassic) series. The second coal-field referred to is that known as the Clarence and Richmond field. It is composed of Triassic or Trias-Jura rocks, and so far as at present known it contains no coal seams of commercial value. It may, however, be underlain by the productive Permo-Carboniferous measures.

The coastal plains are also largely composed of Post-Tertiary fluviatile deposits, which form exceedingly rich agricultural areas. A considerable area between the Richmond and the Tweed Rivers is occupied by basalt, the decomposition of which has produced a rich soil eminently suitable for agriculture and dairy farming.

(iii.) *The Great Western Plains.* The great western plains, which extend from the western foothills of the great tableland, are underlain by granitic rocks and sediments of Palæozoic, Mesozoic, and early Tertiary age. The most northerly portion is Mesozoic (Triassic), and forms the artesian water-basin. South of this is a Palæozoic belt stretching westerly from the great tableland to the South Australian border. During the Mesozoic era this belt formed a mountain range, whose direction was at right angles to the main divide; but this range was subsequently planed down by denudation, and its surface is now level with the surrounding country. To the south of this, along the Lower Darling and the Murray, is a large area of early Tertiary marine beds (Eocene), while the remainder of the Riverina district (up the Murray, Murrumbidgee, and Lachlan Rivers) is underlain for the most part by granitic, Silurian, and Devonian rocks.

The surface of the western plains is covered by Post-Tertiary deposits, flood loams, etc., except in isolated places where the remains of the older formations still rise above their surface.

(iv.) *Classification of the Sedimentary Rocks of New South Wales.* In the following classification some indication of the economic significance of the different members of each series is given:—

| | | | | | | |
|------------|---|----------------|---|--|---|--|
| CAINOZOIC. | { | Post-Tertiary. | { | Recent; auriferous and stanniferous soils and alluvial deposits in the beds of existing rivers. | | |
| | | Tertiary. | | Pleistocene; alluvial leads containing gold, tin and gem-stones. Pliocene; alluvial leads, frequently covered by basalt, and containing gold, tin and gem-stones. Miocene; quartzites with plant remains at Dalton, near Gunning. Eocene; marine limestones and calcareous sandstones of the Lower Darling; plant beds of the New England district. | | |
| MESOZOIC. | { | Cretaceous. | { | Upper Cretaceous (desert sandstone); contains deposits of precious opal. | | |
| | | Jurassic. | | Middle Cretaceous; auriferous alluvial leads at Mount Brown. Lower Cretaceous (Rolling Downs formation of Queensland). Talbragar fish-bearing shales. | | |
| | | Triassic. | { | The Ipswich coal measures and the Clarence coal measures. | { | Form the base of the artesian water-bearing basin. These measures contain thin coal seams, not at present worked in New South Wales. |
| | | | | Hawkesbury series. | | Wiannamatta shales (contain fire-clays). Hawkesbury sandstones (building stone). Narrabeen shales. |

| | | | | |
|-------------|----------------------|---|--|---|
| PALÆOZOIC. | Permo-Carboniferous. | { | 1. Upper or Newcastle coal measures. | } The productive coal seams of New South Wales occur in these measures. |
| | | | 2. Dempsey series. | |
| | | | 3. Middle or Tomago coal measures. | |
| | | | 4. Upper marine series. | |
| | | | 5. Greta coal measures. | |
| | | | 6. Lower marine series. | |
| | Carboniferous. | { | Rhacopteris beds and associated marine beds. | } All the metalliferous lodes and reefs occur in these formations, or in such igneous rocks as granites, quartz-porphyrries, felsites, diorites, etc. |
| | | | Gympie claystones (of Queensland). | |
| | Devonian. | { | Upper Devonian. | |
| | | | Lower Devonian. | |
| Silurian. | { | Limestones and slates at Yass, Molong, Wellington, Quidong, etc. | | |
| Ordovician. | { | Slates and tuffs at Mandurama, Cadia, Tomingley, Berridale, and in the counties of Auckland and Wellesley, on the Victorian border. | | |
| Cambrian. | { | Limestones, schists and glacial beds of Terrawingee. | | |

(v.) *Cambrian System.* The oldest sedimentary rocks of New South Wales are probably those forming the Barrier Ranges in the far west. No organic remains have yet been found in them, and their geological age has been a matter of speculation for many years. Quite recently Mr. Mawson, of Adelaide, has stated that he has traced the Lower Cambrian beds of South Australia to Terrawingee, north of Broken Hill, and he also considers that the metamorphic rocks of Broken Hill may be of pre-Cambrian age. These statements have not yet been confirmed by the New South Wales Geological Survey, though it is quite possible they are correct.

The rocks at Broken Hill consist of a laminated series of crystalline gneisses, quartzites, micaceous and hornblendic schists, and garnet sandstones. Broken Hill itself is a low range in which these rocks have been folded into an anticline. The great Broken Hill lode occupies the saddle-shaped cavity caused by the folding of the strata as stated, but the saddle lode is now of larger dimensions than the original cavity, owing to the gradual replacement (metasomatism) of the country rock forming the walls by ores of lead, silver, and zinc.

To the north of Broken Hill the metamorphic rocks just described give place—in an unbroken series—to less altered slates and schists, traversed by tin-bearing dykes of coarse pegmatite, as at Euriovie, while at Terrawingee there are massive beds of blue limestone (and, according to Mr. Mawson, glacial till), which apparently belong to the same series.

(vi.) *Ordovician System.* At the Lyndhurst goldfields, near Mandurama, occurs a series of banded sedimentary rocks, consisting of indurated bluish grey claystones alternating with highly altered volcanic tuffs. The claystones contain Trilobites (agnostidæ), Brachiopods (obolella), Pteropods (hyolithes), Graptolites (diplograptus, dicellograptus, climacograptus, etc.), and remains of Radiolaria. The tuff beds, which vary from the thickness of paper up to 20 feet, contain bunches and impregnations of auriferous sulphides, and are worked for gold.

The series of banded rocks has been intruded by sills and dykes of hornblende, andesite, etc., which are apparently offshoots from a large body of hornblendic granite. The intrusions appear to have occurred while the sediments were still in a plastic condition, for the tuffs have been so forced into the claystones as to give the former the appearance of being intrusive.

Dark blue claystones and slates containing similar Graptolites also occur at Tomingley, Cadia, Berridale, and on the Victorian border—counties of Auckland and Wellesley. At Tomingley the slates are intersected by auriferous quartz reefs.

(vii.) *Silurian System.* Silurian rocks cover a large area of New South Wales, but the locality where they can be most satisfactorily studied is between Yass and the

Murrumbidgee River. There they consist of a considerable thickness of slates, sandstones, and limestones, with numerous characteristic fossils, such as Trilobites, Corals, Echinoderms, Brachiopoda, and Mollusca.

The celebrated auriferous reefs at Hill End, Tambaroora, and Hargraves occur in Silurian rocks, consisting of slates with interbedded volcanic tuffs, the latter being fossiliferous at Hill End. The Silurian rocks have been intruded, altered, and disturbed by granites, felspar porphyries, etc.

(viii.) *The Devonian System.* The Silurian slates and limestones to the south of Yass are succeeded by a belt of lavas (rhyolites, etc.) and tuffs, which separate them from a newer series of blue limestones, quartzites, and slates containing fossils of Lower Devonian affinities. At Wellington also the junction can be seen between Silurian and Lower Devonian rocks. At Tamworth, rocks of the same age as the Carboniferous of Europe are underlain by a series of banded claystone and volcanic tuffs, with occasional beds of limestone and intrusive sills of granite. The claystones contain numerous Radiolarian remains, while in the tuffs is found the plant *Lepidodendron australe*, and the limestones contain an abundant fossil fauna, including corals, which enable these beds to be correlated with the Upper Devonian of Queensland. A good section of Upper Devonian quartzites and shales containing *Lepidodendron australe* and numerous marine fossils can also be seen at Mount Lambie, near Rydal.

The Devonian system is characterised by the prevalence of grey and red quartzites and grits, and vary large areas of the southern half of the State are covered by these rocks.

(ix.) *The Carboniferous System.* A considerable area of the coastal plain and tableland north of Newcastle is occupied by bluish claystones and tuffs, with occasional belts of limestones, corresponding in age with the Lower Carboniferous rocks of Europe. Near Port Stephens they contain interbedded deposits of Magnetite, which, however, contains a considerable percentage of Titanium, whereby its value as an iron ore is reduced. At Copeland and several other goldfields the claystones are intersected by gold-bearing reefs. The plant *Lepidodendron australe* is fairly common in Lower Carboniferous rocks as well as in the Upper Devonian.

In the neighbourhood of Stroud is an area of shales, sandstones, and cherts containing abundant impressions of *Rhacopteris*, and these beds have been classified as Upper Carboniferous. No workable seams of coal have been found in the Carboniferous system, though in the *Rhacopteris* series near Stroud several very inferior seams with numerous bands are known.

(x.) *The Permo-Carboniferous System.* The productive coal measures of New South Wales contain fossil remains, shewing affinities to both the Permian and Carboniferous systems of Europe, hence the composite name which has been given to them. The measures are about 15,000 feet in thickness and have been classified as follows:—

- (a) *Upper or Newcastle Coal Measures*, containing an aggregate of about 100 feet of coal.
- (b) *Dempsey Series*: freshwater beds containing no productive coal. This series thins out completely in certain directions.
- (c) *Middle, or Tomago, or East Mailland Coal Measures*, containing an aggregate of about 40 feet of coal.
- (d) *Upper Marine Series*: sandstones and shales specially characterised by the predominance of the brachiopod *Productus brachyliketus*. At Branxton traces of glacial action have been seen in these beds.
- (e) *Lower or Greta Coal Measures*, containing from 20 to 40 feet of coal.
- (f) *Lower Marine Series*: sandstones and shales: specially characterised by the mollusc *Eurydesma cordata*. Glaciated boulders and erratics have been found in these beds at Lochinvar.

The three coal-bearing series contain numerous plant remains, including *Glossopteris*, *Gangamopteris*, *Phyllothea*, *Næggerathiopsis*, etc., while the Lower and Upper Marine series are characterised by an abundant fauna. The Permo-Carboniferous coal basin occupies an area of about 25,000 square miles extending to the north, west, and south of Sydney, and is the storehouse of one of the State's most valuable assets. In several collieries near West Maitland very fine seams of coal of 20 feet and upwards are being worked. A narrow isolated deposit of the Permo-Carboniferous system extends from near Inverell to the Queensland border. It contains a fine seam of coal (27 feet thick in places), which probably belongs to the Greta series. These measures lie unconformably upon altered claystones of Lower Carboniferous age, and have been intruded by granite which has tilted the coal seam to an angle of about 40 degrees.

(xi.) *The Triassic System.* The Permo-Carboniferous coal basin is overlain in most places by a thickness of over 1000 feet of shales and thick-bedded sandstones. There is no apparent stratigraphical unconformity between these beds and the underlying coal measures, nevertheless there is a very decided break in the fossil life, and the fauna and flora of the newer beds have been correlated with the Triassic system of Europe. These shales and sandstones have been named the Hawkesbury series, and have been subdivided as follows in descending order:—

- (a) *Wiannamatta Shales.* Blue, red, and grey shales, with occasional beds of sandstone. These shales are used for the manufacture of bricks and tiles. and some have the qualities of fireclay.
- (b) *Hawkesbury Sandstones.* Thick-bedded greyish-white freestones, used commonly about Sydney for building purposes.
- (c) *Narrabeen Shales.* Beds of chocolate-coloured shales and greenish tuffs varying from a foot or so to about 1800 feet in thickness. These shales form a very definite and persistent horizon.

The Clarence River coal basin is composed of rocks closely resembling the Hawkesbury series, and they are regarded as contemporaneous, thus the—

- (d) Upper Clarence shales may be the equivalents of the Wiannamatta shales.
- (e) Clarence sandstones " " Hawkesbury sandstones.
- (f) Lower Clarence shales " " Narrabeen shales.

It should be noted, however, that while the Clarence River series contains the fossil plants *Tæniopteris daintreei* and *Thinnfeldia odontopteroides*, the first-named has never been found in the Hawkesbury series, though *Thinnfeldia* is common in these rocks. It is possible, therefore, that the Clarence series may be newer than the Hawkesbury.

There are numerous seams of coal in the Clarence Measures, but they are too thin and their quality too inferior to be of commercial value. It is very probable, however, that these Triassic rocks may be underlain by the Permo-Carboniferous Coal Measures, which may mean a considerable addition to the coal resources of the State. The Clarence Coal Measures extend through Southern Queensland to the western flanks of the tableland of New South Wales, and dip thence under the north-western plains, forming the great artesian basin.

(xii.) *Jurassic System.* About 20 miles north-east of Gulgong is a small lacustrine deposit of thin-bedded yellow shales containing plants and fish remains which are considered to be Jurassic. The deposit referred to lies unconformably upon massive beds of Hawkesbury sandstone; it is of small extent and is the only known representative of the Jurassic in the State. Amongst the fossil plants are *Tæniopteris daintreei*, *Podozamites lanceolatus*, *Alethopteris australis*, *Thinnfeldia falcata*, and *Baiera bidens*: the fish include *Leptolepis gregarius*, *Archæomene robustus*, *Coccolepis*, etc.

(xiii.) *Cretaceous System.* The Rolling Downs formation of Queensland, which has been classified as Lower Cretaceous, and which consists of a series of shales, limestones and sandstones, is not known to outcrop at the surface anywhere in New South Wales, but its characteristic fossils have been met with in wells at Yandama, in the Milparinka

district, and a solid core from the Wallon bore, in the Moree district, shows that the drill penetrated about 1500 feet of Lower Cretaceous sediments there. It is possible, therefore, that these rocks underlie some considerable portion of the north-western plains.

The desert sandstones formation, which is believed to belong to the Upper Cretaceous epoch, is of very widespread occurrence over the north-western plains. There is a very marked stratigraphical unconformity between it and the Lower Cretaceous series, though there seems to be no practical distinction in regard to fossil life in the two formations. The most important fossils include—*Isocrinus*, *Maccoyella*, *Pseudavicula*, *Belemnites*, *Ancylloceras*, *Crioceras*, and *Cimoliosaurus*. The desert sandstone is generally horizontally bedded, and occurs as isolated hills and low ranges. Two varieties of rock are particularly noticeable, one being a greyish-white freestone, while the other is a vitreous rock of the character of porcellanite. Occasional beds of conglomerate occur, containing pebbles of quartz, agate, and chalcedony, and there is also a soft, fine-grained, siliceous rock having somewhat the appearance of kaolin. At White Cliffs, in the Wilcannia district, and at Lightning Ridge, north of Walgett, precious opal occurs in this rock, and extensive mining operations are carried on there.

(xiv.) *Tertiary System.* (a) *Eocene.* In the south-western portion of the State, along the course of the Lower Darling and Murray Rivers, there is a large area of marine calcareous sandstones, which have been classified as Eocene. In the Arumpo bore these beds have been proved to be at least 900 feet thick, the fossil *Trigonia semiundulata* being found at that depth.

At Tooraweenah, Warrumbungle Mountains, a lacustrine deposit, consisting of two series of shales and sandstones, occurs, containing Eocene plant remains. The two series of beds are separated by a flow of trachytic lava, and a similar lava covers the upper beds.

In New England (at Elsmore, Emnaville, etc.) Eocene leaves are found in fluvialite deposits (tin-bearing gravels) covered by basalt.

(b) *Miocene.* At Dalton, near Gunning, there is a lacustrine deposit of quartzite which has been classified as Miocene, on account of the plant remains found therein.

(c) *Pliocene.* Deep auriferous leads at Gulgong and Forest Reefs have been found to contain Pliocene plant remains—seeds, etc. These deposits are mostly covered by basalt. Most of the Tertiary deposits are of lacustrine or fluvialite origin, and they are important chiefly on account of the alluvial gold and tin ore, as well as diamonds, contained in them.

(xv.) *Post-Tertiary.* Much of the alluvial gold, tin ore, and gems has been found in Post-Tertiary soils and gravels. These are for the most part shallow, and their contents have been easily recovered by the miners.

Pleistocene surface deposits cover great areas of the western plains, and are the means of obscuring the underlying geological formations and rendering prospecting operations difficult. At Mount Kosciusko there are evidences of much glaciation during Post-Tertiary times—striated boulders are very numerous, and glaciated pavements, *roches moutonnées*, and terminal and lateral moraines occur in a good state of preservation.

3. *Geology of Victoria.*¹—The State of Victoria is of irregular shape, with the narrowest part to the east. Near the eastern end the Great Dividing Range enters, running south-westerly and westerly, being on the whole most rugged and of greatest altitude as it enters Victoria, *i.e.*, the general height falls as it runs westerly. On the whole also its southern faces are more steep than its northern, and as the Murray River is approached the character of the country is identical with that of the western plains of New South Wales.

1. This article was contributed by E. J. Dunn, Esquire, F.G.S., Director of the Geological Survey of Victoria.

(i.) *Geological Formations found in Victoria.* The following are the geological formations appearing in Victoria :—

SEDIMENTARY.

| | |
|---------------|--|
| CAINOZOIC ... | Recent; Post-Pliocene; Pliocene—newer and older; Miocene; Eocene. |
| MESOZOIC ... | Jurassic. |
| PALÆOZOIC ... | Permo-Carboniferous; Carboniferous; Devonian; Silurian—Yeringian and Melbourneian; Ordovician—Upper and Lower Darriwill, Castlemaine, Bendigo, Lancefield zones; Cambrian—Heathcotian. |

METAMORPHIC.

| | |
|---------------|---------------------|
| PALÆOZOIC ... | Schists. |
| ARCHÆAN ... | Schists and gneiss. |

IGNEOUS.

| | |
|--------------|--|
| VOLCANIC ... | Basic—Older and Newer Basalt; Acidic—Dacite, etc. |
| PLUTONIC ... | Basic—Gabbro, etc.; Acidic—Granite, Syenite, Grano-diorite, etc. |
| DYKES ... | Basic; Acid. |

The metamorphic and sedimentary series will be referred to in detail in the inverse order of the tabular statement.

(ii.) *Archæan System.* The Archæan system includes gneiss, schists, etc.

(a) *Gneiss.* In the vicinity of Barnawatha, Omeo, Bethanga, and Yackandandah there is an ancient system of rocks that are partly gneissic. White mica and garnets occur abundantly in them, and they are pierced by pegmatite, euritic, and other dykes. These rocks appear to be the most altered of the metamorphic series, and are more granitic in character than the schists of Yackandandah. At Cookimburra, Granya, and Bethanga, sulphides of lead, copper, iron, zinc, etc., together with gold and silver, have been found associated with the gneissic rocks, in lodes and disseminated. The soil is of poor quality in places, but of rich character about Bethanga.

(b) *Schists.* In many parts of Victoria schists have resulted from the alteration of the Silurian and Ordovician rocks caused by granite intrusions. Such schists may be seen at Maldon, south of Bendigo, Buxton, Beechworth, Omeo, Cassilis, etc. To the north of Yackandandah, however, there is a large area of schist which appears to be pre-Ordovician. The schist is much contorted and crumpled, and is characterised by a black mica. It differs widely from the adjacent Ordovician rocks exposed at Hillsborough, etc.

Schists occur over a great portion of the east of the State, and also are found in the south-west, but, so far, the Archæan schists have not been separated from the less ancient series by mapping, although very distinct on the ground.

Economically the schists are important on account of the mineral lodes associated with them. Gold, silver, copper, zinc, lead, arsenic, etc., are found at Cassilis, for instance. The Yackandandah schists have not hitherto proved rich in valuable minerals, but the contact schists often carry auriferous lodes, as at Maldon, Stawell, etc. Limestones have not been observed in this series.

(iii.) *Palæozoic.* The Palæozoic rocks include the following, viz. :—Cambrian, Ordovician, Silurian, Devonian, Carboniferous, and Permo-Carboniferous.

(a) *Heathcotian.* *Cambrian (?)* The Heathcotian rocks were first observed and separated from the Ordovician and Silurian beds in the neighbourhood of Heathcote, hence the name applied to them by Professor Gregory. They consist of much altered and contorted cherty beds, full of thin, ramifying quartz veins, and of jaspers coloured red, green, yellow, etc., associated

with interbedded and intrusive diabases, serpentines, porphyrites, agglomerates and tuffs. Similar rocks occur in the Mount Camel Range, past Toolleen, as far as Lake Cooper; in Gippsland, at Mount Tara, Accommodation Creek, near Mount Deddick, Limestone Creek, Nowa Nowa; at Green Hill and the Dog Rocks, near Geelong; and possibly at Waratah Bay, Mount Wellington, and near Wood's Point. They are separated from the Ordovician rocks by a distinct unconformity.

Gold, silver, copper, lead, zinc, and iron ores have been found associated with this series. Iron ores may be mentioned at the Iron Mask mine, near Mount Tara, Nowa Nowa, and Dookie.

Distinct from the typical Heathcotean series, but probably Cambrian, are the phosphatic rocks of Mansfield. The phosphate is wavellite (phosphate of alumina). Barytes in veins and lodes is of common occurrence in the Heathcotean.

- (b) *Ordovician*. Beds of this age outcrop at the surface over two considerable areas, one in the eastern part of the State and the other west of the meridian passing through Melbourne. They are composed of fine to coarse-grained sandstones, grits, slates, and shales, with rare thin beds of limestone and occasionally conglomerate, and are bent into a series of synclinal and anticlinal folds, and much faulted. The two Ordovician areas together cover about one-fifth of the State. They are of vast thickness, but there is no reliable data on which to base an estimate.

The Ordovician is the gold-bearing formation of Victoria. Most of the gold, since its discovery 56 years ago, has been won from Quartz reefs in these rocks, or from alluvial deposits formed from their disintegration. The western area is the richer of the two, and includes such famous goldfields as Ballarat, Bendigo, Dunolly, Castlemaine, Maryborough, etc. The usual matrix of the gold is quartz.

Bendigo is famous for its saddle reefs—quartz reefs that conform to the bedding in the arches of the anticlinal folds and less frequently in the synclinal folds. These occur one beneath the other, and have been worked from the surface down to a depth of 4250 feet. Along the anticlinals they have been traced for about 20 miles. A feature of this goldfield is the occurrence of basic dykes (limburgite) along the axis of the anticlines. The Berringa goldfield is marked by similar features.

Ballarat is remarkable for the vast quantity of gold which has been yielded from its deep and shallow alluvial deposits from the date of its discovery to the present time. Some of the nuggets were of great size.

A feature of the reef gold in Ballarat is that it occurs in connection with "indicators." These indicators are certain "beds," interlaminated with the usual slates, mudstones, sandstones, etc. When a quartz vein cuts across an indicator it is usually found to be enriched at the point of intersection. The other portions of the vein may be barren or very poor. The Tarnagulla district has long been famous for large gold nuggets, and has lately had public attention redirected to it by the Nick o' Time and Poseidon rushes. Probably these masses of gold come from indicator lines, but so far they have only been found in alluvial deposits. It is reasonable to expect that similar masses of gold remain in their original matrix. Other localities for large nuggets are Moliagul, where the "Welcome Stranger" nugget (2315 ozs.) was found and sold at the local bank for £9436 16s. 8d.; Rheola, or Berlin rush, also is famous for its great nuggets.

Intrusions of granitic rocks are frequent in the Ordovician series, and they are also cut through by numerous acid and basic dykes.

- (c) *Ordovician Fossils.* The following are amongst the typical fossils:—Upper Ordovician: *Stephanograptus gracilis*, *Dicellograptus elegans*, *Climacograptus bicornis*, *Glossograptus hermani*. Lower Ordovician: *Dictyonema pulchellum*, *Didymograptus caduceus*, *Tetragraptus serra*, *T. quadribracliatus*, *Goniograptus macer*, *Clonograptus rigidus*, *Trigonograptus wilkinsoni*, *Phyllograptus typus*, *Siphonotreta maccoyi*, *Saccocaris tetragona*, *Rhinopteroecaris maccoyi*, *Dinesus ida*.
- (d) *Silurian.* The Silurian rocks occur between the two great Ordovician outcrops, and occupy about half the area of the latter. They are divided into the upper, or Yeringian, and the lower, or Melbournian, series. Members of the upper division occur in the extreme east of the State at Limestone Creek, and at Wombat Creek, Mitta Mitta River, and Walhalla.

The beds consist of varieties of sandstone, slate, mudstone, etc. Some of the sandstones are reddish or purple in colour, and in other respects differ from those of Ordovician age in general appearance. They are bent into folds, but not so sharply and evenly as those of Bendigo. Quartz veins are less frequent than in the Ordovician rocks, and auriferous quartz reefs are generally associated with dioritic dykes, and are often exceptionally rich, as at Wood's Point, Walhalla, etc. Copper ore, associated with platinum, is found in a dioritic dyke at the Thomson R., near Walhalla. The goldfields, however, are generally less extensive than those in the older rocks.

Limestones occur in lenticular patches of considerable extent in the upper part of the Silurian series at Lilydale, near Mansfield, Mitta Mitta, Limestone Creek, etc. Lilydale supplies Melbourne with large quantities of lime.

- (e) *Silurian Fossils.* Some of the characteristic fossils are given below:—Upper series (Yeringian)^o:—*Favosites grandipora*, *Pleurodictyum megastomum*, *Chonetes robusta*, *Strophonella euglyphoides*, *Leptæna rhomboidalis*, *Pentamerus australis*, *Atrypa reticularis*, *Panænka gippslandica*, *Conocardium costatum*, *Cyclonema lilydalensis*. Lower Series (Melbournian): *Urasterella selwyni*, *Palaæster smythi*, *Protaster brisignoides*, *Botryocrinus longibrachiatus*, *Siphonotreta australis*, *Chonetes melburnensis*, *Nucleospira australis*, *Hyalithes spryi*, *Cyphaspis spryi*, *Homalonotus harrisoni*, *Dalmanites meridianus*, *Pterygotus australis*.
- (f) *Devontan.* The Devonian is divided into Upper, Middle and Lower. The principal mass of Devonian rocks lies between Briagolong and Mansfield. Sandstones, conglomerates, shales and limestones form the series. The sandstones are frequently red or purple and often mottled. The conglomerates are well developed near Mansfield, where they are several hundreds of feet thick, and are not folded. A remarkable feature of the conglomerates is the manner in which the pebbles are impressed into one another near Stockyard Creek, on the Dargo road, E. Gippsland. The Grampian Range, consisting of white, grey, red and purple sandstones, some conglomerate and a little shale with rocks of the Snowy River porphyry type, apparently interbedded at Hall's Gap, probably belongs to the Lower Devonian series, and is therefore too ancient to contain any coal seams.

Considerable areas of limestone of this age occur, the best known being at Buchau. The limestone tract here is 15 miles long and 6 miles wide. Caves have been known in this district for a number of years, and some discovered lately are said to rival the Jenolan Caves in beauty and extent. Valuable marble occurs. At Bindi also a considerable area occurs.

The soil from the sandstones and conglomerates is very poor, but the shales and limestones are covered with a very fertile soil.

(g) *Devonian Fossils*. The following are some typical fossils. Upper Devonian :—*Archæopteris howitti*, *Sphenopteris iguanensis*, *Cordaites australis*. Lower Devonian :—*Receptaculites australis*, *Favosites multitalbulata*, *F. gotlandica* var. *moonbiensis*, *Syringopora spelæanus*, *Chonetes australis*, *Spirifer yassensis*, *S. howitti*, *Plragmoceras subtrigonum*, *Asterolepis australis*.

(h) *Carboniferous*. The Devonian rocks appear to pass without an unconformity into the Carboniferous series. These beds consist of shales and sandstones of reddish colour, and contain abundant fish and plant remains. They are best known to the north of Mansfield.

(i) *Carboniferous Fossils*. Some Carboniferous fossils are *Lepidodendron australe*, *Gyracanthides murrayi*, *Acanthodes australis*, *Eupleurognmus cresswelli*, *Strepsodus decipiens*, *Ctenodus breviceps*, *Elonichthys sweeti*, *E. gibbus*.

(j) *Permo-Carboniferous*. The glacial conglomerates at Bacchus Marsh, Derrinal, Springhurst, Wooragee, Loddon Valley, and elsewhere are of very late Carboniferous or perhaps Permian age. The glacial conglomerates consist of pebbles and boulders, some rounded and grooved, and some still fairly angular, set in a fine tough clay matrix. The size of the boulders varies from several tons down to fine gravel. As a rule there is no stratification, but in places the boulder clay shews signs of rough bedding. This series appears to correspond with the Duyka conglomerate of South Africa.

Above the glacial series at Bacchus Marsh are thick bedded sandstones containing *gangamopteris*, *glossopteris*, etc.

The glacial beds yield a soil of good quality for grazing purposes.

(k) *Permo-Carboniferous Fossils*. Some characteristic fossils are as follows :—*Teniopteris sweeti*, *Gangamopteris obliqua*, *G. spatulata*, *G. angustifolia*, *G. cyclopteroides*.

(iv.) *Mesozoic*. So far as is known the Triassic and Cretaceous systems are not represented by any formations in Victoria, but the Jurassic system is of great importance, as it contains black coal measures.

(a) *Jurassic*. There are three considerable Jurassic areas exposed—those of South Gippsland, the Cape Otway District, and in the neighbourhood of Merino, in the extreme western part of the State. These three outcrops probably form part of a once continuous belt of similar rocks which is marked in the districts between them by Cainozoic sedimentary and volcanic rocks.

The rocks consist of felspathic sandstones, shales, and mudstones, while conglomerates occur along the coast near Kilcunda. Plant remains are common, and seams of black coal up to four feet thick are being worked in South Gippsland. These rocks are much disturbed and faulted, adding greatly to the difficulties of coal mining. Dykes and sills of basalt, as well as some old volcanic necks of early Cainozoic age penetrate these rocks.

(b) *Jurassic Fossils*. Amongst the characteristic fossils are :—*Coniopteris hymenophylloides* var. *australica*, *Cladophlebis denticulata* var. *australis*, *Sphenopteris ampla*, *Thinnfeldia odontopteroides*, *T. maccoyi*, *Teniopteris spatulata* and vars. *daintreei* and *carruthersti*, *Ginkgo robusta*, *Baiera subgracilis*, *Podozamites barklyi*, *Palissya australis*, *Brachyphyllum gippslandicum*, *Unio stirlingi*.

(v.) *Cainozoic*. The Cainozoic series, as represented in Victoria, is as follows :—

(a) *Eocene*. Beds of marls, clays, sandstones, and limestone of Eocene age are exposed along the littoral of Port Phillip at Geelong, Mornington, etc., and inland at Royal Park and along the Moorabool Valley. The limestone is used for building purposes, both as lime and as building stone, and for filters, and the marl at Mornington would form a valuable fertiliser for poor sandy soil.

(b) *Miocene*. Miocene clays, sands, conglomerates, etc., occur in the Moorabool Valley, near Morrison's, Melton, Altona Bay, Pitfield, in the La Trobe Valley, Cobungra, and at Feathertop, under the basalt of the Dargo high plains, etc. The brown coal beds are sometimes of enormous thickness. At Morwell a bore 1000 feet deep passed through 888 feet of brown coal. Many of the clays are valuable for pottery purposes, and they occur in very large quantities.

(c) *Pliocene*. The Pliocene period is represented in Victoria by sand dune formations and impure limestones near the coast, and by silt, sand, clay and gravel inland.

On the goldfields there are two distinct gravel formations, known as the Older and Newer Pliocene. The Older Pliocene gravels are generally composed of well-rounded quartz pebbles, bound together by clay or ferruginous cementing material. They cap the hilltops or occur in deep leads at levels of 300 or 400 feet below the present surface. They are frequently highly auriferous. The old deep leads were the drifts in ancient river valleys, and have since been covered to great depths by more modern silts, or by flows of basalt. Valuable deposits of clay occur of this age.

The Newer Pliocene of the goldfields consists of some highly rounded pebbles derived from the Older Pliocene mixed with sub-angular and angular pebbles, bound together by red, purple and grey mottled clays and drift material. The gravels are often highly auriferous. The Newer Pliocene beds are found at a lower level than the older gravels which cap the hilltops.

Sands which may be of Pliocene age cover a large area in the Mallee district. Soil from the Pliocene rocks is generally of poor quality.

(d) *Post Pliocene*. River terraces composed of red loam are found in the principal valleys as at Wangaratta, Carisbrook, etc. They contain *Diprotodon* remains indicating a fauna now extinct. These beds are most suitable for brickmaking, and yield a soil of good quality.

(e) *Pleistocene Fossils*.—*Ostrea angasi*, *Mytilus planulatus*, *Tellina deltoidalis*, *Natica conica*, *Vermetus novohollandiae*, *Pagrus unicolor*, *Sthenurus atlas*, *Macropus titan*, *Diprotodon longiceps*, *Phascolumys pliocenus*, *Sarcophilus ursinus*, *Canis dingo*.

(f) *Recent*. Under this heading come the present river drifts, the shifting sand dunes along parts of the coast, the deposits filling swamps such as Koo-Wee-Rup and Carrum, the surface limestone found over wide areas in the Mallee, and the surface in process of formation. The soils range from the most fertile to the most barren.

(g) *Fossils*. Mr. Chapman¹ makes the following note:—"The Tertiaries are here grouped under their several local horizons. In the present condition of our knowledge of the Tertiary stratigraphy of the State, about the succession of which there are yet varieties of opinion, it is impracticable to exactly indicate the equivalence of the strata to the various series defined in European areas."

Some of the characteristic Tertiary fossils in descending order are:—

KALIMNAN.²

Balcombe Bay Beds—*Spondylostrobus smythi*, *Eucalyptus pluti*, *Plesio-capparis prisca*, *Bathyaclis bearmariensis*, *Glycimeris halli*, *Trigonia howitti*, *Zenatiopsis angustata*, *Tylospira coronata*, *Voluta masoni*, *Cancellaria wannonensis*, *Cestracion cainozoicus*, *Oxyrrhina hastalis*.

1. F. Chapman, Esquire, A.L.S., F.R.M.S., Paleontologist to the National Museum of Victoria, who has supplied the lists of typical fossils.

2. These are the sub-divisions of the Cainozoic accepted by Mr. Chapman.

JANJUKIAN.

Coprosmeophyllum ovatum, *Cyclammina complanata*, *Deltocyathus subniola*, *Graphularia senescens*, *Cassidulus australis*, *Terebratulina catinuliformis*, *Limopsis involuta*, *Spondylus gederopoides*, *Spirulirostra curta*, *Carcharodon auriculatus*, *Squalodon wilkinsoni*, *Ziphius geelongensis*.

BALCOMBIAN.

Cinnamomum polymorphoides, *Laurus werribeensis*, *Operculina complanata*, *Plectroninia halli*, *Plachetrochus deltoideus*, *Magellania grandis*, *Arca celleporacea*, *Crassatellites dennanti*, *Chama lamellifera*, *Cypræa eximia*, *Galeocerdo davisii*, *Lamna apiculata*.

(vi.) *Plutonic*. A feature in the distribution of the granitic rocks is the manner in which the outcrops occur distributed over the whole State, except where the surface consists of Tertiary or Jurassic rocks which conceal the Plutonics. There are many varieties of the granitic rocks, such as granites, granodiorites, syenites, hornblende diorites, gabbros, etc. Auriferous quartz veins occur in the granodiorite rocks at Glen Wills, Mt. William and Warburton; tin lodes at Beechworth, Cudgewa and Koetong; copper at the Snowy River and in other parts of E. Gippsland; galena at Mt. Deddick and at Pine Mountain, Upper Murray. The soil derived from granitic rocks is generally of poor quality. The granodiorites yield a somewhat better soil than the other varieties.

(vii.) *Volcanic*. (a) *Diabases*. Interbedded lava flows, ash beds and agglomerates occur in the Heathcoteian, which, as already mentioned, is a formation older than the Ordovician. These rocks are well represented at Heathcote and in the Mt. Camel Range, at the Dog Rocks near Batesford, Green Hill near Geelong, etc. Soil of moderate quality.

(b) *Snowy River Porphyries*. These acid volcanic rocks of Lower Devonian age (?) are widely distributed in Eastern Gippsland, along the course of the Snowy River and in the Mitta Mitta Valley. With the lavas there is a great thickness of ash and agglomerate, which contain lodes of gold, copper, and silver-lead ore. Extremely beautiful porphyries occur in these rocks. The soil is poor.

(c) *Dacites*. The age of the Dacite series is not settled. They form the mountains at Healesville and Warburton, Dandenong Range, Mt. Macedon, and part of the Strathbogie Ranges. No metallic lodes have been found associated with these rocks. The soil varies from a rich loam to a poor siliceous sand.

(d) *Basalts*. The oldest basalt known in the State is that described by Dr. Howitt as interbedded with the Upper Devonian at Snowy Bluff, but the important basalts are of Tertiary age.

The Older Basalt (Eocene to Pliocene) is found at Dargo High Plains, Gelantipy, Warragul, Narracan, the Mornington Peninsula, Phillip and French Islands, etc. The soil is fertile, but the area occupied is insignificant when compared with the area covered by the Newer Basalts.

The Newer Basalts (Pliocene to Recent) extend to the north-west and west of Melbourne for almost 200 miles. This volcanic series forms vast plains of lava flows and ashes with numerous scattered scoria cones in all stages of preservation. Excellent building stone and good road metal is furnished by these volcanic rocks. The soil varies from a poor loam to dark brown and black clayey soils of marvellous fertility.

4. **Geology of Queensland.**¹—From a geological point of view Queensland may be divided into two great parts, occupying nearly equal areas, but possessing very different physical features. One of these extends along the eastern coast, from the New South

1. This article is slightly condensed from one by W. H. Rands, Esquire, A.R.S.M., F.G.S., Government Geologist of Queensland.

Wales border northwards to the 12th parallel of latitude, has an average width of about 200 miles from east to west, and is well watered and timbered. To this division also belongs an area in the north-west portion of the State, viz., in the Burke district, extending from the extreme north-west southwards to Cloncurry and Boulia. The loftiest mountain ranges occur in this division, the remnants of what was once a high tableland, the highest peak, Bellenden Ker, attaining an elevation of 5150 feet.

This region consists of stratified rocks of different ages from the oldest palæozoic—the exact age of older rocks has not yet been determined—up to those of recent origin. There are also large areas of granites, porphyries partly of igneous and partly of metamorphic origin, as well as other intrusive and interbedded igneous rocks. It is in this division that most of the mineral wealth of the State exists.

The other large division, known as the Western Interior, consists almost entirely of the Lower Cretaceous rocks, overlaid unconformably in places by the Desert Sandstone, which is of Upper Cretaceous Age.

This division, locally known as the Rolling Downs Formation, presents a vast area, in parts of almost treeless plains, with here and there clumps of "gidya" scrub.

The rainfall over this division, more especially in the south-west, is small. The river beds are generally dry. The want of water limits the use of some of the very best pastoral land in the State, though this difficulty has been partially overcome by the tapping of the supplies of artesian water contained in the Lower Cretaceous Beds.

The rivers to the north of the high open downs, in latitude about 21° 50' S., flow in a northerly direction into the Gulf of Carpentaria, while south of this they flow in a southerly, or south-westerly direction, into New South Wales.

(i.) *Geological Formations of Queensland.* The following table indicates the geological formations so far known as occurring in Queensland:—

| | | | |
|--------------------------|-----|-----|---|
| QUATERNARY AND CAINOZOIC | ... | ... | Recent Alluvia, Raised Beaches, Post-Tertiary or Tertiary Alluvia, and Bone-Drifts. |
| MESOZOIC | ... | ... | Upper Cretaceous—Desert Sandstone. Lower Cretaceous—Rolling Downs Formation; Blythesdale Braystone. Trias-Jura System—Upper Ipswich Formation; Lower Burrum Formation. |
| PALÆOZOIC | ... | ... | Permo-Carboniferous—Upper Bowen Formation; Middle Bowen Formation; Lower Bowen Formation; Star Formation; Gympie Formation. Devonian—Middle Devonian Formation. Silurian—Silurian Formation. Age undetermined—Slates, Schists, and Quartzites, etc. |

(ii.) *Plutonic and Metamorphic Rocks.* Large areas of granites, syenites, porphyries of both plutonic and metamorphic origin and of different ages, extend from the south to the north of the State.

In these a number of mineral areas are included, viz.:—The Charters Towers, the Croydon, Etheridge, Eidsvold, Normanby, Jimma goldfields; the Ravenswood gold and silver fields; Kangaroo Hills and Running Creek silver and tin fields; the Herberton and Annan, Bloomfield, and Stanthorpe tinfields; and the Mount Perry copper field.

(iii.) *Metamorphic Rocks.* These, embracing the slates, schists, etc., of undetermined age, are all older than the Burdekin Beds—Middle Devonian—and are all more or less metamorphosed. They consist of metamorphic granites, quartzites, slates, schists, gneisses, and shales. No fossils have up to the present been discovered in them, and their exact age has not yet been ascertained.

The principal mining areas in connection with these rocks are:—The McKinlay, Cape River, Gilbert and Woolgar, Coen, Normanby, Clermont, and Peak Downs goldfields; and the Peak Downs copper field.

(iv.) *Silurian*. A large region in the north-west part of the State, formerly included in the slates and schists, etc., of undetermined age, were transferred to the Silurian, the evidence as to the age of the rocks being determined by Mr. R. Etheridge, junr., from certain fossils found near the Cairns Range.¹

The area mapped as Silurian extends from the south of Boulia to the extreme north-west, and from 20 miles east of Cloncurry to the Western boundary of the State, but its boundary has not yet been accurately mapped.²

The principal mining areas are the Cloncurry, McKinlay, and Leichhardt goldfields, the Cloncurry copper fields, and the Lawn Hills silver field. There are also the rich ironstone deposits of Mount Leviathan, and of other hills in the neighbourhood of Cloncurry.

(v.) *Middle Devonian* (Burdekin Formation). Rocks containing characteristic fossils of the Middle Devonian occur in various parts of the State. The principal area, and the one from which the formation takes its name, is on the Upper Burdekin, including the Fanning River, Burdekin Downs, and Broken River. Rocks of this age also occur at Chillagoe; Reid's Gap; on the Townsville-Charters Towers Railway; south of Clermont; at Raglan; and in the neighbourhood of Olsen's Caves, north of Rockhampton.

A doubtful area is shewn on the last addition of the State map in the extreme north-west, in the neighbourhood of Camooweal.

The fossils occur in limestones, and consist almost entirely of corals, with a few Brachiopoda, and one Cephalopod. The most characteristic fossils are *Heliolites porosa*, *Pachypora meridionalis*, *Aulopora repens*, *Stromatopora*, and *Cystiphyllum*.

The Argentine silver field occurs in a series of slates and schists, etc., supposed to belong to this formation.

(vi.) *The Permo-Carboniferous System*. The greater portion of the stratified rocks of the eastern portion of Queensland are included in this system.

The system, as hitherto classified, includes five formations, beginning from the oldest, viz.: (1) Gympie Formation, (2) Star Formation, (3) Lower Bowen Formation, (4) Middle Bowen Formation, (5) Upper Bowen Formation.

A reclassification of these rocks may be found necessary; the following has been suggested:—

| | | | |
|-------------|-----|-----|--|
| GYMPIE | ... | ... | Marine Series. |
| (?) | ... | ... | Basic and Acidic Intrusions. |
| LOWER BOWEN | ... | ... | Lower Marine and Volcanic Series; Lower Fresh-water Series; Upper Marine Series; Upper Fresh-water Series. |
| UPPER BOWEN | ... | ... | Marine Series; Fresh-water Series; Old Alluvial Deposits. |

(a) *The Gympie Formation*, named after the type district (the Gympie goldfield), occupies large areas in the south-eastern, central, and north-eastern parts of the State, and consists chiefly of sandstones, grits, conglomerates, indurated shales, and limestones. These, in parts, have undergone considerable alteration. Bedded volcanic rocks are numerous, especially in the type district, as are also intrusive rocks. The strata generally dip at high angles of inclination.

This contains a very scant flora, represented by Calamites, Lepidodendron: but it has produced the largest fauna of any formation in Queensland, over 120 species having been described. The following genera are peculiar to it, viz.:—

1. These were identified as follows:—(1) Orthoceratites, sp. ind.; (2) Actinoceras (beaded siphuncle), sp. ind.; (3) Univalve and bivalve (casts and impressions). These are interesting, as the first Silurian fossils found in Queensland.

2. See the Geological Map of Queensland of 1899.

Protozoa.—Lasiocladia.
Actinozoa.—Zaphrentis, Cyathophyllum,
 Cladochonus, Monticulipora.
Blastoidea.—Mesoblatus, Granatocrinus,
 Tricelocrinus.
Echinoidea.—Archæocidaris.
Crustacea.—Griffithides.
Polyzoa.—Glaucanome, Rhombopora,
 Myriolithes.
Brachiopoda.—Martinia, Athyris, Lingula.

Pelecypoda.—Pterinopecten, Mytilops,
 Parallelodon, Nucula, Pleuropho-
 rus, Astartella, Cypricardella.
 Eurydesma, Conocardium, Ed-
 mondia, Sanguinolites.
Gasteropoda.—Loxonema, Euomphalus,
 Pleurotomaria, Yvania, Lucicella,
 Murchisonia, Bucania.
Pteropoda.—Conularia.
Cephalopoda.—Nautilus, Gyroceras.
Pisces.—Deltodus?

Several gold and other mineral fields occur in the Gympie formation, amongst which may be mentioned:—The Gympie goldfield, Cania, Calliope, Norton, and other goldfields in the Gladstone district; the goldfields of the Rockhampton district; the Warwick goldfields; Paradise, Hodgkinson, Mulgrave, and Palmer goldfields. Copper deposits at Glassford Creek, Gigoomgan, Gooroomgan, and Mount Coora; some mercury deposits at Kilkivan; and the Neerdie antimony mine.

- (b) *The Star Formation*. The palæontological evidence for separating these beds from the Gympie Series is slight. They contain nineteen species peculiar to themselves, and twelve species common to both, but are, however, less highly inclined than the Gympie Beds, and have been less disturbed and altered.

They are best developed at the following places:—Near the junction of the Great and Little Star Rivers, from which they take their name; near Dotswood, Keelbottom Creek; in the neighbourhood of Harvest Home, Lornesleigh, and Mount McConnell Stations (near the latter the nearly complete remains of a fish of the genus *Palæoniscus* was found); and at Drummond's Range, where numerous scales and teeth of fish occur.

The flora includes species of *Calamites*, *Asterocalamites*, *Lepidodendron*, *Cyclostigma*, *Stigmaria*, and *Cordaites*. The fauna is comparatively small when compared with that of the Gympie Beds, and includes the following genera:—

Crinoidea.—Actinoecrinus.
Crustacea.—Beyrichia, Phillipsia.
Polyzoa.—Fenestella.
Brachiopoda.—Spirifera, Spiriferina, Ret-
 zia, Rhynchonella, Orthis, Strop-
 homena, Chonetes.

Pelecypoda.—Entolium, Euchondria, Nu-
 culana.
Gasteropoda.—Naticopsis, Porcellia.
Cephalopoda.—Orthoceras.
Pisces.—Palæoniscus.

- (c) *The Lower Bowen Formation*. This formation consists of a series of white and yellow sandstones, with beds of conglomerates, containing pebbles of quartzite and porphyry, derived from the metamorphic rocks in the vicinity: the lowest beds, seen near the heads of Pelican Creek, south-west of Bowen, consisting of volcanic agglomerates. It dips under the Trappean rocks of Toussaint, Mount Dinlin, and Mount Macedon.

In another area, north of Mackay, the beds have undergone considerable alteration. So far no fossiliferous remains have been found therein.

- (d) *The Middle Bowen Formation*. This series overlies the last without any marked unconformity. It consists of alternate sandstones, blue and grey shales, and impure arenaceous ironstones, and extends from the type district on the Bowen River across the central railway between the Emerald and Duaringa, and for about 120 miles farther south up to the Dawson and Comet Rivers. The mapping out of these beds in detail on both sides of the central railway suggested the need for an alteration in the classification previously referred to.

Seams of coal have been discovered therein, both north and south of the railway line, one thirty miles south of Duaringa being nine feet thick of perhaps the best coal for steam purposes in the State; it is anthracitic, containing almost 87 per cent. of fixed carbon. Several seams of coal—most of them of a burnt or coked nature—occur in the type district; this is due to the intrusion of sheets of trap rock.

Although it contains a land flora in places the Middle Bowen is mainly marine. The flora include species of *Glossopteris* (which is very common), *Sphenopteris*, and a species of *Conifer*.

The fauna consists of over fifty described species, of which the most characteristic fossils are:—*Strophalosia clarkei*, Eth.; *Strophalosia gerardi*, King; and *Derbyia senilis*, Phill., which, with species of *Productus*, *Spirifera*, and *Martinia*, are very common.

- (e) *The Upper Bowen Formation.* The Upper Bowen Beds are chiefly fresh water, and contain but very small flora and fauna. The flora includes *Phyllothea australis*, *Sphenopteris lobifolia*, *S. flexuosa*, *S. crebra*, *Glossopteris browniana*, *G. linearis*, and a species of a *Conifer*. The fauna includes *Derbyia senilis*, *Productus brachythærus*, and a species of *Goniatites*.

The rocks have a low angle of dip in the type district, and cover a large area to the south of these creeks. They contain numerous coal seams, including the Macarthur, Daintree, and Havilah seams, but most have been destroyed by the intrusion of sheets of dolerite.

Beds of this formation occur west of Laura, on the Cooktown railway, on the Little River coalfield; at Hamilton, about twenty miles west of Cooktown; at Stewart's Creek, near Townsville, also further south near Mackay; and at Blair Athol, ten miles north-west of Clermont. Blair Athol is the only place where the coal seams of this formation are actually being worked; the coal is one of the best steam coals worked in the State.

(vii.) *Lower Trias-Jura* (the Burrum Formation). The Burrum Formation, the lowest member of Mesozoic rocks, extends along the coast from a point about 50 miles north of Bundaberg to south of Noosa Heads, and occupies an area of 3000 square miles.

Over the greater portion of this area the coal measures are covered unconformably with sandstones, clays, and conglomerates of a more recent age, a fact to which is attributable the flat and barren nature of the country. The overlying rocks, 20 to 50 feet in thickness, lie horizontally or nearly so. Their exact age has not been determined, as no fossils have been found in them.

This formation consists of grey and brown sandstones, conglomerates, and grey and black shales, etc. The flora and fauna are both very scant. The former includes:—*Sphenopteris flabellifolia*, var. *erecta*, T. Woods; *Trichomanites laxum*, T. Woods; *Thinnfeldia media*, T. Woods; *Teniopteris daintreei*, McCoy; *Alethopteris australis*, Morris; *Podozamites kidstoni*, Eth. fil.; *Otozamites*, sp. ind., and *Baiera bidens*, T. Woods. The fauna is represented by *Corbicula burrumensis*, Eth. fil., and *Rocellaria terra regina*, Eth. fil.

Seams of coal are known to occur in these measures in Littabella Creek, north of Bundaberg, to near Noosa, in the southern portion of the field, and have been worked near the Burrum River in the neighbourhood of the townships of Howard and Torbanlea, situated about 20 and 15 miles respectively north and north-west of Maryborough.

In the Burrum River, just above the railway bridge, five seams of coal of payable thickness can be seen cropping out in the bank within a distance of half a mile, with a regular dip to the north-east at about 12 degrees.

(viii.) *Upper Trias-Jura* (the Ipswich Formation). The Ipswich Coal Measures cover an area of about 12,000 square miles in the south-eastern portion of the State, a small area occurring in the neighbourhood of Stanwell and Wycarbah, in the Rockhampton district; and another on Callide Creek, south-west of Gladstone, where there is one seam of over 30 feet in thickness of solid coal.

The rocks consist of the usual alternations of sandstones, conglomerates and shales, etc. In the neighbourhood of Brisbane the base of the measures is a volcanic ash, consisting of a felspathic matrix with blebs of quartz, and angular pebbles of schist and quartz. This stone is largely used for building purposes, as are also certain of the sandstones and freestones from this formation.

On the western portion of this area at Gowrie, Jimbour, and Clifton, the coal measures are on a higher horizon to those in the Brisbane and Ipswich district, from which they are separated by a thick mass of basalt.

The flora of the Ipswich Formation contains over eighty known species, five of which are common to the Burrum beds.

The fauna is represented by four species only, viz.:—*Estheria mangalensis*, Jones; *Mesostigmodera typica*, Eth. fil. and Oliff; *Unio ipswichensis*, Eth. fil.; and *Unio cyrensis*.

Several seams occur in the Albert and Logan district, south of Brisbane, and thin coal has been met with close to Brisbane, but no mines have been opened up in either of these localities.

(ix.) *Lower Cretaceous Formation* (the Rolling Downs Formation). The strata of this formation, covering nearly the whole of the western interior, have a very great sameness over this immense area—equal to over half of the whole State—and consist of shales, sandstones, conglomerates, and thin limestones. Thin beds of coal have been met with in boring.

A very porous bed of sandstone—the Blythesdale Braystone—has been traced from the neighbourhood of Texas, on the southern border of the State, to Normanton, in the north of the Gulf of Carpentaria. This is the chief intake rock of the series from which the supply of artesian water is obtained.

The volume of flow of the many rivers that run across or along this sandstone greatly diminishes, shewing that it has absorbed the water. The efflux of the numerous bores, however, is very small when compared with the amount of water taken in by this rock and other porous beds that occur. It has been supposed that the water finds an outlet to the sea at the Great Australian Bight and at the Gulf of Carpentaria.

The Rolling Downs Formation has been classified under the general head of Lower Cretaceous, but it contains amongst its numerous fauna forms allied to the Oolite.

The fauna is represented by over 120 species. Ammonites and Belemnites make their appearance. Among the fish remains have been found the following species:—*Lamna daviesii*, Eth. fil.; *Lamna appendiculata*, Agassiz; a species of *Aspidorhynchus*, Agassiz; and *Belonostomus sweeti*, Eth. fil. and A. S. Woods. There are also the following reptilian remains:—*Notochelone costata*, Owen; *Ichthyosaurus australis*, McCoy; *Ichthyosaurus marathonensis*, Eth. fil.; *Plesiosaurus macrospodylus*, McCoy; *Plesiosaurus sutherlandi*, McCoy.

(x.) *Upper Cretaceous* (Desert Sandstone Formation). This formation at one time covered the greater portion of Queensland, but the work of denudation has left only isolated patches, or outliers, which overlie unconformably the older rocks. Some of these patches are of large extent, especially in the western districts, where they overlie and act as feeders to the Lower Cretaceous water-bearing beds.

The base of the Desert Sandstone, from 1000 to 1800 feet above the sea-level in the southern and central portions of the State, at Cape York Peninsula is nearly at that level.

The beds are always horizontal, or nearly so, and consist usually of very coarse sandstones (often false-bedded), coarse conglomerates, shales, and magnesite shales.

A series of rocks in the neighbourhood of Maryborough, overlying the Burrum Coal Measures, against which they have been faulted, have been included in this formation. They have produced a large number of fossils, some of which are allied to those from the Desert Sandstone at Croydon. Except at these places, the formation is almost barren of fossiliferous remains.

Glossopteris was discovered in rocks of this age at Betts Creek, near the Cape River goldfield, but had not before been discovered in Australia later than in the Permo-Carboniferous. *Glossopteris* was also found in the tableland between the Mitchell and the Walsh Rivers, and was consequently ascribed to the Carboniferous, though these rocks have since been found to be Upper Cretaceous. The genus makes its reappearance, therefore, in this formation, as it has not been detected in the formations intervening between this and the Permo-Carboniferous.

The fauna and flora are represented by thirty-five species, of which only the following eight species have been found outside the Maryborough rocks, and all of these, except the *Glossopteris*, are from Croydon:—*Didymosorus* (?) *gleichenioides*, Oldham and Morr.; *Glossopteris browniana*, Brong.; *Rhynchonella croydonensis*, sp. nov.; *Ostrea*, sp. ind.; *Placuna*, sp. ind.; *Maccoyella barklyii*, var. *maricaburiensis*, Eth. fil.; *Teredo*, sp. ind.; *Siphonaria samwelli*, sp. nov.

The only mineral of commercial value from these beds is the opal, for which there is now a considerable demand. Its chief sources are Opalton, Mayne River, Opal Range, Jundah, Duck Creek, Nickaville, and Listowel Downs.

(xi.) *Tertiary*. The Tertiary deposits are very poorly represented in Queensland—in fact, with the exception of a few alluvial drifts and some raised beaches, no sedimentary deposits of this age are known.

There was undoubtedly great volcanic activity at this period, as is evidenced in many parts of the State by the outflows of basalt capping the Desert Sandstone.

(xii.) *Post-Tertiary and Recent*. This period is represented by bone-drifts on the Darling Downs; Peak Downs; at Maryvale Creek; and along the Burdekin River, etc. They have furnished numerous remains of living and extinct marsupials, such as *Diprotodon australis*, *Macropus titan*, *Macropus ajax*, and other species of the same genus; *Thylacoleo*; several species of *Phascolumys*, and *Nototherium*, etc.; a struthious bird *Dromornis*; *Dinornis*, and the remains of reptiles and fishes.

The deposits in the Chillagoe Caves of North Queensland, and in the Olsen and Johansen Caves near Rockhampton, have also furnished a few bones, and may be expected to be a rich source of organic remains, when they come to be thoroughly explored.

5. Geology of South Australia.¹—In order to elucidate this indication of the principal geological formations of the State of South Australia, a short description of its physical geography is necessary.

A main range extends from Cape Jervis in the south, the opposite point of the mainland to Kangaroo Island, to beyond Hergott Springs in the north, a distance of about 400 miles: branching from about 150 miles north of Adelaide to the New South Wales border in the vicinity of the Barrier Ranges, and from Beltana north-eastward to Mount Babbage. This area includes the Mount Lofty, Barossa, Flinders, Mount Nor' West and Willouran Ranges, and also smaller ones. The highest points are: Mount Lofty, 2327 feet; Mount Brown, near Port Augusta, 3200 feet; St. Mary's Peak, Wilpena, 3900 feet; and Benbonyathe Hill, near the Illinawortina Pound, 3476 feet.

The Tomkinson, Mann, and Musgrave Ranges extend in the north-west corner from the West Australian boundary eastward for over three degrees of longitude along and south of the 26th parallel of south latitude, the northern boundary of the State. The Gawler Ranges run from near Port Augusta westward for about 120 miles. Northward of these are the Warburton Ranges, isolated and of comparatively low elevation. Ranges of similar character are the Peake and Denison, west of Lake Eyre; and there are also detached areas in the vicinity of Port Lincoln and Franklin Harbour, on Eyre Peninsula. The remainder of the State consists of plain and undulating country, with occasional isolated low peaks.

The lakes, mainly large expanses of mud, are numerous and extensive, and occupy low-lying portions of the plain country; the principal ones are Lakes Eyre, North and South, Torrens, Gairdner, Frome and Blanche.

The Murray is the largest river. It enters the eastern boundary of the State in latitude 34°, runs eastward to Morgan, thence southward to its mouth at Encounter Bay, previously widening out into Lakes Alexandrina and Albert; this is the only navigable river in South Australia. The drainage from the eastern watershed of the main range, as far north as the Burra, runs into the Murray, from the western as far north as Port Augusta, into Gulfs St. Vincent and Spencer; further northward the eastern drainage is

1. This article is contributed by H. Y. L. Brown, Esquire, F.G.S., Government Geologist of South Australia.

on to plains and into Lake Frome, and the western into Lake Torrens; north of latitude 30° drainage from all sides is into Lake Eyre, the principal rivers being the Cooper and Diamantina entering from Queensland, the Finke from the MacDonnell Ranges, Northern Territory, the Alberga and the Hamilton from the Musgrave Ranges, and the Neales and others from the westward. From the Musgrave Ranges southward to the Great Australian Bight, and the west coast of Eyre Peninsula, there are no lines of drainage of any importance on the surface.

The coast-line presents roughly a sweep north-westward from Cape Northumberland in latitude 38° S., to Eucla latitude 31° 30' S., crossing 12 degrees of longitude (129° to 141°), deeply indented by two gulfs, St. Vincent's and Spencer's. Kangaroo Island, immediately south of St. Vincent's Gulf, is the largest island of the State, and there are numerous smaller islands, grouped and separate, in Spencer's Gulf, and on the west coast as far as Fowler's Bay.

From Eucla to the head of the Great Australian Bight, the coast-line consists of continuous cliffs from 200 to 300 feet high, forming the edge of the Nullarbor Plain plateau.

The various geological formations will be referred to in ascending order.

(i.) *Archæan* (Metalliferous Rocks). Granite, gneiss, and crystalline metamorphic, hornblendic, micaceous and argillaceous rocks are found at several places, but to a limited extent, to underlie rocks containing Cambrian fossils; and in other places there are considerable exposures of granitic and gneissic rock containing granitic dykes of later age, which may also be Pre-Cambrian; these constitute the lower rock systems and may be classed as Archæan. Chief localities: Southern portion of Yorke's Peninsula, North-East, north end of Main Range, Musgrave Range, etc.

(ii.) *Pre-Cambrian and Cambrian* (Metalliferous Rocks). The Main Ranges from Cape Jervis to Mt. Babbage, the Ranges at Port Lincoln and Franklin Harbour, Kangaroo Island, the North-eastern (Olary) Ranges, Mt. North-west Ranges, the Peake and Dennison Ranges (near Lake Eyre), and isolated areas are composed of highly-contorted, faulted, cleaved, jointed and metamorphosed beds of micaceous, hornblendic and quartzose schists, sandstones, quartzites, argillites, clay slates, conglomerates, crystalline limestones and dolomites intruded into and intersected in places by igneous rocks consisting of granites, diorite, dolerite, gabbro, felspar, porphyry, felsite, etc. The Gawler Ranges are composed of granite and felspar-porphry, the latter predominating, the Musgrave Ranges of granite, metamorphic and eruptive, and altered sedimentary rocks. Cambrian rocks containing fossils of undoubted Cambrian age, have been found in dolomitic limestone beds at Normanville and Sellick's Hill, south of Adelaide, near Ardrossan, Yorke's Peninsula, near Gordon, Belton, Wirrealpa, Ajax Mine, and Ediacara in the far north, and east of Hawker. These beds occur in connection with those just mentioned, but owing to the intense plication, varying thickness, faulting and non-persistence of individual beds and metamorphism of the whole series, their exact stratigraphic relationship can only be determined by exhaustive geological survey and mapping.

(a) *Pre-Cambrian and Cambrian Fossils*. These are as follows, viz. :—*Ethmophyllum hindei*, *Coscinocyathus tatei*, *Microdiscus subsagittatus*, *Ptychoparia australis*, *Orthosina compta*, *Platyceras etheridgei*, *Stenotheca rugosa*, *Hyalithes communis*, *Protopharetra* (?) *scouleri*, *Olenellus pritchardi*, *Dolichometropis tatei*, *P. howchini*, *Ambonychia macroptera*, *Ophileta sublanulata*, *Salterella planocconvexa*, *H. conularioides*.

(iii.) *Ordovician*. Beds of quartzite, sandstone, grit, shale, and conglomerate dipping at low angles and often horizontal occur on Kangaroo Island, in the neighbourhood of Port Augusta, along the western side of Lake Torrens, and on the Alberga River. No fossils have been found in them, but from the positions they occupy and their resemblance to the Ordovician fossiliferous rocks found south of the MacDonnell Ranges, they are probably of that age.

(iv.) *Jurassic*. This is represented by argillaceous, carbonaceous, and bituminous shale with thin bands of sandstone, limestone, ironstone, pyrites, etc., containing seams of coal. The best defined outcrop of this formation is at Leigh Creek, where a basin has been proved by boring to have an extreme depth of about 2000 feet of strata containing Jurassic fossils. In one bore at from 1496 to 1544 feet, over 47 feet of brown coal was passed through in one continuous bed, and small seams at intervals for 300 or 400 feet deeper. Characteristic fossils of the same age have been discovered at Ooroowillannie Swamp, near Kuntha Hill on Cooper's Creek, and bituminous shale and coal similar to that of Leigh Creek at Lake Phillipson and other places in bores put down for artesian water. There is no distinct line of demarcation between this and the overlying Lower Cretaceous formation. It is probable that the sandstone, gravel, and conglomerate in which this water occurs is of Jurassic age.

(a) *Fossils*. The fossils observed are:—*Alethopteris australis*, *Macrotaeniopteris winamatta*, *Oleandridum (?) fluctuans*, *Podoxamites lanceolatus*, *Thinnfeldia odontopteroides*, *T. media*, *Unio eyrensis*.

(v.) *Lower Cretaceous*. These consist of gypseous clays, marls, argillaceous shales, and sandstones, with thin bands of limestone, ironstone, pyrites, etc., and sometimes thin seams of brown coal resting on sandstone and gravel conglomerate beds. This formation, with or without the underlying Jurassic beds, fills the vast artesian basin of which Lake Eyre is approximately the centre; from the north-east corner of the State it is continuous westward along the Queensland border and to slightly beyond the 134th meridian, and southward along the boundaries of Queensland and New South Wales to latitude 30° S. Westward of Lake Eyre, its boundary has not yet been determined, but probably does not extend very far in that direction; it is bounded northward and southward by granite and other primary rocks.

The most western bore, viz., that at Lake Phillipson, has passed through a shale formation down to 3131 feet. The depth to which bores have been sunk in this area, and artesian water obtained, varies from a few feet in the vicinity of the outcrops of primary rocks to 4850 feet in that portion of the basin extending northwards towards the Queensland border.

(a) *Fossils*. The fossils observed are:—*Lingula subovalis*, *Pecten socialis*, *Pseudavicula australis*, *P. anomala*, *Maccoyella barklyi*, *M. corbiensis*, *Lima randsi*, *Pinna australis*, *Mytilus rugocostatus*, *M. inflatus*, *M. linguoides*, *Nucula quadrata*, *Cytherea clarkei*, *C. woodwardiana*, *Leda elongata*, *Mya maccoyi*, *Natica variabilis*, *Cinulia hochstetteri*, *Belemites australis*, *B. canhami*, *Criocerax australe*, and others.

(vi.) *Mesozoic*. This is represented by argillaceous and arenaceous shales, grits, sandstones, quartzose sandstone, gravel, and conglomerate, with limestone and concretionary clay ironstone. The deposit, which is horizontal and undulatory, contains scattered pebbles and boulders of granite, quartzite, sandstone, etc. Some of these boulders are of great size, and denudation has led to their being scattered over the surface to a considerable extent. Bores have been sunk through the deposit to ascertain whether it contained coal, as from its general appearance and resemblance to carbonaceous rocks of the Cape Otway district, Victoria, which contain small seams of coal and are of Mesozoic age, it was thought that this might be the case. It may be noted that the Cape Otway beds also contain beds of pebble conglomerate, the pebbles consisting of granite, syenite, mica-schist, etc. The deposit is undoubtedly a glacial one. The greatest thickness proved by boring through these beds was 964 feet, at which depth clay slate of primary age was bottomed on. The area occupied by the deposit is considerable; the main body stretches across from Victor Harbour to Yankalilla, a distance of about twenty miles; it is of irregular shape, having a width in places of five miles, and lies in a trough between high ranges; its boundaries have not yet been completely defined, and it probably underlies a portion of the Miocene Tertiary lying north and north-westward of Crozier's Hill and other places in the hundreds of Encounter Bay, Goolwa, and Waitpinga. Between Yankalilla and Second Valley, and at Cape Jervis there are beds

of clay and boulder drift which may be of similar age; and these may, however, have been reconstructed from them or deposited during Miocene times. On Kangaroo Island, in the hundred of Menzies, there is a similar deposit, which consists of false-bedded horizontal and slightly-dipping beds of sandstone and grit, with pebble conglomerate layers on shale and sandy clay, containing concretionary masses of brown iron ore and ferruginous sandstone with pebbles, and overlaid unconformably by basalt; it appears to be an outlying area of the Yankalilla and Encounter Bay beds. No fossils have been found at any of these localities, but from the similarity of these beds to those of the Cape Otway district they may be provisionally classed as Mesozoic.

(vii.) *Lower Tertiary or Upper Cretaceous.* Chiefly in the north-eastern portion of the State there are large areas of stony downs and table-hill country where sheets and isolated cappings, as thin beds of sandstone, quartzite, conglomerate, jasper rock, porcelainised shale, etc., etc., overlie both the Lower Cretaceous and older rock formation, which are either of Lower Tertiary or Upper Cretaceous age. The beds are intermittent in character, and are scattered over an area extending from the end of the Musgrave Ranges eastward to the Queensland border, and southward to Lakes Frome, Torrens, and Gairdner, and westward towards the West Australian border, in which direction they occur as small and widely-separated exposures.

(a) *Principal Fossils.* The principal fossils are:—*Mantellia babbagensis* and *Zamites ensiformis*.

(viii.) *Eocene.* The Eocene Formation is represented by polyzoal coral and shell limestone, chalky limestone with flints, fossiliferous clays, calcareous sandstone, and shale.

(a) *Coastal Localities.* On the Murray River, from Bookmark downward to Murray Bridge, good sections of these rocks overlaid by Miocene strata are exposed; the Nullarbor plain, extending from Eucla to Denial Bay, and forming sea cliffs from 200 to 300 feet high between the head of the Great Australian Bight and the West Australian border; the coasts of Yorke's Peninsula, Ports Willunga and Noarlunga, Kangaroo Island, and other places to a less extent.

(b) *Localities Inland.* Near Ardrossan, McLaren Vale, Mount Jagged; at these places the beds are elevated to a height varying approximately from 200 to 700 feet above sea-level. On the Adelaide plains a bore at Croydon shewed a thickness of at least 2296 feet.

The deepest bore sunk for water on the Nullarbor plain penetrated a thickness of 500 feet of crystalline limestone and white chalky limestone with flints, succeeded by shale, gravel, etc., to 1387, where it bottomed on granite.

(c) *Fossils.* The characteristic fossils are:—*Magellania insolita*, *M. pectoralis*, *Magasella deformis*, *Salenia tertiaria*, *Scutellina patella*, *Cassidulis longianus*, *Lovenia forbesi*, *Fibularia gregata*, *Oxyrhina woodsii*, *Aturia australis*, *Voluta pagodoides*, *Fusus sculptilis*, *Turritella aldingæ*, *Natica aldingensis*, *Dentalium mantelli*, *Dimya dissimilis*, *Lima bassii*, *Pecten consobrinus*, *Pecten aldingensis*, *P. eyrei*, *P. flindersi*, *P. hochstetteri*, *Glycimeris cainozoica*, *Limopsis insolita*, *Chione cainozoica*.

(ix.) *Miocene.* This is represented by sand, clay, shale, loam, shell, limestone, sandstone grit, conglomerate, gravel, and boulder deposits. They fill the basins of ancient estuaries and old river beds, rising in the ranges and trending towards and into the sea, forming low cliffs along the coast and in its vicinity, and probably underlying newer formations at numerous places along the coast.

The oyster beds of the Murray Cliffs, Willunga, etc., are of this age.

(a) *Fossils.* The characteristic fossils are:—*Terebra crassa*, *Ancillaria orycta*, *Latirus approximans*, *Marginella hordeacea*, *Murex anceps*, *Cominella sub-*

filicea, *Campanile triseriale*, *Semicassis subgranosa*, *Calyptrea crassa*, *Diastoma provisi*, *Helignope dennanti*, *Natica subvarians*, *Ostrea sturtiana*, *Ostrea arenicola*, *Spondylus arenicola*, *Placunanomia ione*, *Pecten antiaustralis*, *P. palmipes*, *P. consobrinus*, *Lima semicostata*, *Lima jeffreysiana*, *Lithodomus brevis*, *Amussium lucens*, *Cucullæa corioensis*, *Mitylus submenkeanus*, *Cardita dennanti*, *Barbatia simulans*, *Meretrix sphericula*, *Trigonia acuticostata*, *Corbula ephamilla*, *Cardium mediosulcatum*, *Lucina nuciformis*, *Dosinia grayii*, *Tellina lata*, *T. basedowi*, *Myadora corrugata*, *Panopæa orbita*, *Plesiastræa st. vincenti*, *Loripes simulans*, *Macropneustes decipiens*.

(x.) *Volcanic Rocks.* Basalt, dolerite, amygdaloid, lava, ash, etc., which have been derived from several points of eruption, cover limited areas in the south-eastern district in the vicinity of Mount Gambier and Millicent, and smaller areas in the hundred of Menzies, Kangaroo Island. Mount Gambier itself is composed of volcanic ash beds which at one time formed a portion of the walls of a crater. Mount Schanck is a perfect crater formed of beds of ash, scoria, etc. Other eruptive centres occur in the neighbourhood of Millicent. The basalt overlies beds of coralline limestone with flints of Tertiary age. The volcanic eruptions most probably took place at the same time as those in Victoria, where the basalt flows overlie Pliocene gold drifts. The Kangaroo Island basalt occurs as cappings in the hundred of Menzies, it rests on a formation similar to that of Yankalilla and Encounter Bay, the age of which has not yet been determined; its thickness is about 100 feet, and its geological age is most probably the same as that of Mount Gambier.

(xi.) *Post-Tertiary (Pleistocene).* Sand, loam, concretionary limestone, clay, gravel, marl, gypsum, salt, shell limestone, sandstone, limestone, conglomerate, gravel, and boulder drift—these constitute the surface formations over a large extent of the plain country and the alluvium of the creek and gullies running through and from the ranges into these plains, and as cappings to all rocks of greater age. Alluvial gold occurs in these deposits in many parts of the State, and has been worked for to a greater or less extent on the various goldfields which have been discovered in the main range from Cape Jervis northward, and on the isolated ranges west of Lake Eyre.

Fossil remains of large extinct mammals (marsupial), birds, reptiles, amphibians, and fishes have been found. These include:—*Marsupials*: Diprotodon, Nototherium, Phascalomys, Sarcophilus, Palorchestes, Macropus, Thylacoleo. *Aves*: Genyornis (Newtoni), Phalacrocorax. *Reptilia*: Crocodilia—Pallimnarchus Polleus, larger than any living species, a freshwater species allied to *C. Johnstoni*, but larger. Chelonia (tortoise)—Megalania Prisca, a gigantic land lizard. (Localities: Warburton River, Cooper's Creek in vicinity of Lake Eyre. *Pisces*: Ceratodus Silurard, and other fishes. The localities are as just mentioned.

The chief localities of the mammals are Adelaide, Yankalilla, Millicent, Baldina, Bunday, Mundowdna, Booleroo Springs, Lake Callabonna, Warburton River, and Cooper's Creek.

At Yankalilla and other places the remains of Diprotodon, etc., occur in soft spring deposits. At Lake Callabonna they are partially imbedded in the mud of the lake, in which they appear not to have been disturbed since their original deposition, and in other localities they occur in alluvium, either *in situ* or washed out by floods.

(xii.) *General.* Ice action is evidenced by glacial striæ on rocks of presumably Cambrian age, and on erratic boulders at Hallett's Cove and in the Inman River, and also by the occurrence of erratic boulders in the same district and on Yorke's Peninsula, Kangaroo Island, etc. There is no fossil evidence, but the deposit at Hallett's Cove underlies Miocene limestone, and may provisionally be regarded as of Mesozoic age. Erratic boulders are found strewn on the surface and imbedded in the Lower Cretaceous shales of the Central artesian basin.

6. **Geology of Western Australia.**¹—The work of organising a systematic geological survey of Western Australia was commenced in 1896.

During the twelve years since then the mining industry has attained such magnitude that attention has been concentrated upon examinations in more or less detail at and around important mining centres. Any general knowledge of its geology as a whole can consequently be gathered only from information gained whilst travelling from centre to centre taken with the observations of previous geologists.

In Western Australia an enormous area is covered by crystalline rocks, and only a limited area discloses the sedimentary series. The most recent formations repose directly upon the oldest; thus in the southern portion of the State, where the prevailing formations are crystalline schists, they are fringed by deposits containing marine shells of existing types.

(a) *Physical Features.* The physical features of this State are in no way striking, the coast-line being generally very free from indentation and generally followed by low flat coastal plains at little elevation above the sea level, which again are followed by low ranges (the previous coast-line), whilst behind the latter are elevated plains, broken here and there by low ranges or isolated hills and areas of depression called "lakes." There are no mountains of an altitude known to exceed 3000 feet, whilst those rising from elevated plains do not as a rule present a striking appearance even locally. There are numerous watercourses but no flowing rivers, for these, owing to the gradual and uninterrupted fall of the land towards the coast, only run immediately after heavy rains, leaving only filled pools or waterholes behind.

The so-called lakes of the interior are, in reality, chains of wind-planed salt flats lying along main valleys, and they are connected one with another, thus forming the drainage channels of this flat country, but as a rule the rainfall is so light in the interior that the water accumulated upon them from the surrounding country simply evaporates, leaving its salt burden behind.

The general character of the land surface presents that of one which has for a long period been subjected to erosion, in the course of which it is highly probable that wave action in a shallow sea has played an important part, since this appears to be the only satisfactory solution of the problem as to how the detrital matter was removed. Portions of this area (particularly the elevated one) have undoubtedly been land surface for a very considerable period, as their laterite cappings conclusively prove.

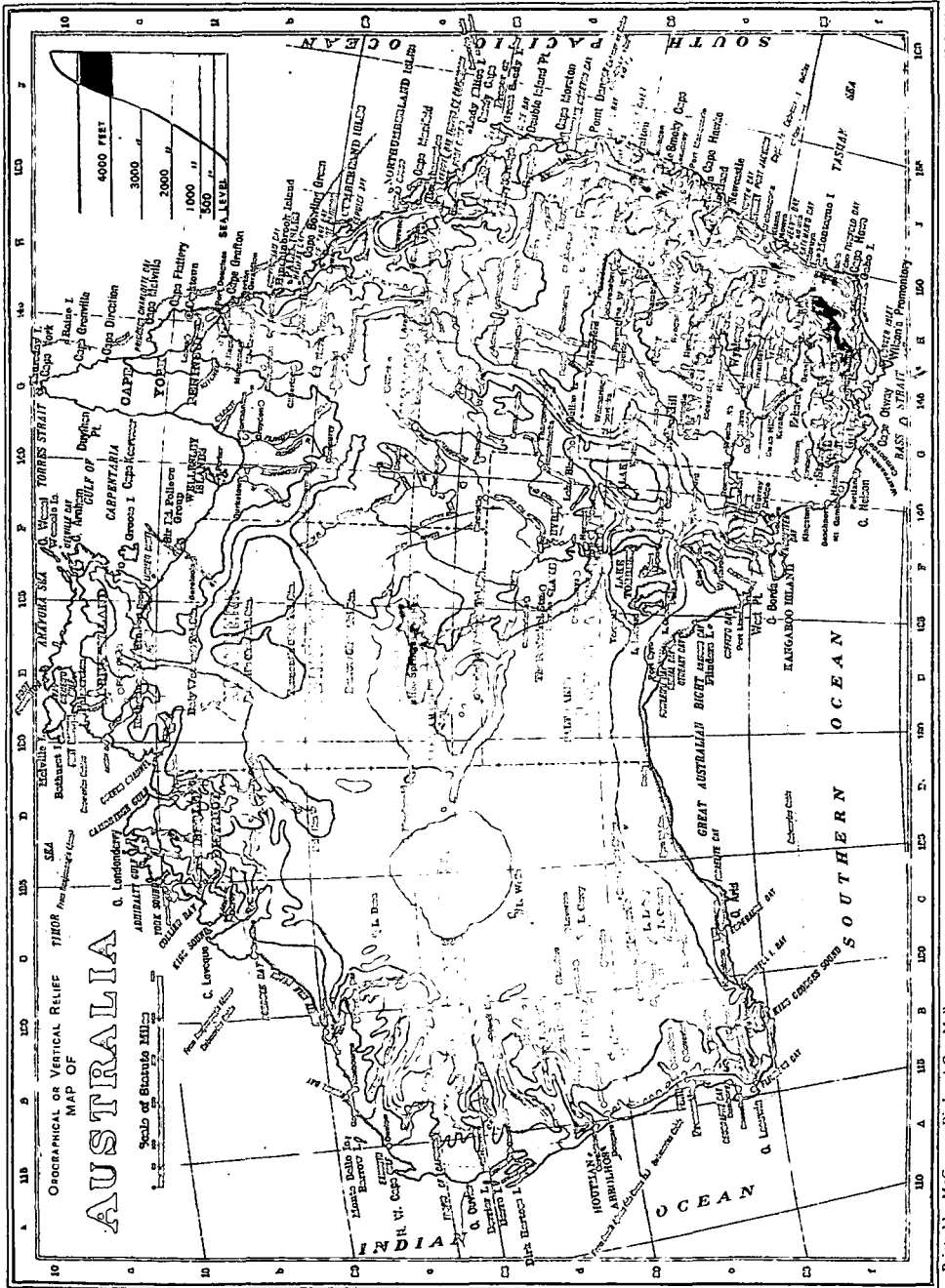
When we turn to the rocks this impression is further supported by the fact that the most modern stratified rocks as yet known here, after the Recent, are of Jurassic age; therefore we may safely conclude that the western portion of this continent has existed either as dry land or a group of islands in a shallow sea since the time at which an elevation took place in mid-Mesozoic times.

(i.) *Geological Formations.* The known geological formations of Western Australia are as follows:—

| | |
|-----------------|---|
| CRYSTALLINE ... | Igneous origin; Metamorphic origin (Pre-Cambrian?). |
| PALÆOZOIC ... | Metamorphic origin (Pre-Cambrian?); Cambrian, Devonian, Lower Carboniferous and Permo-Carboniferous. |
| MESOZOIC ... | Jurassic. |
| RECENT ... | Superficial and marine deposits. |
| VOLCANIC ... | Sheets, flows and necks. |

(ii.) *Crystalline Series.* The Crystalline rocks, which consist of granite, gneiss, schist and greenstone, cover an estimated area of 650,000 square miles, or a total of two-

1. In the absence of A. Gibb Maitland, Esquire, F.G.S., etc., Government Geologist of Western Australia, this article was contributed by Harry P. Woodward, Esquire, F.G.S., Assoc. M. Inst. C.E., Assistant Government Geologist of that State.



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thirds of the superficial extent of the State, and may be divided into three groups, the first of which comprises the granites, gneissic granites, and schists of the south-west division; the second, granites, gneissic granites and greenstones of the central and eastern portion of the State; and the third, granites, gneissic granites, schists and greenstones of sedimentary origin of Kimberley and the north-western districts.

- (a) *First Group.* The first group is represented by a belt of gneissic granites and acidic schists, with intrusive granite and pegmatite veins, diorite dykes and quartz reefs, which occupy practically the whole of the south-western land division of this State; they occur in a belt that has a course a little west of north, extending from the south coast to the Murchison River, being about 200 miles in width at the south, extending from Point d'Entrecasteaux to Doubtful Island Bay, whilst to the northward as it impinges upon the west coast it narrows down to 125 miles.

Upon the western side of this belt, these rocks form a bold escarpment to the seaward, called the Darling Ranges. This face is evidently a fault line, since rocks belonging to a much more modern period are exposed in places at their base, where the talus covering them has been removed or pierced by wells.

This range forms the edge of an interior tableland, but does not attain any considerable elevation; the highest point, Mount William, is said to be 3000 feet above the sea level.

The question as to whether these rocks are of sedimentary or igneous origin has not yet been determined, but the uniformity of their foliation and apparent bedding, with the occurrence of graphite, would almost favour the former. They have so far proved of economic value only at two points, viz.: Northhampton at the north, where lead and copper lodes are found associated with porphyritic diorite dykes, and at Greenbushes at the south, where tin deposits occur in pegmatic and griesen dykes. The diorite dykes which have been intruded into these rocks are generally of an aphanitic character, whilst the quartz reefs are large and often contain marcasite in considerable quantities, but, although generally carrying both gold and silver in small quantities, discoveries of a payable nature have not yet been made.

Upon the south coast, and also upon the eastern side of the Darling Range, a series of magmatic intrusions of granite are met, which upon the coast form bold bare headlands and islands of rounded and polished dome-like shapes or fantastical ruined forms, and this character is maintained by the island outcrops, which generally follow the lake margins between the Great Southern Railway line and the goldfields.

- (b) *Second Group.* To the second group, which occupies the whole area of the eastern goldfields, very considerable interest attaches owing to its economic importance, and therefore, it has been more closely studied than any other series in this State, but, unfortunately, as yet this close attention has only been paid to main centres of production, whilst with regard to the balance but little is known.

The rocks of this region vary from that first mentioned in the occurrence of what appear to be lenticular magmatic intrusions of basic rocks probably of diabase origin, which have been altered by the action of paramorphism and hydration into amphibolites, hornblende and chloritic schists and epidote rock, whilst portions less altered still retain a massive form consisting of epidiorite or diorite. These magmatic intrusions are contained in a gneissic country of doubtful origin, whilst intrusive granite, often magmatic, has at a more recent period broken through them and is frequently met with at the contact of the gneisses with the greenstones. Except where purely local disturbances have taken place, the planes of foliation lie in a north-westerly direction, or parallel to the long axis of the

basic lenses, whilst the quartz reefs or lodes usually follow them, thus presenting a bedded appearance.

Basic dykes can be observed intersecting the gneissic rocks, whilst porphyritic and granite dykes are of common occurrence in the basic zone. It is probable, however, that the basic dykes also traverse the basic rocks, and the acidic the gneisses, but owing to their similarity in a weathered condition at the surface, it is difficult to determinè their presence.

- (c) *Third Group.* The third group includes rocks of undoubted sedimentary origin, in which the alteration is due in most cases to regional metamorphism owing to magmatic intrusions of igneous rock not necessarily always visible at the surface. These rocks are largely developed in the Kimberley and north-west districts, where the transition from undoubted sedimentary rocks of Palæozoic age can be traced into crystalline schists.

Although not crystalline, the slates, quartzites, and conglomerates of the same horizon, having undergone metamorphism, must necessarily be included in this group, and since both the crystalline and uncrystalline form the country rock of metalliferous lodes, they are of equal economic interest, and in consequence have received considerable attention.

In the Kimberley district the two main rivers, the Fitzroy and the Ord, take their rise at the same locality, the former flowing in a north-westerly direction and the latter north, forming roughly a horseshoe-shaped valley, which follows the anticlinal axis caused by a granite intrusion, the beds in contact with which have been altered into schist, whilst following and overlying them upon either side, an ascending series of Palæozoic age is exposed.

These rocks are intersected by numerous granite and diorite dykes, whilst a series of large auriferous quartz reefs and copper lodes occur both in the crystalline and uncrystalline portion of this series, following invariably the bedding planes of the rock.

In the north-west there is a greater complex of this series than in any other portion of the State, whilst they are of very considerable economic interest also since they contain a greater variety of metals and minerals than do the rocks of any other district. They have been very greatly disturbed and altered in places by intrusions of granite with pegmatite and diorite dykes, whilst at a more recent period the district has been the scene of very considerable volcanic activity, which has in all probability played an important part in the deposition of certain of the ores.

Under this section, the auriferous belt which includes both Norseman and Kalgoorlie has also been placed provisionally, but there exists very considerable doubt with regard to the soundness of this classification.

(iii.) *Palæozoic Series.* The Palæozoic Series, consisting of slates, shales, quartzites, sandstones, conglomerates, and limestones from which fossils have been determined to be of Cambrian, Devonian, Lower Carboniferous and Permo-Carboniferous age, are most largely developed in the Kimberley district, but in it as yet no rocks newer than the Lower Carboniferous have been identified, although it is quite possible the extensive shale beds may be of the Upper or even Permo-Carboniferous age.

In this series some small lead and copper deposits have been discovered in the Napier Range, but with this exception they have not so far proved to be of any economic value in this district.

- (a) *Devonian.* In the north-west district the Government Geologist assigns the Nullagine series provisionally to the Devonian period, the beds of which consist of sandstones, grits, and conglomerates, with interbedded volcanic flows or sheets. Of this series interest attaches to the conglomerates, since they have proved to be auriferous in places, being very similar to the banket deposits of South Africa.

To the southward from the north-west coast this series of rocks is supposed to extend in a southerly direction for a considerable distance, probably as far as the Gascoyne River, forming a tableland through which the creeks have cut many cannon-like gorges, at the bottoms of which slates are exposed, whilst from the unconformable junction springs often flow.

- (b) *Lower Carboniferous.* The Lower Carboniferous rocks are developed in the form of a long coastal belt, commencing a little north of the Ashburton River and extending southward across the Gascoyne and Wooramel Rivers, from which point they are lost until they outcrop again upon the Irwin River. It is, however, highly probable that they are continuous, their outcrops being hidden by superficial deposits.

This series north of the Wooramel consists of limestones, sandstones, shales, and conglomerates, with a general dip to the westward, and it is from them that the large supplies of artesian water have recently been obtained at several points.

- (c) *Permo-Carboniferous.* The age of Permo-Carboniferous has been assigned by palæontologists to the rocks of three localities, viz., the Irwin River, Bullsbrook, a little north of Perth, and Collie, in the south-west. The rocks at the Irwin and the Collie consist of sandstones, grits, and pebble beds, with shales more or less micaceous and coal seams of a non-caking and poor quality, identical in composition with some of the Mesozoic coals of both Europe and America.

Some recent boring upon the Greenough River, a little to the northward of the Irwin River, has revealed beds of a similar coal. It is therefore possible that these are of greater extent than was supposed, and that they dip beneath the Jurassic beds which lie to the westward.

(iv.) *Jurassic.* The Jurassic Series, which consists of sandstones, light-coloured claystones, grits, and limestones, occurs in the Northampton district, extending south to the Greenough River. In all probability it forms a continuous belt southward from this point, following the coast to Gingin, which is about 40 miles north of Perth, in which locality fossils of a similar age are said to have been obtained, but, since in the intervening country the surface is practically all sand, no definite statement with regard to it can be made at present.

(v.) *Recent.* The Recent deposits consist of raised beaches at various points around the southern and western coast and coralline limestones and sandstones, which sometimes contain fossils or casts of shells of existing types, thus proving this section of the coast to be rising.

(vi.) *Volcanic.* Until quite recently the volcanic series was considered to be only represented by a basaltic sheet in East Kimberley and an outcrop of the same rock at Bunbury in the south-west. Later investigations, however, prove that it is of considerable extent and importance.

These rocks evidently belong to two distinct periods, the one consisting principally of andesitic rocks and the more recent of basaltic. They both occur in the form of dykes, necks, sheets, and flows, and are often vesicular, whilst the andesites are sometimes amygdaloidal.

Basalt occurs as extensive flows, forming the Great Antrim Plateau in the East Kimberley district, which extends into the Northern Territory of South Australia, and is also met with at many points in West Kimberley, but this latter has not as yet been geologically mapped.

At Bunbury it occurs in sheet form, assuming the columnar structure upon the beach, whilst southward from this point outcrops are met with in the Lower Blackwood River, and at Black Point upon the coast.

The andesites are gradually proving to be of much more frequent occurrence than was supposed, since the cleaved hornblende andesites were often mistaken for aphanitic

amphibolites, into which they sometimes merge so imperceptibly that it is impossible to define a boundary. These rocks are largely developed in the north-west district, between the DeGrey River and the Ashburton River, whilst upon the Murchison goldfields they have been identified at Day Dawn, Cue, and Gabanintha, where they appear to have influenced the concentration of gold in the lodes.

(vii). *General.* A description of the geology of Western Australia would not be complete if the series of nondescript rocks called *laterites* were omitted, since they form one of the staple surface formations of this State. These rocks are supposed to originate from the gradual weathering *in situ* of schists containing iron, which, whilst in solution, is drawn to the surface by capillary attraction, and there deposited upon the evaporation of the water.

They are usually called ironstone gravel or conglomerates, and are found as cappings to most of the hills upon the goldfields, also covering all the ranges in the south-western district. The rock varies very greatly in both composition and character, the former being directly traceable to the parent rock from which it was derived, and the latter to the conditions under which it was formed. Nodular clay ironstone is by far its most common form, but it also often occurs in a massive state sometimes of considerable richness in iron, whilst at others it passes into a ferruginous sandstone.

No classification of the mineral veins has yet been determined upon, but typical examples exist of fault, dyke, shearing, discission, and shrinkage plane fissures, all of which possess one feature in common, no matter what class of ore is contained, which is that the matrix is quartz.

That the geological knowledge of Western Australia is at present very limited, is a natural consequence of the demand that the official staff shall give first attention to the study of economic problems. A considerable period must elapse before anything approaching a systematic survey can be undertaken.

7. Geology of Tasmania.¹—Tasmania is a geological outlier of Eastern Australia. Its Pre-Cambrian and early Palæozoic history can be delineated only imperfectly. In Mesozoic times some connection existed with the Australian part of Gondwana land. In the early Tertiary it was separated from the adjacent island continent; subsequently the land connection was restored, to be again broken, since when it has remained an island. Dr. A. W. Howitt and Mr. C. Hedley have pointed out that the last land connection was between Wilson's Promontory in Victoria and Cape Portland in Tasmania, *via* Flinders Island and the Kent group, and that an elevation of from 200 to 300 feet would lay dry a tract of country between Victoria and Tasmania.

The rugged nature and the remoteness of the mountain fastnesses of the island have been great impediments to geological research. In spite, however, of the physical difficulties, it has been possible to fix the stratigraphy of a large portion of the State, though the lower Palæozoic strata need further study before they can be satisfactorily determined. As far as examination has proceeded the following systems can be recognised:—

| | | |
|------------------|--------------------------|----------------------------|
| i. PRE-CAMBRIAN. | iv. SILURIAN. | vii. TRIAS AND TRIAS-JURA. |
| ii. CAMBRIAN. | v. DEVONIAN. | viii. TERTIARY. |
| iii. ORDOVICIAN. | vi. PERMO-CARBONIFEROUS. | ix. QUATERNARY. |

(i.) *Pre-Cambrian.* The diagnosis of the Pre-Cambrian must be accepted as provisional. It is probable that they belong to the Algonkian division of the group. Among them may be mentioned the quartzites and mica schists of the Port Davey districts. These are strongly developed in the south-west of the island as biotite and muscovite schists, greatly contorted, alternating with white saccharoidal quartzites, all striking north-west and dipping south-west. High headlands of quartzites, which have resisted denudation, jut out on the south coast, with bare, snow-white crests visible for many miles. Ores of copper, antimony, and lead occur in these schists. The contorted

1. This article is contributed by H. W. Twelvetrees, Esquire, Government Geologist and Chief Inspector of Mines of the State of Tasmania.

quartz schists and white quartzite of Rocky Cape, on the north-west coast, are also considered as Pre-Cambrian. These are traversed by granitoid dykes carrying copper ore. The quartzitic and micaceous schists west of the King William and Denison Ranges belong to the Pre-Cambrians. Garnetiferous amphibolite in the Collingwood River valley, the amphibolite of the Rocky River, enclosing lenses of magnetite with pyrrhotite and copper pyrites, and the zoisite-amphibolite of the Forth River, are also ascribed to the Pre-Cambrian group.

(ii.) *Cambrian*. This system is represented by friable, yellow sandstones, containing casts of *Dikelocephalus*, *Orthis*, *Bellerophon*, etc. These occur at two widely-separated localities on nearly the same meridian, one being on Caroline Creek, between Railton and Latrobe, the other on the Humboldt Divide and in the Florentine Valley. Mr. R. Etheridge reports that the fossils appear to be of Upper Cambrian age. The crystalline sandstones, quartzites, and conglomerate of which the Thumbs and Denison Ranges are composed are believed to be Cambrians.

(iii.) *Ordovician*. The slates and sandstones of the goldfields of Lefroy, Mount Victoria, Mathinna, Mangana, etc., in the northern and eastern parts of the island, are referred to this system, though few fossils of any stratigraphical value have been found. Their bearing is either east or west of north, and anticlinal axes are long and continuous. The gold quartz reefs which traverse them began to form apparently at the close of the Upper Silurian. Large and important mines have been opened on these reefs, and every geological consideration that can be adduced points to the permanency of the goldfields.

The conglomerates and sandstones at Beaconsfield, together with the blue limestones which prevail in that district at Blyth's Creek and Winkleigh, as well as the Chudleigh and Railton limestones, may be provisionally regarded as of Ordovician age. The Blyth's Creek limestone has yielded imperfect casts of corals, and the Railton quarries contain remains of *Actinoceras* and other cephalopods.

A series of clay slates occurs between Zeehan and Mount Read, known as the Dundas slates, and believed to be of this age. Ill-preserved traces of graptolites have been noticed in them. These slates extend to Mount Read, Mount Black, and the Red Hills, and along their junction with intrusive quartz porphyry rocks (felsite, keratophyre, granophyre, porphyroid, etc.) large lenses of complex gold and silver bearing sulphidic ores of zinc, lead, and copper have been formed.

Another group of rocks at the base of the Ordovician is the Gordon River series of limestones, sandstones and slates. The limestone in this group is fossiliferous. The organic remains include *Favosites*, *Orthoceratits*, *Raphistoma*, *Orthis*, *Rhynchonella*, *Euomphalus*, *Murchisonia*, etc. The limestone reappears to the north-east of Mount Farrell in the bed of the Mackintosh River, a short distance above its junction with the Sophia River. East of the Valley of Rasselas these rocks occur again in the Florentine Valley and at the Junee.

(iv.) *Silurian*. The Silurians are strongly developed at Zeehan on the West Coast, at Middlesex, and Mount Claude, Heazlewood, and the Eldon Valley, Queen River, etc.

At Zeehan, conglomerates and tubicolar sandstone underlie the limestones, slates, and sandstones, which are intersected by the numerous galena-bearing lodes which have the ore for which this field is so well-known.

The fossils found in limestone and quartzite belong to the genera *Hausmannia*, *Asaphus*, *Illænus*, *Cromus*, *Rhynchonella*, *Strophodonta*, *Lophospira*, *Murchisonia*, *Eunema*, *Tentaculites*, and the beds are considered by Mr. R. Etheridge to be homotaxially equivalent to the lower portion of the Upper Silurian.

Similar tubicolar sandstone occurs near Bell Mount, Middlesex, and on the Five Mile Rise, and casts of *Hausmannia* (or *Phacops*), *Rhynchonella*, *Orthis*, and coral have been found.

Clay slates in the Eldon Valley containing fossil casts of *Calymene*, *Orthis*, *Cardiola*, are considered to belong to the Upper Silurian.

At the Heazlewood limestone and sandstone have yielded remains of *Hausmannia*, *Cromus*, *Cornulites*, *Rhynchonella*, *Tentaculites*, and *Favosites*.

Sandstones and limestones in the Queen River district have been identified as Silurian (Middle or Upper Silurian). These are west of Queenstown. Brachiopods, and trilobites have been found also on the east side of the Lyell Razorback, indicating a similar age for rocks on the Lyell and Lyell Blocks mining properties there. The Queen River sandstones are charged with casts of *Spirifera* and *Orthis*.

Trilobite-bearing Silurian rocks also occur north of the Pieman River near the Wilson River.

In the Zeehan field the Silurian slates are largely accompanied by contemporaneous and intrusive sheets and dykes of vesicular melaphyre. The igneous rock corresponds very closely with the German spilite, an amygdaloidal diabase, sometimes called lime diabase.

Massive conglomerates crown most of the West Coast Mountains, the Dial Range on the North-west Coast, Mounts Roland, Claude, etc. These have generally been ascribed to the Devonian, but more recent data point to the commencement of the Silurian or even a still greater age as more probable.

The quartz-porphyrines or felsites which form the backbone of the West Coast Range are the geographical axes of Mounts Darwin, Jukes, Huxley, Tyndal, Read, Murchison, and Farrell. They carry copper ore associated with lenses of hematite and magnetite, chloritic and felspathic copper-bearing schists, some of them, probably schistose porphyries, flank them and are enclosed in them. The felspathic schists of Mount Lyell belong to this group. Sufficient is not known of this geological formation to enable its age to be stated definitely.

Associated with the rocks of the Silurian system in the northern and western parts of the island is an extensive development of serpentine, the altered form of gabbro and its appendages, peridotite and pyroxenite. This rock is found at the Heazlewood, at Trial Harbour, in the Dundas district, in the Forth Valley, and near Beaconsfield. The difference of age between it and the Devonian granite is slight. Chronologically some of the granite is later.

(v.) *Devonian*. Granite occurs in a meridional line down the East Coast, extending from Flinders Island to Maria Island. It forms Mt. Cameron, Mt. Stronach, the Blue Tier, Freycinet's Peninsula, and is exposed at Ben Lomond and at the base of Mt. Arthur. Exposures are also seen at the Hampshire Hills, Granite Tor, Middlesex, the Magnet and Meredith Ranges, Heazlewood, etc. The quartz porphyry dykes at Mt. Bischoff, the tourmaline lodes at Mt. Black, and in the Dundas district, the stannite lodes and quartz-porphyry dykes at Zeehan, all denote a granitic reservoir below a large portion of the mineral fields on the West Coast. No granite intrusion into Permo-Carboniferous strata has been observed. The normal granite is a dark mica one, but muscovite and lithia micas appear in the tin-bearing varieties. Tin-bearing lodes occur on Ben Lomond and Mt. Heemskirk, while on the Blue Tier floors or stocks of altered granite form huge tin ore bodies of low grade. Porphyry dykes at Mt. Bischoff have shed the vast accumulation of tin ores which has been mined by the Mt. Bischoff Co. for the last thirty-four years with wonderful success.

(vi.) *Permo-Carboniferous*. The base of the system is formed by glacial conglomerates, grits, micaceous sandstones and flagstones, well seen on Bruny and Maria Islands and elsewhere in Southern Tasmania. Fossiliferous mudstones and limestones form a lower division of the system, while the upper division comprises the Tasmanite shale and coal measures of the Mersey basin, with upper marine mudstones and shales in the Mersey basin and at Hobart, and the coal measure series of Mt. Cygnet and Southport. The characteristic fossil plants of the coal measures of this system are *Glossopteris*, *Gangamopteris*, *Noggerathiopsis*. The seams average from 1½ to 2 feet in thickness, and the analyses show from 36 to 42 per cent. fixed carbon, 41 to 48 per cent. gas, 2 to 9 per cent. ash, and 8 to 12 per cent. moisture. They are known as the lower coal measures of Tasmania.

South of Wynyard and at Barn Bluff, cannel coal or kerosene shale is met with. The Wynyard or Preolenna seam of this coal is in sandstone overlying fossiliferous

mudstones, and assays up to 76 per cent. volatile matter. The Barn Bluff cannel coal has only been observed in loose blocks, supposed to have been distributed by glacier action.

At the close of the system, or during Mesozoic times, a local intrusion of alkaline rocks, alkali and nepheline syenites, etc., occurred, traversing the Permo-Carboniferous strata south of Hobart, from Oyster Cove and Woodbridge on the Channel to the Huon River in a N.E.-S.W. line. Auriferous quartz and pyrites have been developed near the line of the contact of these igneous rocks with the Permo-Carboniferous sandstones and mudstones, and a good deal of free gold has been shed into the flats.

(vii.) *Mesozoic*. The fresh-water beds, which succeed the Upper Palæozoic, belong to the Mesozoic division, but cannot as yet be subdivided with certainty. The nearest approach to a subdivision would be as follows: but the reference to European equivalents is nothing more than an attempt at correlation homotaxially:—

- (a) *Trias* (?) 1. Variegated sandstones with remains of heterocercal fishes and amphibians.
- 2. Sandstones and shales with coal at Ida Bay.
- (b) *Jura* (or *Rhætic*). 3. Upper coal measure sandstones.
- (c) *Cretaceous* (?) 4. Diabase in intrusive masses, sills and dykes.

The variegated sandstones occur at Knocklofty, the Domain, Ross, etc. Remains of *Acrolepis* have been found at Knocklofty and Tinderbox Bay. Bones of an amphibian (labyrinthodontine?) have been obtained from the Government House quarry in the Domain.

The upper sandstones are readily recognised by their soft felspathic nature: they are generally greenish-grey to yellowish-brown, sometimes white. They are widely distributed throughout Eastern and South-eastern Tasmania, and occur also in the extreme south. They are largely interrupted by intrusions of diabase. They flank the central, eastern and western tiers, and fringe isolated mountains, e.g., Mt. Nicholas, Mt. Victoria, Ben Lomond, Ben Nevis, Mt. Dundas, Cradle Mountain, etc. From Fingal and Mt. Nicholas they extend on the outskirts of the diabase ranges southward to Seymour, Bicheno, Llandaff, Spring Bay, and all over South-eastern and a large part of Southern Tasmania.

These measures enclose the coal seams, averaging from 4 to 12 feet, which are worked at the Mount Nicholas, Cornwall, York Plains, and Sandfly collieries. The analyses of this coal range from 53 to 60 per cent. fixed carbon, 23 to 31 per cent. volatile matter, 9 to 16 per cent. ash, 2 to 4 per cent. moisture, and the coal is not a coking one. A sub-anthracitic coal is raised at York Plains, and at the Sandfly mine a seam of anthracite occurs containing 80 per cent. fixed carbon and 8 per cent. volatile matter.

The fossil flora from these measures must be regarded as characteristic for the Mesozoic. The list includes *Thinnfeldia*, *Pecopteris*, *Tæniopteris*, *Sphenopteris*, *Alethopteris*, etc.

The diabasic intrusions cut up the coal measure areas into different basins and cover large portions of the Central, Eastern and Southern districts.

(viii.) *Tertiary*. A great stratigraphic break exists between the Mesozoic and the succeeding strata. This Tertiary system cannot be subdivided as in Europe. The two divisions, Palæogene and Neogene, are adopted in Tasmania. According to this arrangement, the subdivisions are as follows:—

- (a) *Neogene* (= approximately to Pliocene).

Under this head would fall various river terraces and estuarine deposits.

- (b) *Palæogene* (= Eocene to Miocene).

- 3. Basalt lavas.

- 2. Fluvial and lacustrine clays and sands, tin ore drifts, and deep leads.

- 1. Fossiliferous marine beds at Wynyard (= Eocene).

The marine fossiliferous beds at Wynyard are covered with the basalt which, generally throughout the island, appears to separate the Lower from the Upper Tertiaries. The extensive lacustrine deposits within the watershed of the Tamar cover an area of 600 square miles, and embrace widely-spread pre-basaltic or Palæogene clays and sands, which form a series 900 to 1000 feet thick. Such sediments with fossil leaves of European genera occur at Launceston, Dilston, Windermere, Beaconsfield, Waratah, Strahan, St. Helens, Burnie, and on the Derwent. In the north-east and east, the sub-basaltic gravels are worked on a large scale for tin ore, and yield most of the alluvial tin of the State.

At the close of the Palæogene a great outpouring of basaltic lava took place, and this rock is very general throughout the Island, though rarer on the West Coast.

The rock is usually olivine basalt, but nepheline basalt occurs on the Shannon Tier, and at Sandy Bay, Hobart.

The Neogene valley terraces can only be distinguished from the earlier Tertiaries by position and lithological characters. Some of the gravel drifts of the Derwent, of the Longford plains, and in the neighbourhood of Launceston, belong to this subdivision. The close of the Tertiary, or the beginning of the Quaternary, witnessed a glacier epoch in the west and centre of the island. The highlands round Barn Bluff, Mounts Tyndal, Lyell, Sedgwick, Jukes, Darwin, etc., and the western edge of the great central plateau abound with tarns, ice-scratched stones, and moraines. No proof of glacier conditions in this period in the eastern part of the island has been adduced yet.

Tin and gold ores are the most important products of the deposits of the Tertiary system. They are won from the alluvial gravels and leads of the period. The sands in the Savage River and other tributaries of the Pieman and Huskisson have been worked for osmiridium. Zircon sand, near Table Cape, has also been exploited. Tertiary clays are used largely for brick-making and pottery, the gravels for road-making. Lignites exist, but are not yet industrially important. Though there has been great volcanic activity, there are no signs of Tertiary metalliferous veins.

(ix.) *Quaternary.* These deposits may be classed as follows:—

(a) *Recent.*

3. River alluvium and sand dunes.
2. Raised beaches and helicidæ sandstone.

(b) *Pleistocene.*

1. River drifts.

The later terrace drifts in the valleys of existing rivers are referred to the Pleistocene. Sand dunes, consolidated to shelly sandstones, occur on Cape Barren, Badger, Kangaroo and other islands in Bass Straits, containing shells of *Helix*, *Succinea*, etc. These sandstones sometimes overlies a raised beach. The raised beaches on the North and South Coasts indicate elevation within the Recent period.

(x.) *Ore Deposition.* The period during which the deposition of metalliferous ores was most active was the interval between the Upper Silurian and the Permo-Carboniferous. Ore deposition has been associated principally with the consolidation of the gabbroid and granitic masses. Nickel sulphide and osmiridium owe their origin to the serpentine at the Heazlewood, Trial Harbour, and Dundas. On the other hand the granite magma is responsible for the lodes of silver lead all over the island, whether these pierce quartz porphyry as at the Devon and Mount Tyndal, slate, sandstone and limestone as at Zeehan, or ultra basic dyke rock as at the Magnet. The pyritic lead, zinc, or copper ores of the West Coast Range (Mount Lyell, Mount Read, Mount Black, etc.) are also

most probably due to the action of the acid magma. Tin and wolfram ores are naturally referred to the same source, and the gold quartz reefs of the Ordovician strata must be regarded as the result of the expiring effort of the cooling magma to get rid of its surplus available silica. A few veins of barren quartz occur in the Permo-Carboniferous strata, but beyond the exceptional case of the alkali porphyries at Port Cygnet, the chapter of metal-bearing lode action closed, as it began, with the Devonian period. Within that period, therefore, were accumulated the great stores of mineral which the mining industry of Tasmania is now drawing upon. The mines of gold, silver, lead, copper, and tin, rank high among the famous mines of the world. Her mineral wealth may, in fact, be considered remarkable, when despite the small area of the island (26,000 square miles) the value of the mineral produced for the year ending 31st December, 1907, amounted to £2,277,159. The industry is thriving, is on a sound and established basis, and with the careful administration and care which it receives it may with confidence be expected to continue a highly important asset of the State for a quite indefinite period of time.

§ 6. The Fauna of Australia.¹

1. Zoological Isolation of Australia.—The most striking character of the Australian Fauna is its distinctness from that of the rest of the world. This character is evinced as much by the peculiarity of the animals found in Australia as by the absence of others which are widely spread over the remainder of the earth's surface. In consequence of this some zoogeographers have divided the earth into two regions, Australian and non-Australian.

The land-fauna of the globe is, as a rule, limited in its migrations by the sea. Other barriers to the spread of species may be now and again overstepped, but the sea imposes restrictions that remain absolute under the existing conditions. Geology, however, teaches us that the sea has once rolled where our highest mountains stand, and that the sites of former lands are now sunk beneath the waves. Here then we find a clue to the presence on all the larger land areas of terrestrial animals. The marine barrier that now separates them is but a passing feature; they were once united and they may yet be so again, and while the union existed there was a free interchange of inhabitants.

The older a group of animals is the farther could it spread, for it has been able to make use of many land connections that have now vanished. Thus, the *Felidæ* and *Suidæ* (cats and pigs) are old enough to have found their way over almost the whole habitable globe, excepting Australia and a few islands to the north. Alone of the great islands of the world, our island-continent has remained separated from the other great land masses since the first appearance of the *Felidæ* and *Suidæ*, and so none have reached it.

Facts of a similar nature, almost numberless, may be brought forward in confirmation of this conclusion. Animals and plants alike bear evidence to its truth, and thus we see how the deficiencies of the Australian fauna are accounted for. The barrier that prevented the incursion of the adaptable and enterprising cats and pigs was equally efficient in the case of a host of other forms, from elephants to earthworms.

2. Effect of Isolation.—Before this isolation of Australia, however, some animals had reached our shores, and among them were the marsupials. Once here, they were protected by isolation from competition with the more specialised forms that came into existence elsewhere. They varied among themselves, and gave rise to the diversified forms that now inhabit the country.

There are other groups besides the marsupials whose history runs on similar lines. Of some of them we know this history, but not of all, and the deciphering of the tale of the early origin of the fauna of Australia is one of the many interesting pieces of work that lie before the naturalist.

1. This article was contributed by T. S. Hall, Esquire, M.A., D.Sc., Lecturer in Biology, Melbourne University.

3. **The Non-marine Fauna.**—The chief interest in Australian fauna centres round the dwellers on land and in fresh water. It is they who shew the peculiarities just noticed, whereas the marine forms are more widely spread, since barriers to their migration are more easily burst through. The fauna of the Pacific Ocean differs in many points from that of the Atlantic, but is linked more or less closely with that of the Indian Ocean, so that it is usual to speak of an Indo-Pacific region. The widespread character of the marine fauna as opposed to that of the land will render it advisable, owing to limitations of space, to concentrate our attention on the latter, though we must, in consequence, pass by much that is of interest.

(i.) *Mammalia.* The great group of mammals has been divided into two sections. the *Prototheria* or egg-laying mammals, and the *Theria*, which includes all the rest. The *Theria* are again subdivided into numerous sections, one of which is that of the marsupials. For a long while the marsupials were separated from the rest of the *Theria* on account of certain peculiarities connected with gestation. The young are born in a very undeveloped condition, and usually there is, during development, no organic connection between the foetal and maternal tissues, or in other words, no placenta is formed. However, recent research has shewn that a placenta is present in the native cat (*Dasyurus*), and as it is universally present in all *Theria* other than marsupials the criterion fails. *Dasyurus* cannot be separated from the other marsupials, so all must belong to the one group, which is called *Theria*.

The egg-laying mammals are confined to Australia, Papua and Tasmania, and there is no absolutely conclusive evidence of their ever having lived elsewhere. As regards marsupials, they are found nowadays only in Australia and some adjacent islands, and in America as far north as the Southern United States. In former times, as we know from fossils, they ranged still further north and lived even in Europe.

(a) *The Higher Theria.* In the *Theria* above the marsupials we are poorly off. The Dingo (*Canis dingo*) reached Australia while the giant mammals were still living, and his bones occur as undoubted fossils, a fact proved some forty years ago, but still not accepted by many foreign naturalists. There are several kinds of true rats (*Mus*) and a widely spread water-rat *Hydromys chrysogaster*, as well as a few other kinds. Bats are common, for both they and rats have found their way all over the globe, excepting to a few remote islands, and this without the aid of man, and in fact before his appearance on the scene. The largest bats we have belong to the genus *Pteropus*, and are fruit-eaters, being a great scourge to orchards in the warmer parts. They are generally spoken of as flying foxes. Another large bat, a white one (*Megaderma gigas*), is found in caves far inland. Seals, whales, and the dugong being marine forms, must be passed over.

(b) *Marsupials.* The group of Marsupials has, in Australia, reached its highest stage of development, and, as the other *Theria* are almost absent, its members have become differentiated in almost every direction to occupy their places. Thus we have the grass-eating kangaroos, the flesh-eating Tasmanian wolf and Tasmanian devil, and the "tiger cat," the insect-eating native cats and "weasels," the ant-eating marsupial mole and banded ant-eater, the root-eating wombats, the omnivorous bandicoots and leaf-eating koalas. One great group of land *Theria* has no counterpart. There is no marsupial bat.

Marsupials have been divided into two main groups which, roughly speaking, though not exactly, correspond to carnivorous and vegetarian. This usual, but somewhat unsatisfactory, classification is founded on the teeth. An examination of the lower jaw of a wombat, kangaroo, "possum," or a few other forms, will shew that there are two strong teeth in front, the incisors. Usually only two are present. This gives the name to the group, *Diprotodontia*, that is, "two teeth in front." Most of its members are

vegetable feeders. The other group comprises forms with several lower incisors—the *Polyprotodontia*, “many front teeth.” These are almost entirely flesh-eaters. A more modern classification, and apparently a better one, is based on the structure of the foot. In the kangaroo, what appears to be a single toe on the inner side of the hind foot bears two claws. In reality there are two toes present which are bound together by skin. This feature is known as “syndactyly,” and gives its name to the group, *Syndactyla*. The other group comprises the remaining marsupials, and is known as *Diadactyla*.

- (c) *Prototheria* or *Monotremes*. The egg-laying mammals, in their strange method of reproduction, and in certain points in their structure, shew a decided approach to the reptiles, and they are widely separated in many ways from the higher mammals. They include only the platypus (*Ornithorhynchus anatinus*) and the spiny-ant-eaters. The platypus is found only in Eastern Australia and Tasmania, and does not range up very far into Queensland. Its curious duck-like bill is so extraordinary that the first skins sent to Europe were viewed with suspicion. The memory of the mermaid, made up of fish and monkey skin, was too recent to be forgotten. Although the adult has no trace of teeth, strong bony teeth are present in the young, and are shed only when the animal is about half-grown. Their place is supplied by horny pads, which are quite efficient for the work they have to do. The platypus makes its nest at the end of a long burrow in a river bank, the entrance being below water-level. The eggs have no hard shell, but are soft like those of the reptile.

The spiny-ant-eaters are represented on the mainland and in Tasmania by the well-known *Tachyglossus aculeata* or *Echidna aculeata*, and in Papua by an allied form with a somewhat longer beak. The beak is narrow and rounded, and the long tongue, covered with a viscid secretion, is a very effective instrument for the capture of the ants on which the animal lives. The spines with which the body is covered are colour-banded like those of the true porcupines of the northern hemisphere, but are much shorter. When attacked the animal rolls itself into a ball. It is of great strength, burrows vertically downwards with extreme rapidity, and is an expert rock climber. The two eggs are hatched in a pouch which superficially resembles that of the marsupials. Though possessed of a pouch and “marsupial” bones, the egg-laying mammals are not, in the ordinary sense of the term, allied to the marsupials.

(ii.) *Diadactylous Marsupials*. Confining our attention to the Australian marsupials, we find the *Diadactyla*, which have the second and third toes separate, are represented only by a single family, the *Dasyuridae*, or native cat family. This family is apparently less changed from the original marsupial stock than is any other Australian one. The “native cats” (*Dasyurus*), the several kinds of which vary in size from that of a pug-dog to that of a ferret, are nearly all spotted with white, the body colour being brown or black. They are found all over Australia, from Tasmania to New Guinea. A number of small species exist, ranging in size from a half-grown kitten to that of a mouse, and belonging to two other genera (*Phascologale* and *Sminthopsis*). Popularly they are called weasels and mice. Some of them are terrestrial, others arboreal. There is a peculiar jerboa-like little species (*Antechinomys laniger*), which is found throughout the drier interior. The banded ant-eater (*Myrmecobius*), about the size of a rat, has a similar range, but seems commoner on the western side of the continent. The Tasmanian Devil (*Diabolus ursinus*, or *Sarcophilus ursinus*), now confined to Tasmania, is a clumsy, hideous, black and white blotched animal, about as large as a pug-dog. Its ferocity and strength justified its name.

The last member of this family is the Tasmanian wolf or tiger (*Thylacynus cynocephalus*). It is about the size of a retriever, but with a much longer body. The cross-

banded back gives it the name of tiger, which is the one generally used. It is a fierce, predatory animal, but is rapidly becoming exterminated. Like the Tasmanian Devil, it formerly lived on the mainland, and its fossil remains have been found as far north as the Darling Downs. All authorities are not agreed that the "tiger" should be included in the same family as the animals previously mentioned. Some place it in a family by itself; others group with it certain South American extinct animals known as Sparassodonts; others again hold that the latter forms are not marsupials at all, but a sort of connecting link between them and an ancient group, the *Creodonta*, which gave rise to the modern *Carnivora*, and to the *Marsupialia* as well.

(iii.) *Syndactylous Marsupials*. Taking now the remaining Australian marsupials, we find that they all have the second and third toes bound together; they are *Syndactyla*. Two families are polyprotodont, namely the *Peramelidæ* and the *Notoryctidæ*; the others are diprotodont.

The *Peramelidæ*, or bandicoot family, comprises several animals mostly about the size of a large rat. They are ground-dwellers, and range over all Australia. The marsupial-mole (*Notoryctes*) forms a family by itself. It is about the size of a newly-born kitten, golden yellow in colour, quite blind, its eyes being very rudimentary and covered by the muscles of the face. On hard ground it is a clumsy, sprawling walker, but in sandy soil a remarkably rapid burrower, its great, shovel-shaped claws enabling it to sink out of sight almost at once. It has a remarkably restricted area of distribution, being confined, as far as is known, to the basin of the Finke River in Central Australia, though there is the probability that it is to be found in Western Australia.

The remaining families are diprotodont. The *Phalangeridæ* include the Australian "possums" (*Trichosurus*), which have wrongly appropriated the name of the true or American opossums. The value of the skins of these animals for furriers' purposes leads to their slaughter by millions annually, and they have now disappeared where they were once common. Some allied forms (*Petaurus*, *Dromicia* and *Acrobates*) have a fold of skin stretching from the hind to the fore-limb, which enables them to glide from a greater to a lesser height. Collectively, they are spoken of as flying-squirrels, though they cannot fly and are not squirrels. The Koala, Kola, or native bear or monkey-bear (*Phascolarctos*), a lethargic leaf-eater, belongs to this family.

The *Phascolomyidæ*, or wombat family, contains only one living genus (*Phascolomys*), which is confined to the south-east and Tasmania. The wombats are inoffensive burrowers, but unfortunately are apt to damage crops where they are common, and their great strength and burrowing powers make fences but poor protection against their inroads.

The kangaroo family (*Macropodidæ*) is a large one, and its members vary in size from the giant, standing higher than a man, to the Musk kangaroo of the Herbert River, which is about ten inches long. The larger forms were dwellers on the open plains, where, with scarcely any foes, they grazed in countless thousands. Now, like the bison of America, they are passing away. The smaller kangaroos which belong to various genera, and are spoken of as wallabies, frequent the scrubs and rocky fastnesses of the mountains. The tree kangaroos of Queensland and New Guinea (*Dendrolagus*) browse on the leaves of lofty eucalypts, which they climb to their topmost branchlets.

Among extinct marsupials we have *Diprotodon*, as large as a rhinoceros, but as inoffensive apparently as a wombat, which it seems to have resembled much in appearance. *Thylacoleo*, a huge carnivorous monster, greater than a polar bear, was allied to the phalangers. There were also giant kangaroos, standing a dozen feet high, and wombats as large as an ox. On the other hand there was a dwarf wombat, about a quarter of the size of our recent species. The oldest known Australian marsupial, *Wynyardia*, is of Oligocene or perhaps Eocene age.

(iv.) *Aves*. Birds shew the same characteristics that the mammals do. Deficiencies, as well as the presence of peculiarly Australian forms, serve to distinguish Australia from the rest of the world. Among the groups which are eminently characteristic are the birds of paradise, which have their home in New Guinea and just pass into Northern Queensland. Of pigeons, we have more species than the rest of the world, and we have

the largest and the smallest kinds. The cassowary and the emu, forming a single family, are unknown beyond our regions. The cassowary (*Casuarinus*) is found in the forests of New Guinea and North Queensland, and the emu (*Dromæus*) ranges over all Australia, and, till it was exterminated, was common on Kangaroo Island, the islands of Bass Straits, and Tasmania. The brush-tongued lorises (*Trichoglossidae*) follow the flowering of the honey-yielding eucalypts throughout Australia. The honey-eaters (*Meliphagidae*) are among our most characteristic birds, though they pass far beyond Australia itself, and out across the Pacific, even to the Sandwich Islands. The larger ones are sought for food, while some of the smaller kinds, which have developed a taste for orchard fruits, are at times a scourge. The peculiar mound-nests of the *Megapodidae*, where the eggs are hatched after the manner of those of reptiles, are very characteristic of Australia, though not confined to it. Among other strange forms are the bower birds (*Ptilonorhynchidae*), whose habit of building playing-runs and decorating them with bones, shells, flowers, and so on, has often been described. The lyre birds (*Menuridae*) are remarkable for their peculiar tail feathers. They are inhabitants of dense fern-gullies in Eastern Australia. Their allies, the scrub birds (*Atrichidae*) are confined to the dense forests of the warm east coast, and of West Australia. The most striking absentees, whose abundance in Eastern Asia makes their absence here so remarkable, are the pheasants and vultures, while there are other abundant East Asiatic forms which are poorly represented amongst us.

(v.) *Reptilia*. Among reptiles we have the estuary crocodile (*Crocodylus porosus*), occurring commonly in the northern rivers, and ranging from India to the Solomons, and even it is said, as a stray, to Fiji. A small, harmless species (*Crocodylus johnstoni*) is found in the fresh waters of the north. Of freshwater tortoises there are three genera represented (*Chelodina*, *Emydura* and *Elseya*). None occur in Tasmania. These tortoises tuck their heads into their carapaces by an S-shaped fold in a horizontal plane, and belong to a group whose other representatives are found in South America.

Among lizards the most peculiar are the so-called legless lizards (*Pygopodidae*), which are confined to Australia. In them the front limbs are completely absent, and the hind limbs are represented only by a pair of short flaps, which fit into grooves at the side of the body, and so easily escape detection. The family contains seven genera, *Pygopus*, *Delma*, and *Lialis* being the most widely spread. The skinks (*Scincidae*) are the most numerous Australian family, and the *Varanidae*, commonly called "goannas," contain the largest of our lizards. Altogether we have about 390 species of lizards.

There are slightly more than 100 species of Australian snakes, about three-quarters of them being venomous. The number of non-poisonous forms decreases as the latitude rises, so that in Tasmania none are found, all the snakes being venomous. The harmless kinds include the blind snakes (*Typhlopidae*), which have very smooth, glassy skins, and are burrowing forms, living principally on termites, and therefore deserving of careful protection. The pythons and rock snakes are the largest of our Ophidia, but are also harmless. *Python spilotes*, the diamond and carpet snake of the mainland, is beautifully mottled. It grows to a length of about 10 feet, and is found throughout Australia. The long, slender, green tree-snake (*Dendrophis punctulatus*) inhabits almost the whole of Australia. It is quite harmless and feeds on tree frogs, young birds, and lizards. Though so many of our snakes are poisonous, only five common forms are really deadly. These are the brown snake (*Diemenia textilis*, or *Demansia textilis*), the black snake (*Pseudechys porphyriacus*), the copperhead—unfortunately called diamond snake in Tasmania—(*Denisonia superba*), the tiger snake (*Notechis scutatus*), known in Tasmania as the carpet snake, and lastly the death adder (*Acanthophis antarctica*). The first four all occur in Tasmania, and are the only snakes found there. The tiger snake is the boldest of all, and commonly shews fight. The death adder, a short, thick-bodied snake, is very lethargic, and often allows itself to be trodden on, when it strikes with lightning-like rapidity and deadly effect. None of our snakes have long enough teeth to make their bite, when made through clothing—even a single thickness of tweed—a cause of dread.

(vi.) *Amphibia*. In amphibia the most striking fact is the absence of tailed forms (*Urodela*). The characteristic old world genus *Rana* just invades North Queensland.

We are especially rich in tree frogs (*Hylidæ*), some of which as *Hyla aurea*, the common southern green frog, have lost their tree-climbing habits and the adhesive suckers on fingers and toes. The *Cystignathidæ*, which include the common sand frog of the south-east, occur also in South America. The water-holding frog, with its body enormously distended by water, can live for a year or more in thoroughly dried mud. It is found in Central Australia.

(vii.) *Pisces*. Owing to our poor river development, Australia is not rich in fresh-water fish. The great river basin of the Murray has several species peculiar to itself, as the Murray cod (*Oligorus macquariensis*), the golden perch (*Plectroplites ambiguus*), the silver perch (*Therapon ellipticus*) and the catfish (*Copidoglanis tandanus*). Of these, the Murray cod, owing to stream capture and the consequent alteration of drainage areas, has invaded the head waters of a few other rivers, as the Richmond and Clarence Rivers in New South Wales. Another curious instance of distribution is that of the blackfish of the south-east (*Gadopsis marmoratus*). This is almost confined to rivers entering Bass Straits, it being found in Northern Tasmania and Southern Victoria. These streams are the now separated upper-waters of a river which drained the plain now occupied by Bass Strait, and entered the ocean to the north of King Island. River capture has carried blackfish into the upper waters of the Goulburn and the Loddon. Eels, which are common in all streams from Cape York to Beachport, are absent from the entire Murray basin and Central and Western Australia, and apparently from Northern Australia as well. The southern trouts (*Galaxias*) are found in the streams of south-eastern Australia and Tasmania. Elsewhere they are found in South Africa, New Zealand, Patagonia and Chile. As some of the species, but not all, breed in the sea, the distribution of the genus is not as remarkable as once was thought. The gudgeons or bullheads (*Gobiidæ*) have representatives in fresh water all over Australia. None of these grow to any size.

The most remarkable of all our fresh-water fish, however, is the Lung fish (*Neoceratodus forsteri*) of the Mary and Burnet Rivers of Queensland. It is one of the three surviving species of an ancient and once world-wide group of fish. As its name implies, it has a lung, a modified swim-bladder, in addition to the usual gills. When the water is foul it comes to the surface to breathe. It cannot, as its African relatives do, live in the mud of dried-up ponds.

(viii.) *Invertebrate Fauna*. In land and fresh-water shellfish we are not well off. The eastern coastal strip from Cape York well into New South Wales is closely related to Papua in its shellfish, as it is also in so many other ways. There are many genera of the Helices. Of the rest of Australia the western State seems the poorest in molluscs, though many of its inhabitants range right across to the eastern highlands.

Among insects, the butterflies of the warm damp Queensland coastal districts vie in beauty with those of any part of the world. As we retire from this region their number and size decrease. The wandering butterfly, a black and white species, at times appears in countless myriads and travels far out to sea. We are especially rich in beetles of the families *Buprestidæ*, *Curculionidæ*, and *Cerambycidæ*, the members of the first family containing some very handsome insects. White ants are plentiful, especially in the tropics. One species is remarkable for its narrow, wall-like nests, which have their long axes along the north and south line.

Among crustacea a species of *Apus* is found in the interior, and the allied *Lepidurus* in the southern coastal districts. The peculiar isopod, *Phreatoicus*, and some allied genera, are found in our mountain streams or burrowing in the damp southern gullies. *Koonunga*, a recently described Anaspid, is an annectant form between the stalk-and sessile-eyed groups. Among the higher crustacea belonging to the *Parastacidæ* are the genera *Astacopsis* (*Chærops*), which is spread all over the continent, and *Engæus*, found only in Tasmania and Southern Victoria. The larger species of *Astacopsis* are used as food.

Among the flat-worms, *Linstowia* is peculiar, as it is confined to the monotremes and the marsupials of Australia and South America. The genus then must date back to Meso-

zoic times. *Tennocephala* infests the fresh-water crayfish, and is curious on account of its distribution, as it ranges up into America, and, strange to say, an allied form has recently been recorded from Southern Europe.

Australia is rich in earthworms, but the native species are being ousted by European forms. *Megascolides* is remarkable for the size of one of its species, the giant earth worm of Gippsland (*M. australis*), which reaches a length of over seven feet, and is as thick as a man's finger. The *Acanthodrilidæ* are distinctly a southern family, being especially plentiful in Australia, New Zealand and South America, and gradually becoming fewer in species as we pass north from these lands.

To attempt to deal with the fresh-water protozoa would make too great demands on space, and for the same reason the whole of the marine fauna must here be passed over in silence.

4. Origin of the Fauna.—The place of origin of our Fauna and its route of entry into Australia has been much discussed. As mentioned previously, it consists of several constituents. The marsupials, and probably some of the birds, the tortoises, the cystig-nathid frogs, some fresh-water fish (as the Galaxiidae and some others), many insects and earthworms, have their nearest living allies in South America. These represent ancient groups, and probably date back to the times when a great antarctic continent existed, of which the southern lands are but isolated fragments.

Much of the remaining Fauna has a northern origin, as the dingo, rats, bats, most of our flying birds, lizards, fresh-water crayfish, and probably the bulk of our insects. The evidence of a Malayan incursion, both of plants and animals, is specially strong along the damp seaward slopes of the eastern coast range of Australia.

The native Australian Fauna is in danger of disappearing before the inroads of introduced animals like the rabbit, the sparrow, and the starling. The beginning of an attempt to stay this onset may be seen in the reservation in some of the States of asylums for the native animals. The Victorian reserve includes nearly all Wilson's Promontory, the southernmost part of Australia; New South Wales has reserved a coastal strip near the Hawkesbury mouth; but enlightened action is badly needed.

§ 7. The Flora of Australia.

1. Character of the Australian Flora.—(i.) *Effect of Climate and Altitude.* As would naturally be expected in a territory whose limits extend from the tropical latitudes of North Queensland to the temperate regions of Victoria and Tasmania, and whose physical elevation varies from the sea coast (or levels even below that of the sea) to peaks whose tops are covered during a great part of the year with snow, the vegetation of Australia is largely varied. In the Queensland tropics there are many forms which belong to the Malayan and Oceanic regions. In the north of Western Australia, the tropical area, comprising some 364,000 square miles, is lacking in these forms. The assertion of land contiguity between Northern Queensland and New Guinea and the Malayan Archipelago generally, frequently made by geologists and zoologists, is thus supported by botanical evidence. The existence of many types common to both Australia and South Africa points to the possibility of a land connection between those continents by way of what is now the Indian Ocean. But, whatever evidences of land connection may be discovered, the fact remains that the great bulk of the vegetation of the temperate zone, where the flora is profuse and various, is distinctively Australian. Hence Australia has been isolated for a long time, but probably not so long as New Zealand. The fact that the Australian flora is of a primitive type is of particular interest from a scientific point of view. Forms belonging to early stages in plant evolution exist upon this continent, which otherwise can only be studied as fossils in rocks of long-passed geological ages. This is seen particularly in *Byblis*, *Casuarina*, *Cephalotus*, *Nuytsia*, *Polypompholyx*, and *Phylloglossum*.

(ii.) *General Features of the Australian Landscape.* The coastal regions furnish the most luxuriant vegetation. A marked physical feature of the continent is the chain of mountain ranges which runs along part of the southern and the eastern coast, roughly parallel to the contour, and at little distance from the shore. Upon these heights, and on the uplands and foot-hills which stretch from them to the coast, is to be found the heaviest forest. There is, however, in Western Australia, also a great forest belt, some 350 miles in length, and from 50 to 100 miles in breadth, not on the coastal side but extending eastward from the Darling Ranges. Inland, from what may be called the coastal forest region, the vegetation becomes thinner as the more arid regions replace those of heavier rainfall, and rapidly dwindles, till bushes, scrubs, and dwarf eucalypts, with belts of pine at intervals, give place to a scant and inferior vegetation. Except in its south-west portion, Western Australia has little forest. South Australia has still less. But the great Australian mountain system runs from the Grampians of Western Victoria easterly, following generally the trend of the coast-line, north-easterly into New South Wales, and northerly through that State and Queensland to Cape York, with a spur which turns westward and forms the watershed between the streams which flow north into the Gulf of Carpentaria and those which eventually reach the Murray. Here there are large trees and dense undergrowth, very often giving place to rich pasture lands on the extensive plateaux and great plains that stretch away into the interior. Under the copious rainfall of the coastal regions the wild flowers that belong to Australia, variegated, bright, often scentless, grow luxuriously.

(iii.) *Special Plant Adaptations.* The general dryness of the climate of Australia has led to marked adaptations in form and structure especially in the interior parts of the continent. Spiny plants, with foliage of hard, woody ribs and reduced surface area, are characteristic. Exhalation into the air of the moisture absorbed from the soil by the roots, is thus reduced through the absence of soft cellular parts. The moisture absorbed by the root-system, scant because of the desert soil, is eagerly taken up by the arid atmosphere. In these, the relative amount of transpiring foliage is small, and appears to correspond to the soil conditions. Short, scale-like leaves, for example, mark considerable reduction in the foliage area. In the great majority of acacias, the true leaves are suppressed, the leaf stalks, however, remaining in a flat leaf-like form (*phyllodia*); or the leaf may be entirely suppressed, the leaf-functions being carried on by the stems of the plants. In some desert plants, as *Verbenaceæ* and *Solanaceæ*, a dense coat of hairs covers the leaves or whole plant; in others, as in some acacias, the surface of leaves and twigs is substantially a layer of resin, both modifications greatly reducing the transpiration, and serving also, as a protection against the extremes of heat and cold to which they are subjected. Generally the vegetation on the west coast is more drought-resisting (*xerophilous*) than that on the east coast.

(iv.) *Forestry, Agriculture, and Horticulture.* Both hardwoods and softwoods abound in the forests, their commercial uses being set out in the chapter on Forestry (see Section X.) Among the exotics that have been acclimatised are many that yield valuable timber. Cereals are grown in large quantities, but none are indigenous. Native plants fit for human consumption are insignificant. Generally the indigenous plants that can be utilised for food need some preparation before being used. The part suitable for food is the yam-like root of some, the stems, foliage, or seeds of others. Useful fruits are found, but most of them require to be cooked, being very acid in their native state. In tropical Queensland there are pleasant fruits of the lime family. Edible species of fungi are also common, but none are marketed or much used, except the common mushroom. The aborigines eat the fruits of the doobah (*Marsdenia Leichhardtiana*), the seeds of acacias, the grains of some indigenous grasses and of the nardoo (*Marsilia quadrifolia*), as well as other vegetable products having a more or less meagre store of nutriment. Many of the native grasses and other herbage have high nutritive properties, affording rich fodder, but there is not a native fodder clover; on the contrary, many native Leguminosæ are poisonous. The cultivation of native wildflowers, and the sporting of selected garden stocks, has led to the introduction of many new varieties, and horticulture is a growing industry.

2. Botanic Distribution.—(i.) *Tropical and Extra-tropical Regions.* The indigenous vegetation of Australia may be roughly classed as tropical and extra-tropical. The line of geographical distribution between the two classes is not distinctly marked, but it may be said that the former class covers the north-eastern uplands, where the Malayan and Oceanic forms have, by their incursion, enriched the east coast from Torres Straits as far south as Illawarra, and also the tropical regions of Western Australia, where the different climatic conditions and the absence of high mountains and the permanent streams and still waters usually associated with them do not cause the vegetation of these tropical latitudes to be specially distinguished. Extra-tropical plants, mostly hardwoods, characterise the Australian forests of temperate regions.

(a) *The North-east Tropical Vegetation.* While something under a tenth of Queensland bears timber of general commercial value, at least a third of that State may be said to be covered with trees which have a local use for building and other purposes. The vegetation is rich, the number and variety of plants being very large. There are a large number of fibrous plants of the orders *Malvaceæ*, *Sterculiaceæ*, *Leguminosæ*, *Urticaceæ*, *Scitamineæ*, *Amaryllidææ*, and *Aroideæ*. Of indigenous fruits the principal are the lime and Davidson's plum, with others of the order *Euphorbiaceæ*, *Ampelidææ*, *Rutaceæ*, and *Urticaceæ*. There are numerous fungi—many of them edible. Among trees, acacias, araucarias, xanthorrhœas, eucalypts, canariums and callitris are the most abundant. Besides these there are medicinal, oil, perfumery, rubber, and spice plants, as well as some which give tanning and dyeing material. Trees of many varieties, of unique beauty in the landscape, and yielding handsome timber for carpentry, cover the forests. Overlapping of the tropical and extra-tropical vegetation is inevitable, and the merging of the former into the latter becomes more and more marked after the New South Wales border is crossed. The vegetation of the north-east may be summarised by saying that between the Dividing Range and the Pacific there are some of the finest belts of forest in the continent. Among eucalypts are several varieties of ironbark (*Eucalyptus paniculata*, *E. crebra*, *E. siderophloia*, *E. sideroxylon*), tallow-wood (*E. microcorys*), blackbutt (*E. pilularis*), grey gum (*E. propinqua*), spotted gum (*E. maculata*), turpentine (*Syncarpia laurifolia*), forest red gum (*E. tereticornis*), and red mahogany (*E. resinifera*); among conifers, the Moreton Bay (*Araucaria Cunninghamhami*), brown (*Podocarpus elata*), and Bunya-Bunya (*Araucaria Bidwillii*) pines; while among the brush timbers of fine grain are red cedar (*Cedrela australis*), rosewood (*Dysoxylon Fraserianum*), red bean (*Dysoxylon Muelleri*), black bean (*Castanospermum australe*), white beech (*Gmelina Leichhardtii*), silky oak (*Grevillea robusta* and *Orites excelsa*), and tulipwood (*Harpulia pendula*). In Queensland, a large portion of the country west of the Divide is an extensive plateau running into great plains, but with little timber. Towards the centre of the continent, where the land gradually falls to a vast shallow basin, with low hilly ridges at intervals on its rim, and wide expanses of plain country with short water-courses losing themselves in the desert, the tree growth is very scanty, consisting chiefly of stunted eucalypts, such as the gimlet-gum (*E. salubris*) and black box (*E. microtheca*), the desert sheoak, acacias and mallee. Westward of the ranges in New South Wales, where the tableland sinks down to undulating country and vast plains, through which the tributaries of the Murray make their way, the vegetation changes to scrub and open forest, consisting of eucalypts such as red gum (*E. rostrata*) along the water-courses, with several varieties of box, cypress and other pines, and wattles. Farther inland again the timber becomes more sparse, being chiefly cypress pine, stunted eucalypts, and casuarianas, with extensive areas of mallee scrub.

(b) *The North-west Tropical Vegetation.* In the northern district of Western Australia, there are extensive tracts of pasture lands on the slopes drained

by the rivers flowing into the Indian Ocean. Inland from these are stunted bush and scrub lands, which in some cases impinge even upon the sea border. The Kimberley district has forest country about the Fitzroy River, and the King Leopold Ranges are tree-clad. Farther eastward, and continuing across the border into the Northern Territory, grasses and stunted growths form the main vegetation. The flatness of the country accounts for the absence of mountain flora, the vertical elevation rarely reaching 1500 feet. The chief geological features are sandstone of the carboniferous era forming the tableland, and basaltic plains. As a consequence, the flora is very little varied, the largest order of plants being *Leguminosæ*, represented by acacias and cassias. The smaller plants include *Indigofera*, *Crotalaria*, *Daviesia*, and *Bossia*. Next to *Leguminosæ*, *Gramineæ*, of which there are several new types, are the most numerous. With the exception of the grasses, all the monocotyledons are limited. The *Myrtaceæ* include eucalypts (principally *E. rostrata*) and melaleucas. The *Loranthaceæ*, *Rubiaceæ*, *Cucurbitaceæ* and *Proteaceæ* are represented by several plants. *Compositæ*, *Chenopodiaceæ*, *Santalaceæ* and *Orchideæ* are rare, but members of the family *Lythraceæ* are more numerous than might have been expected. The Gymnosperms are sparingly represented, *Euphorbiaceæ* are surprisingly scarce. Perhaps the most marked characteristic of the whole tract is the almost entire absence of lichens and mosses, though ferns are plentiful in the vicinity of the Victoria River.

- (c) *The Australian Extra-tropical Vegetation.* Australia is believed to have been free from geological upheavals and cataclysms for a longer period than most other lands. The persistence of type which has resulted has enabled its flora to become very well adapted to prevailing climatic conditions. The chief feature of the Australian forest landscape, as presented by the eastern, south-eastern, and south-western portions of the continent, is the presence of giant hardwoods, mostly eucalypts—very often rapidly reproductive, and attaining to a great age. The existing types are of high antiquity, and are possessed of special means of resistance to the extremes of temperature, to excessive sunshine, and to alternations of drought and flood to which they are subject. Along the shores of the Great Australian Bight, and in the north and north-west, there are no extensive forests. In the desert interior the vegetation is generally dwarfed and stunted, the forests of the inland slopes of the eastern mountains gradually thinning from the thickly-clad hilltops to second-class eucalypts, whilst these latter in turn give place to extensive areas of mallee scrub, the vegetation becoming more scarce, until in the arid interior, patches are found with no covering of herbage of any kind. The hill slopes, however, are often clad with rich grass, and along the water-courses eucalypts such as red gum persist, with pines and acacias. In the south-west, where the ranges approach closely to the ocean, the forest belt extends beyond the watershed some distance inland. The great belt of jarrah (*E. marginata*) which stretches eastward from the Darling Hills, has two distinct but narrow belts of tuart (*E. gomphocephala*) and red gum (*E. calophylla*) between it and the coast. Within this extensive tract of jarrah, in the extreme south-western part of the State, is the main karri (*E. diversicolor*) belt, stretching from Cape Hamelin to Torbay. In this region the jarrah, karri, tuart and red gum are the dominant trees. In the somewhat drier districts stretching eastward of the jarrah belt, there is a fairly wide strip of white gum (*E. redunca*) enclosing a narrow belt of York gum (*E. loxophleba*) which, as regards its northern and southern limits, is almost coterminous with the jarrah. Eastward of this again the arid region is entered, and the forest rapidly dwindles, changing first to a poorer growth of white gum until, in the sandy wastes of the goldfields region, the vegetation is scant and stunted, consisting chiefly of the eucalypts, locally known as salmon,

morrell (*E. macrocarpa*), and gimlet (*E. salubris*) gums, with some belts of pines at intervals. The Tasmanian flora represents that of South-east Australia, but there are also some valuable conifers, chiefly in the western and southern parts, such as the Huon (*Dacrydium Franklini*), King William, and celery-top (*Phyllocladus rhomboidalis*) pines. The forest area of the island is extensive, covering two-thirds of its surface. The principal eucalypts are blue-gum (*E. globulus*), stringy-bark (*E. obliqua*), peppermint (*E. amygdalina*—the mountain ash of Victoria), and silver-top ironbark (*E. Sieberiana*); the chief fine-grain woods are blackwood (*Acacia melanoxylon*), beech or myrtle (*Fagus Cunninghami*), sassafras (*Atherosperma moschata*), native cherry (*Exocarpus cupressiformis*), native box (*Bursaria spinosa*), and casuarina or sheoak. These are distributed throughout the State.

The extra-tropical vegetation of Australia is highly differentiated from that of the rest of the world. In the eastern States, however, there is some admixture in the flora of species derived in the course of past ages from almost all other regions of the globe, but South and Western Australia are, as regards their flora, typically and purely Australian. The natural orders which are endemic, or nearly so, to Australia are either entirely confined to the continent or are represented elsewhere only by one or a few outlying species, mostly in adjoining regions. They are the *Tremandrea*, *Stackhousiaceæ*, *Stylidæ*, *Goodeniaceæ*, *Casuarineæ*, *Phyllidreæ*.

Like Australia, New Zealand has its own characteristic flora: 72 per cent. of its species are endemic, 21 per cent. are found also in Australia, and 7 per cent. are sub-antarctic. The forests are often mixed in their growths, with pines of various kinds generally predominating, the finest tree being the kauri pine (*Agathis australis*). Tawa (*Beilschmiedia lawa*) and totara (*Podocarpus totara*) also flourish. In the Middle Island several species of beech (*Nothofagus*) are found, particularly on the higher levels. In the forest areas there is dense undergrowth. In the meadows the tussock form is characteristic of various grasses and sedges. The shrub-form and the iris-like form also help to make up the facies. The scrub is made up to a large extent of manuka, which seems to be the same as our *Leptospermum scoparium*. *Bursaria spinosa* is common here as in the rest of Australia, this shrub being universal throughout Australia and New Zealand. *Pittosporum* is native to New Zealand.

- (d) *Alpine Vegetation.* The Australian continent is not remarkably irregular in physical elevation, the highest elevation being only 7000 feet above sea level, while a great deal of the land surface stretches for many miles in extensive plains, offering no kind of relief to the eye. In these circumstances little characteristic alpine flora is to be expected. There is none in Western Australia, the vegetation on heights and plains having the same physiognomy. In Eastern and South-eastern Australia and New Zealand only the highest points of the mountains bear alpine flora. The transition from the forest to the alpine region is gradual, considerable overlapping of alpine and lowland flora being noticeable, and differentiation of alpine types is less marked than usual. Numerous bushes grow on these transition areas. Endemic conifers are wanting in the Australian Alps; but on many mountains which attain a height of 5000 feet the flowering plants display rich and varied colours.

(ii) *Exotics.* While Australia has made large and flourishing additions to the forest flora of many countries, a large number of exotics have been successfully introduced here, furnishing a welcome variation to the sombre landscape presented by the prevailing eucalypts. With practically no cereals of value as food for man, and with few fodder plants, and these generally of an inferior kind, the fruits of the earth which Australia offered were indeed small. Now, however, her fields are sown with introduced grains and

grasses, and yield abundantly. But alien weeds have come in too. Native pests are few in number, but some of the most aggressive weeds have intruded themselves, to the detriment of the native flora.

(iii.) *Persistence of Types.* Though there is every probability that individual varieties have been eliminated in the various terrestrial convulsions that have altered the land surface of this part of the globe, there is good reason for believing that Nature, "so careful of the type," has not suffered the eradication of representative forms. Nor has the hand of man, careless, in the strenuous days of early colonisation, in conserving the original vegetation, stamped out any of the indigenous species. That many places have been set aside for the preservation, as virgin country, of areas where the plant covering is yet undisturbed, attests a desire to render to botanic science that assistance which only forms belonging to an early stage of vegetation, such as the Australian, can afford.

3. **Natural Orders of Plants Represented in Australia.**—The following is a list of the natural orders of plants represented in Australia:—

CLASS I.—DICOTYLEDONS.

SUB-CLASS I.—POLYPETALÆ.

| | | | |
|------------------|-------------------|------------------|-------------------|
| 1. Ranunculaceæ | 18. Elatineæ | 34. Celastrineæ | 47. Combretaceæ |
| 2. Dilleniaceæ | 19. Hypericineæ | 35. Stackhousiæ | 48. Myrtaceæ |
| 3. Magnoliaceæ | 20. Guttiferæ | 36. Rhamnæ | 49. Melastomaceæ |
| 4. Anonaceæ | 21. Malvaceæ | 37. Ampelideæ | 50. Lythrarieæ |
| 5. Menispermaceæ | 22. Sterculiaceæ | 38. Sapindaceæ | 51. Onagrarieæ |
| 6. Nymphaeaceæ | 23. Tiliaceæ | 39. Anacardiaceæ | 52. Samydaceæ |
| 7. Papaveraceæ | 24. Lineæ | 40. Leguminosæ | 53. Passifloreæ |
| 8. Crucifereæ | 25. Malpighiaceæ | SUB-ORDERS: | |
| 9. Capparideæ | 26. Zygophyllaceæ | (i) Papilionaceæ | |
| 10. Violarieæ | 27. Geraniaceæ | (ii) Cæsalpinieæ | |
| 11. Bixineæ | 28. Rutaceæ | (iii) Mimosæ | |
| 12. Pittosporæ | 29. Simarubæ | 41. Rosaceæ | 54. Cucurbitaceæ |
| 13. Tremandreeæ | 30. Burseraceæ | 42. Saxifrageæ | 55. Ficoideæ |
| 14. Polygaleæ | 31. Meliaceæ | 43. Crassulaceæ | 56. Umbellifereæ |
| 15. Frankeniaceæ | 32. Olacineæ | 44. Droseraceæ | 57. Araliaceæ |
| 16. Caryophylleæ | 33. Ilicineæ | 45. Haloragææ | 58. Cornaceæ |
| 17. Portulacææ | | 46. Rhizophoreæ | 59. Loranthaceæ |
| | | | 60. Caprifoliaceæ |
| | | | 61. Rubiaceæ |
| | | | 62. Compositæ |

SUB-CLASS II.—MONOPETALÆ.

| | | | |
|------------------|--------------------|-------------------|----------------------|
| 63. Stylideæ | 77. Loganiaceæ | 91. Selagineæ | 105. Thymeleæ |
| 64. Goodenovieæ | 78. Gentianeæ | 92. Verbenaceæ | 106. Elæagnaceæ |
| 65. Campanulaceæ | 79. Hydrophyllaceæ | 93. Labiateæ | 107. Nepenthaceæ |
| 66. Ericaceæ | 80. Boragineæ | 94. Plantagineæ | 108. Euphorbiaceæ |
| 67. Epacrideæ | 81. Convolvulaceæ | 95. Phytolaccaceæ | 109. Urticeæ |
| 68. Plumbagineæ | 82. Solaneæ | 96. Chenopodiaceæ | 110. Casuarineæ |
| 69. Primulaceæ | 83. Scrophularineæ | 97. Amarantaceæ | 111. Piperaceæ |
| 70. Myrsineæ | 84. Lentibularieæ | 98. Paronychiaceæ | 112. Aristolochiaceæ |
| 71. Sapotaceæ | 85. Orobanchaceæ | 99. Polygonaceæ | 113. Cupulifereæ |
| 72. Ebenaceæ | 86. Gesneraceæ | 100. Nyctagineæ | 114. Santalaceæ |
| 73. Styracaceæ | 87. Bignoniaceæ | 101. Myristiceæ | 115. Balanophoreæ |
| 74. Jasmineæ | 88. Acanthaceæ | 102. Monimiaceæ | 116. Conifereæ |
| 75. Apocynææ | 89. Pedalineæ | 103. Laurineæ | 117. Cycadeæ |
| 76. Asclepiadeæ | 90. Myoporineæ | 104. Proteaceæ | |

CLASS II.—MONOCOTYLEDONS.

| | | | |
|--------------------|--------------------|-----------------|-------------------|
| 118. Hydrocharideæ | 125. Dioscorideæ | 132. Juncaceæ | 139. Alismaceæ |
| 119. Scitamineæ | 126. Roxburghiaceæ | 133. Palmæ | 140. Eriocaulæ |
| 120. Orchideæ | 127. Liliaceæ | 134. Pandanaceæ | 141. Centrolepidæ |
| 121. Burmanniaceæ | 128. Pontederaceæ | 135. Aroideæ | 142. Restiaceæ |
| 122. Irideæ | 129. Phytidraceæ | 136. Typhaceæ | 143. Cyperaceæ |
| 123. Amaryllideæ | 130. Xyrideæ | 137. Lemnaceæ | 144. Gramineæ |
| 124. Taccaceæ | 131. Commellinaceæ | 138. Naiadeæ | |

CLASS III.—ACOTYLEDONS (Non-flowering Vegetation).

| | | |
|-------------------|------------------|--------------|
| 145. Lycopodiaceæ | 146. Marsileaceæ | 147. Filices |
|-------------------|------------------|--------------|

§ 8. Climate and Meteorology of Australia.¹

1. **History of Meteorology in Australia.**—Systematic rainfall observations appear to have been commenced first in Adelaide by the late Sir G. Kingston in 1839, and continued till 1878, the last eighteen years being concurrent with more complete observations taken at the Astronomical Observatory in that city. At Sydney, Port Macquarie, Melbourne, and Brisbane observations appear to have been taken from 1840. Those at Sydney from April, 1840, to the end of 1855 were taken at South Head, five miles east of Sydney; at Petersham in 1856, at Double Bay in 1857-8, and at the Sydney Observatory, Flagstaff Hill, from 1859 onwards.

At Brisbane a record of rainfall was kept from 1840 to 1846 by Captain T. C. Wickham. About 1860 Dr. Barton, Resident Surgeon of the Brisbane Hospital, continued the observations on the site occupied by the Supreme Court buildings, but upon his death the duties were transferred to the staff of the telegraph office, and the instruments removed to William-street. On the appointment of the first Government Meteorologist (Mr. E. MacDonnell) the instruments were again removed to Wickham Terrace, and some years later to the present site. Mr. C. L. Wragge succeeded Mr. MacDonnell in 1887.

At Hobart observations were started by Sir John Franklin, when Governor of Tasmania, in the year 1840. The Observatory was founded in the following year by Captain Kay, R.N., who took hourly observations for eight years. Mr. Francis Abbot, who had a private observatory in Murray-street, carried on tri-daily observations of pressure, temperature, humidity, cloud and rain from 1841 to 1880. Observations of rainfall were also started by the Marine Board at the lighthouses under their care, and by others privately. Mr. Abbot was obliged to relinquish his work in 1880. Captain Short was appointed Government Meteorologist in 1882.

Under the late Mr. R. L. J. Ellery, an Observatory was founded near Williamstown, Melbourne, in the middle of 1853, and a record also kept at Melbourne by Mr. Brough Smyth from 1856 till 1858, viz., to the date of the creation of the new Observatory on Flagstaff Hill under Professor Neumayer.

The observations at the present Melbourne Observatory were commenced in June, 1863, under Mr. R. L. J. Ellery himself, the Observatories at Williamstown and Flagstaff Hill being abandoned. At Port Phillip records were taken for the years 1840 till 1851, and are given in the New South Wales *Government Gazette*. Some doubt attaches to these records and to the site upon which they were taken; for this reason they have not been used in the discussion of rainfall for Melbourne itself, the results of which have been tabulated and given herein.

At Perth no official records of rainfall were taken till 1875, when the observations were commenced at the Botanical Gardens by the Surveyor-General (Sir Malcolm Fraser), and where they have been continued up to the present time. During the first half of last century meteorological observations were confined largely to rainfall only. Systematic observations of pressure, temperature, rainfall, wind, and other meteorological elements began with the foundation of the astronomical Observatories in the capitals of the different States, viz.:—At Adelaide in 1856; Hobart, 1841; Melbourne, 1854; and Sydney, 1858. The directors of these Observatories established meteorological stations, under competent observers, in different parts of the country from time to time, as opportunity allowed.

2. **Magnetic Observations.**—On the 1st January, 1841, an Imperial Observatory, forming part of an international scheme, was founded at "Hobart Town" (Tasmania), and magnetic observations were taken there systematically up to the end of 1854.

Early in 1858 Prof. Neumayer opened an Observatory on Flagstaff Hill, Melbourne, where hourly observations in terrestrial magnetism were taken regularly up to the 28th

1. Prepared from data supplied by the Commonwealth Meteorologist, H. A. Hunt, Esquire, F.R.M.S.

February, 1863. That gentleman also made extended trips into the country, where he determined the magnetic elements at 230 stations from sea-level to 7200 feet above, and distributed in such a manner that the greatest distance between them was not more than 30 miles, and frequently only 18 or 20 miles. By the commencement of February, 1864, Neumayer had completed his magnetic survey of Victoria. Since June, 1863, magnetic observations have been systematically continued at the Melbourne Observatory.

Observations in the other States, more or less fragmentary, have been carried on from time to time under the auspices of the Surveyor-General's Department.

3. **Equipment.**—The determination of the climatological data has been made by records from the following instruments :—

- (i.) *Rainfall.* Rainfalls have been generally measured by the cylindrical gauge, 8 inches in diameter.
- (ii.) *Temperature.* Temperatures have been recorded by self-registering maximum and minimum thermometers, which are read and set daily.
- (iii.) *Atmospheric pressure.* Pressures have been measured by mercurial barometers of the Fortin or Kew pattern.
- (iv.) *Evaporation.* The following description of tanks has been used in the observations of evaporation, viz.:—

PERTH.—Slate tank :—3 ft. by 3 ft. by 3 ft., inside a cement tank (sunk into the ground 2 ft. 6 in., leaving 5 in. clear all round) which is kept full of water.

ADELAIDE.—Slate tank :—3 ft. by 3 ft. by 3 ft., inside a cement tank (sunk into the ground, leaving 7 in. clear all round) which is kept full of water.

BRISBANE.—Piché's tube evaporimeter, from 1902 to 1906, that is, for five years only.

SYDNEY.—Galvanised iron tank, 4 ft. diameter and 3 ft. deep, sunk in the ground 2 ft. 11 in.

MELBOURNE.—Slate tank :—3 ft. by 3 ft. by 10 in., sunk in ground and covered with wire cage 2 ft. above tank, $\frac{3}{4}$ -in. wire netting.

4. **Wind Velocities and Pressures.**—The velocities have been measured by means of anemometers, of Robinson's pattern, at Perth, Adelaide, Sydney, and Melbourne, the sizes being as follows :—

Perth—Diameter of cups, 9 in. ; distance from centre to centre of cups, 4 ft.

Adelaide—Diameter of cups, 8 $\frac{1}{4}$ in. ; distance from centre to centre of cups, 4 ft.

Sydney—Diameter of cups, 4 in. ; distance from centre to centre of cups, 4 ft.

Melbourne—Diameter of cups, 8 $\frac{3}{8}$ in. ; distance from centre to centre of cups, 4 ft. 0 $\frac{1}{2}$ in.

At Hobart, Hagemann's suction tube was used.

The wind-pressures corresponding to the observed velocities have been calculated by the formula $P=0.003 V^2$, in which P denotes pressure in lbs. per square foot, and V velocity in miles per hour.

5. **Creation of the Commonwealth Bureau of Meteorology.**—By Chapter 1, Part 5, Section 51, sub-section viii., of the Commonwealth Constitution it is enacted that "Parliament shall, subject to this constitution, have powers to make laws for the peace, order, and good government of the Commonwealth with respect to *inter alia* meteorological observations." The Meteorological Act of 1906 was assented to on the 28th August, 1906, and enacts that—The Commonwealth Meteorologist may, subject to the regulations and to the directions of the Minister, be charged with any of the following duties :—

- (a) The taking and recording of meteorological observations.
- (b) The forecasting of weather.
- (c) The issue of storm warnings.
- (d) The display of weather and flood signals.
- (e) The display of frost and cold wave signals.

- (f) The distribution of meteorological information.
- (g) Such other duties as are prescribed to give effect to the provisions of this Act.

The Governor-General may enter into an arrangement with the Governor of any State in respect of all or any of the following matters:—

- (a) The transfer to the Commonwealth, on such terms as are agreed upon, of any observatory and the instruments, books, registers, records, and documents used or kept in connection therewith.
- (b) The taking and recording of meteorological observations by State officers.
- (c) The interchange of meteorological information between the Commonwealth and State authorities.
- (d) Any matters incidental to any of the matters above specified or desirable or convenient to be arranged or provided for the purpose of efficiently and economically carrying out this Act.

The Governor-General may enter into any arrangement with the Governments of other countries or any of them for the interchange of meteorological information and any matter incidental thereto between such Governments and the Commonwealth.

The Governor-General may make regulations prescribing all matters necessary or desirable to be prescribed for carrying out or giving effect to this Act.

H. A. Hunt, Esquire, F.R.M.S., was appointed Commonwealth Meteorologist, and entered upon his duties on the 1st January, 1907.

6. Meteorological Conference.—Under the presidency of the Commonwealth Meteorologist, a conference of meteorologists was held in the Conference-room of the Bureau of Census and Statistics during the period from the 20th to the 23rd May, 1907, when the following questions were discussed, viz.:—

- (i.) The range of practical meteorological observation to be at once undertaken.
- (ii.) The expansion of meteorological work to be undertaken in the future.
- (iii.) The extent of purely scientific investigations, the undertaking of which is desirable in the interests of meteorology.
- (iv.) Meteorological records, reports, and publications.
- (v.) Maritime meteorology.
- (vi.) The relation of river observation to flood forecasting.
- (vii.) The co-operation of the Commonwealth and States Departments.

7. Organisation of Meteorological Bureau.—The Central Bureau premises are situated at the corner of Victoria and Drummond streets, Carlton, Melbourne. Observations are carried on at this site, and also within the Royal Society's grounds, which afford a better exposure for the instruments. Divisional offices are also maintained in the capitals of each of the other States. The central Bureau is divided into five sub-departments, each being under the immediate supervision of assistants, whose duties are distributed as follows:—

Weather predictions, storm warnings, summaries of current weather, and management of the Central Bureau.

Divisional Bureaux and observing stations.

Climatological work and records of the Commonwealth.

Daily observations, entry of same into ledgers, reduction tables for various elements, distribution and collection of information with respect to the maritime branch of the service.

Instrumental stock, standardising and satisfactory working of all instruments before distribution to the observing stations throughout the Commonwealth.

The five assistants have been drawn from the different States, where they held leading positions in the meteorological services prior to the advent of federal control. They now constitute a daily forecast board, presided over by the Commonwealth Meteorologist. The observations made at the chief meteorological stations are telegraphed to the Central

Bureau, where they are plotted on charts and discussed by the Board. The results of its deliberations are then wired to the divisional Bureaux, where they are amplified or modified in the light of the latest local indications, and then distributed to the settled districts of the respective States.

8. **Publications, etc.**—The following have been issued daily, viz.:—(i.) Weather charts. (ii.) Rainfall maps. (iii.) Bulletins, Victorian and Interstate, shewing pressure, temperature, wind, rain, cloud extent, and weather.

The Bulletins of Climatology are as follows:—(i.) Bulletin No. 1.—A general discussion of the climate and meteorology of Australia, illustrated by one map and diagrams.

(ii.) Bulletin No. 2.—A discussion of the rainfall over Australia during the past ten years compared with the normal, illustrated by one map.

The daily observations made at all stations throughout the Commonwealth are being reduced to tabular form monthly with a view to publication at the end of the present year.

9. **General Description of Australia.**—In the general description of Australia, § 4.1. (i.), it is pointed out that a considerable portion (0.530) of three States of the Australian Commonwealth is north of the tropic of Capricorn, that is to say, within the States of Queensland, the Northern Territory and Western Australia, no less than 1,149,320¹ square miles belong to the tropical zone, and 1,020,720 to the temperate zone. The whole area of the Commonwealth within the temperate zone, however, is 1,825,261² square miles, thus the tropical part is about 0.386, or about five-thirteenths of the whole, or the "temperate" region is half as large again as the "tropical" (more accurately 1.509). By reason of its insular geographical position, and the absence of striking physical features, Australia is, on the whole, less subject to extremes of weather than are regions of similar area in other parts of the globe; and latitude for latitude Australia is, on the whole, more temperate.

The altitudes of the surface of Australia range up to a little over 7300 feet, hence its climate embraces a great many features, from the characteristically tropical to what is essentially alpine, a fact indicated in some measure by the name Australian Alps given to the southern portion of the great Dividing Range,

While on the coast the rainfall is often abundant and the atmosphere moist, in some portions of the interior the rainfall is very limited, and the atmosphere dry. The distribution of forest, as might be expected, and its climatic influence, is consequently very variable. In the interior there are on the one hand fine belts of trees, on the other there are large areas which are treeless, and where the air is hot and parched in summer. Again, on the coast, even as far south as latitude 35°, the vegetation is tropical in its luxuriousness and also somewhat so in character. Climatologically, therefore, Australia may be said to present a great variety of features. The various climatological characteristics will be referred to in detail.

10. **Meteorological Divisions.**—The Commonwealth Meteorologist has divided Australia, for climatological and meteorological purposes, into five divisions. The boundaries between these may be thus defined:—(a) between divisions I. and II., the boundary between South and West Australia, viz., the 129th meridian of east longitude; (b) between divisions II. and III., starting at the Gulf of Carpentaria, along the Norman River to Normanton, thence a straight line to Wilcannia on the Darling River, New South Wales; (c) between divisions II. and IV., from Wilcannia along the Darling River to its junction with the Murray; (d) between divisions II. and V., from the junction of the Darling and Murray Rivers, along the latter to Encounter Bay; (e) between divisions III. and IV., starting at Wilcannia, along the Darling, Barwon, and Dumaresq Rivers to the Great Dividing Range, and along that range and along the

1. In the article "Australia" in the Encyclopædia Britannica, Vol. XXX., p. 796, this area is given as 1,145,000 square miles.

2. Given as 1,801,700 square miles in the work above quoted, where, however, the statistics are said "to refer only to the continental States of the Federation, not to Tasmania."

watershed between the Clarence and Richmond Rivers to Evans Head on the east coast of Australia; (f) between divisions IV. and V., from the junction of the Darling and Murray Rivers along the latter to its junction with the Murrumbidgee, along the Murrumbidgee to the Tumut River, and along the Tumut River to Tumut, thence a straight line to Cape Howe; (g) division V. includes Tasmania.

The populations included within these boundaries on 30th June, 1907, may be taken approximately as follows:—

| Division | I. | II. | III. | IV. | V. |
|------------|---------|---------|---------|-----------|-----------|
| Population | 260,000 | 481,000 | 537,000 | 1,369,000 | 1,511,000 |

In these divisions the order in which the capitals occur is as follows:—(i.) Perth, (ii.) Adelaide, (iii.) Brisbane, (iv.) Sydney, (v.) Melbourne, (vi.) Hobart, and for that reason the climatological and meteorological statistics will be set forth in the indicated order in this publication.

(i.) *Special Climatological Stations.* The latitudes, longitudes, and altitudes of special stations, the climatological features of which are graphically represented hereinafter, are as follows:—

SPECIAL CLIMATOLOGICAL STATIONS.

| Locality. | Height above Sea Level. | Latitude. | | Longitude. | | Locality. | Height above Sea Level. | Latitude. | | Longitude. | |
|---------------|-------------------------|-----------|------|------------|------|-------------------|-------------------------|-----------|------|------------|------|
| | | S. | E. | S. | E. | | | S. | E. | | |
| Perth ... | 197 | deg. | min. | deg. | min. | Port Darwin ... | 97 | deg. | min. | deg. | min. |
| Adelaide ... | 140 | 31 | 57 | 115 | 51 | Daly Waters ... | 700 | 12 | 28 | 130 | 51 |
| Brisbane ... | 137 | 27 | 28 | 153 | 2 | Alice Springs ... | 1926 | 23 | 38 | 133 | 37 |
| Sydney ... | 146 | 33 | 51 | 151 | 13 | Dubbo ... | 863 | 32 | 18 | 148 | 35 |
| Melbourne ... | 91 | 37 | 50 | 144 | 59 | Laverton ... | 1530 | 28 | 40 | 122 | 23 |
| Hobart ... | 160 | 42 | 52 | 147 | 22 | Coolgardie ... | 1402 | 30 | 57 | 121 | 10 |

11. Temperatures.—In respect of Australian temperatures generally it may be pointed out that the isotherm for 70° Fahrenheit extends in South America and South Africa as far south as latitude 33°, while in Australia it reaches only as far south as latitude 30°, thus shewing that, on the whole, Australia has a more temperate climate when compared latitude for latitude with places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included in the comparison, for in the United States the 70° isotherm extends in several of the western States as far north as latitude 41°. In Europe the same isotherm reaches almost to the southern shores of Spain, passing, however, afterwards along the northern shores of Africa till it reaches the Red Sea, when it bends northward along the eastern shore of the Mediterranean till it reaches Syria. In Asia nearly the whole of the land area south of latitude 40° N. has a higher isothermal value than 70°.

The extreme range of shade temperatures in summer and winter in a very large part of Australia amounts to probably only 81°. In Siberia, in Asia, the similar range is no less than 171°, and in North America 153°, or say nearly double of the Australian range.

Along the northern shores of the Australian continent the temperatures are very equable. At Port Darwin, for example, the difference in the means for the hottest and coldest months is only 8.7°, and the extreme readings for the year, that is, the highest maximum in the hottest month and the lowest reading in the coldest month, shew a difference of under 50°.

Coming southward the extreme range of temperature increases gradually on the coast, and in a more pronounced way inland.

The detailed temperature results for the several capitals of the States of Australia are shewn on the Climatological Tables hereinafter. It will suffice here to briefly refer to special features.

(i.) *Perth*. Meteorological observations were taken in the Perth Botanical Gardens as far back as 1876, but since the conditions surrounding the instruments and the situation of the station relative to Perth cannot be regarded as quite satisfactory, the more exact climate history of Perth did not properly commence until 1897, when the present Observatory was established. During the period 1897 to 1907, the mean annual shade temperature of Perth was 64° , about a degree higher than that for Sydney and Adelaide, over 5° higher than that for Melbourne, and 10° above that for Hobart, but, on the other hand, 4° below that for Brisbane. The average temperature for the month of January is 73.6° , and for July 55.2° .

The extreme maximum shade record of 107.9° was registered in December, 1904, and the lowest minimum shade temperature was 36.4° , viz., in July, 1906.

(ii.) *Adelaide*. In Adelaide the climate is drier and more sunny than in the other capitals, and, consequently, radiation is less hindered. The extremes of heat are consequently somewhat more marked, especially in the summer months. The mean shade temperature for January and February is 74.0° , and that of July 51.6° . Records of the temperature having reached 100° exist for each of the six summer months from October to March, and of having exceeded 110° exist for each of those months with the exception of March and October. The highest record of shade temperature in Adelaide is 116.3° , registered in January, 1858, and the lowest 32.2° , a range of 84.1° . The freezing point, although closely approached, has never actually been reached by the shade temperature thermometers, notwithstanding the fact that records have been kept for fifty-one years. Frosts have, however, occurred on the grass (four feet below the shade thermometers) at various times between the beginning of April and the end of November.

(iii.) *Brisbane*. In Brisbane the monthly mean shade temperature ranges from 77.3° in January to 58.0° in July, a difference of 19.3° . The extremes have varied from 108.9° in January to 36.1° in July, viz., through a range of 72.8° .

(iv.) *Sydney*. In Sydney the highest monthly mean is 71.5° , recorded in January, while the lowest, again in July, is 52.3° , giving a range of 19.2° .

The extremes of shade temperature recorded at Sydney over a period of nearly half a century are 108.5° in January, 1896, and 35.9° in July, 1890, *i.e.*, a range of 72.6° .

(v.) *Melbourne*. In Melbourne the January mean shade temperature averages 67.3° , and that of July 48.5° , the highest reading ever recorded being 111.2° in January, 1862, and the lowest 27.0° in July, 1869.

(vi.) *Hobart*. The mean temperature for the hottest month at Hobart is 62.0° in January and February, and that of the coldest 45.7° , the highest reading ever recorded being 105.2° in December, 1897, and the lowest 27.7° , nearly a degree higher than the lowest experienced in Melbourne.

(vii.) *Hottest and Coldest Parts*. A comparison of the temperatures recorded at coast and inland stations shews that, in Australia as in other continents, the range increases with increasing distance from the coast.

In the interior of Australia, and during exceptionally dry summers, the temperature occasionally reaches or exceeds 120° in the shade, and during the dry winters the major portion of the country to the south of the tropics is subject to ground frosts. An exact knowledge of temperature disposition cannot be determined until the interior becomes more settled, but from data procurable, it would appear that the hottest area of the continent is situated in the northern part of Western Australia about the Marble Bar and Nullagine goldfields, where the maximum shade temperature during the summer

sometimes exceeds 100° for days, and even weeks continuously. The coldest part of the Commonwealth is the extreme south-east of New South Wales and extreme east of Victoria, namely, the region of the Australian Alps. Here the temperature seldom, if ever, reaches 100° even in the hottest of seasons.

In *Tasmania* also, although occasionally hot winds may cross the Straits and cause the temperature to rise to 100° in the low-lying parts, yet the island as a whole enjoys a most moderate and equable range of temperature throughout the year.

(viii.) *Monthly Maximum and Minimum Temperatures.* The mean monthly maximum and minimum temperatures can be best shewn by means of graphs, which exhibit the nature of the fluctuation for each for the entire year. In the diagram (on page 135) for nine representative places in Australia, the upper heavy curves shew the mean maximum, the lower heavy curves the mean minimum temperatures based upon daily observations. On the same diagram the thin curves shew the relative humidities. (see next section).

12. **Relative Humidity.**—Next after temperature the degree of humidity may be regarded as of great importance as an element of climate; and the characteristic differences of relative humidity between the various capitals of Australia call for special remark. For nine representative places the variations of humidity are shewn on the preceding graph, which gives results based upon daily observations of the greatest and least humidity. Hitherto difficulties have been experienced in many parts of Australia in obtaining satisfactory observations for a continuous period of any length. For this reason it has been thought expedient to refer to the record of humidity at first order stations only, where the results are thoroughly reliable. Throughout the degree of humidity given will be what is known as *relative humidity*, that is, the percentage of aqueous vapour actually existing to the total possible if the atmosphere were saturated.

(i.) *Perth.* At Perth the mean annual humidity at 9 a.m. is 63; the greatest monthly mean is 83, and is in June, and the lowest 45, in January.

(ii.) *Adelaide.* At Adelaide the mean annual humidity is only 56; the mean monthly humidity has been as low as 33 in January and December, and as high as 84 in June.

(iii.) *Brisbane.* In Brisbane the mean annual humidity is 68; the lowest monthly mean recorded is 47, and is in September, and the highest 85 in the months of March and May.

(iv.) *Sydney.* In Sydney the mean annual humidity is 73; the greatest monthly average, which occurred in May, 1889, the wettest month on record during the last forty years, was 90, while the lowest monthly mean, 55, occurred in the month of October, 1867.

(v.) *Melbourne.* The mean annual humidity in Melbourne is 72; the greatest monthly average 88, in June and July, and the lowest 54, in February.

(vi.) *Hobart.* Hobart's mean annual humidity is 72, the highest 92, in June, and the lowest 51, in February.

From the above results, it is seen that, in respect of relative humidity, Sydney has the first place, while Hobart, Melbourne, Brisbane, Perth, and Adelaide follow in the order stated, Adelaide being the driest. The graphs on page 135 shew the annual variations in humidity. It will be observed that the *relative humidity* is ordinarily but not invariably great when the temperature is low.

13. **Evaporation.**—The rate and quantity of evaporation in any territory is influenced by the prevailing temperature, and by atmospheric humidity, pressure and movement. In

Australia the question is of perhaps more than ordinary importance ; since in its drier regions water has often to be conserved in "tanks"¹ and dams. The magnitude of the economic loss by evaporation will be appreciated from the following records, which have been obtained from either jacketed tanks sunk into the ground, or from jacketed vessels exposed on the surface.

The average total evaporation at Sydney is 37.42 inches ; at Melbourne, 38.33 inches ; at Adelaide, 54.92 inches ; and at Perth, 65.81 inches, these results being based respectively upon 46, 35, 38, and 9 years' observations. For Brisbane the result is 86.64 inches, based upon 5 years' observations only, and determined by means of Piché's tube evaporimeter.

In the interior of New South Wales the annual evaporation is as high as 84 inches ; at Coolgardie, Western Australia, it was 85 inches in 1905, and at Laverton in the same year, 140.8 inches, or nearly 12 feet.

(i.) *Monthly Evaporation Curves.* The curves shewing the mean monthly evaporation in various parts of the Commonwealth will disclose how characteristically different are the amounts for the several months in different localities. The evaporation for characteristic places is shewn on diagram shewing also rainfalls (see page 136).

(ii.) In the interior of Australia the possible evaporation is often greater than the actual rainfall. Since therefore, the loss by evaporation depends largely on the exposed area, tanks and dams so designed that the surface shall be a minimum are advantageous. Similarly, the more protected from the direct rays of the sun and from winds, by means of suitable tree planting, the less will be the loss by evaporation : these matters are of more than ordinary concern in the drier districts of Australia.

14. **Rainfall.**—As even a casual reference to climatological maps, indicating the distribution of rainfall and prevailing direction of wind, would clearly shew, the rainfall of any region is determined mainly by the direction and route of the prevailing winds, by the varying temperatures of the earth's surface over which they blow, and by the physiographical features generally.

Australia lies within the zone of the south-east and westerly trade winds. The southern limit of the south-east trade strikes the eastern shores at about 30° south latitude. Hence we find that, with very few exceptions, the heaviest rains of the Australian continent are precipitated along the Pacific slopes to the north of that latitude, the varying quantities being more or less regulated by the differences in elevation of the shores and of the chain of mountains, upon which the rain-laden winds blow, from the New South Wales northern border to Thursday Island. The converse effect is exemplified on the north-west coast of Western Australia from the summer south-east trade winds. Here the prevailing winds, blowing from the interior of the continent instead of from the ocean, result in the lightest coastal rain in Australia.

The westerly trade winds, which skirt the southern shores, are responsible for the very reliable, although generally light, rains enjoyed by the south-western portion of Western Australia, by the south-eastern agricultural areas of South Australia, by a great part of Victoria, and by the whole of Tasmania.

(i.) *Factors determining Distribution and Intensity of Rainfall.* The distribution and intensity of rainfall in the interior of the continent, and also to some extent in the areas already mentioned, are governed by the seasonal peculiarities of three distinct atmospheric control systems, the most important of which is, undoubtedly, the anti-

1. In Australia artificial storage ponds or reservoirs are called "tanks."

cyclonic stream. This stream, which girdles the earth and embraces approximately the region between 15° and 40° south latitude, breaks up into vast elliptically-shaped bodies of circulating atmosphere, measuring frequently 3000 miles in their major and 2000 miles in their minor axes. In passing over Australia from west to east, these great bodies of circulating air cause moist-laden winds to sweep across the continent from the surrounding oceans. The front-circulation brings in winds from the Southern Ocean, and the rear-circulation those from the equatorial seas.

The rain-invoking agent second in order of importance because of its reliability is the well-known "V-shaped depression." The sphere of operation of this latter disturbance is ordinarily the southern half of the continent, although occasionally it may extend its influence to tropical latitudes. The western half of this type of disturbance, with a southerly wind circulation, is the portion from which rain is most frequently to be expected, but occasionally good falls of rain, attended with electrical manifestations, are liberated from the warm eastern portion.

The third agent associated with the production of rain is the tropical depression more popularly known as the "monsoonal depression." This disturbance may be in active evidence for a succession of seasons, and then be conspicuously absent for a number of years, thus raising the question whether, after all, it can be regarded as in any way a distinctive feature of Australian meteorology.

When these disturbances are actively operative in the production of rain, the effect on the country generally, and the economic results for the succeeding season, are very pronounced. The interior of the continent becomes transformed. The plains, which ordinarily have so profound an effect on the heat winds of the summer, are deluged with rain, and respond immediately with an astonishingly luxurious growth of grass and herbage. The air is both tempered in heat, and loses its dryness for considerable periods after their visitations.

The distribution of rain by monsoonal disturbances is, however, very capricious in comparison with that precipitated by the southern "depressions." During some seasons the whole of the northern half of the continent will benefit to a fairly uniform degree, at another time some special region will be favoured. A remarkable example of this peculiarity occurred in 1902, for when monsoonal rains were copiously falling over the major portion of Western Australia, the eastern half of the continent was suffering from severe drought conditions.

During other seasons, tongue-shaped regions extending southwards from the northern shores of the continent will be particularly favoured in regard to rain. These regions may extend to the interior of Western Australia, and simultaneously others may occur in the Central Territory, in Western Queensland, and in the interior of New South Wales:

It is thus obvious that different parts of the continent are mainly dependent upon forms of atmospheric disturbances for what may be called their fundamental rains, and since there is a seasonal tendency for a particular class of storms to predominate, it rarely happens that any year passes without a good rain being universally enjoyed. Again, the condition of drought can hardly affect the whole of the continent at the same time. Nevertheless a more than ordinarily fortunate condition in one part of the continent ordinarily implies drought conditions in another, or *vice-versâ*. Thus in New South Wales, monsoonal rains, so beneficial to its north-western districts, rarely extend during the same season to coastal areas, or to Southern Riverina. For this reason it may happen occasionally that sheep may with advantage be sent 500 or 600 miles from the coast for feed and water. Should the southern or antarctic low-pressures be the predominating influence, the country to the south of the Murrumbidgee River is benefiting at the expense of the remainder of the State.

Good coastal season ordinarily depends upon an anticyclonic control; when such exists, the country west of the tablelands usually wants water.

A good season for Australia as a whole is dependent upon many circumstances. Not only must the main rain-giving storms be well represented, but other favourable conditions must also coexist. The general rate of translation of the atmosphere across the continent is a factor of the utmost importance. Another is the latitude the cyclones and anti-cyclones are moving in, and, further, the daily or periodic surgings of high and low pressures to and from the equator are also factors of considerable moment.

(ii.) *Time of Rainfall.* Monsoonal rains affect the northern parts of the continent in December or January, and may continue with diminishing energy for nearly six months of the year. As they penetrate into higher latitudes the period of action is delayed, but is not shortened, though the quantities of the fall materially lessen. Antarctic rains are experienced during the winter months of the year, the resultant quantities being reliable and consistently regular. The heaviest totals from this source are precipitated on the west coast of Tasmania. Thus at Queenstown the total for one year exceeded 140 inches, and even the average is 127.81 inches.

Anti-cyclonic rains occur at all times of the year, but more markedly from March to September. They benefit particularly the southern area of the continent, and are responsible for many of the heaviest rainfalls and floods on the coastal districts of New South Wales.

(iii.) *Wettest and Driest Regions.* The wettest place in Australia is Geraldton, on the north-east coast of Queensland, where the average rainfall is no less than 145 inches, the maximum yearly total being 211.24 inches and the minimum 69.87 inches. The difference of range between these extremes is 141.37 inches.

The driest known part of the continent is about the Lake Eyre district in South Australia (the only part of the continent below sea level), where the annual average is but 5 inches, and where it rarely exceeds 10 inches for the twelve months.

The inland districts of Western Australia have until recent years been regarded as the driest part of Australia, but authentic observations taken during the past decade at settled districts in the east of that State shew that the annual average is from 10 to 12 inches.

(iv.) *Quantities and Distribution of Rainfall generally.* The departure from the normal rainfall increases greatly and progressively from the southern to the northern shores of the continent, and similarly also at all parts of the continent, subject to capricious monsoonal rains, as the comparisons hereunder will shew. The general distribution is best seen from the map on page 138, shewing the areas subject to average annual rainfalls lying between certain limits. The areas so defined are shewn in the following table:—

DISTRIBUTION OF AVERAGE RAINFALL.

| Average Annual Rainfall. | N. S. W. | Victoria. | Queensland. | South Aust. | Northe'n Territ'y. | Western Aust. | Tasmania. | Commonwealth. |
|--------------------------|-----------|-----------|-------------|-------------|--------------------|---------------|-----------|---------------|
| | sqr. mls. | sqr. mls. | sqr. mls. | sqr. mls. | sqr. mls. | sqr. mls. | sqr. mls. | sqr. mls. |
| Under 10 inches | 81,144 | nil | 135,600 | 306,663 | 6,300 | 408,300 | nil | 938,007 |
| 10—20 " | 116,363 | 36,300 | 255,300 | 57,935 | 213,430 | 400,720 | nil | 1,080,048 |
| 20—30 " | 77,910 | 27,900 | 173,400 | 13,908 | 96,790 | 113,700 | 11,395 | 515,003 |
| 30—40 " | 20,414 | 18,770 | 58,700 | 1,198 | 120,600 | 39,100 | 5,396 | 264,178 |
| Over 40 " | 14,541 | 4,914 | 47,500 | 366 | 86,500 | 14,100 | 9,424 | 177,345 |
| Total area ... | 310,372 | 87,884 | 670,500 | 380,070 | 523,620 | 975,920 | 26,215 | 2,974,581 |

Referring first to the southern capitals, it may be noted that the average at Melbourne from authentic records is 25.57 inches; the maximum 44.25, and minimum 15.61; the range therefore is 28.64 inches. At Adelaide the average determined from sixty-eight years' totals is 20.88, the maximum 30.87, the minimum 12.43, and the range therefore 17.44 inches. At Hobart 23.53 inches is the average annual rainfall, 40.67 is the highest total for one year, 13.43 is the lowest; thus 27.24 inches is the extreme range. The average for Perth is 33.18 inches, 46.73 being the maximum and 20.48 inches the minimum; the range is therefore 26.25 inches. These figures appear to constitute an exception to the general rule, but it should be mentioned as a possible explanation that records have there been taken only since 1876, whereas the records at the other cities date from 1840 or thereabouts.

Continuing the comparison of rainfall figures, Sydney's average annual total is 48.54 inches, its maximum 82.81 in 1860, and minimum 21.48 in 1849, thus the range is 61.33 inches. At Brisbane the disparities are greater still. There the average is 48.44 inches—a trifle lower than that of Sydney—the annual maximum was 88.26 inches in 1893, the minimum 16.17 inches in 1902, and the range therefore 62.09 inches.

In order to shew how the rainfall is distributed throughout the year in various parts of the continent, the figures of representative towns have been selected. Port Darwin, typical of the Northern Territory, shews that in that region nearly the whole of the rainfall occurs in the summer months, while little or nothing falls in the middle of the year. The figures of Perth, as representing the south-western part of the continent, are the reverse, for while the summer months are dry, the winter ones are very wet. In Melbourne and Hobart the rain is fairly well distributed throughout the twelve months, with a maximum in October in the former, and in November in the latter. The records at Alice Springs and Daly Waters indicate that in the central parts of Australia the wettest months are in the summer and autumn. In Queensland, as in the Northern Territory, the heaviest rains fall in the summer months, but good averages are also maintained during the other seasons.

On the coast of New South Wales, the first six months of the year are the wettest, with slight excesses in April and July; the averages during the last six months are fair and moderately uniform. In general it may be said that one-fourth of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 inches, the remaining three-fourths receiving generally from 10 to 15 inches.

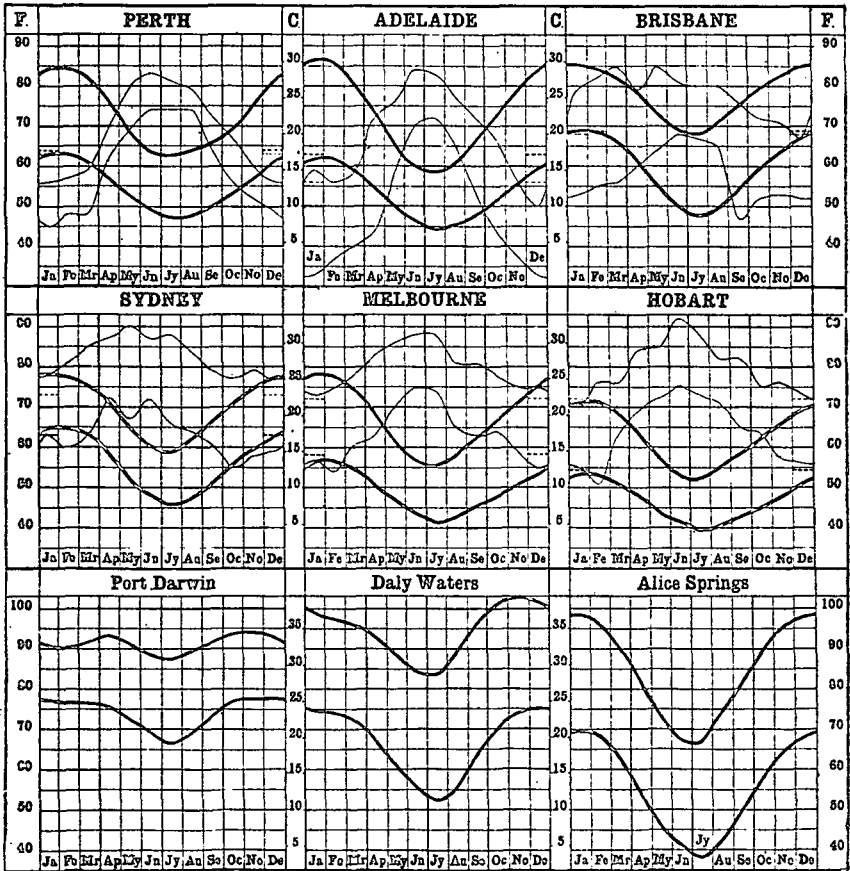
(v.) *Curves of Rainfall and Evaporation.* The relative amounts of rainfall and evaporation at different times through the year are best seen by referring to the graphs for a number of characteristic places. It will be recognised at once how large is the evaporation when water is fully exposed to the direct rays of the sun, and to wind, etc.

(vi.) *Tables of Rainfall.* The table of rainfall for a long period of years for each of the various Australian capitals, affords information as to the variability of the fall in successive years and the list of the more remarkable falls furnishes information as to what may be expected on particular occasions.

RAINFALL AT THE AUSTRALIAN CAPITALS.

| Year. | PERTH. | | | ADELAIDE. | | | BRISBANE. | | | SYDNEY. | | | MELBOURNE. | | | HOBART. | | |
|-------|---------|--------------|------------------|-----------|--------------|------------------|-----------|--------------|------------------|---------|--------------|------------------|------------|--------------|------------------|---------|--------------|------------------|
| | Amount. | No. of Days. | 10 Years' Means. | Amount. | No. of Days. | 10 Years' Means. | Amount. | No. of Days. | 10 Years' Means. | Amount. | No. of Days. | 10 Years' Means. | Amount. | No. of Days. | 10 Years' Means. | Amount. | No. of Days. | 10 Years' Means. |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1840 | 24.23 | 99 | 24.23 | 29.32 | 99 | 29.32 | 58.52 | 150 | 58.52 | 32.57 | 119 | 32.57 | 20.48 | 103 | 20.48 | 20.48 | 103 | 20.48 |
| 1 | 17.96 | 98 | 17.96 | 49.31 | 98 | 49.31 | 76.31 | 142 | 76.31 | 30.18 | 119 | 30.18 | 35.68 | 109 | 35.68 | 35.68 | 109 | 35.68 |
| 2 | 20.32 | 122 | 20.32 | 38.82 | 122 | 38.82 | 48.82 | 137 | 48.82 | 31.16 | 119 | 31.16 | 41.34 | 106 | 41.34 | 41.34 | 106 | 41.34 |
| 3 | 17.19 | 104 | 17.19 | 51.23 | 104 | 51.23 | 62.78 | 168 | 62.78 | 31.54 | 119 | 31.54 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 4 | 16.88 | 136 | 16.88 | 69.21 | 136 | 69.21 | 70.67 | 157 | 70.67 | 30.74 | 119 | 30.74 | 33.44 | 110 | 33.44 | 33.44 | 110 | 33.44 |
| 5 | 18.83 | 125 | 18.83 | 39.19 | 125 | 39.19 | 62.03 | 132 | 62.03 | 33.93 | 119 | 33.93 | 33.44 | 110 | 33.44 | 33.44 | 110 | 33.44 |
| 6 | 26.89 | 114 | 26.89 | 31.43 | 114 | 31.43 | 43.83 | 139 | 43.83 | 30.53 | 119 | 30.53 | 28.90 | 89 | 28.90 | 28.90 | 89 | 28.90 |
| 7 | 27.61 | 109 | 27.61 | 21.24 | 109 | 21.24 | 42.80 | 142 | 42.80 | 30.18 | 119 | 30.18 | 33.44 | 110 | 33.44 | 33.44 | 110 | 33.44 |
| 8 | 19.74 | 114 | 19.74 | 42.59 | 114 | 42.59 | 59.17 | 137 | 59.17 | 33.15 | 119 | 33.15 | 37.52 | 105 | 37.52 | 37.52 | 105 | 37.52 |
| 9 | 25.44 | 110 | 25.44 | 35.00 | 110 | 35.00 | 21.48 | 140 | 21.48 | 44.25 | 119 | 44.25 | 39.96 | 123 | 39.96 | 39.96 | 123 | 39.96 |
| 1850 | 19.56 | 84 | 19.56 | 35.00 | 84 | 35.00 | 44.88 | 157 | 44.88 | 26.98 | 119 | 26.98 | 27.63 | 117 | 27.63 | 27.63 | 117 | 27.63 |
| 1 | 30.86 | 128 | 30.86 | 54.63 | 128 | 54.63 | 35.14 | 142 | 35.14 | 30.18 | 119 | 30.18 | 31.79 | 116 | 31.79 | 31.79 | 116 | 31.79 |
| 2 | 37.44 | 118 | 37.44 | 69.44 | 118 | 69.44 | 62.81 | 182 | 62.81 | 25.38 | 133 | 25.38 | 24.78 | 101 | 24.78 | 24.78 | 101 | 24.78 |
| 3 | 27.08 | 128 | 27.08 | 28.27 | 128 | 28.27 | 58.36 | 157 | 58.36 | 39.16 | 159 | 39.16 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 4 | 15.35 | 105 | 15.35 | 68.82 | 105 | 68.82 | 29.98 | 111 | 29.98 | 32.08 | 139 | 32.08 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 5 | 23.15 | 124 | 23.15 | 47.00 | 124 | 47.00 | 47.08 | 152 | 47.08 | 36.42 | 165 | 36.42 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 6 | 34.93 | 118 | 34.93 | 24.11 | 118 | 24.11 | 69.12 | 187 | 69.12 | 27.40 | 144 | 27.40 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 7 | 21.15 | 105 | 21.15 | 51.18 | 105 | 51.18 | 36.29 | 128 | 36.29 | 15.94 | 119 | 15.94 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 8 | 21.55 | 107 | 21.55 | 24.11 | 107 | 24.11 | 36.81 | 149 | 36.81 | 22.41 | 107 | 22.41 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 9 | 14.85 | 95 | 14.85 | 61.04 | 95 | 61.04 | 59.68 | 126 | 59.68 | 25.79 | 133 | 25.79 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 1860 | 19.67 | 119 | 19.67 | 35.98 | 119 | 35.98 | 43.05 | 127 | 43.05 | 18.27 | 120 | 18.27 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 1 | 24.04 | 147 | 24.04 | 54.39 | 147 | 54.39 | 48.19 | 134 | 48.19 | 24.58 | 129 | 24.58 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 2 | 21.85 | 119 | 21.85 | 79.06 | 119 | 79.06 | 64.22 | 178 | 64.22 | 33.77 | 129 | 33.77 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 3 | 23.68 | 145 | 23.68 | 45.45 | 145 | 45.45 | 52.27 | 141 | 52.27 | 30.17 | 125 | 30.17 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 4 | 19.75 | 121 | 19.75 | 49.22 | 121 | 49.22 | 37.12 | 161 | 37.12 | 32.52 | 136 | 32.52 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 5 | 15.51 | 108 | 15.51 | 62.02 | 108 | 62.02 | 73.40 | 176 | 73.40 | 25.60 | 134 | 25.60 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 6 | 20.11 | 116 | 20.11 | 38.71 | 116 | 38.71 | 63.60 | 175 | 63.60 | 28.10 | 134 | 28.10 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 7 | 19.05 | 112 | 19.05 | 67.03 | 112 | 67.03 | 46.25 | 153 | 46.25 | 32.87 | 158 | 32.87 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 8 | 19.99 | 113 | 19.99 | 53.42 | 113 | 53.42 | 45.69 | 156 | 45.69 | 24.04 | 134 | 24.04 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 9 | 14.74 | 117 | 14.74 | 30.28 | 117 | 30.28 | 59.66 | 147 | 59.66 | 24.10 | 124 | 24.10 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 1870 | 23.84 | 119 | 23.84 | 56.33 | 119 | 56.33 | 49.77 | 129 | 49.77 | 25.36 | 116 | 25.36 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 1 | 23.25 | 137 | 23.25 | 67.30 | 137 | 67.30 | 63.19 | 167 | 63.19 | 19.28 | 127 | 19.28 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 2 | 22.66 | 146 | 22.66 | 49.12 | 146 | 49.12 | 29.51 | 142 | 29.51 | 28.48 | 147 | 28.48 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 3 | 20.11 | 139 | 20.11 | 29.39 | 139 | 29.39 | 41.09 | 163 | 41.09 | 24.08 | 134 | 24.08 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 4 | 17.23 | 127 | 17.23 | 42.62 | 127 | 42.62 | 42.28 | 112 | 42.28 | 22.40 | 131 | 22.40 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 5 | 29.21 | 157 | 29.21 | 32.22 | 157 | 32.22 | 46.92 | 157 | 46.92 | 33.71 | 130 | 33.71 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 6 | 13.43 | 110 | 13.43 | 43.49 | 110 | 43.49 | 44.04 | 159 | 44.04 | 25.85 | 128 | 25.85 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 7 | 24.95 | 135 | 24.95 | 26.85 | 135 | 26.85 | 39.91 | 145 | 39.91 | 26.94 | 123 | 26.94 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 8 | 30.48 | 103 | 30.48 | 53.66 | 103 | 53.66 | 39.43 | 152 | 39.43 | 24.00 | 128 | 24.00 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 9 | 39.72 | 143 | 39.72 | 81.54 | 143 | 81.54 | 60.16 | 189 | 60.16 | 32.39 | 153 | 32.39 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 1880 | 41.34 | 106 | 41.34 | 33.08 | 106 | 33.08 | 23.01 | 132 | 23.01 | 19.42 | 123 | 19.42 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 1 | 31.79 | 116 | 31.79 | 49.36 | 116 | 49.36 | 57.16 | 186 | 57.16 | 27.14 | 125 | 27.14 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 2 | 24.78 | 101 | 24.78 | 73.02 | 101 | 73.02 | 81.42 | 184 | 81.42 | 24.20 | 140 | 24.20 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 3 | 35.68 | 109 | 35.68 | 41.68 | 109 | 41.68 | 55.30 | 200 | 55.30 | 26.73 | 126 | 26.73 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 4 | 31.96 | 92 | 31.96 | 64.97 | 92 | 64.97 | 69.26 | 188 | 69.26 | 24.69 | 124 | 24.69 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 5 | 33.44 | 110 | 33.44 | 88.26 | 110 | 88.26 | 49.90 | 208 | 49.90 | 26.80 | 140 | 26.80 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 6 | 28.90 | 89 | 28.90 | 44.02 | 89 | 44.02 | 38.22 | 188 | 38.22 | 22.60 | 138 | 22.60 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 7 | 37.52 | 105 | 37.52 | 59.11 | 105 | 59.11 | 31.86 | 170 | 31.86 | 17.04 | 131 | 17.04 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 8 | 27.63 | 117 | 27.63 | 44.97 | 117 | 44.97 | 42.40 | 157 | 42.40 | 25.16 | 121 | 25.16 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 9 | 39.96 | 123 | 39.96 | 42.53 | 123 | 42.53 | 42.52 | 136 | 42.52 | 49.11 | 117 | 49.11 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 1890 | 46.73 | 126 | 46.73 | 60.80 | 126 | 60.80 | 43.17 | 149 | 43.17 | 15.61 | 102 | 15.61 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 1 | 30.93 | 93 | 30.93 | 37.35 | 93 | 37.35 | 55.90 | 172 | 55.90 | 28.87 | 116 | 28.87 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 2 | 31.23 | 122 | 31.23 | 34.41 | 122 | 34.41 | 66.54 | 170 | 66.54 | 28.09 | 139 | 28.09 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 3 | 40.12 | 145 | 40.12 | 16.17 | 145 | 16.17 | 40.10 | 151 | 40.10 | 27.45 | 113 | 27.45 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 4 | 33.72 | 103 | 33.72 | 49.27 | 103 | 49.27 | 38.62 | 169 | 38.62 | 28.43 | 130 | 28.43 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 5 | 33.01 | 123 | 33.01 | 33.23 | 123 | 33.23 | 45.93 | 155 | 45.93 | 29.72 | 128 | 29.72 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 6 | 31.50 | 103 | 31.50 | 36.76 | 103 | 36.76 | 35.03 | 144 | 35.03 | 25.64 | 129 | 25.64 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 7 | 27.25 | 101 | 27.25 | 42.84 | 101 | 42.84 | 31.89 | 159 | 31.89 | 22.29 | 114 | 22.29 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 8 | 32.04 | 109 | 32.04 | 29.39 | 109 | 29.39 | 43.83 | 139 | 43.83 | 22.26 | 106 | 22.26 | 31.96 | 92 | 31.96 | 31.96 | 92 | 31.96 |
| 9 | 31.96 | 104 | 31.96 | 31.45 | 104 | 31.45 | 31.32 | 132 | 31 | | | | | | | | | |

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF TEMPERATURE AND HUMIDITY.—In the above graphs, in which the heavy lines denote 'temperature' and the thin lines 'humidity,' the fluctuations of mean temperature and mean humidity are shewn throughout the year. These curves are plotted from the data given in the Climatological Tables hereinafter. The temperatures are shewn in degrees Fahrenheit, the inner columns giving the corresponding values in centigrade degrees. Humidities have not been obtained for Port Darwin, Daly Waters, or Alice Springs.

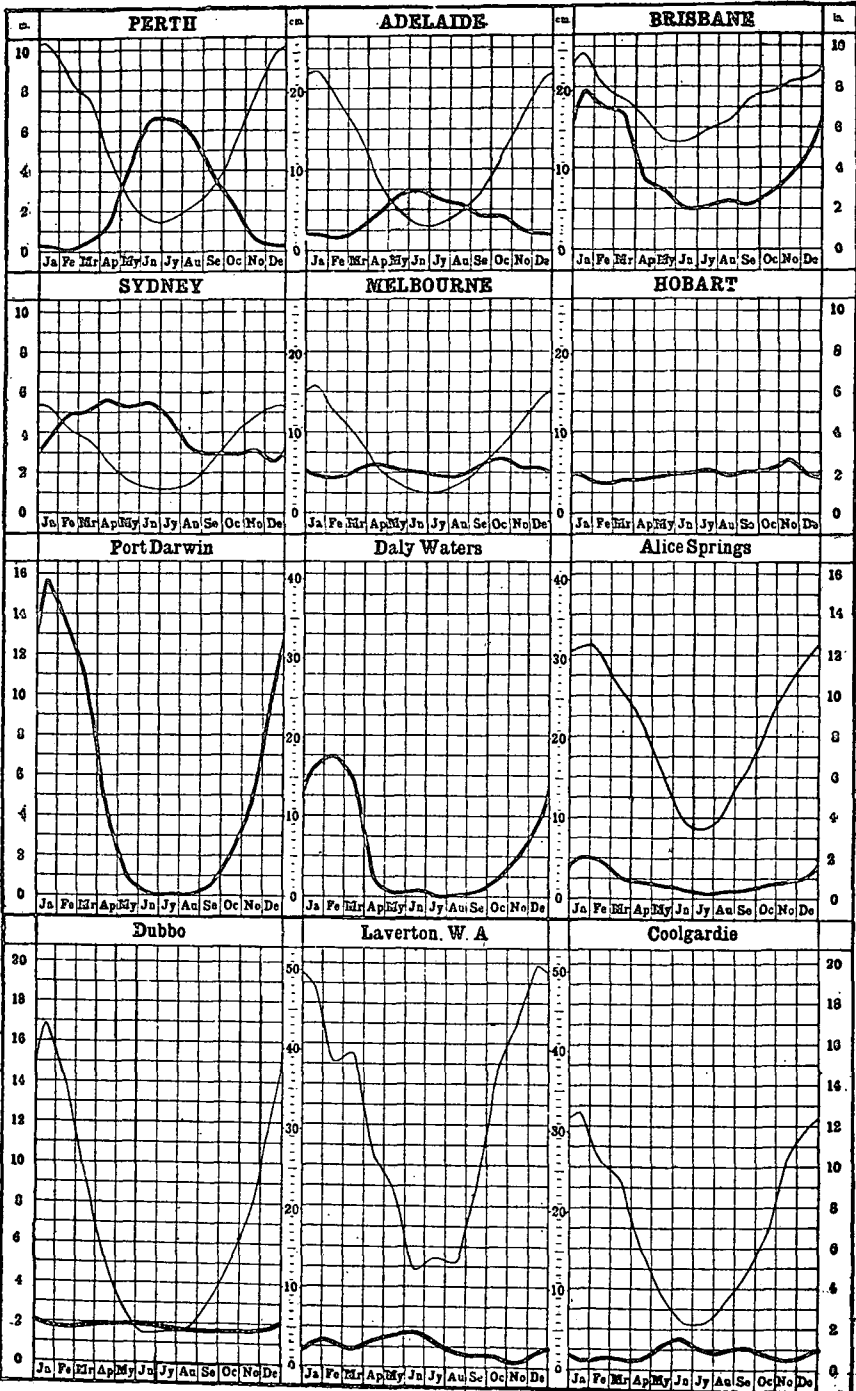
For the thin lines the degree numbers represent relative humidities, or the actual percentages of actual saturation on the total for the respective temperature.

In both cases the upper line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also shew the progression of the range between maximum and minimum temperatures throughout the year.

INTERPRETATION OF THE GRAPHS.—The curves denote mean monthly values. Thus, taking, for example, the temperature graphs for Perth, the mean readings of the maximum and minimum temperatures for a number of years on 1st January would give respectively about 83° Fahr. and 62° Fahr. Thus the mean range of temperature on that date is the difference, viz., 21°. Similarly, observations about 1st June would give respectively about 66° Fahr. and 51° Fahr., or a range of 15°.

In a similar manner it will be seen that the mean of the greatest humidities, say on 31st March, is about 64 and the mean of the least humidities 55; in other words, at Perth, the degree of saturation of the atmosphere by aqueous vapour ranges on 31st March between 64 % and 55 %.

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN RAINFALL AND MEAN EVAPORATION IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



(For explanation see next page.)

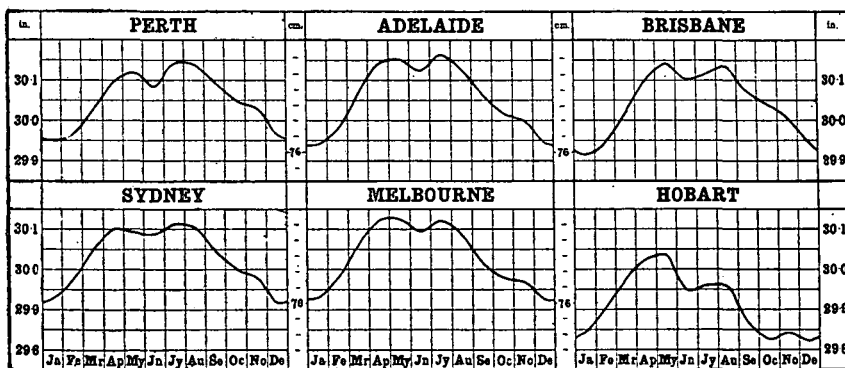
EXPLANATION OF THE GRAPHS OF RAINFALL AND EVAPORATION.—On the preceding graphs thick lines denote rainfall and thin lines evaporation, and shew the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables hereinafter, are shewn in inches (see the outer columns), and the corresponding metric scale (centimetres) is shewn in the two inner columns. The evaporation is not given for Hobart, Port Darwin, nor Daly Waters.

INTERPRETATION OF THE GRAPHS.—The distance for any date from the zero line to the curve, represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide, on the 1st January the rain falls on the average at the rate of about four-fifths of an inch per month, or, say, at the rate of about $9\frac{1}{2}$ inches per year. In the middle of June it falls at the rate of nearly 3 inches per month, or, say, at the rate of about 36 inches per year. At Dubbo the evaporation is at the rate of nearly 17 inches per month about the middle of January, and only about $1\frac{1}{4}$ inches at the middle of June.

TABLE SHEWING MEAN ANNUAL RAINFALL AND EVAPORATION IN INCHES OF THE PLACES SHEWN ON PRECEDING PAGE, AND REPRESENTED BY THE GRAPHS.

| — | Rainfall. | Evapora- tion. | — | Rainfall. | Evapora- tion. |
|---------------|-----------|-------------------|---------------------|-----------|-------------------|
| Perth ... | 33.03 | 65.70 | Port Darwin ... | 61.55 | — |
| Adelaide ... | 20.89 | 54.97 | Daly Waters ... | 27.14 | — |
| Brisbane ... | 47.47 | 86.64 | Alice Springs... .. | 10.78 | 97.88 |
| Sydney ... | 48.80 | 37.42 | Dubbo ... | 22.23 | 81.03 |
| Melbourne ... | 26.35 | 38.33 | Laverton, W.A. ... | 10.76 | — |
| Hobart ... | 23.38 | — | Coolgardie ... | 8.88 | 83.58 |

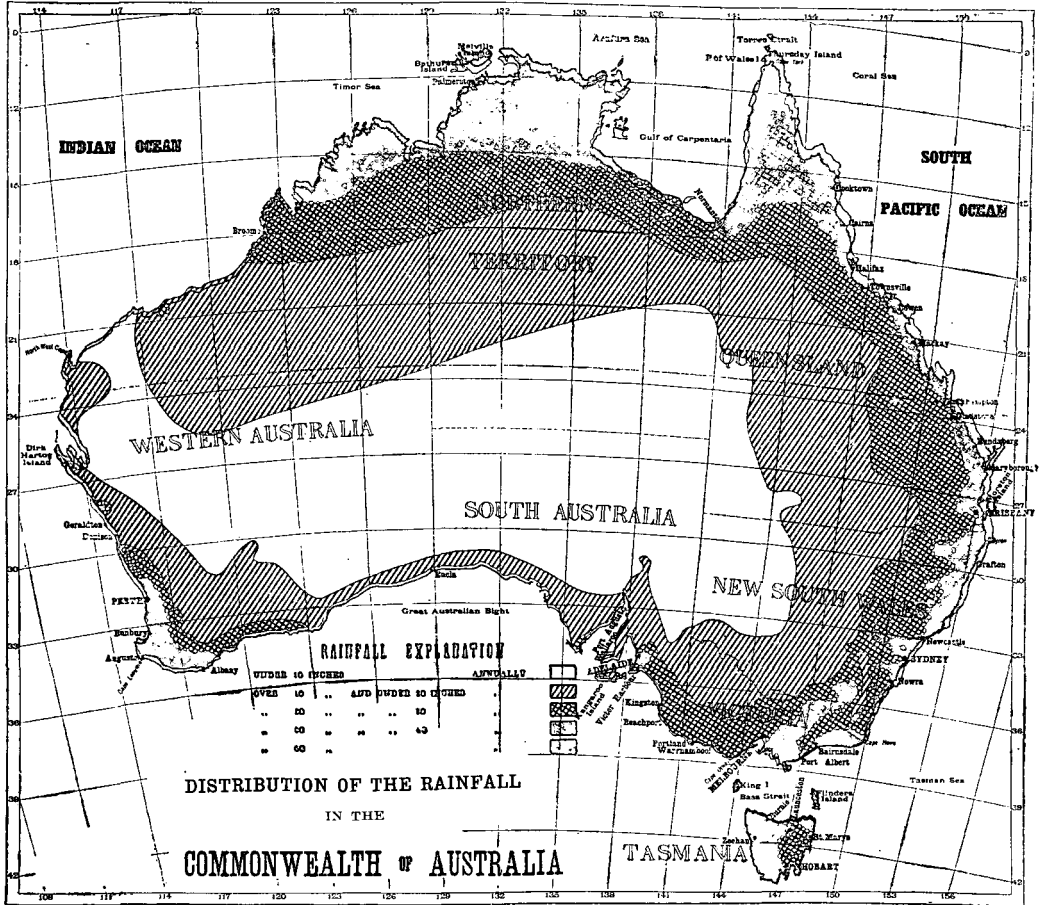
GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN BAROMETRIC PRESSURE FOR THE CAPITALS OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF BAROMETRIC PRESSURE.—On the above graphs the lines representing the yearly fluctuation of barometric pressure at the capital cities are means for long periods, and are plotted from the Climatological Tables given hereinafter. The pressures are shewn in inches on about $2\frac{1}{2}$ times the natural scale, but the corresponding pressures in centimetres are also shewn in the two inner columns, each division representing one millimetre.

INTERPRETATION OF THE BAROMETRIC GRAPHS.—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure on 1st January is about 29.93 inches, and there are maxima in the middle of May and August of about 30.15 and 30.14 respectively. The double maxima appear clearly on each graph.

RAINFALL OF AUSTRALIA.



The above map has been prepared from a chart showing the isohyets (curves of equal mean annual rainfall) for every 10 inches for Australia, and compiled from the most recent information. It was impracticable on the small scale map to distinguish between the areas with 40 to 50, 50 to 60, 60 to 70, and over 70 inches of rain annually.

15. Remarkable Falls of Rain.—The following are the more remarkable falls of rain in the States of Western Australia, South Australia, Queensland, and New South Wales :—

HEAVY RAINFALLS, NEW SOUTH WALES, UP TO 1907, INCLUSIVE.

| Name of Town or Locality. | Date. | Amnt. | Name of Town or Locality. | Date. | Amnt. |
|---------------------------|---------------|-------|---------------------------|---------------|-------|
| | | ins. | | | ins. |
| Albion Park ... | 8 Feb., 1895 | 10.00 | Kempsey ... | 10 Mar., 1893 | 10.34 |
| Albury ... | 14 " 1898 | 10.70 | Leconfield... .. | 9 " " | 14.53 |
| Alme Dorrigo ... | 22 Jan., 1893 | 10.27 | Liverpool ... | 23 Feb., 1874 | 10.89 |
| Anthony ... | 28 Mar., 1887 | 17.14 | Maitland W. ... | 9 Mar., 1893 | 14.79 |
| " ... | 15 Jan., 1890 | 13.13 | Major's Creek ... | 14 Feb., 1898 | 12.32 |
| Arnold Grove ... | 28 May, 1889 | 11.13 | Mittagong... .. | 6 Mar., 1893 | 11.71 |
| " ... | 20 Mar., 1892 | 10.08 | Morpeth ... | 9 " " | 21.52 |
| Araluen ... | 14 Feb., 1898 | 10.51 | Mount Kembla ... | 14 Feb., 1898 | 10.25 |
| " ... | 15 " " | 13.36 | Myra Vale ... | 14 " " | 10.00 |
| Billambil ... | 14 Mar., 1894 | 12.94 | Nambucca Heads ... | 3 Apr., 1905 | 10.62 |
| Bowral ... | 6 " 1893 | 11.94 | Nepean Tunnel ... | 14 Feb., 1898 | 12.30 |
| Bowraville... .. | 22 June, 1898 | 11.50 | Newcastle... .. | 19 Mar., 1871 | 11.17 |
| Broger's Creek ... | 14 Feb., " " | 20.05 | " ... | 9 " 1893 | 11.14 |
| Bulli Mountain ... | 19 Mar., 1894 | 10.45 | Nowra ... | 11 July, 1904 | 11.50 |
| " ... | 13 Feb., 1898 | 17.14 | Parramatta ... | 28 May, 1889 | 11.94 |
| Burwood ... | 28 May, 1889 | 11.75 | " ... | 20 Mar., 1892 | 11.01 |
| Camden ... | 11 July, 1904 | 10.90 | Port Macquarie ... | 9 Nov., 1887 | 10.76 |
| Camden Haven ... | 22 Jan., 1895 | 12.23 | Port Stephens ... | 9 Feb., 1889 | 10.15 |
| Canley Vale ... | 28 May, 1889 | 10.06 | Prospect ... | 28 May, " | 12.37 |
| " ... | 20 Mar., 1892 | 10.85 | Raymond Terrace ... | 28 Sep., 1903 | 10.32 |
| Castle Hill... .. | 28 May, 1889 | 13.49 | Richmond ... | 28 May, 1889 | 12.18 |
| Colombo Lyttleton ... | 5 Mar., 1893 | 12.17 | Robertson... .. | 14 Feb., 1898 | 10.00 |
| Condong ... | 27 " 1887 | 18.66 | " ... | 10 July, 1904 | 10.50 |
| " ... | 15 Jan., 1890 | 11.50 | Rooty Hill ... | 27 May, 1889 | 11.85 |
| Cookville ... | 1 Apr., 1892 | 11.31 | Rylstone ... | 28 " " | 10.26 |
| Coramba ... | 11 June, 1893 | 10.83 | Seven Oaks ... | 22 June, 1898 | 11.06 |
| Cordeaux River ... | 26 Feb., 1873 | 10.98 | Springwood ... | 7 Mar., 1894 | 10.55 |
| " ... | 3 " 1890 | 11.51 | Taree ... | 28 Feb., 1892 | 12.24 |
| " ... | 14 Feb., 1898 | 22.58 | Terara ... | 26 " 1873 | 12.57 |
| " ... | 31 Aug., 1906 | 10.31 | Tomago ... | 9 Mar., 1893 | 13.76 |
| Cudgen ... | 15 Mar., 1894 | 10.23 | Tongarra ... | 9 July, 1904 | 11.10 |
| Dapto West ... | 14 Feb., 1898 | 12.05 | Tongarra Farm ... | 14 Feb., 1898 | 15.12 |
| Darkes' Forest ... | 8 " 1895 | 11.10 | Towamba ... | 5 Mar., 1893 | 20.00 |
| Dunheved ... | 28 May, 1889 | 12.40 | Tweed Heads ... | 14 Jan., 1890 | 10.53 |
| Eden ... | 4 " 1875 | 10.52 | " ... | 14 Mar., 1894 | 11.40 |
| Fernmount ... | 2 Feb., 1890 | 10.36 | Trial Bay ... | 9 " 1893 | 11.13 |
| " ... | 2 June, 1903 | 11.29 | Wollongong ... | 26 Feb., 1873 | 11.00 |
| Goorangoola ... | 9 Mar., 1893 | 10.34 | " ... | 5 Apr., 1882 | 10.00 |
| Guy Fawkes ... | 2 June, 1903 | 11.30 | Woolgoolga ... | 11 June, 1893 | 10.83 |
| Hercynia ... | 28 May, 1889 | 11.85 | Yellow Rock ... | 14 Feb., 1898 | 11.69 |
| Holy Flat ... | 12 Mar., 1887 | 12.00 | South Head | | |
| " ... | 28 Feb., 1892 | 12.24 | (near Sydney)... .. | 29 Apr., 1841 | 20.12 |
| Jamberoo ... | 14 " 1898 | 10.92 | " ... | 16 Oct., 1844 | 20.41 |
| Kareela ... | 20 Oct., 1902 | 11.73 | | | |

HEAVY RAINFALLS, QUEENSLAND, UP TO 1896, INCLUSIVE.

| | | | | | |
|----------------|---------------|-------|--------------------------|---------------|-------|
| Ayr ... | 20 Sep., 1890 | 14.58 | Bowen Park ... | 16 Feb., 1893 | 10.38 |
| " ... | 25 Mar., 1891 | 10.19 | Brisbane ... | 21 Jan., 1897 | 18.31 |
| " ... | 26 Jan., 1896 | 10.50 | Bromby Park (Bowen) | 14 Feb., 1893 | 13.28 |
| Beenleigh ... | 21 " 1887 | 11.30 | " ... | 20 Jan., 1894 | 11.20 |
| Bloomsbury ... | 14 Feb., 1893 | 17.40 | Bulimba (Brisbane)... .. | 16 Feb., 1893 | 10.46 |
| " ... | 27 Jan., 1896 | 10.52 | Bundaberg ... | 31 Jan., 1893 | 10.15 |
| Bowen ... | 13 Feb., 1893 | 14.65 | Burketown ... | 15 " 1891 | 13.58 |
| " ... | 20 Jan., 1894 | 11.11 | Bustard Head ... | 18 Feb., 1888 | 10.14 |

HEAVY RAINFALLS, QUEENSLAND—Continued.

| Name of Town or Locality. | Date. | Amnt. | Name of Town or Locality. | Date. | Amnt. |
|---------------------------|---------------|-------|---------------------------|---------------|-------|
| | | ins | | | ins. |
| Bustard Head ... | 30 Jan., 1893 | 11.85 | Lytton ... | 13 Mar., 1892 | 10.60 |
| Caboolture ... | 21 ,, 1887 | 10.00 | " ... | 16 Feb., 1893 | 11.74 |
| Cairns ... | 11 Feb., 1889 | 14.74 | Mackay ... | 17 ,, 1888 | 10.10 |
| " ... | 21 Apr., ,, | 12.40 | " ... | 15 ,, 1893 | 10.46 |
| " ... | 5 ,, 1891 | 14.08 | Macnade Mill | | |
| " ... | 19 Jan., 1892 | 10.56 | (Townsville) ... | 28 Mar., 1891 | 10.61 |
| Caloundra ... | 21 ,, 1887 | 10.50 | " ... | 15 ,, 1893 | 10.50 |
| Cape Grafton ... | 5 Mar., 1896 | 13.37 | " ... | 18 Jan., 1894 | 12.56 |
| Cardwell ... | 18 ,, 1887 | 10.15 | " ... | 17 Apr., ,, | 14.26 |
| " ... | 30 Dec., 1889 | 12.00 | Marlborough ... | 17 Feb., 1888 | 14.24 |
| " ... | 2 Jan., 1890 | 10.06 | " ... | 29 Jan., 1896 | 10.84 |
| " ... | 23 Mar., ,, | 12.00 | Mein ... | 4 Apr., 1895 | 10.50 |
| Clare ... | 26 Jan., 1896 | 15.80 | Mooloolah... .. | 13 Mar., 1892 | 11.53 |
| Collaroy ... | 30 ,, ,, | 14.25 | " ... | 2 Feb., 1893 | 29.11 |
| Cooran ... | 1 Feb., 1893 | 13.62 | " ... | 9 June, ,, | 11.50 |
| " ... | 9 June, ,, | 10.12 | Mount Perry ... | 24 Feb., 1887 | 10.00 |
| Cooroy ... | 9 ,, ,, | 13.60 | Mundoolun ... | 21 Jan., ,, | 17.95 |
| Cressbrook ... | 16 Feb., ,, | 10.65 | Musgrave ... | 6 Apr., 1894 | 13.71 |
| Crohamhurst | | | Nanango ... | 9 June, 1893 | 10.00 |
| (Blackall Range) | 31 Jan., ,, | 10.78 | Nerang ... | 15 ,, 1892 | 12.35 |
| " ... | 2 Feb., ,, | 35.71 | Netley (Rockhampton) | 29 Jan., 1896 | 11.77 |
| Crohamhurst ... | 9 June, ,, | 13.31 | North Pine ... | 21 ,, 1887 | 11.60 |
| Cryna (Beaudesert) ... | 21 Jan., 1887 | 14.00 | " ... | 16 Feb., 1893 | 14.97 |
| Donaldson ... | 27 ,, 1891 | 11.29 | Palmwoods ... | 4 ,, ,, | 12.30 |
| Dungeness ... | 16 Mar., 1893 | 22.17 | Pittsworth ... | 11 Mar., 1890 | 14.68 |
| " ... | 19 Jan., 1894 | 11.84 | Port Douglas ... | 5 ,, 1887 | 13.00 |
| " ... | 17 Apr., ,, | 14.00 | " ... | 12 Feb., 1888 | 10.00 |
| Eddington (Cloncurry) | 23 Jan., 1891 | 10.33 | " ... | 20 Jan., 1892 | 11.50 |
| Emu Park ... | 31 ,, 1893 | 10.00 | " ... | 23 Feb., 1894 | 10.25 |
| Esk ... | 21 ,, 1887 | 10.70 | " ... | 7 Apr., ,, | 10.00 |
| Fassifern ... | 21 ,, ,, | 10.20 | Ravenswood ... | 24 Mar., 1890 | 17.00 |
| Geraldton ... | 11 Feb., 1889 | 17.13 | " ... | 27 Jan., 1896 | 10.52 |
| " ... | 31 Dec., ,, | 12.45 | Redcliffe ... | 21 ,, 1887 | 14.00 |
| " ... | 25 Jan., 1892 | 11.10 | " ... | 16 Feb., 1893 | 17.35 |
| " ... | 6 Apr., 1894 | 16.02 | Rockhampton ... | 17 ,, 1888 | 10.82 |
| " ... | 3 Mar., 1896 | 11.42 | " ... | 29 Jan., 1896 | 10.53 |
| Gladstone ... | 18 Feb., 1888 | 12.37 | Sandgate ... | 21 ,, 1887 | 10.50 |
| " ... | 31 Jan., 1893 | 14.62 | " ... | 16 Feb., 1893 | 14.03 |
| Glen Broughton ... | 5 Apr., 1894 | 18.50 | St. Helena ... | 16 ,, ,, | 11.20 |
| Gold Creek Reservoir | 16 Feb., 1893 | 11.16 | St. Helens (Mackay) | 24 ,, 1888 | 12.00 |
| Goodna ... | 21 Jan., 1887 | 11.00 | St. Lawrence ... | 17 ,, ,, | 12.10 |
| Goondi Mill (Gerald'n) | 20 ,, 1892 | 11.10 | " ... | 30 Jan., 1896 | 15.00 |
| " ... | 6 Apr., 1894 | 15.69 | Tabragalba ... | 21 ,, 1887 | 10.00 |
| Haughton Valley ... | 26 Jan., 1896 | 18.10 | Tambourine Mountain | 17 July, 1889 | 10.91 |
| Holmwood (Woodford) | 2 Feb., 1893 | 16.19 | The Hollow (Mackay) | 23 Feb., 1888 | 15.12 |
| Ingham ... | 18 Jan., 1894 | 12.60 | " ... | ? Mar., 1891 | 10.39 |
| " ... | 7 Apr., ,, | 10.10 | Toooloombah ... | 29 Jan., 1896 | 11.70 |
| Inkerman ... | 21 Sep., 1890 | 12.93 | Townsville ... | 24 ,, 1892 | 19.20 |
| Inneshoven | | | Woodford ... | 2 Feb., 1893 | 14.93 |
| (Johnstone River) | 30 Dec., 1889 | 14.01 | Woodlands (Yeppoon) | 10 ,, 1889 | 10.00 |
| Inskip Point ... | 13 Mar., 1892 | 10.65 | " ... | 26 Jan., 1890 | 10.22 |
| Kamerunga (Cairns) ... | 20 Jan., ,, | 13.61 | " ... | 25 Mar., ,, | 14.25 |
| " ... | 23 Feb., 1894 | 10.10 | " ... | 31 Jan., 1893 | 23.07 |
| Kamerunga ... | 6 Apr., ,, | 14.04 | " ... | 30 ,, 1896 | 11.91 |
| " ... | 5 ,, 1895 | 12.31 | " ... | 9 Feb., ,, | 13.97 |
| " ... | 5 Mar., 1896 | 11.81 | Yandina ... | 1 ,, 1893 | 20.08 |
| Lake Nash ... | 10 Jan., 1895 | 10.02 | " ... | 9 June, ,, | 12.70 |
| Landsborough ... | 2 Feb., 1893 | 25.15 | Yeppoon ... | 31 Jan., ,, | 20.05 |
| " ... | 9 June, ,, | 12.80 | " ... | 30 ,, 1896 | 11.02 |
| Lytton ... | 21 Jan., 1887 | 12.85 | | | |

HEAVY RAINFALLS, WESTERN AUSTRALIA, UP TO 1907, INCLUSIVE.

| Name of Town or Locality. | Date | Amnt. | Name of Town or Locality. | Date. | Amnt. |
|---------------------------|---------------|-------|---------------------------|---------------|-------|
| | | ins. | | | ins. |
| Balla Balla ... | 20 Mar., 1899 | 6.00 | Port Hedland ... | 7 Feb., 1901 | 3.56 |
| " " ... | 21 " , 1899 | 14.40 | " " ... | 8 " , " | 9.55 |
| Boodaryl ... | 3 Jan., 1894 | 10.03 | Roebourne... .. | 3 Apr., 1898 | 11.44 |
| " " ... | 4 " , " | 5.22 | " " ... | 6 Mar., 1900 | 10.32 |
| " " ... | 21 Mar., 1899 | 14.53 | Tambrey ... | 6 " , " | 11.00 |
| " " ... | 6 Feb., 1901 | 1.91 | " " ... | 3 " , 1903 | 10.46 |
| " " ... | 7 " , " | 9.16 | Thangoo ... | 17-19 Feb.'96 | 24.18 |
| Bamboo Creek ... | 22 Mar., 1899 | 10.10 | " " ... | 28 Dec., 1898 | 11.15 |
| Carlton ... | 11 Jan., 1903 | 10.64 | Whim Creek ... | 2 Apr., 1898 | 7.08 |
| Cossack ... | 3 Apr., 1898 | 12.82 | " " ... | 3 " , " | 29.41 |
| " " ... | 15 " , 1900 | 6.89 | " " ... | 20 Mar., 1899 | 8.89 |
| " " ... | 16 " , " | 13.23 | " " ... | 21 " , " | 18.17 |
| Croydon ... | 3 Mar., 1903 | 12.00 | " " ... | 6 " , 1900 | 10.03 |
| Cocos Island ... | 29 Nov., " | 14.38 | " " ... | 3 " , 1903 | 10.44 |
| Derby ... | 29 Dec., 1898 | 13.09 | Wyndham ... | 27 Jan., 1890 | 11.60 |
| " " ... | 30 " , " | 7.14 | " " ... | 11 " , 1903 | 9.98 |
| Kerdiary ... | 7 Feb., 1901 | 12.00 | " " ... | 12 " , " | 6.64 |
| Millstream ... | 5 Mar., 1900 | 10.00 | " " ... | 13 " , " | 4.20 |
| Obagama ... | 16 Feb., 1896 | 3.95 | Yeeda ... | 28 Dec., 1898 | 8.42 |
| " " ... | 17 " , " | 6.30 | " " ... | 29 " , " | 6.88 |
| " " ... | 18 " , " | 7.22 | " " ... | 30 " , " | 6.12 |
| Point Torment ... | 17 Dec., 1906 | 11.86 | | | |

HEAVY RAINFALLS, SOUTH AUSTRALIA, UP TO 1907, INCLUSIVE.

| | | | | | |
|----------------|---------------|-------|-----------------|--------------|-------|
| Borroloola ... | 14 Mar., 1899 | 14.00 | Pine Creek ... | 8 Jan., 1897 | 10.35 |
| Lake Nash ... | 21 " , 1901 | 10.25 | Port Darwin ... | 7 " , " | 11.67 |

16. **Snowfall.**—Light snow has been known to fall even as far north, occasionally, as latitude 31° S., and from the western to the eastern shores of the continent. During exceptional seasons it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria as far north as Toowoomba in Queensland. During the winter snow covers the ground to a great extent on the Australian Alps for several months, where also the temperature falls below zero Fahrenheit during the night, and in the ravines around Kosciusko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with our most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed and protrude into very low latitudes, sometimes even to the tropics.

17. **Hail.**—Hail falls throughout Australia most frequently along the southern shores of the continent, and in the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. Rarely does a summer pass without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauged galvanised iron bear evidence as to the weight and penetrating power of the stones.

Hail storms occur most frequently in Australia when the barometric readings indicate a flat and unstable condition of pressure. They are invariably associated with tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

18. **Barometric Pressures.**—The mean annual barometric pressure in Australia varies from 29.88 inches on the north coast to 30.06 inches over the central and southern parts of the continent. In January the mean pressure ranges from 29.76 inches in the northern and central areas to 29.94 and 29.95 inches in the southern. The July mean pressure ranges from 29.97 inches at Port Darwin to 30.18 at Alice Springs. Barometer readings, corrected to mean sea-level, have, under anticyclonic conditions in the interior of the continent, ranged from 30.81 inches to as low as 28.44 inches. This lowest record was registered at Townsville during a hurricane on the 9th March, 1903. The mean annual fluctuations of barometric pressure for the capitals of Australia are shewn on page 137.

19. **Wind.**—(i.) *Trade Winds.* The two distinctive wind currents in Australia are, as previously stated, the south-east and westerly trade winds. As the belt of the earth's atmosphere in which they blow apparently follows the sun's ecliptic path north and south of the equator, so the area of the continent affected by these winds varies at different seasons of the year. During the summer months the anticyclonic belt travels in very high latitudes, thereby bringing the south-east trade winds as far south as 30° south latitude. The westerly trade winds are forced a considerable distance to the south of Australia, and are very rarely in evidence in the hot months. When the sun passes to the north of the equator, the south-east trade winds follow it, and only operate to the north of the tropics for the greater part of the winter. The westerly winds, by the same force, are brought into lower latitudes during the same period of the year. They sweep across the southern areas of the continent from the Leeuwin to Cape Howe, and during some seasons are remarkably persistent and strong. They occasionally penetrate to almost tropical latitudes, and though usually cold and dusty, are of the greatest service to the country, for being rain-bearing winds, moisture is by their agency precipitated over vast areas in the south of the continent.

(ii.) *Land and Sea Breezes.* The prevailing winds second in order of importance are the land and sea breezes. These generally blow at right angles to the coast line in their early stages, but are deflected to the north and south in the middle and later periods of the blows.

On the east coast the sea breezes which come in from the north-east, when in full force, frequently reach the velocity of a gale during the afternoon in the summer months, the maximum hourly velocity, ordinarily attained about 3 p.m., not unfrequently attaining a rate of 35 to 40 miles per hour. This wind, although strong, is usually shallow in depth, and does not ordinarily penetrate more than 9 or 12 miles inland.

The land breezes on the east coast blow out from a south-westerly direction during the night.

On the western shores of the continent the directions are reversed. The sea breezes come in from the south-west, and the land breezes blow out from the north-east.

(iii.) *Inland Winds.* Inland, the direction of the prevailing winds is largely regulated by the seasonal changes of pressure, so disposed as to cause the winds to radiate spirally outwards from the centre of the continent during the winter months, and to circulate spirally from the seaboard to the centre of Australia during the summer months.

(iv.) *Prevailing Direction at the State Capitals.* In *Perth*, southerly is the prevailing direction for November to February inclusive, and north-north-easterly for the mid-winter months.

In *Adelaide* the summer winds are from the south-west and south, and in the winter from north-east to north.

In *Brisbane*, south-east winds are in evidence all the year round, but more especially during the months January, February, March and April.

In *Sydney* from May to September the prevailing direction is westerly, and for the remaining seven months north-easterly.

Melbourne winter winds are from north-west to north-east, and those of the summer from south-west to south-east.

At *Hobart* the prevailing direction for the year is from north-west.

Over the greater part of Australia January is the most windy month, *i.e.*, is the month when the winds are strongest on the average, though the most violent wind storms occur at other times during the year, the time varying with the latitude.

20. Cyclones and Storms.—(i.) *General.* The “elements” in Australia are ordinarily peaceful, and although severe cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Straits, including the coast-line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, that is, in that part of them which has a north-westerly to a south-westerly circulation.

Occasionally the north-east coast of Queensland is visited by hurricanes from the north-east tropics. During the first three months of the year these hurricanes appear to have their origin in the neighbourhood of the South Pacific Islands, their path being a parabolic curve of south-westerly direction. Only a small percentage, however, reach Australia, the majority recurring in their path before reaching New Caledonia.

Anemometrical records for these storms do not exist, but the fact that towns visited by them have been greatly damaged indicates that the velocity must be very great. Fortunately the area covered by these storms is very small when compared with the southern cyclones, and the region affected during an individual visitation is very limited. The heaviest blows are experienced to the west of the vortex with south-east to south-west winds.

(ii.) *Severe Cyclones.* Very severe cyclones, popularly known as “Willy Willies,” are peculiar to the north-west coast of Western Australia from the months of December to March, inclusive. They apparently originate in the ocean, in the vicinity of the Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy near Cossack and Onslow, between latitudes 20° and 22° South. The winds in these storms, like those from the north-east tropics, are very violent and destructive, causing great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern quadrant of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coast-line, or cross the continent to the Great Australian Bight. When they take the latter course their track is marked by torrential rains, as much as 29.41 inches, for example, being recorded at Whim Creek from one such occurrence. Falls of 10 inches and over have frequently been recorded in the interior of Western Australia from similar storms.

Cyclones occasionally develop from incipient monsoonal low-pressures in the interior of the continent. Their formation is apparently materially assisted by the advancing high-pressures to the west of them, for they seldom or never appear without this accompaniment. The velocity and duration of the resultant gales, too, has a distinct relation to the magnitude of pressure in the anti-cyclones. Evidence of excess of high pressures on such occasions indicates severe gales in the cyclones, and in the case of moderate pressures, moderate gales.

These cyclones do not attain their severest phases until they reach the seaboard. The most violent winds occur in the south-western quadrant, with south-west to south-east winds. The area affected on the coast-line is not usually very great. During the visitation of one of these storms, about 500 miles in diameter, in July, 1903, a strip of land, only 80 miles in extent, was affected. But so severe was the gale within this

region that steamers of from 8000 to 10,000 tons, leaving Port Jackson, were buffeted and tossed about like corks by the turbulent sea. Notwithstanding this, vessels 200 miles to the east lay becalmed and had no indication of the violent atmospheric upheaval relatively so near.

Though storms of this type may occur at any time of the year, they are more frequent during the months of August and September. The velocity of the wind has on one occasion reached the rate of 120 miles per hour.

(iii.) *Southerly Bursters.* The "Southerly Burster" is a characteristic feature of the eastern part of Australia. It is a cool, or cold, wind peculiar to the coastal districts of New South Wales, south of latitude 30°. In a modified form, however, it also appears in the interior of that State, in Victoria, and the western districts of Queensland.

The "Southerly Bursters" invariably follow periods of hot weather, and are a great relief to the population settled over the favoured areas. They occur in all months from August to May inclusive, but most frequently in November. The preceding winds in the early and late summer months are from a north-westerly, and in the midsummer months from a north-easterly direction. A rise in the barometer always takes place before their advent, but no relation has been established between the time this rise begins and the moment of the arrival of the wind itself, neither is there any apparent connection between the velocity of the wind and the rate of gradient of the barometric rise, notwithstanding that records of nearly fifteen hundred "Bursters," extending over a period of forty years, have been analysed with a view of ascertaining if such a connection could be established. All that can be said is that, should the rise be sharp and rapid, the life of the blow will be short, while a slow and gradual one indicates a long and steady blow from the south, after the initial "Burster" has passed. "Southerly Bursters" are usually first noted on the extreme south coast, and travel northward at a rate of 20 miles an hour. The rate of translation has ordinarily no definite relation to the velocity attained by the wind itself.

"Bursters" frequently occur simultaneously at several places along the seaboard, and occasionally they have been known to progress down the coast from north to south. While they may arrive at any time during the day or night, the interval between sun-down and midnight is that in which they ordinarily occur.

This type of storm is usually associated with "V"-shaped depressions, but occasionally a condition of relatively high barometric pressures in Victoria will induce their occurrence. It is most frequent during seasons of sporadic rains, and very rare during good years in the interior. In the summer of 1890, the year of the great Darling River flood, only sixteen visitations occurred, and even these were of a very mild character. The series of good years in the interior of Australia, since 1903, has been remarkable for the small annual number of "southerly bursters."

The greatest number ever experienced in a single summer was sixty-two, the average being thirty-two.

In the months of December and January they are usually short lived, and two may occur within the twenty-four hours. In the early and late summer months the intervening periods of warm weather are longer, and the winds are longer sustained, the energy being supplied from the more pronounced high pressures prevailing at these seasons of the year. The velocity varies from a rate of a few miles an hour to over 80 miles per hour, the maximum puffs occurring about an hour after the arrival of the burster. During recent years there has been a falling-off both in their number and strength, the reason for which is not yet understood, but it is suspected that the gradual extension of the agricultural and pastoral industries to the interior of the country may be one of the causes of the change.

Winds of a like character, and possibly derived from similar atmospheric actions and conditions, are—

In Europe—"The Bora," a sharp, cold north-east wind, which blows from the Croatian and Illyrian Mountains along the coast of Dalmatia from Trieste southward:

and the "Mistral," a violent northerly wind which blows from France to the Gulf of Lyons.

In North America, the "Northerners" of Texas have similar characteristics, and in South America "The Pampero," a cold and strong southerly wind which blows over the Pampas of Argentina, is almost identical with the "Southerly Bursters." The "Tehuantepec" winds that blow on the Pacific side of Central America are also very similar.

All parts of Australia are subject during the summer months to hot, desiccating winds, of two kinds. The most common and general class are associated with low-pressure isobars. The more rare and local hot winds are caused by the heating of descending air on the lee-side of mountains. In Victoria the former class are known as "Brick Fielders," a name originally applied to the "Southerly Bursters" in Sydney, because of the dust they raised from the brickfields to the south of the city. When the goldfields were discovered in Victoria the miners hailing from Sydney gave the name to the dusty winds from the opposite quarter.

The hot winds on the south-eastern littoral are analogous to the "Chinook" winds which blow at the eastern foot of the Rocky Mountains; to the "Föhn" winds of the Alpine Valleys; and to the "North-Westers" of the Canterbury Plains in the Middle Island of New Zealand.

21. Influences affecting Australian Climate.—Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes therein, however, have taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shews a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great growth of residential and manufacturing buildings within the city and in the surrounding suburbs during that period. Again, low-lying lands on the north coast of New South Wales, that originally were seldom subject to frosts, have with the denudation of the surrounding hills from forests experienced annual visitations, the probable explanation being that, through the absence of trees, the cold air of the high lands now flows, unchecked and untempered, down the sides of the hills to the valleys and lower lands.

It is pointed out by Abercromby,¹ as shewing the influence of irrigation on climate, that "Before the Suez Canal was made, the desert through which it is cut was said to be rainless; now since the Bitter Lakes have been filled up with water, rain falls on an average eight days in the year at Ismailia." And in the United States, General A. W. Greely² says, concerning "Heat Waves," "It seems possible that the frequency and intensity of such visitations have diminished on the Pacific coast, since Tennant's record of hot days (classing as such those on which the temperature rose to 80° or above, at San Francisco) indicates that their annual number has very materially diminished since 1859. For seven years prior to 1859 such days averaged thirteen yearly, and since that time, up to 1871, the average yearly number is but four. The immense quantity of land placed under irrigation and the vast increase in vegetation are obvious reasons why there should be some diminution in this respect."

(i.) *Influences of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestal undertakings will allow, the weather can be controlled by human agency. The direct action of forests is an equalising one; thus, especially in equatorial regions and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes of their shade temperatures, by altering the extent of radiating surface, by evaporation, and by checking the movement of air. While decreasing

1. "Seas and Skies," Hon. Ralph Abercromby. 8vo, London, 1888, p. 30.

2. "American Weather." 8vo, London, 1888, p. 253.

evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain, and the washing away of surface soil. Thus when a region is protected by trees, steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies" watercourses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the inland rivers. Thus the River Murray, which has never been known to run dry, derives its steadiness of flow mainly through the causes above indicated.

(ii.) *Direct Influences of Forest on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others contend the opposite. According to Dr. Hann, observations have been made in India and Germany which support the idea that the destruction of trees has had a most deteriorating effect upon the climate.¹ In the Cordilleras clouds with rain falling from them can be seen hanging over forests, while over contiguous lands covered with shrubs or used for agriculture the sky is blue and the sun is shining.

In America the influence of forests on the rainfall is still debated, but in Europe authorities contend that forests encourage frequent rainfalls. Hann states that a surface which keeps the air moist and cool, and from which there is as great an evaporation as takes place from extended forests, must have a tendency to increase the amount and frequency of precipitation, as contrasted with an open country which is dry, but over which conditions are otherwise similar.

Obviously the settlement of this very important question is difficult. Observations would have to be taken, with different treatments of the land, over very extended periods. Sufficient evidence exists, however, to establish that, even if the rainfall has not increased, the beneficial effect of forest lands in tempering the effects of the climate is more than sufficient to disclose the importance of their protection and extension. Curtis, in a paper read before the Meteorological Congress in 1893, sets forth important evidence of the ill-effects on orchard and wheat country of the felling of trees for the timber trade.

In Michigan, where half a century ago peach trees flourished and were rarely injured by cold, the crops have now nearly disappeared, owing to the removal by timbermen of the shelter afforded by the forests. In Northern Kansas, too, from the same cause, the growing of peaches has been largely abandoned. Many of the South Californian citrus fruit-growers protect their orchards from the destructive effects of wind by the judicious planting of eucalyptus and other trees.

It is the rapid rate of evaporation (says Dr. Fernow), induced by both hot and cold winds, which injures crops and makes life uncomfortable on the plains. Whether the forest aids in increasing precipitation there may be doubt, but nobody can say that it does not check the winds and the rapid evaporation due to them.

Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of our treeless interior. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.²

22. Comparison of Rainfalls and Temperatures.—For the purpose of comparison the following lists of rainfalls and temperatures are given for various important cities throughout the world, for some of the places mentioned as possible sites for a federal capital, and for the capitals of the Australian States :—

1. "Climatology," p. 194.

2. See A. Woelfkof, *Petermann's Mittheilungen*, 1885; and W. M. Fulton and A. N. Salisbury, "Convention of U.S.A. Weather Bureau Officials, 1896."

**COMPARISON OF RAINFALLS AND TEMPERATURES
OF CITIES OF THE WORLD WITH THOSE OF AUSTRALIA.**

| Place. | Height above M.S.L. | Annual Rainfall. | | | Temperature. | | | | | |
|----------------|---------------------------|------------------|----------|---------|-----------------|-----------------|--------------------------|-------------------------|------------------------------|------------------------------|
| | | Average. | Highest. | Lowest. | Mean Summer. | Mean Winter. | Highest on Record. | Lowest on Record. | Average Hottest Month. | Average Coldest Month. |
| | | Ins. | Ins. | Ins. | Fahr. | Fahr. | Fahr. | Fahr. | Fahr. | Fahr. |
| Amsterdam | Ft. ... | 26.40 | ... | ... | 62.9 | 37.1 | 93.9 | 5.8 | 63.6 | 35.0 |
| Athens | ... | ... | ... | ... | ... | ... | 106.0 | ... | ... | ... |
| Berlin | 161 | 22.80 | 27.18 | 17.97 | 64.6 | 32.4 | 97.5 | —9.6 | 65.8 | 30.6 |
| Berne | 1,880 | 46.00 | ... | ... | ... | ... | 97.2 | 22.0 | 63.0 | 27.0 |
| Bombay | 37 | 75.00 | ... | ... | 83.0 | 75.0 | 100.0 | 53.0 | 83.0 | 74.0 |
| Brussels | 177 | 28.60 | 47.00 | 20.00 | 63.2 | 37.2 | ... | ... | 65.0 | 35.6 |
| Budapest | 502 | 21.50 | ... | ... | ... | ... | ... | ... | 71.7 | 31.0 |
| Buenos Ayres | 72 | 35.20 | 78.74 | 22.76 | 75.4 | 51.4 | 103.1 | 28.4 | 75.0 | 50.0 |
| Calcutta | 21 | 65.60 | ... | ... | 84.7 | 66.7 | 108.0 | 44.0 | 85.0 | 65.0 |
| Capetown | 40 | 25.50 | 36.72 | 17.71 | 68.1 | 54.7 | 102.0 | 34.0 | 68.8 | 53.9 |
| Chicago | 595 | 33.40 | 45.80 | 24.40 | 70.0 | 26.0 | 103.0 | 23.0 | 72.0 | 24.0 |
| Christiania | 82 | 21.10 | ... | ... | ... | ... | 91.2 | ... | 63.0 | 23.5 |
| Colombo | 40 | 87.36 | ... | ... | 81.0 | 79.5 | 95.8 | 65.2 | 82.5 | 79.0 |
| Constantinople | ... | 28.75 | 42.74 | 14.78 | 74.0 | 43.5 | 103.6 | 13.0 | 75.7 | 42.0 |
| Copenhagen | 46 | 21.80 | 27.87 | 21.58 | 60.5 | 31.9 | 90.5 | 9.7 | 61.9 | 31.4 |
| Dublin | 155 | 29.20 | 35.57 | 20.47 | 58.9 | 42.0 | 87.0 | 13.0 | 63.5 | 32.8 |
| Edinburgh | 441 | 25.00 | 32.89 | 16.50 | 59.0 | 38.4 | 88.0 | 0.0 | 58.0 | 37.0 |
| Genoa | 177 | 45.00 | ... | ... | ... | ... | ... | ... | ... | ... |
| Hong Kong | 110 | 84.88 | 100.0 | 57.03 | 80.9 | 59.1 | 92.9 | 40.6 | 80.9 | 55.3 |
| Johannesburg | 5,925 | 30.64 | 43.39 | 21.66 | 65.0 | 51.5 | 94.0 | 23.3 | 66.8 | 40.6 |
| Lisbon | 312 | 31.00 | 102.0 | 27.50 | 69.6 | 51.3 | 94.1 | 32.5 | ... | ... |
| London | 154 | 24.36 | 34.08 | 16.93 | 61.2 | 39.3 | 97.1 | 4.0 | 62.7 | 38.6 |
| Madras | 22 | 49.00 | ... | ... | 87.3 | 76.7 | 112.0 | 57.0 | 89.3 | 76.1 |
| Madrid | 2,149 | 17.99 | 27.48 | 11.22 | 73.0 | 41.2 | 107.1 | 10.5 | 75.7 | 39.7 |
| Marseilles | 246 | 21.73 | 43.05 | 12.05 | 70.3 | 46.0 | 100.4 | 11.5 | 83.0 | 56.3 |
| Moscow | 469 | 21.30 | ... | ... | 63.5 | 49.0 | ... | ... | 68.0 | 12.0 |
| Naples | 187 | 32.60 | ... | ... | 76.1 | 49.3 | 104.0 | 23.0 | 77.2 | 48.2 |
| New York | 175 | 30.70 | 37.60 | 24.30 | 67.0 | 19.0 | 97.0 | —28.0 | 69.0 | 16.0 |
| Ottawa | 294 | 33.19 | 38.05 | 25.25 | 66.7 | 15.0 | 98.3 | —31.6 | 68.7 | 12.6 |
| Paris | 104 | 19.68 | 26.18 | 15.28 | 63.0 | 38.4 | 101.1 | —14.0 | 66.0 | 36.3 |
| Pekin | ... | 24.40 | ... | ... | ... | ... | ... | ... | 79.2 | 23.6 |
| Quebec | 293 | 45 to 50 | ... | ... | 63.0 | 14.0 | ... | ... | 66.0 | 9.4 |
| Rome | 164 | 27.84 | 36.29 | 19.84 | 74.0 | 46.6 | 100.4 | 19.6 | 76.5 | 45.7 |
| San Francisco | 28 | 22.50 | 38.70 | 9.30 | 59.0 | 51.0 | 100.0 | 29.0 | 61.0 | 50.0 |
| Shanghai | ... | ... | ... | ... | 79.4 | 41.1 | 102.0 | 12.2 | 82.7 | 37.7 |
| Singapore | ... | 92.70 | 123.24 | 65.56 | ... | ... | 93.0 | ... | ... | ... |
| Stockholm | 144 | 15.70 | ... | ... | ... | ... | ... | ... | 63.0 | 24.5 |
| St. Petersburg | 16 | 20.86 | 25.11 | 15.74 | 61.0 | 19.0 | 87.4 | —30.3 | 64.0 | 17.1 |
| Tokyo | 69 | 58.00 | ... | ... | 74.1 | 38.6 | 98.0 | 15.0 | 77.4 | 36.6 |
| Vienna | 666 | 25.82 | 37.60 | 20.04 | 65.3 | 30.9 | 101.7 | —13.9 | 67.5 | 28.6 |
| Vladivostok | 100 | 12.60 | ... | ... | ... | ... | ... | ... | 69.5 | 5.0 |
| Washington | 73 | 43.10 | 61.30 | 30.60 | 75.0 | 35.0 | 104.0 | —15.0 | 77.0 | 33.0 |

**PLACES WHICH HAVE BEEN REFERRED TO AS POSSIBLE SITES FOR THE
FEDERAL CAPITAL.**

| | | | | | | | | | | |
|------------------------|--------------------------|-------|-------|-------|------|------|-------|------|------|------|
| Armidale | 3,333 | 31.79 | 59.34 | 16.61 | * | † | 105.2 | 13.9 | 69.1 | 42.1 |
| Bombala | 3,000 | 29.92 | 38.18 | 11.88 | 61.0 | 42.8 | 104.1 | 15.5 | 65.2 | 41.3 |
| Canberra (District) | (2,000) to (2,900) | 23.00 | 50.69 | 16.56 | 68.0 | 44.7 | 109.0 | 16.0 | 72.0 | 42.0 |
| Dalgety | 2,650 | 17.82 | 23.20 | 13.53 | 64.2 | 41.8 | 104.0 | 11.0 | 67.0 | 40.0 |
| Lyndhurst | 2,204 | 26.29 | 31.74 | 19.05 | ... | ... | ... | ... | ... | ... |
| Tumut | 900 | 31.96 | 47.87 | 16.83 | ... | ... | ... | ... | ... | ... |

THE STATE CAPITALS.

| | | | | | | | | | | |
|-----------|-----|-------|-------|-------|--------|--------|-------|------|------|------|
| Perth | 197 | 33.18 | 46.73 | 20.48 | * 71.0 | † 56.0 | 107.9 | 36.4 | 73.8 | 55.2 |
| Adelaide | 140 | 20.33 | 30.87 | 13.43 | 71.3 | 52.9 | 116.3 | 32.2 | 74.0 | 51.5 |
| Brisbane | 137 | 43.44 | 88.23 | 16.17 | 75.5 | 59.5 | 108.9 | 36.1 | 77.3 | 58.0 |
| Sydney | 144 | 48.54 | 82.81 | 21.48 | 69.7 | 53.8 | 108.5 | 35.9 | 71.5 | 52.3 |
| Melbourne | 91 | 25.57 | 44.25 | 15.61 | 64.9 | 50.0 | 111.2 | 27.0 | 67.3 | 48.5 |
| Hobart | 160 | 23.53 | 40.67 | 13.43 | 60.1 | 47.0 | 105.2 | 27.7 | 62.0 | 45.7 |

* Mean summer temperature derived from the average for November, December, January, February and March. † Mean winter temperature derived from the average for June, July, and August.

23. Climatological Tables.—The means, averages, extremes, totals, etc., for a number of climatological elements have been determined from long series of observations at the Australian capitals. These are given in the following tables:—

CLIMATOLOGICAL DATA FOR PERTH, W.A.
 LAT. 31° 57' S., LONG. 115° 51' E. HEIGHT ABOVE M.S.L. 197 FT.
 BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Barometer corrected to 32° F. and Mean Sea Level from 9 a.m. & 3 p.m. Readings. | Wind. | | | | Mean Amount of Evaporation. | No. of Days Lightning. | Mean Amount of Clouds. | No. of Clear Days. |
|---|---|--------------------------------------|------------------------------|--------------|-----------------------|-----------------------------|------------------------|------------------------|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends. | 11 | 10 | 10 | 10 | 10 | 9 | 11 | 11 | 11 |
| January | 29.950 | 797 27/98 | 0.73 | 11,667 | S | 10.36 | 1.0 | 2.4 | 15.0 |
| February | 29.961 | 606 10/05 | 0.68 | 10,281 | S | 8.65 | 1.2 | 2.7 | 12.6 |
| March | 30.022 | 601 17/99 | 0.56 | 10,231 | S S E | 7.61 | 0.9 | 3.1 | 12.3 |
| April | 30.059 | 355 25/1900 | 0.44 | 8,811 | S S E | 4.76 | 0.8 | 4.4 | 7.4 |
| May | 30.124 | 698 5/05 | 0.36 | 8,219 | N E | 2.64 | 2.3 | 5.2 | 5.3 |
| June | 30.080 | 836 29/1900 | 0.40 | 8,258 | N E | 1.59 | 1.7 | 6.0 | 5.3 |
| July | 30.130 | 949 11/99 | 0.41 | 8,626 | N E | 1.61 | 2.5 | 5.4 | 5.5 |
| August | 30.122 | 966 15/03 | 0.45 | 9,137 | S W | 2.32 | 1.5 | 5.2 | 5.5 |
| September | 30.093 | 864 11/05 | 0.48 | 9,156 | S S W | 3.23 | 1.8 | 5.6 | 5.5 |
| October | 30.052 | 686 15/98 | 0.60 | 10,508 | S S W | 5.29 | 1.3 | 5.4 | 6.9 |
| November | 30.038 | 777 18/97 | 0.65 | 10,581 | S | 7.79 | 0.9 | 3.8 | 6.9 |
| December | 29.968 | 672 31/98 | 0.72 | 11,483 | S | 9.95 | 1.5 | 3.0 | 12.4 |
| Year { Totals | — | — | — | — | — | 65.81 | 17.4 | — | 98.3 |
| Year { Averages | 30.054 | — | 0.53 | 9,750 | S | — | — | 4.4 | — |
| Year { Extremes | — | 966 15/8.03 | — | — | — | — | — | — | — |

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | Sea water mn. 3 ft. below surface. |
|---|-------------------|-----------|------|----------------------------|--------------|-----------------|----------------------|------------------|------------------------------------|
| | Mean Max. | Mean Min. | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | |
| No. of yrs. over which observation extends. | 11 | 11 | 11 | 11 | 11 | 11 | 10 | 10 | — |
| January | 84.2 | 63.1 | 73.6 | 107.0 16/97 | 50.6 25/01 | 56.4 | 171.1 4/04 | 42.4 25/02 | — |
| February | 84.5 | 63.1 | 73.8 | 106.8 6/98 | 47.7 1/02 | 59.1 | 169.0 4/99 | 41.2 1/02 | — |
| March | 81.8 | 60.7 | 71.2 | 104.3 6, 7/06 | 45.8 8/03 | 58.5 | 161.6 1/99 | 36.7 8/03 | — |
| April | 76.0 | 56.6 | 66.3 | 98.0 5/06 | 42.4 2/01 | 55.6 | 152.0 11/01 | 35.0 2/03 | — |
| May | 68.9 | 52.6 | 60.8 | 90.4 2/07 | 39.9 * | 50.5 | 138.8 15/02 | 31.9 18/99 | — |
| June | 63.8 | 49.4 | 56.6 | 73.5 6/07 | 36.9 14/98 | 36.6 | 131.0 5/04 | 30.2 14/98 | — |
| July | 62.7 | 47.6 | 55.2 | 73.8 24/99 | 36.4 19/06 | 37.4 | 131.0 31/98 | 30.7 6/99 | — |
| August | 64.0 | 48.2 | 56.1 | 80.4 30/02 | 37.5 11/97 | 42.9 | 134.1 † | 30.6 13/05 | — |
| September | 65.6 | 50.1 | 57.4 | 86.4 28/1900 | 39.0 18/00 | 47.4 | 144.8 19/02 | 33.2 15/99 | — |
| October | 69.1 | 53.1 | 61.1 | 93.4 17/06 | 41.2 10/03 | 52.2 | 152.6 30/01 | 34.6 6/98 | — |
| November | 74.8 | 56.3 | 65.6 | 100.3 27/01 | 42.0 1/04 | 58.9 | 161.5 17/03 | 36.9 1/04 | — |
| December | 80.5 | 60.5 | 70.5 | 107.9 20/04 | 49.2 1/97 | 58.7 | 168.3 20/04 | 42.0 5/02 | — |
| Year { Averages | 73.0 | 55.1 | 64.0 | — | — | — | — | — | — |
| Year { Extremes | — | — | — | 107.9 20/12.04 | 36.4 19/7.06 | 59.1 | 171.1 4/1/04 | 30.2 14/6/98 | — |

* 17, 18/1899. † 20/1898; 18/1903.

HUMIDITY, RAINFALL, AND DEW.

| Month. | Humidity. | | | Rainfall. | | | | Dew. | | |
|---|-------------|---------------|--------------|---------------|---------------------------|-------------------|----------------|----------------------|---------------------|--------------------|
| | Mean 9 a.m. | Highest Mean. | Lowest Mean. | Mean Monthly. | Mean No. of Days of Rain. | Greatest Monthly. | Least Monthly. | Greatest in One Day. | Mean Amount of Dew. | Mean No. days Dew. |
| No. of yrs. over which observation extends. | 11 | 11 | 11 | 32 | 32 | 11 | 11 | 11 | — | 11 |
| January | 52 | 56 | 45 | 0.34 | 2 | 1.24 1900 | nil 1837 | 0.71 | — | 1.6 |
| February | 53 | 63 | 46 | 0.34 | 2 | 0.42 1906 | nil 1903 | 0.20 | — | 1.6 |
| March | 54 | 59 | 45 | 0.77 | 4 | 1.59 1901 | 0.08 1902 | 1.37 | — | 2.9 |
| April | 63 | 70 | 34 | 1.70 | 7 | 3.26 1899 | 0.82 1902 | 2.62 | — | 7.4 |
| May | 73 | 81 | 63 | 4.92 | 14 | 8.71 1903 | 0.98 1903 | 2.08 | — | 10.5 |
| June | 79 | 83 | 74 | 6.56 | 16 | 11.19 1903 | 3.66 1902 | 2.10 | — | 10.4 |
| July | 79 | 81 | 74 | 6.19 | 16 | 10.00 1902 | 4.39 1897 | 2.29 | — | 11.5 |
| August | 75 | 79 | 68 | 5.62 | 17 | 9.25 1903 | 0.45 1902 | 2.79 | — | 9.5 |
| September | 70 | 76 | 64 | 3.36 | 14 | 7.52 1903 | 1.93 1899 | 1.26 | — | 6.7 |
| October | 62 | 67 | 56 | 2.08 | 11 | 4.18 1899 | 0.86 1897 | 1.26 | — | 3.6 |
| November | 55 | 60 | 52 | 0.77 | 5 | 1.30 1903 | 0.11 1902 | 1.11 | — | 3.3 |
| December | 52 | 56 | 49 | 0.59 | 4 | 0.77 1905 | 0.04 1906 | 0.58 | — | 2.0 |
| Year { Totals | — | — | — | 33.18 | 112 | — | — | — | — | 71.0 |
| Year { Averages | 63 | — | — | — | — | 11.19 | — | — | — | — |
| Year { Extremes | — | 83 | 45 | — | — | 6/1900 | nil 1/97, 2/03 | 2.79 7/8/1903 | — | — |

— Signifies no record kept.

CLIMATOLOGICAL DATA FOR ADELAIDE, S.A.

LAT. 34° 56' S., LONG. 138° 35' E. HEIGHT ABOVE M.S.L. 140 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Barometer corrected to 32° F. and Mean Sea Level from 9 a.m. to 3 p.m. Readings. | Wind. | | | | Mean Amount of Evaporation | No. of Days Lightning. | Mean Amount of Clouds. | No. of Clear Days. |
|---|--|--------------------------------------|------------------------------|--------------|-----------------------|----------------------------|------------------------|------------------------|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends. | 51 | 30 | 30 | 30 | 38 | 36 | 40 | 26 | |
| January ... | 29.939 | 758 19/99 | 0.37 | 8,312 | S W x S | 8.95 | 2.3 | 3.5 | 7.3 |
| February ... | 29.979 | 691 22/96 | 0.32 | 6,990 | S W x S | 7.30 | 2.1 | 3.4 | 7.3 |
| March ... | 30.069 | 592 12/85 | 0.26 | 6,952 | S W to S E | 5.89 | 2.2 | 3.9 | 6.7 |
| April ... | 30.143 | 773 10/96 | 0.24 | 6,420 | S W & S † | 3.42 | 1.6 | 5.0 | 3.7 |
| May ... | 30.152 | 760 9/80 | 0.21 | 6,271 | N E to N | 2.04 | 1.8 | 5.7 | 1.7 |
| June ... | 30.124 | 750 12/78 | 0.27 | 6,827 | N E to N | 1.25 | 2.2 | 6.2 | 1.3 |
| July ... | 30.164 | 674 25/82 | 0.26 | 6,955 | N E to N | 1.32 | 1.5 | 5.8 | 1.3 |
| August ... | 30.126 | 773 31/97 | 0.30 | 7,397 | N E to N † | 1.98 | 2.2 | 5.2 | 2.0 |
| September ... | 30.067 | 720 2/87 | 0.33 | 7,537 | N E & S W † | 2.68 | 2.4 | 5.2 | 2.5 |
| October ... | 30.020 | 768 28/98 | 0.37 | 8,305 | S W & N E † | 4.81 | 3.6 | 4.9 | 3.6 |
| November ... | 30.001 | 677 2/04 | 0.36 | 7,937 | W S W to S | 6.61 | 3.8 | 4.5 | 5.4 |
| December ... | 29.948 | 675 12/91 | 0.37 | 8,268 | W S W to S | 8.48 | 2.9 | 3.8 | 7.0 |
| Year { Totals | — | — | — | — | — | 54.92 | 28.6 | — | 49.8 |
| Year { Averages | 30.061 | — | 0.30 | 7,348 | S W | — | — | 4.8 | — |
| Year { Extremes | — | 773 * | — | — | — | — | — | — | — |

* 10/4/96; † 31/8/97. ‡ With tendency N E. † With tendency S W. † Equal.

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | Sea water 3 ft. below surface. |
|---|-------------------|-----------|------|----------------------------|--------------|--------------------|----------------------|------------------|--------------------------------|
| | Mean Max. | Mean Min. | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | |
| No. of yrs. over which observation extends. | 51 | 51 | 51 | 51 | 51 | 51 | 30 | 47 | 34 |
| January ... | 86.5 | 61.6 | 74.0 | 116.3 26/58 | 45.1 21/84 | 71.2 | 180.0 18/82 | 36.5 14/79 | 70.8 |
| February ... | 86.1 | 62.0 | 74.0 | 113.6 12/99 | 46.4 13/05 | 67.2 | 170.5 10/00 | 36.7 24/78 | 70.8 |
| March ... | 81.0 | 59.0 | 70.0 | 108.0 12/61 | 44.8 15/7 | 63.2 | 174.0 17/83 | 33.8 27/80 | 68.2 |
| April ... | 73.4 | 54.7 | 64.1 | 98.0 10/66 | 39.6 15/59 | 58.4 155.0 | 1/83 30.5 14/79 | 30.5 14/79 | 64.0 |
| May ... | 65.4 | 50.0 | 57.7 | 88.3 5/66 | 36.9 * | 51.4 148.2 12/79 | 25.9 10/91 | 25.9 10/91 | 59.0 |
| June ... | 60.2 | 46.7 | 53.5 | 76.0 23/65 | 32.5 27/76 | 43.5 138.8 18/79 | 24.5 20/79 | 24.5 20/79 | 54.7 |
| July ... | 58.7 | 44.4 | 51.5 | 74.0 11/06 | 32.2 11/03 | 41.8 134.5 26/90 | 25.0 17/90 | 25.0 17/90 | 52.2 |
| August ... | 61.9 | 45.7 | 53.8 | 82.0 25/62 | 32.3 17/59 | 49.7 140.0 31/92 | 23.5 7/88 | 23.5 7/88 | 53.3 |
| September ... | 66.3 | 47.8 | 57.1 | 90.7 23/82 | 32.7 4/58 | 58.0 160.5 23/82 | 28.0 6/78 | 28.0 6/78 | 56.5 |
| October ... | 72.6 | 51.4 | 62.0 | 100.5 30/59 | 36.0 15/7 | 64.5 158.8 19/82 | 28.5 7/96 | 28.5 7/96 | 60.7 |
| November ... | 78.8 | 55.3 | 67.1 | 113.5 21/65 | 40.9 6/67 | 72.6 166.9 20/78 | 31.8 10/77 | 31.8 10/77 | 65.2 |
| December ... | 83.7 | 59.0 | 71.3 | 114.2 14/76 | 43.0 † | 71.3 175.7 7/99 | 32.5 4/84 | 32.5 4/84 | 68.7 |
| Year { Averages | 72.9 | 53.1 | 63.0 | — | — | — | — | — | 62.0 |
| Year { Extremes | — | — | — | 116.3 26/1/58 | 32.2 11/7/03 | 84.1 180.0 16/1/82 | 23.5 7/8/88 | — | — |

* 26/95; † 24/1904. † 16/1861; † 4/1906.

HUMIDITY, RAINFALL, AND DEW.

| Month. | Humidity. | | | Rainfall. | | | | Dew. | | |
|---|-------------|---------------|--------------|---------------|------------------------|-------------------|----------------|----------------------|---------------------|----------------------|
| | Mean 9 a.m. | Highest Mean. | Lowest Mean. | Mean Monthly. | Mean No. of Days Rain. | Greatest Monthly. | Least Monthly. | Greatest In One Day. | Mean Amount of Dew. | Mean No. of Days Dew |
| No. of yrs. over which observation extends. | 40 | 40 | 40 | 51 | 51 | 51 | 51 | 51 | — | 36 |
| January ... | 42 | 59 | 33 | 0.84 | 5 | 3.28 1870 | nil 1878, 1906 | 2.30 | — | 3 |
| February ... | 44 | 56 | 37 | 0.59 | 4 | 3.10 1858 | nil 1860 | 1.81 | — | 4 |
| March ... | 49 | 58 | 40 | 1.07 | 6 | 4.60 1878 | nil 1859 | 3.50 | — | 10 |
| April ... | 59 | 72 | 44 | 1.86 | 10 | 5.65 1889 | 0.086 1888 | 3.15 | — | 13 |
| May ... | 70 | 76 | 58 | 2.74 | 14 | 7.75 1875 | 0.196 1891 | 2.47 | — | 15 |
| June ... | 78 | 84 | 70 | 2.98 | 17 | 6.02 1887 | 0.423 1886 | 1.45 | — | 15 |
| July ... | 78 | 88 | 72 | 2.57 | 17 | 5.38 1865 | 0.365 1899 | 1.75 | — | 16 |
| August ... | 72 | 77 | 65 | 2.33 | 16 | 4.48 1864 | 0.675 1860 | 1.44 | — | 15 |
| September ... | 63 | 72 | 54 | 1.73 | 14 | 3.67 1877 | 0.448 1896 | 1.42 | — | 15 |
| October ... | 54 | 67 | 44 | 1.75 | 12 | 3.63 1870 | 0.306 1888 | 1.46 | — | 11 |
| November ... | 47 | 57 | 38 | 1.03 | 7 | 2.57 1903 | 0.039 1885 | 1.88 | — | 6 |
| December ... | 43 | 50 | 33 | 0.84 | 6 | 3.98 1861 | nil 1904 | 1.32 | — | 3 |
| Year { Totals | — | — | — | 20.33 | 128 | — | — | — | — | 127 |
| Year { Averages | 56 | — | — | — | — | — | — | — | — | — |
| Year { Extremes | — | 84 | 33 | — | — | 7.75 5/1875 | nil * | 3.50 | — | — |

— Signifies no record kept. * Jan., Feb., Mar. and Dec. various years.

CLIMATOLOGICAL DATA FOR BRISBANE, QUEENSLAND.

LAT. 27° 28' S., LONG. 153° 2' E. HEIGHT ABOVE M.S.L. 137 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Barometer corrected to 32° F. and Mean Sea Level from 9 a.m. & 3 p.m. Readings. | Wind. | | | | Mean Amount of Evaporation. | No. of Days Lightning. | Mean Amount of Clouds. | No. of Clear Days. |
|---|---|--------------------------------------|------------------------------|--------------|-----------------------|-----------------------------|------------------------|------------------------|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends. | 21 | — | — | — | 21 | 6 | — | 21 | — |
| January ... | 29.911 | — | — | — | S E, E, N E | 9.37 | — | 5.8 | — |
| February ... | 29.944 | — | — | — | S, S E, E | 7.93 | — | 5.9 | — |
| March ... | 30.011 | — | — | — | S to E | 7.27 | — | 5.6 | — |
| April ... | 30.099 | — | — | — | S to S E | 6.68 | — | 4.8 | — |
| May ... | 30.149 | — | — | — | S'y & W'y | 5.41 | — | 4.7 | — |
| June ... | 30.106 | — | — | — | S'y & W'y | 5.19 | — | 3.9 | — |
| July ... | 30.119 | — | — | — | S to W | 5.80 | — | 3.5 | — |
| August ... | 30.135 | — | — | — | S to W | 6.48 | — | 3.5 | — |
| September ... | 30.079 | — | — | — | S'y | 7.52 | — | 3.6 | — |
| October ... | 30.043 | — | — | — | N to E | 7.84 | — | 4.2 | — |
| November ... | 30.011 | — | — | — | E to N | 8.21 | — | 4.9 | — |
| December ... | 29.943 | — | — | — | E to N | 8.46 | — | 5.4 | — |
| Year { Totals ... | — | — | — | — | — | 86.16 | — | — | — |
| Averages ... | 30.046 | — | — | — | S to E | — | — | 4.7 | — |
| Extremes ... | — | — | — | — | — | — | — | — | — |

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | Sea water 3 ft. below surface. |
|---|-------------------|-----------|------|----------------------------|------------|-----------------|----------------------|------------------|--------------------------------|
| | Mean Max. | Mean Min. | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | |
| No. of yrs. over which observation extends. | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | — |
| January ... | 8.55 | 69.0 | 77.3 | 108.9 14/02 | 58.8 4/93 | 50.1 | 162.7 20/89 | 49.9 4/93 | — |
| February ... | 84.3 | 68.6 | 76.5 | 101.9 11/04 | 58.7 † | 43.2 | 158.1 10/88 | 49.3 9/89 | — |
| March ... | 82.1 | 66.5 | 74.4 | 96.8 16/88 | 55.6 30/95 | 41.2 | 160.0 1/87 | 46.0 28/02 | — |
| April ... | 78.7 | 61.4 | 70.1 | 95.2 * | 48.6 17/00 | 46.6 | 148.7 2/87 | 37.0 17/00 | — |
| May ... | 73.1 | 55.2 | 64.2 | 88.8 18/97 | 41.3 24/89 | 47.5 | 140.8 4/88 | 29.8 8/97 | — |
| June ... | 69.2 | 50.6 | 59.9 | 81.5 6/06 | 38.5 16/96 | 43.0 | 133.9 6/06 | 25.4 23/88 | — |
| July ... | 68.1 | 47.7 | 58.0 | 83.4 28/98 | 36.1 † | 47.3 | 134.4 29/89 | 23.9 11/90 | — |
| August ... | 71.2 | 49.7 | 60.5 | 87.5 8/07 | 37.4 6/87 | 50.1 | 140.7 30/88 | 27.1 9/99 | — |
| September ... | 75.5 | 54.5 | 65.1 | 90.2 20/04 | 40.7 1/86 | 49.5 | 155.5 26/03 | 30.4 1/89 | — |
| October ... | 79.9 | 59.9 | 69.9 | 101.4 18/93 | 43.3 3/99 | 58.1 | 156.5 31/89 | 34.9 8/89 | — |
| November ... | 82.7 | 63.8 | 73.3 | 105.4 13/98 | 48.5 2/05 | 56.9 | 162.3 7/89 | 38.8 1/05 | — |
| December ... | 85.0 | 67.2 | 76.1 | 105.9 26/93 | 57.0 16/90 | 48.9 | 159.5 23/89 | 49.1 3/94 | — |
| Year { Averages ... | 77.9 | 59.5 | 68.8 | — | — | — | — | — | — |
| Extremes ... | — | — | — | 108.9 14/1/02 | 36.1 † | 72.8 | 162.7 20/1/89 | 23.9 11/7/90 | — |

* 9/1896 and 5/1903. † 10 and 11/1904. ‡ 12/1894 and 2/1896. § 12/7/1894 and 2/7/1896.

HUMIDITY, RAINFALL, AND DEW.

| Month. | Humidity. | | | Rainfall. | | | | Dew.* | | |
|---|-------------|---------------|-------------|---------------|------------------------|-------------------|----------------|----------------------|---------------------|----------------------|
| | Mean 9 a.m. | Highest Mean. | Lowest Mean | Mean Monthly. | Mean No. of Days Rain. | Greatest Monthly. | Least Monthly. | Greatest in One Day. | Mean Amount of Dew. | Mean No. of days Dew |
| No. of yrs. over which observation extends. | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | — | — |
| January ... | 66 | 79 | 53 | 7.61 | 14 | 27.72 1895 | 1.23 1889 | 18.31 21/87 | — | — |
| February ... | 69 | 82 | 55 | 7.03 | 14 | 40.39 1893 | 0.77 1904 | 8.35 16/93 | — | — |
| March ... | 72 | 85 | 56 | 6.69 | 16 | 21.36 1890 | 0.63 1903 | 6.77 13/92 | — | — |
| April ... | 72 | 79 | 60 | 3.29 | 12 | 14.26 1892 | 0.05 1897 | 3.93 20/92 | — | — |
| May ... | 75 | 85 | 64 | 2.97 | 11 | 11.82 1903 | 0.47 1902 | 4.26 31/03 | — | — |
| June ... | 74 | 81 | 68 | 2.08 | 7 | 11.03 1893 | 0.02 1895 | 6.01 9/93 | — | — |
| July ... | 73 | 80 | 67 | 2.23 | 7 | 8.46 1889 | 0.04 1894 | 3.54 16/89 | — | — |
| August ... | 70 | 80 | 65 | 2.35 | 8 | 11.80 1887 | 0.24 1896 | 4.69 12/87 | — | — |
| September ... | 65 | 76 | 47 | 2.17 | 9 | 4.80 1890 | 0.10 1907 | 2.46 2/94 | — | — |
| October ... | 62 | 72 | 52 | 2.72 | 10 | 6.26 1892 | 0.14 1900 | 1.95 20/89 | — | — |
| November ... | 59 | 71 | 53 | 3.66 | 11 | 8.78 1889 | 1.07 1906 | 2.57 17/95 | — | — |
| December ... | 62 | 67 | 52 | 4.95 | 12 | 11.52 1895 | 0.55 1900 | 5.26 7/05 | — | — |
| Year { Totals ... | — | — | — | 47.75 | 131 | — | — | — | — | — |
| Averages ... | 68 | — | — | — | — | — | — | — | — | — |
| Extremes ... | — | 85 | 47 | — | — | 40.39 2/1893 | 0.02 6/1895 | 18.31 21/1887 | — | — |

— Signifies no record kept.

* Dew included in rainfall.

CLIMATOLOGICAL DATA FOR SYDNEY, N.S.W.

LAT. 33° 52' S., LONG. 151° 13' E. HEIGHT ABOVE M.S.L. 146 FT.
 BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Barometer corrected to 35° F. and Mean Sea Level from 9 a.m. & 3 p.m. Readings. | Wind. | | | | Mean Amount of Evaporation. | No. of Days Lightning. | Mean Amount of Clouds. | No. of Clear Days. |
|---|---|--------------------------------------|------------------------------|--------------|-----------------------|-----------------------------|------------------------|------------------------|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends. | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| January | 29.929 | 721 1/71 | 0.35 | 8,010 | NE | 5.30 | 4.7 | 5.1 | 1.7 |
| February | 29.973 | 871 12/69 | 0.27 | 6,447 | NE | 4.22 | 3.5 | 5.4 | 1.2 |
| March | 30.054 | 943 20/70 | 0.23 | 6,473 | NE | 3.60 | 5.0 | 5.0 | 2.4 |
| April | 30.103 | 802 6/82 | 0.20 | 5,896 | NE | 2.49 | 4.5 | 4.6 | 2.5 |
| May | 30.091 | 758 6/98 | 0.20 | 6,046 | W | 1.58 | 3.6 | 4.3 | 3.3 |
| June | 30.089 | 712 7/00 | 0.28 | 6,893 | W | 1.26 | 2.7 | 4.7 | 2.7 |
| July | 30 115 | 930 17/79 | 0.26 | 6,978 | W | 1.20 | 1.9 | 4.1 | 3.5 |
| August | 30.103 | 756 22/72 | 0.24 | 6,678 | W | 1.50 | 3.2 | 4.4 | 3.7 |
| September | 30.045 | 964 6/74 | 0.27 | 6,844 | W | 2.50 | 4.8 | 4.3 | 3.0 |
| October | 30.001 | 926 4/72 | 0.29 | 7,284 | NE | 3.81 | 5.4 | 4.6 | 1.9 |
| November | 29.981 | 720 13/68 | 0.32 | 7,426 | NE | 4.68 | 6.4 | 5.2 | 1.0 |
| December | 29.918 | 938 3/84 | 0.32 | 7,629 | NE | 5.28 | 7.1 | 5.5 | 1.5 |
| Year (Totals | — | — | — | — | — | — | — | — | — |
| Averages | 30.034 | — | 0.27 | 6,884 | NE | 37.42 | 52.8 | 57.2 | 28.4 |
| Extremes | — | 964 6/9/74 | — | — | — | — | — | — | — |

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | Sea water 3 ft. below surface. |
|---|-------------------|-----------|------|----------------------------|--------------|-----------------|----------------------|------------------|--------------------------------|
| | Mean Max. | Mean Min. | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | |
| No. of yrs. over which observation extends. | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 47 |
| January | 78.2 | 64.8 | 71.5 | 108.5 13/96 | 51.2 14/65 | 57.3 | 160.9 13/96 | 44.2 18/97 | 71.4 |
| February | 77.2 | 64.8 | 71.1 | 101.0 19/86 | 49.3 28/63 | 51.7 | 173.3 11/89 | 43.4 25/91 | 71.0 |
| March | 75.4 | 63.0 | 69.2 | 102.6 3/89 | 48.8 14/86 | 53.8 | 172.3 4/89 | 42.3 13/83 | 70.9 |
| April | 70.9 | 58.2 | 64.7 | 88.9 3/87 | 44.6 27/64 | 44.3 | 144.1 10/77 | 38.0 13/92 | 68.3 |
| May | 64.9 | 52.0 | 58.5 | 83.5 1/59 | 40.2 22/59 | 43.3 | 129.7 1/96 | 30.9 7/88 | 64.2 |
| June | 60.4 | 48.2 | 54.3 | 74.7 24/72 | 38.1 28/62 | 36.6 | 123.0 14/78 | 28.7 30/95 | 59.9 |
| July | 58.9 | 45.7 | 52.3 | 74.9 17/71 | 35.9 19/60 | 39.0 | 144.3 15/88 | 24.0 4/83 | 57.3 |
| August | 62.2 | 47.5 | 54.9 | 82.0 31/84 | 36.8 3/72 | 45.2 | 149.3 30/78 | 27.7 30/95 | 57.5 |
| September | 65.3 | 51.4 | 58.9 | 89.8 23/88 | 40.8 18/64 | 49.0 | 142.2 12/78 | 31.1 1/83 | 60.2 |
| October | 71.0 | 55.9 | 63.5 | 89.7 19/88 | 43.3 9/99 | 56.4 | 140.9 13/96 | 33.0 9/99 | 63.3 |
| November | 74.2 | 59.6 | 66.9 | 102.7 21/78 | 46.2 27/64 | 56.5 | 158.5 28/89 | 39.8 16/61 | 66.8 |
| December | 77.1 | 62.8 | 70.0 | 107.5 31/04 | 49.3 2/59 | 58.2 | 171.5 4/88 | 42.2 8/75 | 69.5 |
| Year (Averages | 59.7 | 56.2 | 63.0 | — | — | — | — | — | 65.1 |
| Extremes | — | — | — | 108.5 13/1/96 | 35.9 12/7/90 | 72.6 | 173.3 11/2/89 | 24.0 4/7/93 | — |

HUMIDITY, RAINFALL, AND DEW.

| Month. | Humidity. | | | Rainfall. | | | | Dew. | | |
|--|-----------|---------------|--------------|---------------|------------------------|-------------------|----------------|----------------------|---------------------|--------------------|
| | Mean. | Highest Mean. | Lowest Mean. | Mean Monthly. | Mean No. of Days Rain. | Greatest Monthly. | Least Monthly. | Greatest in One Day. | Mean Amount of Dew. | Mean No. days Dew. |
| No of yrs. over which observation extends. | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| January | 71 | 78 | 60 | 3.56 14.2 | 10.49 1883 | 0.42 1888 | 3.75 22/63 | 0.002 | 1.1 | |
| February | 73 | 81 | 60 | 4.88 13.9 | 18.56 1873 | 0.34 1902 | 8.90 25/73 | 0.003 | 1.4 | |
| March | 75 | 85 | 63 | 5.09 14.9 | 18.70 1870 | 0.43 1876 | 5.66 25/90 | 0.007 | 2.9 | |
| April | 73 | 87 | 64 | 5.63 13.5 | 24.49 1861 | 0.06 1868 | 7.52 29/60 | 0.022 | 6.3 | |
| May | 76 | 90 | 66 | 5.21 15.8 | 20.87 1889 | 0.21 1885 | 8.36 28/89 | 0.030 | 7.3 | |
| June | 79 | 89 | 72 | 5.49 12.7 | 16.30 1885 | 0.19 1904 | 5.17 16/84 | 0.022 | 5.3 | |
| July | 77 | 88 | 66 | 4.74 12.5 | 13.21 1900 | 0.12 1862 | 4.77 9/04 | 0.024 | 6.8 | |
| August | 74 | 84 | 64 | 3.22 11.6 | 14.89 1889 | 0.04 1885 | 5.33 2/60 | 0.021 | 5.7 | |
| September | 70 | 79 | 60 | 2.97 12.3 | 14.05 1879 | 0.08 1862 | 5.63 10/79 | 0.008 | 3.4 | |
| October | 68 | 77 | 55 | 2.97 12.9 | 10.81 1902 | 0.21 1867 | 6.37 13/02 | 0.004 | 1.6 | |
| November | 68 | 79 | 58 | 3.10 12.6 | 9.88 1865 | 0.20 1867 | 4.23 19/00 | 0.006 | 2.7 | |
| December | 68 | 77 | 59 | 2.50 12.9 | 7.80 1870 | 0.45 1876 | 2.75 1/88 | 0.002 | 1.0 | |
| Year (Totals | — | — | — | 49.36 159.8 | — | — | — | — | 0.151 | 45.5 |
| Averages | 73 | — | — | — | — | — | — | — | — | — |
| Extremes | — | 90 | 55 | — | — | 24.49 4/1861 | 0.04 8/1885 | 8.90 25/2/73 | — | — |

CLIMATOLOGICAL DATA FOR MELBOURNE, VICTORIA.

LAT. 37° 50' S., LONG. 144° 58' E. HEIGHT ABOVE M.S.L. 91 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Barometer corrected to 32° F. and Mean Sea Level from 9 a.m., 3 p.m., & 9 p.m. Readings. | Wind. | | | | Mean Amount of Evaporation. | No. of Days Lightning. | Mean Amount of Clouds. | No. of Clear Days. |
|---|--|--------------------------------------|------------------------------|--------------|-----------------------|-----------------------------|------------------------|------------------------|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends. | 50 | 41 | 41 | 41 | 41 | 36 | — | 50 | — |
| January ... | 29.933 | 583 10/97 | 0.30 | 7,412 | S W, S E | 6.34 | — | 5.2 | — |
| February ... | 29.985 | 566 8/68 | 0.28 | 6,488 | S W, S E | 4.96 | — | 5.1 | — |
| March ... | 30.070 | 677 9/81 | 0.22 | 6,409 | S W, S E | 3.83 | — | 5.5 | — |
| April ... | 30.123 | 597 7/68 | 0.19 | 5,750 | S W, S E, N W | 2.29 | — | 5.8 | — |
| May ... | 30.129 | 693 12/65 | 0.19 | 5,993 | N W, N E, S W | 1.49 | — | 6.5 | — |
| June ... | 30.098 | 761 13/76 | 0.24 | 6,531 | N W, N E | 1.11 | — | 6.7 | — |
| July ... | 30.125 | 755 8/74 | 0.23 | 6,539 | N W, N E | 1.08 | — | 6.3 | — |
| August ... | 30.083 | 637 14/75 | 0.26 | 6,906 | N W, N E, S W | 1.49 | — | 6.3 | — |
| September ... | 30.019 | 617 11/72 | 0.29 | 7,102 | N W, S W, N E | 2.28 | — | 6.1 | — |
| October ... | 29.986 | 899 15/66 | 0.30 | 7,412 | S W, N W | 3.28 | — | 6.0 | — |
| November ... | 29.998 | 734 13/66 | 0.29 | 7,144 | S W, S E | 4.50 | — | 5.9 | — |
| December ... | 29.919 | 655 1/75 | 0.31 | 7,540 | S W, S E | 5.72 | — | 5.5 | — |
| Year { Totals | — | — | — | — | — | 38.38 | — | — | — |
| Year { Averages | 30.039 | — | 0.26 | 6,769 | S W, N W | — | — | 5.9 | — |
| Year { Extremes | — | 899 15/10/66 | — | — | — | — | — | — | — |

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | Sea water min. 3 ft. below surface. | | | | |
|---|-------------------|-----------|------|----------------------------|---------|-----------------|----------------------|------------------|-------------------------------------|---------|------|---------|---|
| | Mean Max. | Mean Min. | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | | | | | |
| No. of yrs. over which observation extends. | 52 | 52 | 52 | 52 | 52 | 52 | 48 | 47 | — | | | | |
| January ... | 78.1 | 56.5 | 67.3 | 111.2 | 14/62 | 42.0 | 28/85 | 69.2 | 178.5 | 14/62 | 30.2 | 28/85 | — |
| February ... | 77.7 | 56.6 | 67.1 | 109.5 | 7/01 | 40.3 | 9/65 | 69.2 | 167.5 | 15/70 | 30.9 | 6/91 | — |
| March ... | 74.6 | 54.5 | 64.7 | 105.5 | 2/93 | 37.1 | 17/84 | 68.4 | 164.5 | 1/68 | 28.9 | — | — |
| April ... | 68.6 | 50.7 | 59.7 | 94.0 | 6/65 | 34.8 | 24/88 | 59.2 | 152.0 | 8/61 | 25.0 | 23/37 | — |
| May ... | 61.5 | 46.6 | 54.0 | 83.7 | 7/05 | 31.3 | 26/95 | 52.4 | 142.6 | 2/59 | 23.2 | 21/97 | — |
| June ... | 56.9 | 43.9 | 50.4 | 68.1 | — | 28.0 | 11/65 | 40.1 | 129.0 | 11/61 | 20.4 | 17/95 | — |
| July ... | 55.5 | 41.5 | 48.5 | 68.4 | 24/78 | 27.0 | 21/69 | 41.4 | 125.8 | 27/50 | 20.5 | 12/03 | — |
| August ... | 58.8 | 43.2 | 51.0 | 77.0 | 20/85 | 28.3 | 11/63 | 48.7 | 137.4 | 29/69 | 21.3 | 14/02 | — |
| September ... | 62.5 | 45.3 | 53.9 | 82.3 | 30/07 | 31.9 | 13/07 | 49.8 | 142.1 | 20/67 | 24.7 | 13/07 | — |
| October ... | 67.0 | 48.1 | 57.5 | 96.1 | 30/85 | 32.1 | 3/71 | 64.0 | 154.3 | 28/68 | 25.9 | 3/71 | — |
| November ... | 71.3 | 50.9 | 61.1 | 105.7 | 27/94 | 36.5 | 2/96 | 69.2 | 159.6 | 29/65 | 24.6 | 2/96 | — |
| December ... | 75.3 | 53.7 | 64.5 | 110.7 | 15/76 | 40.0 | 4/70 | 70.7 | 170.3 | 20/69 | 33.2 | 1/04 | — |
| Year { Averages | 67.3 | 49.3 | 58.3 | — | — | — | — | — | — | — | — | — | — |
| Year { Extremes | — | — | — | 111.2 | 14/1/62 | 27.0 | 21/7/69 | 34.3 | 178.5 | 14/1/62 | 20.4 | 17/6/95 | — |

* 21/1865 and 2/1884. † 17/1884 and 20/1897.

HUMIDITY, RAINFALL, AND DEW.

| Month. | *Humidity. | | | Rainfall. | | | | | Dew. | | | |
|---|------------|---------------|--------------|---------------|------------------------|-------------------|----------------|----------------------|---------------------|--------------------|---|---|
| | Mean. | Highest Mean. | Lowest Mean. | Mean Monthly. | Mean No. of Days Rain. | Greatest Monthly. | Least Monthly. | Greatest in One Day. | Mean Amount of Dew. | Mean No. days Dew. | | |
| No. of yrs. over which observation extends. | 50 | 50 | 50 | 52 | 52 | 67 | 67 | 48 | — | — | | |
| January ... | 64 | 73 | 57 | 1.90 | 7 | 6.83 | 1844 | 0.04 | 1878 | 2.97 | — | — |
| February ... | 65 | 75 | 54 | 1.74 | 7 | 6.73 | 1841 | 0.03 | 1870 | 2.14 | — | — |
| March ... | 68 | 78 | 61 | 2.13 | 8 | 6.36 | 1874 | 0.16 | 1842 | 3.05 | — | — |
| April ... | 73 | 83 | 63 | 2.42 | 10 | 6.71 | 1901 | 0.57 | † | 4.50 | — | — |
| May ... | 79 | 86 | 70 | 2.14 | 12 | 6.94 | 1848 | 0.45 | 1901 | 1.85 | — | — |
| June ... | 80 | 88 | 75 | 2.05 | 13 | 5.22 | 1851 | 0.60 | 1840 | 1.74 | — | — |
| July ... | 80 | 88 | 74 | 1.85 | 15 | 7.02 | 1891 | 0.49 | 1840 | 2.71 | — | — |
| August ... | 75 | 81 | 65 | 1.81 | 13 | 7.62 | 1849 | 0.48 | 1903 | 1.87 | — | — |
| September ... | 72 | 81 | 63 | 2.31 | 14 | 5.87 | 1870 | 0.61 | 1881 | 2.62 | — | — |
| October ... | 71 | 79 | 63 | 2.69 | 13 | 7.61 | 1869 | 0.28 | 1850 | 3.00 | — | — |
| November ... | 67 | 75 | 59 | 2.26 | 10 | 12.13 | 1849 | 0.25 | 1895 | 2.57 | — | — |
| December ... | 65 | 75 | 55 | 2.27 | 9 | 7.18 | 1863 | 0.11 | 1904 | 2.36 | — | — |
| Year { Totals | — | — | — | 25.57 | 131 | — | — | — | — | — | — | — |
| Year { Averages | 72 | — | — | — | — | 12.13 | — | — | — | — | — | — |
| Year { Extremes | — | 88 | 54 | — | — | 11/1849 | 0.03 | 2/1870 | 4.50 | — | — | — |

— Signifies no record. * Mean of 9 a.m., 3 p.m., and 9 p.m. readings taken. † 1866 and 1902.

CLIMATOLOGICAL DATA FOR HOBART, TASMANIA.

LAT. 42° 53' S., LONG. 147° 20' E. HEIGHT ABOVE M.S.L. 160 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Barometer corrected to 32° F. and Mean Sea Level from 9 a.m. & 3 p.m. Readings. | Wind. | | | | Mean Amount of Evaporation. | No. of Days Lightning. | Mean Amount of Clouds. | No. of Clear Days. |
|---|---|--------------------------------------|------------------------------|--------------|-----------------------|-----------------------------|------------------------|------------------------|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends. | 24 | — | 24 | — | 24 | — | — | 24 | — |
| January | 29.844 | — | 0.51 | — | S E, N W | — | — | 6.3 | — |
| February | 29.906 | — | 0.51 | — | N W, S E | — | — | 6.2 | — |
| March | 29.980 | — | 0.47 | — | N W, S E | — | — | 6.0 | — |
| April | 30.014 | — | 0.43 | — | N W, S E | — | — | 6.3 | — |
| May | 30.041 | — | 0.43 | — | N W | — | — | 6.3 | — |
| June | 29.958 | — | 0.43 | — | N W | — | — | 6.5 | — |
| July | 29.957 | — | 0.47 | — | N W | — | — | 5.8 | — |
| August | 29.949 | — | 0.47 | — | N W | — | — | 5.9 | — |
| September | 29.862 | — | 0.63 | — | N W, S E | — | — | 6.2 | — |
| October | 29.824 | — | 0.60 | — | N W, S E | — | — | 6.6 | — |
| November | 29.844 | — | 0.63 | — | N W, S E | — | — | 6.5 | — |
| December | 29.819 | — | 0.60 | — | N W, S E | — | — | 6.4 | — |
| Year { Totals | — | — | — | — | — | — | — | — | — |
| Averages | 29.916 | — | 0.51 | — | N W, S E | — | — | 6.3 | — |
| Extremes | — | — | — | — | — | — | — | — | — |

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | Sea water mm. 3 ft. below surface. |
|---|-------------------|-----------|------|----------------------------|-----------------|-----------------|----------------------|------------------|------------------------------------|
| | Mean Max. | Mean Min. | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | |
| No. of yrs. over which observation extends. | 24 | 24 | 24 | 24 | 24 | 24 | 22 | 20a | — |
| January | 70.8 | 53.1 | 62.0 | 105.0 | 40.3 | 64.7 | 160.0 | 30.6 | 1897 |
| February | 71.0 | 52.9 | 62.0 | 104.4 | 39.0 | 65.4 | 165.0 | 29.3 | 1887 |
| March | 68.0 | 50.5 | 59.3 | 97.5 | 36.0 | 61.5 | 147.5 | 27.5 | 30/02 |
| April | 63.0 | 47.9 | 55.5 | 82.4 | 33.3 | 49.1 | 138.5 | 25.0 | 1886 |
| May | 57.6 | 43.3 | 50.5 | 75.3 | 30.8 | 46.1 | 128.0 | 20.0 | 19/02 |
| June | 53.0 | 41.3 | 47.3 | 69.3 | 29.5 | 30.7 | 132.0 | 21.0 | 6/87 |
| July | 52.1 | 39.3 | 45.7 | 65.4 | 27.7 | 37.7 | 118.7 | 19.6 | 18/7/86 |
| August | 55.0 | 41.0 | 48.0 | 71.5 | 30.5 | 41.0 | 139.0 | 21.0 | 1887 |
| September | 58.4 | 42.8 | 50.6 | 79.5 | 31.0 | 48.5 | 134.0 | 22.7 | 1886 |
| October | 62.7 | 45.1 | 53.9 | 86.0 | 32.0 | 54.0 | 145.0 | 23.8 | § |
| November | 66.1 | 48.0 | 57.1 | 98.0 | 37.0 | 61.0 | 161.0 | 26.2 | 29/05 |
| December | 69.1 | 50.9 | 60.0 | 105.2 | 38.0 | 67.2 | 156.0 | 27.2 | 1886 |
| Year { Averages | 62.2 | 46.7 | 54.3 | — | 27.7 | — | — | — | — |
| Extremes | — | — | — | 105.2 30/12/97 | 27.7 11/7/95 | 77.5 | 165.0 24/2/96 | 18.7 16/7/86 | — |

* 30/91 and 17/97. † 24/84, 13/87, 11/85, and 7/00. ‡ 5/86 and 13/05. § 1886 and 1899.

HUMIDITY, RAINFALL, AND DEW.

| Month. | Humidity. | | | Rainfall. | | | | | Dew. | |
|---|-------------|---------------|--------------|---------------|---------------------------|-------------------|----------------|----------------------|---------------------|--------------------|
| | Mean 9 a.m. | Highest Mean. | Lowest Mean. | Mean Monthly. | Mean No. of Days of Rain. | Greatest Monthly. | Least Monthly. | Greatest in One Day. | Mean Amount of Dew. | Mean No. days Dew. |
| No. of yrs. over which observation extends. | 13 | 13 | 13 | 64 | 50 | 64 | 64 | 25 | — | — |
| January | 63 | 72 | 55 | 1.84 | 9.0 | 5.91 | 1893 | 2.59 | 30/05 | — |
| February | 65 | 76 | 51 | 1.50 | 7.8 | 9.15 | 1854 | 1.60 | 23/03 | — |
| March | 69 | 76 | 63 | 1.81 | 8.9 | 7.60 | 1884 | 1.45 | 1/83 | — |
| April | 76 | 85 | 69 | 1.76 | 9.8 | 5.01 | 1856 | 0.07 | 1904 | 1.66 |
| May | 80 | 85 | 72 | 1.85 | 12.0 | 6.37 | 1905 | 0.10 | 1843 | 1.62 |
| June | 82 | 82 | 75 | 2.15 | 12.8 | 8.15 | 1889 | 0.22 | 1852 | 4.11 |
| July | 79 | 88 | 73 | 2.16 | 13.0 | 5.98 | 1849 | 0.30 | 1850 | 1.56 |
| August | 79 | 82 | 65 | 2.10 | 12.1 | 10.16 | 1858 | 0.23 | 1854 | 2.28 |
| September | 75 | 82 | 65 | 2.10 | 13.7 | 7.14 | 1844 | 0.39 | 1847 | 1.57 |
| October | 69 | 75 | 63 | 2.13 | 13.7 | 6.67 | 1906 | 0.26 | 1850 | 2.58 |
| November | 65 | 76 | 57 | 2.57 | 12.1 | 8.92 | 1849 | 0.16 | 1868 | 3.70 |
| December | 60 | 73 | 56 | 1.88 | 10.4 | 9.00 | 1875 | 0.11 | 1842 | 2.27 |
| Year { Totals | — | — | — | 23.35 | 134.7 | — | — | — | — | — |
| Averages | 72 | 92 | 51 | — | — | 10.16 | — | 4.11 | — | — |
| Extremes | — | — | — | — | — | 8/1856 | 0.02 | 3/1843 | — | 14/6/89 |

— Signifies no record kept.

SECTION IV.

POPULATION.

§ 1. Special Characteristics of Australian Population.

1. **Sex Distribution.**—In respect of the relative proportions of the sexes in its population, Australia has, since the first settlement of the continent in 1788, differed materially from the older countries of the world. In the latter the populations have, in general, grown by natural increase, and their composition usually reflects that fact, the numbers of males and females being in most countries approximately equal, with a more or less marked tendency, however, for the females to slightly exceed the males. The excess of females arises from a variety of causes, amongst which may be mentioned—(a) higher rate of mortality amongst males; (b) greater propensity on the part of males to travel; (c) the effects of war; (d) employment of males in the army, navy, and mercantile marine; (e) preponderance of males amongst emigrants. On the other hand, the last-mentioned cause has tended naturally to produce an excess of males in Australia, since the majority of those emigrating to Australia have been males. The circumstances under which the colonisation of Australia was first undertaken, and the remoteness of this country from Europe, have combined to accentuate this feature.

There is little doubt that the continent presented few attractions to the explorers who visited its shores, mainly on the west and north, during the sixteenth, seventeenth, and early part of the eighteenth centuries, and it was only when the Declaration of Independence of the United States, in 1776, closed to the British prison authorities the North American plantations, which had previously been used as receptacles for the deportation of convicts, that the overcrowding of the gaols caused them to consider the advisability of converting the great southern continent into a convict settlement. This idea was put into practice in 1787, when the first consignment of convicts left England, arriving in Sydney Cove on 26th January, 1788. Reports concerning the number actually landed are conflicting, but it appears that the total may be set down approximately at 1035, including the military. Details as to the sexes are not available, but the males must have largely preponderated. Indeed, nearly nine years later, on the 31st December, 1796, in a total population of 4100, there were 257 males to every 100 females.

The subsequent progress of Australia resulting from extensive mineral discoveries and the development of its great natural resources, pastoral, agricultural, forestal, etc., have tended to attract male rather than female immigrants, particularly in view of the distance from the principal centres of European population. Even at the end of 1907, after nearly 120 years of settlement, there were 111 males to each 100 females, and this notwithstanding the equalising tendency due to additions to the population by means of births and to deductions therefrom by the deaths of immigrants.

The terms "masculinity" and "femininity" have been used to express the proportion of the sexes in any group, the former indicating the ratio of males to females, the latter the reciprocal of this, viz., the ratio of females to males. The term "masculinity" is that which it is proposed to adopt, and the masculinity of any group will usually be

expressed numerically as the number of males to each 100 females. The masculinity of the population of the Commonwealth at intervals of five years from 1800 to 1905, and also for the years 1906 and 1907 is as follows:—

MASCULINITY OF THE AUSTRALIAN POPULATION, 1800 to 1907.

| Year. | Number of Males to each 100 Females. | Year. | Number of Males to each 100 Females. | Year. | Number of Males to each 100 Females. |
|-------|--------------------------------------|-------|--------------------------------------|-------|--------------------------------------|
| 1800 | 263.05 | 1840 | 201.75 | 1880 | 117.28 |
| 1805 | 233.35 | 1845 | 163.38 | 1885 | 118.33 |
| 1810 | 190.53 | 1850 | 143.20 | 1890 | 116.06 |
| 1815 | 188.84 | 1855 | 145.48 | 1895 | 113.41 |
| 1820 | 243.71 | 1860 | 140.15 | 1900 | 110.55 |
| 1825 | 329.77 | 1865 | 125.38 | 1905 | 111.23 |
| 1830 | 308.30 | 1870 | 121.10 | 1906 | 111.70 |
| 1835 | 260.71 | 1875 | 118.25 | 1907 | 111.48 |

The curious inequalities of the increases in the number of males and in the number of females for the Commonwealth as a whole, and for the individual States respectively, will be seen by referring to the graphs on pages 192 and 193.

The significance of the rates of masculinity shewn in the above table will perhaps be better understood by a comparison with the corresponding information for other countries. This has been made in the next table which shews, for some of the principal countries of the world for which such particulars are available, the masculinity of the population according to the most recent statistics:—

MASCULINITY OF THE POPULATION OF VARIOUS COUNTRIES.

| Country. | Year. | No. of Males to each 100 Females. | Country. | Year. | No. of Males to each 100 Females. |
|--------------------------|-------|-----------------------------------|-----------------------|-------|-----------------------------------|
| New Zealand ... | 1907 | 112.78 | Ireland ... | 1901 | 97.40 |
| Australia ... | 1907 | 111.48 | Prussia ... | 1905 | 97.38 |
| India (Feudatory States) | 1901 | 106.02 | Russia (European) ... | 1897 | 97.18 |
| Servia ... | 1905 | 105.87 | German Empire ... | 1905 | 97.17 |
| Canada ... | 1901 | 105.04 | France ... | 1901 | 96.84 |
| United States of America | 1900 | 104.87 | Austria ... | 1900 | 96.65 |
| Rumania ... | 1899 | 103.30 | Sweden ... | 1906 | 95.39 |
| British India ... | 1901 | 103.26 | Spain ... | 1900 | 95.36 |
| Japan ... | 1903 | 102.03 | Scotland ... | 1901 | 94.58 |
| Poland (Russian) ... | 1897 | 101.42 | Denmark ... | 1906 | 94.49 |
| Greece ... | 1907 | 101.37 | Norway ... | 1900 | 94.37 |
| Belgium ... | 1900 | 98.70 | England and Wales ... | 1901 | 93.63 |
| Netherlands ... | 1906 | 98.43 | Portugal ... | 1900 | 91.53 |

2. Age Distribution.—The causes which operated to bring about an excess of males in the population of the Commonwealth, have been equally effective in rendering the age distribution essentially different from that of older countries. The majority of the immigrants, whether male or female, were in the prime of life, and as the Australian birth-rate in earlier years was a comparatively high one, the effect produced is a population in which the number of young and middle-aged persons is somewhat above, and the number for advanced ages somewhat below the normal.

Thus in the Commonwealth at the Census of 31st March, 1901, the age distribution of the population was as shewn in the table hereunder; that for England and Wales is given also for the sake of comparison:—

AGE DISTRIBUTION OF POPULATION,

COMMONWEALTH AND ENGLAND AND WALES, AT CENSUS OF 31ST MARCH, 1901.

| Age Group. | Population of COMMONWEALTH. | Percentage on Total Population. | Population of ENGLAND and WALES. | Percentage on Total Population. |
|------------------------|-----------------------------|---------------------------------|----------------------------------|---------------------------------|
| Under 15 | 1,325,323 | 35.12 | 10,545,739 | 32.42 |
| 15 and under 65 | 2,297,689 | 60.88 | 20,464,351 | 62.91 |
| 65 and upwards | 150,789 | 4.00 | 1,517,753 | 4.67 |
| Total | 3,773,801 | 100.00 | 32,527,843 | 100.00 |

During the past 40 years, the age distribution of the Australian population has varied considerably, as will be seen from the following table, which gives for each sex the proportion per cent. of the total population in the age groups "under 15," "15 and under 65," and "65 and over." The figures upon which these percentages have been computed are those furnished by the Censuses of the several States. Those for 1861 include the results of the Western Australian Census of 1859, while those for 1871 include the results of the Western Australian and Tasmanian Censuses of 1870 :—

AGE DISTRIBUTION OF AUSTRALIAN POPULATION, 1861 to 1901.

| Census Year. | Males. | | | | Females. | | | | Persons. | | | |
|--------------|-----------------|------------------|--------------|--------|-----------------|------------------|--------------|--------|-----------------|------------------|--------------|--------|
| | Under 15 Years. | 15 and under 65. | 65 and over. | Total. | Under 15 Years. | 15 and under 65. | 65 and over. | Total. | Under 15 Years. | 15 and under 65. | 65 and over. | Total. |
| | % | % | % | % | % | % | % | % | % | % | % | % |
| 1861 | 31.41 | 67.42 | 1.17 | 100 | 43.03 | 56.20 | 0.77 | 100 | 36.28 | 62.72 | 1.00 | 100 |
| 1871 | 38.84 | 59.11 | 2.05 | 100 | 46.02 | 52.60 | 1.38 | 100 | 42.09 | 56.17 | 1.74 | 100 |
| 1881 | 36.37 | 60.85 | 2.78 | 100 | 41.89 | 56.07 | 2.04 | 100 | 38.91 | 58.65 | 2.44 | 100 |
| 1891 | 34.77 | 62.02 | 3.21 | 100 | 39.36 | 58.08 | 2.56 | 100 | 36.90 | 60.20 | 2.90 | 100 |
| 1901 | 33.87 | 61.82 | 4.31 | 100 | 36.50 | 59.85 | 3.65 | 100 | 35.12 | 60.88 | 4.00 | 100 |

The excess of males over females, previously referred to, is found mainly in ages of 21 and upwards. In the total population under the age of 21 there were, at the date of the last Census, less than 102 males to each 100 females, while in that aged 21 and upwards there were more than 118 males to each 100 females. In the absence of a large immigration of males, therefore, the disparity between the sexes in Australia will soon be eliminated.

3. **Race and Nationality.**—(i.) *Constitution of Australia's Population.* As regards race, the population of the Commonwealth may be conveniently divided into two main groups, one comprising the aboriginal natives of Australia, and the other the various immigrant races which, since the foundation of settlement in 1788, have made the Commonwealth their home. Under the head of "immigrant races" would, of course, be included not only those residents of Australia who had been born in other countries, but also their descendants born in Australia.

It would appear that the aboriginal population of Australia was never large, and that the life led by them was, in many parts of Australia, a most precarious one. With the continued advance of settlement the numbers have shrunk to such an extent that in the more densely populated States they are practically negligible. Thus, at the Census of 1901 the number of full-blooded aboriginals and nomadic half-castes living with those of full blood remaining in New South Wales was stated to be 4287, while in Victoria the total was only 271, and in Tasmania the last aboriginal native died in 1876. In Queens-

land, South Australia, and Western Australia, on the other hand, there are considerable numbers of natives still in the "savage" state, numerical information concerning whom is of a most unreliable nature, and can be regarded as little more than the result of mere guessing.

Ethnologically interesting as is this remarkable and rapidly-disappearing race, practically all that has been done to increase our knowledge of them, their laws, habits, customs, and language, has been the result of more or less spasmodic and intermittent effort on the part of enthusiasts either in private life or the public service. Strange to say, an enumeration of them has never been seriously undertaken in connection with any State Census, though a record of the numbers who were in the employ of whites, or living in contiguity to the settlements of whites, has usually been made. As stated above, various guesses at the number of aboriginal natives at present in Australia have been made, and the general opinion appears to have prevailed that 150,000 might be taken as a rough approximation to the total. Recent estimates, however, have given results considerably below this total. Thus, in his report of June, 1908, the Queensland Chief Protector of Aborigines estimates the total at 74,030, distributed as follows:—New South Wales, 6960; Victoria, 270; Queensland, 20,000; South Australia (including the Northern Territory) 19,800; Western Australia, 27,000. A somewhat similar estimate made by Dr. Roth, formerly Chief Protector of Aborigines in Queensland, gives Queensland at least 18,000; Western Australia at least 24,000, and the Northern Territory from 20,000 to 22,000. It is proposed to make an attempt to enumerate the aboriginal population of Australia in connection with the first Commonwealth Census to be taken in 1911.

The number of aboriginal natives enumerated in the several States of the Commonwealth at the Census of 1901 was as follows:—

ABORIGINAL NATIVES ENUMERATED AT CENSUS OF 1901.

| Persons, etc. | N.S.W. | Victoria. | Queens-land. | South Australia. | Western Australia | Tasmania. | Commonwealth. |
|------------------------------|--------------------|-----------|--------------|------------------|-------------------|-----------|---------------|
| Males | 2,451 | 163 | 3,089 | 14,076 | 2,933 | 0 | 22,712 |
| Females | 1,836 | 108 | 2,048 | 12,357 | 2,328 | 0 | 18,677 |
| Total | 4,287 ¹ | 271 | 5,137 | 26,433 | 5,261 | 0 | 41,389 |
| Masculinity ² ... | 133.5 | 150.9 | 150.8 | 113.9 | 126.0 | — | 121.6 |

1. Including 509 half-castes living in nomadic state with natives of full blood.

2. Number of males per hundred females.

In the Commonwealth Constitution Act provision is made for aboriginal natives to be excluded for all purposes for which statistics of population are made use of under the Act, but the opinion has been given by the Commonwealth Attorney-General that, "in reckoning the population of the Commonwealth, half-castes are not aboriginal natives within the meaning of section 127 of the Commonwealth of Australia Constitution Act, and should therefore be included." It may be added, however, that as "half-castes," living in the nomadic state, are practically undistinguishable from aborigines, it has not always been found practicable to make the distinction, and further, that no authoritative definition of "half-caste" has yet been given.

As regards the immigrant races, it may be said that they consist mainly of natives of the three divisions of the United Kingdom and their descendants. The proportion of Australian-born contained in the population of the Commonwealth has, in recent years, increased rapidly, and at the Census of 31st March, 1901, out of a total population of 3,765,879 persons whose birthplaces were specified, no fewer than 2,908,303, or 77.23 per cent., were Australian born, while of the remainder, 679,159, or 18.03 per cent., were natives of the United Kingdom, and 25,788, or 0.68 per cent., were natives of New Zealand, that is, 95.94 per cent. of the total population at the date of the Census had

been born in either Australasia or the United Kingdom. The other birthplaces most largely represented in the Commonwealth were Germany, 38,352 (1.02 per cent.); China, 29,907 (0.79 per cent.); Scandinavia (comprising Sweden, Norway and Denmark), 16,144 (0.43 per cent.); Polynesia, 10,363 (0.28 per cent.); British India, 7637 (0.20 per cent.); United States of America, 7448 (0.20 per cent.); and Italy, 5678 (0.15 per cent.). The total population of Asiatic birth was 47,014 (1.25 per cent.), of whom 3593 were born in Japan.

(ii.) *Biological and Sociological Significance.* As regards race and nationality, therefore, the population of Australia is fundamentally British, and thus furnishes an example of the transplanting of a race into conditions greatly differing from those in which it had been developed. The biological and sociological significance of this will ultimately appear in the effects on the physical and moral constitution produced by the complete change of climatic and social environment, for the new conditions are likely to considerably modify both the physical characteristics and the social instincts of the constituents of the population. At present the characteristics of the Australian population, whether physical, mental, moral, or social, are only in the making, and probably it will not be possible to point to a distinct Australian type until three or four generations more have passed. Even then it is hardly likely that with the great extent of territory and varying conditions presented by the Commonwealth there will be but one type; on the contrary, a variety of types may be expected. The Australian at present is little other than a transplanted Briton, with the essential characteristics of his British forbears, the desire for freedom from restraint, however, being perhaps more strongly accentuated. The greater opportunity for an open-air existence, and the absence of the restrictions of older civilisations, may be held to be in the main responsible for this.

4. *Differences among the States.*—(i.) *Sex Distribution.* The varying circumstances under which the settlement of the several States has been effected, and the essentially different conditions experienced in the due development of their respective resources, have naturally led to somewhat marked differences in the constitution of their populations. In the matter of sex distribution the States in which the normal condition of older countries is most nearly represented are those of Victoria and Tasmania, in the former of which the numbers of males and females are practically identical, while in the latter there are 106 males to each 100 females. In Western Australia and Queensland, on the other hand, the position of affairs is quite abnormal, the numbers of males to each 100 females being respectively 139 and 120.

The variation in the masculinity of the estimated population of the several States and of the Commonwealth as a whole during the past eight years will be seen from the following table:—

MASCULINITY* OF THE POPULATION, 31st DECEMBER, 1900 to 1907.

| State. | Masculinity of the Population on 31st December. | | | | | | | |
|---------------------|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | 1900. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| N. S. W. ... | 111.14 | 110.22 | 111.17 | 111.55 | 112.42 | 113.40 | 114.26 | 114.92 |
| Victoria ... | 101.23 | 101.37 | 100.77 | 100.31 | 99.96 | 100.13 | 100.25 | 99.88 |
| Queensland | 125.33 | 125.58 | 124.39 | 123.91 | 123.06 | 122.01 | 120.66 | 119.51 |
| S. Australia | 104.04 | 103.50 | 103.08 | 103.02 | 105.53 | 109.28 | 112.85 | 112.72 |
| W. Australia | 157.54 | 155.85 | 154.14 | 149.41 | 147.15 | 144.31 | 142.15 | 139.08 |
| Tasmania ... | 107.97 | 107.37 | 108.15 | 107.65 | 106.95 | 106.58 | 106.46 | 106.01 |
| C'wealth ... | 110.55 | 110.29 | 110.42 | 110.28 | 110.64 | 111.23 | 111.70 | 111.48 |

* Number of males to each 100 females.

(ii.) *Age Distribution.* The disparity in sex distribution exhibited by the several States is accompanied by a corresponding inequality in the matter of age distribution. The number of persons in each State at the Census of 31st March, 1901, at what are commonly known as the "dependent," "supporting," and "old" ages, and the proportion of same to total of each State and Commonwealth was as follows:—

**NUMBER AND PROPORTION OF PERSONS IN THE COMMONWEALTH OF
DEPENDENT, SUPPORTING, AND OLD AGE.**

| State. | Number of persons of | | | | Proportion of Population of | | |
|-----------------------|---------------------------|-----------------------------------|---------------------------|-----------|-----------------------------|-----------------------------------|---------------------------|
| | Dependent age (under 15). | Supporting age (15 and under 65). | Old age (65 and upwards). | All ages. | Dependent age (under 15). | Supporting age (15 and under 65). | Old age (65 and upwards). |
| New South Wales ... | 486,996 | 821,277 | 46,573 | 1,354,846 | 35.94 | 60.62 | 3.44 |
| Victoria ... | 409,363 | 725,647 | 66,060 | 1,201,070 | 34.08 | 60.42 | 5.50 |
| Queensland ... | 182,432 | 302,824 | 12,873 | 498,129 | 36.62 | 60.79 | 2.59 |
| South Australia ... | 129,237 | 218,932 | 14,938 | 363,157 | 35.59 | 60.30 | 4.11 |
| Western Australia ... | 53,270 | 127,532 | 3,322 | 184,124 | 28.93 | 69.26 | 1.81 |
| Tasmania ... | 64,025 | 101,427 | 7,023 | 172,475 | 37.12 | 58.81 | 4.07 |
| Commonwealth ... | 1,325,323 | 2,297,689 | 150,789 | 3,773,801 | 35.12 | 60.88 | 4.00 |

Thus in Western Australia a larger proportion of its population was of supporting age than in any other State. In Tasmania the proportion is the lowest. On the other hand, in Tasmania the proportion of dependent age was the highest for the Commonwealth, while the Western Australian proportion was the lowest. Victoria had the highest and Western Australia the lowest proportion of persons aged 65 years and upwards.

(iii.) *Birthplaces.* Complete information concerning the race and nationality of the population is not available in the Census returns, the material there furnished of this nature being the records of birthplaces. The following table exhibits, in a very condensed form, the distribution of the population of the several States according to birthplace:—

BIRTHPLACES AT CENSUS OF 31st MARCH, 1901.

| Birthplace. | Total Population of Commonwealth at Census. | | | | | | |
|------------------------------|---|-----------|---------|----------|----------|---------|-----------|
| | N.S.W. | Victoria. | Ql'd. | S. Aust. | W. Aust. | Tas. | C'wealth. |
| Australia ... | 1,079,154 | 940,830 | 323,436 | 289,993 | 126,952 | 147,938 | 2,908,303 |
| New Zealand ... | 10,589 | 9,020 | 1,571 | 711 | 2,704 | 1,193 | 25,788 |
| United Kingdom | 220,401 | 214,371 | 126,159 | 56,862 | 41,551 | 19,815 | 679,159 |
| Other European Countries ... | 20,151 | 16,548 | 21,174 | 9,326 | 6,076 | 1,398 | 74,673 |
| Asia ... | 14,208 | 8,793 | 13,878 | 4,376 | 4,810 | 949 | 47,014 |
| Africa ... | 986 | 926 | 378 | 235 | 243 | 101 | 2,869 |
| America ... | 4,813 | 3,659 | 1,688 | 811 | 1,151 | 385 | 12,507 |
| Polynesia ... | 1,139 | 203 | 8,877 | 39 | 78 | 27 | 10,363 |
| At Sea ... | 1,967 | 1,564 | 634 | 539 | 317 | 182 | 5,203 |
| Unspecified ... | 1,438 | 5,156 | 334 | 265 | 242 | 487 | 7,922 |
| Total ... | 1,354,846 | 1,201,070 | 498,129 | 363,157 | 184,124 | 172,475 | 3,773,801 |

The proportions for the several States for each of the birthplaces shewn in the foregoing table expressed as percentages of the total population, the birthplaces of which were specified, are as follows:—

PERCENTAGE OF COMMONWEALTH POPULATION ACCORDING TO BIRTHPLACE,

31ST MARCH, 1901.

| Birthplace. | Percentage of Total Population. | | | | | | |
|---------------------------------|---------------------------------|-----------|-------------|------------------|--------------------|-----------|---------------|
| | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Commonwealth. |
| | % | % | % | % | % | % | % |
| Australia | 79.74 | 78.67 | 64.97 | 79.91 | 69.04 | 86.02 | 77.23 |
| New Zealand | 0.78 | 0.75 | 0.32 | 0.20 | 1.47 | 0.69 | 0.68 |
| United Kingdom | 16.28 | 17.93 | 25.34 | 15.67 | 22.60 | 11.52 | 18.03 |
| Other European Countries | 1.49 | 1.38 | 4.25 | 2.57 | 3.30 | 0.81 | 1.98 |
| Asia | 1.05 | 0.74 | 2.79 | 1.21 | 2.62 | 0.55 | 1.25 |
| Africa | 0.07 | 0.08 | 0.08 | 0.06 | 0.13 | 0.06 | 0.08 |
| America | 0.36 | 0.30 | 0.34 | 0.22 | 0.63 | 0.22 | 0.33 |
| Polynesia | 0.08 | 0.02 | 1.78 | 0.01 | 0.04 | 0.02 | 0.28 |
| At Sea | 0.15 | 0.13 | 0.13 | 0.15 | 0.17 | 0.11 | 0.14 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

As regards distribution according to birthplace, the population of New South Wales is very similar to that of Victoria, the proportions born in Australia and Asia being slightly higher, and that born in the United Kingdom slightly lower, in the case of New South Wales. There is also a rough similarity between the population distributions of Queensland and Western Australia. In both, the Australian-born represent a much smaller, and those born in the United Kingdom, in "Other European Countries" and in Asia, a much larger proportion than is the case with the remaining States. Polynesians were, however, much more numerously represented in Queensland at the date of the Census than in any other State, but this position has been considerably modified by the recent deportation of Kanakas. Natives of New Zealand were, proportionately, most numerous in Western Australia. Tasmania had the largest proportion of Australian-born population, viz., 86 per cent., while Queensland, with 65 per cent., had the smallest. On the other hand, more than 25 per cent. of Queensland's population consisted of natives of the United Kingdom, while only 11½ per cent. of the population of Tasmania had been born there. For the Commonwealth as a whole 98 per cent. of the population were from Australasian or European birthplaces.

§ 2. Commonwealth Population—Its Distribution and Fluctuation.

1. **Present Population.**—The estimated population of the several States of the Commonwealth at the end of each of the last eight years is as follows:—

POPULATION OF COMMONWEALTH on 31st DECEMBER, 1900 to 1907.

| Year. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Commonwealth. |
|----------|------------------|-----------|-------------|------------------|--------------------|-----------|---------------|
| MALES. | | | | | | | |
| 1900 ... | 716,047 | 601,773 | 274,684 | 184,637 | 110,088 | 89,768 | 1,976,992 |
| 1901 ... | 721,043 | 609,546 | 281,658 | 186,007 | 118,241 | 90,289 | 2,006,784 |
| 1902 ... | 738,783 | 608,038 | 283,195 | 186,106 | 129,386 | 92,202 | 2,037,710 |
| 1903 ... | 752,627 | 605,364 | 285,297 | 187,151 | 135,960 | 93,045 | 2,059,444 |
| 1904 ... | 771,248 | 605,038 | 287,799 | 191,355 | 144,255 | 93,123 | 2,092,818 |
| 1905 ... | 792,682 | 609,677 | 290,206 | 197,484 | 150,494 | 93,435 | 2,133,978 |
| 1906 ... | 814,139 | 616,748 | 292,609 | 203,499 | 153,652 | 92,898 | 2,173,545 |
| 1907 ... | 838,913 | 623,683 | 294,959 | 208,076 | 152,159 | 94,690 | 2,212,480 |

| | | | | | | | |
|----------|---------|---------|---------|---------|---------|--------|-----------|
| FEMALES. | | | | | | | |
| 1900 ... | 644,258 | 594,440 | 219,163 | 177,470 | 69,879 | 83,137 | 1,788,347 |
| 1901 ... | 654,197 | 601,336 | 224,286 | 179,724 | 75,868 | 84,091 | 1,819,592 |
| 1902 ... | 664,549 | 603,410 | 227,660 | 180,552 | 83,942 | 85,256 | 1,845,369 |
| 1903 ... | 674,697 | 603,491 | 230,237 | 181,670 | 90,995 | 86,435 | 1,867,525 |
| 1904 ... | 686,014 | 605,268 | 233,861 | 181,324 | 98,035 | 87,070 | 1,891,572 |
| 1905 ... | 699,038 | 608,896 | 237,847 | 180,722 | 104,285 | 87,664 | 1,918,452 |
| 1906 ... | 712,558 | 615,192 | 242,504 | 180,330 | 108,094 | 87,258 | 1,945,936 |
| 1907 ... | 730,029 | 624,412 | 246,806 | 184,588 | 109,404 | 89,318 | 1,984,557 |

| | | | | | | | |
|----------|-----------|-----------|---------|---------|---------|---------|-----------|
| TOTAL. | | | | | | | |
| 1900 ... | 1,360,305 | 1,196,213 | 493,847 | 362,107 | 179,967 | 172,900 | 3,765,339 |
| 1901 ... | 1,375,240 | 1,210,882 | 505,944 | 365,731 | 194,109 | 174,380 | 3,826,286 |
| 1902 ... | 1,403,332 | 1,211,448 | 510,855 | 366,658 | 213,328 | 177,458 | 3,883,079 |
| 1903 ... | 1,427,324 | 1,208,855 | 515,534 | 368,821 | 226,955 | 179,480 | 3,926,969 |
| 1904 ... | 1,457,262 | 1,210,306 | 521,660 | 372,679 | 242,290 | 180,193 | 3,984,390 |
| 1905 ... | 1,491,720 | 1,218,573 | 528,053 | 373,206 | 254,779 | 181,099 | 4,052,430 |
| 1906 ... | 1,526,697 | 1,231,940 | 535,113 | 383,829 | 261,746 | 180,156 | 4,119,481 |
| 1907 ... | 1,568,942 | 1,248,095 | 541,765 | 392,664 | 261,563 | 184,008 | 4,197,037 |

2. **Growth of Population.**—(i.) *1788 to 1824.* From 1788, when settlement first took place in Australia, until December 1825, when Van Diemen's Land became a separate colony, the whole of the British Possessions in Australia were regarded as one colony, viz., that of New South Wales. The population during this period increased very slowly, and at the end of 1824 had reached only 48,072.

The population with which settlement in Australia was inaugurated, and that at the end of each year until 1824, are as follows:—

POPULATION OF AUSTRALIA (INCLUDING TASMANIA)

ON 31ST DECEMBER, 1788 TO 1824.

| Year. | Males. | Females. | Total. | Year. | Males. | Females. | Total. |
|-------------------|--------|----------|--------|-------|--------|----------|--------|
| 1788 ¹ | ... | ... | 1,035 | 1806 | 5,389 | 2,521 | 7,910 |
| 1788 | ... | ... | 859 | 1807 | 5,939 | 2,855 | 8,794 |
| 1789 | ... | ... | 645 | 1808 | 6,822 | 3,441 | 10,263 |
| 1790 | ... | ... | 2,056 | 1809 | 7,618 | 3,942 | 11,560 |
| 1791 | ... | ... | 2,873 | 1810 | 7,585 | 3,981 | 11,566 |
| 1792 | ... | ... | 3,264 | 1811 | 7,697 | 4,178 | 11,875 |
| 1793 | ... | ... | 3,514 | 1812 | 8,132 | 4,498 | 12,630 |
| 1794 | ... | ... | 3,579 | 1813 | 9,102 | 4,855 | 13,957 |
| 1795 | ... | ... | 3,466 | 1814 | 9,295 | 4,791 | 14,086 |
| 1796 | 2,953 | 1,147 | 4,100 | 1815 | 9,848 | 5,215 | 15,063 |
| 1797 | 3,160 | 1,184 | 4,344 | 1816 | 11,690 | 5,863 | 17,553 |
| 1798 | 3,367 | 1,221 | 4,588 | 1817 | 14,178 | 7,014 | 21,192 |
| 1799 | 3,804 | 1,284 | 5,088 | 1818 | 17,286 | 8,573 | 25,859 |
| 1800 | 3,780 | 1,437 | 5,217 | 1819 | 21,366 | 10,106 | 31,472 |
| 1801 | 4,372 | 1,573 | 5,945 | 1820 | 23,784 | 9,759 | 33,543 |
| 1802 | 5,208 | 1,806 | 7,014 | 1821 | 26,179 | 9,313 | 35,492 |
| 1803 | 5,185 | 2,053 | 7,238 | 1822 | 27,915 | 9,449 | 37,364 |
| 1804 | 5,313 | 2,285 | 7,598 | 1823 | 30,206 | 10,426 | 40,632 |
| 1805 | 5,395 | 2,312 | 7,707 | 1824 | 36,871 | 11,201 | 48,072 |

1. On 26th January.

(ii.) *1825 to 1858.* The period extending from 1825 to 1859 witnessed the birth of the colonies of Tasmania (then known as Van Diemen's Land), Western Australia, South Australia, Victoria, and Queensland. The years in which these came into existence as separate colonies were as follows:—Tasmania, 1825; Western Australia, 1829; South Australia, 1836; Victoria, 1851; Queensland, 1859.

The estimated population of the Commonwealth during each year of this transition period was as follows:—

POPULATION OF AUSTRALIA (INCLUDING TASMANIA)

ON 31ST DECEMBER, 1825 TO 1858.

| Year. | Males. | Females. | Total. | Year. | Males. | Females. | Total. |
|-------|---------|----------|---------|-------|---------|----------|-----------|
| 1825 | 40,288 | 12,217 | 52,505 | 1842 | 153,753 | 87,226 | 240,984 |
| 1826 | 41,289 | 12,593 | 53,882 | 1843 | 158,846 | 92,002 | 250,848 |
| 1827 | 43,053 | 13,247 | 56,300 | 1844 | 165,034 | 99,253 | 264,287 |
| 1828 | 44,778 | 13,419 | 58,197 | 1845 | 173,159 | 105,989 | 279,148 |
| 1829 | 46,946 | 14,988 | 61,934 | 1846 | 181,342 | 111,907 | 293,249 |
| 1830 | 52,885 | 17,154 | 70,039 | 1847 | 190,265 | 118,532 | 308,797 |
| 1831 | 57,037 | 18,944 | 75,981 | 1848 | 201,612 | 130,716 | 332,328 |
| 1832 | 62,254 | 21,683 | 83,937 | 1849 | 221,978 | 151,384 | 373,362 |
| 1833 | 71,669 | 26,426 | 98,095 | 1850 | 238,683 | 166,673 | 405,356 |
| 1834 | 76,259 | 29,297 | 105,556 | 1851 | 256,975 | 180,690 | 437,665 |
| 1835 | 81,929 | 31,425 | 113,354 | 1852 | 304,126 | 209,670 | 513,796 |
| 1836 | 89,417 | 35,703 | 125,120 | 1853 | 358,203 | 242,789 | 600,992 |
| 1837 | 94,881 | 39,607 | 134,488 | 1854 | 414,337 | 280,580 | 694,917 |
| 1838 | 105,271 | 46,597 | 151,868 | 1855 | 470,118 | 323,142 | 793,260 |
| 1839 | 115,480 | 54,459 | 169,939 | 1856 | 522,144 | 354,585 | 876,729 |
| 1840 | 127,306 | 63,102 | 190,408 | 1857 | 574,800 | 395,487 | 970,287 |
| 1841 | 144,114 | 76,854 | 220,968 | 1858 | 624,380 | 426,448 | 1,050,828 |

(iii.) *1859 to 1907.* From 1859, the year in which Queensland came into existence as a separate colony, until the beginning of 1901, when the Commonwealth of Australia was inaugurated under the provisions of the Commonwealth Constitution Act, Australia consisted of six States, practically independent of each other in all matters of government. During this period, the population of the Commonwealth increased from 1,050,828

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at the end of 1858 to 3,765,339 on the 31st December, 1900. The particulars for this period are given in the table hereunder.

During the seven years that have elapsed since the federation of the States was effected the population of the Commonwealth has increased by 431,698, from 3,765,339 on 31st December, 1900, to 4,197,037 on 31st December, 1907. See table hereunder:—

POPULATION OF AUSTRALIA (INCLUDING TASMANIA)
ON 31ST DECEMBER, 1859 TO 1907.

| Year. | Males. | Females. | Total. | Year. | Males. | Females. | Total. |
|-------|-----------|-----------|-----------|-------|-----------|-----------|-----------|
| 1859 | 644,376 | 452,929 | 1,097,305 | 1884 | 1,411,996 | 1,193,729 | 2,605,725 |
| 1860 | 668,560 | 477,025 | 1,145,585 | 1885 | 1,460,394 | 1,234,124 | 2,694,518 |
| 1861 | 669,373 | 498,776 | 1,168,149 | 1886 | 1,510,954 | 1,277,096 | 2,788,050 |
| 1862 | 683,650 | 523,268 | 1,206,918 | 1887 | 1,559,118 | 1,322,244 | 2,881,362 |
| 1863 | 704,259 | 555,033 | 1,259,292 | 1888 | 1,610,548 | 1,371,129 | 2,981,677 |
| 1864 | 740,433 | 584,750 | 1,325,183 | 1889 | 1,649,094 | 1,413,383 | 3,062,477 |
| 1865 | 773,278 | 616,765 | 1,390,043 | 1890 | 1,692,831 | 1,458,524 | 3,151,355 |
| 1866 | 800,648 | 643,307 | 1,443,955 | 1891 | 1,736,617 | 1,504,368 | 3,240,985 |
| 1867 | 819,127 | 664,721 | 1,483,848 | 1892 | 1,766,772 | 1,538,981 | 3,305,753 |
| 1868 | 849,272 | 690,280 | 1,539,552 | 1893 | 1,791,815 | 1,570,080 | 3,361,895 |
| 1869 | 875,139 | 717,018 | 1,592,157 | 1894 | 1,824,217 | 1,602,543 | 3,426,760 |
| 1870 | 902,494 | 745,262 | 1,647,756 | 1895 | 1,855,539 | 1,636,082 | 3,491,621 |
| 1871 | 928,918 | 771,970 | 1,700,888 | 1896 | 1,887,174 | 1,665,924 | 3,553,098 |
| 1872 | 947,422 | 795,425 | 1,742,847 | 1897 | 1,917,460 | 1,700,323 | 3,617,783 |
| 1873 | 972,907 | 821,613 | 1,794,520 | 1898 | 1,937,629 | 1,727,086 | 3,664,715 |
| 1874 | 1,001,096 | 848,296 | 1,849,392 | 1899 | 1,959,074 | 1,756,914 | 3,715,988 |
| 1875 | 1,028,489 | 869,734 | 1,898,223 | 1900 | 1,976,992 | 1,788,347 | 3,765,339 |
| 1876 | 1,061,477 | 897,202 | 1,958,679 | 1901 | 2,006,734 | 1,819,502 | 3,826,236 |
| 1877 | 1,102,340 | 928,790 | 2,031,130 | 1902 | 2,037,710 | 1,845,369 | 3,883,079 |
| 1878 | 1,132,573 | 959,591 | 2,092,164 | 1903 | 2,059,444 | 1,867,525 | 3,926,969 |
| 1879 | 1,168,781 | 993,562 | 2,162,343 | 1904 | 2,092,818 | 1,891,572 | 3,984,390 |
| 1880 | 1,204,514 | 1,027,017 | 2,231,531 | 1905 | 2,133,978 | 1,918,452 | 4,052,430 |
| 1881 | 1,247,059 | 1,059,677 | 2,306,736 | 1906 | 2,173,545 | 1,945,936 | 4,119,481 |
| 1882 | 1,289,892 | 1,098,190 | 2,388,082 | 1907 | 2,212,480 | 1,984,557 | 4,197,037 |
| 1883 | 1,357,423 | 1,148,313 | 2,505,736 | | | | |

It will be seen from the foregoing tables that the population of Australia attained its first million in 1858, seventy years after settlement was first effected; its second million nineteen years later, in 1877; its third million twelve years later, in 1889; and its fourth million sixteen years later in 1905.

The growth of the total population of the Commonwealth generally, and of each State therein, is graphically shewn on page 191, and of each sex considered separately on pages 192 and 193.

3. **Variations in Masculinity.**—For convenience of reference particulars concerning variations in the masculinity of the population of the several States are given below for each year since 1796. In future issues summaries only will be published. The graphs corresponding to these figures will be found on page 197.

MASCULINITY OF AUSTRALIAN POPULATION, 1796 to 1907.

| Year. | N.S.W. | Victoria. | Queensland. | South Aust. | West Aust. | Tasmania. | C'wealth. |
|-------|--------|-----------|-------------|-------------|------------|-----------|-----------|
| 1796 | 257.45 | ... | ... | ... | ... | ... | 257.45 |
| 1797 | 266.89 | ... | ... | ... | ... | ... | 266.89 |
| 1798 | 275.76 | ... | ... | ... | ... | ... | 275.76 |
| 1799 | 296.26 | ... | ... | ... | ... | ... | 296.26 |
| 1800 | 263.05 | ... | ... | ... | ... | ... | 263.05 |
| 1801 | 277.94 | ... | ... | ... | ... | ... | 277.94 |
| 1802 | 288.37 | ... | ... | ... | ... | ... | 288.37 |
| 1803 | 252.56 | ... | ... | ... | ... | ... | 252.56 |
| 1804 | 232.52 | ... | ... | ... | ... | ... | 232.52 |
| 1805 | 233.35 | ... | ... | ... | ... | ... | 233.35 |

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MASCULINITY OF AUSTRALIAN POPULATION—Continued.

| Year. | N.S.W. | Victoria. | Queensland. | South Aust. | West Aust. | Tasmania. | C'wealth. |
|-------|--------|-----------|-------------|-------------|------------|-----------|-----------|
| 1806 | 213.76 | ... | ... | ... | ... | ... | 213.76 |
| 1807 | 208.02 | ... | ... | ... | ... | ... | 208.02 |
| 1808 | 198.26 | ... | ... | ... | ... | ... | 198.26 |
| 1809 | 193.25 | ... | ... | ... | ... | ... | 193.25 |
| 1810 | 190.53 | ... | ... | ... | ... | ... | 190.53 |
| 1811 | 184.23 | ... | ... | ... | ... | ... | 184.23 |
| 1812 | 180.79 | ... | ... | ... | ... | ... | 180.79 |
| 1813 | 187.48 | ... | ... | ... | ... | ... | 187.48 |
| 1814 | 194.01 | ... | ... | ... | ... | ... | 194.01 |
| 1815 | 188.84 | ... | ... | ... | ... | ... | 188.84 |
| 1816 | 199.39 | ... | ... | ... | ... | ... | 199.39 |
| 1817 | 202.14 | ... | ... | ... | ... | ... | 202.14 |
| 1818 | 201.63 | ... | ... | ... | ... | ... | 201.63 |
| 1819 | 211.42 | ... | ... | ... | ... | ... | 211.42 |
| 1820 | 243.71 | ... | ... | ... | ... | ... | 243.71 |
| 1821 | 281.10 | ... | ... | ... | ... | ... | 281.10 |
| 1822 | 295.43 | ... | ... | ... | ... | ... | 295.43 |
| 1823 | 289.72 | ... | ... | ... | ... | ... | 289.72 |
| 1824 | 329.18 | ... | ... | ... | ... | ... | 329.18 |
| 1825 | 325.51 | ... | ... | ... | ... | 341.71 | 329.77 |
| 1826 | 327.27 | ... | ... | ... | ... | 329.45 | 327.87 |
| 1827 | 328.99 | ... | ... | ... | ... | 315.94 | 325.00 |
| 1828 | 329.10 | ... | ... | ... | ... | 344.20 | 333.69 |
| 1829 | 314.05 | ... | ... | ... | 328.63 | 310.82 | 313.22 |
| 1830 | 317.18 | ... | ... | ... | 297.29 | 293.44 | 308.30 |
| 1831 | 308.27 | ... | ... | ... | 270.44 | 290.33 | 301.08 |
| 1832 | 296.09 | ... | ... | ... | 246.33 | 273.71 | 287.11 |
| 1833 | 273.90 | ... | ... | ... | 225.15 | 268.92 | 271.21 |
| 1834 | 267.04 | ... | ... | ... | 207.17 | 251.86 | 260.30 |
| 1835 | 268.40 | ... | ... | ... | 190.26 | 251.68 | 260.71 |
| 1836 | 254.71 | ... | ... | 130.38 | 175.49 | 249.40 | 250.45 |
| 1837 | 246.26 | ... | ... | 130.17 | 162.24 | 243.42 | 239.56 |
| 1838 | 234.15 | ... | ... | 130.06 | 148.45 | 230.86 | 225.92 |
| 1839 | 214.60 | ... | ... | 130.09 | 152.82 | 237.00 | 212.05 |
| 1840 | 204.16 | ... | ... | 130.10 | 163.51 | 229.53 | 201.75 |
| 1841 | 183.75 | ... | ... | 130.09 | 161.86 | 221.48 | 187.52 |
| 1842 | 167.50 | ... | ... | 130.11 | 155.40 | 225.43 | 176.28 |
| 1843 | 164.53 | ... | ... | 124.20 | 148.74 | 221.89 | 172.65 |
| 1844 | 156.22 | ... | ... | 129.85 | 151.74 | 218.62 | 166.28 |
| 1845 | 153.33 | ... | ... | 132.75 | 150.22 | 215.62 | 163.37 |
| 1846 | 152.91 | ... | ... | 131.56 | 150.52 | 212.80 | 162.05 |
| 1847 | 152.73 | ... | ... | 128.70 | 148.79 | 210.20 | 160.52 |
| 1848 | 148.20 | ... | ... | 125.60 | 156.21 | 199.15 | 154.24 |
| 1849 | 142.04 | ... | ... | 124.71 | 136.99 | 188.94 | 146.63 |
| 1850 | 138.47 | ... | ... | 129.15 | 154.81 | 179.49 | 143.20 |
| 1851 | 134.53 | 148.35 | ... | 127.74 | 181.47 | 170.73 | 142.22 |
| 1852 | 128.99 | 192.75 | ... | 112.23 | 184.12 | 131.70 | 145.05 |
| 1853 | 125.46 | 192.76 | ... | 122.10 | 158.77 | 134.20 | 147.54 |
| 1854 | 126.99 | 187.70 | ... | 120.20 | 196.17 | 120.92 | 147.67 |
| 1855 | 125.08 | 187.40 | ... | 100.62 | 193.55 | 123.65 | 145.48 |
| 1856 | 129.20 | 180.78 | ... | 108.99 | 198.57 | 128.25 | 147.25 |
| 1857 | 126.02 | 176.68 | ... | 102.87 | 194.77 | 132.24 | 145.34 |
| 1858 | 131.49 | 173.73 | ... | 104.80 | 202.48 | 129.00 | 146.41 |
| 1859 | 128.87 | 166.11 | 143.33 | 103.18 | 179.15 | 126.86 | 142.27 |
| 1860 | 131.29 | 158.85 | 149.63 | 105.06 | 166.93 | 123.61 | 140.15 |
| 1861 | 128.93 | 146.61 | 153.52 | 106.32 | 167.29 | 119.95 | 134.20 |
| 1862 | 125.67 | 140.69 | 151.95 | 106.72 | 171.90 | 117.15 | 130.65 |
| 1863 | 122.00 | 133.54 | 155.67 | 107.10 | 173.95 | 116.20 | 126.89 |
| 1864 | 120.20 | 132.78 | 161.40 | 108.22 | 173.18 | 116.40 | 126.62 |
| 1865 | 120.08 | 129.60 | 158.47 | 109.11 | 173.90 | 116.42 | 125.38 |
| 1866 | 121.36 | 127.22 | 152.00 | 108.83 | 175.22 | 116.37 | 124.46 |

MASCULINITY OF AUSTRALIAN POPULATION—Continued.

| Year. | N.S.W. | Victoria. | Queensland. | South Aust. | West Aust. | Tasmania. | C'wealth. |
|-------|--------|-----------|-------------|-------------|------------|-----------|-----------|
| 1867 | 120.58 | 124.96 | 153.99 | 108.13 | 172.73 | 115.94 | 123.23 |
| 1868 | 121.38 | 123.58 | 159.61 | 106.94 | 171.21 | 114.90 | 123.03 |
| 1869 | 121.26 | 122.54 | 153.34 | 106.73 | 164.15 | 113.98 | 122.05 |
| 1870 | 120.48 | 121.59 | 150.31 | 105.85 | 161.17 | 112.98 | 121.10 |
| 1871 | 120.29 | 120.31 | 147.34 | 105.89 | 159.35 | 112.57 | 120.33 |
| 1872 | 119.98 | 117.98 | 145.70 | 105.73 | 156.64 | 112.16 | 119.11 |
| 1873 | 119.32 | 116.72 | 143.36 | 106.21 | 153.59 | 113.31 | 118.41 |
| 1874 | 119.31 | 115.43 | 144.47 | 106.49 | 151.00 | 112.44 | 118.01 |
| 1875 | 119.09 | 114.46 | 152.61 | 107.24 | 148.61 | 111.45 | 118.25 |
| 1876 | 118.82 | 113.54 | 156.72 | 108.57 | 146.46 | 111.58 | 118.31 |
| 1877 | 119.42 | 112.62 | 159.68 | 110.67 | 143.55 | 111.72 | 118.69 |
| 1878 | 119.40 | 111.80 | 152.30 | 112.48 | 141.43 | 111.78 | 118.03 |
| 1879 | 120.00 | 110.94 | 147.82 | 113.07 | 139.99 | 112.12 | 117.64 |
| 1880 | 120.45 | 110.42 | 142.50 | 114.33 | 135.06 | 111.70 | 117.28 |
| 1881 | 121.95 | 110.00 | 141.75 | 114.18 | 134.86 | 113.06 | 117.68 |
| 1882 | 121.59 | 109.58 | 142.72 | 112.94 | 133.84 | 112.58 | 117.46 |
| 1883 | 122.12 | 109.86 | 146.00 | 112.13 | 133.34 | 111.52 | 118.21 |
| 1884 | 122.08 | 110.05 | 144.98 | 112.07 | 132.94 | 110.65 | 118.28 |
| 1885 | 121.95 | 110.61 | 143.95 | 110.58 | 135.47 | 110.73 | 118.33 |
| 1886 | 120.90 | 111.50 | 141.57 | 110.23 | 144.23 | 111.85 | 118.31 |
| 1887 | 119.84 | 111.76 | 139.27 | 109.96 | 146.44 | 111.95 | 117.91 |
| 1888 | 119.38 | 112.56 | 136.75 | 107.69 | 143.64 | 110.84 | 117.46 |
| 1889 | 118.49 | 111.57 | 134.34 | 109.00 | 143.26 | 110.12 | 116.68 |
| 1890 | 118.05 | 110.65 | 132.21 | 108.60 | 146.85 | 111.88 | 116.06 |
| 1891 | 117.31 | 109.86 | 130.59 | 108.29 | 153.21 | 112.25 | 115.44 |
| 1892 | 116.35 | 108.67 | 129.50 | 108.93 | 160.06 | 113.19 | 114.80 |
| 1893 | 115.54 | 107.56 | 128.94 | 108.96 | 171.10 | 110.00 | 114.12 |
| 1894 | 114.82 | 106.39 | 128.61 | 106.94 | 207.57 | 108.28 | 113.83 |
| 1895 | 113.78 | 105.23 | 128.15 | 105.05 | 226.54 | 108.16 | 113.41 |
| 1896 | 113.30 | 103.30 | 126.81 | 103.46 | 245.61 | 107.93 | 113.28 |
| 1897 | 113.22 | 102.94 | 126.40 | 102.57 | 203.74 | 108.05 | 112.77 |
| 1898 | 112.68 | 102.46 | 126.97 | 102.81 | 181.48 | 109.89 | 112.19 |
| 1899 | 111.88 | 101.87 | 126.80 | 103.92 | 168.37 | 110.13 | 111.51 |
| 1900 | 111.14 | 101.23 | 125.33 | 104.04 | 157.54 | 107.97 | 110.55 |
| 1901 | 110.22 | 101.37 | 125.58 | 103.50 | 155.85 | 107.37 | 110.29 |
| 1902 | 111.17 | 100.77 | 124.39 | 103.08 | 154.14 | 108.15 | 110.42 |
| 1903 | 111.55 | 100.31 | 123.91 | 103.02 | 149.41 | 107.65 | 110.28 |
| 1904 | 112.42 | 99.96 | 123.06 | 105.53 | 147.15 | 106.95 | 110.64 |
| 1905 | 113.40 | 100.13 | 122.01 | 109.28 | 144.31 | 106.58 | 111.23 |
| 1906 | 114.26 | 100.25 | 120.66 | 112.85 | 142.15 | 106.46 | 111.70 |
| 1907 | 114.92 | 99.88 | 119.51 | 112.72 | 139.08 | 106.01 | 111.48 |

§ 3. Influences affecting Growth and Distribution of Population.

1. **Mineral Discoveries.**—The discovery of gold in Australia in 1851 was undoubtedly one of the most powerful factors in bringing about a rapid settlement of the country. Its effect may be gauged by a comparison of the increase during the ten years preceding with that during the ten years succeeding the discovery. From 31st December, 1840, to 31st December, 1850, the increase was only 214,948 (viz., from 190,408 to 405,356). The rush of people to the newly-discovered goldfields during the succeeding decennium caused an increase of no less than 740,229, the population advancing to 1,145,585 on 31st December, 1860. In 1861, owing to the opening up in that year of the New Zealand goldfields, a rush of population from Australia set in, the result being that the net increase of population of the Commonwealth, which in 1854 amounted to 98,343, and even in 1860 was as much as 48,108, fell in 1861 to 22,564. In fact, during the year 1861 the departures from Australia exceeded the arrivals by 5958, the gain of 22,564 being due to the births exceeding the deaths by 28,522.

In more recent years the gold discoveries of Western Australia in 1886 and subsequent years, led to such extensive migration to that State that its population, which on 31st December, 1885, amounted to only 35,959, increased in 22 years by no less than 225,604, totalling 261,563 on 31st December, 1907. In this case, however, the additions to the population of the western State were largely drawn from those of the eastern States, so that the actual gain of population to the Commonwealth was but slight.

2. Pastoral Development.—Very early in the colonisation of Australia it was recognised that many portions were well adapted for pastoral pursuits, and pastoral developments have led to a considerable distribution of population in various directions. As the numbers engaged in connection therewith, compared with the value of the interests involved, are relatively small, and as pastoral occupancy tends to segregation rather than aggregation of population, the growth of pastoral industry is but slightly reflected in the population statistics of the Commonwealth.

3. Agricultural Expansion.—At the present time the area annually devoted to crops in the Commonwealth is about $9\frac{1}{2}$ millions of acres. Although considerable in itself, this area, viewed in relation to the total area of the Commonwealth, is relatively small, and represents only $\frac{1}{2}$ per cent. of the total area. Per head of population of the Commonwealth the area under crop, however, is $2\frac{1}{2}$ acres, a fairly high amount when allowance is made for the recency of Australian settlement. Nearly 80 per cent. of the area under crop is devoted to the production of wheat and hay, which require for their profitable production in Australia a considerable area in the one holding. Thus on the whole the agricultural districts of Australia are somewhat sparsely populated, though in a less marked degree than is the case in the pastoral areas.

4. Progress of Manufacturing Industries.—One direct effect of the development of manufacturing industries is the concentration of population in places offering the greatest facilities for the production of the particular commodities. In Australia, where manufacturing industries are as yet in their infancy, the tendency throughout has been to concentrate the manufacturing establishments in each metropolis. This has accentuated the growth of the capital cities, which growth, when compared with that of the rest of the country, appears somewhat abnormal.

5. Influence of Droughts.—The droughts, which at times so seriously affect the agricultural and pastoral prospects of Australia, have a marked influence on the distribution of population. Districts, which in favourable seasons were fairly populous, have, in times of drought, temporarily become more or less depopulated until the return of better conditions. This movement, however, ordinarily affects only the internal distribution of the population and not the total, but severe drought may even make its influence felt in the statistics of the total population of Australia. Thus in the case of the drought of 1902-3, the departures from the Commonwealth exceeded the arrivals for the two years, 1903 and 1904, by 10,380. It may be noted also, that for the former of these years, the natural increase of population by excess of births over deaths was abnormally low, being only 51,150, as compared with 54,698 in the preceding and 60,541 in the succeeding year.

6. Other Influences.—(i.) *Commercial Crisis.* The effect on population of a commercial crisis, such as that which occurred in Australia in the early years of the final decade of the last century, is clearly indicated on comparing the migration statistics of the Commonwealth for the five years 1887-91, with those for the five years 1892-96. During the former period, the arrivals in the Commonwealth exceeded the departures by no less than 146,872. In the latter period, the corresponding excess amounted to only 2064.

(ii.) *South African War.* The war in South Africa has apparently also left its impress on the population statistics of the Commonwealth, the departures during 1899 and 1900 exceeding the arrivals for the same period by no less than 10,546.

A reference to the graphs of population on pages 191 to 196 will illustrate the preceding observations.

§ 4. Elements of Growth of Population.

1. **Natural Increase.**—The two factors which contribute to the growth of a population are the “natural increase” by excess of births over deaths, and the “net immigration,” *i.e.*, the excess of arrivals over departures. While the relative potency of these factors depends upon a variety of causes, it may be said that, in general, in the case of a new country, “net immigration” occupies an important position as a source of increase of population, while in an old country “natural increase,” modified more or less by “net emigration,” or excess of departures over arrivals, is the only element causing growth of population. The table hereunder gives the total natural increase, as well as that of males and females:—

NATURAL INCREASE¹ OF THE POPULATION

OF AUSTRALIA, STATES AND COMMONWEALTH, FROM 1861 TO 1907.

MALES.

| Period. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|-------------------|---------|-----------|---------|----------|----------|--------|-----------|
| 1861 to 65 ... | 22,055 | 34,286 | 2,444 | 9,645 | 765 | 3,761 | 72,956 |
| 1866 to 70 ... | 25,850 | 34,997 | 5,739 | 10,881 | 754 | 3,281 | 81,502 |
| 1871 to 75 ... | 30,067 | 35,132 | 6,704 | 9,979 | 710 | 3,077 | 85,669 |
| 1876 to 80 ... | 34,040 | 31,985 | 7,960 | 13,676 | 1,023 | 3,472 | 92,156 |
| 1881 to 85 ... | 42,658 | 33,614 | 7,986 | 16,969 | 1,002 | 5,284 | 107,513 |
| 1886 to 90 ... | 54,753 | 39,528 | 17,872 | 16,519 | 1,755 | 6,093 | 136,520 |
| 1891 to 95 ... | 56,834 | 45,606 | 20,525 | 15,758 | 1,436 | 6,889 | 147,048 |
| 1896 to 1900 ... | 48,692 | 33,645 | 17,724 | 12,562 | 3,402 | 6,373 | 122,398 |
| 1901 to 1905 ... | 51,179 | 34,332 | 16,628 | 11,926 | 8,233 | 7,955 | 130,303 |
| 1906 and 1907 ... | 24,511 | 15,383 | 8,037 | 5,110 | 4,261 | 3,388 | 60,690 |
| 1861 to 1907 ... | 390,639 | 338,508 | 111,619 | 123,025 | 23,391 | 49,573 | 1,036,755 |

FEMALES.

| | | | | | | | |
|-------------------|---------|---------|---------|---------|--------|--------|-----------|
| 1861 to 65 ... | 26,343 | 39,615 | 3,566 | 9,987 | 1,105 | 4,415 | 85,031 |
| 1866 to 70 ... | 30,327 | 40,919 | 7,571 | 11,223 | 1,301 | 4,451 | 95,792 |
| 1871 to 75 ... | 35,567 | 41,472 | 9,706 | 10,944 | 1,255 | 4,192 | 103,136 |
| 1876 to 80 ... | 40,276 | 37,551 | 12,291 | 14,608 | 1,585 | 4,699 | 111,010 |
| 1881 to 85 ... | 50,204 | 39,833 | 15,262 | 18,033 | 1,738 | 6,364 | 131,434 |
| 1886 to 90 ... | 62,090 | 48,131 | 24,238 | 17,320 | 2,609 | 7,228 | 161,616 |
| 1891 to 95 ... | 63,930 | 53,190 | 25,757 | 16,792 | 3,376 | 7,781 | 170,826 |
| 1896 to 1900 ... | 57,107 | 40,474 | 24,037 | 13,443 | 7,054 | 6,718 | 148,833 |
| 1901 to 1905 ... | 59,163 | 39,831 | 22,910 | 12,729 | 11,468 | 8,027 | 154,128 |
| 1906 and 1907 ... | 27,252 | 17,050 | 9,829 | 5,315 | 5,236 | 3,227 | 67,909 |
| 1861 to 1907 ... | 452,259 | 398,066 | 155,167 | 130,394 | 36,727 | 57,102 | 1,229,715 |

EXCESS OF FEMALES OVER MALES, 1861-1907.

| | | | | | | | |
|---------------------------------|--------|--------|--------|-------|--------|--------|---------|
| Number ... | 61,620 | 59,558 | 43,548 | 7,369 | 13,336 | 7,529 | 192,960 |
| Percentage of Male Increase ... | 15.77% | 17.59% | 39.01% | 5.99% | 57.01% | 15.19% | 18.61% |

PERSONS.

| Period. | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|-------------------|---------|-----------|---------|----------|----------|---------|-----------|
| 1861 to 65 ... | 48,398 | 73,901 | 6,010 | 19,632 | 1,870 | 8,176 | 157,987 |
| 1866 to 70 ... | 56,177 | 75,916 | 13,310 | 22,104 | 2,055 | 7,732 | 177,294 |
| 1871 to 75 ... | 65,634 | 76,604 | 16,410 | 20,923 | 1,965 | 7,269 | 188,805 |
| 1876 to 80 ... | 74,316 | 69,536 | 20,251 | 28,284 | 2,608 | 8,171 | 203,166 |
| 1881 to 85 ... | 92,862 | 73,447 | 23,248 | 35,002 | 2,740 | 11,648 | 238,947 |
| 1886 to 90 ... | 116,843 | 87,659 | 42,110 | 33,839 | 4,364 | 13,321 | 298,136 |
| 1891 to 95 ... | 120,764 | 98,796 | 46,282 | 32,550 | 4,812 | 14,670 | 317,874 |
| 1896 to 1900 ... | 105,799 | 74,119 | 41,761 | 26,005 | 10,456 | 13,091 | 271,231 |
| 1901 to 1905 ... | 110,342 | 74,163 | 39,538 | 24,655 | 19,751 | 15,982 | 284,431 |
| 1906 and 1907 ... | 51,763 | 32,433 | 17,866 | 10,425 | 9,497 | 6,615 | 128,599 |
| 1861 to 1907 ... | 842,898 | 736,574 | 266,786 | 253,419 | 60,118 | 106,675 | 2,266,470 |

I. Excess of Births over Deaths.

With a single exception, viz., Tasmania, for the period 1906 and 1907, the natural increase of females exceeded that of males throughout the 47 years referred to in the foregoing table. This excess, for the total period 1861 to 1907, is shewn in the table both in absolute numbers and as percentages of the male increase. The quinquennial period in which the largest natural increase of population took place was that of 1891-5 with a total for the Commonwealth of 317,874. For the individual States the quinquennia of maximum natural increase were as follows:—New South Wales, Victoria and Queensland 1891-5, South Australia 1881-5, and Western Australia and Tasmania 1901-5.

2. **Comparison with other Countries.**—Notwithstanding its comparatively low birth-rate, Australia has a high rate of natural increase, owing to the fact that its death-rate is a very low one. The following table furnishes a comparison between the average rates of natural increase for some of the principal countries of the world for which such information is available, and those for the several States of the Commonwealth and the Dominion of New Zealand:—

NATURAL INCREASE PER 1000 OF MEAN POPULATION.

| Country. | Increase. | Country. | Increase. | Country. | Increase. |
|--------------------------------|-----------|---------------------------|-----------|---------------------------|-----------|
| Australasia (1903-7). | | Europe— <i>continued.</i> | | Europe— <i>continued.</i> | |
| Western Australia | 18.40 | Netherlands ... | 15.59 | Switzerland ... | 10.43 |
| Tasmania ... | 18.25 | Prussia ... | 15.23 | Belgium ... | 10.15 |
| New Zealand ... | 17.14 | German Empire | 14.44 | Spain ... | 9.38 |
| New South Wales | 16.11 | Denmark ... | 14.39 | Ireland ... | 5.89 |
| Queensland ... | 15.63 | Rumania ... | 13.81 | France ... | 1.42 |
| Australasia ... | 15.38 | Norway ... | 13.68 | Asia— | |
| Commonwealth | 15.00 | Finland ... | 12.76 | Japan... | 10.84 |
| South Australia... | 13.54 | England & Wales | 12.13 | Ceylon ... | 10.21 |
| Victoria ... | 12.67 | Scotland ... | 12.09 | America— | |
| Europe (1902-6) ¹ — | | Austria ... | 11.33 | Jamaica ... | 14.94 |
| Bulgaria ... | 18.29 | Italy ... | 10.78 | Chile ... | 6.14 |
| Servia ... | 16.37 | Hungary ... | 10.76 | | |
| | | Sweden ... | 10.71 | | |

1. 1902-6 generally for rest of table.

The graphs of natural increase for each of the States, as well as for the Commonwealth, are shewn on page 196.

3. **Net Immigration.**—The other factor of increase in the population, viz., the excess of arrivals over departures, known as "net immigration," is, from its nature, much more subject to marked and extensive variation than is the factor of "natural increase." These variations are due to numerous causes, many of which have already been referred to in dealing with the influences which affect the growth of population. An important cause not yet referred to, is that of assisted immigration. The number of persons so introduced varies considerably in different years.

NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES
(STATES AND COMMONWEALTH), FROM 1861 TO 1907 INCLUSIVE.

| Period. | N.S.W. | Victoria. | Q'sland. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|-----------------|---------|-----------|----------|----------|----------|-----------|-----------|
| MALES. | | | | | | | |
| 1861 to 65 ... | 2,984 | — 15,871 | 34,031 | 10,270 | 3,213 | — 2,865 | 31,762 |
| 1866 to 70 ... | 23,381 | 13,516 | 10,190 | — 242 | 1,182 | — 313 | 47,714 |
| 1871 to 75 ... | 20,346 | — 8,093 | 26,236 | 3,833 | — 80 | — 1,916 | 40,326 |
| 1876 to 80 ... | 48,378 | — 5,696 | 13,892 | 25,056 | — 179 | 2,418 | 83,869 |
| 1881 to 85 ... | 70,996 | 19,925 | 54,867 | — 1,982 | 2,701 | 1,860 | 148,367 |
| 1886 to 90 ... | 29,345 | 51,894 | 18,514 | — 12,895 | 6,411 | 2,648 | 95,917 |
| 1891 to 95 ... | 8,671 | — 33,192 | 5,088 | — 1,493 | 39,443 | — 2,857 | 15,660 |
| 1896 to 1900... | 854 | — 39,805 | 8,095 | — 8,239 | 36,953 | 2,905 | — 945 |
| 1901 to 1905... | 25,456 | — 26,428 | — 1,106 | 921 | 32,123 | — 4,283 | 26,683 |
| 1906 and 1907 | 21,720 | — 1,377 | — 3,284 | 5,482 | — 2,596 | — 2,133 | 17,812 |
| 1861 to 1907... | 250,423 | — 45,127 | 166,523 | 20,711 | 119,171 | — 4,536 | 507,165 |
| FEMALES. | | | | | | | |
| 1861 to 65 ... | 8,578 | 21,527 | 18,824 | 5,993 | 952 | — 1,165 | 54,709 |
| 1866 to 70 ... | 9,928 | 16,702 | 4,851 | 1,207 | 517 | — 500 | 32,705 |
| 1871 to 75 ... | 9,395 | 2,498 | 11,187 | 774 | — 18 | — 2,500 | 21,336 |
| 1876 to 80 ... | 25,081 | — 169 | 7,792 | 12,977 | 130 | 462 | 46,273 |
| 1881 to 85 ... | 38,867 | 7,861 | 27,526 | — 100 | 957 | 562 | 75,673 |
| 1886 to 90 ... | 23,220 | 34,337 | 14,811 | — 11,310 | 1,768 | — 42 | 62,784 |
| 1891 to 95 ... | 12,793 | — 13,656 | — 422 | 1,964 | 7,758 | — 1,705 | 6,732 |
| 1896 to 1900... | 143 | — 23,777 | 927 | — 7,627 | 32,043 | 2,009 | 3,432 |
| 1901 to 1905... | — 4,383 | — 25,375 | — 4,226 | — 9,477 | 22,938 | — 3,500 | — 24,023 |
| 1906 and 1907 | 3,739 | — 1,534 | — 870 | — 1,449 | — 117 | — 1,573 | — 1,804 |
| 1861 to 1907... | 127,075 | 18,414 | 80,400 | — 7,048 | 66,928 | — 7,952 | 277,817 |
| PERSONS. | | | | | | | |
| 1861 to 65 ... | 11,562 | 5,656 | 52,855 | 16,263 | 4,165 | — 4,030 | 86,471 |
| 1866 to 70 ... | 33,309 | 30,218 | 15,041 | 965 | 1,699 | — 813 | 80,419 |
| 1871 to 75 ... | 29,741 | — 5,595 | 37,423 | 4,607 | — 98 | — 4,416 | 61,662 |
| 1876 to 80 ... | 73,459 | — 5,865 | 21,684 | 38,033 | — 49 | 2,880 | 130,142 |
| 1881 to 85 ... | 109,863 | 27,786 | 82,393 | — 2,082 | 3,658 | 2,422 | 224,040 |
| 1886 to 90 ... | 52,565 | 86,231 | 33,325 | — 24,205 | 8,179 | 2,606 | 158,701 |
| 1891 to 95 ... | 21,464 | — 46,848 | 4,666 | 471 | 47,201 | — 4,562 | 22,392 |
| 1896 to 1900... | 997 | — 63,582 | 9,022 | — 15,866 | 68,996 | 4,914 | 2,487 |
| 1901 to 1905... | 21,073 | — 51,803 | — 5,332 | — 8,556 | 55,061 | — 7,783 | 2,660 |
| 1906 and 1907 | 25,459 | — 2,911 | — 4,154 | 4,033 | — 2,713 | — 3,706 | 16,008 |
| 1861 to 1907... | 377,498 | — 26,713 | 246,923 | 13,663 | 186,099 | — 12,488 | 784,982 |

Throughout, the minus sign (—) signifies that the number of departures was in excess of arrivals.

During the period 1861-1907, viz., 47 years, the gain to the Commonwealth population by excess of arrivals over departures was 784,982 persons, while the gain by excess of births over deaths for the same period was 2,266,470. That is, nearly 26 per cent. of the increase for the Commonwealth during the past 47 years has been due to "net immigration" and 74 per cent. to "natural increase." In regard to the contribution of individual States to the total net immigration of 784,982, it may be said that for two, viz., Victoria and Tasmania, the departures for the period in question actually exceeded the arrivals, viz., by 26,713 in the case of the former, and 12,488 in that of the latter, while in South

Australia the total gain for the period was only 13,663. In New South Wales, Queensland, and Western Australia, on the other hand, the additions due to net immigration during the 47 years were respectively 377,498; 246,923; and 186,099.

The quinquennial period in which the greatest net immigration to the Commonwealth occurred was that of 1881-5 with a total of 224,040, whilst that in which the smallest was recorded was the period 1896-1900 with the total of only 2487. The quinquennial periods in which maximum net immigration occurred in the several States were as follows:—New South Wales and Queensland 1881-5, Victoria 1886-90, South Australia 1876-80, Western Australia and Tasmania 1896-1900. In all the States quinquennial periods have occurred in which the departures for the five years have exceeded the arrivals. The periods in which such net emigration from the several States was greatest were as follows:—New South Wales and Victoria 1896-1900, Queensland and Tasmania 1901-5, South Australia 1886-90, and Western Australia 1906-7.

The graphs shewing net increase, both for the Commonwealth as a whole and for each of the States, will be found on pages 194 and 195.

4. **Total Increase.**—(i.) *Rates for various Countries.* The table hereunder furnishes particulars concerning rates of increase in population for the Commonwealth, its component States, and other countries:—

RATES OF INCREASE IN POPULATION, 1881 to 1907.

| Countries. | Mean Annual Rate of Increase in Population during period— | | | | | |
|-----------------------|---|---------------|---------------|---------------|---------------|---------|
| | 1881 to 1886. | 1886 to 1891. | 1891 to 1896. | 1896 to 1901. | 1901 to 1906. | 1907. |
| | % | % | % | % | % | % |
| AUSTRALASIA— | | | | | | |
| Commonwealth ... | 3.86 | 3.06 | 1.86 | 1.49 | 1.49 | 1.88 |
| New South Wales ... | 4.83 | 3.23 | 1.99 | 1.57 | 2.11 | 2.77 |
| Victoria ... | 2.60 | 3.12 | 0.97 | 0.52 | 0.34 | 1.31 |
| Queensland ... | 8.42 | 3.80 | 2.49 | 2.25 | 1.13 | 1.24 |
| South Australia ... | 1.41 | 1.15 | 1.63 | 0.77 | 0.97 | 2.30 |
| Western Australia ... | 6.13 | 5.54 | 20.81 | 7.25 | 6.16 | * -0.07 |
| Tasmania ... | 2.18 | 2.87 | 1.06 | 1.83 | 0.65 | 2.14 |
| New Zealand ... | 3.31 | 1.47 | 2.41 | 1.98 | 2.90 | 2.28 |
| EUROPE— | | | | | | |
| England and Wales ... | 1.11 | 1.11 | 1.15 | 1.15 | 1.15 | |
| Scotland ... | 0.75 | 0.75 | 1.06 | 1.06 | 1.06 | |
| Ireland* ... | -0.95 | -0.94 | -0.60 | -0.43 | -0.26 | |
| Austria ... | 0.73 | 0.83 | 0.79 | 1.05 | † 1.03 | |
| Belgium ... | 1.13 | 0.75 | 1.15 | 0.92 | 1.26 | |
| Denmark ... | 1.05 | 0.87 | 0.99 | 1.32 | 1.10 | |
| Finland ... | 1.42 | 1.51 | 1.20 | 1.41 | † 1.28 | |
| France ... | 0.34 | 0.06 | 0.09 | 0.24 | 0.14 | |
| German Empire ... | 0.74 | 1.09 | 1.17 | 1.51 | † 1.47 | |
| Hungary ... | 1.09 | 1.01 | 0.92 | 1.03 | 1.01 | |
| Italy ... | 0.66 | 0.71 | 0.68 | 0.61 | 0.65 | |
| Netherlands ... | 1.32 | 1.03 | 1.28 | 1.30 | 1.53 | |
| Norway ... | 0.36 | 0.54 | 0.96 | 1.31 | 0.55 | |
| Prussia ... | 0.79 | 1.15 | 1.29 | 1.59 | 1.57 | |
| Rumania ... | 1.77 | 1.34 | 1.15 | 1.41 | † 1.40 | |
| Servia ... | 2.30 | 2.08 | 1.37 | 1.57 | 1.52 | |
| Spain ... | 0.54 | 0.48 | 0.45 | 0.45 | 0.45 | |
| Sweden ... | 0.57 | 0.40 | 0.61 | 0.86 | 0.61 | |
| Switzerland ... | 0.38 | 0.40 | 1.22 | 1.10 | † 0.92 | |
| ASIA— | | | | | | |
| Ceylon ... | 0.54 | 1.35 | 1.41 | 2.03 | 2.07 | |
| Japan ... | 0.96 | 1.12 | 0.96 | 1.25 | † 1.24 | |
| AMERICA— | | | | | | |
| Canada ... | 1.10 | 1.08 | 0.97 | 1.19 | † 1.33 | |
| Chile ... | 2.97 | 0.72 | 2.66 | 0.90 | † 1.69 | |
| Jamaica ... | 0.77 | 1.37 | 1.66 | 1.72 | 1.63 | |
| United States ... | 2.27 | 2.15 | 1.93 | 2.02 | 1.62 | |

Information not yet available.

* Decrease. † 1890 to 1905. ‡ 1901 to 1905.

(ii.) *Variations in the Commonwealth Rate.* During the twenty-six years 1881-1907, the annual rate of increase in the population of the Commonwealth has exhibited a marked decline, falling from an average of 3.86 per cent. for the five years 1881-6 to an average of 1.49 for 1901-6, the rate for the latter period being also the average for the five years 1896-1901. During the year 1907, however, an improvement took place, the rate of increase for that year being 1.88 per cent., or almost identical with the rate for the period 1891-6. As regards the separate States of the Commonwealth, the rates of increase in all cases except that of Western Australia were lower, and in most instances considerably lower, for the period 1901-6 than for 1881-6, while in all cases except that of Western Australia the rate of increase for 1907 was higher than for the preceding quinquennium. In Western Australia a loss of population amounting to 0.07 per cent. was experienced. In all the other States fluctuations more or less marked have been in evidence.

(iii.) *Unsatisfactory Nature of Commonwealth Rate.* The annual rate of increase in the Commonwealth population for the quinquennium 1901-6 was practically identical with the annual rate for Germany, the figures being respectively 1.49 per cent. and 1.47 per cent. In view of the sparsity of the population of Australia, and the recency of its settlement, this rate of increase, equal only to that of such a densely populated country as Germany, cannot be regarded as satisfactory. When contrasted with the growth of population in the United States the comparison is even less favourable, since the annual rate of increase of that country for the period 1901-6 was 1.62 per cent. Further, if the increase in the population of the Commonwealth be compared with that of the United States under comparable conditions as to density of population, it will be seen that whilst during the seventy years 1790-1860 the population of the United States increased at a rate of slightly more than 3 per cent. per annum, that of the Commonwealth has, in the past ten years, grown at less than half that rate. The full significance of the difference between these two rates of increase will be seen on comparing the figures shewn in line (a) below with those appearing on line (b). The former represent the population of the Commonwealth in the years specified, on the assumption that the rate of increase experienced in the Commonwealth during the past ten years remains permanently in force, while the latter shew what it would be in the same years if the rate of increase experienced in the United States during the seventy years 1790-1860 were in force.

SIGNIFICANCE OF PRESENT RATE OF GROWTH OF COMMONWEALTH POPULATION.

| | 31st Dec., 1907. | 31st Dec., 1908. | 31st Dec., 1909. | 31st Dec., 1910. | 31st Dec., 1920. | 31st Dec., 1930. | 31st Dec., 1940. | 31st Dec., 1950. |
|-----|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| (a) | 4,197,037 | 4,260,000 | 4,324,000 | 4,388,000 | 5,091,000 | 5,906,000 | 6,852,000 | 7,949,000 |
| (b) | 4,197,037 | 4,324,000 | 4,454,000 | 4,568,000 | 6,176,000 | 8,312,000 | 11,188,000 | 15,058,000 |

(a) On basis of Commonwealth rate of increase 1898-1907.

(b) On basis of U.S.A. rates of increase 1790-1860.

These are not predictions as to the probable future population of the Commonwealth, but computations shewing what the population will be if only the present rate of increase is maintained, and what it would be if the increase were as rapid as in the United States at a comparable period.

5. *Density of Population.*—From one aspect population may be less significant in respect of its absolute amount than in respect of the density of its distribution. The Commonwealth of Australia, with an area of 2,974,581 square miles, and a population on 31st December, 1907, of 4,197,037, has a density of only 1.41 persons to the square mile, and is, therefore, the most sparsely populated of the civilised countries of the world. For the other continents the densities are approximately as follows:—Europe, 111; Asia, 55; Africa, 13; and America, 10. The population of the Commonwealth has thus about 14 per cent. of the density of that of America, about 11 per cent. of that of Africa, about 2½ per cent. of that of Asia, and about 1¼ per cent. of that of Europe.

Particulars concerning the number and density of the population of the various countries of the world for the latest dates for which such information is available are given in the following table. These figures have in the main been derived from the 1908 issue of the "Statesman's Year Book," and in some instances, more particularly in the case of Africa, must be considered as rough approximations only, complete data not being obtainable:—

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS COUNTRIES OF THE WORLD.

| Country. | Population. | | Country. | Population. | |
|---------------------------|----------------------|---------------|---------------------------|--------------------|--------------|
| | Number. | *Density. | | Number. | *Density. |
| Continents— | | | | | |
| Europe | 428,775,084 | 111.07 | Cambodia | 1,500,000 | 40.11 |
| Asia | 932,158,315 | 54.96 | Bokhara | 1,250,000 | 15.63 |
| Africa | 147,543,205 | 12.94 | Federated Malay States | 871,980 | 33.05 |
| North & Central America | | | Khiva | 800,000 | 35.84 |
| and the West Indies ... | 115,222,262 | 13.48 | Oman | 800,000 | 9.76 |
| South America | 43,316,964 | 5.90 | Borneo and Sarawak ... | 660,000 | 9.03 |
| Australasia & Polynesia | 6,911,784 | 2.00 | Laos | 650,000 | 6.61 |
| | | | Straits Settlements ... | 611,790 | 382.37 |
| | | | Goa | 475,513 | 323.70 |
| | | | Hong Kong & Territory | 437,270 | 1,121.21 |
| Total | 1,673,927,614 | 32.46 | Timor, etc. | 300,000 | 40.93 |
| Europe— | | | French India | 275,400 | 1,405.10 |
| Russia (including Poland | | | Cyprus | 250,590 | 70.00 |
| & Ciscaucasia & Finland) | 127,503,000 | 60.07 | French Siam | 200,000 | 25.64 |
| German Empire | 60,641,278 | 290.46 | Wei-hai-wei | 130,800 | 467.14 |
| Austria - Hungary (incl. | | | Macao, etc. | 63,991 | 15,997.75 |
| Bosnia & Herzegovina) | 49,266,902 | 188.74 | Damao and Diu | 56,285 | 333.05 |
| United Kingdom | 44,100,231 | 363.29 | Aden & Dependencies ... | 43,970 | 4.84 |
| France | 39,252,245 | 189.57 | Kiauchau | 30,000 | 150.00 |
| Italy | 33,640,710 | 304.00 | Bhutan | 30,000 | 1.79 |
| Spain | 19,069,400 | 97.91 | Tientsin | 17,000 | 944.44 |
| Turkey (including Bul- | | | Labuan | 9,000 | 300.00 |
| garia and Crete) | 10,476,020 | 98.06 | | | |
| Belgium | 7,238,622 | 636.47 | Total | 932,158,315 | 54.96 |
| Rumania | 6,585,534 | 129.84 | | | |
| Netherlands | 5,672,237 | 448.47 | Africa— | | |
| Portugal | 5,423,132 | 152.81 | Congo Independ't State | 30,000,000 | 33.33 |
| Sweden | 5,337,055 | 30.87 | Turkish Dependencies | | |
| Switzerland | 3,463,609 | 216.80 | (incl. Egypt & Sudan) | 13,000,000 | 7.43 |
| Servia | 2,735,147 | 146.66 | Abyssinia | 10,000,000 | 50.00 |
| Denmark (incl. Iceland) | 2,683,738 | 48.49 | French Congo | 10,000,000 | 11.76 |
| Greece | 2,631,952 | 105.22 | Northern Nigeria Prot. | 8,000,000 | 31.20 |
| Norway | 2,321,088 | 18.70 | Senegambia and Niger ... | 8,000,000 | 21.62 |
| Luxemburg | 236,543 | 237.02 | German East Africa ... | 7,000,000 | 18.22 |
| Montenegro | 230,000 | 63.36 | Southern Nigeria & Prot. | 6,000,000 | 77.66 |
| Malta | 206,690 | 1,766.58 | Algeria | 5,158,050 | 15.02 |
| Gibraltar | 18,624 | 9,312.00 | Morocco | 5,000,000 | 22.33 |
| Monaco | 15,180 | 1,897.50 | Angola | 4,119,000 | 8.50 |
| San Marino | 11,439 | 301.03 | British East Africa Prot. | 4,000,000 | 22.78 |
| Liechtenstein | 9,477 | 145.80 | Kamerun | 3,500,000 | 18.31 |
| Andorra | 5,231 | 29.89 | Portuguese East Africa | 3,120,000 | 10.63 |
| | | | Madagascar & adjacent | | |
| Total | 428,775,084 | 111.07 | Islands | 2,644,700 | 11.60 |
| Asia— | | | Uganda Protectorate ... | 2,540,000 | 11.36 |
| China & Dependencies ... | 453,553,030 | 101.36 | Cape Colony | 2,487,670 | 8.98 |
| British India | 231,555,533 | 213.27 | French Guinea | 2,200,000 | 23.16 |
| Fedutary Indian States | 62,461,549 | 91.94 | Ivory Coast | 2,000,000 | 16.67 |
| Japan & Dependencies ... | 50,841,562 | 266.84 | Tunis | 1,900,000 | 29.41 |
| Dutch East Indies | 35,800,000 | 61.24 | Liberia | 1,800,000 | 41.86 |
| Russia in Asia | 21,796,300 | 3.34 | Gold Coast and Protect. | 1,697,000 | 14.23 |
| Turkey in Asia | 17,736,900 | 25.57 | Rhodesia | 1,500,000 | 3.45 |
| Tonking | 10,000,000 | 217.39 | Transvaal | 1,355,440 | 11.51 |
| Korea | 10,000,000 | 140.85 | Natal | 1,151,910 | 32.57 |
| Persia | 9,500,000 | 15.13 | Sierra Leone and Protect. | 1,027,000 | 34.23 |
| Philippine Islands | 7,635,426 | 59.72 | Togoland | 1,000,000 | 29.67 |
| Siam | 6,686,546 | 31.51 | Dahomey | 1,000,000 | 15.38 |
| Annam | 6,124,000 | 117.54 | Nyasaland Protectorate | 927,400 | 22.63 |
| Nepal | 5,000,000 | 92.59 | Portuguese Guinea ... | 820,000 | 58.82 |
| Afghanistan | 4,750,000 | 19.00 | French Sahara | 800,000 | 0.41 |
| Ceylon | 3,984,980 | 157.32 | Eritrea | 450,000 | 5.08 |
| Cochin China | 2,968,600 | 148.43 | Italian Somaliland ... | 400,000 | 4.00 |
| Arabia (Independent) ... | 2,000,000 | 2.07 | Orange River Colony ... | 387,320 | 7.69 |
| | | | Mauritius and Depend. | 382,000 | 454.76 |
| | | | Basutoland | 348,850 | 33.90 |

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS
COUNTRIES OF THE WORLD.—Continued.

| Country. | Population. | | Country. | Population. | |
|---|-------------|----------|---|-------------|----------|
| | Number. | *Density | | Number. | *Density |
| British Somaliland ... | 300,030 | 4.41 | St. Pierre & Miquelon ... | 6,250 | 67.93 |
| Zanzibar ... | 300,000 | 196.03 | Turks & Caicos Islands ... | 75,290 | 31.12 |
| German S. W. Africa ... | 300,000 | 0.62 | | | |
| Reunion ... | 173,200 | 178.56 | | | |
| Cape Verde Islands ... | 147,424 | 59.61 | Total ... | 115,222,262 | 13.48 |
| Rio Muni & C San Juan ... | 140,000 | 14.29 | | | |
| Rio de Oro and Adrar ... | 130,000 | 1.86 | South America— | | |
| Bechuanaland Protect. ... | 129,990 | 0.47 | Brazil ... | 17,441,069 | 5.30 |
| Senegal ... | 107,800 | 11.89 | Argentina Republic ... | 5,678,197 | 5.00 |
| Gambia & Protectorate ... | 90,360 | 24.93 | Colombia ... | 4,279,674 | 9.62 |
| French Somali Coast, etc. ... | 50,000 | 4.17 | Peru ... | 4,000,000 | 5.75 |
| Comoro Isles ... | 47,000 | 75.81 | Chile ... | 3,399,928 | 11.05 |
| Prince's & St. Thomas Is. ... | 42,103 | 116.95 | Venezuela ... | 2,619,218 | 7.20 |
| Fernando Po, etc. ... | 21,946 | 28.14 | Bolivia ... | 1,953,916 | 3.23 |
| Seychelles ... | 21,000 | 140.00 | Ecuador ... | 1,400,000 | 12.07 |
| Mayotte ... | 11,640 | 83.14 | Uruguay ... | 1,103,040 | 15.28 |
| Spanish N. & W. Africa ... | 10,412 | 800.92 | Paraguay ... | 631,347 | 6.44 |
| St. Helena ... | 3,530 | 76.74 | Panama ... | 400,000 | 11.83 |
| Ascension ... | 410 | 12.06 | British Guiana ... | 300,130 | 3.32 |
| | | | Dutch Guiana ... | 75,465 | 1.64 |
| Total ... | 147,543,205 | 12.94 | French Guiana ... | 32,910 | 1.08 |
| | | | Falkland Islands and South Georgia ... | 2,070 | 0.28 |
| North & Central America & West Indies— | | | Total ... | 43,316,964 | 5.90 |
| United States ... | 83,941,510 | 28.26 | | | |
| Mexico ... | 13,605,919 | 17.74 | Australasia & Polynesia— | | |
| Canada ... | 5,983,560 | 1.60 | Commonwealth of Australia ... | † 4,347,037 | 1.46 |
| Cuba ... | 1,955,884 | 44.45 | New Zealand ... | 1,989,560 | 9.45 |
| Guatemala ... | 1,842,134 | 38.15 | Papua ... | 350,000 | 3.87 |
| Haiti ... | 1,500,000 | 147.00 | German New Guinea & Bismarck Archipelago ... | 300,000 | 3.33 |
| Salvador ... | 1,006,848 | 139.36 | Dutch New Guinea ... | 200,000 | 1.32 |
| Porto Rico ... | 953,243 | 277.51 | Hawaii ... | 154,001 | 23.88 |
| Jamaica ... | 829,930 | 197.13 | Solomon Islands (British) ... | 150,000 | 17.94 |
| Nicaragua ... | 600,000 | 12.20 | Fiji ... | 125,540 | 16.22 |
| Honduras ... | 500,136 | 10.81 | German Solomon Is., etc. ... | 56,000 | 10.85 |
| San Domingo ... | 416,000 | 23.05 | New Caledonia & Depend. ... | 53,350 | 6.97 |
| Windward Islands ... | 371,870 | 555.03 | New Hebrides ... | 50,000 | 10.00 |
| Costa Rica ... | 345,090 | 18.75 | Gilbert Islands ... | 35,000 | 194.44 |
| Trinidad and Tobago ... | 327,400 | 175.08 | Samoa (German) ... | 33,000 | 33.00 |
| Newfoundland & Labrador ... | 232,780 | 1.43 | French Estab. in Oceania ... | 29,000 | 19.08 |
| Martinique ... | 203,780 | 536.26 | Tonga ... | 21,300 | 54.62 |
| Guadeloupe and Depend. ... | 182,110 | 264.69 | Guam ... | 11,229 | 56.15 |
| Leeward Islands ... | 133,310 | 190.44 | Samoa (American) ... | 5,800 | 73.42 |
| Alaska ... | 63,592 | 0.11 | Norfolk Island ... | 967 | 96.70 |
| Bahamas ... | 59,140 | 13.44 | | | |
| Curaçao ... | 53,466 | 132.67 | Total ... | 6,911,784 | 2.00 |
| British Honduras ... | 41,010 | 5.42 | | | |
| Danish West Indies ... | 30,527 | 221.21 | | | |
| Bermudas ... | 19,590 | 979.50 | | | |
| Greenland ... | 11,893 | 0.25 | | | |

* Number of Persons per square mile.

† Inclusive of Aboriginal Natives.
Pacific Islands.

‡ Inclusive of Maoris and population of Cook and other
Pacific Islands.

§ 5. Seasonal Variations of Population.

1. **Natural Increase.**—In most of the States of the Commonwealth the natural increase of the population is greatest in the quarter ending 30th September, and least in that ending 31st March. The birth rate is usually at its highest, and the death rate at its lowest, in the September quarter, and *vice versa* in the March quarter. The average natural increase in population of the several States for each of the quarters, based upon the experience of the seven years 1901 to 1907, is as follows:—

. AVERAGE NATURAL INCREASE, STATES AND COMMONWEALTH, 1901 to 1907.

| State. | * Average Natural Increase for Quarter ended on last day of— | | | | | | | | Average Natural Increase per annum, 1901-7. | |
|------------------|--|------|---------|------|------------|------|-----------|------|---|-------|
| | March. | | June. | | September. | | December. | | | |
| | Persons | % | Persons | % | Persons | % | Persons | % | Persons | % |
| New S'th Wales | 5,465 | 3.80 | 5,890 | 4.08 | 6,010 | 4.13 | 5,793 | 3.96 | 23,158 | 15.97 |
| Victoria ... | 3,529 | 2.91 | 3,973 | 3.27 | 4,017 | 3.30 | 3,709 | 3.04 | 15,228 | 12.53 |
| Queensland ... | 1,836 | 3.55 | 2,227 | 4.29 | 2,199 | 4.21 | 1,938 | 3.71 | 8,200 | 15.77 |
| South Australia | 1,120 | 3.02 | 1,355 | 3.65 | 1,378 | 3.71 | 1,158 | 3.10 | 5,011 | 13.47 |
| W. Australia ... | 932 | 4.11 | 1,031 | 4.47 | 1,250 | 5.33 | 966 | 4.09 | 4,179 | 18.00 |
| Tasmania ... | 749 | 4.22 | 781 | 4.42 | 835 | 4.73 | 863 | 4.84 | 3,228 | 18.22 |
| Commonwealth | 13,631 | 3.46 | 15,257 | 3.86 | 15,689 | 3.95 | 14,427 | 3.62 | 59,004 | 14.88 |

* The symbol % denotes "per thousand."

2. **Net Immigration.**—For the Commonwealth as a whole the excess of arrivals over departures for the years 1901 to 1907 was greatest in the September quarter, while in the March quarter the average excess of departures over arrivals was 1682. In New South Wales also the September quarter gives the greatest excess of arrivals over departures. In Western Australia the largest excess is in the June quarter. In South Australia and Tasmania the arrivals largely exceeded the departures in the December quarter, but in all the other quarters the departures were in excess. In Queensland, the June quarter was the only one showing an average excess of arrivals. Victoria shows an excess of departures for every quarter, the maximum being that for the quarter ended 30th June. Particulars concerning the average net immigration of the several States are as follows:—

AVERAGE NET IMMIGRATION, STATES AND COMMONWEALTH, 1901 to 1907.

| State. | Quarter ended on last day of— | | | | | | | | Average Net Immigration per annum, 1901-7. | |
|----------|-------------------------------|-------|---------|--------|------------|-------|-----------|-------|--|-------|
| | March. | | June. | | September. | | December. | | | |
| | Persons | % | Persons | % | Persons | % | Persons | % | Persons | % |
| N.S.W. | 999 | 0.69 | 2,253 | 1.56 | 3,334 | 2.29 | 61 | 0.04 | 6,647 | 4.59 |
| Victoria | -2,513 | -2.07 | -3,078 | -2.54 | -2,082 | -1.71 | 143 | -0.12 | -7,816 | -6.43 |
| Q'land | 598 | -1.15 | 1,518 | 2.93 | 132 | -0.25 | 2,148 | -4.11 | -1,355 | -2.61 |
| S. Aust. | 979 | -2.64 | -1,441 | -3.88 | 464 | -1.25 | 2,238 | 5.99 | 646 | -1.74 |
| W. Aust. | 2,857 | 12.61 | 3,350 | 14.52 | 1,921 | 8.19 | 650 | -2.75 | 7,478 | 32.22 |
| Tas. | -1,453 | -8.18 | -1,903 | -10.77 | 204 | -1.16 | 1,919 | 10.77 | -1,641 | -9.26 |
| C'wealth | -1,682 | -0.43 | 699 | 0.18 | 2,373 | 0.60 | 1,277 | 0.32 | 2,667 | 0.67 |

Throughout, the minus sign (—) denotes that the departures were in excess of arrivals. and % denotes per thousand of population.

§ 6. Urban Population.

1. **The Metropolitan Towns.**—A feature of the distribution of population in Australia is the tendency to accumulate in the capital cities. To such an extent is this metropolitan aggregation carried, that in every State the population of the capital far outnumbers that of any other town therein, and ranges between 19 and 46 per cent. of the entire population of the State. The estimated populations of the several capitals on 31st December, 1907, and the percentages of such populations on the totals for the

respective States, are shewn in the table hereunder. That this metropolitan concentration is phenomenal, may be readily seen by comparing the percentage on the total population with the similar figures for the principal countries of Europe, also given in the table hereunder:—

METROPOLITAN POPULATION.

| State or Country. | Metropolis. | Year. | Population. | Percentage on total of State or Country. |
|-----------------------|--------------------|------------------|-------------|--|
| | | | | % |
| New South Wales ... | Sydney ... | 31st Dec., 1907. | 577,180 | 36.79 |
| Victoria ... | Melbourne ... | | 588,000 | 43.11 |
| Queensland ... | Brisbane ... | | 135,655 | 25.04 |
| South Australia ... | Adelaide ... | | 178,300 | 45.41 |
| Western Australia ... | Perth ... | | 50,380 | 19.26 |
| Tasmania ... | Hobart ... | | 40,326 | 21.92 |
| Commonwealth ... | (6 Cities) ... | | 1,519,841 | 36.21 |
| New Zealand ... | Wellington ... | | 70,947 | 7.63 |
| Denmark ... | Copenhagen ... | 1906 | 514,134 | 19.86 |
| England ... | London* ... | 1907 | 4,758,218 | 13.62 |
| Saxony ... | Dresden ... | 1905 | 516,996 | 11.47 |
| Norway ... | Christiania ... | 1900 | 227,626 | 11.16 |
| Belgium ... | Brussels ... | 1906 | 623,041 | 8.61 |
| Bavaria ... | Munich ... | 1905 | 538,983 | 8.26 |
| Scotland ... | Edinburgh ... | 1906 | 341,035 | 7.22 |
| France ... | Paris ... | 1906 | 2,763,393 | 7.04 |
| Portugal ... | Lisbon ... | 1900 | 356,009 | 6.56 |
| Ireland ... | Dublin ... | 1901 | 290,638 | 6.54 |
| Greece ... | Athens ... | 1906 | 170,000 | 6.46 |
| Austria ... | Vienna ... | 1900 | 1,674,957 | 6.41 |
| Sweden ... | Stockholm ... | 1906 | 332,738 | 6.23 |
| Prussia ... | Berlin ... | 1905 | 2,040,148 | 5.47 |
| Netherlands ... | The Hague ... | 1906 | 248,995 | 4.39 |
| Hungary ... | Budapest ... | 1900 | 732,322 | 3.80 |
| Spain ... | Madrid ... | 1900 | 539,835 | 2.90 |
| Switzerland ... | Berne ... | 1905 | 71,748 | 2.07 |
| Italy ... | Rome ... | 1901 | 462,743 | 1.42 |
| Russia (European) ... | St. Petersburg ... | 1905 | 1,429,000 | 1.33 |

* Population of Greater London 7,217,941.

2. Provincial Towns.—In connection with the particulars shewing the tendency in Australia to concentrate population in the metropolis, it should be borne in mind that in most of the European States the capital is but one of many populous cities, and in some instances is by no means the most populous. In Australia, on the other hand, the metropolis is in every instance the most populous city, and, in some of the States, is also the only town of considerable magnitude. It will be seen from the table on the next page, that there are in all, only fifteen towns in the Commonwealth having a population upwards of 20,000. Of these three are in New South Wales, four in Victoria, two in Queensland, one in South Australia, three in Western Australia, and two in Tasmania.

In the following table are given the estimated populations of the principal Australian towns. These particulars relate to the year 1907, except in the case of the Queensland provincial towns, the figures for which represent the population within a radius of 5 miles at the date of the Census of 1901. The metropolitan towns are included for the purpose of giving a complete view of the urban population of the Commonwealth. In all cases the populations given for the towns include those of contiguous suburban areas:—

POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH.

| Town (including Suburban Areas). | State in which Situatcd. | Popula- tion. | Town (including Suburban Areas). | State in which Situatcd. | Popula- tion. |
|-------------------------------------|--------------------------------|------------------|-------------------------------------|--------------------------------|------------------|
| 100,000 and upwards— | | | 5000 and under 10,000, cont. | | |
| Sydney | N.S.W. | 577,180 | Queenstown | Tas. | 6,196 |
| Melbourne | Vic. | 538,000 | Maryborough | Vic. | 5,903 |
| Adelaide | S.A. | 178,300 | Grafton and S. Grafton | N.S.W. | 5,900 |
| Brisbane | Qld. | 135,655 | Zeehan | Tas. | 5,732 |
| 20,000 and under 100,000— | | | Lismore | N.S.W. | 5,700 |
| Newcastle | N.S.W. | 63,250 | Wagga Wagga | N.S.W. | 5,700 |
| Perth | W.A. | 50,380 | Stawell | Vic. | 5,300 |
| Ballarat | Vic. | 48,607 | Mackay | Qld. | 5,157 |
| Bendigo | Vic. | 44,458 | Forbes | N.S.W. | 5,000 |
| Hobart | Tas. | 40,326 | 3000 and under 5000— | | |
| Broken Hill | N.S.W. | 31,000 | Armidale | N.S.W. | 4,500 |
| Kalgoorlie and Boulder | W.A. | 29,242 | Cobar | N.S.W. | 4,300 |
| Geelong | Vic. | 28,021 | Liverpool | N.S.W. | 4,250 |
| Launceston | Tas. | 24,536 | Inverell | N.S.W. | 4,250 |
| Fremantle... .. | W.A. | 21,000 | Warwick | Qld. | 4,225 |
| Charters Towers | Qld. | 20,976 | Hamilton | Vic. | 4,170 |
| 10,000 and under 20,000— | | | Midland Junction | W.A. | 4,062 |
| Rockhampton | Qld. | 19,691 | Echuca | Vic. | 4,050 |
| Kadina, Moonta & Wallaroo | S.A. | 15,526 | St. Arnaud | Vic. | 4,024 |
| Townsville | Qld. | 15,506 | Wangaratta | Vic. | 4,005 |
| Ipswich | Qld. | 15,246 | Parkes | N.S.W. | 4,000 |
| Gympie | Qld. | 14,431 | Ararat | Vic. | 3,951 |
| Toowoomba | Qld. | 14,087 | Glen Innes | N.S.W. | 3,800 |
| Parramatta | N.S.W. | 13,000 | Daylesford | Vic. | 3,775 |
| Maryborough | Qld. | 12,900 | Penrith | N.S.W. | 3,750 |
| Port Pirie | S.A. | 12,317 | Maldon | Vic. | 3,708 |
| Maitland, East and West | N.S.W. | 11,000 | Albany | W.A. | 3,602 |
| Goulburn | N.S.W. | 10,800 | Wellington | N.S.W. | 3,600 |
| 5000 and under 10,000— | | | Colac | Vic. | 3,550 |
| Bundaberg | Qld. | 9,666 | Dubbo | N.S.W. | 3,500 |
| Bathurst | N.S.W. | 9,400 | Horsham | Vic. | 3,500 |
| Castlemaine | Vic. | 8,530 | Devonport | Tas. | 3,474 |
| Mount Morgan | Qld. | 8,486 | Cairns | Qld. | 3,467 |
| Albury | N.S.W. | 7,000 | Salc | Vic. | 3,455 |
| Lithgow | N.S.W. | 7,000 | Kyneton | Vic. | 3,416 |
| Orange and East Orange | N.S.W. | 6,900 | Bunbury | W.A. | 3,410 |
| Claremont and Cottesloe | W.A. | 6,889 | Mudgee | N.S.W. | 3,400 |
| Mt. Gambier | S.A. | 6,845 | Beaconsfield | Tas. | 3,176 |
| Warrnambool | Vic. | 6,600 | Bairnsdale | Vic. | 3,120 |
| Granville | N.S.W. | 6,500 | Croydon | Qld. | 3,102 |
| Tamworth | N.S.W. | 6,400 | Narrabri and W. Narrabri | N.S.W. | 3,100 |
| | | | Tenterfield | N.S.W. | 3,100 |
| | | | Hay | N.S.W. | 3,000 |

§ 7. Assisted Immigration.

In the earlier days of settlement in Australia, State-assisted immigration played an important part. Such assistance practically ceased in Victoria in 1873, in South Australia in 1886, and in Tasmania in 1891. In New South Wales general State-aided immigration was discontinued in the year 1887, but those who arrived under that system and were still residing in New South Wales might, under special regulations, send for their wives and families. A certain amount of passage money, graduated according to the age of the immigrant, was required to be paid in each case. Under the provisions of these regulations immigrants to the number of 1994 received State assistance during the years 1888 to 1899, inclusive. From 1900 to 1905 no assistance of any kind was given, but in 1906 assistance was again afforded, a total of 680 State-assisted immigrants being recorded for that year and 2845 for the year 1907. In Queensland and Western Australia, such assistance, although varying considerably in volume from year to year, has been accorded for many years past. The numbers so assisted during 1907 were 1176 in Queensland and 949 in Western Australia. In the second half of 1907 assistance to 127 immigrants was rendered by the Victorian Government.

The total number of immigrants to Australia from the earliest times up to the end of 1907, the cost of whose introduction was wholly or partly borne by the State, is approximately as follows:—

ASSISTED IMMIGRANTS UP TO END OF 1907.
STATES AND COMMONWEALTH.

| State | N.S.W. | Victoria. | Qld. | S. Aust. | W.A. | Tas. | C'wth. |
|----------------------------|---------|-----------|---------|----------|-------|--------|---------|
| No. of Assisted Immigrants | 215,497 | 140,229 | 171,473 | 95,348 | 9,452 | 21,699 | 653,698 |

§ 8. Enumerations and Estimates.

1. Musters.—Actual enumerations of Australia's population, of varying accuracy, have been made from the earliest times onward. Originally known as "Musters," these were first undertaken with a view to estimating the food and other requirements of the settlements. These musters, the results of which are said to have been very unreliable, appear to have been carried out at least annually from 1788 to 1825, when they were discontinued.

2. Census-taking.—The first regular Census in Australia was that of New South Wales, in November, 1828. The dates on which Censuses have been taken in the several States, and the populations enumerated thereat, are as shewn in table on the page immediately following.

3. The Census of 1901.—A conference of the State Statisticians of Australia and New Zealand held in Sydney in February and March, 1900, aimed at securing uniformity in the collection and compilation of the Census of 1901. The householder's schedule which it drafted made provision for the collection of information in all the States under the following heads, viz.:—Name, Sex, Age, Conjugal Condition, Relation to Head of Household, Occupation, Sickness and Infirmity, Birthplace, Length of Residence in Colony, Religion, Education, Materials of Houses and Number of Rooms. In addition to these, it was agreed that States so desiring might include further inquiries relating to Land, Live Stock, Crops, and certain other matters.

Provision was made for uniformity in the classification and compilation of the data by formulating rules for dealing with cases in which differences of opinion as to methods of treatment might exist. Thus, although conducted by six different States, the Census of the Commonwealth, as taken in 1901, was carried out on a fairly uniform plan, and consequently furnished data in many ways suitable for purposes of aggregation or comparison. A detailed examination of the results, however, gives many indications of departure from a common line of action, which, in the absence of a central authority, can hardly be avoided in an undertaking of this nature.

4. The Census of 1911.—Under Section 51, sub-section (xi.) of the Constitution Act, power is given to the Parliament of the Commonwealth to make laws with respect to "Census and Statistics." This power was brought into requisition in 1905, when the Census and Statistics Act 1905 became law, being assented to on 8th December, 1905, under this Act provision is made for the appointment of a Commonwealth Statistician, and amongst other duties that officer is charged with the taking of a Census in the year 1911 and in every tenth year thereafter.

The particulars which the Act requires to be included in the Census schedule are almost identical with those which were contained in the 1901 schedule, the principal

alterations being that "Length of Residence in Australia" is to be asked instead of "Length of Residence in the Colony of Enumeration," that "Duration of Marriage" is to be asked in all cases, and that nationality is to be ascertained in addition to birthplace.

AUSTRALIAN CENSUSES.

| Census Year. | Population Enumerated (exclusive of Aborigines). | | | | | | |
|-------------------|--|-------------------------------------|------------------------------------|------------------------|------------------------|------------------------|-----------------------|
| | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Commonwealth. (Total) |
| 1828 | (Nov.) 36,598 | ... | ... | ... | ... | ... | ... |
| 1833 | (2nd Sept.) 60,794 | ... | ... | ... | ... | ... | ... |
| 1836 | (2nd Sept.) 77,096 | ... | ... | ... | ... | ... | ... |
| 1841 | (2nd March) 130,856 | ... | ... | ... | ... | (27th Sept.) 50,216 | ... |
| 1844 | ... | ... | ... | (26th Feb.) 17,366 | ... | ... | ... |
| 1846 | (2nd March) 189,609 | ... | ... | (26th Feb.) 22,390 | ... | ... | ... |
| 1847 | ... | ... | ... | ... | ... | (31st Dec.) 70,164 | ... |
| 1848 | ... | ... | ... | ... | (10th Oct.) 4,622 | ... | ... |
| 1851 | (1st Mar.) ¹ 268,344 | ... | ... | (1st Jan.) 63,700 | ... | (1st Mar.) 70,130 | ... |
| 1854 | ... | (26th Apr.) ² 234,298 | ... | ... | (30th Sept.) 11,743 | ... | ... |
| 1855 | ... | ... | ... | (31st Mar.) 85,821 | ... | ... | ... |
| 1856 | (1st March) 269,722 | ... | ... | ... | ... | ... | ... |
| 1857 | ... | (29th Mar.) 408,998 | ... | ... | ... | (31st Mar.) 81,492 | ... |
| 1859 | ... | ... | ... | ... | (31st Dec.) 14,837 | ... | ... |
| 1861 | (7th April) 350,860 | (7th April) 538,628 | (7th April) ² 30,059 | (7th April) 126,830 | ... | (7th April) 89,977 | ... |
| 1864 | ... | ... | (1st Jan.) 61,467 | ... | ... | ... | ... |
| 1866 | ... | ... | ... | (26th Mar.) 163,452 | ... | ... | ... |
| 1868 | ... | ... | (2nd Mar.) 99,901 | ... | ... | ... | ... |
| 1870 | ... | ... | ... | ... | (31st Mar.) 24,785 | (7th Feb.) 99,328 | ... |
| 1871 | (2nd April) 502,998 | (2nd April) 730,198 | (1st Sept.) 120,104 | (2nd April) 185,626 | ... | ... | ... |
| 1876 | ... | ... | (1st May) 173,283 | (26th Mar.) 213,271 | ... | ... | ... |
| 1881 ³ | 749,825 | 861,566 | 213,525 | 279,865 | 29,708 | 115,705 | 2,250,194 |
| 1886 | ... | ... | (1st May) 322,853 | ... | ... | ... | ... |
| 1891 ⁴ | 1,123,954 | 1,139,840 | 393,718 | 320,431 | 49,782 | 146,667 | 3,174,392 |
| 1901 ⁵ | 1,354,846 | 1,201,070 | 498,129 | 363,157 | 184,124 | 172,475 | 3,773,801 |

1. Including Port Phillip District, which afterwards became the Colony of Victoria. 2. Previously included with New South Wales. 3. 3rd April. 4. 5th April. 5. 31st March.

5. **Estimates of Population.**—In the absence of an annual enumeration of the population, it becomes necessary to adopt some method of estimating it for intercensal periods, basing such estimates on the results of the most recent Censuses. The manner in which this is effected varies, however, in different parts of the world. In England, for example, the assumption made is that the rate of increase of the preceding intercensal period will

continue unchanged during the current period. Again, in the United States, it has been assumed, in certain cases, that the numerical increase per annum ascertained for the preceding intercensal period will hold good for the current period. From the earliest times in Australia, "statistics of fluctuation" have been obtained from the records of births, deaths, arrivals and departures. With reasonable thoroughness in the collection of such statistics, the deduced estimates possess much greater weight than those based on the mere assumption of a continuation of the increase experienced in the preceding period. In most cases, however, estimates of population, based on statistics of fluctuation, are found to be in excess at the Census, thus indicating a uniform tendency to over-estimation, and the necessity for a correction. In the population figures given in the earlier portion of the present section, the estimates of the population of the several States have been carefully revised, the results of the various Censuses being taken in conjunction with the records of births, deaths, arrivals and departures. It is believed that by this means the population of the Commonwealth from the date of settlement onwards has been obtained with a high degree of accuracy, and that the figures supplied represent a reasonably close approximation to the actual numbers. Particulars for the several States from the date of settlement onwards are given in the following tables, and are shewn by graphs on pages 191 to 193:—

AUSTRALIAN POPULATION FROM EARLIEST DATE.

MALES.

| Year | Estimated Population at end of Year. | | | | | | Commonwealth. |
|------|--------------------------------------|-----------|-------------|------------------|--------------------|-----------|---------------|
| | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | |
| 1788 | ... | ... | ... | ... | ... | ... | † |
| 1790 | ... | ... | ... | ... | ... | ... | † |
| 1795 | ... | ... | ... | ... | ... | ... | † |
| 1800 | 3,780 | ... | ... | ... | ... | ... | 3,780 |
| 1805 | 5,395 | ... | ... | ... | ... | ... | 5,395 |
| 1810 | 7,585 | ... | ... | ... | ... | ... | 7,585 |
| 1815 | 9,848 | ... | ... | ... | ... | ... | 9,848 |
| 1820 | 23,784 | ... | ... | ... | ... | ... | 23,784 |
| 1825 | 29,309 | ... | ... | ... | ... | 10,979* | 40,288 |
| 1830 | 33,900 | ... | ... | ... | 877 | 18,108 | 52,885 |
| 1835 | 51,949 | ... | ... | ... | 1,231 | 28,749 | 81,929 |
| 1840 | 85,560 | ... | ... | 8,272 | 1,434 | 32,040 | 127,306 |
| 1845 | 113,739 | ... | ... | 12,810 | 2,689 | 43,921 | 173,159 |
| 1850 | 154,976 | ... | ... | 35,902 | 3,576 | 44,229 | 238,683 |
| 1855 | 147,822 | 226,462* | ... | 48,843 | 8,311 | 38,680 | 470,118 |
| 1860 | 197,851 | 330,302 | 16,817* | 64,340 | 9,597 | 49,653 | 668,560 |
| 1865 | 222,890 | 348,717 | 53,292 | 84,255 | 13,575 | 50,549 | 773,278 |
| 1870 | 272,121 | 397,230 | 69,221 | 94,894 | 15,511 | 53,517 | 902,494 |
| 1875 | 322,534 | 424,269 | 102,161 | 108,706 | 16,141 | 54,678 | 1,028,489 |
| 1880 | 404,952 | 450,558 | 124,013 | 147,438 | 16,985 | 60,568 | 1,204,514 |
| 1885 | 518,606 | 504,097 | 186,866 | 162,425 | 20,688 | 67,712 | 1,460,394 |
| 1890 | 602,704 | 595,519 | 223,252 | 166,049 | 28,854 | 76,453 | 1,692,831 |
| 1895 | 668,209 | 607,933 | 248,865 | 180,314 | 69,733 | 80,485 | 1,855,539 |
| 1900 | 716,047 | 601,773 | 274,684 | 184,637 | 110,088 | 89,763 | 1,976,992 |
| 1901 | 721,043 | 609,546 | 281,658 | 186,007 | 118,241 | 90,289 | 2,006,784 |
| 1902 | 738,783 | 608,038 | 283,195 | 186,106 | 129,886 | 92,202 | 2,037,710 |
| 1903 | 752,627 | 605,364 | 285,297 | 187,151 | 135,960 | 93,045 | 2,059,444 |
| 1904 | 771,248 | 605,038 | 287,799 | 191,355 | 144,255 | 93,123 | 2,092,818 |
| 1905 | 792,682 | 609,677 | 290,206 | 197,484 | 150,494 | 93,435 | 2,133,978 |
| 1906 | 814,139 | 616,748 | 292,609 | 203,499 | 153,652 | 92,898 | 2,173,545 |
| 1907 | 838,913 | 623,683 | 294,959 | 203,076 | 152,159 | 94,690 | 2,212,480 |

* Previously included with New South Wales.

† Details not available.

ENUMERATIONS AND ESTIMATES.

FEMALES.

| Year. | Estimated Population at end of Year | | | | | | |
|-------|-------------------------------------|-----------|---------|----------|----------|-----------|-----------|
| | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
| 1788 | ... | ... | ... | ... | ... | ... | + |
| 1790 | ... | ... | ... | ... | ... | ... | † |
| 1795 | ... | ... | ... | ... | ... | ... | † |
| 1800 | 1,437 | ... | ... | ... | ... | ... | 1,437 |
| 1805 | 2,312 | ... | ... | ... | ... | ... | 2,312 |
| 1810 | 3,981 | ... | ... | ... | ... | ... | 3,981 |
| 1815 | 5,215 | ... | ... | ... | ... | ... | 5,215 |
| 1820 | 9,759 | ... | ... | ... | ... | ... | 9,759 |
| 1825 | 9,004 | ... | ... | ... | ... | 3,213* | 12,217 |
| 1830 | 10,688 | ... | ... | ... | 295 | 6,171 | 17,154 |
| 1835 | 19,355 | ... | ... | ... | 647 | 11,423 | 31,425 |
| 1840 | 41,908 | ... | ... | 6,358 | 877 | 13,959 | 63,102 |
| 1845 | 74,179 | ... | ... | 9,650 | 1,790 | 20,370 | 105,989 |
| 1850 | 111,924 | ... | ... | 27,798 | 2,310 | 24,641 | 166,673 |
| 1855 | 118,179 | 120,843* | ... | 48,544 | 4,294 | 31,282 | 323,142 |
| 1860 | 150,695 | 207,932 | 11,239* | 61,242 | 5,749 | 40,168 | 477,025 |
| 1865 | 185,616 | 269,074 | 33,629 | 77,222 | 7,806 | 43,418 | 616,765 |
| 1870 | 225,871 | 326,695 | 46,051 | 89,652 | 9,624 | 47,369 | 745,262 |
| 1875 | 270,833 | 370,665 | 66,944 | 101,370 | 10,861 | 49,061 | 869,734 |
| 1880 | 336,190 | 408,047 | 87,027 | 128,955 | 12,576 | 54,222 | 1,027,017 |
| 1885 | 425,261 | 455,741 | 129,815 | 146,888 | 15,271 | 61,148 | 1,234,124 |
| 1890 | 510,571 | 538,209 | 168,864 | 152,898 | 19,648 | 68,334 | 1,458,524 |
| 1895 | 587,294 | 577,743 | 194,199 | 171,654 | 30,782 | 74,410 | 1,636,082 |
| 1900 | 644,258 | 594,440 | 219,163 | 177,470 | 69,879 | 83,137 | 1,788,347 |
| 1901 | 654,197 | 601,336 | 224,286 | 179,724 | 75,868 | 84,091 | 1,819,502 |
| 1902 | 664,549 | 603,410 | 227,660 | 180,552 | 83,942 | 85,256 | 1,845,369 |
| 1903 | 674,697 | 603,491 | 230,237 | 181,670 | 90,995 | 86,435 | 1,867,525 |
| 1904 | 686,014 | 605,268 | 233,861 | 181,324 | 98,035 | 87,070 | 1,891,572 |
| 1905 | 699,038 | 608,896 | 237,847 | 180,722 | 104,285 | 87,664 | 1,918,452 |
| 1906 | 712,558 | 615,192 | 242,504 | 180,330 | 108,094 | 87,258 | 1,945,936 |
| 1907 | 730,029 | 624,412 | 246,806 | 184,588 | 109,404 | 89,318 | 1,984,557 |

PERSONS.

| | | | | | | | |
|------|-----------|-----------|---------|---------|---------|---------|-----------|
| 1788 | 859 | ... | ... | ... | ... | ... | 859 |
| 1790 | 2,056 | ... | ... | ... | ... | ... | 2,056 |
| 1795 | 3,466 | ... | ... | ... | ... | ... | 3,466 |
| 1800 | 5,217 | ... | ... | ... | ... | ... | 5,217 |
| 1805 | 7,707 | ... | ... | ... | ... | ... | 7,707 |
| 1810 | 11,566 | ... | ... | ... | ... | ... | 11,566 |
| 1815 | 15,063 | ... | ... | ... | ... | ... | 15,063 |
| 1820 | 33,543 | ... | ... | ... | ... | ... | 33,543 |
| 1825 | 38,313 | ... | ... | ... | ... | 14,192* | 52,505 |
| 1830 | 44,588 | ... | ... | ... | 1,172 | 24,279 | 70,039 |
| 1835 | 71,304 | ... | ... | ... | 1,878 | 40,172 | 113,354 |
| 1840 | 127,468 | ... | ... | 14,630 | 2,311 | 45,999 | 190,408 |
| 1845 | 187,918 | ... | ... | 22,460 | 4,479 | 64,291 | 279,148 |
| 1850 | 266,900 | ... | ... | 63,700 | 5,886 | 68,870 | 405,356 |
| 1855 | 266,001 | 347,305* | ... | 97,387 | 12,605 | 69,962 | 793,260 |
| 1860 | 348,546 | 538,234 | 28,056* | 125,582 | 15,346 | 89,821 | 1,145,585 |
| 1865 | 408,506 | 617,791 | 86,921 | 161,477 | 21,381 | 93,967 | 1,390,043 |
| 1870 | 497,992 | 723,925 | 115,272 | 184,546 | 25,135 | 100,886 | 1,647,756 |
| 1875 | 593,367 | 794,934 | 169,105 | 210,076 | 27,002 | 103,739 | 1,898,223 |
| 1880 | 741,142 | 858,605 | 211,040 | 276,393 | 29,561 | 114,790 | 2,231,531 |
| 1885 | 943,867 | 959,838 | 316,681 | 309,313 | 35,959 | 128,860 | 2,694,518 |
| 1890 | 1,113,275 | 1,133,728 | 392,116 | 318,947 | 48,502 | 144,787 | 3,151,355 |
| 1895 | 1,255,503 | 1,185,676 | 443,064 | 351,968 | 100,515 | 154,895 | 3,491,621 |
| 1900 | 1,360,305 | 1,196,213 | 493,847 | 362,107 | 179,967 | 172,900 | 3,765,339 |
| 1901 | 1,375,240 | 1,210,882 | 505,944 | 365,731 | 194,109 | 174,380 | 3,826,286 |
| 1902 | 1,403,332 | 1,211,448 | 510,855 | 366,658 | 213,328 | 177,458 | 3,883,079 |
| 1903 | 1,427,324 | 1,208,855 | 515,534 | 368,821 | 226,955 | 179,480 | 3,926,969 |
| 1904 | 1,457,262 | 1,210,306 | 521,660 | 372,679 | 242,290 | 180,193 | 3,984,390 |
| 1905 | 1,491,720 | 1,218,573 | 528,053 | 378,206 | 254,779 | 181,099 | 4,052,430 |
| 1906 | 1,526,697 | 1,231,940 | 535,113 | 383,829 | 261,746 | 180,156 | 4,119,481 |
| 1907 | 1,568,942 | 1,248,095 | 541,765 | 392,664 | 261,563 | 184,008 | 4,197,037 |

* Previously included with New South Wales.

† Details not available.

The tables on the two preceding pages, shewing the quinquennial figures for the male, female, and total population of each State and the Commonwealth, give sufficient indication, for general purposes, of its progress. A reference to the diagrams given hereinafter (in this section), on which the graphs shew the particulars for *each* year, is also desirable. The characteristics of the fluctuations of each element, or of the totals, will be more readily perceived by reference to the graphs than they possibly can by reference to these numerical tables. The earliest date for which particulars as to sex were available was 1796. The figures from 1788 to 1825 inclusive shew the results of the musters taken in those years; those for subsequent years are founded upon estimates made at the end of each year on the basis of the Census results and the annual returns of births and deaths and immigration and emigration.

§ 9. Principal Results of Census of 1901.

1. **Census Results.**—In the first issue of the Official Year Book tables are given shewing in some detail particulars for the several States under the headings of Ages, Birthplaces, Occupations, Religions, and Conjugal Condition. Similar information in a very condensed form is given hereunder. For fuller particulars reference should be made to the first issue.

2. **Ages.**—The numbers of persons of each sex in some of the more important age groups enumerated in the several States of the Commonwealth at the Census of 31st March, 1901, are as follows:—

AGE DISTRIBUTION OF AUSTRALIAN POPULATION ON 31st MARCH, 1901.

| Age Group. | N.S.W. | Victoria. | Qsld. | S. Aust. | W. Aust. | Tas. | Total C'wealth. |
|------------------|----------------|----------------|----------------|----------------|----------------|---------------|------------------|
| MALES. | | | | | | | |
| Under 5 years | 80,308 | 66,792 | 31,307 | 20,260 | 10,441 | 10,702 | 219,810 |
| 5 and under 15 | 165,771 | 139,419 | 60,913 | 44,949 | 16,396 | 21,809 | 449,257 |
| 15 " 21 | 83,177 | 69,311 | 28,514 | 23,625 | 9,045 | 11,032 | 224,704 |
| 21 " 45 | 255,828 | 216,062 | 106,535 | 63,123 | 61,714 | 31,850 | 735,112 |
| 45 " 65 | 95,320 | 72,772 | 37,997 | 25,128 | 12,751 | 10,282 | 254,250 |
| 65 and upwards | 27,038 | 36,813 | 7,916 | 7,337 | 2,259 | 3,829 | 85,192 |
| Not stated ... | 2,563 | 2,551 | 3,821 | 279 | 269 | 120 | 9,603 |
| Total ... | 710,005 | 603,720 | 277,003 | 184,701 | 112,875 | 89,624 | 1,977,928 |

| | | | | | | | |
|------------------|----------------|----------------|----------------|----------------|---------------|---------------|------------------|
| FEMALES. | | | | | | | |
| Under 5 years | 78,553 | 65,163 | 30,687 | 19,817 | 10,234 | 10,163 | 214,617 |
| 5 and under 15 | 162,043 | 137,111 | 59,504 | 44,211 | 16,176 | 21,351 | 440,396 |
| 15 " 21 | 84,193 | 71,341 | 27,160 | 23,889 | 7,127 | 10,872 | 224,582 |
| 21 " 45 | 229,130 | 223,895 | 75,475 | 61,243 | 30,689 | 28,161 | 648,593 |
| 45 " 65 | 70,896 | 68,837 | 22,319 | 21,421 | 5,914 | 9,083 | 198,470 |
| 65 and upwards | 19,535 | 29,247 | 4,957 | 7,601 | 1,063 | 3,194 | 65,597 |
| Not stated ... | 491 | 1,756 | 1,024 | 274 | 46 | 27 | 3,618 |
| Total ... | 644,841 | 597,350 | 221,126 | 178,456 | 71,249 | 82,851 | 1,795,873 |

AGE DISTRIBUTION OF AUSTRALIAN POPULATION.—Continued.

| Age Group. | N.S.W. | Victoria. | Qsld. | S. Aust. | W. Aust. | Tas. | Total C'wealth. |
|----------------|-----------|-----------|---------|----------|----------|---------|-----------------|
| PERSONS. | | | | | | | |
| Under 5 years | 158,861 | 131,955 | 61,994 | 40,077 | 20,675 | 20,865 | 434,427 |
| 5 and under 15 | 327,814 | 276,530 | 120,417 | 89,160 | 32,572 | 43,160 | 889,653 |
| 15 „ 21 | 167,370 | 140,652 | 55,674 | 47,514 | 16,172 | 21,904 | 449,286 |
| 21 „ 45 | 484,958 | 439,957 | 182,010 | 124,366 | 92,403 | 60,011 | 1,383,705 |
| 45 „ 65 | 166,216 | 141,609 | 60,316 | 46,549 | 18,665 | 19,365 | 452,720 |
| 65 and upwards | 46,573 | 66,060 | 12,873 | 14,938 | 3,322 | 7,023 | 150,789 |
| Not stated ... | 3,054 | 4,307 | 4,845 | 553 | 315 | 147 | 13,221 |
| Total ... | 1,354,846 | 1,201,070 | 498,129 | 363,157 | 184,124 | 172,475 | 3,773,801 |

3. **Birthplaces.**—In the next table is given a summary of the populations of the several States of the Commonwealth on 31st March, 1901, classified according to sex and birthplace, the birthplaces being grouped under the five continental divisions of the globe, with two additional headings for those born in Polynesia, and those born at sea. Of the total population of 3,773,801 those of unspecified birthplace numbered only 7922, or little more than 2 per thousand :—

AUSTRALIAN POPULATION, ON 31st MARCH, 1901,
CLASSIFIED ACCORDING TO BIRTHPLACE.

| Birthplace. | N.S.W. | Victoria. | Qsld. | S. Aust. | W. Aust. | Tas. | Total C'wealth. |
|-----------------|---------|-----------|---------|----------|----------|--------|-----------------|
| MALES. | | | | | | | |
| Australasia ... | 546,311 | 463,736 | 168,261 | 143,108 | 73,315 | 75,930 | 1,470,661 |
| Europe ... | 143,553 | 125,364 | 84,918 | 36,348 | 33,632 | 12,262 | 436,077 |
| Asia ... | 13,221 | 8,019 | 13,291 | 4,099 | 4,416 | 726 | 43,772 |
| Africa ... | 642 | 503 | 257 | 129 | 160 | 51 | 1,742 |
| America ... | 3,486 | 2,376 | 1,267 | 570 | 918 | 272 | 8,889 |
| Polynesia ... | 783 | 90 | 8,446 | 16 | 52 | 11 | 9,398 |
| At Sea ... | 1,100 | 782 | 336 | 259 | 182 | 88 | 2,747 |
| Unspecified ... | 909 | 2,850 | 227 | 172 | 200 | 284 | 4,642 |
| Total ... | 710,005 | 603,720 | 277,003 | 184,701 | 112,875 | 89,624 | 1,977,928 |
| FEMALES. | | | | | | | |
| Australasia ... | 543,432 | 486,114 | 156,746 | 147,596 | 56,341 | 73,201 | 1,463,430 |
| Europe ... | 96,999 | 105,555 | 62,415 | 29,840 | 13,995 | 8,951 | 317,755 |
| Asia ... | 987 | 774 | 587 | 277 | 394 | 223 | 3,242 |
| Africa ... | 344 | 423 | 121 | 106 | 83 | 50 | 1,127 |
| America ... | 1,327 | 1,283 | 421 | 241 | 233 | 113 | 3,618 |
| Polynesia ... | 356 | 113 | 431 | 23 | 26 | 16 | 965 |
| At Sea ... | 867 | 782 | 298 | 280 | 135 | 94 | 2,456 |
| Unspecified ... | 529 | 2,306 | 107 | 93 | 42 | 203 | 3,280 |
| Total ... | 644,841 | 597,350 | 221,126 | 178,456 | 71,249 | 82,851 | 1,795,873 |

AUSTRALIAN POPULATION—Continued.

| Birthplace. | N.S.W. | Victoria. | Qsld. | S. Aust. | W. Aust. | Tas. | Total C'wealth. |
|-----------------|-----------|-----------|---------|----------|----------|---------|--------------------|
| PERSONS. | | | | | | | |
| Australasia ... | 1,089,743 | 949,850 | 325,007 | 290,704 | 129,656 | 149,131 | 2,934,091 |
| Europe ... | 240,552 | 230,919 | 147,333 | 66,188 | 47,627 | 21,213 | 753,832 |
| Asia ... | 14,208 | 8,793 | 13,878 | 4,376 | 4,810 | 949 | 47,014 |
| Africa ... | 986 | 926 | 378 | 235 | 243 | 101 | 2,869 |
| America ... | 4,813 | 3,659 | 1,688 | 811 | 1,151 | 385 | 12,507 |
| Polynesia ... | 1,139 | 203 | 8,877 | 39 | 78 | 27 | 10,363 |
| At Sea ... | 1,967 | 1,564 | 634 | 539 | 317 | 182 | 5,203 |
| Unspecified ... | 1,438 | 5,156 | 334 | 265 | 242 | 487 | 7,922 |
| Total ... | 1,354,846 | 1,201,070 | 498,129 | 363,157 | 184,124 | 172,475 | 3,773,801 |

4. **Occupations.**—In the compilation of the results of the Census of 31st March, 1901, the populations of the several States were tabulated according to occupation in the following classes:—

(i.) *Professional.* Embracing all persons not otherwise classed, mainly engaged in the government and defence of the country, and in satisfying the moral, intellectual, and social wants of its inhabitants.

(ii.) *Domestic.* Embracing all persons engaged in the supply of board and lodging, and in rendering personal services for which remuneration is usually paid.

(iii.) *Commercial.* Embracing all persons directly connected with the hire, sale, transfer, distribution, storage, and security of property and materials.

(iv.) *Transport and Communication.* Embracing all persons engaged in the transport of persons or goods, or in effecting communication.

(v.) *Industrial.* Embracing all persons not otherwise classed who are principally engaged in various works of utility, or in specialities connected with the manufacture, construction, modification, or alteration of materials so as to render them more available for the various uses of man, but excluding, as far as possible, all who are mainly or solely engaged in the service of commercial interchange.

(vi.) *Agricultural, Pastoral, Mineral, and other Primary Producers.* Embracing all persons mainly engaged in the cultivation or acquisition of food products, and in obtaining other raw materials from natural sources.

(vii.) *Indefinite.* Embracing all persons who derive incomes from services rendered, but the direction of which services cannot be exactly determined.

(viii.) *Dependents.* Embracing all persons dependent upon relatives or natural guardians, including wives, children, and others, not otherwise engaged in pursuits for which remuneration is paid, and all persons depending upon private charity; or whose support is a burthen on the public revenue.

Particulars concerning the number contained in each of these classes are given in the table hereunder:—

AUSTRALIAN POPULATION ON 31st MARCH, 1901,

CLASSIFIED ACCORDING TO OCCUPATION.

| Occupation. | N.S.W. | Vic. | Qld. | S. Aus. | W. Aus. | Tas. | Total C'wth. |
|---------------------------------------|----------------|----------------|----------------|----------------|----------------|---------------|------------------|
| MALES. | | | | | | | |
| Class. | | | | | | | |
| I.—Professional | 26,855 | 20,380 | 9,122 | 5,372 | 5,103 | 3,067 | 69,899 |
| II.—Domestic | 20,128 | 13,128 | 7,791 | 3,452 | 4,373 | 1,463 | 50,335 |
| III.—Commercial | 67,097 | 64,632 | 22,958 | 17,080 | 10,280 | 6,097 | 188,144 |
| IV.—Transport and Communication | 42,822 | 30,318 | 17,745 | 12,591 | 10,736 | 4,518 | 118,730 |
| V.—Industrial | 122,692 | 113,507 | 44,065 | 34,255 | 19,602 | 16,475 | 350,596 |
| VI.—Primary Producers | 168,212 | 140,112 | 79,421 | 45,898 | 35,081 | 25,439 | 494,163 |
| VII.—Indefinite (of independ't means) | 3,597 | 7,242 | 740 | 180 | 207 | 301 | 12,267 |
| VIII.—Dependents | 256,631 | 210,923 | 94,084 | 64,094 | 27,229 | 32,039 | 685,002 |
| Unspecified | 1,968 | 3,479 | 1,077 | 1,779 | 264 | 325 | 8,792 |
| Total | 710,005 | 603,720 | 277,003 | 184,701 | 112,375 | 89,624 | 1,977,928 |

| | | | | | | | |
|---------------------------------------|----------------|----------------|----------------|----------------|---------------|---------------|------------------|
| FEMALES. | | | | | | | |
| I.—Professional | 14,529 | 14,841 | 4,486 | 3,485 | 1,964 | 1,930 | 41,235 |
| II.—Domestic | 52,690 | 53,676 | 16,402 | 14,529 | 6,990 | 6,474 | 150,701 |
| III.—Commercial | 10,567 | 14,415 | 3,524 | 3,085 | 1,523 | 1,400 | 34,514 |
| IV.—Transport and Communication | 1,045 | 1,198 | 341 | 259 | 256 | 330 | 3,429 |
| V.—Industrial | 23,966 | 32,706 | 7,407 | 6,978 | 2,208 | 2,275 | 75,570 |
| VI.—Primary Producers | 4,642 | 24,998 | 3,090 | 3,263 | 491 | 2,460 | 38,944 |
| VII.—Indefinite (of independ't means) | 5,927 | 2,824 | 691 | 213 | 117 | 357 | 10,129 |
| VIII.—Dependents | 531,164 | 451,284 | 184,344 | 145,214 | 57,571 | 66,942 | 1,436,519 |
| Unspecified | 281 | 1,403 | 841 | 1,430 | 189 | 683 | 4,932 |
| Total | 644,841 | 597,350 | 221,126 | 178,456 | 71,249 | 82,851 | 1,795,873 |

| | | | | | | | |
|---------------------------------------|------------------|------------------|----------------|----------------|----------------|----------------|------------------|
| PERSONS. | | | | | | | |
| I.—Professional | 41,394 | 35,221 | 13,608 | 8,857 | 7,067 | 4,997 | 111,134 |
| II.—Domestic | 72,818 | 66,804 | 24,193 | 17,981 | 11,303 | 7,937 | 201,036 |
| III.—Commercial | 77,664 | 79,047 | 26,482 | 20,165 | 11,803 | 7,497 | 222,658 |
| IV.—Transport and Communication | 43,867 | 31,516 | 18,086 | 12,850 | 10,932 | 4,848 | 122,159 |
| V.—Industrial | 146,688 | 146,213 | 51,472 | 41,233 | 21,810 | 18,750 | 426,166 |
| VI.—Primary Producers | 172,854 | 165,110 | 82,511 | 49,161 | 35,572 | 27,899 | 533,107 |
| VII.—Indefinite (of independ't means) | 9,524 | 10,066 | 1,431 | 393 | 324 | 658 | 22,396 |
| VIII.—Dependents | 787,798 | 662,206 | 278,428 | 209,308 | 84,800 | 98,981 | 2,121,521 |
| Unspecified | 2,249 | 4,687 | 1,918 | 3,209 | 453 | 906 | 13,624 |
| Total | 1,354,846 | 1,201,070 | 498,129 | 363,157 | 184,124 | 172,475 | 3,773,801 |

5. Religions.—In the Acts under which the Census of 1901 was taken in the several States, persons enumerated were required under penalty to furnish replies to all the inquiries contained in the schedule, with the exception of that relating to religion. In this case, any person objecting to give such particulars was allowed to insert the words "Object to state" in the column provided for religion. Of the total population of 3,773,801 there were 42,131, or 1.12 per cent., who availed themselves of this option. There were also 14,060, or 0.37 per cent., concerning whom no particulars as to religion were obtained.

Of the remainder, 3,626,449, or 97.55 per cent., were members of the various Christian denominations, 53,371 were members of non-Christian religions, 31,011 were of indefinite religious belief, and 6779 stated that they were of no religion.

Amongst the Christian denominations, that most numerous represented was the Church of England, with 1,497,576 adherents, the next in order being the Roman Catholic (850,620), the Methodist (504,101), the Presbyterian (426,105), the Baptist (89,338), the Lutheran (75,021), the Congregational (73,561), and the Salvation Army (31,100).

The principal non-Christian religions represented in Australia were the Hebrew, Mahomedan, Buddhist and Confucian, the members of the Hebrew congregation totalling 15,239.

Those included under the head of "Indefinite" in the attached table consist mainly of persons who stated that they were "Freethinkers" or "Agnostics," or returned themselves as being of "No Denomination," while under the head of "No Religion" are given those who were so returned on the schedules as well as a small number who stated that they were "Atheists."

AUSTRALIAN POPULATION ON 31st MARCH, 1901,

CLASSIFIED ACCORDING TO RELIGION.

| Religion. | N.S.W. | Victoria. | Qsland. | Sth. Aust. | W. Aust. | Tas. | C'wealth. |
|--------------------|------------------|------------------|----------------|----------------|----------------|----------------|------------------|
| MALES. | | | | | | | |
| Christian ... | 678,845 | 577,191 | 250,922 | 171,267 | 102,564 | 86,284 | 1,867,073 |
| Non-Christian ... | 11,043 | 8,577 | 17,481 | 4,030 | 3,042 | 460 | 44,633 |
| Indefinite ... | 6,451 | 5,805 | 3,112 | 4,096 | 2,864 | 627 | 22,955 |
| No Religion ... | 1,424 | 1,920 | 612 | 270 | 1,138 | 49 | 5,413 |
| Object to state... | 9,058 | 6,997 | 3,424 | 4,759 | 2,429 | 1,776 | 28,443 |
| Unspecified ... | 3,184 | 3,230 | 1,452 | 279 | 838 | 428 | 9,411 |
| Total ... | 710,005 | 603,720 | 277,003 | 184,701 | 112,375 | 89,624 | 1,977,928 |
| FEMALES. | | | | | | | |
| Christian ... | 634,656 | 584,883 | 216,684 | 172,900 | 68,927 | 81,326 | 1,759,376 |
| Non-Christian ... | 3,439 | 3,005 | 942 | 579 | 664 | 109 | 8,738 |
| Indefinite ... | 1,665 | 2,755 | 948 | 1,883 | 574 | 231 | 8,056 |
| No Religion ... | 289 | 550 | 160 | 86 | 272 | 9 | 1,366 |
| Object to state... | 4,010 | 3,830 | 1,366 | 2,734 | 624 | 1,124 | 13,688 |
| Unspecified ... | 782 | 2,327 | 1,026 | 274 | 188 | 52 | 4,649 |
| Total ... | 644,841 | 597,350 | 221,126 | 178,456 | 71,249 | 82,851 | 1,795,873 |
| PERSONS. | | | | | | | |
| Christian ... | 1,313,501 | 1,162,074 | 467,606 | 344,167 | 171,491 | 167,610 | 3,626,449 |
| Non-Christian ... | 14,482 | 11,582 | 18,423 | 4,609 | 3,706 | 569 | 53,371 |
| Indefinite ... | 8,116 | 8,560 | 4,060 | 5,979 | 3,438 | 858 | 31,011 |
| No Religion ... | 1,713 | 2,470 | 772 | 356 | 1,410 | 58 | 6,779 |
| Object to state... | 13,068 | 10,827 | 4,790 | 7,493 | 3,053 | 2,900 | 42,131 |
| Unspecified ... | 3,966 | 5,557 | 2,478 | 553 | 1,026 | 480 | 14,060 |
| Total ... | 1,354,846 | 1,201,070 | 498,129 | 363,157 | 184,124 | 172,475 | 3,773,801 |

6. **Conjugal Condition.**—In the following tables are given summaries of the particulars concerning the population of the several States on 31st March, 1901, classified according to age and conjugal condition. In the case of South Australia divorced persons and persons whose conjugal condition was not stated were included under other heads. The figures given in these tables are exclusive of 1553 half-castes in Queensland, and 553 in South Australia, whose ages and conjugal condition were unspecified:—

AUSTRALIAN POPULATION ON 31st MARCH, 1901,
CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.

(a) MALES.

| Age. | N.S.W. | Victoria. | Q'land. | Sth. Aust. | W. Aust. | Tas. | Total C'wealth. |
|-----------------------|----------------|----------------|----------------|----------------|---------------|---------------|--------------------|
| MARRIED. | | | | | | | |
| Under 15 ... | 2 | ... | ... | ... | ... | ... | 2 |
| 15 and under 21 ... | 477 | 245 | 110 | 141 | 55 | 55 | 1,083 |
| 21 " 45 ... | 123,206 | 104,080 | 44,991 | 30,839 | 23,370 | 15,642 | 342,128 |
| 45 " 60 ... | 54,735 | 42,118 | 18,921 | 16,115 | 6,604 | 6,640 | 145,133 |
| 60 and upwards ... | 24,312 | 29,477 | 8,088 | 7,659 | 2,005 | 3,456 | 74,997 |
| Unspecified adults | 190 | 240 | 103 | ... | 29 | 14 | 576 |
| Total ... | 202,922 | 176,160 | 72,213 | 54,754 | 32,063 | 25,807 | 563,919 |
| NEVER MARRIED. | | | | | | | |
| Under 15 ... | 246,354 | 206,713 | 92,227 | 65,209 | 26,845 | 32,511 | 669,859 |
| 15 and under 21 ... | 82,689 | 69,062 | 28,394 | 23,481 | 8,987 | 10,976 | 223,589 |
| 21 " 45 ... | 127,451 | 107,472 | 59,745 | 31,304 | 37,026 | 15,503 | 378,501 |
| 45 " 60 ... | 17,291 | 10,786 | 9,928 | 3,534 | 3,342 | 1,166 | 46,047 |
| 60 and upwards ... | 9,967 | 10,048 | 3,557 | 1,038 | 1,147 | 716 | 26,473 |
| Unspecified adults | 498 | 581 | 2,788 | ... | 109 | 45 | 4,021 |
| Total ... | 484,250 | 404,662 | 196,639 | 124,566 | 77,456 | 60,917 | 1,348,490 |
| WIDOWED. | | | | | | | |
| Under 15 ... | ... | ... | ... | ... | ... | ... | ... |
| 15 and under 21 ... | 7 | 4 | 5 | 3 | 3 | 1 | 23 |
| 21 " 45 ... | 4,034 | 3,462 | 1,514 | 980 | 1,086 | 539 | 11,615 |
| 45 " 60 ... | 6,120 | 4,524 | 2,276 | 1,487 | 981 | 682 | 16,070 |
| 60 and upwards ... | 9,252 | 11,919 | 3,001 | 2,632 | 854 | 1,336 | 28,994 |
| Unspecified adults | 38 | 64 | 16 | ... | 8 | 2 | 128 |
| Total ... | 19,451 | 19,973 | 6,812 | 5,102 | 2,932 | 2,560 | 56,830 |
| DIVORCED. | | | | | | | |
| Under 15 ... | ... | ... | ... | ... | ... | ... | ... |
| 15 and under 21 ... | ... | ... | ... | ... | ... | ... | ... |
| 21 " 45 ... | 427 | 151 | 70 | ... | 81 | 24 | 753 |
| 45 " 60 ... | 214 | 91 | 18 | ... | 26 | 10 | 359 |
| 60 and upwards ... | 50 | 45 | 13 | ... | 4 | 1 | 113 |
| Unspecified adults | 1 | 2 | ... | ... | ... | ... | 3 |
| Total ... | 692 | 289 | 101 | * | 111 | 35 | 1,228 |

AUSTRALIAN POPULATION—Continued.

| Age. | N.S.W. | Victoria. | Q'land. | Sth. Aust. | W. Aust. | Tas. | Total C'wealth. |
|---------------------|--------------|--------------|------------|------------|------------|------------|--------------------|
| NOT STATED. | | | | | | | |
| Under 15 ... | ... | ... | ... | ... | ... | ... | ... |
| 15 and under 21 ... | 4 | ... | 5 | ... | ... | ... | 9 |
| 21 „ 45 ... | 710 | 897 | 215 | ... | 151 | 142 | 2,115 |
| 45 „ 60 ... | 227 | 281 | 71 | ... | 31 | 55 | 665 |
| 60 and upwards ... | 190 | 296 | 40 | ... | 16 | 49 | 591 |
| Unspecified adults | 1,559 | 1,162 | 134 | ... | 115 | 59 | 3,029 |
| Total ... | 2,690 | 2,636 | 465 | * | 313 | 305 | 6,409 |

| TOTAL. | | | | | | | |
|---------------------|----------------|----------------|-----------------|-----------------|----------------|---------------|------------------|
| Under 15 ... | 246,356 | 206,713 | 92,227 | 65,209 | 26,845 | 32,511 | 669,861 |
| 15 and under 21 ... | 83,177 | 69,311 | 28,514 | 23,625 | 9,045 | 11,032 | 224,704 |
| 21 „ 45 ... | 255,828 | 216,062 | 106,535 | 63,123 | 61,714 | 31,850 | 735,112 |
| 45 „ 60 ... | 78,587 | 57,800 | 31,214 | 21,136 | 10,984 | 8,553 | 208,274 |
| 60 and upwards ... | 43,771 | 51,785 | 14,699 | 11,329 | 4,026 | 5,558 | 131,168 |
| Unspecified adults | 2,286 | 2,049 | 3,041 | ... | 261 | 120 | 7,757 |
| Total ... | 710,005 | 603,720 | †276,230 | †184,422 | 112,875 | 89,624 | 1,976,876 |

* Included under other heads. † Exclusive of 773 half-castes, Queensland; 279 South Australia.

(b) FEMALES.

| Age. | N.S.W. | Victoria. | Q'land. | Sth. Aust. | W. Aust. | Tas. | Total C'wealth. |
|---------------------|----------------|----------------|---------------|---------------|---------------|---------------|--------------------|
| MARRIED. | | | | | | | |
| Under 15 ... | 2 | ... | ... | ... | ... | ... | 2 |
| 15 and under 21 ... | 4,837 | 2,245 | 1,592 | 815 | 720 | 633 | 10,842 |
| 21 „ 45 ... | 144,408 | 125,585 | 51,308 | 36,280 | 21,797 | 17,578 | 396,956 |
| 45 „ 60 ... | 42,981 | 36,613 | 13,990 | 12,989 | 3,669 | 5,240 | 115,482 |
| 60 and upwards ... | 13,757 | 18,058 | 4,463 | 5,257 | 843 | 1,998 | 44,376 |
| Unspecified adults | 201 | 340 | 116 | ... | 14 | 11 | 682 |
| Total ... | 206,186 | 182,841 | 71,469 | 55,341 | 27,043 | 25,460 | 568,340 |

NEVER MARRIED.

| | | | | | | | |
|---------------------|----------------|----------------|----------------|----------------|---------------|---------------|------------------|
| Under 15 ... | 240,638 | 202,650 | 90,205 | 64,028 | 26,425 | 31,514 | 655,460 |
| 15 and under 21 ... | 79,266 | 69,087 | 25,543 | 23,060 | 6,403 | 10,234 | 213,593 |
| 21 „ 45 ... | 76,394 | 90,379 | 21,616 | 23,118 | 7,804 | 9,729 | 229,040 |
| 45 „ 60 ... | 4,437 | 5,396 | 816 | 1,429 | 306 | 788 | 13,163 |
| 60 and upwards ... | 1,447 | 2,102 | 267 | 496 | 58 | 301 | 4,671 |
| Unspecified adults | 144 | 312 | 77 | ... | 8 | 5 | 546 |
| Total ... | 402,326 | 369,926 | 138,524 | 112,122 | 41,004 | 52,571 | 1,116,473 |

AUSTRALIAN POPULATION—Continued.

| Age. | N.S.W. | Victoria. | Q'land. | Sth. Aust. | W. Aust. | Tas. | Total C'wealth. |
|---------------------|---------|-----------|---------|------------|----------|--------|-----------------|
| WIDOWED. | | | | | | | |
| Under 15 ... | ... | ... | ... | ... | ... | ... | ... |
| 15 and under 21 ... | 30 | 7 | 11 | 14 | 1 | 3 | 66 |
| 21 „ 45 ... | 7,558 | 7,309 | 2,492 | 1,845 | 1,014 | 788 | 21,006 |
| 45 „ 60 ... | 11,133 | 12,367 | 3,536 | 2,986 | 1,027 | 1,296 | 32,345 |
| 60 and upwards ... | 16,429 | 23,211 | 4,167 | 5,874 | 1,066 | 2,584 | 53,331 |
| Unspecified adults | 57 | 127 | 12 | ... | 4 | 1 | 201 |
| Total ... | 35,207 | 43,021 | 10,218 | 10,719 | 3,112 | 4,672 | 106,949 |
| DIVORCED. | | | | | | | |
| Under 15 ... | ... | ... | ... | ... | ... | ... | ... |
| 15 and under 21 ... | 4 | 2 | 1 | ... | ... | ... | 7 |
| 21 „ 45 ... | 580 | 252 | 33 | ... | 39 | 18 | 922 |
| 45 „ 60 ... | 111 | 59 | 10 | ... | 3 | 3 | 186 |
| 60 and upwards ... | 13 | 13 | ... | ... | ... | 1 | 27 |
| Unspecified adults | ... | 5 | ... | ... | ... | ... | 5 |
| Total ... | 708 | 331 | 44 | * | 42 | 22 | 1,147 |
| NOT STATED. | | | | | | | |
| Under 15 ... | ... | ... | ... | ... | ... | ... | ... |
| 15 and under 21 ... | 56 | ... | 13 | ... | 3 | 2 | 74 |
| 21 „ 45 ... | 190 | 370 | 26 | ... | 35 | 48 | 669 |
| 45 „ 60 ... | 42 | 114 | 10 | ... | 1 | 31 | 198 |
| 60 and upwards ... | 81 | 151 | 17 | ... | 4 | 35 | 288 |
| Unspecified adults | 45 | 596 | 45 | ... | 5 | 10 | 701 |
| Total ... | 414 | 1,231 | 111 | * | 48 | 126 | 1,930 |
| TOTAL. | | | | | | | |
| Under 15 ... | 240,640 | 202,650 | 90,205 | 64,028 | 26,425 | 31,514 | 655,462 |
| 15 and under 21 ... | 84,193 | 71,341 | 27,160 | 23,889 | 7,127 | 10,872 | 224,582 |
| 21 „ 45 ... | 229,130 | 223,895 | 75,475 | 61,243 | 30,689 | 28,161 | 648,593 |
| 45 „ 60 ... | 58,704 | 54,549 | 18,362 | 17,395 | 5,006 | 7,358 | 161,374 |
| 60 and upwards ... | 31,727 | 43,535 | 8,914 | 11,627 | 1,971 | 4,919 | 102,693 |
| Unspecified adults | 447 | 1,380 | 250 | ... | 31 | 27 | 2,135 |
| Total ... | 644,841 | 597,350 | 220,366 | 178,182 | 71,249 | 82,851 | 1,794,839 |

* Included under other heads. † Exclusive of 760 half-castes, Queensland; 274 South Australia.

§ 10. Naturalisation.

1. **The Commonwealth Act.**—The Commonwealth Constitution empowers the Commonwealth Parliament to make laws with respect to “Naturalisation and Aliens,” a power which was exercised when the “Naturalisation Act of 1903” was passed. Assented to on 13th October of that year, this Act came into force on 1st January, 1904, in accordance with a proclamation by *Gazette* of 14th November, 1903.

Prior to the passing of this Act the issue of certificates of naturalisation had been a function of the State Governments, carried out under Acts of the several State Legislatures, which, however, did not differ materially from each other, and furnished the basis on which the Commonwealth Act was drafted. From 1st January, 1904, when the Act became operative, the right to issue certificates of naturalisation in the Commonwealth has been vested exclusively in the Federal Government, but all certificates or letters of naturalisation issued under the several State Acts prior to that date entitle the recipients to be deemed to be naturalised under the Commonwealth Act.

The grant of a certificate of naturalisation entitles the recipient within the limits of the Commonwealth to all the rights and privileges, and renders him subject to all the obligations, of a natural-born British subject, with the exception that where, by any Commonwealth or State Constitution or Act, a distinction is made between natural-born British subjects and naturalised persons, such distinction shall hold good in the case of all persons naturalised under the Commonwealth Act.

Applications for certificate of naturalisation must be made to the Governor-General, the qualifications required in an applicant being :—

- (i.) That he is not a British subject.
- (ii.) That he is not an aboriginal native of Asia, Africa, or the Islands of the Pacific, excepting New Zealand.
- (iii.) That he intends to settle in the Commonwealth.
- (iv.) (a) That he has resided in Australia continuously for two years immediately preceding naturalisation ; or
(b) That he has obtained in the United Kingdom a certificate or letters of naturalisation.

An applicant who has already obtained a certificate or letters of naturalisation in the United Kingdom is required to furnish, in support of his application—

- (i.) His certificate or letters of naturalisation.
- (ii.) His statutory declaration—
 - (a) That he is the person named therein.
 - (b) That he obtained the certificate or letters without fraud or intentional false statement.
 - (c) That the signature and seal thereto are, to the best of his knowledge and belief, genuine.
 - (d) That he intends to settle in the Commonwealth.

If the applicant is not already naturalised in the United Kingdom the particulars which he is required to furnish in support of his application are as follows :—

- (i.) His own statutory declaration stating—
 - (a) Name ; (b) Age ; (c) Birthplace ; (d) Occupation ; (e) Residence ; (f) Length of residence in Australia ; (g) Intention to settle in the Commonwealth.
- (ii.) A certificate signed by a Justice of the Peace, a postmaster, a teacher of a State school, or an officer of police, that the applicant is known to him and is of good repute.

In connection with any application for naturalisation, the Governor-General in Council is authorised to grant or withhold a certificate as he thinks most conducive to the public good, but the issue of a certificate to any person who is not already naturalised in the United Kingdom is not admissible until the applicant has taken an oath or affirmation of allegiance. The grant of a certificate is made free of charge.

In addition to naturalisation by grant of certificate, the Act makes provision for—

- (i.) Naturalisation by marriage.
- (ii.) Naturalisation by residence with naturalised parent.

The former relates to the case of a woman who is not herself a British subject, but is married to a British subject; the latter to that of an infant who is not a natural-born British subject, but who has resided at any time in Australia with a father or mother who is a naturalised British subject. In each instance the person concerned is deemed to be naturalised under the Commonwealth Act.

The administration of the Act is carried out by the Department of External Affairs, and the Governor-General is authorised to make such regulations as are necessary or convenient for giving effect to the Act. Up to the present, however, no such regulations have been issued.

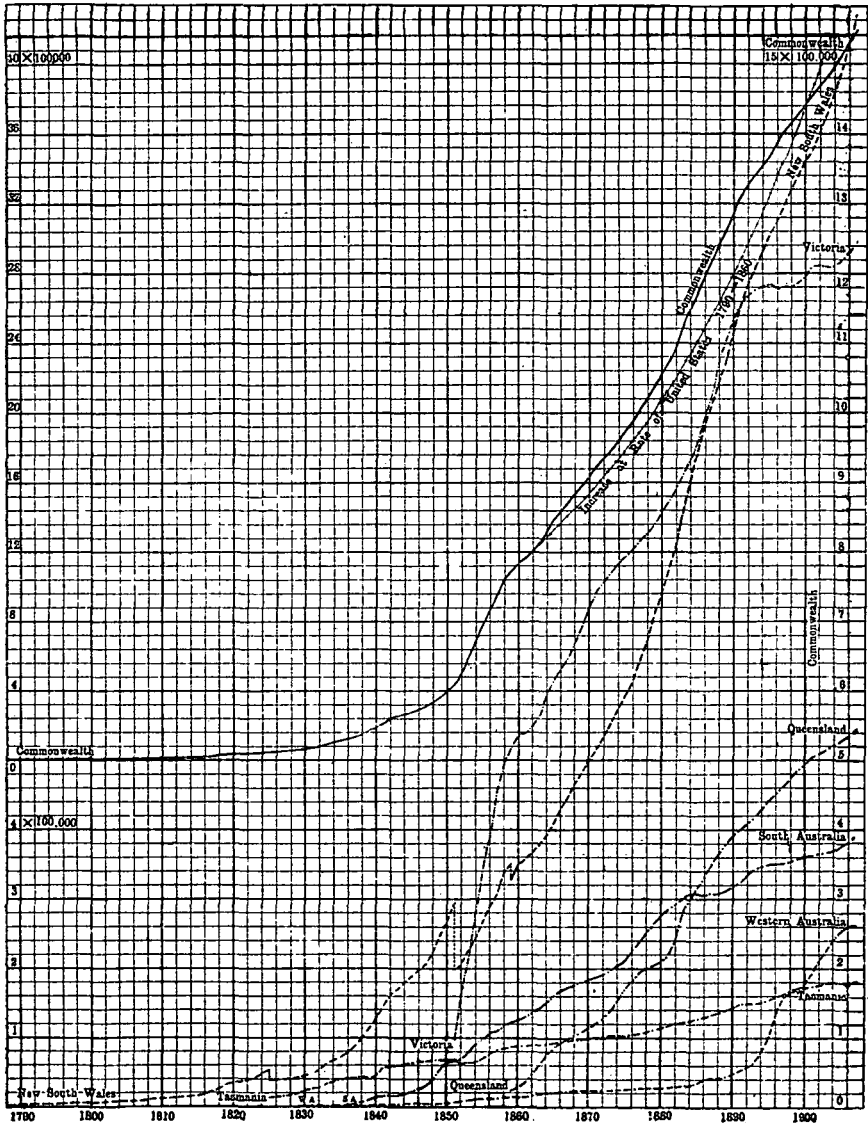
2. **Statistics of Naturalisation.**—Particulars relative to the nationalities of the recipients of certificates of naturalisation issued under the Act during each of the four years 1904 to 1907, and to the countries from which such recipients had come, are shewn in the following table. Corresponding particulars as to certificates issued under the State Acts during the years 1901 to 1903 are not available in such detail as to admit of comparison:—

COMMONWEALTH CERTIFICATES GRANTED, 1904 to 1907.

| Nationalities of Recipients. | No. of Certificates Granted. | | | | Countries from which Recipients of Commonwealth Certificates had come. | No. of Certificates Granted. | | | |
|------------------------------|------------------------------|--------------|--------------|--------------|--|------------------------------|--------------|--------------|--------------|
| | 1904. | 1905. | 1906. | 1907. | | 1904. | 1905. | 1906. | 1907. |
| German ... | 687 | 379 | 446 | 365 | Germany ... | 502 | 318 | 360 | 296 |
| Swedish ... | 311 | 120 | 144 | 137 | Great Britain ... | 567 | 213 | 231 | 209 |
| Italian ... | 193 | 103 | 95 | 98 | Italy ... | 166 | 97 | 82 | 82 |
| Danish ... | 145 | 82 | 92 | 84 | America(North) ... | 165 | 51 | 78 | 71 |
| Russian ... | 232 | 77 | 89 | 66 | Sweden ... | 86 | 42 | 64 | 51 |
| Norwegian ... | 158 | 69 | 73 | 59 | Denmark ... | 73 | 47 | 55 | 44 |
| Greek ... | 76 | 61 | 52 | 50 | France ... | 65 | 35 | 21 | 30 |
| French ... | 82 | 47 | 35 | 46 | Norway ... | 73 | 39 | 41 | 28 |
| Swiss ... | 42 | 23 | 24 | 38 | Switzerland ... | 24 | 16 | 19 | 26 |
| American(Nth.) ... | 32 | 15 | 42 | 31 | Greece ... | 30 | 26 | 22 | 25 |
| Austrian ... | 67 | 65 | 40 | 28 | New Zealand... .. | 49 | 17 | 26 | 24 |
| Dutch ... | 24 | 13 | 12 | 8 | Egypt ... | 32 | 23 | 20 | 23 |
| Spanish ... | 9 | 6 | 10 | 8 | South Africa ... | 36 | 17 | 19 | 23 |
| Portuguese ... | 13 | 14 | 8 | 7 | Austria ... | 22 | 45 | 17 | 13 |
| Turkish ... | 9 | 28 | 1 | 7 | Russia ... | 16 | ... | 13 | 11 |
| Belgian ... | 8 | 4 | 10 | 1 | Belgium ... | 24 | ... | 17 | 9 |
| Rumanian ... | 20 | 7 | 6 | 1 | Finland ... | 19 | ... | 10 | ... |
| Servian ... | ... | ... | 2 | 1 | Turkey ... | ... | 25 | ... | ... |
| American (Sth.) ... | 7 | ... | 2 | 1 | Syria ... | 22 | 11 | ... | ... |
| Brazilian ... | ... | 1 | 1 | 1 | China ... | 15 | ... | ... | ... |
| Chilian ... | ... | ... | 1 | 1 | Mauritius ... | 14 | ... | ... | ... |
| Bulgarian ... | 2 | ... | ... | 1 | Holland ... | 13 | ... | ... | ... |
| Mexican ... | ... | ... | ... | 1 | Poland ... | 11 | ... | ... | ... |
| Peruvian ... | ... | ... | ... | 1 | Other Countries | 83 | 96 | 92 | 77 |
| Uruguayan ... | ... | ... | ... | 1 | | | | | |
| Armenian ... | ... | ... | 1 | ... | | | | | |
| Cuban ... | ... | 1 | 1 | ... | | | | | |
| American (Cen.) ... | ... | 1 | ... | ... | | | | | |
| Icelandic ... | ... | 1 | ... | ... | | | | | |
| Timorian ... | ... | 1 | ... | ... | | | | | |
| Total ... | 2,107 | 1,118 | 1,187 | 1,042 | Total ... | 2,107 | 1,118 | 1,187 | 1,042 |

The following table furnishes particulars concerning the States in which the recipients of Commonwealth certificates of naturalisation during the years 1904 to 1907

GRAPHS OF TOTAL POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND EACH STATE THEREIN, 1788-1907.



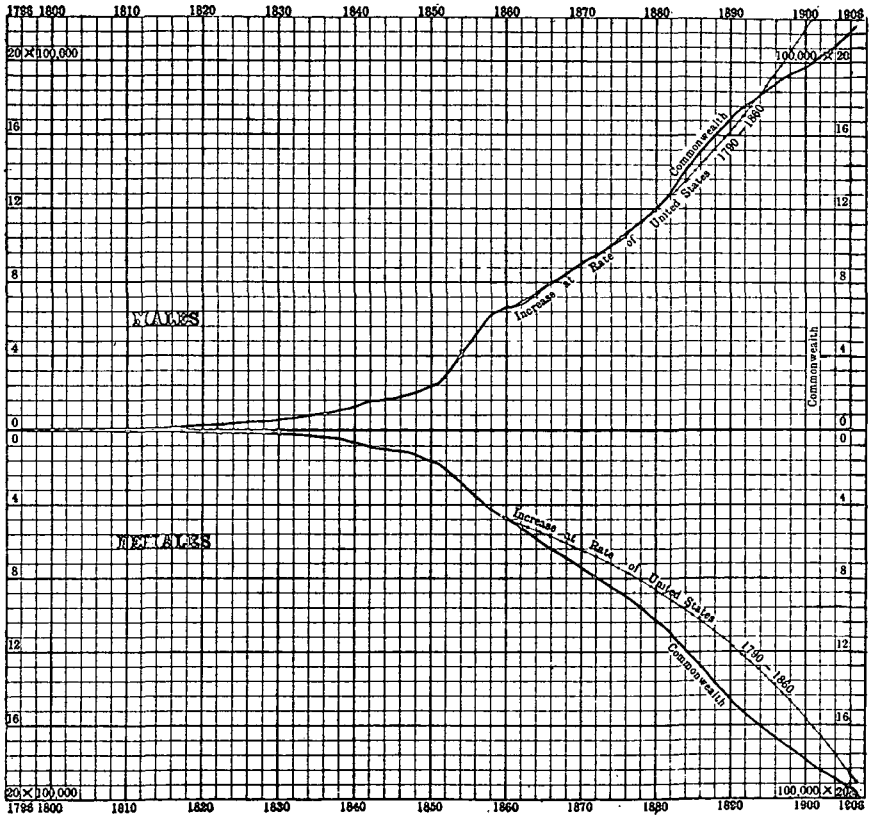
EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval for both States and Commonwealth; and the vertical height 80,000 persons for Commonwealth or 20,000 for States. The zero line for the States is the bottom line; for the Commonwealth it is the line marked "Commonwealth," with 0 written below. The scale on the right and that below the Commonwealth zero line on the left relate to the States, that above the Commonwealth zero line on the right relates to the Commonwealth.

Where the population falls suddenly the fall denotes the creation of a new colony, e.g., New South Wales 1825, loses the whole population of Tasmania, then erected into a separate colony.

The curves are as follows:—Commonwealth, an unbroken line; New South Wales, — — —; Victoria, - - - - -; Queensland, - - - - -; South Australia, - - - - -; Western Australia, - - - - -; Tasmania, - - - - -; the names on the curves also shew which State each represents.

The manner in which the population of the Commonwealth would have grown from 1860 to 1907 if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860, is shewn for purposes of comparison.

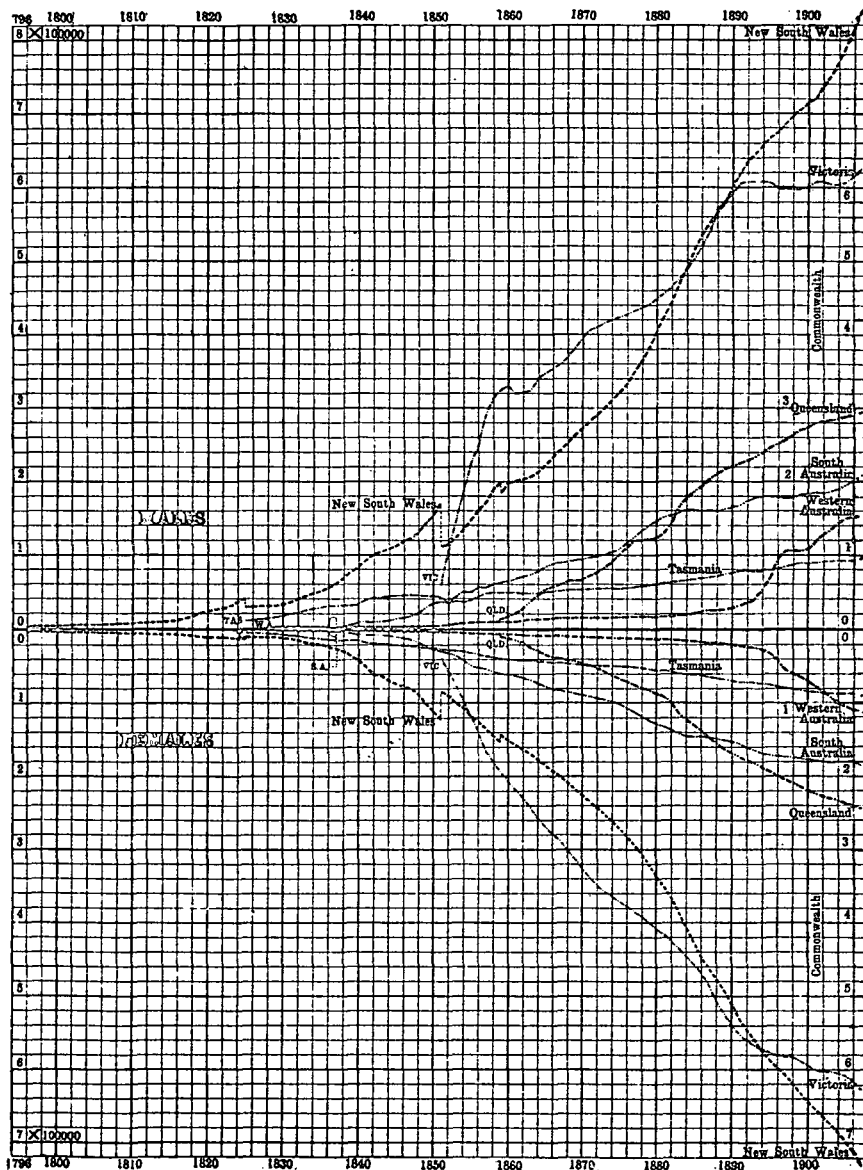
GRAPHS OF MALE AND FEMALE POPULATIONS, COMMONWEALTH OF AUSTRALIA, 1796-1907



EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval, and the vertical height 80,000 persons. The distances upward from the heavy zero line denote the number of males, and downward the number of females. From 1860 onward is shown, for purposes of comparison, the manner in which the numbers of each sex in the Commonwealth would have grown from 1860 to 1907 if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860.

The asymmetry of the two graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS OF MALE AND FEMALE POPULATION OF THE STATES OF AUSTRALIA, 1796-1907.



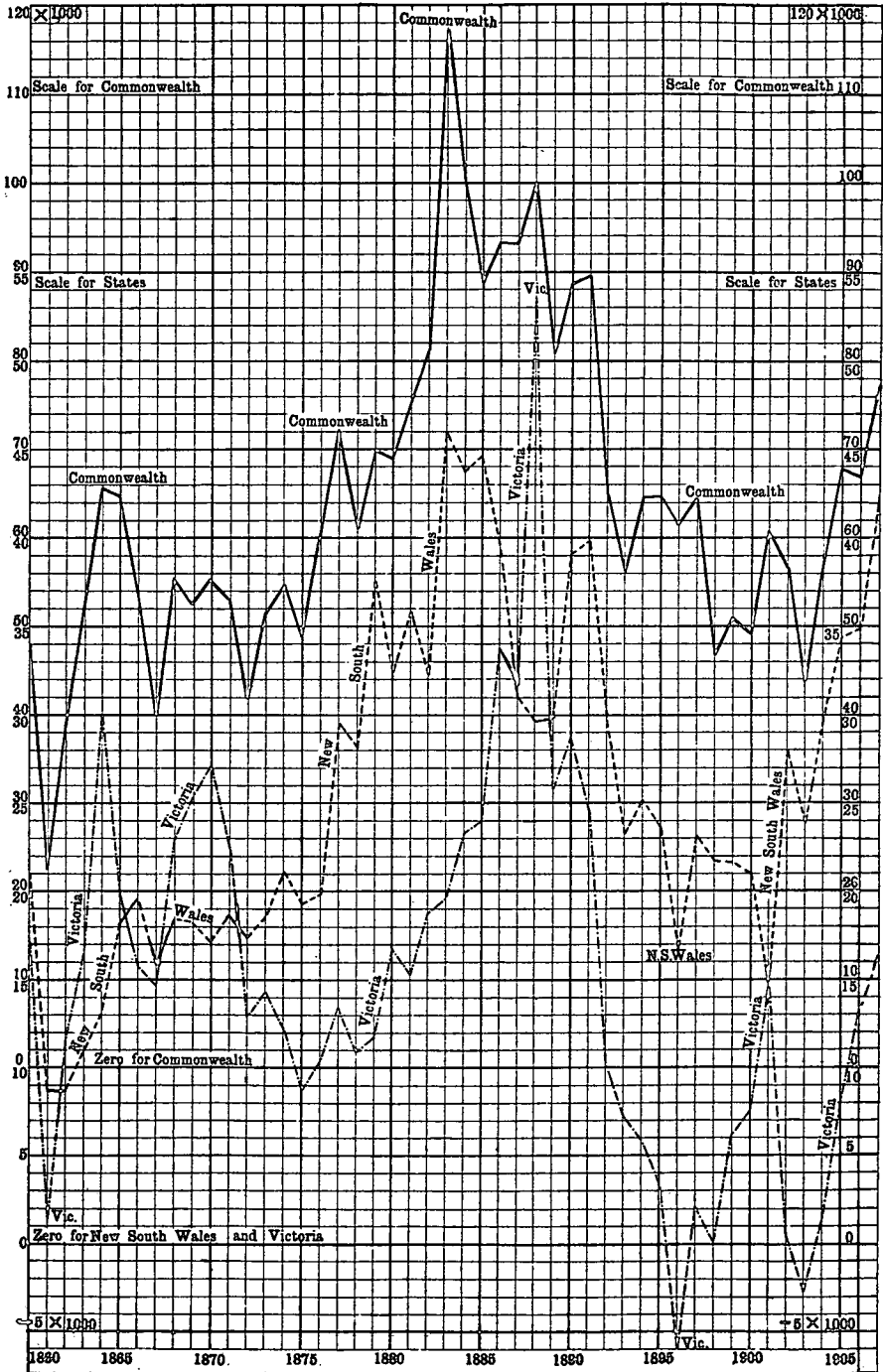
EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval, and the vertical height 20,000 persons. The distances upward from the zero line represent the number of males, and downward the number of females.

The sudden falls denote the creation of new colonies.

The names on the curves denote the States to which they refer, and the curves are as follows :—New South Wales, — — —; Victoria, — — — — —; Queensland, — — — — —; South Australia, — — — — —; Western Australia, — — — — —; Tasmania, — — — — —.

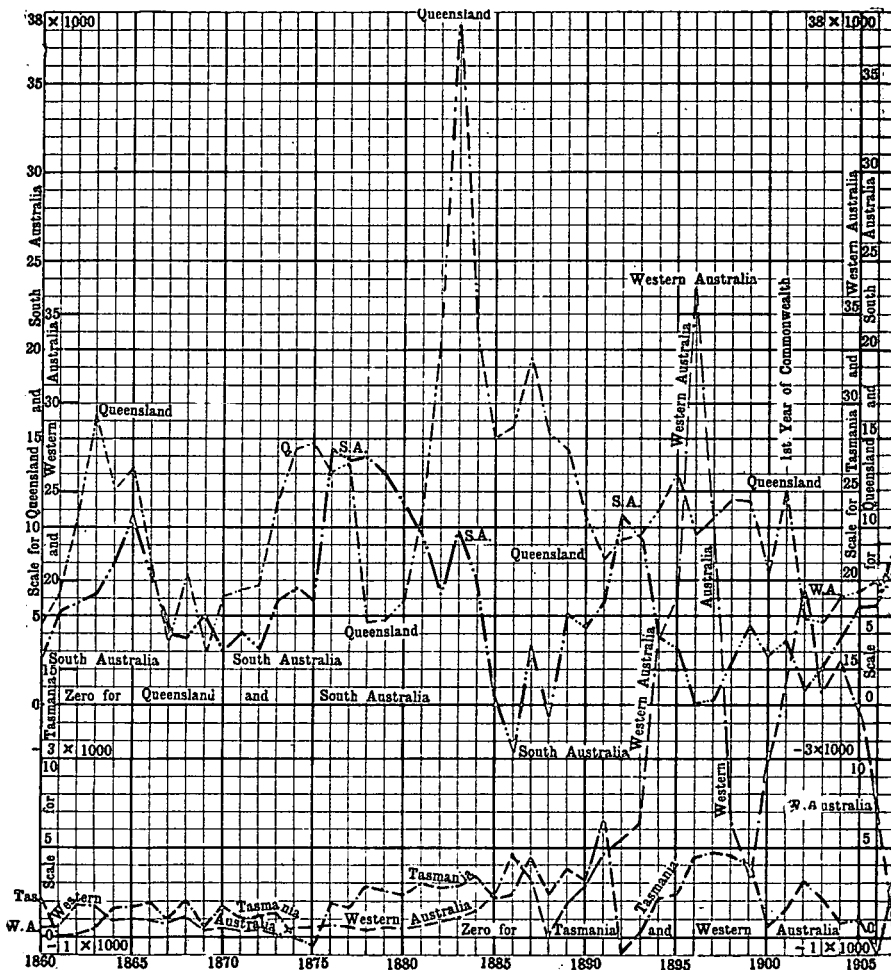
The asymmetry of the two series of graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND THE STATES OF NEW SOUTH WALES AND VICTORIA, 1850-1907.



(For explanation see foot of next page.)

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE STATES OF QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA.



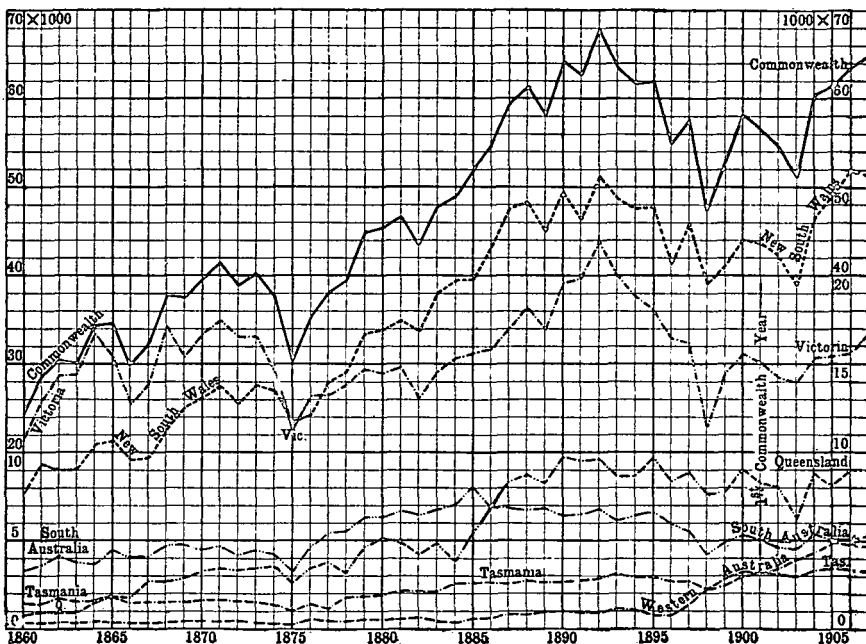
EXPLANATION OF GRAPHS SHEWING NET INCREASE.—The base of each small square represents an interval of a year for both States and Commonwealth; the vertical height represents 2000 for the Commonwealth and 1000 for the States. Four zero lines are taken, viz.—(i.) For the Commonwealth; (ii.) for New South Wales and Victoria; (iii.) for Queensland and South Australia; and (iv.) for Tasmania and Western Australia. These are indicated on the graphs.

NET DECREASES in population are shown by carrying the graph in such cases below the zero line, the distance of the graph below the zero line indicating the extent of the decrease.

The lines used are as follows:—Commonwealth, an unbroken line; New South Wales, — — —; Victoria, — · — ·; Queensland, · · · ·; South Australia, — — — —; Western Australia, — — — —; Tasmania, — · — ·.

The names given on the diagram also indicate which State each graph represents.

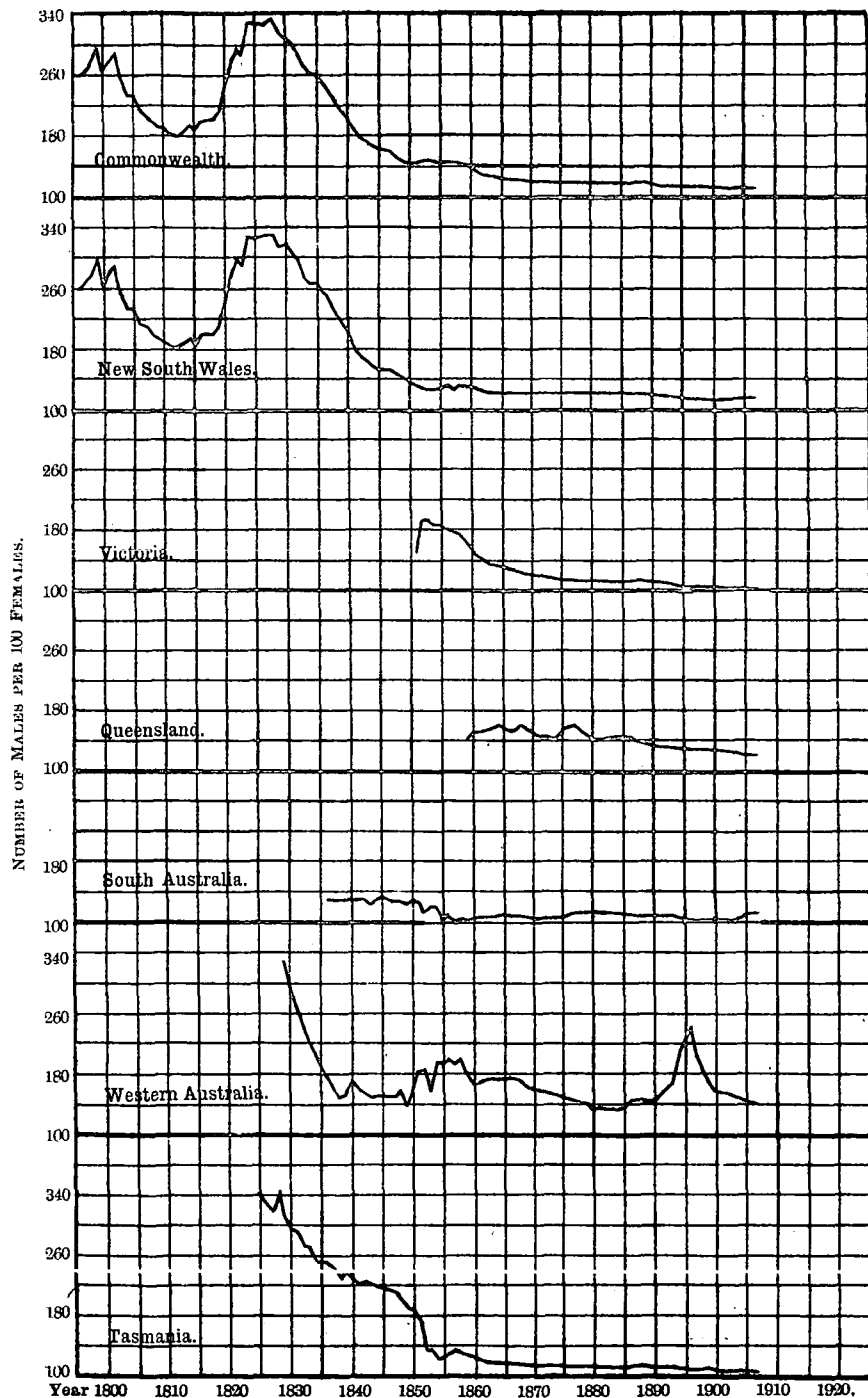
GRAPHS OF NATURAL INCREASE OF THE POPULATION OF THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1907.



EXPLANATION OF GRAPHS.—The base of each small square represents one year for both States and Commonwealth, and the vertical height 1000 persons for the States or 2000 persons for the Commonwealth.

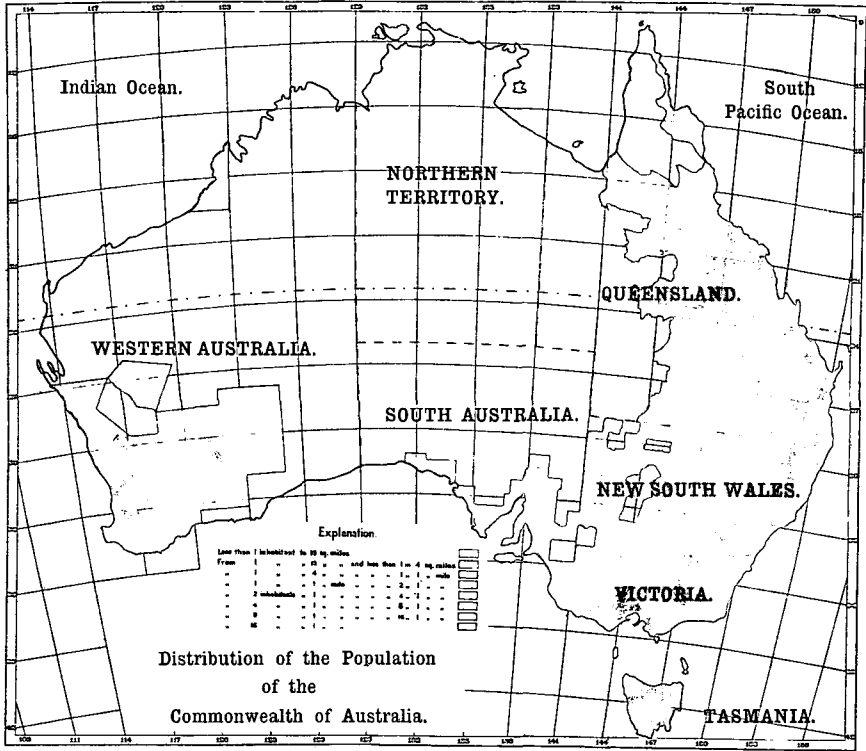
The distances upward from the zero line, marked 0 for both Commonwealth and States, denote the excess of births over deaths. The smaller scale running 0. 5. 10. 15. 20 relates to the States, while the larger running 20. 30. 40. 50. 60. 70. relates to the Commonwealth curve. The names show the States to which the curves refer, they are as follows:—Commonwealth —; New South Wales, — — —; Victoria, — — — —; Queensland, — — — — —; South Australia, — — — — — —; Western Australia, — — — — — — —; Tasmania, — — — — — — — —.

GRAPHS SHEWING MASCULINITY OF THE COMMONWEALTH AND STATES
OF AUSTRALIA, 1796-1907.



EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year, and the vertical height an excess of eight per cent. of males over females. The basic line (shewn thickened) for Commonwealth and all the States is 100 per cent., equivalent to a numerical equality of the sexes.

DENSITY OF POPULATION THROUGHOUT THE COMMONWEALTH OF AUSTRALIA
ACCORDING TO CENSUS OF 1901.



This map furnishes a graphic representation of the distribution of the population of the Commonwealth at the date of the last census, 1901. For this purpose the density of the population of variously constituted districts in each State has been computed, and the areas representing those have been shaded in accordance with the scale of density given at the foot of the map. The districts for which the results of the census were tabulated in the several States and which have, therefore, been used in the map are as follows:—New South Wales, counties; Victoria, counties; Queensland, census districts coincident with registration districts; South Australia, counties so far as the State has been divided into counties; Western Australia, magisterial districts; Tasmania, electoral districts.

A map drawn on such a small scale must of course be considered as furnishing only a rough approximation as to the true distribution of the population, owing to the fact that a small densely-populated area may exist in certain cases within a comparatively large district, the balance of which is but sparsely populated. Thus, in such a case, owing to the density of the whole district being alone taken into account, the fact of a concentration of population within a small area is lost for purposes of representation. It is evident that the larger the district is for which the density has been calculated, the less will the map represent the true facts. Thus New South Wales, Victoria, and South Australia present a truer picture than the remaining three States. The densely-populated mining centres of the northern part of Queensland, the goldfields and pearling grounds of Western Australia, and the mines on the west coast of Tasmania are all contained in large districts which, apart from the centres mentioned, are very sparsely populated, and which, therefore, shew a darker shading on the map than they would present if the size of the map had allowed a division into smaller districts to be made.

The concentration of population about the capitals, referred to in the accompanying text, is obvious on reference to the above map.

were resident. The numbers of certificates granted under the several State Acts during the years 1901, 1902, and 1903 are also given.

NATURALISATION CERTIFICATES GRANTED, 1901 to 1907.

| STATE. | Number of Certificates Granted. | | | | | | |
|-----------------------|---------------------------------|-------|-------|-------|-------|-------|-------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| New South Wales ... | 507 | 386 | 400 | 1,379 | 544 | 475 | 458 |
| Victoria ... | 574 | 500 | 397 | 319 | 213 | 301 | 214 |
| Queensland... | 449 | 375 | 355 | 115 | 150 | 177 | 193 |
| South Australia ... | 109 | 54 | 43 | 25 | 34 | 45 | 27 |
| Western Australia ... | 58 | 111 | 75 | 248 | 166 | 150 | 134 |
| Tasmania ... | 70 | 28 | 149 | 21 | 11 | 39 | 16 |
| Commonwealth ... | 1,767 | 1,454 | 1,419 | 2,107 | 1,118 | 1,187 | 1,042 |

3. **Census Particulars.**—In the Census Schedule drafted by the Statistical Conference of 1900, provision was made for the inclusion of particulars concerning the number of persons who had become British subjects by naturalisation. This information was obtained in all the States except Queensland, the particulars being as follows:—

NUMBER OF NATURALISED BRITISH SUBJECTS RECORDED AT THE AUSTRALIAN CENSUS OF 1901.

| Particulars. | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tasmania. | C'wealth.* |
|--------------|--------|-----------|------|----------|----------|-----------|------------|
| Males ... | 3,265 | 3,304 | 1 | 1,360 | 576 | 119 | 8,624 |
| Females ... | 354 | 1,262 | 1 | 545 | 101 | 24 | 2,286 |
| Persons ... | 3,619 | 4,566 | 1 | 1,905 | 677 | 143 | 10,910 |

1. Not ascertained. 2. Exclusive of Queensland.

It is probable that the numbers furnished above fall short of the total number of naturalised persons at the date of the Census, as the method of recording the fact of naturalisation on the schedule was that of inserting the letter N after the birthplace, a method which is always liable to lead to errors of omission. Cases also of women who had become naturalised by marriage to British subjects, would probably remain unrecorded in many instances.

§ 11. Graphical Representation of Growth of Population.

1. **General.**—The nature of the fluctuations of the numbers representing (a) total population, or those representing (b) births and deaths from year to year, or (c) the natural increase, *i.e.*, the difference of births and deaths, or (d) the net immigration, all of which taken together make up the element of increase of total population, cannot be readily discerned from mere numerical tables. It has been deemed desirable therefore to furnish a series of graphical representations, shewing in some cases the characteristics of these elements from 1788 to 1907, and in others from 1860 to 1907. The graphs furnish at a glance a clear indication of the changes taking place, and of their significance from year to year. The great importance of such representations is that only by their means can the most recent changes be justly apprehended, either in their relation to the past, or their meaning for the future.

2. **Graphs of Total Population** (page 191).—These graphs furnish interesting evidence of the comparatively slow rate of growth of the several States and of the Commonwealth as a whole, during the period from the foundation of settlement in 1788 until 1832. From that year onwards to 1851, a moderately increased rate of progress was experienced. In 1851 gold was discovered in Australia, and the effect of this discovery on the population of the Commonwealth is shewn by the steepness of the curves for New South Wales and Victoria, and also of the Commonwealth, from this point onwards for a series of years. The sudden breaks in the continuity of the curves for New South Wales indicate the creation of new colonies, and their separation from the mother colony. Thus, Tasmania came into existence in 1825, Victoria in 1851, and Queensland in 1859. Owing to the extensive gold discoveries in Victoria, its population increased so rapidly that in 1854 its total passed that of New South Wales, and remained in excess until 1892, when the mother State again assumed the lead, which it has since maintained. The rate of increase in New South Wales is large, but the State is only sparsely populated. A feature of the New South Wales curve is its comparative regularity as compared with that of Victoria, the population of which State increased with great rapidity from 1851 to 1860, less rapidly from 1861 to 1878, with a further period of increased rapidity from 1878 to 1891, and a period of very slow and fluctuating growth from the latter year to 1907. Victoria, however, has a population density more than double that of Tasmania, and about three times that of New South Wales.

In the case of Queensland, the curve indicates a rate of growth which, though varying somewhat, has on the whole been satisfactory, and at times very rapid. Periods of particularly rapid increase occurred from 1862 to 1865, from 1873 to 1877, and from 1881 to 1889. The population of Queensland passed that of Tasmania in 1867, and that of South Australia in 1885. The population density of Queensland is less than one-seventeenth that of Victoria.

The curve for South Australia indicates that with fluctuations more or less marked, the population increased at a moderate rate from the date of the foundation of the colony in 1836 until 1884, and that from that point onwards a diminished rate of increase was experienced. The population of South Australia passed that of Tasmania in 1852. Its density is about half that of Queensland, about one-twelfth that of New South Wales, and about one-thirty-third that of Victoria.

The curve for Western Australia indicates that the population increased regularly but very slowly until 1886, when the discovery of gold in the Kimberley division caused an influx of population. The effects of the further rich discoveries of gold in the Murchison and Coolgardie districts in 1891 and 1892, are clearly shewn in the rapid increase of population in those and subsequent years to 1897. Two years of retarded progress then occurred, followed by a satisfactorily rapid rate of increase from 1899 to 1906, and a decline in 1907. The population of Western Australia became greater than that of Tasmania

in 1899. Its density is little more than half that of South Australia, one-third that of Queensland, one-eighteenth that of New South Wales, and about one-fiftieth that of Victoria.

The Tasmanian population curve indicates a comparatively slow rate of growth throughout. Its most noticeable feature is a retardation in increase in 1852 and subsequent years, brought about by the discovery of gold on the mainland. The population density of Tasmania is more than 40 per cent. greater than that of New South Wales, and a little less than half that of Victoria.

3. Graphs for Commonwealth of Male and Female Population (page 192).—These curves shew the relative growth of male and female population of the Commonwealth, and it will be seen that the former are far more liable to marked fluctuations than the latter. The curves representing an increase of population on the basis of the United States rate for 1790 to 1860, indicate that on the whole the female rate of increase in the Commonwealth has been a fairly satisfactory one, and that from 1860 to 1893 the same might be said of the male population. From 1893 onwards, however, the male population of the Commonwealth has fallen considerably below this rate, and it may be added that the rapid lowering of the rate of increase of the male population must be regarded as unsatisfactory from a national standpoint.

Although the rate of increase of the female population from 1860 onwards is on the whole very satisfactory, it should be noted that the total number at the beginning of this period was relatively very small, and that from 1894 there is an unsatisfactory falling off in the rate of increase, similar to that experienced in the case of males.

4. Graphs for each State of Male and Female Population (page 193).—These graphs, shewing the relative progress in male and female population for each of the States, disclose the fact that in all cases the female population is much less liable to marked fluctuations than the male, and further, that in cases where rapid increases have taken place in the latter a similar, but much more gradual, increase is in evidence in the former, commencing usually, however, somewhat later than in the case of the males. A comparison of the graphs of each of the States with that of the Commonwealth shews that the fluctuations in the latter case are smaller than in the former. This is largely due to internal migrations of the male element of the population, brought about by various causes, amongst which mining developments figure prominently.

5. Graphs of Natural Increase of Population, Commonwealth and States (page 196).—The graphs indicate that, with the exception of certain marked variations, the natural increase of the population of the Commonwealth, viz., the excess of births over deaths, advanced with fair rapidity from 1860 to 1892, in which year it attained its maximum, when, however, it fell rapidly till 1898. A subsequent rise to 1900 was followed by a continuous fall for the three years succeeding, viz., to 1903. The recovery shows a fairly rapid rise to 1907. The years in which the natural increase of the Commonwealth was at its highest were 1865, 1871, 1881, 1892, and 1900; and the years of extraordinarily low rates of natural increase were 1866, 1875, 1882, 1898, and 1903. The low rate of 1898 was due in large measure to a phenomenally high death rate experienced in practically all the States in that year, when an epidemic of measles was prevalent throughout the Commonwealth. The low rate of 1903 was brought about by the low birth rates and high death rates which accompanied the drought of 1902-3, while the advance in the rate of natural increase since 1903 has been collateral with the marked improvement in material conditions experienced throughout the Commonwealth during that period.

6. Graphs shewing Net Increase of Population (pages 194 and 195).—The graphs disclose the fact that the most notable years of large net increases of population of the Commonwealth as a whole were 1864, 1877, 1883, 1888, and 1907. The highest increase was attained in 1883. The net increase for 1907 was higher than for any year since 1891. The years in which low net increases were noticeable were 1861, 1867, 1872, 1878, 1889, 1893, 1898, and 1903.

The graph for New South Wales indicates a high net increase of population between 1876 and 1893, advancing to a maximum in 1883, and then declining to 1901. From the latter year onwards to 1907 an advance in the net increase has been in evidence.

A feature of the graph shewing the Victorian net increase is the height attained in 1864, 1870, 1888, and 1901, the smallness of the increase for the years 1861 and 1875, and the decreases for 1896 and 1903.

For Queensland it will be seen that the years of high net increases were 1862, 1875, 1883, 1895, and 1901, while the years in which these were at very low level were 1869, 1878, 1891, and 1903.

In South Australia the net increases were exceptionally high in 1865, 1876, 1883, and 1892, and correspondingly low in 1870, 1886, and 1896.

In Western Australia the net increase graph indicates no very marked advance until about 1884, from which it rises somewhat rapidly to 1886, and then declines to 1888. This is followed by an exceedingly rapid rise to 1896, and a subsequent fall to 1899, succeeded by a further rise to 1902, and fall thereafter.

In the case of the Tasmanian graph indications of a very varied net increase are in evidence, the principal high points being those for the years 1887, 1891, 1897, and 1902, while actual decreases were experienced in 1874, 1875, 1892, and 1906.

7. Graphs shewing Masculinity of Population, Commonwealth and States (page 197).—These graphs furnish information concerning the variations which have taken place in the relative numbers of males and females in the populations of the Commonwealth and the several States during the years 1796 to 1907, and incidentally serve to indicate special features of growth in the respective populations. In general it will be noted that in recent years there has been a marked tendency towards a masculinity of 100, that is, to a condition in which the numbers of males and females in the population were equal, but that with the exception of Victoria in 1904 and 1907 the masculinity has never fallen below 100. The early experience of the Commonwealth exhibits a fairly rapid decline in masculinity to 1812, followed by an even more rapid rise to 1828 and a subsequent fall with more gentle slope to 1850. From 1850 onwards the decline in masculinity has been fairly continuous though subject to fluctuations. It should be noted that the marked variations of the earlier as compared with the later years have been due to a considerable extent to the fact that, owing to the smallness of the population, any considerable influx of male immigrants had a marked effect in increasing the masculinity of the population, while an influx of female immigrants tended to considerably reduce it. Two points of special interest in the graphs of the separate States are the maxima attained in 1852 in Victoria and 1896 in Western Australia, as the result of extensive male immigration consequent on the gold discoveries in the respective States.

SECTION V.
VITAL STATISTICS.

§ 1. Births.

1. **Male and Female Births, 1901 to 1907.**—The total number of male and female births registered in the Commonwealth and New Zealand during the years 1901 to 1907 is as shewn in the two tables hereunder :—

TOTAL MALE BIRTHS, AUSTRALASIA, 1901 to 1907.

| State, etc. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------|--------|--------|--------|--------|--------|--------|--------|
| N.S. Wales ... | 19,149 | 19,322 | 18,377 | 19,857 | 20,206 | 21,066 | 21,604 |
| Victoria ... | 15,876 | 15,583 | 15,115 | 15,313 | 15,523 | 15,716 | 15,986 |
| Queensland, ... | 7,281 | 7,279 | 6,427 | 7,134 | 6,978 | 7,280 | 7,451 |
| S. Australia ¹ ... | 4,687 | 4,587 | 4,484 | 4,686 | 4,514 | 4,617 | 4,689 |
| W. Australia ... | 2,946 | 3,241 | 3,433 | 3,666 | 3,862 | 4,043 | 3,962 |
| Tasmania ... | 2,570 | 2,604 | 2,570 | 2,702 | 2,812 | 2,792 | 2,797 |
| C'wealth ... | 52,509 | 52,616 | 50,406 | 53,358 | 53,895 | 55,514 | 56,489 |
| New Zealand | 10,471 | 10,653 | 11,217 | 11,762 | 12,109 | 12,397 | 12,835 |

1. Including Northern Territory.

TOTAL FEMALE BIRTHS, AUSTRALASIA, 1901 to 1907.

| State, etc. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------|--------|--------|--------|--------|--------|--------|--------|
| N.S. Wales ... | 18,726 | 18,513 | 17,589 | 18,810 | 19,295 | 19,882 | 20,597 |
| Victoria ... | 15,132 | 14,878 | 14,454 | 14,450 | 14,584 | 15,128 | 15,379 |
| Queensland ... | 7,022 | 6,937 | 6,194 | 6,948 | 6,648 | 6,739 | 7,089 |
| S. Australia ¹ ... | 4,424 | 4,360 | 4,024 | 4,447 | 4,354 | 4,329 | 4,549 |
| W. Australia ... | 2,772 | 2,991 | 3,266 | 3,510 | 3,720 | 3,757 | 3,750 |
| Tasmania ... | 2,360 | 2,481 | 2,510 | 2,590 | 2,445 | 2,541 | 2,494 |
| C'wealth ... | 50,436 | 50,160 | 48,037 | 50,755 | 51,046 | 52,376 | 53,858 |
| New Zealand | 10,020 | 10,002 | 10,612 | 11,004 | 11,573 | 11,855 | 12,259 |

1. Including Northern Territory.

2. **Total Births, 1901 to 1907.**—While the total number of births for the Commonwealth was higher in 1907 than in any of the preceding six years, the following table of particulars discloses also the fact that in Victoria, Queensland and South Australia the excess of births in 1907 over those in 1901 was very small :—

TOTAL BIRTHS, AUSTRALASIA, 1901 to 1907.

| State, etc. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------------|---------|---------|--------|---------|---------|---------|---------|
| New South Wales ... | 37,875 | 37,835 | 35,966 | 38,667 | 39,501 | 40,948 | 42,201 |
| Victoria ... | 31,008 | 30,461 | 29,569 | 29,763 | 30,107 | 30,844 | 31,865 |
| Queensland ... | 14,305 | 14,216 | 12,621 | 14,082 | 13,626 | 14,019 | 14,540 |
| South Australia ¹ ... | 9,111 | 8,947 | 8,508 | 9,133 | 8,868 | 8,946 | 9,238 |
| Western Australia ... | 5,718 | 6,232 | 6,699 | 7,176 | 7,582 | 7,800 | 7,712 |
| Tasmania ... | 4,930 | 5,085 | 5,080 | 5,292 | 5,257 | 5,333 | 5,291 |
| Commonwealth ... | 102,945 | 102,776 | 98,443 | 104,113 | 104,941 | 107,890 | 110,347 |
| New Zealand ... | 20,491 | 20,655 | 21,829 | 22,766 | 23,682 | 24,252 | 25,094 |

1. Including Northern Territory.

3. *Birth Rates, 1901 to 1907.*—(i.) *Crude Birth Rate.* The birth rate for the whole Commonwealth was lower in 1907 than in 1901, and Tasmania is the only State in which a slight increase in the rate took place, as will be seen from the following table, which gives also the number of persons per square mile in each State :—

CRUDE BIRTH-RATE,¹ AUSTRALASIA, 1901 to 1907.

| State, etc. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | Density ² (No. per sq. mile). |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|--|
| New South Wales ... | 27.78 | 27.20 | 25.41 | 26.81 | 26.79 | 27.12 | 27.22 | 5.06 |
| Victoria ... | 25.75 | 25.16 | 24.46 | 24.65 | 24.83 | 25.20 | 25.32 | 14.20 |
| Queensland ... | 28.53 | 27.89 | 24.62 | 27.13 | 25.92 | 26.31 | 26.98 | 0.81 |
| South Australia ³ ... | 25.11 | 24.54 | 23.25 | 24.71 | 23.67 | 23.55 | 23.96 | 0.43 |
| Western Australia ... | 30.34 | 30.27 | 30.26 | 30.33 | 30.29 | 30.01 | 29.40 | 0.27 |
| Tasmania ... | 28.60 | 29.23 | 28.62 | 29.60 | 29.33 | 29.82 | 29.50 | 7.02 |
| Commonwealth ... | 27.14 | 26.66 | 25.23 | 26.33 | 26.12 | 26.41 | 26.55 | 1.41 |
| New Zealand ⁴ ... | 26.34 | 25.89 | 26.61 | 26.94 | 27.22 | 27.08 | 27.30 | 8.87 |

1. Number of Births per 1000 of the mean annual population.
2. On 31st December, 1907.
3. Including Northern Territory.
4. Excluding Maoris.

The population density of each State and of the Commonwealth has been given for the purpose of considering the influence, if any, of concentration of population on birth-rate, in connection with the disparities of the rate in different parts of Australia.

(ii.) *Objections to Crude Birth Rate.* The figures just given represent the "crude birth rate," viz., the number of births per thousand of mean annual population. The number of births per thousand of the female population of child-bearing ages, viz., from 15 to 45, would furnish a more significant rate. To calculate this, would, of course, involve assumptions concerning the variations of the age and sex constitution of the population since the last Census. Calculations of this nature at the present time would be subject to so large an uncertainty that it has been decided to defer computing the rates of fecundity and fertility on other and better bases until after the next Census.

4. **Birth Rates of Various Countries.**—A comparison with other countries shews that the Australian States occupy a very low position, which is, however, fortunately counterbalanced by a still lower position in regard to their death rates, as will be seen from the table on page 221.

CRUDE BIRTH RATE¹ OF VARIOUS COUNTRIES.

| Country. | Year. | Rate. | Country. | Year. | Rate. |
|----------------------|-------|-------|-------------------------|-------------|-------------|
| Russia, European ... | 1901 | 47.9 | Western Australia ... | 1907 | 29.4 |
| Bulgaria ... | 1905 | 43.8 | Denmark ... | 1906 | 28.5 |
| Servia ... | 1906 | 41.3 | Scotland ... | 1906 | 27.9 |
| Rumania ... | 1905 | 38.6 | Switzerland ... | 1905 | 27.4 |
| Jamaica ... | 1906 | 38.1 | New Zealand ... | 1907 | 27.3 |
| Hungary ... | 1906 | 36.0 | New South Wales ... | 1907 | 27.2 |
| Ceylon ... | 1906 | 35.7 | England and Wales ... | 1906 | 27.1 |
| Chile ... | 1905 | 35.1 | Queensland ... | 1907 | 27.0 |
| Spain ... | 1906 | 34.1 | United Kingdom ... | 1906 | 26.8 |
| Austria ... | 1905 | 33.7 | Commonwealth ... | 1907 | 26.6 |
| Prussia ... | 1906 | 33.7 | Norway ... | 1906 | 26.5 |
| German Empire ... | 1905 | 33.0 | Belgium ... | 1906 | 25.7 |
| Italy ... | 1906 | 31.9 | Sweden ... | 1906 | 25.7 |
| Finland ... | 1905 | 30.6 | Victoria ... | 1907 | 25.3 |
| Japan ... | 1905 | 30.6 | South Australia ... | 1907 | 24.0 |
| Netherlands ... | 1906 | 30.4 | Ireland ... | 1906 | 23.6 |
| Tasmania ... | 1907 | 29.5 | France ... | 1906 | 20.6 |

1. Number of births per 1000 of the mean population.

5. **Masculinity at Birth.**—The masculinity of births registered during the last seven years in the several States of the Commonwealth, *i.e.*, the number of males per 100 females, has varied from 102.26 in New South Wales in 1901 to 115.01 in Tasmania in 1905. The following table, which gives the values for the States and Commonwealth for 1901 to 1907, shews the remarkable fact that for the Commonwealth there was a steady increase of masculinity from 1901 to 1906, with a decrease to the 1902 level in 1907.

MASCULINITY¹ OF BIRTHS REGISTERED IN AUSTRALIA, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|--------|--------|--------|--------|--------|--------|--------|
| N.S.W. ... | 102.26 | 104.37 | 104.48 | 105.57 | 104.72 | 105.96 | 104.89 |
| Victoria ... | 104.92 | 104.74 | 104.57 | 105.97 | 106.44 | 103.89 | 103.95 |
| Queensland ... | 103.69 | 104.93 | 103.76 | 102.68 | 104.96 | 108.03 | 105.11 |
| South Australia | 105.94 | 105.21 | 111.43 | 105.37 | 103.67 | 106.65 | 103.08 |
| West. Australia | 106.28 | 108.36 | 105.11 | 104.44 | 103.82 | 107.61 | 105.65 |
| Tasmania ... | 108.90 | 104.96 | 102.39 | 104.32 | 115.01 | 109.88 | 112.15 |
| C'wealth ... | 104.11 | 104.90 | 104.93 | 105.13 | 105.58 | 105.99 | 104.89 |

1. Number of males to each 100 females.

There is ordinarily a very small difference between the masculinity of legitimate and illegitimate births. Thus, according to Bodio, whose figures are quoted in the following table, for the period about 1837-1891, the masculinity ranged from 108.3 to 103.6, and from 107.9 to 101.6 for total and illegitimate births respectively.

MASCULINITY OF BIRTHS IN VARIOUS COUNTRIES.

| Country. | Masculinity of Births. ¹ | | Country. | Masculinity of Births. ¹ | |
|----------------------|-------------------------------------|---------------------------|-------------------|-------------------------------------|---------------------------|
| | All Live Births. | Illegitimate Live Births. | | All Live Births. | Illegitimate Live Births. |
| Spain | 108.8 | 107.9 | German Empire ... | 105.2 | 104.7 |
| Rumania | 107.7 | 103.4 | Finland | 105.0 | 105.2 |
| Portugal | 107.5 | 106.4 | Hungary | 105.0 | 102.9 |
| Austria | 105.8 | 105.5 | Sweden | 105.0 | 104.3 |
| Italy | 105.8 | 104.4 | Denmark | 104.8 | 105.0 |
| Norway | 105.8 | 105.9 | Servia | 104.7 | 103.5 |
| Ireland | 105.5 | 104.8 | France | 104.6 | 102.9 |
| Netherlands ... | 105.5 | 104.7 | Belgium | 104.5 | 102.2 |
| Scotland | 105.5 | 105.9 | Switzerland ... | 104.5 | 101.6 |
| Russia, European ... | 105.4 | 104.5 | England | 103.6 | 104.4 |

1. Number of males to each 100 females.

The masculinity of illegitimate births in Australia was as follows:—

**MASCULINITY¹ OF ILLEGITIMATE BIRTHS REGISTERED IN AUSTRALIA,
1901 TO 1907.**

| State. | 1901. | 1902. | 1903 | 1904. | 1905. | 1906. | 1907. |
|------------------|--------|--------|--------|--------|--------|--------|--------|
| N. S. W. ... | 108.46 | 103.67 | 97.79 | 100.80 | 102.50 | 103.10 | 104.91 |
| Victoria ... | 102.22 | 106.78 | 114.83 | 108.68 | 102.52 | 102.23 | 105.59 |
| Queensland ... | 107.84 | 100.23 | 95.22 | 95.77 | 105.63 | 104.17 | 100.90 |
| S. Australia ... | 100.56 | 106.91 | 100.00 | 83.50 | 96.94 | 116.97 | 113.56 |
| W. Australia ... | 100.00 | 111.11 | 114.29 | 107.28 | 98.75 | 118.13 | 115.94 |
| Tasmania ... | 102.07 | 93.17 | 122.66 | 93.71 | 102.80 | 124.92 | 100.00 |
| C'wealth ... | 105.50 | 103.96 | 104.10 | 100.98 | 102.44 | 105.44 | 105.11 |

1. Number of males to each 100 females.

It is curious to note that while, so far as the total births are concerned, there has always been an excess of male births over female births, this has not been the case in regard to illegitimate births, where in South Australia in 1904 the masculinity was only 83.50. On the other hand it rose as high as 124.82 in Tasmania in 1906. Little weight, however, can be attached to the two last figures on account of the small totals on which they are based.

6. Illegitimacy.—The total illegitimates fell from 1901 to 1903, then rose rapidly to 1907. See the table on next page.

It is, of course, possible that the number of illegitimate births is somewhat understated, owing to diffidence in proclaiming the fact of illegitimacy, and it is not unlikely that the majority of unregistered births are illegitimate.

**TOTAL ILLEGITIMATE BIRTHS REGISTERED IN AUSTRALASIA,
1901 TO 1907.**

| State, etc. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------|-------|-------|-------|-------|-------|-------|-------|
| N.S.W. ... | 2,712 | 2,497 | 2,413 | 2,755 | 2,912 | 2,882 | 2,920 |
| Victoria ... | 1,729 | 1,677 | 1,695 | 1,707 | 1,689 | 1,721 | 1,764 |
| Queensland ... | 848 | 859 | 857 | 971 | 950 | 1,076 | 1,117 |
| S. Australia ... | 361 | 389 | 354 | 367 | 386 | 358 | 378 |
| W. Australia... | 222 | 247 | 315 | 313 | 318 | 373 | 298 |
| Tasmania ... | 293 | 311 | 285 | 308 | 290 | 308 | 306 |
| C'wealth | 6,165 | 5,980 | 5,919 | 6,421 | 6,545 | 6,718 | 6,783 |
| New Zealand | 937 | 921 | 994 | 1,029 | 1,082 | 1,132 | 1,157 |

(i). *Rate of Illegitimacy, 1901 to 1907.* The rate of illegitimacy, viz., the percentage of illegitimate to total births, shews on the whole a slight increase, from 1901 to 1905, with a decrease during the last two years, as the subjoined table shews:—

**PERCENTAGE OF ILLEGITIMATE ON TOTAL BIRTHS, AUSTRALASIA,
1901 TO 1907.**

| State, etc. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| | % | % | % | % | % | % | % |
| N S.W. ... | 7.16 | 6.60 | 6.71 | 7.12 | 7.37 | 7.04 | 6.92 |
| Victoria ... | 5.58 | 5.51 | 5.73 | 5.74 | 5.61 | 5.58 | 5.62 |
| Queensland ... | 5.93 | 6.04 | 6.79 | 5.90 | 6.97 | 7.68 | 7.68 |
| S. Australia... | 3.96 | 4.35 | 4.16 | 4.02 | 4.35 | 4.00 | 4.09 |
| W. Australia... | 3.88 | 3.96 | 4.70 | 4.36 | 4.19 | 4.78 | 3.86 |
| Tasmania ... | 5.94 | 6.12 | 5.61 | 5.82 | 5.52 | 5.78 | 5.78 |
| C'wealth ... | 5.99 | 5.82 | 6.01 | 6.17 | 6.24 | 6.23 | 6.15 |
| New Zealand | 4.57 | 4.46 | 4.55 | 4.52 | 4.57 | 4.67 | 4.61 |

A comparison of greater significance would be obtained by calculating the number of illegitimate births per thousand of the single and widowed female population between the ages of 15 and 45, but until the next Census has once more shewn the composition of the population, such a calculation would be liable to considerable error, and will, therefore, be deferred.

(ii). *Causes of Increase.* Since the rate of illegitimacy might appear to increase by the mere decrease in the general birth rate, the following table has been prepared:—

**CRUDE ILLEGITIMATE, LEGITIMATE AND TOTAL BIRTH RATES, AUSTRALIA,
1901 to 1907.**

| Births. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------|-------|-------|-------|-------|-------|-------|-------|
| Illegitimate ... | 1.62 | 1.56 | 1.52 | 1.62 | 1.63 | 1.65 | 1.63 |
| Legitimate ... | 25.52 | 25.10 | 23.71 | 24.71 | 24.50 | 24.76 | 24.92 |
| Total ... | 27.14 | 26.66 | 25.23 | 26.33 | 26.13 | 26.41 | 26.55 |

1. Number of births per 1000 of mean population.

(iii). *Illegitimacy—Rates of Various Countries.* The rate for the Commonwealth is higher than that for England and Wales, slightly lower than that for Scotland, and considerably below the rates for many of the countries for which returns are available, as the table hereunder shews. The rates for the States, Commonwealth, and New Zealand are for 1907, while those for other countries are for 1905 or 1906, generally:—

PERCENTAGE OF ILLEGITIMATE ON TOTAL BIRTHS IN VARIOUS COUNTRIES,
1905 to 1907.

| Country. | Rate. | Country. | Rate. |
|--------------------------|-------|------------------------|-------|
| | % | | % |
| Netherlands | 2.1 | Norway | 6.7 |
| Ireland | 2.8 | Scotland | 6.7 |
| England and Wales | 3.9 | New South Wales | 6.9 |
| West Australia | 3.9 | Queensland | 7.7 |
| South Australia | 4.1 | Germany | 8.5 |
| Switzerland | 4.6 | France | 8.8 |
| New Zealand | 4.6 | Hungary | 9.8 |
| Italy | 5.6 | Rumania | 10.0 |
| Victoria | 5.6 | Denmark | 10.1 |
| Tasmania | 5.8 | Portugal | 11.4 |
| Commonwealth | 6.2 | Sweden | 12.1 |
| Belgium | 6.4 | Austria | 12.8 |

It may be added that the general circumstances in Australia with regard to opportunity for marriage are probably relatively easy as compared with those in older established countries.

7. Multiple Births.—Among the total number of 110,347 births registered in the Commonwealth in 1907 there were 108,263 single births, 2046 twins, and 38 triplets. The number of cases of twins was 1029, twelve children being still-born, and the number of cases of triplets fourteen, four children being still-born. The total number of mothers was, therefore, 109,306, the proportion of mothers of twins being one in every 106, and of mothers of triplets one in every 7872 of total mothers.

8. Ages of Parents.—The relative ages of the parents of children registered in 1907 have been tabulated, twins and triplets being distinguished from single births, and are shewn for single ages in "Bulletin of Population and Vital Statistics, No. 8; Vital Statistics of the Commonwealth for the Year 1907." In the present work the exigencies of space allow only the insertion of corresponding tables shewing the relative ages of parents in groups of five years. The tables, moreover, must be given exclusive of the figures for South Australia, as the Registration Act of that State, which was in force to the end of 1907, did not require those particulars to be mentioned. For the year 1908 it will be possible to tabulate this information for all the States of the Commonwealth. It will be seen from the tables that while the largest number of single births occurred where the ages of both father and mother were between 25 and 29, the largest number of twin births took place in the age group where both father and mother were between 35 and 39. The largest number of mothers of single children was found at ages 25 to 29, and that of mothers of twins at ages 30 to 34.

(a) AGES OF PARENTS IN CASES OF SINGLE BIRTHS, 1907.
(COMMONWEALTH, EXCLUSIVE OF SOUTH AUSTRALIA.)

| Age. | Total Fathers. | Ages of Mothers. | | | | | | | | Not Stated. |
|-------------------------------------|----------------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|---------------|-------------|
| | | Under 15. | 15 to 19. | 20 to 24. | 25 to 29. | 30 to 34. | 35 to 39. | 40 to 44. | 45 and Upwds. | |
| Ages of Fathers. | | | | | | | | | | |
| Under 20 | 293 | ... | 186 | 100 | 7 | ... | ... | ... | ... | ... |
| 20 to 24 | 8,504 | 3 | 1,725 | 5,621 | 1,010 | 128 | 12 | 2 | ... | 3 |
| 25 to 29 | 21,101 | 1 | 1,045 | 8,932 | 9,273 | 1,640 | 187 | 15 | ... | 8 |
| 30 to 34 | 21,860 | ... | 319 | 3,990 | 9,071 | 7,221 | 1,153 | 91 | 3 | 12 |
| 35 to 39 | 19,010 | ... | 109 | 1,412 | 4,649 | 6,940 | 5,345 | 538 | 13 | 4 |
| 40 to 44 | 13,089 | ... | 43 | 519 | 1,548 | 3,535 | 5,024 | 2,342 | 71 | 7 |
| 45 to 49 | 6,295 | ... | 11 | 133 | 486 | 1,112 | 2,345 | 1,909 | 295 | 4 |
| 50 to 54 | 1,911 | ... | 5 | 44 | 127 | 301 | 549 | 733 | 148 | 4 |
| 55 to 59 | 494 | ... | ... | 12 | 40 | 85 | 140 | 161 | 56 | ... |
| 60 to 64 | 168 | ... | 1 | 2 | 19 | 29 | 41 | 60 | 15 | 1 |
| 65 & upwards | 107 | ... | ... | 5 | 8 | 17 | 41 | 26 | 9 | 1 |
| Not stated | 48 | ... | 1 | 6 | 16 | 8 | 3 | 1 | 1 | 12 |
| Mothers of legitimate children... | 92,880 | 4 | 3,445 | 20,776 | 26,254 | 21,016 | 14,840 | 5,878 | 611 | 56 |
| Mothers of illegitimate children... | 6,330 | 22 | 1,774 | 2,455 | 1,043 | 531 | 338 | 136 | 10 | 21 |
| Total mothers | 99,210 | 26 | 5,219 | 23,231 | 27,297 | 21,547 | 15,178 | 6,014 | 621 | 77 |

(b) AGES OF PARENTS OF TWINS, 1907.
(COMMONWEALTH, EXCLUSIVE OF SOUTH AUSTRALIA.)

| Age. | Total Fathers. | Ages of Mothers. | | | | | | |
|-------------------------------|----------------|------------------|-----------|-----------|-----------|-----------|-----------|---------------|
| | | Under 20. | 20 to 24. | 25 to 29. | 30 to 34. | 35 to 39. | 40 to 44. | 45 & upwards. |
| Ages of Fathers. | | | | | | | | |
| Under 20 | 3 | 3 | ... | ... | ... | ... | ... | ... |
| 20 to 24 | 45 | 10 | 25 | 7 | 2 | 1 | ... | ... |
| 25 to 29 | 138 | 8 | 44 | 64 | 20 | 2 | ... | ... |
| 30 to 34 | 201 | ... | 28 | 66 | 83 | 24 | ... | ... |
| 35 to 39 | 247 | ... | 10 | 45 | 93 | 94 | 5 | ... |
| 40 to 44 | 162 | ... | ... | 14 | 38 | 77 | 32 | 1 |
| 45 to 49 | 67 | ... | ... | 3 | 16 | 28 | 19 | 1 |
| 50 to 54 | 25 | ... | ... | 1 | 6 | 7 | 10 | 1 |
| 55 to 59 | 9 | ... | 1 | ... | 1 | 1 | 6 | ... |
| 60 to 64 | 2 | ... | ... | ... | ... | 2 | ... | ... |
| 65 and upwards | 3 | ... | ... | ... | ... | ... | 2 | 1 |
| Mothers of legitimate twins | 902 | 21 | 108 | 200 | 250 | 236 | 74 | 4 |
| Mothers of illegitimate twins | 36 | ... | 12 | 10 | 5 | 6 | 3 | ... |
| Total mothers | 938 | 21 | 120 | 210 | 264 | 242 | 77 | 4 |

(c) AGES OF PARENTS OF TRIPLETS, 1907.
(COMMONWEALTH, EXCLUSIVE OF SOUTH AUSTRALIA.)

| Age. | Total Fathers. | Ages of Mothers. | | | | |
|-----------------------------------|----------------|------------------|-----------|-----------|-----------|-----------|
| | | 20 to 24. | 25 to 29. | 30 to 34. | 35 to 39. | 40 to 44. |
| Ages of Fathers. | | | | | | |
| 20 to 24 | 1 | 1 | ... | ... | ... | ... |
| 25 to 29 | 2 | ... | 2 | ... | ... | ... |
| 30 to 34 | 2 | ... | 2 | ... | ... | ... |
| 35 to 39 | 2 | ... | ... | 1 | 1 | ... |
| 40 to 44 | 3 | ... | ... | 1 | ... | 2 |
| 45 to 49 | ... | ... | ... | ... | ... | ... |
| 50 to 54 | 1 | ... | 1 | ... | ... | ... |
| 55 to 59 | 1 | ... | ... | ... | ... | 1 |
| Mothers of legitimate triplets... | 12 | 1 | 5 | 2 | 1 | 3 |
| Mothers of illegitimate triplets | 1 | ... | ... | ... | 1 | ... |
| Total mothers | 13 | 1 | 5 | 2 | 2 | 3 |

9. *Birthplaces of Parents.*—The relative birthplaces of the parents of children whose births were registered during the year 1907 will be found tabulated in the Bulletin above-mentioned, again exclusive of the figures for South Australia. A summary of the results of the tabulation is here given:—

BIRTHPLACES OF PARENTS OF CHILDREN, 1907.

(COMMONWEALTH, EXCLUSIVE OF SOUTH AUSTRALIA.)

| Birthplaces. | Fathers. | | | Mothers of Legitimate Children. | | | Mothers of Illegitimate Children. | | |
|-------------------------------|----------------|--------|------------|---------------------------------|--------|------------|-----------------------------------|--------|------------|
| | Single Births. | Twins. | Trip-lets. | Single Births. | Twins. | Trip-lets. | Single Births. | Twins. | Trip-lets. |
| New South Wales ... | 29,704 | 234 | 4 | 33,111 | 252 | 3 | 2,683 | 15 | ... |
| Victoria ... | 28,164 | 302 | 5 | 29,116 | 325 | 4 | 1,660 | 7 | 1 |
| Queensland ... | 7,089 | 70 | 1 | 9,339 | 74 | 2 | 920 | 7 | ... |
| South Australia ... | 3,444 | 31 | 1 | 3,637 | 41 | ... | 179 | ... | ... |
| Western Australia ... | 1,105 | 11 | ... | 1,602 | 21 | ... | 92 | 2 | ... |
| Tasmania ... | 4,673 | 47 | ... | 4,908 | 49 | ... | 356 | 1 | ... |
| New Zealand ... | 1,120 | 10 | ... | 1,069 | 15 | ... | 72 | ... | ... |
| Austria-Hungary ... | 61 | ... | ... | 22 | ... | ... | ... | ... | ... |
| Belgium ... | 2 | ... | ... | 2 | ... | ... | ... | ... | ... |
| Bulgaria ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| Channel Islands ... | 30 | ... | ... | 12 | ... | ... | ... | ... | ... |
| Denmark ... | 217 | 3 | ... | 74 | 1 | ... | 2 | ... | ... |
| England ... | 8,943 | 96 | ... | 5,135 | 54 | ... | 184 | 2 | ... |
| Finland ... | 22 | ... | ... | 5 | ... | ... | ... | ... | ... |
| France ... | 70 | ... | ... | 28 | ... | ... | 1 | ... | ... |
| Germany ... | 1,053 | 14 | ... | 547 | 9 | ... | 14 | ... | ... |
| Gibraltar ... | 3 | ... | ... | 3 | ... | ... | ... | ... | ... |
| Greece ... | 18 | 1 | ... | 4 | ... | ... | ... | ... | ... |
| Iceland ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Ireland ... | 2,814 | 32 | ... | 1,876 | 27 | 2 | 67 | 1 | ... |
| Isle of Man ... | 17 | 1 | ... | 12 | 1 | ... | ... | ... | ... |
| Italy ... | 215 | 3 | ... | 121 | 2 | ... | 5 | ... | ... |
| Malta ... | 5 | ... | ... | 2 | ... | ... | 1 | ... | ... |
| Netherlands ... | 9 | ... | ... | 5 | ... | ... | ... | ... | ... |
| Norway ... | 110 | ... | ... | 30 | 2 | ... | ... | ... | ... |
| Portugal ... | 8 | ... | ... | ... | ... | ... | ... | ... | ... |
| Rumania ... | 4 | ... | ... | 4 | ... | ... | ... | ... | ... |
| Russia ... | 95 | 2 | ... | 41 | 2 | ... | 1 | ... | ... |
| Scotland ... | 2,194 | 22 | ... | 1,185 | 20 | 1 | 26 | ... | ... |
| Spain ... | 12 | ... | ... | 8 | ... | ... | 1 | ... | ... |
| Sweden ... | 209 | 2 | ... | 25 | 1 | ... | ... | ... | ... |
| Switzerland ... | 41 | 2 | ... | 21 | ... | ... | 3 | ... | ... |
| Turkey ... | 13 | 1 | ... | 4 | ... | ... | ... | ... | ... |
| Wales ... | 259 | 4 | ... | 242 | ... | ... | 10 | 1 | ... |
| Canada ... | 75 | 2 | ... | 29 | ... | ... | 3 | ... | ... |
| Newfoundland ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| United States ... | 220 | 3 | 1 | 114 | 2 | ... | 4 | ... | ... |
| Mexico ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| British West Indies ... | 22 | 1 | ... | 4 | ... | ... | ... | ... | ... |
| British Honduras ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... |
| Central America, so described | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Argentine Republic ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Brazil ... | 2 | ... | ... | 2 | ... | ... | ... | ... | ... |
| British Guiana ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Chile ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| S. America, so describ'd | 12 | ... | ... | 8 | ... | ... | ... | ... | ... |

BIRTHPLACES OF PARENTS OF CHILDREN—Continued.

| Birthplace. | Fathers. | | | Mothers of Legitimate Children. | | | Mothers of Illegitimate Children. | | |
|-------------------------------------|----------------|--------|------------|---------------------------------|--------|------------|-----------------------------------|--------|------------|
| | Single Births. | Twins. | Trip-lets. | Single Births. | Twins. | Trip-lets. | Single Births. | Twins. | Trip-lets. |
| Afghanistan ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... |
| Arabia ... | 5 | ... | ... | 2 | ... | ... | 1 | ... | ... |
| Asia Minor ... | 3 | ... | ... | 4 | ... | ... | ... | ... | ... |
| Burmah ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| Ceylon ... | 22 | ... | ... | 9 | ... | ... | 4 | ... | ... |
| China ... | 165 | 2 | ... | 60 | ... | ... | 2 | ... | ... |
| Cochin China ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Cyprus ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Dutch East Indies ... | 6 | 1 | ... | 3 | ... | ... | ... | ... | ... |
| India ... | 146 | 2 | ... | 80 | ... | ... | 1 | ... | ... |
| Japan ... | 13 | 1 | ... | 8 | ... | ... | 2 | ... | ... |
| Persia ... | 3 | ... | ... | 2 | ... | ... | ... | ... | ... |
| Philippine Islands ... | 6 | ... | ... | 1 | ... | ... | ... | ... | ... |
| Siam ... | 1 | ... | ... | ... | ... | ... | 1 | ... | ... |
| Straits Settlements ... | 9 | ... | ... | 2 | ... | ... | ... | ... | ... |
| Syria ... | 100 | 1 | ... | 89 | 2 | ... | ... | ... | ... |
| Africa, so described ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... |
| Canary Islands ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| E. Africa, so described ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... |
| Egypt ... | 1 | ... | ... | 1 | ... | ... | ... | ... | ... |
| Madagascar ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Madeira ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Mauritius ... | 33 | 1 | ... | 15 | ... | ... | ... | ... | ... |
| Réunion ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| S. Africa, so described ... | 36 | ... | ... | 49 | ... | ... | 1 | ... | ... |
| W. Africa, so described ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Fiji ... | 38 | ... | ... | 15 | ... | ... | 1 | ... | ... |
| Friendly Islands ... | 2 | ... | ... | 1 | ... | ... | ... | ... | ... |
| Hawaii ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... |
| New Caledonia ... | 12 | ... | ... | 11 | ... | ... | 1 | ... | ... |
| New Hebrides ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... |
| Norfolk Island ... | 2 | ... | ... | 2 | ... | ... | ... | ... | ... |
| Samoa ... | 2 | ... | ... | 1 | ... | ... | ... | ... | ... |
| Solomon Islands ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| South Sea Islands, so described ... | 21 | ... | ... | 6 | ... | ... | 4 | ... | ... |
| Born at sea ... | 122 | ... | ... | 119 | 2 | ... | 5 | ... | ... |
| Birthplace not stated ... | 44 | ... | ... | 51 | ... | ... | 22 | ... | ... |
| Total ... | 92,880 | 902 | 12 | 92,880 | 902 | 12 | 6,330 | 36 | 1 |

10. **Occupations of Fathers.**—A summary of the occupations of the fathers of all legitimate children, whose births were registered in 1907, will be found in the following table. The figures include all the States of the Commonwealth:—

OCCUPATIONS OF FATHERS OF ALL LEGITIMATE CHILDREN—Continued.

| Occupations. | Number of Fathers. | Occupations. | Number of Fathers. |
|---|--------------------|--|--------------------|
| Fibrous Materials | 38 | Labourers | 17,145 |
| Animal Food... .. | 325 | Others | 242 |
| Vegetable Food | 1,455 | | |
| Groceries, Drinks, Narcotics, and Stimulants | 445 | Total Industrial | 39,854 |
| Animal Matter | 392 | | |
| Workers in wood not elsewhere clsd. | 44 | CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC. | |
| Fodder | 9 | Agricultural | 17,655 |
| Paper | 6 | Pastoral | 3,538 |
| Stone, Clay, Glass | 506 | Dairying | 1,315 |
| Jewellery and Precious Stones | 184 | Fisheries, Capture and Destruction of Wild Animals, or acquisition of Products yielded thereby | 314 |
| Metals, other than Gold & Silver | 2,843 | Forestry | 473 |
| Gas, Electric Lighting | 300 | Water Conservation and Supply | 77 |
| Buildings— | | Mines and Quarries | 9,168 |
| Builders | 390 | Total Primary Producers | 32,540 |
| Stonemasons | 239 | | |
| Bricklayers | 465 | CLASS VII.—INDEFINITE. | |
| Carpenters... .. | 2,360 | Independent Means | 133 |
| Slaters | 14 | University Student | 3 |
| Plasterers | 193 | Occupation not stated | 76 |
| Painters | 1,037 | | |
| Plumbers | 613 | Total Indefinite | 212 |
| Others | 72 | | |
| Roads, Railways, Earthworks | 222 | Total all Occupations | 103,564 |
| Disposal of the Dead | 59 | | |
| Disposal of Refuse | 109 | | |
| Other Industrial Workers— | | | |
| Manufacturers | 326 | | |
| Engineers, Firemen... .. | 2,586 | | |
| Contractors | 831 | | |

§ 2. Marriages.

1. **Marriages, 1901 to 1907.**—The number of marriages registered in the Commonwealth in 1907 was 32,470, the highest number ever recorded. There has been a steady increase in the annual number of marriages in each State since 1903, and the crude marriage-rate increased similarly in all the States, with the exception of Western Australia, where a further diminution may reasonably be expected until the composition of the population as to sexes and ages approaches more closely to that of the other States. The number of marriages in each State since 1901 is shewn below:—

TOTAL MARRIAGES, AUSTRALASIA, 1901 to 1907.

| State, etc. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------|--------|--------|--------|--------|--------|--------|--------|
| N. S. W. ... | 10,538 | 10,486 | 9,759 | 10,424 | 10,970 | 11,551 | 12,187 |
| Victoria ... | 8,406 | 8,477 | 7,605 | 8,210 | 8,774 | 8,930 | 9,575 |
| Queensland ... | 3,341 | 3,243 | 2,933 | 3,078 | 3,173 | 3,588 | 4,105 |
| S. Australia ... | 2,309 | 2,383 | 2,272 | 2,534 | 2,599 | 2,681 | 3,079 |
| W. Australia... .. | 1,821 | 2,024 | 2,064 | 2,088 | 2,123 | 2,261 | 2,114 |
| Tasmania | 1,338 | 1,313 | 1,344 | 1,350 | 1,365 | 1,399 | 1,410 |
| C'wealth ... | 27,753 | 27,926 | 25,977 | 27,684 | 29,004 | 30,410 | 32,470 |
| New Zealand | 6,095 | 6,394 | 6,748 | 6,983 | 7,200 | 7,592 | 8,192 |

2. **Marriage Rates, 1901 to 1907.**—The number of marriages registered per thousand of mean population is shown in the following table for the same period:—

CRUDE MARRIAGE RATE,¹ AUSTRALASIA, 1901 to 1907.

| State, etc. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------|-------|-------|-------|-------|-------|-------|-------|
| N.S.W. ... | 7.73 | 7.54 | 6.89 | 7.23 | 7.44 | 7.65 | 7.86 |
| Victoria ... | 6.98 | 7.00 | 6.29 | 6.80 | 7.24 | 7.30 | 7.73 |
| Queensland ... | 6.66 | 6.36 | 5.72 | 5.93 | 6.03 | 6.73 | 7.62 |
| S. Australia ... | 6.36 | 6.54 | 6.21 | 6.86 | 6.94 | 7.06 | 7.98 |
| W. Australia... | 9.66 | 9.83 | 9.32 | 8.83 | 8.48 | 8.70 | 8.06 |
| Tasmania ... | 7.76 | 7.55 | 7.57 | 7.55 | 7.62 | 7.82 | 7.86 |
| C'wealth ... | 7.32 | 7.24 | 6.66 | 7.00 | 7.22 | 7.44 | 7.81 |
| New Zealand | 7.83 | 8.01 | 8.23 | 8.26 | 8.28 | 8.48 | 8.91 |

1. Number of marriages (not persons married) per 1000 of mean annual population.

3. **Marriage Rates in Various Countries.**—A comparison of the Australian marriage rate with that of European countries shows it to be considerably below the rates prevailing in the East of Europe, almost identical with those of Central and Western Europe, and higher than those of the North of Europe:—

CRUDE MARRIAGE RATE.—VARIOUS COUNTRIES.

| Country. | Year. | Crude Marriage Rate. | Country. | Year. | Crude Marriage Rate. |
|-------------------|-------|----------------------|------------------|-------|----------------------|
| Bulgaria ... | 1905 | 10.9 | Italy ... | 1906 | 7.8 |
| Servia ... | 1906 | 10.2 | Commonwealth ... | 1907 | 7.8 |
| New Zealand... | 1907 | 8.9 | Switzerland... | 1905 | 7.6 |
| Hungary ... | 1906 | 8.7 | Denmark ... | 1906 | 7.5 |
| Russia ... | 1901 | 8.6 | Netherlands | 1906 | 7.5 |
| Belgium ... | 1906 | 8.1 | Spain ... | 1906 | 7.3 |
| German Empire | 1905 | 8.1 | Scotland ... | 1906 | 7.0 |
| Rumania ... | 1905 | 7.9 | Finland ... | 1905 | 6.5 |
| Austria ... | 1905 | 7.8 | Sweden ... | 1906 | 6.1 |
| England and Wales | 1906 | 7.8 | Norway ... | 1906 | 5.9 |
| France ... | 1906 | 7.8 | Ireland ... | 1906 | 5.2 |

4. **Age at Marriage.**—(a) The age at marriage of bridegrooms and brides will be found in the following table, the previous conjugal condition of the contracting parties being distinguished. It will be seen that no less 1156 males were married during 1907, who were less than twenty-one years of age. The corresponding number of females was 6796, of whom four were widows. At the other end of the scale there were twenty-six men of sixty-five years and upwards, who described themselves as bachelors, and five spinsters of corresponding ages.

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1907.

| Age at Marriage. | Bridegrooms. | | | | Brides. | | | |
|------------------|--------------|----------|-----------|--------|------------|---------|-----------|--------|
| | Bachelors | Widowers | Divorced. | Total. | Spinsters. | Widows. | Divorced. | Total. |
| 12 years | ... | ... | ... | ... | 1 | ... | ... | 1 |
| 13 " | ... | ... | ... | ... | ... | ... | ... | ... |
| 14 " | ... | ... | ... | ... | 11 | ... | ... | 11 |
| 15 " | ... | ... | ... | ... | 66 | ... | ... | 66 |
| 16 " | 5 | ... | ... | 5 | 270 | 2.. | ... | 270 |
| 17 " | 16 | ... | ... | 16 | 743 | 1 | ... | 744 |
| 18 " | 121 | ... | ... | 121 | 1,441 | ... | ... | 1,441 |
| 19 " | 345 | ... | ... | 345 | 2,050 | ... | ... | 2,050 |
| 20 " | 669 | ... | ... | 669 | 2,210 | 3 | ... | 2,213 |
| 21 " | 1,942 | ... | ... | 1,942 | 3,671 | 12 | ... | 3,683 |
| 22 " | 2,066 | 1 | ... | 2,067 | 3,008 | 8 | 1 | 3,017 |
| 23 " | 2,323 | 6 | ... | 2,329 | 2,826 | 15 | 2 | 2,843 |
| 24 " | 2,552 | 6 | 1 | 2,559 | 2,468 | 21 | 10 | 2,499 |
| 25 " | 2,454 | 13 | ... | 2,467 | 2,027 | 29 | 6 | 2,062 |
| 26 " | 2,415 | 19 | 3 | 2,437 | 1,845 | 33 | 7 | 1,885 |
| 27 " | 2,195 | 23 | 2 | 2,220 | 1,490 | 36 | 13 | 1,539 |
| 28 " | 2,025 | 28 | 2 | 2,055 | 1,300 | 53 | 8 | 1,361 |
| 29 " | 1,698 | 32 | 7 | 1,737 | 972 | 66 | 10 | 1,048 |
| 30 " | 1,445 | 46 | 3 | 1,494 | 815 | 57 | 12 | 884 |
| 31 " | 1,066 | 41 | 3 | 1,110 | 563 | 50 | 5 | 618 |
| 32 " | 1,025 | 55 | 5 | 1,085 | 505 | 71 | 8 | 584 |
| 33 " | 783 | 60 | 10 | 853 | 399 | 46 | 10 | 455 |
| 34 " | 782 | 42 | 5 | 829 | 323 | 64 | 10 | 397 |
| 35 " | 666 | 61 | 6 | 733 | 296 | 61 | 7 | 364 |
| 36 " | 584 | 68 | 9 | 661 | 236 | 65 | 8 | 309 |
| 37 " | 493 | 65 | 10 | 568 | 209 | 60 | 7 | 276 |
| 38 " | 481 | 85 | 8 | 574 | 166 | 72 | 11 | 249 |
| 39 " | 389 | 83 | 8 | 480 | 117 | 78 | 6 | 201 |
| 40 " | 300 | 81 | 5 | 386 | 107 | 92 | 4 | 203 |
| 41 " | 215 | 75 | 5 | 295 | 53 | 56 | 6 | 115 |
| 42 " | 176 | 87 | 5 | 268 | 84 | 63 | 4 | 151 |
| 43 " | 149 | 72 | 5 | 226 | 49 | 64 | 4 | 117 |
| 44 " | 121 | 76 | 1 | 198 | 45 | 61 | 4 | 110 |
| 45 " | 109 | 72 | 7 | 188 | 37 | 50 | 5 | 92 |
| 46 " | 111 | 69 | 2 | 182 | 27 | 38 | 4 | 69 |
| 47 " | 88 | 70 | 6 | 164 | 24 | 52 | 5 | 81 |
| 48 " | 64 | 74 | 6 | 144 | 25 | 41 | 2 | 68 |
| 49 " | 55 | 64 | 6 | 125 | 11 | 30 | 2 | 43 |
| 50 " | 51 | 67 | 2 | 120 | 14 | 30 | 1 | 45 |
| 51 " | 38 | 44 | 3 | 85 | 7 | 27 | 1 | 35 |
| 52 " | 33 | 43 | ... | 76 | 11 | 30 | 1 | 42 |
| 53 " | 27 | 46 | 3 | 76 | 5 | 18 | ... | 23 |
| 54 " | 19 | 44 | 2 | 65 | 4 | 23 | ... | 27 |
| 55 " | 15 | 26 | ... | 41 | 4 | 13 | 1 | 18 |
| 56 " | 14 | 36 | 3 | 53 | 3 | 23 | 1 | 27 |
| 57 " | 19 | 23 | 2 | 44 | ... | 14 | ... | 14 |
| 58 " | 8 | 33 | 1 | 42 | 1 | 10 | ... | 11 |
| 59 " | 11 | 16 | ... | 27 | 3 | 8 | ... | 11 |
| 60 " | 5 | 32 | ... | 37 | 2 | 9 | ... | 11 |
| 61 " | 4 | 11 | ... | 15 | ... | 4 | ... | 4 |
| 62 " | 7 | 21 | ... | 28 | 1 | 9 | ... | 10 |
| 63 " | 4 | 22 | ... | 26 | 1 | 5 | ... | 6 |
| 64 " | 5 | 20 | ... | 25 | ... | 7 | ... | 7 |
| 65 " | 8 | 14 | ... | 22 | 1 | 4 | ... | 5 |
| 66 " | 2 | 19 | ... | 21 | 1 | 5 | ... | 6 |
| 67 " | 3 | 12 | ... | 15 | ... | 7 | ... | 7 |
| 68 " | 2 | 21 | ... | 23 | 1 | 4 | ... | 5 |
| 69 " | ... | 7 | ... | 7 | 1 | 3 | ... | 4 |
| 70 " | 3 | 14 | ... | 17 | ... | 6 | ... | 6 |

AGES AND CONJUGAL CONDITIONS OF PERSONS MARRIED, 1907—Continued.

| Age at Marriage. | Bridegrooms. | | | | Brides. | | | |
|------------------|--------------|----------|-----------|--------|------------|---------|-----------|--------|
| | Bachelors | Widowers | Divorced. | Total. | Spinsters. | Widows. | Divorced. | Total. |
| 71 years ... | 2 | 5 | ... | 7 | ... | ... | ... | ... |
| 72 " ... | 1 | 7 | ... | 8 | ... | 2 | ... | 2 |
| 73 " ... | ... | 9 | ... | 9 | ... | 4 | ... | 4 |
| 74 " ... | 1 | 9 | ... | 10 | ... | 2 | ... | 2 |
| 75 " ... | ... | 2 | ... | 2 | ... | 2 | ... | 2 |
| 76 " ... | 1 | 4 | 1 | 6 | ... | ... | ... | ... |
| 77 " ... | 2 | 5 | ... | 7 | ... | 1 | ... | 1 |
| 78 " ... | ... | 5 | ... | 5 | ... | 1 | ... | 1 |
| 79 " ... | 1 | 2 | ... | 3 | 1 | ... | ... | 1 |
| 80 " ... | ... | 3 | ... | 3 | ... | ... | ... | ... |
| 81 " ... | ... | 3 | ... | 3 | ... | ... | ... | ... |
| 82 " ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 83 " ... | ... | 1 | ... | 1 | ... | ... | ... | ... |
| Not stated ... | 6 | 3 | ... | 9 | 12 | 2 | ... | 14 |
| Total ... | 30,220 | 2,103 | 147 | 32,470 | 30,563 | 1,721 | 186 | 32,470 |

(b) The relative ages of bridegrooms and brides are shown for single years in "Bulletin of Population and Vital Statistics, No. 8"; a condensation is here given into age-groups of five years:—

RELATIVE AGES OF PERSONS MARRIED, 1907.

| Ages. | Total Bridegrooms. | Ages of Brides. | | | | | | | | Not Stated. |
|----------------------|--------------------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|---------------|-------------|
| | | Under 15. | 15 to 19. | 20 to 24. | 25 to 29. | 30 to 34. | 35 to 39. | 40 to 44. | 45 and Upwds. | |
| Ages of Bridegrooms. | | | | | | | | | | |
| Under 20 ... | 487 | ... | 334 | 141 | 10 | 2 | ... | ... | ... | ... |
| 20 to 24 ... | 9,566 | 7 | 2,467 | 5,872 | 1,024 | 154 | 33 | 5 | 3 | 1 |
| 25 to 29 ... | 10,916 | 2 | 1,236 | 5,434 | 3,415 | 630 | 164 | 28 | 4 | 3 |
| 30 to 34 ... | 5,371 | ... | 347 | 1,789 | 1,954 | 953 | 245 | 67 | 16 | ... |
| 35 to 39 ... | 3,016 | 2 | 140 | 674 | 977 | 667 | 382 | 130 | 42 | 2 |
| 40 to 44 ... | 1,373 | ... | 33 | 225 | 301 | 308 | 267 | 164 | 74 | 1 |
| 45 to 49 ... | 603 | 1 | 10 | 81 | 117 | 136 | 167 | 147 | 144 | ... |
| 50 to 54 ... | 422 | ... | 4 | 21 | 64 | 58 | 76 | 77 | 122 | ... |
| 55 to 59 ... | 207 | ... | ... | 7 | 17 | 18 | 34 | 40 | 90 | 1 |
| 60 to 64 ... | 131 | ... | ... | 6 | 9 | 6 | 18 | 15 | 77 | ... |
| 65 and upwards ... | 169 | ... | ... | 3 | 7 | 4 | 13 | 23 | 118 | 1 |
| Not stated ... | 9 | ... | ... | 2 | ... | 2 | ... | ... | ... | 5 |
| Total Brides ... | 32,470 | 12 | 4,571 | 14,255 | 7,895 | 2,936 | 1,399 | 696 | 690 | 14 |

5. **Previous Conjugal Condition.**—In a previous table the total number of bachelors and spinsters, widowed and divorced persons, who were married during the year 1907, was shown. In the following table the relative conjugal conditions of the contracting parties are given:—

RELATIVE CONJUGAL CONDITIONS OF PERSONS MARRIED, 1907.

| Conjugal Condition. | Total Bridegrooms. | Brides. | | | |
|---------------------|--------------------|------------|---------|-----------|-----|
| | | Spinsters. | Widows. | Divorced. | |
| Bridegrooms { | Bachelors ... | 30,220 | 28,967 | 1,113 | 140 |
| | Widowers ... | 2,103 | 1,479 | 590 | 34 |
| | Divorced ... | 147 | 117 | 18 | 12 |
| Total Brides ... | 32,470 | 30,563 | 1,721 | 186 | |

6. **Birthplaces of Persons Married.**—Information as to the birthplaces of persons who were married in 1907 was not obtained in the States of South Australia and Western Australia; the following figures refer, therefore, only to New South Wales, Victoria, Queensland, and Tasmania. As might be expected, there were more brides than bridegrooms who were born in one of the Commonwealth States, and more bridegrooms than brides who were born elsewhere. In "Bulletin No. 8 of Population and Vital Statistics" the relative birthplaces of bridegrooms and brides will be found tabulated:—

BIRTHPLACES OF PERSONS MARRIED, 1907.

| Birthplaces. | Bridegrooms. | Brides. | Birthplaces. | Bridegrooms. | Brides. |
|-----------------------|--------------|---------|---------------------------|--------------|---------|
| New South Wales ... | 9,578 | 10,517 | British West Indies ... | 1 | ... |
| Victoria ... | 8,287 | 8,673 | Central America ... | 1 | ... |
| Queensland ... | 2,670 | 3,360 | South America ... | 3 | ... |
| South Australia ... | 795 | 756 | Aden ... | 1 | ... |
| Western Australia ... | 13 | 15 | Afghanistan ... | 1 | ... |
| Tasmania ... | 1,293 | 1,483 | Arabia ... | 1 | ... |
| New Zealand ... | 391 | 298 | Burmah ... | 1 | ... |
| Austria-Hungary ... | 21 | 2 | Ceylon ... | 7 | 3 |
| Belgium ... | 4 | 3 | China ... | 50 | 4 |
| Bulgaria ... | 1 | ... | Cyprus ... | 1 | ... |
| Channel Islands ... | 5 | 5 | Dutch East Indies ... | 3 | ... |
| Denmark ... | 48 | 16 | India ... | 56 | 12 |
| England ... | 2,246 | 1,165 | Japan ... | 15 | 7 |
| Finland ... | 8 | ... | Philippine Islands ... | 4 | ... |
| France ... | 23 | 7 | Straits Settlements ... | 5 | 1 |
| Germany ... | 195 | 89 | Syria ... | 15 | 7 |
| Greece ... | 7 | ... | Africa (so described) ... | 1 | ... |
| Ireland ... | 544 | 364 | Algeria ... | 1 | ... |
| Isle of Man ... | 2 | 1 | Egypt ... | 1 | 2 |
| Italy ... | 51 | 15 | Madagascar ... | ... | 1 |
| Malta ... | 1 | ... | Madeira ... | 1 | ... |
| Monaco ... | ... | 1 | Mauritius ... | 8 | 4 |
| Netherlands ... | 2 | ... | Seychelles Islands ... | 1 | ... |
| Norway ... | 30 | 4 | South Africa ... | 15 | 13 |
| Portugal ... | 1 | ... | Fiji ... | 11 | 12 |
| Rumania ... | 4 | 1 | Friendly Islands ... | 2 | ... |
| Russia ... | 22 | 10 | New Caledonia ... | 1 | 2 |
| Scotland ... | 594 | 299 | New Hebrides ... | 7 | 2 |
| Spain ... | 2 | 3 | Samoa ... | 3 | 1 |
| Sweden ... | 48 | 6 | Solomon Islands ... | 3 | 1 |
| Switzerland ... | 12 | 1 | S. Sea Is. (so describ'd) | 21 | 3 |
| Turkey ... | ... | 1 | Born at sea ... | 29 | 20 |
| Wales ... | 59 | 33 | Birthplace not stated | 12 | 17 |
| Canada ... | 32 | 6 | Total ... | 27,277 | 27,277 |
| Cuba ... | 1 | ... | | | |
| Mexico ... | 1 | 1 | | | |
| United States... .. | 63 | 30 | | | |
| Bermudas ... | 1 | ... | | | |

7. **Occupations and Ages of Bridegrooms.**—The question has been asked whether persons in some walks of life marry earlier than in others, and a tabulation has therefore been made of the occupations and ages of all males who were married in the Commonwealth in the year 1907. In "Bulletin No. 8" this tabulation is shown for orders of occupations, while here it is repeated for classes only, with a subdivision of the Industrial class and of the class of Primary Producers. The average ages of the persons falling under those twelve subdivisions were determined, and it appears that, apart from the Indefinite class, which consists chiefly of persons who have retired from business and who

are living on their own means, and where a high average age may naturally be expected, the average age ranges from 28.01 in the Manufacturing class to 32.55 years in the Pastoral class. The figures for one year are, however, rather small to allow of definite conclusions being drawn. The results obtained are shewn in the following table:—

OCCUPATIONS AND AGES OF BRIDEGROOMS, 1907.

| Ages at Marriage. | Professional | Domestic. | Mercantile. | Transport and Communication. | Industrial. | | | Primary Producers. | | | Indefinite. | |
|----------------------|--------------|-----------|-------------|------------------------------|---------------------|-------------------------------|--------------------------------------|--------------------|-----------|------------------------|-------------|-----------------------------|
| | | | | | Manu- facturing. | Building and Construction. | Indefinite Industrial Workers. | Agricultural. | Pastoral. | Mines and Quarries. | | Other Primary Producers. |
| 16 years ... | ... | ... | 1 | 1 | 9 | ... | 1 | ... | ... | ... | ... | ... |
| 17 " ... | 1 | 1 | 5 | ... | 36 | 10 | 24 | 1 | ... | ... | ... | ... |
| 18 " ... | ... | 2 | 16 | ... | 50 | 3 | 3 | ... | ... | ... | ... | ... |
| 19 " ... | 3 | 2 | 30 | 38 | 75 | 25 | 101 | 6 | 1 | 7 | 4 | 3 |
| 20 " ... | 9 | 28 | 91 | 60 | 134 | 46 | 165 | 6 | ... | ... | ... | ... |
| 21 " ... | ... | 52 | 268 | 210 | 324 | 124 | 492 | 168 | 31 | 177 | 37 | ... |
| 22 " ... | 56 | 48 | 287 | 317 | 325 | 131 | 523 | 304 | 24 | 200 | 26 | ... |
| 23 " ... | 73 | 59 | 369 | 309 | 387 | 138 | 586 | 242 | 42 | 174 | 29 | ... |
| 24 " ... | 85 | 62 | 401 | 310 | 397 | 135 | 594 | 230 | 54 | 204 | 38 | ... |
| 25 " ... | 128 | 52 | 440 | 310 | 386 | 140 | 495 | 321 | 37 | 184 | 28 | 10 |
| 26 " ... | 117 | 53 | 406 | 312 | 317 | 112 | 537 | 371 | 73 | 184 | 28 | 8 |
| 27 " ... | 125 | 50 | 375 | 177 | 275 | 100 | 457 | 345 | 75 | 188 | 21 | 10 |
| 28 " ... | 124 | 36 | 353 | 154 | 281 | 88 | 436 | 342 | 58 | 152 | 19 | 7 |
| 29 " ... | 129 | 36 | 304 | 130 | 199 | 71 | 333 | 302 | 68 | 126 | 29 | 5 |
| 30 " ... | 134 | 40 | 274 | 127 | 150 | 56 | 285 | 257 | 63 | 103 | 17 | 6 |
| 31 " ... | 136 | 49 | 214 | 74 | 123 | 43 | 190 | 202 | 54 | 93 | 10 | 2 |
| 32 " ... | 86 | 31 | 174 | 79 | 121 | 38 | 190 | 191 | 51 | 96 | 16 | 9 |
| 33 " ... | 89 | 32 | 147 | 51 | 75 | 38 | 156 | 180 | 50 | 52 | 9 | 3 |
| 34 " ... | 60 | 32 | 129 | 51 | 83 | 35 | 134 | 180 | 41 | 76 | 18 | 3 |
| 35 to 39 years | 208 | 85 | 504 | 235 | 279 | 136 | 586 | 548 | 163 | 214 | 41 | 17 |
| 40 " 44 " | 107 | 37 | 250 | 98 | 134 | 72 | 232 | 237 | 80 | 90 | 22 | 14 |
| 45 " 49 " | 47 | 25 | 123 | 79 | 77 | 60 | 154 | 128 | 39 | 51 | 7 | 13 |
| 50 years and upwards | 64 | 31 | 120 | 58 | 95 | 74 | 147 | 159 | 51 | 62 | 10 | 58 |
| Not stated | 2 | ... | 2 | 2 | ... | ... | ... | 1 | ... | ... | ... | ... |
| Total | 1,843 | 807 | 5,282 | 2,713 | 4,276 | 1,672 | 6,802 | 4,754 | 1,096 | 2,564 | 463 | 198 |
| Average age—years | 31.26 | 30.12 | 29.74 | 28.90 | 28.01 | 29.71 | 28.76 | 30.93 | 32.55 | 29.03 | 29.19 | 33.26 |

8. **Fertility of Marriages.**—The quotient obtained by division of the legitimate births registered, say during the five years 1903 to 1907, by the number of marriages registered during the five years 1898 to 1902, i.e., the period antecedent by five years to the period of the births, has been called the "fertility of marriages." This works out at 3.70, or in other words, the number of children to be expected from every four marriages in the Commonwealth is fifteen. This method, while not professing any claim to accuracy, furnishes results which agree fairly well with those found by more elaborate and careful investigation.

9. **Registration of Marriages.**—In all the States of the Commonwealth marriages may be celebrated either by ministers of religion, whose names are registered for that purpose with the Registrar-General, or by certain civil officers, in most cases district registrars. The percentage of marriages celebrated by ministers of religion has increased from 96.25 per cent. in 1901 to 97.37 per cent. in 1907. The figures for the individual States were in 1907: New South Wales, 97.83 per cent.; Victoria, 99.20 per cent.; Queensland, 94.88 per cent.; South Australia, 96.82 per cent.; Western Australia, 90.82 per cent.; and Tasmania, 99.22 per cent. The registered ministers in 1907 belonged to forty-three different denominations, some of which, however, can hardly be regarded as having any valid existence. The extraordinary number of marriages credited to some denominations, the number of whose adherents, according to the Census returns, was very small indeed, is not inconsistent with the supposition that some of these denomina-

tions have been created for the purpose of obtaining the registration necessary to conduct marriages, or to be connected with a so-called "Matrimonial Agency." The figures for 1907 are shewn in the following table:—

MARRIAGES IN EACH DENOMINATION, 1907.

| Denomination. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | C'with. |
|------------------------------------|---------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Church of England | 4,671 | 2,050 | 1,054 | 645 | 734 | 497 | 9,651 |
| Roman Catholic Church | 2,187 | 1,450 | 828 | 282 | 366 | 180 | 5,293 |
| Presbyterian Church of Australia | 1,569 | 1,530 | 580 | 152 | 197 | 172 | 4,200 |
| " " East. Australia | 1 | ... | ... | ... | ... | ... | 1 |
| Independent Presbyterian Church | ... | 880 | ... | 1 | ... | ... | 881 |
| Methodist Church | 1,591 | 1,433 | 708 | 1,084 | 372 | 254 | 5,442 |
| Primitive Methodist Church | ... | ... | 9 | ... | ... | ... | 9 |
| Lay Methodist Church | 38 | ... | ... | ... | ... | ... | 38 |
| Independent Methodist Church... | ... | ... | 5 | ... | ... | ... | 5 |
| Congregational Church | 1,296 | 1,092 | 127 | 140 | 91 | 173 | 2,919 |
| Baptist Church | 264 | 330 | 186 | 227 | 91 | 110 | 1,208 |
| Particular Baptist Church | 1 | 1 | ... | ... | ... | ... | 2 |
| German Baptist Church | ... | ... | 13 | ... | ... | ... | 13 |
| Church of Christ | 79 | 165 | 24 | 151 | 23 | 2 | 444 |
| Christian Brethren | ... | ... | ... | 27 | ... | ... | 27 |
| Lutheran Church | 16 | 53 | 127 | 194 | 14 | ... | 404 |
| Evangelical Lutheran Church | 9 | 4 | 6 | ... | ... | ... | 19 |
| Protest'nt State Church of Prussia | ... | ... | 1 | ... | ... | ... | 1 |
| Moravian Church | ... | ... | 1 | 2 | ... | ... | 3 |
| Australian Church | ... | 26 | ... | ... | ... | ... | 26 |
| Unitarian Church | 19 | 1 | ... | 5 | ... | ... | 25 |
| New Unitarian Church | 45 | ... | ... | ... | ... | ... | 45 |
| Society of Friends | ... | ... | ... | ... | ... | 1 | 1 |
| Catholic Apostolic Church | 1 | 1 | 1 | ... | ... | ... | 3 |
| Apostolic Church | 1 | 1 | 7 | ... | ... | ... | 9 |
| Christian Apost'lic Church of Zion | 1 | ... | ... | ... | ... | ... | 1 |
| New Church | ... | 1 | ... | ... | ... | ... | 1 |
| New Jerusalem Church | ... | ... | 5 | ... | ... | ... | 5 |
| Plymouth Brethren | 1 | ... | ... | ... | ... | ... | 1 |
| Franco-Australian Church | 13 | ... | ... | ... | ... | ... | 13 |
| Seventh-Day Adventists | 3 | 10 | ... | 4 | 3 | 4 | 24 |
| Latter-Day Saints | 40 | 134 | ... | 4 | ... | ... | 178 |
| Christian Church | ... | ... | 3 | ... | ... | ... | 3 |
| Free Christian Church... .. | ... | 169 | ... | ... | ... | ... | 169 |
| New Thought Church | 6 | ... | ... | ... | ... | ... | 6 |
| Salvation Army | 45 | 35 | 22 | 32 | 19 | 6 | 159 |
| Christian Assembly | ... | ... | 9 | ... | ... | ... | 9 |
| Joyful News Mission | ... | ... | 170 | ... | ... | ... | 170 |
| City Mission | 1 | ... | ... | 30 | ... | ... | 31 |
| Ballarat Town Mission | ... | 98 | ... | ... | ... | ... | 98 |
| Aboriginal Mission | 3 | ... | ... | ... | ... | ... | 3 |
| Greek Orthodox Church | 3 | ... | ... | ... | ... | ... | 3 |
| Jewish | 18 | 32 | ... | 1 | 9 | ... | 60 |
| Registrar's Office | 265 | 77 | 210 | 98 | 194 | 11 | 855 |
| Not stated | ... | 2 | 9 | ... | 1 | ... | 12 |
| Total | 12,187 | 9,575 | 4,105 | 3,079 | 2,114 | 1,410 | 32,470 |

10. **Mark Signatures.**—The marriage registers afford some clue, even if an imperfect one, to the illiteracy of the adult population, since a small and constantly diminishing percentage of bridegrooms and brides sign the registers with marks.

(i.) *Males and Females, 1901 to 1907.* For a number of years mark signatures by males have been slightly more numerous than those by females, the percentages for the Commonwealth during the past seven years having been as follows:—

**PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, AUSTRALIA,
1901 to 1907.**

| Year. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------|-------|-------|-------|-------|-------|-------|-------|
| Male ... | 1.35 | 1.21 | 1.17 | 0.95 | 0.91 | 0.92 | 0.81 |
| Female ... | 1.29 | 1.11 | 1.02 | 0.91 | 0.93 | 0.86 | 0.70 |

(ii.) *Mark Signatures in Commonwealth States, 1901 to 1907.* The following table shews that while the Tasmanian percentage has been the highest, and the Victorian the lowest, in each of the seven years under review, there has been a marked decrease in every State:—

**PERCENTAGE OF MARK SIGNATURES AT MARRIAGE IN AUSTRALASIA,
1901 to 1907.**

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| N.S.W. ... | 1.34 | 1.22 | 1.10 | 0.90 | 1.12 | 0.94 | 0.87 |
| Victoria ... | 0.53 | 0.61 | 0.60 | 0.54 | 0.44 | 0.43 | 0.36 |
| Queensland ... | 2.56 | 1.93 | 1.86 | 1.72 | 1.39 | 1.67 | 1.14 |
| South Australia | 0.95 | 1.15 | 1.32 | 0.65 | 0.83 | 0.67 | 0.55 |
| West. Australia | 0.99 | 0.69 | 0.75 | 0.53 | 0.57 | 0.66 | 0.64 |
| Tasmania ... | 4.11 | 3.12 | 2.38 | 2.85 | 2.12 | 2.18 | 2.02 |
| Commonwealth | 1.32 | 1.16 | 1.10 | 0.93 | 0.92 | 0.89 | 0.76 |
| New Zealand ... | 0.54 | 0.34 | 0.50 | 0.54 | 0.32 | 0.33 | 0.23 |

A complete disappearance of mark signatures is hardly to be expected, for the available information tends to shew that two-thirds of those who sign with marks are natives of their respective States, who apparently have not made use of the advantages offered to them by the State schools.

§ 3. Deaths.

1. Male and Female Deaths, 1901 to 1907.—The total number of deaths registered in the Commonwealth from 1901 to 1907 inclusive, gives an annual average of 26,256 males and 19,233 females, the details being as follows:—

MALE DEATHS, AUSTRALIA, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | Rate. 1907. |
|------------------|--------|--------|--------|--------|--------|--------|--------|----------------|
| N.S.W. ... | 9,327 | 9,535 | 9,428 | 8,733 | 8,709 | 8,715 | 9,444 | 11.40 |
| Victoria ... | 9,035 | 9,152 | 8,626 | 7,992 | 8,273 | 8,342 | 7,977 | 12.88 |
| Queensland ... | 3,838 | 3,924 | 3,951 | 3,259 | 3,499 | 3,212 | 3,482 | 11.85 |
| S. Australia ... | 2,289 | 2,389 | 2,242 | 2,071 | 2,041 | 2,109 | 2,087 | 10.23 |
| W. Australia... | 1,653 | 1,832 | 1,829 | 1,823 | 1,728 | 1,878 | 1,866 | 12.17 |
| Tasmania ... | 1,001 | 1,044 | 1,136 | 1,061 | 1,061 | 1,118 | 1,083 | 11.70 |
| C'wealth ... | 27,143 | 27,876 | 27,212 | 24,939 | 25,311 | 25,374 | 25,939 | 11.84 |

FEMALE DEATHS, AUSTRALIA, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | Rate. 1907. |
|------------------|--------|--------|--------|--------|--------|--------|--------|----------------|
| N.S.W. ... | 6,694 | 7,111 | 7,069 | 6,627 | 6,269 | 6,260 | 6,967 | 9.65 |
| Victoria ... | 6,869 | 7,025 | 6,969 | 6,401 | 6,403 | 6,895 | 6,562 | 10.59 |
| Queensland ... | 2,169 | 2,280 | 2,395 | 1,991 | 2,004 | 1,883 | 2,116 | 8.64 |
| S. Australia ... | 1,776 | 1,925 | 1,709 | 1,707 | 1,763 | 1,822 | 1,741 | 9.59 |
| W. Australia | 866 | 991 | 959 | 994 | 981 | 1,206 | 1,065 | 9.78 |
| Tasmania ... | 813 | 870 | 980 | 913 | 783 | 893 | 915 | 10.55 |
| Commonwealth ... | 19,187 | 20,202 | 20,081 | 18,633 | 18,203 | 18,959 | 19,366 | 9.86 |

2. **Male and Female Death Rates, 1907.**—The crude male and female death rates for 1907 only are given, viz., in the last column of the preceding tables: both are high for Victoria and Western Australia, while the Queensland rate is lowest for females, and the South Australian for males.

Owing to differences in the age constitution of the six States, the crude rates are not, however, strictly comparable, but as has been pointed out in the case of the births, the available data, at a period so remote from the Census, are insufficient for a satisfactory distribution of the population according to ages. For the purposes of calculating the "Index of Mortality" (see page 231) a distribution into five age-groups has, however, been made.

3. **Death Rates of Various Countries.**—A comparison with foreign States is, for the same reason, apt to show the Commonwealth in too favourable a light, but even if an allowance for the different age constitution were made, it would still be found occupying a very enviable position:—

DEATH RATES OF VARIOUS COUNTRIES.

| Country. | Year. | Crude Death Rate. | Country. | Year. | Crude Death Rate. |
|-------------------------|-------------|-------------------------|----------------------|-------|-------------------------|
| Commonwealth ... | 1907 | 10.9 | France ... | 1906 | 19.9 |
| New Zealand ... | 1906 | 10.9 | Italy ... | 1906 | 20.8 |
| Denmark ... | 1906 | 13.5 | Bulgaria ... | 1905 | 21.9 |
| Norway ... | 1906 | 13.7 | Japan ... | 1905 | 22.0 |
| Sweden ... | 1906 | 14.4 | Servia ... | 1906 | 24.0 |
| Netherlands ... | 1906 | 14.8 | Hungary ... | 1906 | 24.8 |
| England and Wales ... | 1906 | 15.4 | Austria ... | 1905 | 25.0 |
| United Kingdom ... | 1906 | 15.6 | Rumania ... | 1905 | 25.0 |
| Scotland ... | 1906 | 16.0 | Jamaica ... | 1906 | 26.2 |
| Belgium ... | 1906 | 16.4 | Spain ... | 1906 | 26.2 |
| Ireland ... | 1906 | 17.0 | Russia, European ... | 1901 | 32.1 |
| Switzerland ... | 1905 | 17.9 | Chile ... | 1905 | 32.3 |
| Finland ... | 1905 | 18.4 | Ceylon ... | 1905 | 34.3 |
| German Empire ... | 1905 | 19.8 | | | |

4. **Total Deaths, 1901 to 1907.**—The total number of deaths in each of the Commonwealth States during the seven years 1901 to 1907, is shown below:—

TOTAL DEATHS, AUSTRALASIA, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------|--------|--------|--------|--------|--------|--------|--------|
| N.S.W. ... | 16,021 | 16,646 | 16,497 | 15,360 | 14,978 | 14,975 | 16,411 |
| Victoria ... | 15,904 | 16,177 | 15,595 | 14,393 | 14,676 | 15,237 | 14,539 |
| Queensland ... | 6,007 | 6,204 | 6,346 | 5,250 | 5,503 | 5,095 | 5,598 |
| South Australia ... | 4,065 | 4,314 | 3,951 | 3,778 | 3,804 | 3,931 | 3,828 |
| W. Australia ... | 2,519 | 2,823 | 2,788 | 2,817 | 2,709 | 3,084 | 2,931 |
| Tasmania ... | 1,814 | 1,914 | 2,116 | 1,974 | 1,844 | 2,011 | 1,998 |
| Commonwealth | 46,330 | 48,078 | 47,293 | 43,572 | 43,514 | 44,333 | 45,305 |
| New Zealand... | 7,634 | 8,375 | 8,528 | 8,087 | 8,061 | 8,339 | 10,066 |

5. **Crude Death Rates, 1901 to 1907.**—The death rate for 1907 was the lowest experienced during the seven years under review in the States of Victoria and South Australia. In New South Wales, Queensland, and Western Australia there were lower rates in some of the intermediate years, though a satisfactory decrease on the 1901 rate is shewn. In Tasmania, however, the rate for 1907 was higher than that for 1901, and was only surpassed in 1903 and 1906. The Commonwealth rate for 1905 and 1906 was a little lower than that for 1907, but the difference is insensible.

CRUDE DEATH RATES, AUSTRALASIA, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------|-------|-------|-------|-------|-------|-------|-------|
| N.S.W. ... | 11.75 | 11.97 | 11.65 | 10.65 | 10.16 | 9.92 | 10.58 |
| Victoria ... | 13.21 | 13.36 | 12.90 | 11.92 | 12.10 | 12.45 | 11.74 |
| Queensland ... | 11.98 | 12.17 | 12.38 | 10.11 | 10.47 | 9.56 | 10.39 |
| South Australia ... | 11.20 | 11.83 | 10.80 | 10.22 | 10.15 | 10.35 | 9.93 |
| W. Australia ... | 13.37 | 13.71 | 12.60 | 11.91 | 10.82 | 11.87 | 11.17 |
| Tasmania ... | 10.52 | 11.00 | 11.92 | 11.04 | 10.29 | 11.24 | 11.14 |
| Commonwealth | 12.22 | 12.47 | 12.12 | 11.02 | 10.83 | 10.85 | 10.90 |
| New Zealand... | 9.81 | 10.50 | 10.40 | 9.57 | 9.27 | 9.31 | 10.95 |

6. **Male and Female Death Rates, 1901 to 1907.**—The rise in the Commonwealth rate from 1905 to 1907 was due to an increase in the female death rate, as the subjoined table shews:—

MALE AND FEMALE DEATH RATES, AUSTRALIA, 1901 to 1907.

| Year. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Male Rate ... | 13.65 | 13.78 | 13.30 | 12.02 | 11.98 | 11.78 | 11.84 |
| Female Rate... | 10.64 | 11.02 | 10.82 | 9.92 | 9.56 | 9.81 | 9.86 |
| Crude Total Rate ... | 12.22 | 12.47 | 12.12 | 11.02 | 10.83 | 10.85 | 10.90 |

7. **Infantile Death Rate.**—(i.) *Deaths and Death Rates of Male and Female Infants, 1901 to 1907.* A marked improvement has taken place in the infantile death rate since

1901, in which year it stood at 103.61 per thousand births registered, while, in 1907 it had fallen to 81.06 per thousand, a rate lower than that experienced in any previous year. In the following table, which shews both the total number of deaths of children under one year and the rate per thousand births since 1901, males and females are distinguished. The universal experience that during the first few years of life the excess of male births disappears as a consequence of the higher death rate of male infants is shewn by the fact that out of 374,787 male infants born from 1901 to 1907, 37,491 died during their first year of life, while of 356,668 female infants the number who died was only 30,171:—

**NUMBER OF INFANTILE DEATHS AND RATE OF INFANTILE MORTALITY, AUSTRALIA,
1901 TO 1907.**

| Year. | Registered Deaths under one year. | | | Rate of Infantile Mortality. ¹ | | |
|-------|-----------------------------------|----------|--------|---|----------|--------|
| | Males. | Females. | Total. | Males. | Females. | Total. |
| 1901 | 5,888 | 4,778 | 10,666 | 112.13 | 94.73 | 103.61 |
| 1902 | 6,008 | 5,004 | 11,012 | 114.19 | 99.76 | 107.15 |
| 1903 | 6,003 | 4,960 | 10,963 | 119.09 | 103.25 | 111.36 |
| 1904 | 4,713 | 3,800 | 8,513 | 88.33 | 74.87 | 81.77 |
| 1905 | 4,884 | 3,696 | 8,580 | 90.69 | 72.41 | 81.76 |
| 1906 | 5,002 | 3,981 | 8,983 | 90.10 | 76.01 | 83.26 |
| 1907 | 4,993 | 3,952 | 8,945 | 88.39 | 73.38 | 81.06 |

1. Number of deaths under 1 year per 1000 births registered.

(ii.) *Infantile Mortality, 1901 to 1907.* Divided among the six States, the rate of infantile mortality during the last seven years was as follows:—

RATE OF INFANTILE MORTALITY, AUSTRALASIA, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|--------|--------|--------|--------|--------|--------|-------|
| N.S.W. ... | 103.74 | 109.74 | 110.35 | 82.42 | 80.55 | 74.53 | 88.46 |
| Victoria ... | 102.94 | 108.60 | 106.40 | 77.92 | 83.30 | 92.92 | 72.60 |
| Queensland ... | 101.94 | 100.17 | 119.88 | 76.13 | 75.52 | 74.68 | 77.65 |
| South Australia | 99.99 | 94.00 | 97.09 | 70.51 | 72.96 | 75.90 | 66.57 |
| West. Australia | 128.89 | 142.01 | 141.22 | 113.02 | 104.19 | 110.00 | 97.51 |
| Tasmania ... | 89.05 | 79.06 | 110.83 | 90.70 | 80.65 | 90.19 | 82.97 |
| Commonwealth | 103.61 | 107.15 | 111.36 | 81.77 | 81.76 | 83.26 | 81.06 |
| New Zealand... | 76.28 | 82.89 | 81.08 | 70.98 | 67.52 | 62.10 | 88.79 |

The movement has been a fairly regular one, shewing an increase in the rate during 1902 and 1903, and a fall since the latter year, so that the 1907 rate was lower than that for 1901 in every State, but above the 1906 rate in New South Wales and Queensland.

(iii.) *Infantile Mortality in Various Countries.* Compared with European countries the States of the Commonwealth occupy a very enviable position, and it may be pointed out that experience has shewn that a high birth rate is often, though not invariably,

accompanied by a high infantile death rate. The figures in the subjoined table relate to the latest years for which returns are available :—

RATE OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.

| Country. | Year. | Rate of Infantile Mortality. | Crude Birth Rate. | Country. | Year. | Rate of Infantile Mortality. | Crude Birth Rate. |
|-------------------------|-------------|------------------------------|-------------------|----------------------|-------|------------------------------|-------------------|
| Commonwealth ... | 1907 | 81 | 26.6 | Servia | 1906 | 144 | 41.3 |
| Norway | 1905 | 81 | 27.4 | Belgium | 1905 | 146 | 26.1 |
| Sweden | 1904 | 84 | 25.8 | Japan | 1905 | 151 | 30.6 |
| New Zealand | 1907 | 89 | 27.3 | Italy | 1905 | 166 | 32.5 |
| Ireland | 1906 | 93 | 23.6 | Spain | 1906 | 173 | 34.1 |
| Scotland | 1905 | 116 | 27.9 | Jamaica | 1906 | 197 | 38.1 |
| Denmark | 1905 | 121 | 28.4 | Ceylon | 1906 | 198 | 35.7 |
| Netherlands | 1906 | 127 | 30.4 | Rumania | 1899 | 198 | 42.0 |
| Switzerland | 1905 | 129 | 27.4 | German Empire | 1905 | 205 | 33.0 |
| England and Wales | 1906 | 132 | 27.1 | Hungary | 1906 | 205 | 36.0 |
| Finland | 1905 | 135 | 30.6 | Austria | 1903 | 211 | 35.2 |
| France | 1905 | 136 | 20.6 | Chile | 1903 | 263 | 34.0 |
| Bulgaria | 1904 | 142 | 42.7 | Russia, European | 1901 | 272 | 47.9 |

(iv.) *The Effect of Infantile Mortality on Birth-rate.* It has been contended by certain investigators that the birth-rate question is intimately related to that of infantile mortality, and that in many cases a declining birth-rate may be to a large extent accounted for by a decline in the infantile death-rate, since, in the case in which an infant has survived, the period elapsing before the birth of the next child is likely to be longer than in the case in which the infant has died. It may indeed be readily admitted that in any community the birth-rate may be affected in a definite way by variations of infantile mortality, but careful investigation of the question serves to shew that, whether considered from the theoretical aspect with a view to determining the *maximum* and the *probable* effects which a given change in the rate of infantile mortality would produce in the birth-rate, or from the practical point of view by observing the fluctuations in the birth-rates of various countries which have been collateral with changes in their rates of infantile mortality, there is little ground for the contention that the rate of infantile mortality is an important factor in determining the variations in the birth-rate. One calculation which has been made on the basis of normal Australian conditions indicates that the *maximum* effect of increasing the rate of infantile mortality 100 per cent. would, in the absence of other disturbing causes, be to increase the birth-rate by only $3\frac{1}{2}$ per cent., whilst the *probable* effect would be considerably less than this. In other words, the *maximum* effect of an increase in the rate of infantile mortality from 100 to 200 per 1000 births would be to increase the birth-rate from say 30 to 31 per 1000 of population. It may be noted too, that although in some countries an increase in birth-rate accompanies an increase in the rate of infantile mortality, in others the birth-rate would appear to be quite unaffected by such an increase, while in the case of England and Wales, Scotland, and Ireland, the tendency apparently exhibited is for an increase in the rate of infantile mortality to be associated with a decrease in the birth-rate. The conclusion which these results appear to warrant is that although infantile mortality undoubtedly tends on the whole to increase the birth-rate, the practical effect produced is so slight that the existence of such a relation may in any instance be quite masked by more important causes of variation.

8. **Deaths in Age-Groups, 1901 to 1907.**—A distribution of the 318,425 deaths which occurred in the Commonwealth from 1901 to 1907 into age-groups has been made, and the results are tabulated for each State. It is, however, sufficient here to shew the results for the Commonwealth as a whole, which are as follows :—

DEATHS IN AGE-GROUPS, AUSTRALIA, 1901 to 1907.

| Ages. | Males. | Females. | Total. | Percentage of Total Males. | Percentage of Total Females. | Percentage of Total. |
|---------------------------|---------|----------|---------|----------------------------|------------------------------|----------------------|
| Under 1 year ... | 37,494 | 30,168 | 67,662 | 20.40 | 22.41 | 21.25 |
| 1 year and under 5 ... | 11,042 | 10,246 | 21,288 | 6.00 | 7.61 | 6.68 |
| 5 years and under 20 ... | 10,951 | 9,829 | 20,780 | 5.96 | 7.30 | 6.53 |
| 20 years and under 40 ... | 26,428 | 22,510 | 48,938 | 14.39 | 16.72 | 15.37 |
| 40 years and under 60 ... | 35,054 | 20,491 | 55,545 | 19.08 | 15.22 | 17.44 |
| 60 years and under 65 ... | 10,636 | 6,451 | 17,087 | 5.78 | 4.79 | 5.37 |
| 65 years and over ... | 51,920 | 34,887 | 86,807 | 28.25 | 25.91 | 27.26 |
| Age not stated ... | 269 | 49 | 318 | 0.14 | 0.04 | 0.10 |
| Total ... | 183,794 | 134,631 | 318,425 | 100.00 | 100.00 | 100.00 |

9. Deaths at Single Ages and in Age-Groups, 1907.—The 45,305 deaths which were registered in the Commonwealth in the year 1907 will be found tabulated under single years (in weeks up to one month, and in months up to one year), and in groups of five years in the following table:—

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1907.

| Ages. | Males. | Females. | Total. | Ages. | Males. | Females. | Total. |
|---------------------------------|--------|----------|--------|---------------------------------|--------|----------|--------|
| Under 1 week ... | 1,346 | 1,007 | 2,353 | 15 years ... | 91 | 93 | 182 |
| 1 week and under 2 ... | 286 | 208 | 494 | 16 " ... | 97 | 91 | 190 |
| 2 weeks " " 3 ... | 218 | 161 | 379 | 17 " ... | 105 | 100 | 205 |
| 3 " " " 4 ... | 183 | 121 | 304 | 18 " ... | 130 | 111 | 241 |
| | | | | 19 " ... | 146 | 101 | 247 |
| Total under one month ... | 2,033 | 1,497 | 3,530 | Total 15 years and under 20 ... | 569 | 496 | 1,065 |
| 1 month and under 2 ... | 503 | 414 | 917 | 20 years ... | 140 | 131 | 271 |
| 2 months " " 3 ... | 394 | 330 | 724 | 21 " ... | 171 | 144 | 315 |
| 3 " " " 4 ... | 355 | 319 | 674 | 22 " ... | 136 | 163 | 299 |
| 4 " " " 5 ... | 300 | 215 | 515 | 23 " ... | 176 | 148 | 324 |
| 5 " " " 6 ... | 240 | 208 | 448 | 24 " ... | 140 | 142 | 282 |
| 6 " " " 7 ... | 249 | 205 | 454 | Total 20 years and under 25 ... | 763 | 728 | 1,491 |
| 7 " " " 8 ... | 213 | 175 | 388 | 25 years ... | 144 | 160 | 304 |
| 8 " " " 9 ... | 217 | 164 | 381 | 26 " ... | 147 | 153 | 300 |
| 9 " " " 10 ... | 176 | 174 | 350 | 27 " ... | 155 | 168 | 323 |
| 10 " " " 11 ... | 168 | 144 | 312 | 28 " ... | 147 | 138 | 285 |
| 11 " " " 12 ... | 145 | 107 | 252 | 29 " ... | 130 | 153 | 283 |
| Total under 1 year ... | 4,993 | 3,952 | 8,945 | Total 25 years and under 30 ... | 723 | 772 | 1,495 |
| 1 year ... | 858 | 804 | 1,662 | 30 years ... | 178 | 153 | 331 |
| 2 years ... | 319 | 283 | 602 | 31 " ... | 138 | 149 | 282 |
| 3 " ... | 189 | 180 | 369 | 32 " ... | 157 | 151 | 308 |
| 4 " ... | 123 | 122 | 245 | 33 " ... | 154 | 160 | 314 |
| Total under 5 years ... | 6,482 | 5,341 | 11,823 | 34 " ... | 167 | 154 | 321 |
| 5 years ... | 148 | 110 | 258 | Total 30 years and under 35 ... | 789 | 767 | 1,556 |
| 6 " ... | 95 | 90 | 185 | 35 years ... | 199 | 171 | 370 |
| 7 " ... | 91 | 79 | 170 | 36 " ... | 218 | 173 | 391 |
| 8 " ... | 79 | 67 | 146 | 37 " ... | 194 | 146 | 325 |
| 9 " ... | 60 | 57 | 117 | 38 " ... | 218 | 171 | 389 |
| Total 5 years and under 10 ... | 473 | 403 | 876 | 39 " ... | 187 | 182 | 369 |
| 10 years ... | 75 | 65 | 140 | Total 35 years and under 40 ... | 1,001 | 843 | 1,844 |
| 11 " ... | 66 | 56 | 122 | | | | |
| 12 " ... | 58 | 66 | 124 | | | | |
| 13 " ... | 82 | 64 | 146 | | | | |
| 14 " ... | 85 | 99 | 184 | | | | |
| Total 10 years and under 15 ... | 366 | 350 | 716 | | | | |

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1907—Continued.

| Ages. | | | Males. | Females. | Total. | Ages. | | | Males. | Females. | Total. |
|-----------------------------|-----|-----|--------|----------|--------|-----------------------------|-----|-----|--------|----------|--------|
| | | | | | | | | | | | |
| 40 years | ... | ... | 280 | 189 | 469 | 75 years | ... | ... | 461 | 324 | 785 |
| 41 " | ... | ... | 193 | 116 | 308 | 76 " | ... | ... | 407 | 290 | 697 |
| 42 " | ... | ... | 263 | 177 | 440 | 77 " | ... | ... | 421 | 279 | 700 |
| 43 " | ... | ... | 226 | 151 | 377 | 78 " | ... | ... | 401 | 238 | 639 |
| 44 " | ... | ... | 244 | 168 | 412 | 79 " | ... | ... | 320 | 193 | 513 |
| Total 40 years and under 45 | | | 1,205 | 801 | 2,006 | Total 75 years and under 80 | | | 2,010 | 1,324 | 3,334 |
| 45 years | ... | ... | 318 | 179 | 497 | 80 years | ... | ... | 355 | 228 | 583 |
| 46 " | ... | ... | 269 | 142 | 411 | 81 " | ... | ... | 248 | 127 | 375 |
| 47 " | ... | ... | 281 | 162 | 443 | 82 " | ... | ... | 221 | 169 | 390 |
| 48 " | ... | ... | 246 | 168 | 414 | 83 " | ... | ... | 176 | 167 | 343 |
| 49 " | ... | ... | 249 | 150 | 399 | 84 " | ... | ... | 199 | 147 | 346 |
| Total 45 years and under 50 | | | 1,363 | 801 | 2,164 | Total 80 years and under 85 | | | 1,199 | 838 | 2,037 |
| 50 years | ... | ... | 368 | 170 | 538 | 85 years | ... | ... | 171 | 132 | 303 |
| 51 " | ... | ... | 201 | 125 | 326 | 86 " | ... | ... | 156 | 97 | 253 |
| 52 " | ... | ... | 298 | 161 | 450 | 87 " | ... | ... | 131 | 125 | 256 |
| 53 " | ... | ... | 256 | 141 | 397 | 88 " | ... | ... | 134 | 113 | 247 |
| 54 " | ... | ... | 257 | 134 | 391 | 89 " | ... | ... | 54 | 85 | 139 |
| Total 50 years and under 55 | | | 1,371 | 731 | 2,102 | Total 85 years and under 90 | | | 646 | 552 | 1,198 |
| 55 years | ... | ... | 265 | 128 | 393 | 90 years | ... | ... | 49 | 56 | 105 |
| 56 " | ... | ... | 283 | 162 | 445 | 91 " | ... | ... | 39 | 40 | 79 |
| 57 " | ... | ... | 244 | 128 | 372 | 92 " | ... | ... | 38 | 26 | 64 |
| 58 " | ... | ... | 260 | 155 | 415 | 93 " | ... | ... | 19 | 23 | 42 |
| 59 " | ... | ... | 232 | 166 | 398 | 94 " | ... | ... | 10 | 12 | 22 |
| Total 55 years and under 60 | | | 1,284 | 739 | 2,023 | Total 90 years and under 95 | | | 155 | 157 | 312 |
| 60 years | ... | ... | 364 | 184 | 548 | 95 years | ... | ... | 21 | 18 | 39 |
| 61 " | ... | ... | 210 | 141 | 351 | 96 " | ... | ... | 7 | 5 | 15 |
| 62 " | ... | ... | 300 | 191 | 491 | 97 " | ... | ... | 13 | 13 | 26 |
| 63 " | ... | ... | 351 | 207 | 558 | 98 " | ... | ... | 5 | 7 | 12 |
| 64 " | ... | ... | 300 | 197 | 497 | 99 " | ... | ... | 2 | 3 | 5 |
| Total 60 years and under 65 | | | 1,525 | 920 | 2,445 | Total 95 yrs. and under 100 | | | 48 | 49 | 97 |
| 65 years | ... | ... | 412 | 260 | 672 | 100 years | ... | ... | 2 | 6 | 8 |
| 66 " | ... | ... | 336 | 196 | 532 | 101 " | ... | ... | 4 | ... | 4 |
| 67 " | ... | ... | 374 | 256 | 630 | 102 " | ... | ... | ... | 1 | 1 |
| 68 " | ... | ... | 359 | 266 | 625 | 103 " | ... | ... | 1 | 3 | 4 |
| 69 " | ... | ... | 304 | 234 | 538 | 104 " | ... | ... | 3 | ... | 3 |
| Total 65 years and under 70 | | | 1,785 | 1,212 | 2,997 | 105 " | ... | ... | 2 | ... | 2 |
| 70 years | ... | ... | 516 | 311 | 827 | 106 " | ... | ... | 1 | ... | 1 |
| 71 " | ... | ... | 347 | 234 | 581 | Total 100 years and over... | | | 13 | 10 | 23 |
| 72 " | ... | ... | 423 | 298 | 721 | Age not stated | ... | ... | 48 | 19 | 67 |
| 73 " | ... | ... | 401 | 350 | 751 | Total all ages | ... | ... | 25,939 | 19,366 | 45,305 |
| 74 " | ... | ... | 434 | 320 | 754 | | | | | | |
| Total 70 years and under 75 | | | 2,121 | 1,513 | 3,634 | | | | | | |

10. **Deaths of Centenarians, 1907.**—Particulars as to the twenty-three persons who died in 1907, aged 100 years and upwards, are given in the following table. It must, of course, be understood that while the Registrars-General of the various States take the greatest care to have statements as to abnormally high ages verified as far as possible, no absolute reliance can be placed in the accuracy of the ages shown, owing to the well-known tendency of very old people to overstate their ages. The fact must not be lost sight of in connection with this question, that while parish registers in the United Kingdom often date very far back, compulsory registration of births dates practically only from 1874, the Act passed in 1836 having left many loop-holes open for those unwilling to register the births of their children:—

DEATHS OF CENTENARIANS, 1907.

| Age | Locality where Death occurred. | State. | Cause of Death. | Occupation. | Birth Place. | Length of Residence in Commonwealth. |
|--------|--------------------------------|-------------|------------------------------|--------------------|--------------|--------------------------------------|
| MALES. | | | | | | |
| Yrs. | | | | | | |
| 119 | Liverpool Asylum | N.S.W. | Senile decay | Dependent on State | England | 87 years |
| 105 | Braidwood | " | Epithelioma of face and neck | Farmer | " | 76 " |
| 105 | Liverpool Asylum | " | Senile decay | Engineer | Hungary | 56 " |
| 104 | Brunswick | Victoria | " | Labourer | England | 93 " |
| 104 | Port Fairy | " | " | Farmer | Ireland | 52 " |
| 104 | Hobart | Tasmania | " | Butcher | England | 87 " |
| 103 | York | West Aust. | " | Farmer | Ireland | 52 " |
| 101 | Cooma Hospital | N.S.W. | " | Gardener | England | 60 " |
| 101 | Tuena | " | " | Bootmaker | " | 75 " |
| 101 | Melbourne | Victoria | " | Gentleman | Syria | 19 " |
| 101 | Kapunda Hospital | South Aust. | " | Labourer | (Not stated) | (Not stated) |
| 101 | Narrabri | N.S.W. | Heart disease | (Not stated) | N.S.W. | Native |
| 100 | Launceston | Tasmania | Senile decay | Stonemason | Ireland | 66 years |

FEMALES.

| | | | | | | |
|-----|----------------|-------------|-----------------------|--|--------------|--------------|
| 103 | Warrnambool | Victoria | Senile decay | | Ireland | 69 years |
| 103 | Bundaberg | Queensland | " | | " | 25 " |
| 103 | Ipswich | " | Pulmonary congestion | | England | 33 " |
| 102 | Medindie | South Aust. | Senile decay | | (Not stated) | (Not stated) |
| 100 | Bourke | N.S.W. | " | | Germany | 48 years |
| 100 | Benalla | Victoria | " | | England | 54 " |
| 100 | Daylesford | " | " | | Ireland | 60 " |
| 100 | Melb. Hospital | " | Emphysema, bronchitis | | (Not stated) | (Not stated) |
| 100 | Mitcham | " | Heart failure, dropsy | | England | 60 years |
| 100 | Ulverstone | Tasmania | Senile decay | | Ireland | 45 " |

11. Length of Residence in the Commonwealth of Persons who Died in 1907.—The length of residence in the Commonwealth of all persons whose deaths were registered in the year 1907 has been tabulated for all the States with the exception of South Australia, and a summary of the results is shewn below:—

**LENGTH OF RESIDENCE IN COMMONWEALTH OF PERSONS WHO DIED
IN 1907.**

| Length of Residence. | Male Deaths. | Female Deaths. | Total Deaths. | Length of Residence. | Male Deaths. | Female Deaths. | Total Deaths. |
|-------------------------|--------------|----------------|---------------|-----------------------------------|--------------|----------------|---------------|
| Born in the C'wealth... | 12,434 | 10,841 | 23,275 | Resident 25 to 29 years | 681 | 352 | 1,033 |
| Resident under 1 year | 129 | 42 | 171 | " 30 to 34 " | 738 | 351 | 1,089 |
| " 1 year | 46 | 12 | 58 | " 35 to 39 " | 425 | 295 | 720 |
| " 2 years | 32 | 10 | 42 | " 40 to 44 " | 1,134 | 710 | 1,844 |
| " 3 " | 35 | 10 | 45 | " 45 to 49 " | 909 | 652 | 1,561 |
| " 4 " | 35 | 12 | 47 | " 50 to 54 " | 2,121 | 1,596 | 3,717 |
| " 5 " | 38 | 19 | 57 | " 55 to 59 " | 902 | 674 | 1,576 |
| " 6 " | 42 | 14 | 56 | " 60 to 64 " | 281 | 191 | 472 |
| " 7 " | 45 | 13 | 58 | " 65 yrs. & over | 379 | 357 | 736 |
| " 8 " | 33 | 22 | 55 | Length of residence not stated... | 1,917 | 603 | 2,520 |
| " 9 " | 25 | 20 | 45 | | | | |
| " 10 to 14 years... | 320 | 82 | 402 | | | | |
| " 15 to 19 " | 302 | 248 | 550 | | | | |
| " 20 to 24 " | 850 | 499 | 1,349 | | | | |
| | | | | Total ... | 23,852 | 17,625 | 41,477 |

12. **Birthplaces of Persons who Died in 1907.**—In the following table, which shews the birthplaces of persons whose deaths were registered in 1907, the figures for South Australia are not included, the Registration Act in force to the end of 1907 not having provided for the registration of those particulars:—

BIRTHPLACES OF PERSONS WHO DIED IN 1907.

| Birthplaces. | Males. | Females. | Total. | Birthplaces. | Males. | Females. | Total. |
|--------------------------|--------|----------|--------|---------------------------|--------|----------|--------|
| New South Wales ... | 5,234 | 4,697 | 9,931 | Afghanistan ... | 1 | ... | 1 |
| Victoria ... | 3,944 | 3,451 | 7,395 | Arabia ... | 2 | ... | 2 |
| Queensland ... | 1,423 | 1,143 | 2,566 | Asia Minor ... | 1 | ... | 1 |
| South Australia ... | 285 | 227 | 512 | Beloochistan ... | 1 | ... | 1 |
| Western Australia ... | 688 | 568 | 1,256 | Ceylon ... | 4 | ... | 4 |
| Tasmania ... | 868 | 754 | 1,622 | China ... | 336 | 1 | 337 |
| | | | | Cochin China ... | 1 | ... | 1 |
| | | | | Dutch East Indies ... | 19 | 2 | 21 |
| New Zealand ... | 76 | 76 | 152 | India ... | 62 | 18 | 80 |
| | | | | Japan ... | 42 | 4 | 46 |
| | | | | Philippine Islands ... | 8 | ... | 8 |
| | | | | Straits Settlements ... | 6 | ... | 6 |
| | | | | Syria ... | 5 | 1 | 6 |
| Austria-Hungary ... | 24 | 7 | 31 | | | | |
| Belgium ... | 7 | ... | 7 | | | | |
| Channel Islands ... | 7 | 10 | 17 | | | | |
| Denmark ... | 87 | 26 | 113 | Africa (so described) | 3 | ... | 3 |
| England ... | 4,761 | 2,738 | 7,499 | Algiers ... | 1 | ... | 1 |
| Finland ... | 13 | ... | 13 | Azores ... | 1 | ... | 1 |
| France ... | 63 | 17 | 80 | Canary Islands ... | ... | 1 | 1 |
| Germany ... | 493 | 182 | 675 | Cape Verde Islands ... | 3 | ... | 3 |
| Gibraltar ... | 3 | 2 | 5 | Cape Colony ... | ... | 1 | 1 |
| Greece ... | 9 | 2 | 11 | Egypt ... | 2 | ... | 2 |
| Iceland ... | 1 | ... | 1 | Mauritius ... | 8 | 5 | 13 |
| Ireland ... | 2,552 | 2,385 | 4,937 | Réunion ... | 1 | ... | 1 |
| Isle of Man ... | 8 | 5 | 13 | Soudan ... | 1 | ... | 1 |
| Italy ... | 76 | 7 | 83 | St. Helena ... | 1 | 1 | 2 |
| Malta ... | 5 | 2 | 7 | S. Africa (so described) | 16 | 16 | 32 |
| Netherlands ... | 14 | ... | 14 | | | | |
| Norway ... | 53 | 8 | 61 | | | | |
| Portugal ... | 3 | 1 | 4 | | | | |
| Russia ... | 29 | 10 | 39 | Fiji ... | 1 | ... | 1 |
| Scotland ... | 1,424 | 939 | 2,363 | New Caledonia ... | 2 | ... | 2 |
| Servia ... | 1 | ... | 1 | New Guinea ... | 18 | ... | 18 |
| Spain ... | 5 | 3 | 8 | New Hebrides ... | 5 | 1 | 6 |
| Sweden ... | 86 | 13 | 99 | Norfolk Island ... | 1 | 2 | 3 |
| Switzerland ... | 45 | 4 | 49 | Samoa ... | 1 | 1 | 2 |
| Turkey ... | 1 | ... | 1 | Sandwich Islands ... | 1 | ... | 1 |
| Wales ... | 122 | 62 | 184 | Society Islands ... | 1 | ... | 1 |
| | | | | Solomon Islands ... | 2 | ... | 2 |
| | | | | S. Sea Is. (so described) | 53 | 3 | 56 |
| Canada ... | 46 | 14 | 60 | | | | |
| United States ... | 86 | 25 | 111 | At Sea ... | 46 | 29 | 75 |
| Brazil ... | 1 | ... | 1 | | | | |
| British Guiana ... | 1 | ... | 1 | | | | |
| British West Indies ... | 22 | 4 | 26 | Not stated... | 618 | 154 | 772 |
| Newfoundland ... | 4 | ... | 4 | | | | |
| S. America (so d'scribd) | 8 | 3 | 11 | | | | |
| | | | | Total Deaths ... | 23,852 | 17,625 | 41,477 |

13. **Occupations of Male Persons who Died in 1907.**—Information as to the occupations of the 25,939 males who died in the Commonwealth in 1907, is contained in the following statement:—

OCCUPATIONS OF DECEASED MALES, 1907.

| Occupation. | No. of Deaths. | Occupation. | No. of Deaths. |
|---|----------------|---|----------------|
| CLASS I.—PROFESSIONAL. | | Groceries, drinks, narcotics, and stimulants | 125 |
| General Government | 111 | Living animals... .. | 39 |
| Local Government | 27 | Hides and leather | 5 |
| Defence | 30 | Wool, tallow, bones, etc. | 11 |
| Law and Order | 143 | Hay, corn, etc. | 42 |
| Religion | 95 | Timber | 14 |
| Charity (exclusive of hospitals) | 4 | Wood, coal, etc. | 39 |
| Health | 145 | Stone, clay, glass, etc. | 2 |
| Literature | 38 | Jewellery and precious stones | 3 |
| Science | 18 | Ironmongery | 31 |
| Civil and mechanical engineering, architecture and surveying | 89 | Merchants, shopkeepers, etc. | 226 |
| Education | 98 | Dealers and hawkers | 111 |
| Fine Arts | 34 | Agents, brokers, etc. | 78 |
| Music | 41 | Accountants, clerks, etc. | 450 |
| Amusements | 56 | Commercial travellers and salesmen | 116 |
| | | Other mercantile persons | 78 |
| | | Storage | 1 |
| | | Speculators on chance events | 3 |
| Total Professional | 929 | Total Commercial | 1,999 |
| CLASS II.—DOMESTIC. | | CLASS IV.—TRANSPORT AND COMMUNICATION. | |
| Hotelkeepers and assistants | 235 | Railway traffic | 238 |
| Others engaged in providing board and lodging... .. | 50 | Tramway traffic | 18 |
| House servants | 128 | Road traffic | 373 |
| Coachmen and grooms | 85 | Sea and river traffic | 505 |
| Hairdressers | 58 | Postal service | 46 |
| Laundrymen | 12 | Telegraph and telephone service | 16 |
| Others engaged in domestic occupations | 78 | Delivery of parcels, etc., by hand | 9 |
| Total Domestic | 646 | Total Transport & Communic't'n | 1,205 |
| CLASS III.—COMMERCIAL. | | CLASS V.—INDUSTRIAL. | |
| Banking and finance | 79 | Books and publications | 120 |
| Insurance and valuation | 53 | Musical instruments | 10 |
| Land and household property | 41 | Prints, pictures, and art materials | 7 |
| Books, publications and advertising | 33 | Ornaments, minor art products, etc. | 24 |
| Fancy goods | 2 | Designs, medals, type, and dies | 6 |
| Watches, clocks, jewellery, etc. | 3 | Watches, clocks, and scientific instruments | 35 |
| Machinery, tools, etc. | 2 | Arms, ammunition, etc. | 2 |
| Carriages and vehicles | 2 | Engines, machines, tools, etc. | 82 |
| Ships, boats, and marine stores | 4 | Carriages and vehicles | 99 |
| Furniture | 2 | Harness, saddlery and leatherware | 76 |
| Chemicals and by-products | 3 | Ships, boats, and equipments | 52 |
| Paper and stationery | 8 | Furniture | 85 |
| Textile fabrics | 98 | Building material (wood) | 73 |
| Dress | 16 | Chemicals and by-products | 3 |
| Fibrous materials | 1 | | |
| Animal food | 216 | | |
| Vegetable food | 62 | | |

OCCUPATIONS OF DECEASED MALES, 1907—Continued.

| Occupation. | No. of Deaths. | Occupation. | No. of Deaths. | | |
|---|----------------|---|----------------|---|--------|
| Textile fabrics | 17 | CLASS VI.—AGRICULTURAL, PASTORAL, MINING PURSUITS, ETC. | 2,603 | | |
| Dress | 360 | | | | |
| Fibrous materials | 16 | | | | |
| Animal food | 22 | | | | |
| Vegetable food | 163 | | | | |
| Groceries, drinks, narcotics, and stimulants | 77 | | | | |
| Wool-scouring, soap, and candles | 56 | | | | |
| Workers in wood (axemen, fencers, etc.) | 12 | | | | |
| Fodder | 1 | | | | |
| Paper manufacture | 1 | | | | |
| Marble, clay, cement, glass, etc. | 54 | | | | |
| Precious metals | 7 | | | | |
| Other metals | 315 | | | | |
| Fuel, light, etc. | 31 | | | | |
| Building and construction— | | | | CLASS VII.—INDEFINITE. | 861 |
| Builders and contractors | 85 | | | | |
| Stonemasons... .. | 99 | | | | |
| Bricklayers | 71 | | | | |
| Carpenters | 431 | | | | |
| Slaters, shinglers, | 5 | | | | |
| Plasterers | 37 | | | | |
| Painters and glaziers | 161 | | | | |
| Plumbers | 59 | | | | |
| Others | 4 | | | | |
| Roads, railways, and earthworks | 44 | | | | |
| Disposal of the dead | 13 | | | | |
| Disposal of refuse | 18 | | | | |
| Other industrial workers— | | CLASS VIII.—DEPENDENTS. | 7,517 | | |
| Manufacturers, mechanics | 20 | | | | |
| Engineers, engine-drivers | 298 | | | | |
| Machinists, machine hands | 6 | | | | |
| Contractors, managers | 111 | | | | |
| Labourers, undefined | 3,286 | | | | |
| Total Industrial | 6,554 | | | | |
| | | | | Independent means, etc. | 798 |
| | | | | Undefined or unknown | |
| | | | | Total Indefinite | 1,659 |
| | | | | Dependent relatives (including persons under 20 years of age with no specified occupation) | 7,517 |
| | | | | Dependent upon the State or upon public or private support | 96 |
| | | | | Total Dependents | 7,613 |
| | | | | Total Male Deaths | 25,939 |

14. **Index of Mortality.**—The death rates so far shewn are crude rates, *i.e.*, they simply shew the number of deaths per thousand of mean population, without taking the age constitution of that population into consideration. It is, however, a well-known fact that the death rate and age constitution of a people are intimately related, thus, other conditions being equal, the death rate of a country will be lower if it contain a large percentage of young people (not infants). In order to have a comparison of the mortality of various countries on a uniform basis, so far as age constitution is concerned, the International Statistical Institute in its 1895 session recommended the universal adoption of the population of Sweden in five age-groups, as ascertained at the Census of 1890, as the standard population by which this "Index of Mortality," as distinguished from the crude death rate should be ascertained. The calculation for 1907 is shewn below for each of the six States and for the Commonwealth, but it will be understood that the distribution of the mean population of 1907 into age-groups according to the distribution as found at the Census of 1901 must be taken as the best approximation which the data will admit of, not as absolutely correct:—

(a) INDEX OF MORTALITY, 1907.—(STATES AND COMMONWEALTH.)

| Age-Groups. | Mean Population, 1907, distributed according to Results of Census of 1901. | Number of Deaths, 1907. | No. of Deaths per 1000 of Mean Population, 1907, in each Age-Group. | Age Distribution per 1000 of Standard Population. | Index of Mortality. |
|---------------------------|--|-------------------------|---|---|---------------------|
| NEW SOUTH WALES. | | | | | |
| Under 1 year | 39,088 | 3,739 | 95.66 | 25.5 | 2.44 |
| 1 year and under 20 | 679,773 | 2,205 | 3.24 | 398.0 | 1.29 |
| 20 years " 40 | 497,175 | 2,143 | 4.31 | 269.6 | 1.16 |
| 40 " 60 | 247,737 | 2,906 | 11.73 | 192.3 | 2.26 |
| 60 " and upwards | 86,714 | 5,418 | 62.48 | 114.6 | 7.16 |
| Total | 1,550,487 | 16,411 | 10.58 | 1,000.0 | 14.31 |
| VICTORIA. | | | | | |
| Under 1 year | 29,219 | 2,279 | 78.00 | 25.5 | 1.99 |
| 1 year and under 20 | 515,381 | 1,418 | 2.75 | 398.0 | 1.18 |
| 20 years " 40 | 405,715 | 1,964 | 4.84 | 269.6 | 1.31 |
| 40 " 60 | 189,786 | 2,567 | 13.53 | 192.3 | 2.60 |
| 60 " and upwards | 98,830 | 6,311 | 63.86 | 114.6 | 7.32 |
| Total | 1,238,931 | 14,539 | 11.74 | 1,000.0 | 14.40 |
| QUEENSLAND. | | | | | |
| Under 1 year | 13,920 | 1,130 | 81.18 | 25.5 | 2.16 |
| 1 year and under 20 | 233,731 | 762 | 3.26 | 398.0 | 1.30 |
| 20 years " 40 | 178,462 | 849 | 4.76 | 269.6 | 1.28 |
| 40 " 60 | 86,716 | 1,237 | 14.26 | 192.3 | 2.74 |
| 60 " and upwards | 26,069 | 1,620 | 62.14 | 114.6 | 7.12 |
| Total | 538,918 | 5,598 | 10.39 | 1,000.0 | 14.60 |
| SOUTH AUSTRALIA. | | | | | |
| Under 1 year | 8,704 | 615 | 70.66 | 25.5 | 1.80 |
| 1 year and under 20 | 171,205 | 439 | 2.56 | 398.0 | 1.02 |
| 20 years " 40 | 117,945 | 554 | 4.70 | 269.6 | 1.27 |
| 40 " 60 | 63,355 | 704 | 11.11 | 192.3 | 2.14 |
| 60 " and upwards | 24,463 | 1,516 | 61.97 | 114.6 | 7.10 |
| Total | 385,672 | 3,828 | 9.93 | 1,000.0 | 13.33 |
| WESTERN AUSTRALIA. | | | | | |
| Under 1 year | 7,162 | 755 | 105.42 | 25.5 | 2.70 |
| 1 year and under 20 | 87,159 | 496 | 5.69 | 398.0 | 2.26 |
| 20 years " 40 | 119,285 | 630 | 5.28 | 269.6 | 1.42 |
| 40 " 60 | 40,134 | 555 | 13.83 | 192.3 | 2.66 |
| 60 " and upwards | 8,569 | 495 | 57.76 | 114.6 | 6.62 |
| Total | 262,309 | 2,931 | 11.17 | 1,000.0 | 15.66 |
| TASMANIA. | | | | | |
| Under 1 year | 4,790 | 440 | 91.86 | 25.5 | 2.34 |
| 1 year and under 20 | 80,976 | 223 | 2.75 | 398.0 | 1.09 |
| 20 years " 40 | 55,955 | 257 | 4.59 | 269.6 | 1.24 |
| 40 " 60 | 26,718 | 338 | 12.65 | 192.3 | 2.43 |
| 60 " and upwards | 10,917 | 740 | 67.78 | 114.6 | 7.77 |
| Total | 179,356 | 1,998 | 11.14 | 1,000.0 | 14.87 |
| COMMONWEALTH. | | | | | |
| Under 1 year | 102,883 | 8,958 | 87.07 | 25.5 | 2.22 |
| 1 year and under 20 | 1,768,225 | 5,543 | 3.13 | 398.0 | 1.24 |
| 20 years " 40 | 1,374,557 | 6,397 | 4.65 | 269.6 | 1.25 |
| 40 " 60 | 654,446 | 8,307 | 12.69 | 192.3 | 2.44 |
| 60 " and upwards | 255,562 | 16,100 | 63.00 | 114.6 | 7.22 |
| Total | 4,155,673 | 45,305 | 10.90 | 1,000.0 | 14.37 |

NOTE.—The small number of persons whose ages were not ascertained at the 1901 Census have been proportionately distributed among the various age-groups, and the same plan has been followed in regard to the 67 persons who died in 1907, and whose ages were not stated in the certificates of death.

It will be seen that the States and the Commonwealth remain in the same order with one exception—while the crude death rate was second highest in Western Australia, and highest in Victoria, the index of mortality was higher in Western Australia than in Victoria. The range of the indexes is rather wider than that of the crude death rates, for while the latter in 1907 rose from 9.93 per thousand in South Australia to 11.74 per thousand in Victoria, a range of 1.81 per thousand, the indexes varied from 13.33 per thousand in South Australia to 15.66 per thousand in Western Australia, a range of 2.33 per thousand.

For the purpose of comparison with previous years the index of mortality is shewn in the following table for each of the Commonwealth States for the years 1902 to 1907:—

(b) INDEX OF MORTALITY, 1902 to 1907.

| State. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|-------|-------|-------|-------|-------|-------|
| New South Wales ... | 15.45 | 15.06 | 14.10 | 13.53 | 13.44 | 14.31 |
| Victoria ... | 15.89 | 15.25 | 14.29 | 14.55 | 15.05 | 14.40 |
| Queensland ... | 15.85 | 16.22 | 13.23 | 14.53 | 13.20 | 14.60 |
| South Australia ... | 15.12 | 13.89 | 13.32 | 13.52 | 13.94 | 13.33 |
| Western Australia ... | 17.66 | 15.75 | 15.60 | 14.41 | 16.51 | 15.66 |
| Tasmania ... | 14.26 | 14.86 | 14.36 | 13.36 | 14.87 | 14.87 |

A comparison of the above figures with the crude death rates given on a previous page shews that while the crude death rate was highest in Victoria for five out of the six years, and in Western Australia in one year, and lowest three times in South Australia, twice in Queensland, and once in Tasmania, the index of mortality was highest in Western Australia five times and in Victoria once, and lowest twice in South Australia, twice in Queensland, and twice in Tasmania. The crude death rates shew the following ranges:—In New South Wales, 2.05; in Victoria, 1.62; in Queensland, 2.44; in South Australia, 1.90; in Western Australia, 2.89; and in Tasmania, 1.63 per thousand; while the fluctuations in the indexes amounted to 2.01 per thousand in New South Wales; to 1.60 in Victoria; to 3.02 in Queensland; to 1.80 in South Australia; to 3.25 in Western Australia; and to 1.51 in Tasmania.

15. **Causes of Death.**—(i.) *Changes in Classification from 1903 to 1906.* The causes of death were classified in all the States of the Commonwealth to the end of 1903 according to the system originally devised by Dr. William Farr, and modified in 1886 by Dr. William Ogle. A conference of the State Statisticians, held at Hobart in January, 1902, decided to substitute for that system the classification adopted since 1901 by the Registrar-General of England. While New South Wales, Queensland, and Tasmania remodelled their vital statistics on that plan, Victoria, South Australia and Western Australia continued to tabulate according to the Farr-Ogle system, and a comparison of the causes of death in the six States during the years 1903, 1904, 1905, and 1906 is, therefore, a matter of extreme difficulty. The differences in tabulation will be seen in the following statement:—

TABULATION OF CAUSES OF DEATH.

| State. | 1902. | 1903. | 1904. | 1905. | 1906. | State. | 1902. | 1903. | 1904. | 1905. | 1906 |
|--------------|-------|-------|-------|-------|---------------|--------------|-------|-------|-------|-------|------|
| N.S.W. ... | Old | Old | Old | New | International | S. Australia | Old | Old | Old | Old | Old |
| Victoria ... | Old | Old | Old | Old | Old | W. Australia | Old | Old | Old | Old | Old |
| Queensland | Old | New | New | New | New | Tasmania ... | Old | New | New | New | New |

Old= Farr-Ogle classification. New= New classification by Registrar-General of England.
International—See next paragraph.

(ii.) *The Classification of the International Institute of Statistics.* At a conference held in Melbourne in November and December, 1906, the Commonwealth Statistician recommended the adoption of the classification of the International Institute of Statistics, generally known as the Bertillon Index, and after some discussion that recommendation was accepted, a course which has met with wide approval in medical circles. This index, as the one used by the Registrar-General of England, is based on the original Farr-Ogle classification, but approximates more closely to the present English system than to the older one. The chief advantage possessed by the international classification is that it presents a very extensive field for comparison, the countries which have adopted it representing a population which is probably not less than 150,000,000. Provision is made for a decennial revision of the classification, as it has been recognised that finality is impossible in the present state of medical science. The committee charged with the first revision will meet in Paris in 1909, and a number of recommendations will, in accordance with a resolution of the Australasian Medical Congress, held in Melbourne in October, 1908, be made to it, dealing particularly with tropical diseases occurring in the northern parts of Australia.

The detailed classification groups causes of death under 179 different headings in fourteen categories, as follows:—

- | | |
|---|---|
| i. General Diseases. | viii. Diseases of the Skin and Cellular Tissue. |
| ii. Diseases of the Nervous System and Organs of Special Sense. | ix. Diseases of the Organs of Locomotion. |
| iii. Diseases of the Circulatory System. | x. Malformations. |
| iv. Diseases of the Respiratory System. | xi. Infancy. |
| v. Diseases of the Digestive System. | xii. Old Age. |
| vi. Diseases of the Genito-urinary System and Adnexa. | xiii. Violence. |
| vii. Puerperal Condition. | xiv. Ill-defined Diseases. |

(iii.) *Compilation of Vital Statistics for 1907 in Commonwealth Bureau.* The vital statistics of the six Commonwealth States for 1907 have been tabulated according to this classification in the Commonwealth Bureau, and the system is being employed in the majority of the State offices in the preparation of their monthly and quarterly bulletins of vital statistics, New South Wales being the only State to publish its Annual Vital Statistics for the year 1906 on the International classification.

(iv.) *Classification of Causes of Death, 1905 to 1907, according to Abridged Bertillon Index.* An abridged classification, which enumerates thirty-five diseases and groups of diseases, is in use in many European and American States, and while the Commonwealth Statistics for 1907 have been compiled on the detailed classification of 179 headings, it was at least possible to group the causes of death experienced in 1905 and 1906 under the 35 headings of the abridged classification. Two slight modifications had to be made in the tabulation of those two years, viz., in No. 31, Congenital Debility and Malformations, only children under three months, who died of congenital debility, should have been included. The age limit had here to be extended to 12 months, as in the majority of States the causes of death were only tabulated for the group "under one year." For the same reason, the very few cases of "Insufficient Nourishment of Infants," No. 153 of detailed, and No. 34 of abridged classification, had to be included with No. 173, "Inanition," of detailed, and No. 33 of abridged classification. Apart from the two cases mentioned, and certain minor difficulties mentioned in paragraph 16 hereinafter,

it is believed that all the causes of death enumerated either under the Farr-Ogle, or under the Registrar-General's classification, have been grouped under the correct headings of the abridged Bertillon Index. The compilation for 1907 does not labour under

CAUSES OF DEATH.—AUSTRALIA, 1907.

(a) MALES.

| Cause. | N.S.W. | Vict. | Q'land. | S.Aust. | W.Aus. | Tas. | C'wth. |
|--|--------|-------|---------|---------|--------|-------|--------|
| 1 Typhoid Fever | 114 | 51 | 60 | 25 | 77 | 22 | 349 |
| 2 Typhus | — | — | — | — | — | — | — |
| 3 Intermittent Fever and Malarial Cachexia | 1 | — | 28 | 5 | 1 | 2 | 37 |
| 4 Small-pox | — | — | — | — | — | — | — |
| 5 Measles | 35 | 24 | 10 | 4 | 4 | — | 77 |
| 6 Scarlet Fever | 15 | 1 | 2 | 2 | — | — | 20 |
| 7 Whooping Cough | 280 | 56 | 67 | 36 | 53 | 21 | 513 |
| 8 Diphtheria and Croup | 75 | 49 | 22 | 9 | 32 | 5 | 192 |
| 9 Influenza | 168 | 149 | 109 | 25 | 10 | 16 | 477 |
| 10 Asiatic Cholera | — | — | — | — | — | — | — |
| 11 Cholera Nostras | 1 | — | — | 1 | — | — | 2 |
| 12 Other Epidemic Diseases | 46 | 13 | 72 | 14 | 27 | 1 | 173 |
| 13 Tuberculosis of the Lungs | 589 | 601 | 241 | 148 | 137 | 58 | 1,774 |
| 14 Tuberculosis of the Meninges | 35 | 48 | 7 | 17 | 5 | 7 | 119 |
| 15 Other forms of Tuberculosis | 86 | 77 | 28 | 23 | 17 | 11 | 242 |
| 16 Cancer and other Malignant Tumours | 624 | 499 | 203 | 134 | 78 | 51 | 1,589 |
| 17 Simple Meningitis | 133 | 110 | 45 | 36 | 35 | 14 | 373 |
| 18 Congestion, Hæmorrhage and Softening of the Brain | 404 | 343 | 119 | 75 | 64 | 33 | 1,038 |
| 19 Organic Diseases of the Heart | 745 | 708 | 292 | 181 | 120 | 108 | 2,154 |
| 20 Acute Bronchitis | 147 | 55 | 36 | 27 | 12 | 17 | 294 |
| 21 Chronic Bronchitis | 178 | 177 | 42 | 36 | 16 | 15 | 464 |
| 22 Pneumonia | 424 | 347 | 142 | 60 | 76 | 54 | 1,103 |
| 23 Diseases of the Stomach (Cancer excepted) | 53 | 61 | 31 | 14 | 5 | 8 | 172 |
| 24 Diarrhœa and Enteritis (children under two years only) | 601 | 367 | 194 | 97 | 202 | 52 | 1,513 |
| 25 Hernia, Intestinal Obstructions | 79 | 71 | 29 | 17 | 15 | 3 | 214 |
| 26 Cirrhosis of the Liver | 71 | 61 | 26 | 16 | 13 | 6 | 193 |
| 27 Nephritis and Bright's Disease | 359 | 404 | 138 | 90 | 49 | 25 | 1,055 |
| 28 Non-cancerous Tumours and other Diseases of the Female Genital Organs | — | — | — | — | — | — | — |
| 29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) | — | — | — | — | — | — | — |
| 30 Other Puerperal Accidents of Pregnancy and Confinement | — | — | — | — | — | — | — |
| 31 Congenital Debility and Malformations | 676 | 470 | 220 | 135 | 127 | 88 | 1,716 |
| 32 Senile Debility... .. | 561 | 657 | 138 | 183 | 55 | 127 | 1,721 |
| 33 Violence | 721 | 552 | 349 | 122 | 204 | 90 | 2,038 |
| 33A Suicide | 133 | 100 | 76 | 25 | 42 | 9 | 385 |
| 34 Other Diseases... .. | 1,786 | 1,719 | 710 | 413 | 295 | 179 | 5,102 |
| 35 Unspecified or Ill-defined Diseases | 304 | 207 | 46 | 117 | 95 | 61 | 830 |
| Total—Males | 9,444 | 7,977 | 3,482 | 2,087 | 1,866 | 1,083 | 25,939 |

those defects. It will be found in full in "Bulletin No. 8, of Population and Vital Statistics"; here it will suffice to give the abridged classification under thirty-five headings:—

CAUSES OF DEATH—AUSTRALIA, 1907.

(b) FEMALES.

| Cause. | N.S.W. | Vic. | Q'land. | S. Aus. | W.Aus. | Tas. | C'wlth. |
|--|--------|-------|---------|---------|--------|------|---------|
| 1 Typhoid Fever | 77 | 40 | 27 | 16 | 42 | 13 | 215 |
| 2 Typhus | — | — | — | — | — | — | — |
| 3 Intermittent Fever and Malarial Cachexia | — | — | 4 | 1 | — | — | 5 |
| 4 Small-pox | — | — | — | — | — | — | — |
| 5 Measles | 46 | 15 | 7 | 1 | — | 1 | 70 |
| 6 Scarlet Fever | 12 | 1 | 1 | 2 | — | 1 | 17 |
| 7 Whooping Cough | 312 | 74 | 60 | 40 | 44 | 27 | 557 |
| 8 Diphtheria and Croup | 79 | 48 | 34 | 5 | 41 | 4 | 211 |
| 9 Influenza | 141 | 126 | 100 | 36 | 5 | 17 | 425 |
| 10 Asiatic Cholera | — | — | — | — | — | — | — |
| 11 Cholera Nostras | 3 | — | — | — | — | — | 3 |
| 12 Other Epidemic Diseases | 41 | 10 | 27 | 8 | 8 | 1 | 95 |
| 13 Tuberculosis of the Lungs | 427 | 581 | 100 | 149 | 80 | 55 | 1,392 |
| 14 Tuberculosis of the Meninges | 33 | 55 | 6 | 8 | 3 | 13 | 118 |
| 15 Other forms of Tuberculosis | 79 | 79 | 11 | 22 | 11 | 11 | 213 |
| 16 Cancer and other Malignant Tumours | 459 | 492 | 150 | 137 | 53 | 60 | 1,351 |
| 17 Simple Meningitis | 99 | 78 | 34 | 29 | 24 | 11 | 275 |
| 18 Congestion, Hæmorrhage, and Softening of the Brain | 306 | 351 | 76 | 77 | 21 | 32 | 863 |
| 19 Organic Diseases of the Heart | 552 | 607 | 168 | 176 | 52 | 92 | 1,647 |
| 20 Acute Bronchitis | 112 | 54 | 16 | 19 | 9 | 10 | 220 |
| 21 Chronic Bronchitis | 140 | 138 | 33 | 42 | 14 | 13 | 380 |
| 22 Pneumonia | 241 | 242 | 76 | 52 | 35 | 39 | 685 |
| 23 Diseases of the Stomach (Cancer excepted) | 58 | 59 | 18 | 9 | 5 | 13 | 162 |
| 24 Diarrhœa and Enteritis (children under two years only) | 500 | 307 | 152 | 72 | 152 | 37 | 1,220 |
| 25 Hernia, Intestinal Obstructions | 55 | 86 | 22 | 20 | 4 | 10 | 197 |
| 26 Cirrhosis of the Liver | 30 | 67 | 17 | 7 | 7 | 4 | 132 |
| 27 Nephritis and Bright's Disease | 236 | 292 | 70 | 57 | 22 | 18 | 695 |
| 28 Non-cancerous Tumours and other Diseases of the Female Genital Organs | 45 | 49 | 6 | 11 | 10 | 7 | 128 |
| 29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) | 71 | 44 | 19 | 19 | 19 | 7 | 179 |
| 30 Other Puerperal Accidents of Pregnancy and Confinement | 169 | 122 | 69 | 25 | 33 | 17 | 495 |
| 31 Congenital Debility and Malformations | 550 | 356 | 169 | 90 | 96 | 61 | 1,322 |
| 32 Senile Debility | 420 | 553 | 98 | 188 | 30 | 126 | 1,415 |
| 33 Violence | 251 | 186 | 80 | 50 | 38 | 36 | 641 |
| 33A Suicide | 25 | 21 | 18 | 6 | 6 | — | 76 |
| 34 Other Diseases... .. | 1,232 | 1,316 | 423 | 311 | 150 | 145 | 3,577 |
| 35 Non-specified or Ill-defined Diseases | 166 | 113 | 25 | 56 | 51 | 34 | 445 |
| Total—Females | 6,967 | 6,562 | 2,116 | 1,741 | 1,065 | 915 | 19,366 |

CAUSES OF DEATH—AUSTRALIA, 1907.

(c) TOTAL, MALES AND FEMALES.

| Cause. | N.S.W. | Vic. | Q'land. | S. Aust. | W.Aust. | Tas. | C'w'lth. |
|---|--------|--------|---------|----------|---------|-------|----------|
| 1 Typhoid Fever ... | 191 | 91 | 87 | 41 | 119 | 35 | 564 |
| 2 Typhus ... | — | — | — | — | — | — | — |
| 3 Intermittent Fever and Malarial Cachexia ... | 1 | — | 32 | 6 | 1 | 2 | 42 |
| 4 Small-pox ... | — | — | — | — | — | — | — |
| 5 Measles ... | 81 | 39 | 17 | 5 | 4 | 1 | 147 |
| 6 Scarlet Fever ... | 27 | 2 | 3 | 4 | — | 1 | 37 |
| 7 Whooping Cough ... | 592 | 130 | 127 | 76 | 97 | 48 | 1,070 |
| 8 Diphtheria and Croup ... | 154 | 97 | 56 | 14 | 73 | 9 | 403 |
| 9 Influenza ... | 309 | 275 | 209 | 61 | 15 | 33 | 902 |
| 10 Asiatic Cholera ... | — | — | — | — | — | — | — |
| 11 Cholera Nostras ... | 4 | — | — | 1 | — | — | 5 |
| 12 Other Epidemic Diseases ... | 87 | 23 | 99 | 22 | 35 | 2 | 268 |
| 13 Tuberculosis of the Lungs ... | 1,016 | 1,182 | 341 | 297 | 217 | 113 | 3,166 |
| 14 Tuberculosis of the Meninges ... | 68 | 103 | 13 | 25 | 8 | 20 | 237 |
| 15 Other forms of Tuberculosis ... | 165 | 156 | 39 | 45 | 28 | 22 | 455 |
| 16 Cancer and other Malignant Tumours ... | 1,083 | 991 | 353 | 271 | 131 | 111 | 2,940 |
| 17 Simple Meningitis ... | 232 | 188 | 79 | 65 | 59 | 25 | 648 |
| 18 Congestion, Hæmorrhage, and Softening of the Brain ... | 710 | 694 | 195 | 152 | 85 | 65 | 1,901 |
| 19 Organic Diseases of the Heart ... | 1,297 | 1,315 | 460 | 357 | 172 | 200 | 3,801 |
| 20 Acute Bronchitis ... | 259 | 109 | 52 | 46 | 21 | 27 | 514 |
| 21 Chronic Bronchitis... .. | 318 | 315 | 75 | 78 | 30 | 28 | 844 |
| 22 Pneumonia ... | 665 | 589 | 218 | 112 | 111 | 93 | 1,788 |
| 23 Diseases of the Stomach (Cancer excepted) ... | 111 | 120 | 49 | 23 | 10 | 21 | 334 |
| 24 Diarrhœa and Enteritis (children under two years only) ... | 1,101 | 674 | 346 | 169 | 354 | 89 | 2,733 |
| 25 Hernia, Intestinal Obstructions ... | 134 | 157 | 51 | 37 | 19 | 13 | 411 |
| 26 Cirrhosis of the Liver ... | 101 | 128 | 43 | 23 | 20 | 10 | 325 |
| 27 Nephritis and Bright's Disease ... | 595 | 696 | 208 | 147 | 71 | 43 | 1,760 |
| 28 Non-cancerous Tumours and other Diseases of the Female Genital Organs ... | 45 | 49 | 6 | 11 | 10 | 7 | 128 |
| 29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ... | 71 | 44 | 19 | 19 | 19 | 7 | 179 |
| 30 Other Puerperal Accidents of Pregnancy and Confinement ... | 169 | 122 | 69 | 25 | 33 | 17 | 435 |
| 31 Congenital Debility and Malformations ... | 1,226 | 826 | 389 | 225 | 223 | 149 | 3,038 |
| 32 Senile Debility ... | 981 | 1,210 | 236 | 371 | 85 | 253 | 3,136 |
| 33 Violence ... | 972 | 738 | 429 | 172 | 242 | 126 | 2,679 |
| 33A Suicide ... | 158 | 121 | 94 | 31 | 48 | 9 | 461 |
| 34 Other Diseases ... | 3,018 | 3,035 | 1,133 | 724 | 445 | 324 | 8,679 |
| 35 Non-specified or Ill-defined Diseases ... | 470 | 320 | 71 | 173 | 146 | 95 | 1,275 |
| Total—Males and Females... | 16,411 | 14,539 | 5,598 | 3,828 | 2,931 | 1,998 | 45,305 |

(d) The classification for the years 1905 and 1906 is shown for the Commonwealth in the following table, and for purposes of comparison the figures for the year 1907 have been repeated from the preceding table:—

CAUSES OF DEATH—AUSTRALIA, 1905 to 1907.

| Cause. | 1905. | | | 1906. | | | 1907. | | |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | M. | F. | Total. | M. | F. | Total. | M. | F. | Total. |
| 1 Typhoid Fever ... | 398 | 232 | 630 | 430 | 308 | 738 | 349 | 215 | 564 |
| 2 Typhus ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... |
| 3 Intermittent Fever and Malarial Cachexia ... | 48 | 7 | 55 | 28 | 10 | 38 | 37 | 5 | 42 |
| 4 Small-pox ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 5 Measles ... | 64 | 49 | 113 | 14 | 25 | 39 | 77 | 70 | 147 |
| 6 Scarlet Fever ... | 24 | 20 | 44 | 29 | 32 | 61 | 20 | 17 | 37 |
| 7 Whooping Cough ... | 20 | 22 | 42 | 126 | 167 | 293 | 513 | 557 | 1,070 |
| 8 Diphtheria and Croup ... | 156 | 158 | 314 | 131 | 149 | 280 | 192 | 211 | 403 |
| 9 Influenza ... | 229 | 199 | 428 | 269 | 270 | 539 | 477 | 425 | 902 |
| 10 Asiatic Cholera ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 11 Cholera Nostras ... | 2 | 3 | 5 | 123 | 86 | 209 | 2 | 3 | 5 |
| 12 Other Epidemic Diseases ... | 356 | 241 | 597 | 224 | 130 | 354 | 173 | 95 | 268 |
| 13 Tuberculosis of the Lungs ... | 1,916 | 1,328 | 3,244 | 1,870 | 1,352 | 3,222 | 1,774 | 1,392 | 3,166 |
| 14 Tuberculosis of the Meninges ... | 159 | 131 | 290 | 150 | 123 | 273 | 119 | 118 | 237 |
| 15 Other forms of Tuberculosis ... | 277 | 221 | 498 | 294 | 253 | 547 | 242 | 213 | 455 |
| 16 Cancer and other Malignant Tumours ... | 1,456 | 1,286 | 2,742 | 1,431 | 1,341 | 2,772 | 1,589 | 1,351 | 2,940 |
| 17 Simple Meningitis ... | 264 | 197 | 461 | 129 | 121 | 250 | 373 | 275 | 648 |
| 18 Congestion, Hemorrhage, and Softening of the Brain ... | 865 | 746 | 1,611 | 904 | 781 | 1,685 | 1,038 | 863 | 1,901 |
| 19 Organic Diseases of the Heart ... | 799 | 650 | 1,449 | 1,430 | 1,072 | 2,502 | 2,154 | 1,647 | 3,801 |
| 20 Acute Bronchitis ... | 280 | 198 | 478 | 210 | 211 | 421 | 294 | 220 | 514 |
| 21 Chronic Bronchitis ... | 573 | 450 | 1,023 | 558 | 426 | 984 | 464 | 380 | 844 |
| 22 Pneumonia ... | 1,472 | 890 | 2,362 | 1,366 | 903 | 2,269 | 1,103 | 685 | 1,788 |
| 23 Diseases of the Stomach (Cancer excepted) ... | 222 | 220 | 442 | 217 | 250 | 467 | 172 | 162 | 334 |
| 24 Diarrhœa & Enteritis (Children under two years only) ... | 1,421 | 1,172 | 2,593 | 1,624 | 1,257 | 2,881 | 1,513 | 1,220 | 2,733 |
| 25 Hernia, Intestinal Obstructions ... | 232 | 200 | 432 | 215 | 184 | 399 | 214 | 197 | 411 |
| 26 Cirrhosis of the Liver ... | 190 | 100 | 290 | 151 | 116 | 267 | 193 | 132 | 325 |
| 27 Nephritis and Bright's Disease ... | 1,083 | 690 | 1,773 | 1,114 | 678 | 1,792 | 1,065 | 695 | 1,760 |
| 28 Non-cancerous Tumours and other Diseases of the Female Genital Organs ... | ... | 134 | 134 | ... | 153 | 153 | ... | 128 | 128 |
| 29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ... | ... | 205 | 205 | ... | 168 | 168 | ... | 179 | 179 |
| 30 Other Puerperal Accidents of Pregnancy and Confinement ... | ... | 411 | 411 | ... | 458 | 458 | ... | 435 | 435 |
| 31 Congenital Debility and Malformations ... | 1,825 | 1,375 | 3,200 | 1,642 | 1,318 | 2,960 | 1,716 | 1,322 | 3,038 |
| 32 Senile Debility ... | 1,807 | 1,353 | 3,160 | 1,712 | 1,319 | 3,031 | 1,721 | 1,415 | 3,136 |
| 33 Violence ... | 2,014 | 649 | 2,663 | 2,024 | 593 | 2,617 | 2,038 | 641 | 2,679 |
| 33A Suicide ... | 431 | 89 | 520 | 403 | 96 | 499 | 385 | 76 | 461 |
| 34 Other Diseases ... | 6,137 | 4,126 | 10,263 | 5,880 | 4,096 | 9,976 | 5,102 | 3,577 | 8,679 |
| 35 Unspecified or Ill-defined Diseases ... | 591 | 451 | 1,042 | 656 | 512 | 1,168 | 830 | 445 | 1,275 |
| Total ... | 25,311 | 18,203 | 43,514 | 25,374 | 18,959 | 44,333 | 25,939 | 19,366 | 45,305 |

16. **Deaths from Special Causes.**—The foregoing table furnishes comparisons for the last three years only, and comparisons will, therefore, be restricted to that period.

(i.) *Typhoid Fever.* Deaths from typhoid fever were less numerous in 1907 than in either of the two preceding years, numbering 564 against 630 in 1905 and 738 in 1906. Of the deaths registered in 1907, 191 occurred in New South Wales and 119 in Western Australia, the numbers in the four remaining States being below 100.

(ii.) *Typhus.* The death of one woman was registered in 1906 in Victoria as being due to typhus, but this registration may have been due to an error in the death certificate, and the death have been one of typhoid (enteric) fever.

(iii.) *Intermittent Fever and Malarial Cachexia.* Deaths from malarial diseases are practically confined to the tropical districts of Northern Queensland, 32 out of 42 deaths registered in 1907 having occurred in that State.

(iv.) *Small-pox.* No deaths from small-pox occurred during the last three years.

(v.) *Measles*. No serious epidemic of measles has occurred for several years; the deaths in 1907 were, however, slightly more numerous than in 1905 and 1906, numbering 147, against 113 and 39 respectively. Of the 147 deaths in 1907, 81 were registered in New South Wales and 39 in Victoria.

(vi.) *Scarlet Fever*. Only 37 deaths were registered in 1907, 27 of which occurred in New South Wales.

(vii.) *Whooping Cough*. A rather severe epidemic of whooping cough visited New South Wales in the early part of 1907, causing 592 deaths out of a total of 1070 registered in the Commonwealth. The number of deaths in Victoria was 130; in Queensland, 127; in South Australia, 76; in Western Australia, 97; and in Tasmania, 43. The deaths in 1905 numbered only 42, and in 1906, 293.

(viii.) *Diphtheria and Croup*. Deaths in 1905 numbered 314; in 1906, 280; and in 1907, 403, of which 154 occurred in New South Wales, 97 in Victoria, and 73 in Western Australia.

(ix.) *Influenza*. This disease was rather more prevalent in 1907 than in the two previous years, the deaths numbering 902, against 428 and 539. Of the deaths occurring in 1907, 309 were registered in New South Wales, 275 in Victoria, and 209 in Queensland.

(x.) *Asiatic Cholera*. No cases of Asiatic cholera have ever occurred in the Commonwealth.

(xi.) *Cholera Nostras*. Isolated cases only of choleric form diarrhoea occurred in each of the three years.

(xii.) *Other Epidemic Diseases*. The number of deaths registered under this heading was 597 in 1905, 354 in 1906, and 268 in 1907. The list in 1907 includes the following diseases:—Dysentery, 120; plague, 48 (of which 19 in New South Wales, 1 in Victoria, and 28 in Queensland); erysipelas, 45; other epidemic diseases, 55.

(xiii.) *Tuberculosis of the Lungs*. The deaths in 1907 numbered 3166, viz., 1774 males and 1392 females. This was a slight decrease on the figures for 1905 and 1906, which were 3244 and 3222 respectively. Of the deaths in 1907, 1016 occurred in New South Wales, 1182 in Victoria, 341 in Queensland, 297 in South Australia, 217 in Western Australia, and 113 in Tasmania.

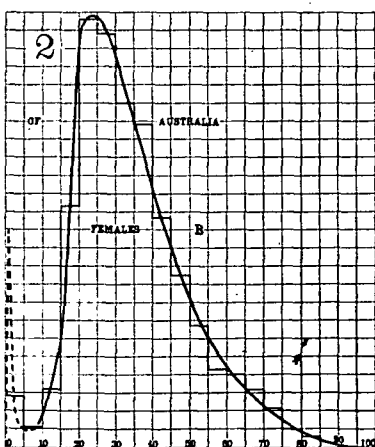
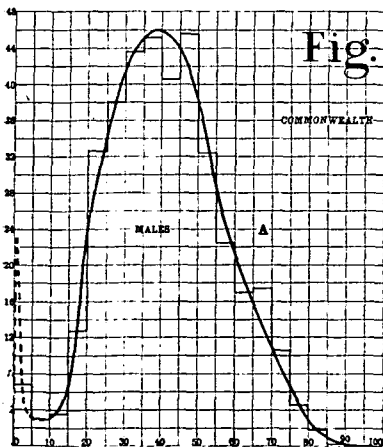
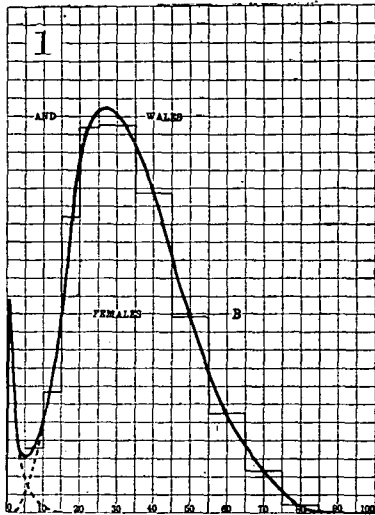
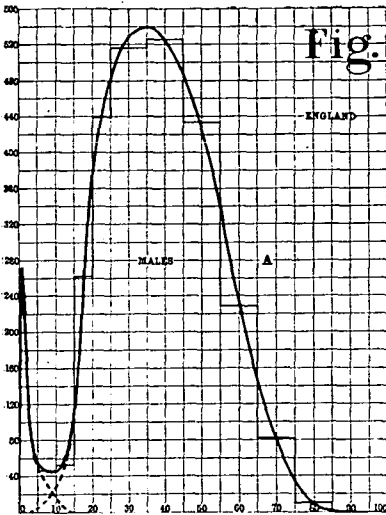
(xiii.a) *Tuberculosis of the Respiratory System*. Of the various forms of tuberculosis prevalent in the Commonwealth, that which has probably attracted the most attention and has been the subject of the widest comment is phthisis, or tuberculosis of the lungs. The intimate relation, however, between tuberculosis of the lungs and that of other parts of the respiratory system renders it desirable that all forms of tuberculosis of the respiratory system should be brought under one head for various investigations concerning the age incidence and duration of this disease. A preliminary investigation of these two phases has been made by the Commonwealth Statistical Bureau, but owing to the paucity of the data and their incompleteness in certain particulars the results obtained, so far as duration is concerned, can be considered as tentative only, and cannot be regarded as sufficiently reliable to warrant their inclusion in an official Year Book. It is proposed to pursue the matter further, and it is hoped that it will be possible to include in the next issue of the "Year Book" results of this nature that will be of service.

In the matter of the age incidence of death from tuberculosis of the respiratory system, more satisfactory data are obtainable, and the diagrams given hereunder furnish graphic representation of the frequency of deaths at successive ages in England and Wales during 1906 (Fig. 1), and in the Commonwealth during 1907 (Fig. 2). The figures for the Commonwealth being insufficient in extent to admit of an exact determination of

the age incidence of death for the first five years, the English results have been made use of in deciding the form of this portion of the curve.

The figures shewn at the foot of each graph denote the respective ages at death, while the figures shewn in the margin denote the number of deaths corresponding to each year of age. In each of the graphs various rectangles are shewn, through the upper parts of which smooth curves have been drawn. The areas of these rectangles represent the number of deaths which occurred between the ages indicated at the extremities of their respective bases, the scale being 100 persons for each small square in the case of graphs for England and Wales and 10 for each small square in the case of the Commonwealth graphs. The smooth curve may be said to represent the form of the results which would have been obtained under the existing circumstances if the number of cases observed had been indefinitely large and the age intervals had been made indefinitely small.

If a point be taken on the base-line corresponding to any given age, the vertical height of the curve above that point represents the rate per annum at which deaths are occurring at the given age.



It will be seen that in both instances the curve for males differs considerably from that for females, and that there is a general though not a close resemblance between the two curves for males, and also between the two curves for females. It will also be noticed that in both cases the curve for females rises much more abruptly than that for males, owing to the fact that the age of maximum frequency is less in the case of females than in the case of males.

The figures dealt with furnish the following death-rates from tuberculosis of the respiratory system for the years specified :—

| | Males. | Females. | Total. |
|---|------------|------------|------------|
| ENGLAND AND WALES, 1906— | | | |
| Population | 16,689,707 | 17,857,309 | 34,547,016 |
| Deaths from tuberculosis of the respiratory system | 22,645 | 17,101 | 39,746 |
| Death-rate per 100,000 of population ... | 135.68 | 95.76 | 115.05 |
| COMMONWEALTH OF AUSTRALIA, 1907— | | | |
| Population | 2,191,472 | 1,964,201 | 4,155,673 |
| Deaths from tuberculosis of the respiratory system | 1,891 | 1,477 | 3,368 |
| Death-rate per 100,000 of population ... | 86.29 | 75.20 | 81.05 |

(xiv.) *Tuberculosis of the Meninges.* The number of deaths registered in 1905 was 290; in 1906, 273; and in 1907, 237. Not much reliance can, however, be placed on the figures for 1905 and 1906, as the tabulation in some of the States appears to include simple meningitis.

(xv.) *Other Forms of Tuberculosis.* Deaths in 1905 numbered 498; in 1906, 547; and in 1907, 455. The deaths in 1907 include the following forms of tuberculosis :— Tuberculosis of the larynx, 40; tuberculosis of the peritonæum, 141; Pott's disease, 30; cold abscess, 1; white swellings, 1; tuberculosis of other organs, 80; and general tuberculosis, 162.

(xiv.a) *All Forms of Tuberculosis.* A complete tabulation of all the different tubercular diseases from which deaths occurred in 1907, will be found in Bulletin No. 8 of Population and Vital Statistics. Here it will suffice to show a few of the features of the tabulation mentioned. The total number of deaths due to tubercular diseases was 3858, viz., 2135 males and 1723 females. The following table shews the ages of these 3858 persons :—

AGES OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1907.

| Ages. | Male. | Female. | Total. | Ages. | Male. | Female. | Total. |
|----------------------|-------|---------|--------|-----------------------|-------|---------|--------|
| Under 5 years ... | 134 | 122 | 256 | 55 years and under 60 | 115 | 46 | 161 |
| 5 years and under 10 | 33 | 44 | 77 | 60 " " 65 | 88 | 43 | 131 |
| 10 " " 15 | 34 | 53 | 87 | 65 " " 70 | 89 | 33 | 122 |
| 15 " " 20 | 84 | 150 | 234 | 70 " " 75 | 58 | 22 | 80 |
| 20 " " 25 | 175 | 254 | 429 | 75 " " 80 | 27 | 10 | 37 |
| 25 " " 30 | 199 | 246 | 445 | 80 " " 85 | 9 | 6 | 15 |
| 30 " " 35 | 232 | 203 | 435 | Age not stated ... | 1 | ... | 1 |
| 35 " " 40 | 237 | 183 | 420 | | | | |
| 40 " " 45 | 214 | 135 | 349 | | | | |
| 45 " " 50 | 237 | 101 | 338 | | | | |
| 50 " " 55 | 169 | 72 | 241 | Total deaths ... | 2,135 | 1,723 | 3,858 |

The length of residence in the Commonwealth of persons who died from tubercular diseases has been tabulated for the year 1907 for all the Commonwealth States, with the exception of South Australia, with the following results :—

LENGTH OF RESIDENCE IN COMMONWEALTH
OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1907 (EXCLUSIVE OF SOUTH AUSTRALIA).

| Length of Residence in Commonwealth. | Male. | Fem. | Total. | Length of Residence in Commonwealth. | Male. | Fem. | Total. |
|--------------------------------------|-------|-------|--------|--------------------------------------|-------|-------|--------|
| Born in Commonwealth ... | 1,157 | 1,250 | 2,407 | Resident 10 yrs. & under 15 | 45 | 10 | 55 |
| Resident under 1 year ... | 17 | 10 | 27 | .. 15 .. " 20 | 50 | 24 | 74 |
| .. 1 year ... | 13 | ... | 13 | .. 20 .. " over ... | 463 | 195 | 658 |
| .. 2 years ... | 5 | 1 | 6 | Length of residence not stated | 148 | 29 | 177 |
| .. 3 .. | 3 | 1 | 4 | | | | |
| .. 4 .. | 7 | 4 | 11 | | | | |
| .. 5 .. & under 10 | 39 | 20 | 59 | Total deaths ... | 1,947 | 1,544 | 3,491 |

There would not appear, therefore, to be much ground for the statement sometimes heard that many persons arrive in Australia in the last stages of consumption.

In order to shew the prevalence of tuberculosis in the several States, the death rates from tubercular diseases are shewn in the following table, together with the percentage which deaths from tuberculosis bear on the total number of deaths registered :—

DEATH RATES FROM TUBERCULOSIS AND PERCENTAGE OF TOTAL DEATHS, 1907.

| State. | Death Rates (per 1000) from Tuberculosis. | | | Percentage of Total Deaths. | | |
|---------------------|---|----------|--------|-----------------------------|----------|--------|
| | Males. | Females. | Total. | Males. | Females. | Total. |
| New South Wales | 0.86 | 0.74 | 0.80 | 7.51 | 7.73 | 7.61 |
| Victoria ... | 1.17 | 1.15 | 1.16 | 9.10 | 10.89 | 9.91 |
| Queensland ... | 0.94 | 0.47 | 0.73 | 7.92 | 5.53 | 7.02 |
| South Australia ... | 0.92 | 0.98 | 0.95 | 9.01 | 10.28 | 9.59 |
| Western Australia | 1.05 | 0.86 | 0.96 | 8.52 | 8.82 | 8.63 |
| Tasmania ... | 0.82 | 0.91 | 0.86 | 7.02 | 8.63 | 7.76 |
| Commonwealth | 0.97 | 0.87 | 0.92 | 8.23 | 8.90 | 8.52 |

In the first issue of this book a series of figures was given shewing the rates of mortality from phthisis in various countries, and it was shewn that these ranged from 570 per million in New Zealand to 4415 per million in Hungary, with a rate of 808 for the Commonwealth. It is not considered necessary to repeat those figures here in detail, and it may suffice to state that while deaths from all tubercular diseases in the Commonwealth were 0.92 per thousand in 1907, they were 1.40 per thousand in Belgium in 1904; 1.65 per thousand in England and Wales in 1906; 1.80 per thousand in the Netherlands in 1906; 2.04 per thousand in the German Empire in 1905; and 2.72 per thousand in Switzerland in 1905. The Commonwealth occupies, therefore, a very enviable position in regard to tubercular diseases, when compared with European countries.

(xvi.) *Cancer and other Malignant Tumours.* Deaths from cancer shew a tendency to increase, the figures for 1905 being 2748 deaths; for 1906, 2772 deaths; and for 1907, 2940 deaths. Of the deaths registered in 1907, 1589 were those of males, viz., 624 in New South Wales, 499 in Victoria, 203 in Queensland, 134 in South Australia, 78 in Western Australia, and 51 in Tasmania; while 1351 were those of females; viz., 459 in New South Wales, 492 in Victoria, 150 in Queensland, 137 in South Australia, 53 in Western Australia, and 60 in Tasmania. "Bulletin No. 8" contains a complete tabu-

lation of the various types of cancer and of the seat of the disease, of which the following is a summary :—

DEATHS FROM CANCER, 1907.

| Seat of Disease. | Male. | Female | Total. |
|---|-------|--------|--------|
| Cancer, etc., of the mouth | 244 | 19 | 263 |
| „ „ the stomach and liver | 671 | 422 | 1,093 |
| „ „ the peritonæum, the intestines, and the rectum | 161 | 140 | 301 |
| „ „ the female genital organs | ... | 331 | 331 |
| „ „ the breast | ... | 193 | 193 |
| „ „ the skin | 55 | 18 | 73 |
| „ „ other organs | 458 | 228 | 686 |
| Total deaths | 1,589 | 1,351 | 2,940 |

Of these deaths 996 were described as cancer, 1147 as carcinoma, 153 as epithelioma, 398 as "malignant disease," 6 as neoplasm, 15 as "rodent ulcer," 198 as sarcoma, and 27 as Scirrhus.

The ages of the 2940 persons who died from cancer in 1907, are shewn in the following table :—

AGES OF PERSONS WHO DIED FROM CANCER, 1907.

| Ages. | Males. | Female | Total. | Ages. | Males. | Female | Total. |
|-----------------------|--------|--------|--------|-----------------------|--------|--------|--------|
| Under 15 years ... | 17 | 14 | 31 | 65 years and under 70 | 260 | 166 | 426 |
| 15 years and under 20 | 11 | 1 | 12 | 70 „ „ 75 | 246 | 175 | 421 |
| 20 „ „ 25 | 8 | 3 | 11 | 75 „ „ 80 | 139 | 104 | 243 |
| 25 „ „ 30 | 6 | 16 | 22 | 80 „ „ 85 | 69 | 42 | 111 |
| 30 „ „ 35 | 20 | 20 | 40 | 85 years and over ... | 31 | 22 | 53 |
| 35 „ „ 40 | 31 | 59 | 90 | Age not stated ... | 2 | 2 | 4 |
| 40 „ „ 45 | 82 | 107 | 189 | | | | |
| 45 „ „ 50 | 121 | 176 | 297 | | | | |
| 50 „ „ 55 | 169 | 134 | 303 | Total Deaths ... | 1,589 | 1,351 | 2,940 |
| 55 „ „ 60 | 180 | 150 | 330 | | | | |
| 60 „ „ 65 | 197 | 160 | 357 | | | | |

A tabulation has been made of the occupations of the males who died from cancer, of which the following is a summary :—

OCCUPATIONS OF MALES WHO DIED FROM CANCER, 1907.

| Occupation. | No. of Deaths. | Occupation. | No. of Deaths. |
|---|----------------|-----------------------------------|----------------|
| Professional class | 76 | Pastoral class | 67 |
| Domestic class | 43 | Working in mines and quarries ... | 139 |
| Mercantile class | 165 | Other primary producers | 14 |
| Engaged in transport and communication | 109 | Independent means | 61 |
| Manufacturing class | 150 | Dependents | 23 |
| Engaged in building and construction | 102 | Occupation not stated | 62 |
| Indefinite industrial workers | 313 | | |
| Agricultural class | 265 | Total Male Deaths | 1,589 |

As the following tables shew, the death rates from cancer are below those for tubercular diseases in all the States, but while the latter have a tendency to decrease the former have, on the contrary, shewn an increase for several years.

DEATH RATES FROM CANCER, AND PERCENTAGE OF TOTAL DEATHS, 1907.

| State. | Death Rates (per 1000) from Cancer. | | | Percentage of Total Deaths. | | |
|---------------------|-------------------------------------|----------|--------|-----------------------------|----------|--------|
| | Males. | Females. | Total. | Males. | Females. | Total. |
| New South Wales | 0.75 | 0.63 | 0.69 | 6.60 | 6.59 | 6.60 |
| Victoria ... | 0.80 | 0.79 | 0.80 | 6.25 | 7.49 | 6.81 |
| Queensland ... | 0.69 | 0.61 | 0.65 | 5.83 | 7.09 | 6.30 |
| South Australia ... | 0.65 | 0.75 | 0.70 | 6.42 | 7.87 | 7.08 |
| Western Australia | 0.51 | 0.48 | 0.50 | 4.18 | 4.97 | 4.47 |
| Tasmania ... | 0.55 | 0.69 | 0.62 | 4.71 | 6.56 | 5.55 |
| Commonwealth | 0.72 | 0.68 | 0.70 | 6.12 | 6.97 | 6.49 |

The table shewing the death rates from cancer in various countries, which was given in the first issue of this work, is not here repeated. It may, however, be stated that while the death rate of the Commonwealth from cancer in 1907 was 0.70 per thousand, that of Belgium in 1904 was 0.56; that of the German Empire in 1905, 0.80; that of England and Wales in 1905, 0.92; that of the Netherlands in 1906, 1.01; and that of Switzerland in 1905, 1.32 per thousand.

(xvii.) *Simple Meningitis.* The table shews 461 deaths in 1905, 250 deaths in 1906, and 648 deaths in 1907. The last figure is the only one that can be taken as correct, the returns for some of the States having in 1905 and 1906 included this disease with tuberculosis of the meninges, as has already been stated in paragraph xiv.

(xviii.) *Congestion, Hæmorrhage, and Softening of the Brain.* The deaths registered under this heading in 1905 numbered 1611, viz., 865 males and 746 females; in 1906, they were 1685, viz., 908 males and 781 females; and in 1907, 1901, viz., 1038 males and 863 females. The 1907 figures are made up of congestion and hæmorrhage of the brain—976 males, 817 females, total 1793; and softening of the brain—62 males, 46 females, total 108.

(xix.) *Organic Diseases of the Heart.* Owing to the changes in tabulation it is impossible to say whether the figures for the three years are strictly comparable. The number of deaths registered in 1907 was 3801, viz., 2154 males and 1647 females. Of these deaths, New South Wales was responsible for 745 males and 552 females; Victoria for 708 males and 607 females; Queensland for 292 males and 168 females; South Australia for 181 males and 176 females; Western Australia for 120 males and 52 females; and Tasmania for 108 males and 92 females. To the figures for 1907 correspond the following death rates and percentages to total deaths:—

DEATH RATES FROM ORGANIC HEART DISEASE AND PERCENTAGE OF TOTAL DEATHS, 1907.

| State. | Death Rates (per 1000) from Organic Heart Disease. | | | Percentage of Total Deaths. | | |
|---------------------|--|----------|--------|-----------------------------|----------|--------|
| | Males. | Females. | Total. | Males. | Females. | Total. |
| New South Wales | 0.90 | 0.76 | 0.83 | 7.89 | 7.92 | 7.90 |
| Victoria ... | 1.14 | 0.98 | 1.06 | 8.87 | 9.25 | 9.44 |
| Queensland ... | 0.99 | 0.68 | 0.85 | 8.38 | 7.94 | 8.21 |
| South Australia ... | 0.88 | 0.97 | 0.92 | 8.67 | 10.11 | 9.32 |
| Western Australia | 0.78 | 0.47 | 0.65 | 6.43 | 4.88 | 5.87 |
| Tasmania ... | 1.16 | 1.06 | 1.11 | 9.97 | 10.05 | 10.01 |
| Commonwealth ... | 0.98 | 0.84 | 0.91 | 8.30 | 8.50 | 8.39 |

(xxi.) *Acute Bronchitis.* The nomenclature of causes of deaths requires deaths of persons under five years of age, which are merely ascribed to "bronchitis," to be classified under "acute bronchitis," and similarly certified deaths of older persons under "chronic bronchitis." This rule has been followed in adjusting the tabulation of 1905 and 1906, and followed throughout in compiling the tables for 1907, with the result that acute bronchitis is credited with 478 deaths in 1905, 421 deaths in 1906, and 514 deaths in 1907, viz., 294 males and 220 females.

(xxii.) *Chronic Bronchitis.* The adjustment mentioned in the preceding paragraph gives a total of 1023 deaths due to chronic bronchitis in 1905, 984 deaths in 1906, and 844 deaths, viz., 464 males and 380 females, in 1907.

(xxiii.) *Pneumonia.* The figures for 1905 and 1906 are unduly swelled by the inclusion of broncho-pneumonia, etc., which in 1907 is classified under "Other Diseases." The 1907 figures were 1103 males and 685 females, a total of 1788 deaths.

(xxiii.) *Diseases of the Stomach (Cancer excepted).* In 1907 this heading includes: Ulcer of the stomach, 46 males, 50 females; and other diseases of the stomach (cancer excepted), 126 males, 112 females; a total of 334 deaths. The corresponding figures for 1905 and 1906, which are fairly comparable, were 442 and 467 respectively.

(xxiv.) *Diarrhœa and Enteritis (Children under two years only).* In 1905 the deaths numbered 2593, viz., 1421 boys and 1172 girls; in 1906 they were 2881, viz., 1624 boys and 1257 girls; and in 1907, 2773, viz., 1513 boys and 1220 girls. The 1907 deaths were distributed amongst the six States as follows:—New South Wales, 601 males, 500 females, total 1101; Victoria, 367 males, 307 females, total 674; Queensland, 194 males, 152 females, total 346; South Australia, 97 males, 72 females, total 169; Western Australia, 202 males, 152 females, total 354; and Tasmania, 52 males, 37 females, total 89.

The following are the death rates and percentages of total deaths due to infantile diarrhœa and enteritis in the six States for the year 1907:—

DEATH RATES FROM INFANTILE DIARRHŒA AND ENTERITIS, AND PERCENTAGE OF TOTAL DEATHS, 1907.

| State. | Death Rate (per 1000) from Infantile Diarrhœa and Enteritis. | | | Percentage of Total Deaths. | | |
|---------------------|--|----------|--------|-----------------------------|----------|--------|
| | Males. | Females. | Total. | Males. | Females. | Total. |
| New South Wales | 0.72 | 0.69 | 0.71 | 6.36 | 7.17 | 6.71 |
| Victoria ... | 0.59 | 0.49 | 0.54 | 4.60 | 4.68 | 4.63 |
| Queensland ... | 0.66 | 0.62 | 0.64 | 5.57 | 7.18 | 6.18 |
| South Australia ... | 0.47 | 0.39 | 0.44 | 4.65 | 4.13 | 4.41 |
| Western Australia | 1.31 | 1.39 | 1.35 | 10.82 | 14.27 | 12.08 |
| Tasmania ... | 0.56 | 0.42 | 0.49 | 4.80 | 4.04 | 4.45 |
| Commonwealth | 0.69 | 0.62 | 0.65 | 5.83 | 6.30 | 6.03 |

As a large number of these deaths is directly due to improper feeding, it would be interesting to know the percentages of infants who were bottle-fed, but, unfortunately, no provision exists for the registration of that fact.

(xxv.) *Hernia, Intestinal Obstructions.* The number of deaths has not varied much from year to year, the number registered in 1905 being 432; in 1906, 399; and in 1907, 411, viz., 214 males and 197 females.

(xxvi.) *Cirrhosis of the Liver.* The deaths in 1905 numbered 290; in 1906, 267; and in 1907, 325, viz., 193 males and 132 females.

(xxvii.) *Nephritis and Bright's Disease.* The number of deaths attributable to these diseases is a very large one from year to year. In 1905 there were registered the deaths of 1083 males and 690 females; in 1906, those of 1114 males and 678 females; and in 1907, those of 1065 males and 695 females. Of the deaths registered in 1907 those of 95 males and 51 females were ascribed to acute nephritis, and those of 970 males and 644 females to Bright's disease. New South Wales was responsible for 595 deaths; Victoria for 696; Queensland for 208; South Australia for 147; Western Australia for 71; and Tasmania for 43; making a total of 1760.

(xxviii.) *Non-cancerous Tumours and other Diseases of the Female Genital Organs.* Deaths in 1905 numbered 134; in 1906, 153; and in 1907, 128. Included in the 128 deaths registered in 1907 were the following:—Metritis, 5; non-puerperal uterine hæmorrhage, 1; non-cancerous uterine tumours, 40; other diseases of the uterus, 30; cysts and other ovarian tumours, 12; other diseases of the female genital organs, 40.

(xxix.) *Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis).* Deaths in 1905 were 205; in 1906, 168; and in 1907, 179.

(xxx.) *Other Puerperal Accidents of Pregnancy and Confinement.* The deaths in 1905 numbered 411; in 1906, 458; and in 1907, 435. Included in the 435 deaths registered in 1907 were the following:—Accidents of pregnancy, 109; puerperal hæmorrhage, 45; other accidents of childbirth, 103; puerperal albuminuria and eclampsia, 98; puerperal phlegmasia alba dolens, 3; and other puerperal accidents (including "sudden death"), 77.

(xxx. a) *All Puerperal Diseases.* The 614 deaths registered in 1907 under the two preceding headings will be found tabulated in "Bulletin No. 8 of Population and Vital Statistics" under the various names of the diseases causing death as found in the certificates of death. The names amount to more than seventy, and need not be repeated here. Of the women who succumbed to puerperal diseases in 1907, 30 were between the ages of 15 and 19; 97 between 20 and 24; 132 between 25 and 29; 154 between 30 and 34; 139 between 35 and 39; 50 between 40 and 44; and 12 between 45 and 49. As the total number of confinements registered in 1907 was 109,306, it follows that one mother in every 178 succumbed to puerperal disease.

(xxxii.) *Congenital Debility and Malformations.* As has been pointed out on a previous page, the figures set down under this heading, viz., 3200 for 1905, 2960 for 1906, and 3038 for 1907, are not strictly comparable, owing to the impossibility of distinguishing in every case for 1905 and 1906 between children under three months of age and those from three to twelve months. The 1907 figures include:—Malformations, 193 males, 133 females, total 326; and congenital debility, icterus, and scleroma of children under three months of age, 1523 males and 1189 females, total 2712; or a grand total of 3038. Of these deaths, 1226 were registered in New South Wales, viz., 676 males and 550 females; 826 in Victoria, viz., 470 males and 356 females; 389 in Queensland, viz., 220 males and 169 females; 225 in South Australia, viz., 135 males and 90 females; 223 in Western Australia, viz., 127 males and 96 females; and 149 in Tasmania, viz., 88 males and 61 females.

(xxxiii.) *Senile Debility.* The deaths ascribed to "old age" form a large group, and are slightly in excess of those due to infantile debility. In 1905 they numbered 3160, viz., 1807 males and 1353 females; in 1906, 3031, viz., 1712 males and 1319 females; and in 1907, 3136, viz., 1721 males and 1415 females. Of the deaths registered in 1907, 981 occurred in New South Wales, viz., 561 males and 420 females; 1210 in Victoria, viz., 657 males and 553 females; 236 in Queensland, viz., 138 males and 98 females; 371 in South Australia, viz., 183 males and 188 females; 85 in Western Australia, viz., 55 males and 30 females; and 253 in Tasmania, viz., 127 males and 126 females.

Of the males whose death was described as due to senility, 3 were between 45 and 49 years old; 3 between 55 and 59; 31 between 60 and 64; 130 between 65 and 69; 289 between 70 and 74; 449 between 75 and 79; 416 between 80 and 84; 284 between 85 and 89; 74 between 90 and 94; 30 between 95 and 99; while 11 were 100 years old and upwards; and of 1 the age was not stated.

Of the females, 1 was between 35 and 39; 1 between 45 and 49; 2 between 50 and 54; 2 between 55 and 59; 21 between 60 and 64; 74 between 65 and 69; 222 between 70 and 74; 332 between 75 and 79; 327 between 80 and 84; 293 between 85 and 89; 101 between 90 and 94; 30 between 95 and 99; while 7 were 100 years old and upwards; and of 2 the age was not stated.

(xxxiii.) *Violence.* A very large number of deaths is every year due to external violence, and, as might be expected from the fact that their occupations expose them much more to accidents, males largely predominate. The figures quoted are exclusive of suicides, which have been treated as a separate group. Deaths ascribed to violence numbered, in 1905, 2663, viz., 2014 males and 649 females; in 1906, 2617, viz., 2024 males and 593 females; and in 1907, 2679, viz., 2038 males and 641 females. Of the deaths registered in 1907, those of 721 males and 251 females occurred in New South Wales; those of 552 males and 186 females in Victoria; those of 349 males and 80 females in Queensland; those of 122 males and 50 females in South Australia; those of 204 males and 38 females in Western Australia; and those of 90 males and 36 females in Tasmania.

The following table shows the various kinds of accidental deaths which occurred in 1907, distinguishing males and females:—

DEATHS FROM VIOLENCE, 1907.

| Cause of Death. | Males. | Females. | Total. |
|--|--------------|------------|--------------|
| Fractures | 243 | 70 | 313 |
| Other accidental injuries | 876 | 128 | 1,004 |
| Burning by fire | 143 | 219 | 362 |
| Burning by corrosive substances | ... | 2 | 2 |
| Insolation | 46 | 18 | 64 |
| Electric shock | 11 | 1 | 12 |
| Accidental drowning | 402 | 71 | 473 |
| Inanition | 46 | 5 | 51 |
| Inhalation of noxious gases | 38 | 18 | 56 |
| Other accidental poisoning | 65 | 38 | 103 |
| Other external violence | 168 | 71 | 239 |
| Total Deaths | 2,038 | 641 | 2,679 |

In every kind of accidental death there was, therefore, a large excess of males, with the exception of burning accidents, in which female deaths largely predominated.

(xxxiii.a) *Suicide.* Suicides have shown a tendency to decrease during recent years, the number in 1905 having been 520, viz., 431 males and 89 females; while in 1906 it was 499, viz., 403 males and 96 females; and in 1907, 461, viz., 385 males and 76 females. Of the last named, those of 133 males and 25 females happened in New South Wales; those of 100 males and 21 females in Victoria; those of 76 males and 18 females in Queensland; those of 25 males and 6 females in South Australia; those of 42 males and 6 females in Western Australia; and those of 9 males in Tasmania.

The modes adopted by persons who committed suicide in 1907 were as follows:—

SUICIDES, 1907.

| Mode of Death. | Males. | Females. | Total. |
|------------------------------------|------------|-----------|------------|
| Poison | 57 | 32 | 89 |
| Asphyxia | 2 | ... | 2 |
| Hanging or strangulation | 71 | 12 | 83 |
| Drowning | 37 | 19 | 56 |
| Firearms | 129 | 3 | 132 |
| Cutting instruments | 61 | 5 | 66 |
| Precipitation from a height | 6 | 1 | 7 |
| Crushing | 3 | 2 | 5 |
| Other modes | 19 | 2 | 21 |
| Total Suicides | 385 | 76 | 461 |

The death rates from suicides and the percentage of total deaths borne by suicides are shown in the following table:—

DEATH RATES FROM SUICIDES AND PERCENTAGE OF TOTAL DEATHS, 1907.

| State. | Death Rates (per 1000) from Suicides. | | | Percentage of Total Deaths. | | |
|-----------------------|---------------------------------------|-------------|-------------|-----------------------------|-------------|-------------|
| | Males. | Females. | Total. | Males. | Females. | Total. |
| New South Wales ... | 0.16 | 0.03 | 0.10 | 1.41 | 0.36 | 0.96 |
| Victoria ... | 0.16 | 0.03 | 0.09 | 1.25 | 0.32 | 0.83 |
| Queensland ... | 0.25 | 0.07 | 0.17 | 2.18 | 0.85 | 1.68 |
| South Australia ... | 0.12 | 0.03 | 0.08 | 1.20 | 0.34 | 0.81 |
| Western Australia ... | 0.27 | 0.05 | 0.18 | 2.25 | 0.56 | 1.64 |
| Tasmania ... | 0.09 | ... | 0.05 | 0.83 | ... | 0.45 |
| Commonwealth | 0.17 | 0.04 | 0.11 | 1.48 | 0.39 | 1.02 |

From the following table, which shows the ages of the persons who committed suicide in 1907, it will be seen that both extreme youth and extreme old age are represented:—

AGES OF PERSONS WHO COMMITTED SUICIDE, 1907.

| Ages. | M. | F. | Total. | Ages. | M. | F. | Total. |
|-----------------------|----|----|--------|-------------------------|------------|-----------|------------|
| Under 15 years ... | 2 | 1 | 3 | 65 years and under 70 | 17 | 4 | 21 |
| 15 years and under 20 | 7 | 4 | 11 | 70 " " 75 | 16 | ... | 16 |
| 20 " " 25 | 19 | 13 | 32 | 75 " " 80 | 10 | 3 | 13 |
| 25 " " 30 | 34 | 7 | 41 | 80 " " 85 | 7 | 1 | 8 |
| 30 " " 35 | 31 | 13 | 44 | 85 " " 90 | 2 | ... | 2 |
| 35 " " 40 | 37 | 6 | 43 | Age not stated ... | 1 | ... | 1 |
| 40 " " 45 | 50 | 3 | 53 | | | | |
| 45 " " 50 | 55 | 8 | 63 | | | | |
| 50 " " 55 | 38 | 4 | 42 | Total Deaths ... | 385 | 76 | 461 |
| 55 " " 60 | 30 | 4 | 34 | | | | |
| 60 " " 65 | 29 | 5 | 34 | | | | |

The birthplaces of suicides, which are shown in the following table, are exclusive of 25 males and 6 females in South Australia:—

BIRTHPLACES OF PERSONS WHO COMMITTED SUICIDE, 1907.

| Birthplaces. | M. | F. | Total. | Birthplaces. | M. | F. | Total. |
|---------------------|----|-----|--------|-----------------------|-----|-----|--------|
| New South Wales ... | 52 | 15 | 67 | Scotland ... | 12 | 1 | 13 |
| Victoria ... | 64 | 14 | 78 | Sweden ... | 3 | ... | 3 |
| Queensland ... | 27 | 6 | 33 | Wales ... | 6 | ... | 6 |
| South Australia ... | 10 | ... | 10 | United States ... | 3 | ... | 3 |
| Tasmania ... | 8 | 1 | 9 | Ceylon ... | 1 | ... | 1 |
| New Zealand ... | 4 | 2 | 6 | China ... | 5 | ... | 5 |
| Austria-Hungary ... | 1 | ... | 1 | India ... | 1 | ... | 1 |
| Denmark ... | 3 | ... | 3 | Japan ... | 1 | ... | 1 |
| England ... | 72 | 19 | 91 | At sea ... | 1 | ... | 1 |
| France ... | 1 | 1 | 2 | Birthplace not stated | 34 | 4 | 38 |
| Germany ... | 13 | ... | 13 | | | | |
| Ireland ... | 31 | 6 | 37 | | | | |
| Italy ... | 5 | ... | 5 | | | | |
| Norway ... | 2 | 1 | 3 | | | | |
| | | | | Total Deaths ... | 360 | 70 | 430 |

The following table shows the occupations of the 385 males who committed suicide:—

OCCUPATIONS OF MALE PERSONS WHO COMMITTED SUICIDE, 1907.

| Occupations. | Deaths. | Occupations. | Deaths. |
|--|---------|-----------------------------------|---------|
| Professional class ... | 24 | Pastoral class ... | 21 |
| Domestic class ... | 7 | Working in mines and quarries ... | 36 |
| Mercantile class ... | 45 | Other primary producers ... | 8 |
| Engaged in transport and communication ... | 23 | Independent means ... | 9 |
| Manufacturing class ... | 37 | Dependents ... | 3 |
| Engaged in building and construction ... | 11 | Occupation not stated ... | 25 |
| Indefinite industrial workers ... | 89 | | |
| Agricultural class ... | 47 | Total Deaths ... | 385 |

(xxxiv.) *Other Diseases.* The number of causes included under this heading is a very large one, amounting to no less than 89 of the items shewn in the detailed classification, and deaths were recorded under every one of these with the exception of the following six:—Glanders and farcy, rabies, pellagra, other poisonings due to occupation, other diseases of the circulatory system, non-puerperal diseases of the breast (cancer excepted). The total number of deaths under "other diseases" in 1905 was 10,263, viz., 6137 males and 4126 females; in 1906 it was 9976, viz., 5880 males and 4096 females; and in 1907, 8679, viz., 5102 males and 3577 females. Some of the diseases included here account for very considerable numbers of deaths. Thus there were 904 deaths ascribed to broncho-pneumonia; 633 to diarrhoea and enteritis of children over two years of age and of adults; 549 to convulsions of children under five years of age; 388 to diabetes; 346 to paralysis without indicated cause; and 305 to appendicitis and abscess of the iliac fossa. Particulars of the deaths included in 1907 are shewn in the following table:—

CAUSES OF DEATH INCLUDED UNDER "OTHER DISEASES," 1907.

| Causes. | M. | F. | T'tal. | Causes. | M. | F. | T'tal. |
|--|-----|-----|--------|--|-------|-------|--------|
| Leprosy | 8 | ... | 8 | Diseases of the Thyroid Body ... | 4 | 18 | 22 |
| Purulent Infection and Septicæmia | 73 | 70 | 143 | Broncho-Pneumonia | 495 | 409 | 904 |
| Malignant Pustule and "Charbon" | 4 | ... | 4 | Pleurisy | 88 | 56 | 144 |
| Trichinosis, etc. | 2 | 1 | 3 | Congestion of the Lungs and Pulmonary Apoplexy | 87 | 77 | 164 |
| Scrofula | 1 | ... | 1 | Gangrene of the Lungs | 21 | 13 | 34 |
| Syphilis | 98 | 72 | 170 | Asthma | 83 | 42 | 125 |
| Blennorrhagia of Adults | 1 | ... | 1 | Pulmonary Emphysema | 27 | 14 | 41 |
| Gonococcal Diseases of Children under five years of age | 1 | 1 | 2 | Other Diseases of the Respiratory System (Consumption excepted) | 108 | 40 | 148 |
| Other Tumours (Tumours of the female genital organs excepted) | 94 | 24 | 48 | Diseases of the Mouth and its Associated Organs | 8 | 8 | 16 |
| Acute Articular Rheumatism | 56 | 77 | 133 | Diseases of the Pharynx | 14 | 14 | 28 |
| Chronic Rheumatism & Gout | 33 | 60 | 93 | Diseases of the Oesophagus | 8 | 8 | 16 |
| Scurvy | 3 | 1 | 4 | Diarrhoea and Enteritis of Children under two years of age and Adults | 325 | 308 | 633 |
| Diabetes | 188 | 200 | 388 | Intestinal Parasites | 1 | 7 | 8 |
| Exophthalmic Goitre | 5 | 36 | 41 | Other Diseases of the Intestine's Icterus Gravis | 39 | 39 | 78 |
| Addison's Disease | 11 | 7 | 18 | Hydatid Tumours of the Liver | 2 | 4 | 6 |
| Leucæmia | 42 | 26 | 68 | Biliary Calculi | 43 | 29 | 72 |
| Anæmia, Chlorosis | 86 | 91 | 177 | Other Diseases of the Liver | 11 | 34 | 45 |
| Other General Diseases | 132 | 37 | 159 | Diseases of the Spleen | 109 | 97 | 206 |
| Acute and Chronic Alcoholism | 18 | 4 | 22 | Simple Peritonitis (non-puerperal) | 5 | 6 | 11 |
| Lead Poisoning | 5 | 5 | 10 | Other Diseases of the Digestive System (Cancer and Tuberculosis excepted) | 117 | 126 | 243 |
| Other Chronic Poisonings | 3 | 2 | 36 | Appendicitis and Abscess of the Iliac Fossa | 9 | 3 | 12 |
| Encephalitis | 74 | 2 | 196 | Other Diseases of the Kidneys and their Adnexa | 184 | 121 | 305 |
| Progressive Locomotor Ataxia | 132 | 64 | 346 | Calculi of Urinary System | 77 | 41 | 118 |
| Other Diseases of the Spinal Cord | 194 | 152 | 346 | Diseases of the Bladder | 31 | 15 | 46 |
| Paralysis without indicated cause | 123 | 23 | 146 | Other Diseases of the Urethra, Urinary Abscess, etc. | 163 | 26 | 189 |
| General Paralysis | 26 | 36 | 62 | Diseases of the Prostate | 35 | 4 | 39 |
| Other Forms of Mental Alienation | 60 | 61 | 121 | Non-venereal Diseases of the Male Genital Organs | 164 | ... | 164 |
| Epilepsy | 17 | 18 | 35 | Gangrene | 2 | 2 | 4 |
| Belammpsia (non-puerperal) | 296 | 253 | 549 | Carbuncle | 58 | 50 | 108 |
| Convulsions of Children under five years of age | 60 | 23 | 83 | Pilesmon, Acute Abscess | 13 | 4 | 17 |
| Tetanus | 60 | 23 | 83 | Other Diseases of the Skin and Adnexa | 18 | 20 | 38 |
| Chorea | 3 | 2 | 5 | Non-tubercular Diseases of the Bones | 48 | 27 | 75 |
| Other Diseases of the Nervous System | 178 | 99 | 277 | Arthritis and other Diseases of the Joints (Tuberculosis & Rheumatism excepted) | 52 | 26 | 78 |
| Diseases of the Eyes and their Appendages | 1 | 1 | 2 | Amputation | 6 | 6 | 12 |
| Diseases of the Ear | 5 | 7 | 12 | Other Diseases of the Organs of Locomotion | 2 | 1 | 3 |
| Pericarditis | 32 | 20 | 52 | Other Diseases peculiar to Infancy | 6 | 2 | 8 |
| Acute Endocarditis | 161 | 123 | 289 | Want of Care (Infants) | 36 | 45 | 81 |
| Angina Pectoris | 66 | 26 | 92 | | 16 | 21 | 37 |
| Diseases of the Arteries, Atheroma, Aneurism | 244 | 58 | 302 | | | | |
| Embolism and Thrombosis | 51 | 43 | 94 | | | | |
| Diseases of the Veins (Varices, Varicose Ulcers, Hæmorrhoids) | 5 | 12 | 17 | | | | |
| Diseases of the Lymphatic System | 6 | 6 | 12 | | | | |
| Hæmorrhages | 48 | 21 | 69 | | | | |
| Diseases of the Nasal Fossæ | 6 | 1 | 7 | | | | |
| Diseases of the Larynx | 58 | 42 | 100 | | | | |
| | | | | Total Deaths | 5,102 | 3,577 | 8,679 |

(xxxv.) *Unspecified or ill-defined Diseases.* The number of cases which has to be included here is a considerable one from year to year, having numbered 1042 in 1905; 1168 in 1906; and 1275, viz., 830 males and 445 females, in 1907. The detailed classification distinguishes these ill-defined diseases under three headings:—Dropsy, including such definitions as anasarca, ascites, general œdema, etc.; sudden death, including syncope; and unspecified or ill-defined causes, of which the following are specimens:—Asthénia, coma, dentition, exhaustion, heart failure, etc. In 1907 the number of cases of death which would have to be classed under the first of these categories was 44; those belonging to the second, 26; and those belonging to the third, 1205. It is, of course, true that there must always occur some cases where the disease is not well characterised, or where sufficient information is not procurable to allow of a clear definition being given in the certificate of death, but in the majority of cases included under this heading a

more complete diagnosis and consequently a more satisfactory certificate would no doubt have been possible.

17. Causes of Death in Classes.—The figures presented in the preceding paragraphs relate to certain definite causes of death. It is almost generally acknowledged that figures of this kind are of greater value in medical statistics than is a classification under general headings. The classification under fourteen general headings adopted by the compiler of The International Nomenclature is, however, shown in the following table, together with the death rates and the percentages of the total deaths pertaining to those classes:—

DEATHS, DEATH RATES, AND PERCENTAGES OF TOTAL DEATHS IN CLASSES,

1907.

| Class. | Total Deaths. | | | Death Rate (per 1000). | | | Percentage of Total Deaths. | | |
|---|---------------|---------------|---------------|------------------------|-------------|--------------|-----------------------------|---------------|---------------|
| | M. | F. | Total. | M. | F. | Total. | M. | F. | Total. |
| 1. General diseases ... | 6,345 | 5,385 | 11,730 | 2.90 | 2.75 | 2.83 | 24.45 | 27.81 | 25.90 |
| 2. Diseases of the Nervous System & of the Organs of Special Sense... | 2,546 | 1,885 | 4,431 | 1.16 | 0.96 | 1.07 | 9.81 | 9.73 | 9.78 |
| 3. Diseases of the Circulatory System | 2,761 | 1,961 | 4,722 | 1.26 | 1.01 | 1.14 | 10.63 | 10.13 | 10.42 |
| 4. Diseases of the Respiratory System | 2,838 | 1,997 | 4,835 | 1.30 | 1.02 | 1.17 | 10.94 | 10.31 | 10.67 |
| 5. Diseases of the Digestive Organs.. | 2,967 | 2,514 | 5,481 | 1.36 | 1.28 | 1.32 | 11.48 | 12.98 | 12.10 |
| 6. Diseases of the Genito-Urinary System and Adnexa ... | 1,537 | 909 | 2,446 | 0.70 | 0.46 | 0.58 | 5.92 | 4.69 | 5.40 |
| 7. Puerperal Condition ... | ... | 614 | 614 | ... | 0.31 | 0.15 | ... | 3.17 | 1.35 |
| 8. Diseases of the Skin and of the Cellular Tissue ... | 137 | 101 | 238 | 0.06 | 0.05 | 0.05 | 0.53 | 0.52 | 0.53 |
| 9. Diseases of the Organs of Locomotion ... | 66 | 35 | 101 | 0.03 | 0.02 | 0.02 | 0.25 | 0.18 | 0.22 |
| 10. Malformations ... | 193 | 133 | 326 | 0.09 | 0.06 | 0.08 | 0.74 | 0.69 | 0.72 |
| 11. Infancy ... | 1,575 | 1,255 | 2,830 | 0.72 | 0.64 | 0.68 | 6.07 | 6.48 | 6.25 |
| 12. Old Age ... | 1,721 | 1,415 | 3,136 | 0.78 | 0.72 | 0.75 | 6.64 | 7.91 | 6.92 |
| 13. Violence ... | 2,423 | 717 | 3,140 | 1.10 | 0.36 | 0.76 | 9.34 | 3.70 | 6.93 |
| 14. Ill-defined Diseases ... | 830 | 445 | 1,275 | 0.38 | 0.22 | 0.30 | 3.20 | 2.90 | 2.81 |
| Total ... | 25,939 | 19,366 | 45,305 | 11.84 | 9.86 | 10.90 | 100.00 | 100.00 | 100.00 |

§ 4. Graphical Representation of Vital Statistics.

1. General.—The progressive fluctuations of the numbers representing the total births and marriages are important indexes of the economic conditions and social ideals of a community. For this reason graphs have been prepared (see pages 255 and 256), shewing these fluctuations from 1860 to 1907, both for the States and the Commonwealth. The facts are very significant from the national point of view and call for serious consideration. To properly appreciate the situation it should be remembered that, normally, the increases of births and also of marriages will be similar to the increase of population. Although the marriage curve shows a falling off in marriages after 1891 (see page 256), it shews a recovery in 1894, and, with the exception of a small fall for 1903, it has continually advanced. The same characteristic is not seen in the curve of births, which discloses a recovering tendency only in 1904.

The table on the following page shews the number of births, marriages and deaths which would have been experienced had the rate for 1890 continued, and reveals the significance of the facts disclosed by the curves. It may be remarked that the death rate has greatly improved, and among other countries, Australia stands in a very favourable position in this respect. At the same time the decline in the marriage rate, overtaken once more in 1907, and the still more serious decline in the birth rate, in a country but sparsely popu-

lated, have an obvious and most important bearing on the national future, and on questions concerning the extent to which it is desirable to promote immigration.

ACTUAL BIRTHS, DEATHS, AND MARRIAGES

EXPERIENCED IN THE COMMONWEALTH DURING THE YEARS 1890 TO 1907, COMPARED WITH THE NUMBER THAT WOULD HAVE OCCURRED IF THE RATES OF 1890 HAD REMAINED IN OPERATION.

| Year. | BIRTHS. | | DEATHS. | | MARRIAGES. | |
|-------|---------|---|---------|---|------------|---|
| | Actual. | Number of Births that would have been experienced if the 1890 birth rate had been in operation. | Actual. | Number of Deaths that would have been experienced if the 1890 death rate had been in operation. | Actual. | Number of Marriages that would have been experienced if the 1890 marriage rate had been in operation. |
| 1890 | 108,683 | | 44,449 | | 23,725 | |
| 1891 | 110,187 | 111,802 | 47,430 | 45,737 | 23,862 | 24,419 |
| 1892 | 110,158 | 114,502 | 42,268 | 46,842 | 22,049 | 25,009 |
| 1893 | 109,322 | 116,617 | 45,801 | 47,707 | 20,631 | 25,470 |
| 1894 | 104,660 | 118,734 | 42,958 | 48,573 | 20,625 | 25,933 |
| 1895 | 105,084 | 121,002 | 43,080 | 49,501 | 21,564 | 26,428 |
| 1896 | 100,134 | 123,212 | 45,202 | 50,405 | 23,068 | 26,911 |
| 1897 | 101,137 | 125,419 | 43,447 | 51,308 | 23,939 | 27,393 |
| 1898 | 98,845 | 127,371 | 51,406 | 52,106 | 24,472 | 27,819 |
| 1899 | 100,638 | 129,088 | 47,629 | 52,809 | 25,958 | 28,194 |
| 1900 | 102,221 | 130,848 | 44,060 | 53,529 | 27,101 | 28,579 |
| 1901 | 102,945 | 132,662 | 46,330 | 54,271 | 27,753 | 28,975 |
| 1902 | 102,776 | 134,873 | 48,078 | 55,175 | 27,926 | 29,458 |
| 1903 | 98,443 | 136,478 | 47,293 | 55,832 | 25,977 | 29,808 |
| 1904 | 104,113 | 138,305 | 43,572 | 56,579 | 27,682 | 30,207 |
| 1905 | 104,941 | 140,511 | 43,514 | 57,482 | 29,004 | 30,689 |
| 1906 | 107,890 | 142,908 | 44,333 | 58,462 | 30,410 | 31,213 |
| 1907 | 110,347 | 145,365 | 45,305 | 59,468 | 32,470 | 31,749 |

2. **Graphs of Annual Births, Commonwealth and States** (page 255).—A striking feature of the graphs of births is the practically continuous increase in the number of births exhibited in the graph for the Commonwealth from 1860 to 1891, and the marked variations of subsequent years. As the curve clearly shews, a turning point in the number of births occurred in 1891, whilst, as regards the separate States, New South Wales and Tasmania date their decline in number from 1893, Victoria from 1891, and Queensland from 1890. In South Australia the corresponding decline took place as early as 1885, while in Western Australia the increase in number of births has been practically continuous throughout.

It is of special interest to note the decline in births associated with the commercial crisis of 1891-3, and also the decline occurring in 1903, an accompaniment of the severe drought of that period.

In the case of New South Wales the graph crosses that of Victoria in 1879, *i.e.*, the births for that year were sensibly identical in the two States. A fairly continuous increase was experienced in the former State from 1860 to 1893, the only marked fluctuation being a sudden decline in 1889 and an equally rapid recovery in 1890. From 1893 to 1898 a somewhat rapid decline again took place, succeeded by a rise, the continuity of which was broken only by a sharp decline in 1903 and recovery in 1904.

In the case of Victoria the graph shews the increase between 1860 and 1880 to have been comparatively slight, the curve being a gradual rise, with fluctuations more or less

marked to 1873, with a subsequent decline. From 1880 to 1891 the increase in the number of births is seen to be very rapid and practically continuous, while from 1891 to 1898 an equally sharp and continuous decline was experienced. A further rise and fall took place between 1898 and 1903, succeeded by a continuous rise from the last-mentioned year onwards.

Starting in 1860 with a lower number of births than any State except Western Australia, the Queensland graph shews that the births increased somewhat rapidly until 1867. The equality in the number of births in Queensland and Tasmania in 1864 is shewn by the Queensland curve crossing the Tasmanian curve at the line for that year. From 1867 to 1882 a continuous though somewhat less rapid increase was experienced, followed by a very rapid rise to 1890, in which year Queensland's maximum number of births was recorded. The South Australian graph is crossed by that of Queensland at the year 1885. From 1890 onwards the number of births has fluctuated somewhat, but has, on the whole, retained a practically stationary position at a height rather less than that of 1890. The most serious variation was a sudden fall in 1903, the drought year, and rapid recovery in 1904.

The South Australian graph, a slow but practically continuous rise from 1860 to 1885, exhibits the steady increase in the total number of births. This rise is followed by a slow but fluctuating decline to 1903, and a slight recovery to 1907.

The Tasmanian curve may be regarded as made up of five portions, of which the first, from 1860 to 1877, represents a period of very slight variation, viz., on the whole an increase; the second, from 1877 to 1884, a period of continuous and moderately rapid increase; the third, from 1884 to 1893, a period of rapid increase; the fourth, from 1893 to 1898, a period of continuous but slow decrease; and the fifth, from 1898 onwards, a period of steady recovery.

The Western Australian curve indicates that an increase, which was practically continuous but very slow, took place from 1860 to 1884, and that a somewhat quicker rate of increase, experienced from 1884 to 1896, was succeeded by a still more rapid and very satisfactory rate of increase from 1896 onwards.

It will be seen that the years in which the highest points were reached by the several curves are as follows:—

| State | ... N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|-------|------------|------|---------|----------|----------|------|-----------|
| Year | ... 1907 | 1891 | 1890 | 1885 | 1906 | 1906 | 1907 |

3. **Graphs of Annual Marriages, Commonwealth and States** (page 256).—The Commonwealth marriage graph from 1860 to 1885 reveals a moderate but somewhat fluctuating increase in the annual number of marriages between 1860 and 1871, a more rapid increase between 1871 and 1879, and a still more rapid increase between 1879 and 1885. From 1885 to 1891 the numbers continued to increase, but with marked fluctuations in rate. The financial crisis associated with the period subsequent to the latter year was accompanied by a strongly-marked decline in the number of marriages, which reached its lowest point in 1894. From that year onwards a fairly rapid recovery was effected, the record for 1891 being exceeded by that of 1897. This progress was maintained until 1902, when the severe drought of that and the succeeding year were collateral with a rapid fall in the number of marriages. An equally rapid recovery, however, has since taken place, and the number of marriages in the Commonwealth during 1907 was greater than in any preceding year.

4. **Graphs of Annual Deaths, Commonwealth and States** (page 257).—The curves, shewing the progression of the annual number of deaths, indicate clearly that the periods for which exceptionally large numbers of deaths occurred were:—(1) 1866-7, (2) 1875-6, (3) 1884-5, (4) 1889-1891, (5) 1893, (6) 1898, and (7) 1902-3. It is remarkable that in each of the periods specified the phenomenon of a relatively high number of deaths

was experienced in a majority of the States. Thus, as regards 1866-7, all the States except Western Australia and Tasmania were so affected, in 1875-6 all except Western Australia; in 1884-5 all were affected; in 1889 all except Western Australia and South Australia; in 1891 all except Queensland; whilst in 1893 and 1898, and in 1902-3, all were affected. The fact that the periods of high death rates have been practically identical in the several States furnishes an indication that the excessive mortality has been due to a considerable extent to some common cause operating throughout the Commonwealth.

It may be noted as curious that periods of heavy mortality have occurred at intervals of approximately nine years, viz.:—1866-7, 1875-6, 1884-5, 1893, and 1902-3. There are, however, two marked increases between the third and fourth dates, and one between the fourth and fifth. Thus there is no real indication of the periodicity in the death rate.

Periods in which the number of deaths was exceptionally low are far less clearly defined than those in which the number was high, and the agreement amongst the States is also less complete. The principal periods of low mortality may be said to be 1861, 1869-71, 1879, 1892, 1897, 1900, 1904-5.

5. Graphs of Annual Birth, Death, and Marriage Rates and of Rate of Natural Increase—Commonwealth (page 258.)—(i.) *General*. These graphs represent the number of births, deaths, and marriages, and the excess of births over deaths (natural increase) per 1000 of the population of the Commonwealth for each of the years 1860 to 1907.

(ii.) *Births*. In the case of births, the graph indicates a well marked decline in rate during the period, and represents a fall from 42.56 per 1000 of population in 1860 to 26.55 per 1000 in 1907. This enormous reduction has been subject to small fluctuations during the period under review, but may, on the whole, be said to have been in evidence throughout. There are, however, two periods of arrested decline noticeable, one from 1877 to 1890, and the other from 1898 to the present time. The course of the graph thus indicates a rapid fall from 42.56 in 1860 to 34.99 in 1877, succeeded by a fluctuating but, on the whole, fairly stationary, period to 34.98 in 1890, then a fall even more rapid to 27.15 in 1898, and a further comparatively stationary period to 26.55 in 1907. The lowest point reached, viz., 25.23, was attained in 1903, the year in which the Commonwealth suffered severely from the worst drought it has ever experienced. Since then a small but well defined advance in birth-rate has been in evidence. A declining birth-rate is usually due to complex causes, amongst which the variations in the age constitution of the population, and the adoption of preventive measures, are generally considered the most potent.

(iii.) *Deaths*. The three graphs relating to deaths furnish particulars concerning the rates experienced during the period amongst males and females separately, and in the population as a whole, the latter occupying naturally a position between the other two. Throughout the period the rate for males has largely exceeded that for females, but the fluctuations in the two rates have synchronised remarkably, indicating that the conditions which have been responsible for the marked variations which have occurred from time to time have affected males and females alike. On the whole, the graphs furnish clear evidence of a satisfactory decline in the death rate of the Commonwealth, a fall having taken place from 20.86 in 1860 to 10.90 in 1907. The graphical representation of the death rates brings into prominence five years in which the rates were exceptionally high when compared with those of adjacent years. These years are 1860, 1866, 1875, 1884, and 1898. The principal cause of the excessive rate of 1860 was the prevalence in that year of measles, scarlatina, and diphtheria, while the high rates of 1866, 1875, and 1898 were also largely due to epidemics of measles. Prior to 1892, when a rate of 12.91 was experienced, the lowest general death rate for the Commonwealth was that of 1871, viz., 13.24. The highest male death rate for the period was 20.97 in 1860, and the lowest 11.78 in 1906. For females the highest was 20.71 in 1860, and the lowest 9.56 in 1905. The difference between the male and female rates has, since 1869, been fairly constant, and has ranged between 1.97 and 3.44, with a mean value of about 2.7.

(iv.) *Marriages.* In the case of the graph representing marriage rates, the fluctuations are less abrupt than in the case of the birth-rate and death-rate graphs, and the rate for 1907, the final year of the period, viz., 7.81, does not differ very considerably from that of 1860, which was 8.42. The lowest marriage rate for the period was that of 1894, viz., 6.08, marking the culmination of the commercial and financial depression indicated by the declining rates from 1888 onwards. From 1894 to the present time a satisfactory increase has been in evidence, disturbed only by the sharp decline which, in 1903, accompanied the severe drought experienced in the Commonwealth in that year.

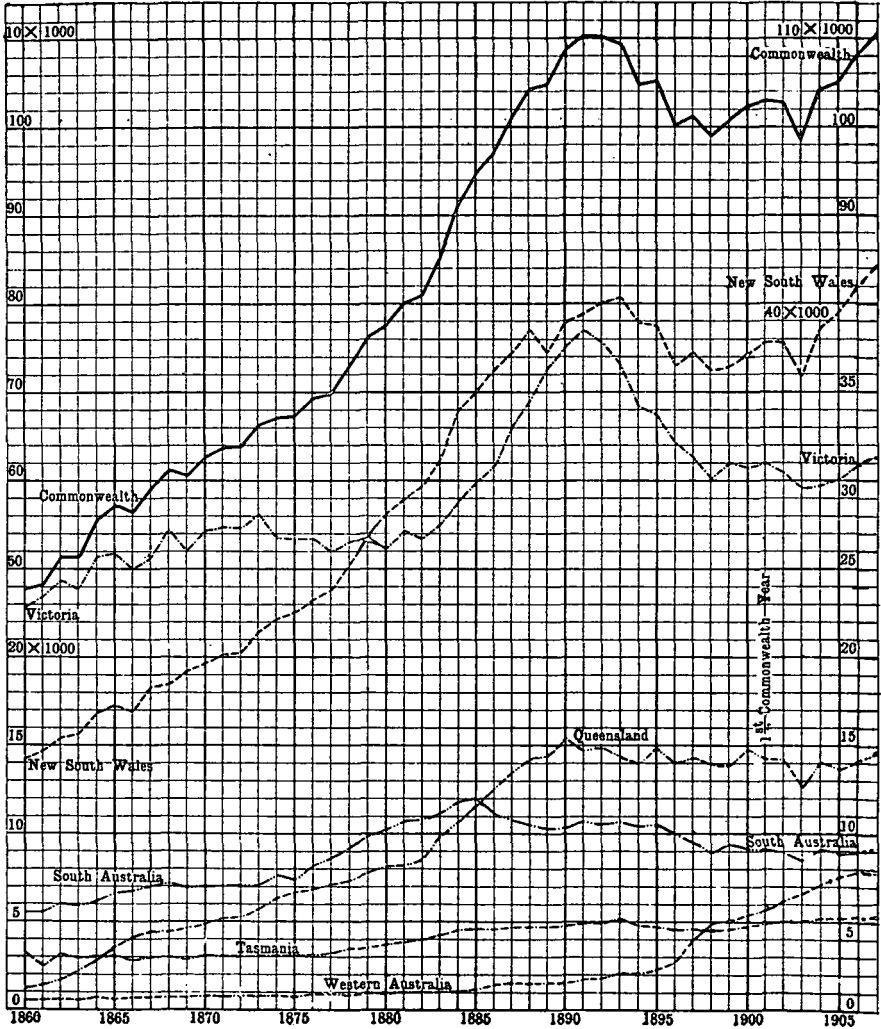
(v.) *Natural Increase.* This graph, which represents the excess of births over deaths per 1000 of population, exhibits marked fluctuations arising from the combined fluctuations in birth and death rates. Thus, corresponding to the high death rates of 1860, 1866, 1875, and 1898, there are exceptionally low rates of natural increase, accentuated in the last-mentioned year by a comparatively low birth rate. A combination of low birth rate and comparatively high death rate was also responsible for a very low rate of natural increase in 1903. The highest rate of natural increase for the period was 26.58 in 1864, and the lowest 13.03 in 1898.

6. Graphs of Annual Birth Rates — States (pages 259 and 260).—These graphs furnish for the several States information similar to that supplied in the graph on page 258 for the Commonwealth as a whole. It will be seen that in every case the total effect has been an extensive decline in rate, subject to very marked fluctuations. In all the States the period from 1875 to 1885 was one of arrested decline, if not of actual advance, in the birth rate. With the exception of the very low rate accompanying the drought of 1903, the variations in any of the States since 1901 have not been very marked, and in some cases a slight tendency to increase is in evidence.

The highest birth rates during the period were as follows:—New South Wales (1864), 44.00; Victoria (1862), 44.71; Queensland (1860), 47.93; South Australia (1862), 45.44; Western Australia (1860), 38.96; and Tasmania (1884), 36.63. The following were the lowest rates for the period:—New South Wales (1903), 25.41; Victoria (1903), 24.46; Queensland (1903), 24.62; South Australia (1903), 23.25; Western Australia (1896), 23.44; Tasmania (1899), 27.43.

7. Graphs of Annual Death Rates—States (pages 261 and 262).—These graphs furnish for the several States similar information to that given for the Commonwealth as a whole in the diagram on page 258, and indicate in each case a satisfactory decline in death rate. It may be noted that an exceptionally high death rate was experienced in all the States in 1875, and that a similar uniformity, though on a smaller scale, is observable for the year 1898, the principal cause in each case having been an epidemic of measles. The highest death rates experienced during the period were as follows:—New South Wales (1867), 19.79; Victoria (1860), 22.77; Queensland (1866), 25.96; South Australia (1875), 19.97; Western Australia (1884), 21.54; and Tasmania (1875), 19.99. The following were the lowest death rates for the period:—New South Wales (1906), 9.92; Victoria (1907), 11.74; Queensland (1906), 9.56; South Australia (1907), 9.93; Western Australia (1905), 10.82; and Tasmania (1905), 10.29.

GRAPHS SHEWING TOTAL ANNUAL BIRTHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1907.



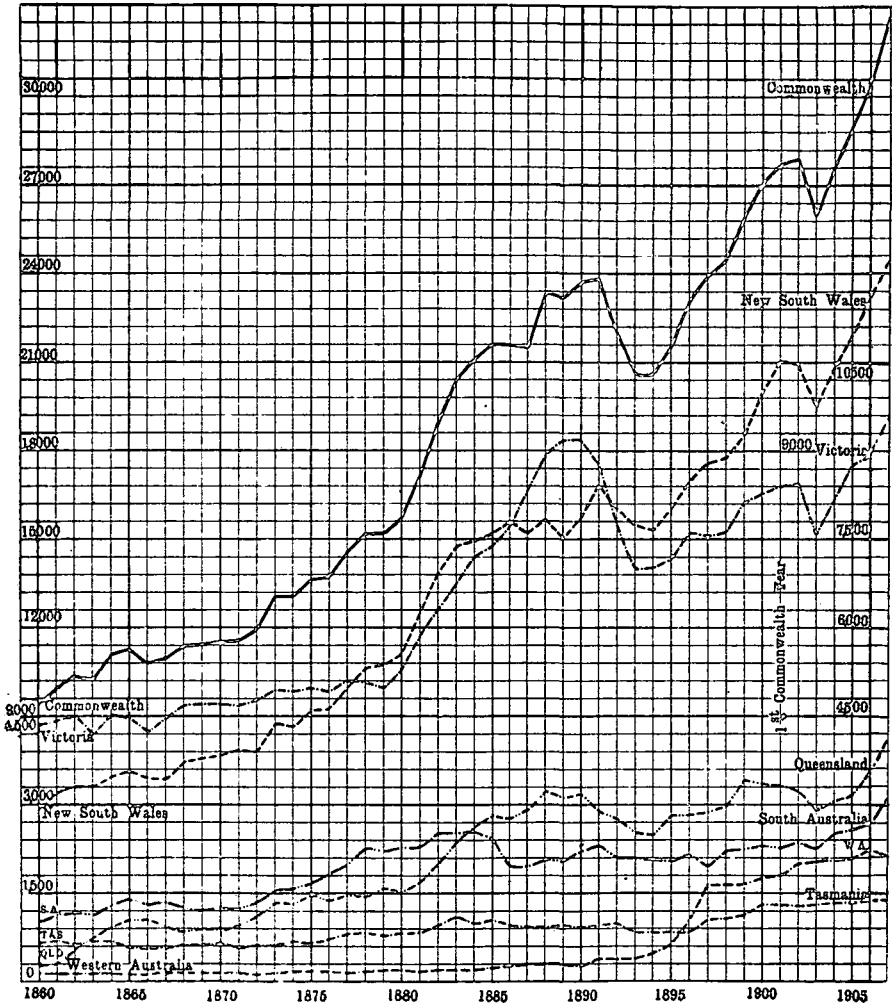
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons of the Commonwealth, and 1000 for the States.

The scale running from 0 to 20 on the left and that from 0 to 40 on the right relate to the States, while those from 50 to 110 on the left and from 90 to 110 on the right refer to the Commonwealth.

The distances upwards from the common zero lines of the States and Commonwealth, marked 0, denote the total annual number of births in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the characters of the lines used are as follows:—Commonwealth, an unbroken line; New South Wales, -----; Victoria, - - - - -; Queensland, - . - . - .; South Australia, - - - - -; Western Australia, - . - . - .; Tasmania, - - - - -.

GRAPHS SHEWING TOTAL ANNUAL MARRIAGES IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1907.



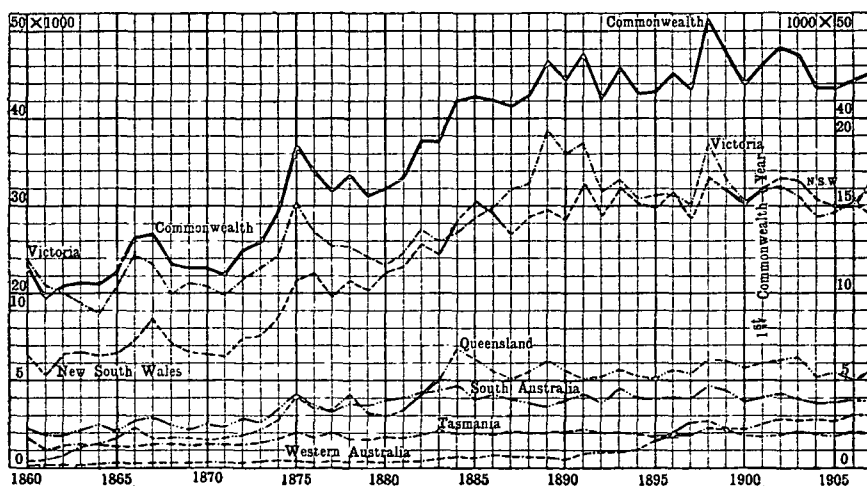
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 600 marriages for the Commonwealth and 300 for the States.

The scale running from 0 to 4500 on the left and that from 0 to 10,500 on the right relate to the States, while that from 9000 to 30,000 on the left refers to the Commonwealth.

The distances upwards from the zero line, marked 0, denote the total annual number of marriages in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the lines used are similar to those for births on page 255.

GRAPHS SHEWING TOTAL ANNUAL DEATHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1907.



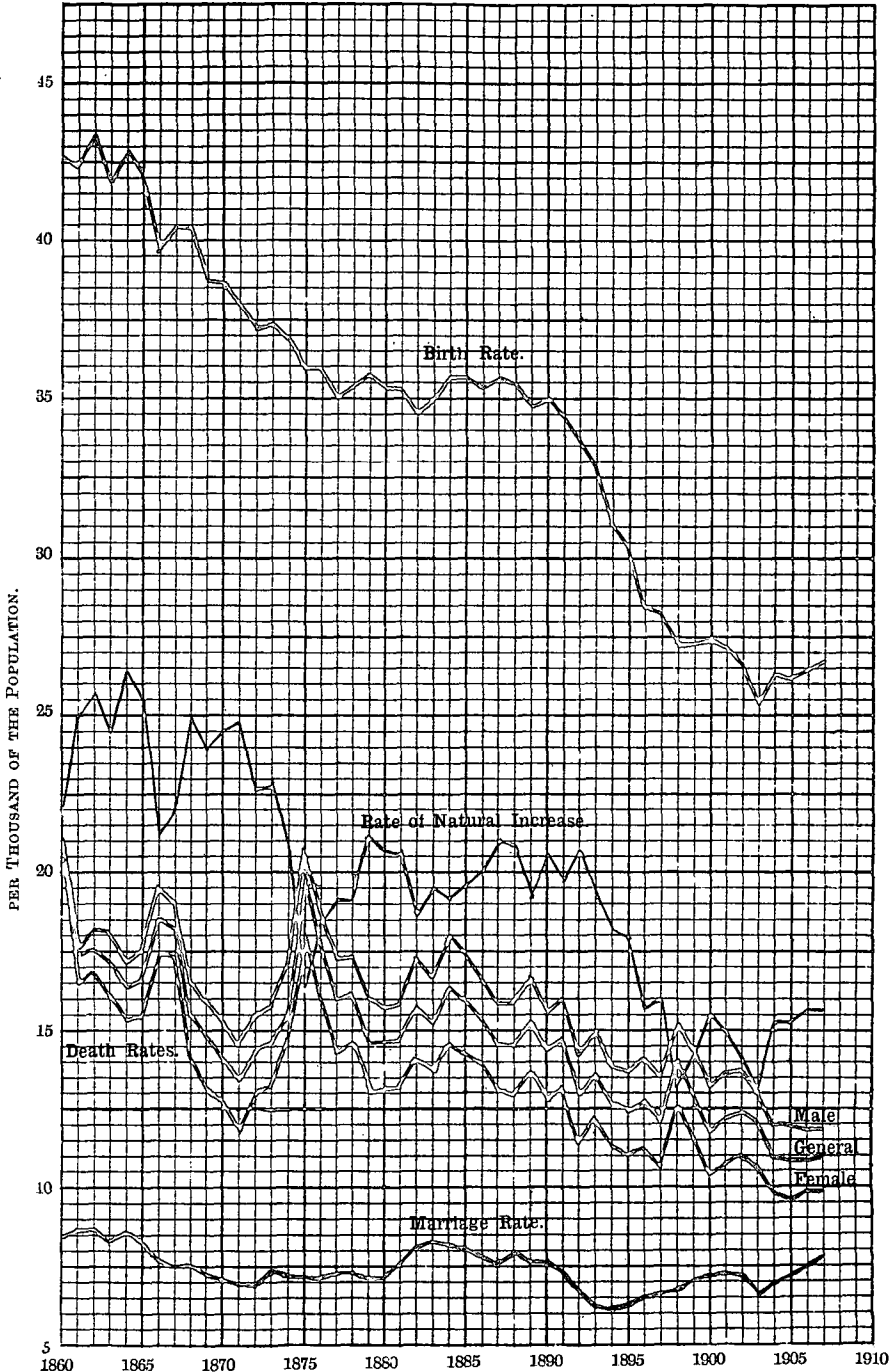
EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth and 1000 for the States.

The scale running from 0 to 10 on the left of the diagram and that from 0 to 20 on the right relate to the States, while those from 20 to 50 on the left and 40 to 50 on the right refer to the Commonwealth.

The distances upwards from the common zero line for States and Commonwealth, marked 0, denote the total annual number of deaths in the States and Commonwealth, the scale of the latter being reduced one-half.

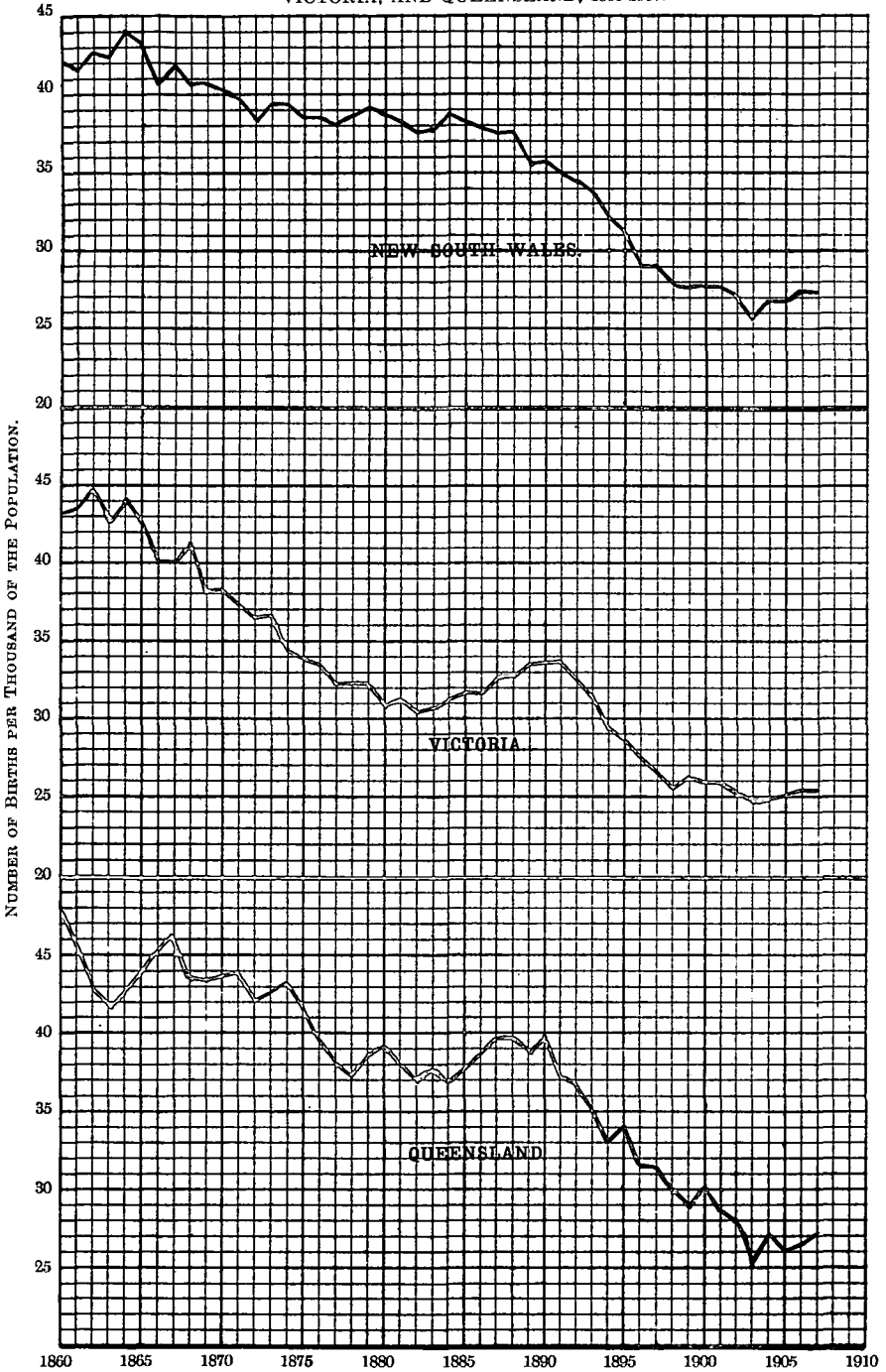
The names of the States to which the curves refer are written thereon, and the lines used are similar to those for births on page 255.

GRAPHS SHEWING GENERAL BIRTH, DEATH, MARRIAGE, AND NATURAL INCREASE RATES, AND MALE AND FEMALE DEATH RATES IN THE COMMONWEALTH OF AUSTRALIA, 1860-1907.



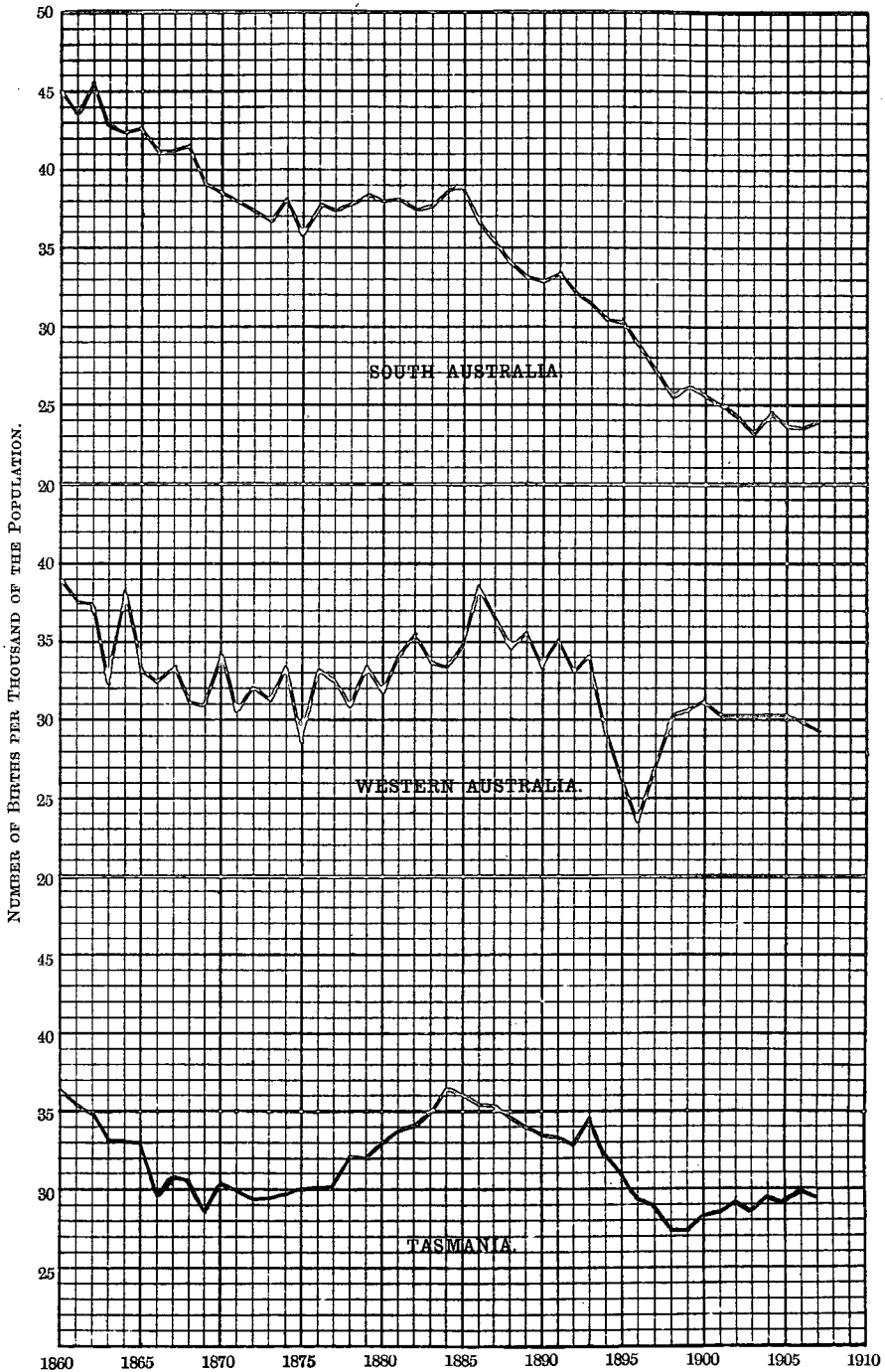
EXPLANATION OF GRAPHS.—The base of each small square represents a year's interval, and the vertical height, according to the character of the curve, one per thousand of the population—the basic line being five per thousand of the population.

GRAPHS SHEWING BIRTH RATES IN THE STATES OF NEW SOUTH WALES, VICTORIA, AND QUEENSLAND, 1860-1907.



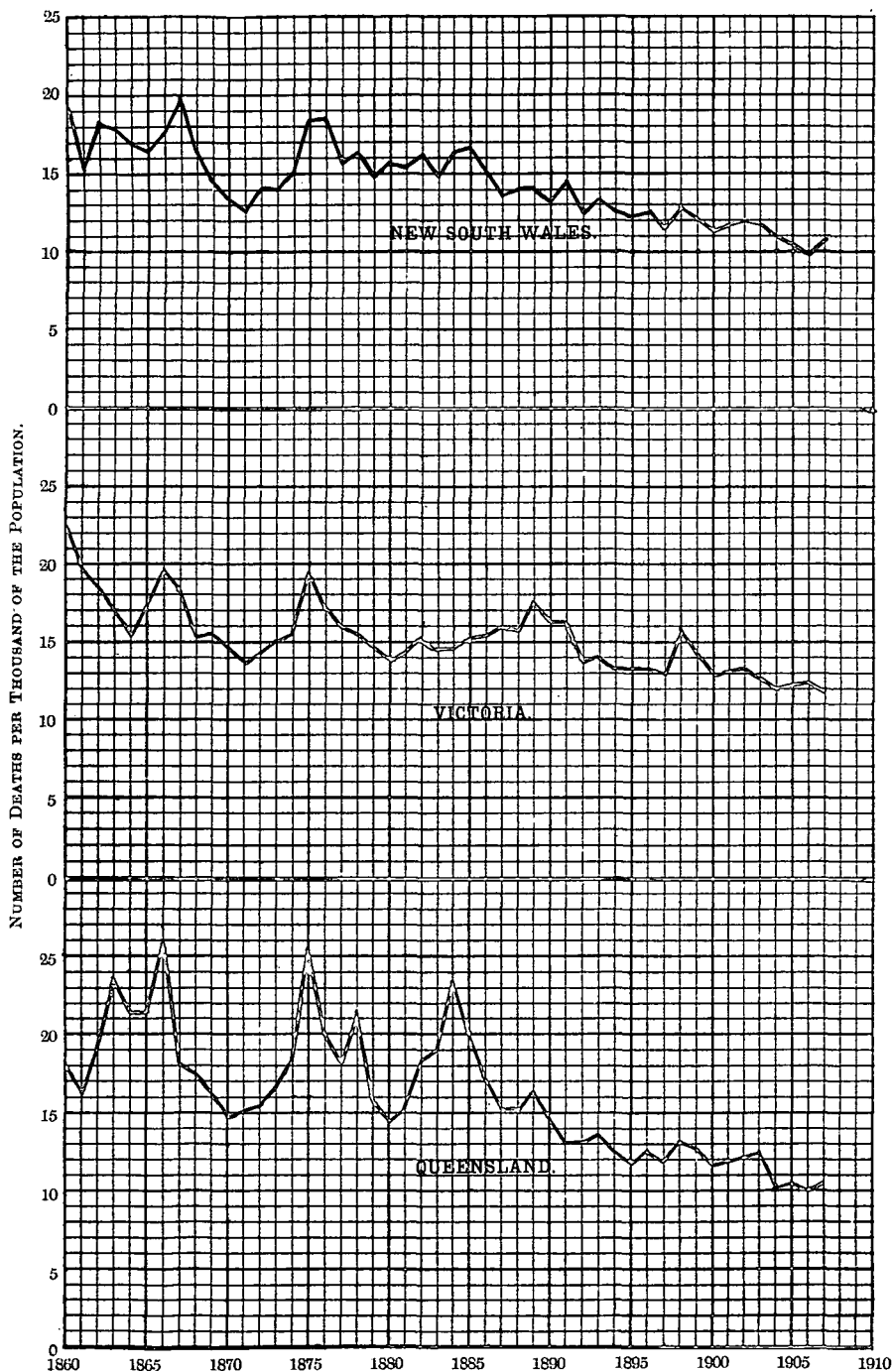
EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

GRAPHS SHEWING BIRTH RATES IN THE STATES OF SOUTH AUSTRALIA,
WESTERN AUSTRALIA, AND TASMANIA, 1860-1907.



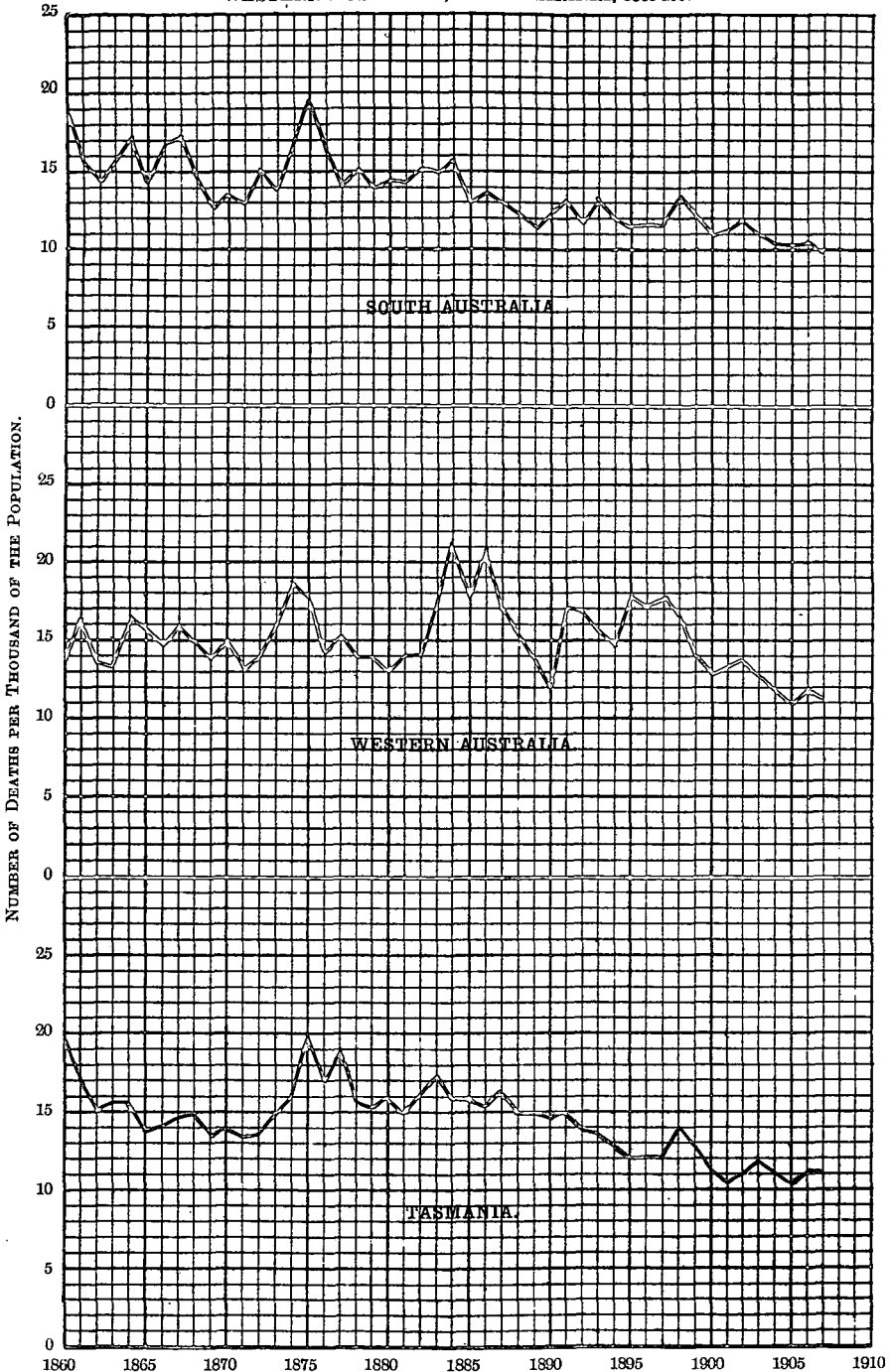
EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

GRAPHS SHEWING DEATH RATES IN THE STATES OF NEW SOUTH WALES,
VICTORIA, AND QUEENSLAND, 1860-1907.



EXPLANATION OF GRAPHS.—The base of each small square represents a year's interval, and the vertical height one death per thousand of the population. The zero for each State is shown by a thickened line.

GRAPHS SHEWING DEATH RATES IN THE STATES OF SOUTH AUSTRALIA,
WESTERN AUSTRALIA, AND TASMANIA, 1860-1907.



EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shewn by a thickened line.

SECTION VI.

LAND TENURE AND SETTLEMENT.

§ 1. Introduction and Early History.

1. **Introduction.**—The various forms of land tenure which have been adopted with a view to securing the settlement of a large and sparsely populated country like Australia are not only of interest to the immigrant, but also have an important and immediate bearing upon the welfare of the community. A comprehensive description, in a classified and co-ordinated form, of the land systems of the several States has not hitherto been published, and an attempt is here made to give such a description and to thus obviate the necessity of having recourse to the numerous Acts of Parliament and other documents dealing with the subject. Though there is a certain similarity between the principal forms of tenure in the States of the Commonwealth, the difficulty of the task of rendering a succinct and co-ordinated account of the land systems is increased by the variety in detail of the terms and conditions imposed, and also by the different manners in which statistics dealing with the subject are presented by the several States. In the account given in this section the classifications ordinarily adopted in the several States have necessarily not always been adhered to, the tenures having been reclassified in accordance with the scheme indicated hereunder. (See § 4.) Statistics relating to various forms of tenure have also, where necessary, been regrouped according to that scheme.

In order to preserve continuity, and in order that the general trend of land legislation may be comprehended, a short historical account of land settlement in the Commonwealth is first given hereunder.

2. **First Grants of Land made in New South Wales, 1789.**—In the early days of Australian colonisation, land was alienated by grants and orders from the Crown, the power of making such being vested solely in the Governor, under instructions issued by the Secretary of State. The first instructions, issued on the 25th April, 1787, authorised the Governor to make grants only to liberated prisoners. The grant was to be free from all taxes, rents, fees, and other acknowledgments for the space of ten years, after which period an annual quit-rent of sixpence for thirty acres was payable; for each unmarried male the grant was not to exceed thirty acres; in case of a married man twenty acres more was allowed, and a further quantity of ten acres for each child living with his or her parents at the time of making such grant. The first settler was a convict of the name of James Ruse, who, having been liberated, entered on his farm of thirty acres at Parramatta on the 25th February, 1789. By further instructions issued by the Secretary of State in 1789, the privilege of obtaining grants was extended to free immigrants and to such of the men belonging to the detachment of marines serving in New South Wales—which then included the whole of the eastern part of Australia—as were desirous of settling in the colony; the maximum grant was not to exceed 100 acres, and was subject to a quit-rent of one shilling per annum for every fifty acres, to be paid within five years of the date of issue. In many cases these grants were made conditional upon a certain proportion of the land being cultivated, or upon certain services being regularly performed, but these conditions do not seem to have been enforced. The first free settlers arrived in the *Bellona* on the 15th January, 1793, and took up land at Liberty Plains, about eight miles from Sydney.

3. **Grants of Town Allotments in Sydney, 1811.**—Until the year 1811 all the land which had hitherto been alienated lay outside the borders of the town of Sydney, but in that year the Governor, with the authority of the Secretary of State, commenced to grant town allotments on lease only, for periods of fourteen or twenty-one years; the rents on these leases varied considerably from time to time according to the discretion of the Governor, by whom they were imposed. In 1824 and 1826 further regulations relating to grants to immigrants were issued by the Colonial Office. In 1829, leases were entirely abolished, grants of freehold estates being made in lieu. Five years later they were, however, again introduced under a Government notice, by which allotments in country towns only were allowed to be alienated by lease, with a covenant to convert the same into grants, either upon payment of twenty-one years' quit-rent or upon the erection of buildings to the value of £1000. As regards the payment of quit-rents generally, it appears that they were collected in a very perfunctory manner, and in later years the Government offered special inducements for their redemption. By official notices in 1846, 1849, and in 1851, it was directed that all persons who had paid quit-rent for twenty years should be released from further payment; that those who had paid more than twenty years should have the difference refunded to them; that at any time any person could commute his future quit-rent by an equivalent cash payment, and finally that all quit-rents of a higher annual value than two shillings for every 100 acres should be reduced to that uniform rate at the expiration of the year 1851.

4. **Introduction of Land Sales, 1825.**—By this time the principle of alienation of land by sale to free settlers had already been introduced under Sir Thomas Brisbane, and under a Government order of the 24th March, 1825, land was allowed to be sold by private tender, at a minimum price of five shillings an acre, no person being allowed to buy more than 4000 acres, nor any family more than 5000 acres. The disposal of lands by sale did not, however, interfere with the ordinary method of alienating town allotments and country lands by grants subject to the payment of quit-rents. In 1830 the division of the eastern part of the colony into counties, hundreds and parishes had been completed by a commission of three persons appointed for that purpose. Dividing the territory into nineteen counties, covering about 34,505 square miles, they made a valuation of the whole of the lands with a view to fixing a fair price for future sales. This territory comprised a belt of land in what is now the middle of the Eastern Division of New South Wales, extending from the coast nearly as far as the boundary of the Central Division, and from the Macleay River in the north to the Moruya River in the south.

5. **Free Grants Abolished, 1831.**—On the 14th February, 1831, it was notified by a Government order that no Crown lands were in the future to be disposed of except by public auction, the minimum price for country lands being fixed at five shillings an acre, which was raised to twelve shillings an acre in 1839, power being given in the latter year to select, at the upset price, land for which there was no bid at the auction, or upon which the deposit paid at the time of sale had been forfeited. This was the first introduction of the principle of selection into the land laws of Australia, and it was then only applied to lands which had been put up for sale by auction. Until the year 1841 regulations for the sale of land were issued by the Imperial authorities, but in October of that year instructions were forwarded to Sir George Gipps, giving him discretionary power as to the upset price and the quantity of land to be sold. In the Port Phillip District, however, the minimum price was to be £1 an acre.

6. **Land Regulations Issued under Imperial Acts, 1842 and 1847.**—These instructions were superseded by regulations made under an Imperial Act of Parliament, which came into force in June, 1842. The principle of sale by auction was maintained, the lands were to be surveyed before being put up for sale, and the upset price was fixed at twenty shillings an acre. It was provided that, subject to a primary charge for survey, half the proceeds of sales were to go to defray the cost of immigration of persons to the colony in which the revenue accrued. Special blocks of 20,000 acres formed an exception.

They might be sold, before survey, by private contract at not less than the upset price. Under Orders in Council, issued on the 9th March, 1847, in pursuance of the provisions of the Waste Lands Act of 1846, a new classification of lands took place, and the territory was divided into—(a) settled districts, including the nineteen original counties, and the lands in the counties of Stanley and Bourke immediately surrounding the settlements at Moreton Bay and Melbourne respectively; (b) intermediate districts, comprising a belt of land from 50 to 200 miles inland beyond the boundaries of the settled districts, and in which pastoral occupation had already spread; and (c) unsettled districts extending westward to the extreme limits of the State. Under this Act the principles of sale by auction or by private contract were maintained, but a system was introduced by which leases were granted for various terms in each of the three divisions for pastoral purposes only. During the currency of such a lease the lessee could at any time purchase the freehold at the upset price of £1 an acre, and on the expiration of the term he had a pre-emptive right at the same price over all or any part of the land.

7. Occupation of Pastoral Lands.—In the early days land was held for pastoral purposes under tickets of occupation, which ceased to be issued on the 1st May, 1827, after which date pastoral lands could only be occupied under annual licenses, upon payment of a quit-rent of twenty shillings per 100 acres, and had to be vacated at six months' notice. As the numbers of stock belonging to the settlers increased, new areas were necessary for depasturing them. The settlers accordingly extended their operations inland, with no right except that of first discovery, until the Legislature was compelled, in 1833, to pass an Act protecting Crown lands from trespass and encroachment, and commissioners were appointed for the purpose of safeguarding the public estate. The provisions of this Act were in many cases disregarded, and new regulations, in which severe penalties were enacted, were issued in 1836. In order to further restrain unauthorised occupation, an Act was passed in March, 1839, providing the means for defraying the expenses of police in the inland districts by a yearly assessment upon stock at the following rates:—One half-penny for every sheep; three halfpence per head of cattle; and threepence for every horse.

Under the Imperial Act of 1846, referred to above, an entirely new system for the occupation of pastoral lands was introduced. The tenure formerly had been a yearly one, and the license fee was calculated according to the extent of the land occupied. Under the new system fixity of tenure of lease was granted, and the fee was paid upon the stock-carrying capacity of the run. In the unsettled districts the term of the lease was fixed at fourteen years; in the intermediate districts the term was for eight years; while in the settled districts the yearly tenure was retained. The license fee was fixed at a minimum rate of £10 for 4000 sheep, and £2 10s. for every additional 1000 sheep which the run was estimated to carry. In the settled districts lands might be occupied in sections of not less than one square mile, the annual fee for each section being fixed at ten shillings.

The provisions of the Act of 1846 were not popular with a considerable proportion of the community. It was urged that the Act tended to "lock up" the land; that it frustrated many honest buyers in their endeavours to secure the freehold; and that it deprived the Crown of a revenue which, under other circumstances, might have been applied for the construction of public works and the promotion of the public good. In the inland districts, remote from the sphere of settlement, squatters spread over the country. Land, which would have realised £5, or even £20 an acre, was seized upon condition of paying two shillings an acre for only a few years, while there was no guarantee for the fulfilment of the conditions.¹

8. First Land Legislation of Individual States.—The legislation of 1846 remained in force in New South Wales until the year 1861; and in the States of Victoria and Queensland, which were separated from the mother colony in 1851 and 1859 respectively, until repealed by Acts of the State Parliaments. The discovery of gold in 1851, and the

1. See Rusden's "History of Australia," Vol. II., p. 338.

consequent rush of population to Australia, greatly changed the conditions of colonisation. The various States of the Commonwealth have found it to their advantage to adopt different systems for securing the settlement of an industrial and agricultural population. The land regulations of Victoria, Queensland, and Tasmania were identical with those in force in New South Wales until the dates of the separation of these States from the mother State, and at the present time practically the same form of conditional occupation with deferred payments exists in all four States. In Western Australia and in South Australia the influence of the legislation of New South Wales was not felt. In these States new conditions prevailed; under a different set of circumstances settlement was effected by legislation of a special and novel character, and it was not until a later date that their land laws were brought more into line with those of the eastern States.

9. **New South Wales Areas Alienated between 1787 and 1859.**—The subjoined statement shews the areas of Crown lands which had been alienated, both in the mother colony and in the settlements administered from Sydney, from the date of the foundation of the colony in 1787 up to the dates of separation of these settlements by their constitution as separate colonies:—

**NEW SOUTH WALES ALIENATIONS,
UP TO SEPARATION OF VARIOUS SETTLEMENTS, BETWEEN 1787 AND 1859.**

| Particulars. | In New South Wales Proper (N.S.W.). | In Van Diemen's Land' (Tasmania). | In Port Phillip District' (Victoria). | In Moreton Bay District' (Q'nsland). |
|---|---|---|---|--|
| | Acres. | Acres. | Acres. | Acres. |
| From 1787 to 1823 | 520,077 | 57,423 | ... | ... |
| From 1824 to 1836 | 4,268,750 | ... | ... | ... |
| From the first settlement in Port Phillip in 1837 to 1841 | 1,110,544 | ... | 222,214 | ... |
| From the first settlement in Moreton Bay in 1842 to the separation of Port Phillip in 1851 | 48,119 | ... | 121,702 | 2,521 |
| From 1852 to the separation of Moreton Bay in 1859 | 899,283 | ... | ... | 58,398 |
| Total from 1787 to 1859 inclusive ... | 6,846,773 | 57,423 | 343,916 | 60,919 |

1. Particulars for the States *after* their separation are shewn in subsequent paragraphs.

§ 2. Land Legislation in Individual States.

1. **New South Wales.**—After the excitement of the first rush, following the discovery of gold in 1851, had died away, the interest in gold-digging commenced to decline, and the number of people desiring to settle on the land greatly increased. The question of land-settlement had accordingly to be dealt with in an entirely new spirit, to meet the requirements of a class of immigrants differing greatly from those contemplated by the Act of 1847.

(i.) *The Lands Act and Occupation Act 1861.* The public interest in the question which thus arose resulted in the passing of the Crown Lands Act and the Occupation Act in 1861, under the leadership of Mr. (afterwards Sir) John Robertson. The object of these Acts was to facilitate the establishment of an agrarian population side by side with the pastoral tenants. It had hitherto been difficult for men with limited capital to establish themselves with a fair chance of success, but under the new principle of free selection before survey, introduced by Robertson's Act, country lands were sold in limited areas of from 40 to 320 acres at a price of £1 an acre, payable partly by deposit, and

carrying interest on the balance outstanding at the rate of 5 per cent. per annum. The land had formerly been occupied for pastoral purposes under a system of yearly licenses; later on, under the Imperial Act of 1846, the licensee had been given fixity of tenure, the fee being calculated according to the stock-carrying capacity of the run. By the Occupation Act of 1861 the colony was divided into first and second-class settled districts and unsettled districts, and the whole of the pastoral leases were left open to the operations of free selectors. The runs in the first-class districts were available only on annual leases at £2 per square mile, while in the second-class and unsettled districts runs ranging in area from 25 to 100 square miles could be leased for a term of five years, being open to competition by public tender. The system of unconditional sales was still continued under the Act of 1861, and remained in force until its abolition in 1884. With many benefits there was also considerable mischief as a result of the operation of Robertson's Act, chiefly for the reason that land, being held under pastoral leases not exempt from free selection, could be the subject of speculative selecting without *bond-fide* intention of settlement.

(ii.) *Acts now in Force.* The Crown Lands Act of 1884 and the supplementary Act of 1889 were accordingly passed to remedy this state of things. These measures, while maintaining the principle of free selection before survey, were designed to give fixity of tenure to the pastoral lessees, and at the same time incidentally tended to restrict the area sold unconditionally. Pastoral leases were required to be surrendered to the Crown and divided into two equal parts. One of these parts was returned to the lessee under a lease with fixity of tenure for a certain term of years; the other half, called the resumed area, the lessee was allowed to hold under an annual occupation license, but this half was always open to selection.

It was found in course of time that the Acts of 1884 and 1889 did not succeed in attaining the objects for which they were designed; settlement proceeded very slowly, and the accumulation of land into large estates continued. Parliament has been led to introduce entirely new principles into the agrarian legislation of the State, embodied in the Crown Lands Acts 1895 to 1905, in the Labour Settlements Act 1902, and in the Closer Settlement Acts 1904 to 1907, which, while still giving fixity of tenure to pastoral lessees, retain the principle of free selection before survey, and to offer *bond-fide* settlers special inducements by the introduction of new forms of tenure on easy terms and conditions.

(iii.) *The Western Lands Acts.* All lands in what is known as the Western Division of New South Wales are now subject to the special provisions of the Western Lands Acts 1901 and 1905. The registered holder of a lease of any description or of an occupation license of land could bring his lease or license within the provisions of the Western Lands Act by application before the 30th June, 1902. If he did not so apply, the lease or license is dealt with as if the Act had not been passed, and the Western Land Board, constituted under the Act, is to be deemed to be the Local Land Board to deal with such cases. All leases issued or brought under the provisions of the Western Lands Act expire on the 30th June, 1943, except in cases where part of the land leased is withdrawn for the purpose of sale by auction or to provide small holdings, in which case the Governor may add to the remainder of the lease a term, not exceeding six years, as compensation for the part withdrawn.

2. *Victoria.*—The early history of land settlement in Victoria is intimately bound up with that of New South Wales. For the first fifteen years of its existence, during which period it was known as the District of Port Phillip, the alienation of Crown lands was regulated by the Orders in Council of the mother State, to which orders reference has already been made. In the month of September, 1836, the Port Phillip district was proclaimed open to settlement, and the principle of the sale of unoccupied land by auction was introduced. The first Port Phillip land sale took place on the 1st June, 1837, when 100 Melbourne town lots and seven allotments in Williamstown were sold. On the 17th January, 1839, the upset price was raised from five shillings to twelve shillings per acre.

On the 15th October, 1840, the first Portland Bay land sales took place, and on the 31st December following there had been alienated by purchase in the Port Phillip district 160,577 acres at a total price of £327,497. In the year 1841 the upset price of country lands, in New South Wales limited to twelve shillings per acre, was specially raised to twenty shillings per acre in the Port Phillip district.

The Orders in Council made under the Imperial Acts of 1842 and 1846, referred to above, remained in force until 1860, when an Act was passed by the Victorian Government, which, after making provision for special reserves for mineral purposes, etc., divided all Crown lands into country and special classes. The former were available after survey for selection in allotments of from forty to sixty acres. Application for these blocks had to be accompanied by a deposit of £1 an acre, and the successful applicant had the option of paying for half the allotment in cash, or taking the whole upon the same conditions, but if he only took half he might rent the other half for a term specified in the proclamation at the rate of one shilling per acre per annum, with the right to purchase at any time during the term. Special lands, situated near towns, railways, rivers, etc., were sold quarterly by auction at an upset price of £1 an acre.

(i.) *Duffy's Act 1862.* In 1862 free selection before survey was introduced by Duffy's Act, which provided for the setting apart of large agricultural areas, within which land could be selected at a uniform price of £1 an acre. Alternative conditions were imposed to the effect that certain improvements should be effected, or that part of the land should be placed in cultivation, and modifications were introduced as to the mode of payment. As regards pastoral lands, license fees and assessments on stock were abolished, and provision was made for the payment of rent for runs according to their value, based on their stock-carrying capacity.

(ii.) *The Land and Pastoral Acts 1869.* The next legislation on the subject of land settlement was in 1869, in which year a Land Act and a Pastoral Act were passed, consolidating and amending all previous land legislation. The system of free selection before survey, as applied to all unoccupied Crown lands, was retained, but the selected area was limited to 320 acres, and was at the outset to be held under license for a term of three years, during the first two and a-half years of which the selector had to reside on the land, fence it, and cultivate a certain proportion of it. The rent was fixed at two shillings an acre per annum, and at the end of the period of license the selector could, if all conditions had been complied with, either purchase the land outright at the rate of £1 an acre, or he might obtain a further lease for seven years, with the right to purchase the land at any time during the term, all money paid as rent being credited towards the purchase price. The Pastoral Act of 1869 provided for the occupation of the land for pastoral purposes under two systems, either as runs under license or lease or under grazing rights. The Land Act of 1869 was amended in 1878, when the conditions of selection were greatly restricted, the immediate effect being a considerable falling-off in the areas taken up. The period of license was increased to six years, and the selector had to reside on his land for a period of five years.

(iii.) *Acts now in Force.* In 1884 the whole system of land occupation and alienation, except as regards Mallee lands (see below), was altered. This measure was again modified by the Acts of 1890, 1891, 1893, 1896, 1898, and 1900, the whole being consolidated in the Land Act 1901, which came into force on the 31st December of that year, and which has in turn been modified by the amending Acts of 1903, 1904, and 1905. The subject of closer settlement was dealt with in the Land Act of 1898, until the introduction of the Closer Settlement Act 1904, which has been amended in 1906 and 1907. Other special forms of tenure have been provided for by the Settlement and Lands Act 1893 and the Small Improved Holdings Act 1906.

The Land Act of 1869 is inoperative as to future selections, but concessions as to payment of arrears of rent, the option of converting their present leases into perpetual leases, and of surrendering part of and obtaining new leases on better terms for the balance of their holdings, have been granted to selectors thereunder by the recent legislation.

The Amendment Act of 1903 introduced amendments as regards the classification of unalienated Crown lands. The Act of 1904 altered the amount to be expended on improvements in the case of agricultural and grazing allotments, and made certain amendments with regard to the powers of perpetual leases of Mallee lands. The Act of 1905 deals principally with the conditions upon which bee range areas may be declared and bee farm site licenses granted.

(iv.) *Mallee Lands.* The territory known generally as the "Mallee"—so named from the scrub with which the country, in its virgin state, was covered—comprises an area of about 11,000,000 acres in the north-western district of the State, and of this area more than half is unalienated and available for occupation. The soil is mostly of a light chocolate and sandy loam character, covered with scrub, interspersed with plains lightly timbered with box, she-oak, and pines. The scrub can be cleared at a moderate expenditure, and the extension of railway facilities and of successful systems of irrigation, should bring large districts in this country into prominence as a field for agricultural enterprise.

Originally Mallee lands could be acquired under lease either as "Mallee Blocks" or "Mallee Allotments." The former were very large areas of the back country, and the term was for a period of twenty years. All such leases have now expired, and these areas are now only let under annual grazing licenses until required for selection. "Mallee Allotments" could be leased up to a maximum area of 20,000 acres, but the area was latterly restricted to the area which could be selected. Alienation by selection was allowed by the Land Act 1896. Lands in the Mallee are now dealt with by a special part of the Land Act of 1901 and are held under special forms of tenure; it is now provided that all Mallee lands after forfeiture or resumption, or on the expiration of any lease of a Mallee block or a Mallee allotment, shall be available for selection and shall not be again leased as a Mallee block or allotment.

3. *Queensland.*—Previous to the year 1859 the Moreton Bay district, as it was then called, formed a portion of New South Wales. The early history of its methods of land settlement is thus included in that of the mother colony. With separation from New South Wales, and the election of a Legislative Assembly of its own, the district of Moreton Bay—or, as it was henceforth to be known, the Colony of Queensland—entered on a new era of prosperity. The first Parliament of the new colony, which assembled in 1860, passed three Acts dealing with Crown lands.

(i.) *Pastoral Leases.* The first two of these (24 Vic., Nos. 11 and 12) dealt chiefly with the occupation of land for pastoral purposes, and their provisions differed but little from those adopted in the mother colony. These measures were amended by Acts passed in 1862, 1863, and 1864. In 1868 an Act was passed providing more land for agricultural settlement by the resumption of land from runs as required, unless the proprietors voluntarily surrendered for selection one-half of their runs, and accepted a ten-years' lease for the remainder. The occupation of lands for pastoral purposes was further dealt with by Acts passed in 1869, 1876, and 1892.

(ii.) *General Settlement.* The third measure (24 Vic. No. 15), passed in 1860, provided for general settlement. This was also more an expansion of the existing law than the adoption of a new line of policy. This Act was amended in 1863 and 1864, and again in 1866, when a comprehensive measure was passed practically introducing the principle of deferred payment, although styled leasehold with the right of purchase. The principle of selection before survey was extended by the Crown Lands Alienation Act 1868, which introduced more liberal conditions and threw open to selection parts of the areas hitherto occupied for pastoral purposes. These principles were further extended by the Homestead Areas Act of 1872 and the Crown Lands Alienation Act of 1876. These measures, with slight amendments, continued in force until 1884, when the Crown Lands Act was passed. This Act introduced the system of grazing farms and provided for the constitution of a Land Board, which was the forerunner of the Land Court established by the Act of 1897. The complaints of pastoral lessees as to insecurity of tenure were also met by the Act of 1884, which, while securing prescribed proportions for settlement, gave the

lessees fixed tenures of the remainder of their holdings for fifteen years, increased later to twenty-one years, subject to prescribed powers of resumption, and later again to twenty-eight years on the holdings being enclosed by rabbit-proof fences.

(iii.) *Acts now in Force.* The Act of 1884 was, after various amendments, repealed by the Land Act 1897, which was in turn amended in 1902, 1905, and 1908, and which re-enacted with modification the provisions relating to grazing farms, abolished the exclusively leasehold tenure as applied to agricultural farms, restoring to them the earlier principle of conditional purchase, but on more liberal terms. Nearly all pastoral leases are now held under the Act of 1897, in conjunction with the Land Act 1902. Under the provisions of the Agricultural Lands Purchase Acts 1894 to 1905, power was given to the Government to repurchase lands for the purposes of closer settlement; these Acts have now been consolidated and repealed by the Closer Settlement Act of 1906. Under the Co-operative Communities Land Settlement Act of 1893, as amended in 1894, provision has been made for the establishment of co-operative communities. No action has, however, up to the present been taken under the Act. The Special Agricultural Selections Acts 1901 to 1905 were passed for the purpose of promoting closer settlement upon agricultural lands, by affording to bodies of settlers special facilities for the acquirement of agricultural selections to be held in conjunction with portions in adjacent agricultural townships.

4. South Australia and the Northern Territory.—In the year 1834 a Bill for the colonisation of South Australia was passed by the British Government, and under this Act the colony was founded. It provided for the appointment by the Crown of three or more Commissioners to carry certain parts of the Act into execution; they were to declare all the lands of the colony, excepting areas reserved for roads and footpaths, to be open to purchase by British subjects, and to make regulations for the survey and sale of such lands at such price as they might deem expedient, and for letting unsold lands for periods of not less than three years. They might sell the land by auction or otherwise, but for ready money only, at a uniform price, and at not less than twelve shillings per acre. The Commissioners were restrained from entering upon the exercise of their general powers until they had invested £20,000 in Exchequer bills, and until land to the value of £35,000 had been sold. There was some difficulty in disposing of a sufficient quantity of land to enable the Commissioners to realise the required sum of £35,000, however, and to secure funds sufficient to enable them to found the colony. The price of the land had at the outset been fixed at £1 per acre, and each land order was for eighty acres of country land, and one acre of town land. About this time the South Australian Company was formed, and an offer was made by this company to purchase the remaining lots of land, provided the price was reduced to twelve shillings an acre. This proposal was readily accepted by the Commissioners, and a sufficient quantity of land having been sold, the investment of £20,000 as required by statute was completed. The principles on which the colony was established originated with Mr. Edward Gibbon Wakefield. He had observed the evils which, in other colonies, had arisen from the grants of large tracts of country to intending settlers, out of all proportion either to individual requirements or to the capacity of grantees to successfully deal with. The main idea in Wakefield's scheme was the sale of waste or unappropriated lands at a high price, and the application of the revenue thus obtained to the introduction of immigrants, so as to secure a constant supply of hired labour for the cultivation of the land, and for the progress of settlement. Other leading features of the scheme were that no convicts should be transported, that no State church should be established, and that the new colony should be financially independent, and not be a charge on Great Britain.

The Wakefield system fell into disfavour owing to the financial crisis of the early forties, and soon had to be modified. It was not until 1872, however, that an Act was passed more in conformity with the legislation of the neighbouring States, and giving to settlers with only a small amount of capital an opportunity of settling upon the lands of the Crown under fair conditions and with a reasonable chance of success. The Act of 1872 was amended from time to time, until it was repealed and its provisions consolidated

by the Crown Lands Act of 1888. The principles of closer settlement were introduced by the Closer Settlement Act of 1897, which was amended in 1902, while village settlements were dealt with by the Village Settlements Act 1901.

(i.) *The Torrens Act.* Reference may here be made to the Real Property Act, which was originated in South Australia by the late Sir R. R. Torrens in the year 1858, and which has been adopted in all the States of the Commonwealth, and also in New Zealand. The objects of this Act are to give security and simplicity to all dealings with land, by providing for such registration of title as shall admit of all interests which may appear upon the face of the registry being protected, so that a registered title or interest shall practically never be affected by any claim or charge not registered. By this system everyone who acquires an estate or interest in land, upon being registered as owner thereof, obtains a title, if not absolutely at least practically secure against everyone whose claim does not appear upon the registry; and the two elements of simplicity and security as regards the acquisition of land appear to be effectually attained.

(ii.) *Acts now in Force.* The Act of 1888, referred to above, in course of time underwent numerous amendments, the whole being repealed and consolidated by the present Crown Lands Act of 1903, which also repealed the previous Closer Settlement and the Village Settlement Acts, and which in turn was amended in 1905 and 1906. Provisions as to the occupation of land for pastoral purposes are now contained in the Pastoral Act 1904.

(iii.) *The Northern Territory.* In 1863 so much of the State of New South Wales as lay to the north of lat. 26° S., and between long. 129° and 138° E., was annexed to South Australia. This portion of the continent is under the administration of a Resident, appointed by the Government of South Australia. The Acts referred to in the preceding paragraph hereof do not apply to the Northern Territory lands, the sale and occupation of which are now regulated by the Northern Territory Crown Lands Act 1890.

5. **Western Australia.**—In the year 1827 Captain James Stirling, accompanied by Mr. Charles Fraser, the Colonial Botanist in New South Wales, made an examination of the country in the vicinity of the Swan River, with a view to the establishment of a settlement, and in consequence of the favourable report made by these gentlemen, the Imperial Government decided to organise a colonising expedition forthwith. On the 2nd June, 1829, the transport *Parmelia* arrived in Cockburn Sound, having on board Captain Stirling, who had been appointed Civil Superintendent of the Swan River settlement, and a number of officials and intending settlers. On the 17th June the expedition disembarked and encamped on the north bank of the Swan River, at the place now called Rous Head, and with the landing of these immigrants the settlement of Western Australia commences.

(i.) *First Grants of Land.* The first settlers were offered large grants of land proportional to the amount of capital introduced, which comprised the value of all stock and implements of husbandry, at the rate of forty acres for every sum of £3, but they had to spend one shilling and sixpence per acre on improvements, before they could obtain the fee simple. The land granted was to be within three years cultivated, or otherwise improved, or reclaimed from its wild state, to a fair proportion of at least one-fourth, or the owners were liable to a payment of sixpence per acre into the public chest; and if still unimproved at the end of seven years the land reverted absolutely to the Crown. Grants were also made to capitalists at the rate of 200 acres for every labourer brought over at their expense, but any land so granted reverted to the Crown unless it was brought under cultivation, or otherwise improved, or reclaimed from its wild state within twenty-one years. Closely following the *Parmelia* a number of vessels arrived, increasing the number of settlers and introducing further supplies of live stock, until at the end of the year 1830 nearly 1800 immigrants had arrived in the colony. No preparations had been made for the reception or provision of these settlers; many of them were persons who were quite unfitted for the hardships which had to be endured, and a general feeling of despondency and depression commenced to spread amongst the colonists. Numbers left, rather than face the difficulties inseparable from initial colonisation;

those who remained, however, struggled on manfully, and in spite of great hardships and privation laid the foundation of the present State.

(ii.) *Free Grants Abolished.* The original regulations under which grants were made to the first settlers were amended by others of a similar nature issued by the Imperial Government on the 20th July, 1830, which in turn were replaced in 1832, when free grants were abolished and land was sold at a minimum price of five shillings per acre. In 1837 the price of allotments in Perth, Fremantle, and Albany was fixed at a minimum of £5 an acre. New land regulations were issued by the Colonial Office in 1843, and these were amended and amplified in 1864. Further amendments were made in 1873 and 1882, and in 1887 the whole of the regulations were amended and consolidated. The colony was divided into six divisions, in all of which sale by auction was permitted, but otherwise the conditions of occupation differed in each division.

(iii.) *Acts now in Force.* In the year 1890 Constitutional Government was granted to the colony, and from time to time various amendments were made in the land laws, until the year 1898, when a Land Act was passed amending, repealing, and consolidating previous legislation as to the sale, occupation, and management of Crown lands. This Act has in turn been amended in 1899, 1900, 1902, 1904, 1905, and 1906, and, with its amendments, is now in force. The principle of repurchasing Crown lands for the purposes of closer settlement was introduced by the Agricultural Lands Purchase Act 1896, amended in 1904.

6. *Tasmania.*—The early settlement of Tasmania was carried out under the regulations framed for the disposal of Crown lands in New South Wales, of which colony it was, at the outset, a part, and after its constitution under a separate administration in 1825 the regulations issued from the Colonial Office for the settlement of Crown lands in the mother colony were made applicable to Tasmania. In 1828 the first land sales in the island took place, but so low were the prices obtained that 70,000 acres enriched the Treasury by only £20,000. In the month of January, 1831, the system of issuing free grants of land was abolished.

In 1855 responsible government was granted to the island colony, and from this time dates the policy under which later settlement has taken place. The Waste Lands Act 1858 introduced the principle of free selection before survey, but owing to the small area available for selection, and the fact that much of the land was heavily timbered, the practical value of this measure was comparatively small. From 1860 to 1870 no less than thirteen Land Acts were passed, and in the latter year a new measure, the Waste Lands Act 1870, embodying and consolidating many of the salient features of previous enactments, was carried. One of the most important features of this Act was the extension of a principle, introduced by a former Act in 1863 and embodied in the legislation now in force, devoting a portion of the purchase-money derived from land sales to the construction of roads and bridges. The Act of 1870 also gave power to the Governor to reserve such land as he might deem necessary for public purposes, and the lands not so reserved were divided into (a) town, (b) agricultural, and (c) pastoral lands. The first class comprised all lands within the towns and villages; the second class included lands which might from time to time be proclaimed as suitable for agricultural purposes; the third class comprised lands which were better adapted for grazing than tillage. The conditions attached to conditional purchases were that the selector, his tenant or servant, should within one year of the date of selection, reside upon the land until the full purchase-money was paid. The upset price for agricultural lands was £1 an acre, that for pastoral lands being a sum equivalent to twelve years' rental, but not in any case more than five shillings an acre. If the selection were purchased for cash a deposit of one-fifth of the purchase-money had to be made and the remainder had to be paid within a month; if purchased upon credit the purchaser had to pay an extra sum of six shillings and eightpence an acre. Numerous amendments to the Act of 1870 were passed, until, in 1890, a measure was carried consolidating the various Acts then in force; the Act of 1890 was itself amended from time to time. The law relating to land tenure and settlement is now consolidated in the Crown Lands Acts 1903, 1905, and 1907, and in the Closer Settlement Acts of 1906 and 1907.

§ 3. Administration and Classification of Crown Lands.

1. **General.**—In each of the States of the Commonwealth there is now a Lands Department under the direction of a responsible Cabinet Minister, who is charged generally with the administration of the Acts relating to the alienation, occupation, and management of Crown lands. The administrative functions of most of the Lands Departments are to some extent decentralised by the division of the States into what are usually termed Land Districts, in each of which there is a Land Office, under the management of a land officer, who deals with applications for selections and other matters generally appertaining to the administration of the Acts within the particular district. In some of the States there is also a Local Land Board or a Commissioner for each district or group of districts.

In most of the States Crown lands are classified according to their situation, the suitability of the soil for particular purposes, and the prevailing climatic and other conditions. The modes of tenure under the Acts, as well as the amount of purchase-money or rent and the conditions as to improvements and residence, may vary in each State according to the classification of the land. The administration of certain special Acts relating to Crown lands has in some cases been placed in the hands of a Board, under the general supervision of the Minister; for such purposes, for instance, are constituted the Western Lands Board in New South Wales, the Lands Purchase and Management Board and the Small Holdings Board in Victoria, and the Closer Settlement Board in Tasmania.

In each of the States there is also a Mines Department, which is empowered under the several Acts relating to mining to grant leases and licenses of Crown lands for mining and auxiliary purposes. Such leases and licenses are more particularly referred to in a later part of this section. (See § 10, below.)

Full information respecting lands available for settlement or on any matter connected with the selection of holdings may be obtained from the Commonwealth representative in London, from the Lands Departments, or from the Agents-General of the respective States.

2. **New South Wales.**—For the purposes of land administration there are now in New South Wales three main territorial "divisions," viz., the Eastern, Central, and Western, each of which is subdivided into a number of "Land Districts." In making the main divisions the special climatic and other prevailing conditions have been taken into consideration. It may be observed that, as a rule, only the Eastern and Central Divisions are suitable for agriculture, dairying, fruit-growing, and mixed farming. The climate, soil, and general character of the Western Division rendering it suitable for grazing on a large scale, that part of the State has, by an Act called "The Western Lands Act," been placed under the control of three Commissioners, appointed by the Governor for a term of seven years, forming the Western Land Board, which has power to recommend leases and otherwise deal with the Crown lands in this division.

(i.) *Land Districts.* To facilitate the transaction of business in connection with the disposal of Crown lands and the collection of rent, interest, and instalments in respect of lands conditionally alienated, the State has been divided into 103 Land Districts, in each of which an officer, called the "Crown Land Agent," is stationed. In addition to the Western Land Board District, which comprises ten of the 103 Land Agents' Districts in the State, there are eleven other Land Board Districts, each of which embraces several Land Agents' Districts. Each Land Board District is under the jurisdiction of a Local Land Board, consisting of a chairman and two other members. At the headquarters of each Land Board a District Surveyor and staff are also located. An application for land, accompanied by the required deposit, must be lodged with the Land Agent of the district in which the land is situated, and it is sent by him to the District Surveyor, by whom it is in due course forwarded, with a report, to be dealt with by the Local Land Board. Appeals from decisions of Local Land Boards may be made to the Land Appeal Court. The latter consists of a President and two Commissioners, appointed by the Executive,

and its decisions have the force of judgments of the Supreme Court. The Western Land Board Commissioners are authorised to exercise all the powers conferred upon the Local Land Boards.

(ii.) *Closer Settlement Board.* For the purpose of carrying out the provisions of the Closer Settlement Acts 1904 to 1907 a Board has been constituted. This Board consists of the president and commissioners of the Land Appeal Court and the chairman and members of the Local Land Board for the land district in which the land under inquiry is situated. Under the amending Act of 1907 the Governor is empowered to appoint three Advisory Boards to report upon areas suitable to be acquired for the purpose of closer settlement.

(iii.) *Classification of Lands.* Under the provisions of Part II. of the Crown Lands Act 1895 the Governor is empowered, for the purpose of effecting a proper classification of Crown lands, to set apart, by notification in the *Gazette*, any tract or area for holdings (whether by way of purchase, lease, or otherwise) of the particular kinds specified in the notification; and it is provided that any lands comprised within such tract or area shall not become available for the purpose of any application for a holding of a kind not specified in the notification.

3. **Victoria.**—For the purposes of land administration the State is divided into seventeen districts, in each of which there is a Land Office under the management of a land officer. Intending selectors can obtain from these officers full information as to the locality and description of lands available for settlement. Local Land Boards are appointed to deal with applications for selections in the various districts. The whole of the unalienated lands belonging to the Crown, with the exception of Mallee lands, are divided into the following classes:—(1) Good agricultural or grazing lands, situated chiefly in the central southern districts; (2) lands to a large extent suitable for grazing, but which in parts are also suitable for cultivation, vineyards and orchards—land of this class is fairly distributed throughout the State; (3) grazing lands, which are situated in nearly every county; (4) inferior grazing lands, situated chiefly in the extreme eastern and western districts of the State;¹ (5) pastoral lands (large) areas; (6) swamp or reclaimed lands; (7) lands which may be sold by auction (not including swamp or reclaimed lands); (8) auriferous lands; (9) State forest reserves; (10) timber reserves; and (11) water reserves.

(i.) *Reclassification of Lands.* Provision is made in the Land Acts for the reclassification of lands where it is considered that any land in either of the first four classes is too highly classed, or if any land in the second to the fifth classes is not classed high enough. For this purpose Land Classification Boards, each consisting of three members, who are officers of the Lands Department, or other competent persons, are constituted. The classification of any land cannot, however, be altered after an application to select the same has been granted.

(ii.) *Mallee Lands.* The provisions of the Land Act of 1901 referring to lands comprised in any of the above eleven classes do not apply to lands in the Mallee country or Mallee border, which are dealt with by a special part of the Act. Land in the Mallee is divided into four classes, the unimproved value of the land in each class being twenty, fifteen, ten, and five shillings respectively. For the purposes of classification Mallee Classification Boards are constituted.

(iii.) *Administration of Closer Settlement Acts.* For the purposes of carrying out the provisions of the Closer Settlement Acts 1898 to 1907, a Board consisting of three members has been constituted. This Board has power to acquire for the purposes of the Act, either by agreement or compulsorily, private lands in any part of the State. The Small Holdings Act 1906 is also administered by a special Board.

4. **Queensland.**—This State is for administrative purposes divided into Land Agents' Districts, in the principal town of each of which there is a Public Lands Office, under the management of a Land Agent, with whom applications for selections must be lodged.

1. Agricultural and grazing lands are classified by the Lands Department in three divisions only, although the Acts provide (if necessary) for a fourth class.

(i.) *Lands Commissioners.* The Governor is empowered to appoint Land Commissioners as may be necessary for carrying the provisions of the Land Acts into effect. To each Commissioner Land Agents' Districts are assigned. A Commissioner must hold a court at least once a month. His powers and duties relate to the consideration of applications to select land, the valuation of land and improvements, the granting of applications for certificates as to performance of conditions, the holding of courts to enquire into violation of the Acts by settlers, and the granting of special licenses and applications.

(ii.) *The Land Court and Land Appeal Court.* Under the provisions of the Land Act of 1897 a Land Court and a Land Appeal Court have been constituted. The Land Court consists of three members, and exercises the powers and functions of the Land Board constituted under the repealed Acts. It hears appeals from the Commissioners' Courts, and has power to summon any person as a witness and examine him on oath. One member of the Court ordinarily acts in the first instance. In certain cases it is imperative that the powers of the Court be exercised by one member only, but an appeal lies from such member to the Land Appeal Court, consisting of a judge of the District Court and the members of the Land Court other than the member pronouncing the decision appealed against. No appeal lies in any case in which the Land Court *may* be lawfully constituted by the three members thereof sitting together. Under certain circumstances an appeal may be made from the decision of the Land Appeal Court to a Supreme Court judge. An appeal lies to the Full Court from any decision of the judge upon a question of law.

(iii.) *Classification.* In Queensland, Crown lands are generally classified as town lands, suburban lands, or country lands. Town and suburban lands are set apart by proclamation, while country lands comprise all Crown lands which are not so proclaimed or are not reserved.

Under the Land Act 1902, section 9, new pastoral leases are to be classified according to the term of the lease, and under section 37 of the Act of 1905 newly acquired holdings are classified by the Land Commissioners, according to whether they are free from or are infested by prickly pear.

5. South Australia and the Northern Territory.—In this State there is a Land Board and a Pastoral Board. There is no general classification of lands, but special areas are set apart by notification in the *Gazette* to be applied for on perpetual lease or agreement. Town lands comprise all Crown lands set apart as the site for a town, and suburban lands comprise all Crown lands surveyed in sections of not greater area than twenty acres each, situated within two miles of any town lands and park lands, the latter of which include lands adjacent to a town and reserved for the use of the inhabitants thereof.

(i.) *The Land Board.* This Board consists of four members, of which three must be civil servants. The Board travels to various centres to take evidence; it arranges the subdivisions of lands, considers applications, deals with transfers, fixes prices, and generally attends to all matters referred to it by the Commissioner of Crown Lands and Immigration.

(ii.) *The Pastoral Board.* This Board, as at present constituted, was created by the Pastoral Act of 1904 to deal generally with pastoral lands. The Board consists of the Surveyor-General and two other members (one not being a civil servant). The Board, with the approval of the Commissioner of Crown Lands, considers applications and decides upon the area, the boundaries of the land, the annual rent to be paid, and the term to be granted, and deals with all other matters referred to it by the Commissioner.

(iii.) *Land Districts.* Under the Crown Lands Act 1903, section 7, authority is given to the Governor to divide the State into Land Districts by proclamation. No such districts have, however, up to the present been proclaimed.

(iv.) *Northern Territory.* In the Northern Territory, Crown lands are also divided into town, suburban, and country lands. Country lands are classified as either (a) surveyed, or (b) unsurveyed. The Minister controlling the Northern Territory carries out all the duties of the Land Board for that part of the State.

6. **Western Australia.**—Under the Lands Act Amendment Act of 1906 six main territorial divisions are defined, viz.:—The South-west Division, the Kimberley Division, the North-west Division, the Central Division, the Eucla Division, and the Eastern Division. The Kimberley, North-west, and Western Divisions are at present more especially adapted to tropical cultivation and for pastoral purposes, to the latter of which they are principally devoted. The South-western is the most important farming division.

(i.) *Land Districts.* In addition to the land divisions, which have been principally arranged with reference to the regulations dealing with pastoral leases, the State is divided into Land Districts for the purpose of conveniently dealing with land sales. In each district is stationed a Land Agent, with whom applications for selections must be lodged. By the Amendment Act of 1906 power was given for the appointment of a Land Board for any district; no such Boards have, however, been constituted up to the present.

(ii.) *Classification of Lands.* Unoccupied Crown lands are generally grouped into two classes. The first class comprises what are termed "cultivable" lands, and are open for selection by conditional purchase. The second class comprises land which is suitable only for grazing purposes, and may be held under grazing leases. Lands may also be classified by notice in the *Gazette* as town or suburban lands.

7. **Tasmania.**—In this State there are no Land Districts, and applications for selections must be lodged at the Central office, Hobart, or at the Brauch office, Launceston.

(i.) *Classification.* Crown lands are divided into (a) town lands and (b) rural lands. (a) *Town lands* comprise all lands situated within any city and within five miles from any point of the boundaries of any city, and all lands situated within the boundaries of any town, township, or village, or which are laid out in lots as the site for a town. Town lands can only be sold by auction, or if, after having been offered at auction and not sold, by private contract, within one year after the auction sale. (b) *Rural lands* comprise all lands other than town lands, and are divided into three classes according to whether the value is at or above £1 an acre, from ten shillings to £1 an acre, or from five shillings to ten shillings an acre. Rural lands may be sold at auction or may be selected for purchase privately.

(ii.) *Special Areas.* Special areas of rural lands, not less than 1000 acres in extent and suitable for agricultural, horticultural, or dairy-farming purposes, together with adjoining areas of second or third-class land, may be set apart and divided into blocks for sale by auction.

(iii.) *Administration of Closer Settlement Acts.* For the purpose of carrying out the provisions of the Closer Settlement Acts 1906 and 1907 a Board, consisting of three members appointed by the Governor, is constituted. Upon the recommendation of the Board the Minister may enter into an agreement for the repurchase of private lands at a price not exceeding that recommended by the Board.

§ 4. Tenures under which Crown Lands may be Alienated or Occupied.

1. **Introduction.**—The freehold of Crown lands in the several States of the Commonwealth may now ordinarily be alienated either by free grant (in trust for certain specified purposes), by direct sale and purchase (which may be either by agreement or at auction), or by conditional sale and purchase. Crown lands may be occupied in the several States under a variety of forms of leases and licenses, issued both by the Lands and the Mines Departments.

2. **Classification of Tenures.**—The tabular statement given on pages 278 and 279 shews the several tenures under which Crown lands may be acquired or occupied in each State of the Commonwealth. The several forms of tenure are dealt with individually in the succeeding parts of this section.

(i.) *Free Grants, Reservations, and Dedications.* The modes of alienation given in this category include all free grants either of the fee simple or of leases of Crown lands. "Free" homesteads in Queensland and Western Australia are not included in this class, these tenures being free in the sense that no purchase-money is payable, though the grants are not free from residential and improvement conditions. Reservation and dedication, which are ordinarily conditions precedent to the issue of free grants, are also dealt with herein.

(ii.) *Sales by Auction and Special Sales.* This class of tenure includes all methods by which the freehold of Crown lands may be obtained (exclusive of sales under the Closer Settlement and kindred Acts) for cash or by deferred payments, and in which the only condition for the issue of the grant is the payment of the purchase-money.

(iii.) *Conditional Purchases.* In this class are included all tenures (except tenures under Closer Settlement and kindred Acts) in which the issue of the grant of the fee simple is conditional upon the fulfilment of certain conditions (as to residence or improvements) other than, or in addition to, the condition of the payment of purchase-money.

(iv.) *Leases and Licenses.* This class includes all forms of occupation of Crown lands (other than under Closer Settlement and kindred Acts) for a term of years under leases and licenses issued by the Lands Departments. As the terms indicate, the freehold cannot be obtained under these forms of tenure.

(v.) *Closer Settlement Sales, Leases, and Licenses.* In this division are included all forms of tenure provided for under the various Closer Settlement Acts and also under kindred Acts, such as the Village Settlements and Small Holdings Acts.

(vi.) *Mines Departments' Leases and Licenses.* The tenures here specified include all methods in which Crown lands may be occupied for mining and auxiliary purposes under leases and licenses issued by the Mines Departments in the several States.

**CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED
OR OCCUPIED.**

| New South Wales. | Victoria. | Queensland. |
|------------------|-----------|-------------|
|------------------|-----------|-------------|

FREE GRANTS, RESERVATIONS, AND DEDICATIONS.

| | | |
|---|---|--|
| Free grants in trust Volunteer land grants Reservations and dedications under Land Act 1884 and Mining Act 1906 | Free grants in trust and res- ervations under Land Act 1901 | Free grants in trust Reservations under Land Act 1897 and under State Forests and National Parks Act 1906 |
|---|---|--|

SALES BY AUCTION AND SPECIAL SALES.

| | | |
|---|---|--|
| Auction sales for cash or on credit After-auction sales Special sales Improvement purchases | Auction sales for cash or on credit Special sales | Auction sales for cash or on credit After-auction sales Special sales Unconditional selections |
|---|---|--|

CONDITIONAL PURCHASES.

| | | |
|---|---|---|
| Residential or non-residential conditional purchases Conversion of conditional pur- chase leases Homestead selections | Agricultural allotments, resi- dential or non-residential Grazing allotments, resi- dential or non-residential Selection from grazing area, perpetual or auriferous leases Selection from pastoral leases Mallee agricultural licenses | Agricultural farms Agricultural homesteads Prickly pear selections Free homesteads |
|---|---|---|

LEASES AND LICENSES.

| | | |
|--|--|---|
| Conditional leases Conditional purchase leases Settlement leases Improvement leases Annual leases Residential leases Special leases Snow leases Act of 1903, sec. 18 leases Scrub leases Inferior lands leases Western lands leases | Grazing area leases Perpetual leases Mallee leases Licenses of auriferous lands Leases of swamp or reclaimed lands Grazing licenses Leases and licenses for other than pastoral or agricultural purposes State forest and timber reserve licenses | Grazing farms Grazing homesteads Scrub selections Occupation licenses Special leases Perpetual lease selections Special licenses Pastoral leases |
|--|--|---|

CLOSER SETTLEMENT SALES, LEASES, AND LICENSES.

| | | |
|---|---|---|
| Sales by auction Closer settlement purchase Annual leases Labour settlements | Special sales Sales by auction Conditional purchase leases Holdings under Small Im- proved Holdings Act 1906 Village communities | Sales by auction Agricultural farms Unconditional selections Settlements under Special Agri- cultural Selections Act 1901 |
|---|---|---|

MINES DEPARTMENTS' LEASES AND LICENSES.

| | | |
|--|--|--|
| Miners' rights Business licenses Authorities to prospect Leases | Mining leases Special licenses Miners' rights Business & residence licenses | Miners' rights Mining leases and licenses Miners' homestead leases |
|--|--|--|

CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.

| South Australia. | Western Australia. | Tasmania. |
|------------------|--------------------|-----------|
|------------------|--------------------|-----------|

FREE GRANTS, RESERVATIONS, AND DEDICATIONS.

| | | |
|---|--|---|
| Free grants in trust Reservations and dedications under Crown Lands Act 1903 Artesian leases | Free grants in trust and free leases Reservations under Land Acts , 1898 and 1906 | Free leases Reservations under Crown Lands Act 1903 |
|---|--|---|

SALES BY AUCTION AND SPECIAL SALES.

| | | |
|---|------------------------|--|
| Auction sales for cash After-auction sales Sales for special purposes | Auction sales for cash | Auction sales for cash or on credit After-auction sales, Special sales of residence or business allotments |
|---|------------------------|--|

CONDITIONAL PURCHASES.

| | | |
|--|--|---|
| Agreements to purchase Special agreements under Pin- naroo Railway Act | Conditional purchase, resi- dential or non-residential Conditional purchase by direct payment Conditional purchase of small blocks Free homestead farms Conditional auction sales | Selection of rural lands Homestead areas Selection in mining areas Conditional auction sales |
|--|--|---|

LEASES AND LICENSES.

| | | |
|---|--|--|
| Perpetual leases Miscellaneous leases Grazing and cultivation leases Reclaimed swamp leases Special licenses Pastoral leases Leases with right of purchase Northern Territory a g r i - cultural, pastoral, special right of purchase, and per- petual leases | Pastoral leases Timber licenses Special leases Quarrying licenses | Grazing leases Miscellaneous leases Timber licenses Occupation licenses |
|---|--|--|

CLOSER SETTLEMENT SALES, LEASES, AND LICENSES.

| | | |
|---|--|--|
| Sales by auction Agreements to purchase Miscellaneous leases Village settlements Homestead blocks | Sales by auction Conditional purchases Workingmen's blocks | Special sales Leases with right of purchase |
|---|--|--|

MINES DEPARTMENTS' LEASES AND LICENSES.

| | | |
|---|---|--|
| Miners' rights Mining leases Miscellaneous leases Business claims Occupation licenses | Miners' rights Mining leases Miners' homestead leases | Prospectors' licenses Miners' rights Mining leases Miscellaneous licenses |
|---|---|--|

§ 5. Free Grants, Reservations, and Dedications.

1. **Introduction.**—Although free grants of Crown lands were virtually abolished as far back as 1831 (see § 1, 4, above), the Land Acts of all the States now contain provisions under which the free alienation or occupation of Crown lands for certain specified purposes—comprising generally charitable, educational, and public purposes—is allowed. In all the States, also, Crown lands may be excepted from sale and reserved to the Crown or dedicated for various public and special purposes. Generally reservation and dedication are conditions precedent to the issue of a free grant. In addition to reservations of a permanent nature, temporary reservations are also made, but these are, as a rule, subject to considerable fluctuations in area by reason of withdrawals, renotifications, and fresh reservations.

The following table shews the area for which free grants were issued and the areas reserved or dedicated in each State during each year from 1901 to 1907, inclusive:—

PARTICULARS OF FREE GRANTS, RESERVATIONS, AND DEDICATIONS, 1901 to 1907.

| State, etc. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------|--------|--------|--------|--------|--------|--------|--------|
| FREE GRANTS. | | | | | | | |
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| N.S.W. ... | 282 | 92 | 137 | 633 | 537 | 171 | 305 |
| Victoria ... | 7 | 97 | 2,153 | ... | 126 | 4,622 | 861 |
| Queensland | 425 | 3,709 | 447 | 223 | 2,212 | 3,095 | 943 |
| S. Australia | 5 | 92 | 17 | 13 | 87 | 7 | 200 |
| W. Australia | 156 | 1,918 | 519 | 4,426 | 15 | 147 | 132 |
| Tasmania † | 10 | 159 | 222 | 570 | 35 | 80 | 6,715 |
| Total ... | 885 | 6,067 | 3,495 | 5,865 | 3,012 | 8,122 | 9,156 |

RESERVATIONS AND DEDICATIONS.

| | | | | | | | |
|--------------|------------|------------|------------|----------|------------|------------|---------|
| N.S.W. ... | 1,595 | 1,784 | 463 | 3,206 | 1,471 | 632 | 1,509 |
| Victoria ... | 19,278 | 81,145 | 17,718 | 9,026 | 78,525 | 6,711 | 1,770 |
| Queensland | 811,200 | 1,456,358 | 3,675,840 | 257,195 | 373,858 | 438,895 | 487,766 |
| S. Australia | ... | ... | ... | ... | ... | ... | 47,831 |
| W. Australia | 189,856 | 209,883 | 143,678 | 177,779 | 1,756,073 | 1,905,504 | 406,116 |
| Tasmania ... | 4,231 | 2,611 | 1,096 | 763 | 974 | 129 | 8,113 |
| Total ... | 1,026,160† | 1,751,781† | 3,838,795† | 447,969† | 2,210,901† | 2,351,871† | 953,105 |

* Not available.

† Exclusive of South Australia.

‡ Free leases.

2. **New South Wales.**—Under Sections 104 to 106 of the Crown Lands Act 1884 Crown lands may be reserved or dedicated for certain charitable, educational, and public purposes therein specified, and at any time thereafter the fee simple of such lands may be alienated in trust for the purpose specified. The Crown Lands Alienation Act 1861, which was repealed by the Act of 1884, contained provisions for the dedicating and granting in trust of Crown lands for religious purposes. In cases where a dedication or a promise of dedication had been made under the authority of the repealed Act, but had not been carried into effect before such repeal, the grant is made by virtue of the saving clause contained in Section 2 of the Act of 1884. No fresh promises of dedication for religious purposes were made after the 11th May, 1880, on which date a resolution against any further such grants was passed by the Legislative Assembly. Holders of certificates issued to such volunteers as had served efficiently for a certain period under the provisions

of the Volunteer Force Regulation Act 1867 are entitled to a free grant of 50 acres of such land as may be open to conditional purchase, other than lands within a proclaimed special area.

(i.) *Reservations.* In addition to the reservations under Sections 104 to 106 of the Act of 1884, referred to above, Crown lands may also be temporarily reserved as sites for cities, towns, or villages under Section 101 of the same Act, and may be reserved for mining purposes under Section 106 of the Mining Act 1906. Crown lands within one mile of any made or projected railway may be temporarily reserved from sale under Section 103 of the Crown Lands Act 1884, and under Sections 112 to 114 of that Act any Crown lands may be reserved from sale for the preservation and growth of timber. Further, under Section 39 of the Crown Lands Act 1889, Crown lands may be reserved by notification in the *Gazette* from being sold or let upon lease or license, in such particular manner as may be specified, or may be reserved from sale or lease generally.

(ii.) *Areas Granted and Reserved, 1907.* During the year 1907 the total area for which free grants were issued was 305 acres. Of that area 32 acres were granted for religious purposes, 23 acres for public purposes, and 250 acres under Volunteer Land Orders. During the same period 1509 acres were dedicated and permanently reserved; of that area 670 acres were for quarantine purposes, 454 acres for public recreation grounds, and 147 acres for travelling stock and camping grounds.

3. **Victoria.**—Under Section 10 of the Land Act 1901 the Governor is authorised to reserve Crown lands, either temporarily or permanently, from sale, lease, or license for any public purpose whatsoever. In case of temporary reservations the land cannot be sold or leased, nor a license be granted until the temporary reservation has been revoked, and in case of permanent reservation all conveyances and alienations except for the purpose for which the reservation is made are void both against the Crown and against all other persons.

During the year 1907 forty-nine free grants, comprising an area of 861 acres, were issued for railway, municipal, or water supply purposes, or as sites for cemeteries, or for extension of Melbourne University. During the same year 134 reservations of a permanent nature, comprising an area of 1770 acres, were made; of this area 486 acres were reserved for public purposes, 373 acres for recreation grounds, 292 acres for watering and camps, 56 acres for water-supply purposes, 37 acres for State schools, and 20 acres for railway purposes.

4. **Queensland.**—Under Section 190 of the Land Act 1897 the Governor-in-Council may grant in trust or may reserve from sale or lease, either temporarily or permanently, any Crown lands required for any of the various charitable, educational, and public purposes specified therein, and may, by proclamation and without issuing any deed of grant, place any lands so reserved under the control of trustees.

(i.) *Reservations.* Under Section 19 of the same Act the Governor-in-Council may set apart any Crown lands as reserves for public purposes, and under Section 2 of the State Forests and National Parks Act 1906 he may permanently reserve any Crown lands and declare them to be a State Forest or a National Park.

(ii.) *Areas Granted and Reserved, 1907.* During the year 1907 there were thirty-three free grants for a total area of 943 acres issued. During the same period 167 reserves, having an area of 487,766 acres, were proclaimed, of which 375,227 acres were for State forest reserves, 67,718 acres for timber reserves, 18,878 acres for camping and water, and 17,924 acres for stock-dip reserves.

5. **South Australia.**—Under Section 7 (d) of the Crown Lands Act 1903 the Governor is empowered to dedicate by proclamation any Crown lands for various charitable, educational, and public purposes, and may, at any time after dedication, grant the fee simple of such lands to secure the use thereof for the purpose for which they were dedicated.

(i.) *Reservations.* Under Section 7 (*f*) of the same Act the Governor may by proclamation reserve any Crown lands (*a*) for the use of aborigines, (*b*) for the purposes of military defence, (*c*) for forest or travelling-stock reserves, (*d*) for public recreation grounds, (*e*) for railways or tramways, and (*f*) for park lands.

(ii.) *Artesian Leases.* Under special circumstances free leases of pastoral lands may be granted to discoverers of artesian wells. (See § 8. 5. vi. c.)

(iii.) *Areas Granted and Reserved, 1907.* During the year 1907 free grants were issued for a total area of 200 acres, of which 99 acres were for water-works purposes, 43 for railways, 22 for schools, and the remainder for institute, show, cemetery, and district council purposes. During the same year sixty-seven reserves, comprising 47,831½ acres, were proclaimed; of this area 38,400 acres were for native fauna and flora reserves, 6459½ acres for water reserves, 1216½ acres for forests, and 643 acres for marine boards.

6. **Western Australia.**—Under Section 39 of the Land Act 1898, as amended by Section 27 of the Act of 1906, the Governor is authorised to except from sale, and to reserve to the Crown or to dispose of in such other manner as may seem best for the public interest, any Crown lands which may be required for the various religious, charitable, and public purposes specified. These reservations may be either temporary or permanent, but if temporary the reservation lapses unless confirmed within twelve months. Any reserve may either be alienated in trust for the purpose specified, the trustees having power of leasing for any term not exceeding twenty-one years, or may be leased for a term of 999 years. The Governor is further authorised, without issuing any deed of grant, to place any reserve under the control of any person or body of persons, as a board of management.

During the year 1907 free grants for 132 acres were issued, while the area reserved was 406,116 acres. Further particulars are not available.

7. **Tasmania.**—There are no free grants of the fee simple of Crown lands in this State. Under Section 24 of the Crown Lands Act 1903, however, the Governor may by proclamation reserve any Crown lands for the purposes therein specified, and may thereafter, in order to give effect to any such proclamation, vest for such term as he thinks fit any lands so reserved in any person or body of persons. Under this section lands are reserved from sale and are ordinarily leased to the trustees of public bodies for a period of ninety-nine years at a peppercorn rental. These leases contain provisions that the lands shall be appropriated only to the purposes for which they were reserved. Upon breach of such provisions the lands are forfeited to the Crown.

During the year 1907 there were six free leases, comprising an area of 6715 acres, issued. Of this area 6690 acres were for the purpose of a catchment area for water supply. During the same period 6780 acres were reserved, 6760 acres being reserved for water catchment.

§ 6. Sales by Auction and Special Sales.

1. **Introduction.**—In all the States sales by auction of Crown lands are held from time to time. Notifications of such sales are given in the *Government Gazette*, together with particulars as to the upset price and conditions of sale. Excepting in the case of South Australia, where land is sold at auction for cash only, the purchase may be either for cash or on credit by deferred payments. In most of the States land may also be purchased by private contract at the upset price, when it has been offered at auction and not sold. In the case of auction sales on credit in the States of Western Australia and Tasmania, certain improvement conditions are imposed, and such sales are therefore classed for the purposes of this article among *Conditional Purchases*. (See § 7 below.)

In most of the States comparatively small areas of Crown lands may be sold without competition under special circumstances. Sales by auction and special sales under Closer Settlement Acts are referred to in a later part of this section. (See § 9.)

2. New South Wales.—Under the Crown Lands Act 1884 lands not exceeding in the aggregate 200,000 acres for the whole State may be sold by auction during any one year. The sales are notified in the *Gazette* not less than one month before the day of sale. The upset prices may not be less than £8 an acre for town lands; £2 10s. for suburban lands; and other lands fifteen shillings. Town lands may not be sold in areas exceeding half-an-acre; suburban lands in areas exceeding twenty acres; and country lands in areas exceeding 640 acres. A deposit of 25 per cent. on the purchase-money must be paid at the sale, and the remainder within three months.

(i.) *Deferred Payment on Auction Sales.* Under the Auction Sales Balances Act 1887 and the Crown Lands Amendment Act 1903 special terms of payment may be made on auction sales of land subdivided into areas not exceeding forty acres. The time for deferred payments may not exceed five years and the instalments carry interest at five per cent. per annum. A cash deposit of 25 per cent. on the purchase-money must be paid.

(ii.) *After-auction Sales.* Under the Crown Lands Amendments Acts 1895 and 1903 lands which have been offered for sale at auction and not sold may be granted at the upset price to any person applying. A deposit of 25 per cent. on the upset price must be paid, and the remainder according to the terms on which the land was offered at auction.

(iii.) *Special Sales without Competition.* Under the Crown Lands Act 1884 the Governor is authorised to rescind the reservation of water frontage, or of land adjoining such frontage, contained in any Crown grant, and to sell the land, the subject of such rescission, at a fair price not less than the upset price, to the owner of the land contained in the grant. Crown lands may be sold to the owners of adjacent lands in a similar manner in the following cases:—(a) Where there is no way of access attainable, (b) where the lands comprised are insufficient in area for conditional sale, (c) where the lands are situated between granted land and a road which should form the way of approach to such granted land, (d) where the lands are encroached upon by buildings erected on granted land, and (e) where lands have been reclaimed with the authority of the Governor from below high-water mark.

(iv.) *Improvement Purchases.* Although termed an "improvement" purchase, this type of sale is not conditional on the subsequent fulfilment of any improvement conditions. Only lands within proclaimed goldfields are available for improvement purchase. The areas which may be acquired in this manner may not exceed one-quarter of an acre within the boundaries of a town or village defined as such in the Mining Act; or two acres of land outside such boundaries. The price of the land is fixed by the Local Board, and must not be less than at the rate of £8 per acre for town lands, and £2 10s. for suburban or other lands, or for any area less than one acre. The applicant must be in authorised occupation under the Mining Act of the land he applies for, and must be the owner of the improvements thereon in virtue of which his application is made, and such improvements must be of value equal to the respective minimum rates above-mentioned, i.e., £8 an acre for town lands, and £2 10s. an acre for suburban or other lands, or for an area less than one acre. No person who has made an improvement purchase may make a subsequent purchase of the same kind within three miles of a prior purchase by him.

(v.) *Alienation by Auction and Special Sales.* During the year ended the 30th June, 1907, the area of Crown lands sold by auction and special sales amounted to 26,515 acres, of which 21,071 acres were sold by auction; 4246 were sold by after-auction sales; 57 acres were sold as improvement purchases; and 1131 acres were sold as special purchases. The following table gives particulars of Crown lands alienated by auction and special sales during each year from 1901 to 1907:—

NEW SOUTH WALES.—AUCTION AND SPECIAL SALES, 1901 to 1907.

| Year. | Auction and After-auction Sales. | Improvement Purchases. | Special Sales. | Total. | |
|-----------------------|----------------------------------|------------------------|----------------|--------|---------|
| | | | | Area. | Price. |
| | Acres. | Acres. | Acres. | Acres. | £ |
| 1901 ... | 49,074 | 43 | 445 | 49,562 | 116,562 |
| 1902 ... | 50,110 | 801 | 1,022 | 51,933 | 115,625 |
| 1903 ... | 40,610 | 23 | 576 | 41,209 | 117,879 |
| 1904 ... | 53,556 | 23 | 1,185 | 54,764 | 120,946 |
| 1905 ¹ ... | 22,390 ³ | 6 | 129 | 22,525 | 99,246 |
| 1906 ² ... | 22,774 ³ | 36 | 2,616 | 25,426 | 86,802 |
| 1907 ³ ... | 25,327 ³ | 57 | 1,131 | 26,515 | 132,127 |

1. Half-year ended 30th June. 2. Year ended 30th June. 3. Including land sold under the Centenary Park Sale Act.

The total areas alienated by auction and other forms of sale up to the 30th June, 1907, are shewn below. (See § 12.)

3. **Victoria.**—The lands comprised within the areas described in a schedule attached to the Land Act 1901 and any land in any city, town, or borough, may be sold by auction in fee simple, not exceeding 100,000 acres in any one year, at an upset price of £1 an acre, or at any higher price determined. Before any country lands can be sold a schedule thereof must be laid before both Houses of Parliament. The purchaser must pay the survey charge at the time of the sale, together with a deposit of 12½ per cent. of the whole price; the residue is payable in equal half-yearly instalments not exceeding forty in number, according to the amount, with interest at the rate of 4 per cent. per annum, or may be paid at any earlier time at the option of the purchaser. On failure of the payment of any instalment with interest, the deposit and any instalments already paid are liable to forfeiture, and the contract becomes void. Isolated portions of Crown lands not exceeding fifty acres, or any portion not exceeding three acres required as a site for a church or for any charitable purpose, for which land cannot legally be reserved, may also be sold by auction. There are stringent provisions and penalties against illegal agreements to prevent fair competition at auction sales.

(i.) *Special Sales without Competition.* Detached strips of land not exceeding twenty acres may be sold at a valuation to the owner of the adjoining freehold in cases similar to those specified above in respect to Crown lands in New South Wales.

(ii.) *Areas Sold at Auction and by Special Sales, 1901 to 1907.* The following table gives particulars of auction sales and special sales for each year from 1901 to 1907:—

VICTORIA.—AUCTION AND SPECIAL SALES, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Country lands ... | 4,079 | 3,297 | 4,936 | 3,154 | 3,267 | 2,060 | 2,776 |
| Town and suburban lands ... | 2,127 | 2,259 | 1,957 | 1,924 | 2,129 | 1,946 | 1,369 |
| Special sales ... | 846 | 1,748 | 6,330 | 4,510 | 3,382 | 2,636 | 2,168 |
| Total ... | 7,052 | 7,304 | 13,223 | 9,588 | 8,778 | 6,642 | 6,313 |

Particulars of total areas alienated are given below. (See § 12.)

4. **Queensland.**—The Governor may proclaim any Crown lands to be sold by auction. Town or suburban lots must be offered as nearly as possible according to the following scale:—Town lands in allotments of from one rood to one acre, at an upset price of £8 per acre; suburban lands, if within one mile from town lands, in lots of from one to five acres, and if over one mile from town lands, in lots of from one to ten acres, the upset price being £2 per acre. In respect of country lands, the maximum area which may be sold by auction in any one year is 500,000 acres, and the upset price is fixed at £1 an acre for lands classed as agricultural, and not less than ten shillings per acre in the case of other lands. The area of any portion of country lands so sold may not exceed 5120 acres. In sales by auction both of country and of town lands, a deposit, as specified in the proclamation, must be paid at the time of sale, and the balance, including the value of improvements on the land, together with assurance and survey fees, must be paid within one month from the date of sale.

(i.) *Deferred Payment on Auction Sales.* The Governor may, by the proclamation under which the sale is notified, vary the conditions as to the amount of the deposit and the times for payment of the balance. The time for payment may not, however, be extended beyond ten years. If the time for payment is extended beyond six months, all instalments payable at a later date bear interest at 5 per cent. per annum.

(ii.) *After-auction Sales.* The proclamation of lands for sale by auction may specially declare that any lands therein mentioned, which have been offered at auction, but not sold, shall be open to purchase at the upset price by the first applicant. The price may be paid in the same instalments and at the same periods as if the land had been bought at the auction.

(iii.) *Special Sales without Competition.* Land may be sold without competition to the holder or holders of adjoining lands at a price to be determined by the Land Court, under circumstances similar to those specified above in the case of New South Wales. When the holder of any land proves that, owing to danger from floods or other reasons, it is unsafe to reside on his holding, he may be granted, on payment of a price determined by the Land Court, an area not exceeding ten acres out of the nearest convenient and available Crown lands.

(iv.) *Areas Sold at Auction, after Auction, and by Special Sales, 1901 to 1907.* The following table shews the areas sold at or after auction, and by special sales during each year from 1901 to 1907:—

QUEENSLAND.—AUCTION AND SPECIAL SALES, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|--------|---------|---------|---------|---------|--------|--------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Town | 334 | 156 | 167 | 197 | 128 | 340 | 285 |
| Suburban | 793 | 620 | 277 | 389 | 363 | 706 | 364 |
| Country— | | | | | | | |
| Ordinary sales | 52,132 | 17,870 | 119,092 | 92,553 | 157,839 | 15,481 | 11,556 |
| Special sales | ... | 174,470 | 33,512 | 9,939 | 1,659 | ... | 3,716 |
| Total | 53,259 | 193,116 | 153,048 | 103,078 | 159,989 | 16,527 | 15,921 |

Particulars as to the total areas alienated by all forms of purchase up to the end of each year from 1901 to 1907 are given in a later part of this section. (See § 12 below.)

(v.) *Unconditional Selections.* Although termed a "selection," this form of tenure partakes rather of the nature of a sale by auction with deferred payment than of a conditional purchase. Areas of land are available for unconditional selection at a price ranging from thirteen shillings and fourpence upwards, which is payable in twenty annual instalments. The maximum area which can be acquired by any one person as an unconditional selection is 1280 acres. As the term implies, no other condition than the payment of the purchase-money is attached to this mode of selection; a negotiable lease for the term of twenty years is issued to the selector when his application to select has been approved by the Court, and a deed of grant may be obtained at any time on payment of the balance of the purchasing price. An agricultural farm, or an agricultural homestead, may be converted into an unconditional selection, and an unconditional selection may be converted into an agricultural farm.

The following table shews the number and area of unconditional selections for which applications were accepted during each year from 1901 to 1907:—

QUEENSLAND.—UNCONDITIONAL SELECTION, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------|--------|--------|--------|--------|--------|--------|--------|
| Number | 151 | 91 | 71 | 59 | 90 | 130 | 91 |
| Area ... Acres | 24,322 | 15,464 | 10,449 | 14,758 | 10,586 | 25,262 | 25,382 |
| Rent ... £ | 1,180 | 714 | 511 | 754 | 481 | 1,113 | 1,042 |

5. *South Australia.*—The following lands may be sold by auction for cash:—(1) *Special blocks.* Any single section of Crown lands which may be surrounded by lands sold or contracted to be sold, and any section or block of land (not exceeding 100 acres in area) which may be required for the establishment of any industry, trade, or business. (2) *Crown lands which have been offered for perpetual lease, and not taken up for two years.* (3) *Town lands.* (4) *Suburban lands,* which the Governor by proclamation may except from being dealt with by the Board. The upset price of any land offered at auction is determined by the Commissioner, and 20 per cent. of the purchase-money must be deposited at the time of sale, and the residue must be paid within one month or within such extended time as the Commissioner may allow. Purchase-moneys derived from the sale of lands by auction are paid into a fund primarily applicable to the payment of such portion of the public liabilities as shall be specially charged thereon.

(i.) *After-auction Sales.* All Crown lands, except town or suburban lands, offered at auction and not sold remain open for leasing or sale under agreement or may be sold by private contract for cash at the upset price.

(ii.) *Sales for Special Purposes.* Under section 201 of the Crown Lands Act 1903 the Governor may, on the application of the purchaser or lessee under any of the Crown Lands Acts, grant any of the land comprised in such agreement or lease to a corporation or to trustees, to be used for any public or charitable purposes, not exceeding two acres, for any one purpose, or he may, on the application of the holder of a lease or agreement, grant not over one acre of land, comprised in such lease or agreement, as a site for a blacksmith's or carpenter's shop, mill, store, or post office, provided that the land is not situated within five miles of any town lands. The purchase-money for such land must be paid at the time of application.

(iii.) *Northern Territory, Auction Sales.* Town and suburban lands may be offered for sale by auction at an upset price of not less than £1 an acre, and country lands at an upset price of not less than ten shillings an acre: 20 per cent. of the amount of the

purchase-money must be paid at the time of sale, and the balance within one month. Town and suburban lands may also be sold by private contract.

(iv.) *Areas Sold for Cash, 1901 to 1907.* The following table shews the areas sold for cash during each year from 1901 to 1907, inclusive. The total areas sold under all types of sale at the end of each year from 1901 to 1907 is shown in a later part of this section. (See § 12.)

SOUTH AUSTRALIA.—AUCTION AND SPECIAL SALES, 1901 to 1907.

| Year | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------|--------|--------|--------|--------|--------|--------|--------|
| Area in acres ... | 11,314 | 18,595 | 30,512 | 31,756 | 77,022 | 69,060 | 70,349 |

6. **Western Australia.**—Town and suburban lands throughout the colony, after being surveyed into lots and notified in the *Gazette* as open for sale, may be sold by public auction at an upset price to be determined by the Governor-in-Council. Any person may apply to the Minister to put up for sale by auction any lot already surveyed on depositing 10 per cent. of the upset price, which is refunded in the event of the applicant being outbid at auction. The purchaser must pay 10 per cent. on the fall of the hammer, unless he has already paid a sufficient deposit on application, and must ordinarily pay the balance of the purchase-money, and the value of the improvements, if any, by four equal quarterly instalments. In the case of suburban lands, the purchaser must carry out certain improvements, which are more particularly referred to below. (See § 7. *Conditional Purchases*, 6, vii.) On payment of the first instalment of the purchase-money a license is issued to the purchaser, and his license may be transferred or mortgaged.

(i.) *Areas Sold by Auction, 1901 to 1907.* The following table shews the areas of town and suburban lands sold at auction during each year from 1901 to 1907 :—

WESTERN AUSTRALIA.—AUCTION SALES, 1901 to 1907.

| Year | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Area sold .. Acres | 856 | 941 | 978 | 1,397 | 1,076 | 1,109 | 1,895 |
| Number of Allotments | 1,366 | 1,240 | 1,049 | 946 | 950 | 935 | 995 |

Particulars as to total areas alienated are given in a later part of this section. (See § 12 below.)

7. **Tasmania.**—Any town lands may be sold at auction or by private contract, either for cash or on credit, provided that no such lands may be sold on credit if the price is less than £15. Rural lands may also be sold at auction or by private contract, but lots of first-class land may not be sold on credit if less than fifteen acres in area. In the case of sales on credit both of town and rural lands, improvement conditions are imposed, and such sales are therefore classified for the purposes of this article as *Conditional Purchases*. (See § 7.) The area of any rural lot sold may not exceed: (a) 200 acres (nor be less than fifteen acres, if sold by private contract) of first-class land; (b) 250 acres, nor be less than thirty acres of second-class land; and (c) 500 acres, nor be less than 60 acres of third-class land.

(i.) *After-auction Sales.* All rural lands and town lands, not within five miles of any city, which have been offered at auction and not sold, may be purchased by private contract at the upset price, and subject to the conditions on which they were offered at auction.

(ii.) *Sale of Land in Mining Towns.* The surface of any Crown land within a mining town occupied as a residence area or a business area (see § 8, below) may be sold at auction. The holder of a residence or business license, who is in occupation and is the owner of buildings and improvements upon the area licensed of a value equal to the upset price of such area, is entitled to purchase the area at the upset price, which may not be less than £10, exclusive of improvements. The area so purchased may not in any case exceed half an acre. The areas may be sold on credit, one-third of the price being added as premium. The purchaser must pay a deposit of one-fourteenth of the price at the time of sale, and the remainder by thirteen annual instalments.

(iii.) *Areas Sold for Cash, 1901 to 1907.* The following table shews the areas sold for cash during each year from 1901 to 1907, inclusive:—

TASMANIA.—AUCTION AND SPECIAL SALES, 1901 to 1907.

| Year | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------|-------|-------|-------|-------|-------|-------|-------|
| Area in acres ... | 1,915 | 4,021 | 6,411 | 162 | 404 | 463 | 504 |

Particulars of total areas alienated are given in a later part of this section. (See § 12.)

§ 7. Conditional Purchases.

1. **Introduction.**—In all the States of the Commonwealth the freehold of the land may be acquired under what are known as systems of conditional purchase by deferred payments of half-yearly or yearly instalments. Certain conditions, generally as to residence and improvements, have to be complied with before the freehold is granted, but these conditions are usually of a light nature and are inserted chiefly with the object of guaranteeing that the occupier will become of benefit to the community by making a reasonable effort to render his holding wealth-producing. Though there is a considerable similarity between some of the forms of tenure in the several States, the terms and conditions vary greatly in detail. As a rule a lease or license for a certain period is first issued to the selector, and upon fulfilment of the prescribed conditions and payment of the full amount of purchase-money the freehold is conveyed to him. In Queensland and Western Australia “free” homesteads may be acquired. Although under these tenures no purchase-money is payable, the grant is conditional on the performance of residential and improvement conditions; these tenures are therefore included here with conditional purchases rather than with free grants.

2. **New South Wales.**—The following are the methods by which land may be alienated by conditional purchase:—(i.) Residential conditional purchase; (ii.) non-residential conditional purchase; (iii.) conversion of conditional purchase; and (iv.) homestead selections.

(i.) *Residential Conditional Purchase.* Any vacant Crown lands in the “Eastern Division” and “Central Division” are available for conditional purchase, but only those set apart by proclamation as special areas are open in the “Western Division.” For a holding of this class an applicant must be not less than sixteen years of age, and must pay on application both the prescribed deposit and a survey fee according to a fixed scale.

The area which may be selected depends upon the division in which the land is situated. In the Eastern Division the minimum and maximum areas are respectively 40 and 640 acres; in the Central 40 and 2560 acres; and in a special area the maximum is 320 acres in the Eastern and 640 acres in the Central or Western Divisions. The deposit is 10 per cent. of the price of the land, which is ordinarily available at the statutory value of £1 an acre, subject to the applicant's right to apply for an appraisalment where he considers such price excessive. At the end of the third year from the date of application the purchaser must pay an instalment of 5 per cent. of the price of the land. This instalment includes interest at the rate of $2\frac{1}{2}$ per cent. on the outstanding balance of the purchase-money due to the Crown, and he must continue to pay a similar instalment annually until such balance and interest have been paid off.

The following conditions are attached to the holding, viz.:—That it must be fenced within three years, or be improved to the value of six shillings an acre within the same period, and to the value of ten shillings an acre at the end of the first five years. The settler must commence to reside on his holding within three months from the date of the confirmation of his application by the Land Board, and continue to do so for a period of ten years from the date of application, but for sufficient reason this condition may be suspended. Members of a family taking up land situated within working distance of each other, may fulfil the condition of residence in respect of their holdings by living on any one of them. The conditional purchase may be transferred after the issue of the first certificate of fulfilment of conditions. This certificate will be issued at the expiration of five years from the date of application if the required conditions have been fulfilled up to that date, and if the holding be transferred the transferee must reside thereon during the remainder of the unexpired residence term of ten years.

The holder of a conditional purchase may at any time, if land be available, apply for an additional conditional purchase (of unclassified land) the area of which, together with that of the original holding, may not exceed the maximum limits stated above. The Crown Lands Act of 1903, however, provides that the areas specified may be exceeded by allowing an applicant to acquire additional holdings of classified land, the area of which, together with that of all other lands held by the applicant other than under annual tenure, must not exceed such an area as, in the opinion of the Land Board, is sufficient for the maintenance of his home thereon in average seasons and circumstances. The additional holdings need not be contiguous to the original holding, but must be within reasonable working distance thereof.

(ii.) *Non-residential Conditional Purchase.* When land is conditionally purchased without residence the maximum area obtainable is 320 acres, and the minimum 40 acres. The price, deposit, and annual instalments are double those required under residential conditions. The selection must be enclosed with a fence within twelve months from the date of confirmation of application, and within five years improvements, other than boundary fencing, must be made to the value of £1 an acre, or, with the permission of the Local Board, other improvements to the value of thirty shillings an acre may be substituted for fencing. No person under twenty-one years of age may select land on non-residential terms, and anyone who has made a non-residential conditional purchase is not allowed to make any other conditional purchase.

(iii.) *Conversion of Conditional Purchase Leases.* Under the Crown Lands Amendment Act 1905, a conditional purchase lease, for which the term is forty years, carries with it a right of conversion into a conditional purchase at any time during its currency, and ultimately into a freehold. These leases are more particularly referred to below. (See § 8. *Leases and Licenses.*)

(iv.) *Applications Made and Confirmed and Decds Issued, 1901 to 1907.* During the year ended the 30th June, 1907, grants were issued on the completion of conditional purchases for 1,261,660 acres, making the total area for which such grants were issued up to the end of the financial year 10,264,221 acres. The following table gives particulars of conditional purchases for each year from 1901 to 1907:—

NEW SOUTH WALES.—CONDITIONAL PURCHASES. 1901 to 1907.

| Year. | Applications Made. | | Applications Confirmed. | | Areas for which Deeds have been Issued. | |
|-----------------------|--------------------|----------------------|-------------------------|---------------------|---|---------------------|
| | Number. | Area. | Number. | Area. | During the Year. | To end of Year. |
| 1862-1900 ... | 254,303 | Acres. 34,672,319 | 46,449 | Acres. 8,169,874 | Acres. ... | Acres. 3,711,635 |
| 1901 ... | 2,277 | 549,898 | 1,555 | 360,910 | 500,554 | 4,212,189 |
| 1902 ... | 2,340 | 400,710 | 1,691 | 360,235 | 1,005,391 | 5,217,580 |
| 1903 ... | 2,113 | 332,886 | 1,823 | 297,267 | 792,449 | 6,010,029 |
| 1904 ... | 2,922 | 523,102 | 1,793 | 285,930 | 959,596 | 6,969,625 |
| 1905 ¹ ... | 1,456 | 245,468 | 1,013 | 161,701 | 584,827 | 7,554,452 |
| 1906 ² ... | 3,123 | 496,781 | 2,088 | 343,832 | 1,448,109 | 9,002,561 |
| 1907 ² ... | 3,723 | 685,795 | 2,639 | 443,679 | 1,261,660 | 10,264,221 |
| Total ... | 272,257 | 37,911,959 | 59,051 | 10,423,428 | 6,552,586 | 10,264,221 |

1. Half-year ended 30th June. 2. Year ended 30th June.

Further particulars as to the total areas alienated and in process of alienation are given below. (See § 12.)

(v.) *Homestead Selection.* Under a principle of classification and measurement introduced by the Act of 1895 suitable land may be classified for homestead selection, which tenure is similar in many respects to perpetual leases in other States. (See § 8, *Leases and Licenses*, below.) In a homestead selection, however, the freehold of the land may be acquired, subject to the payment of an annual rent, whereas in a perpetual lease the freehold is not alienated. The areas set apart for homestead selection are either good agricultural lands, divided into blocks, each large enough for one family, or suitable lands, within easy access of towns, divided to suit the requirements of business people. Conditions as to area of blocks, capital value, etc., are published in the *Gazette*, and the selector is limited to one block, as gazetted, the area of which must not be greater than 1280 acres. The selector must reside continuously on the land for five years, on the expiration of which a grant will be issued. After the issue of the grant he must continue to reside on the holding for at least seven months in the year. The annual rent for the first six years will be an amount equal to $1\frac{1}{2}$ per cent. of the capital value of the land, after which the rent will be increased to $2\frac{1}{2}$ per cent. of the capital value, which is determined according to the character and situation of the holding, and is subject to re-appraisement every ten years. Should an area granted under this tenure be found to be insufficient for the maintenance of a home in average seasons and circumstances, it may be increased to a home maintenance area by additional homestead selection. The additional holding need not necessarily adjoin the original holding, but must, in the opinion of the Land Board, be situated within a reasonable working distance thereof. Any person who is eligible to take up a conditional purchase may apply for a homestead selection. The incoming tenant must pay for improvements at a price to be determined by the Land Board, but if the appraised value of such improvements be greater than 20 per cent. of the estimated value as notified in the *Gazette*, the applicant may withdraw his application and obtain a refund of all moneys paid. Tenant right in improvements may be obtained under certain circumstances, and the holding may be so protected that it cannot, under any circumstances, be taken from the selector. Holders of conditional purchases may convert their holdings into homestead selections.

During the year ended the 30th June, 1907, there were 291 homestead selections applied for, comprising an area of 89,426 acres. During the same period the total number of applications confirmed was 251, comprising 70,957 acres, and 391 homestead grants were issued for 160,854 acres. Further particulars for previous years are given in a later part of this section. (See § 12.)

3. **Victoria.**—The freehold of agricultural and grazing lands may be acquired by conditional purchase under the following tenures:—(i.) Agricultural allotments; (ii.) grazing allotments; (iii.) agricultural and grazing allotments by selection from grazing area or perpetual leases; (iv.) homestead selections from pastoral leases; (v.) Mallee agricultural licenses; and (vi.) swamp or reclaimed lands purchase leases. Numbers (i.), (ii.) and (v.) may be either on residential or on non-residential conditions.

A selection may be obtained by any person over the age of eighteen years, either by taking a grazing area lease or a perpetual lease and selecting thereout, as described below, or by obtaining directly (a) an agricultural allotment of first or second-class lands, or (b) a grazing allotment in the case of third-class lands, which tenures enable the freehold to be paid for in twenty or forty years at the option of the applicant. The minimum price for the freehold is, in the case of first-class land, £1 an acre; second-class land, fifteen shillings an acre; and third-class, ten shillings an acre, and the prices may be enhanced according to the valuation of the land. Any person may become the licensee of more than one agricultural or grazing allotment, provided the total acreage does not exceed the limit for its class of land, but no selector may pick out the best or any part of an allotment, leaving the balance unselected, and afterwards apply for an agricultural allotment elsewhere.

(i.) *Agricultural Allotments.* Either residential or non-residential licenses to occupy an agricultural allotment not exceeding in the whole 200 acres of first-class land or 320 acres of second-class land are issued to any person over the age of eighteen years, who has not already made a selection under the Land Acts, or has not taken up a pre-emptive right to the extent of the maximum number of acres in the first or second class (as the case may be), or who is not in respect of the license applied for an agent, servant, or trustee for any other person, or who has not, at the time of the application, entered into any agreement to permit any other person to acquire by purchase or otherwise the allotment in respect of which such application is made.

(a) *Residential Licenses* are granted for six years at a fee, according to the valuation of the land, of not less than one shilling an acre per annum in the case of first-class land, and not less than ninepence an acre per annum in the case of second-class land, payable half-yearly in advance. The licensee may not transfer, assign or sublet, but may give a lien up to half the value of the improvements effected to any person for money advanced; he must destroy vermin on the land, and must within six years from the issue of his license enclose the land with a fence, or he may, if he prove to the satisfaction of the Board that such a fence is impracticable or is not required, expend in permanent improvements an amount equivalent to the cost of fencing. The licensee must enter into occupation within twelve months from the issue of the license, and must occupy the allotment thenceforward during the continuance of the license. Any licensee may during each year, however, absent himself from his allotment for not more than three months, by registering with the district land officer a notice of his intention to so absent himself; and if his home is situated upon the allotment the Board may consent for a specified period to substituted occupation by the wife or by a child over the age of eighteen years; or, if he has no wife or child, by the father or mother of the licensee, provided that he or she is dependent upon him for support. During the currency of the license the Crown reserves the right to resume possession of any of the land required for reserves or for public or mining purposes, subject to repayment to the licensee of all moneys paid by him as rent to the Crown, and of a reasonable sum as compensation for such resumption. Substantial and permanent improvements must be made to the value of £1 for every acre if of first-class land, or of the value of fifteen shillings for every acre if of second-class land, during the following periods and on the following basis:—If the land be first-class land, to the value of three shillings and fourpence for each acre before the end of the second year from the date of issue of the license, another three shillings and fourpence before the end of the third year, another three shillings and fourpence before the end of the fourth year, and the balance before the end of the sixth year; if the land be second-class, to the value of two shillings and sixpence for each of the same periods as in the

case of first-class land. Upon satisfying the Board that all conditions of the license have been fulfilled, the licensee is entitled at any time within twelve months after six years from the commencement of the license to obtain a grant upon payment of the balance of the purchase-money; or otherwise he may obtain a lease of the allotment for a term of fourteen years at the same rental as the fee paid under license. The lessee is entitled upon payment at the end of the term of the last instalment due on account of the rent reserved, or at any time during the currency of the lease by payment of the difference between the amount of rent actually paid and the entire sum payable for the purchase of the land, to obtain a grant in fee of the lands leased.

Residential licenses are also granted, subject to the same covenants and conditions as stated above, but varied with regard to the term and to the amount of the fee and rent reserved, as follows, being double the term at half the yearly payment:—The fee for occupation to be, according to the valuation of the land, not less than sixpence nor fourpence halfpenny an acre per annum in the case respectively of first or second-class land, the term of a lease to be thirty-four years' annual rent of the same amounts, instead of only fourteen years at double the rental.

(b) *Non-residential Licenses* for both agricultural and grazing (see below) allotments may be issued on conditions identical with the above, with the exception that the term of the lease granted after the license period must be on the fourteen years basis only. The improvements which may be effected are as follows:—(a) In the case of agricultural allotments, to the value of six shillings and eightpence an acre during each year of the license for first-class land, and five shillings an acre during each of the first three years of the license for second-class land. (b) In the case of grazing allotments, three shillings and fourpence an acre during each of the first three years, for third-class land. During any one year non-residential licenses may not be issued for more than 50,000 acres.

(ii.) *Grazing Allotments.* Licenses for grazing allotments of third-class lands are issued similarly to agricultural allotment licenses. The area of a grazing allotment must not exceed 640 acres of third-class land; the period of license is six years at an annual occupation fee, according to the valuation of the land, of not less than sixpence an acre for the twenty-year term, or threepence for the forty-year term. The licensee must enter into occupation within six months after the issue of the license. Improvements must be effected to the value of ten shillings an acre (five shillings per acre before the end of the third year and the balance before the end of the sixth year). Other conditions are similar to those in case of agricultural allotments. If the conditions be complied with the licensee is entitled, at any time within twelve months after six years from the commencement of the license, to obtain a grant in fee upon payment of the balance of the purchase-money; otherwise he may obtain a lease of the allotment for a term of fourteen years, or thirty-four years at the same rental as the fee paid under license. The Crown grant will be issued at the end of the term or at any time sooner by payment of the entire purchase-money.

As to non-residential licenses see *Agricultural Allotments* (b) above.

(iii.) *Agricultural and Grazing Allotments by Selection from Grazing Area, Perpetual, or Auriferous Lands Leases.* The lessee of a grazing area lease may select thereout, if the grazing area consist of first-class land, an agricultural allotment of not more than 200 acres; if of second-class land, an agricultural allotment of not more than 320 acres; or if of third-class land, a grazing allotment of not more than 640 acres. If the residence and improvement conditions necessary under a license have already been complied with, the license may be antedated any period, not exceeding 6 years, upon payment of the difference in the rent for such period and a grant may, therefore, be obtained immediately (see 3. (i.) (a) above). Grazing area leases are more particularly referred to below, under the heading of *Leases*. (See § 8, 3. i.) Either residential or non-residential, agricultural or grazing allotments may also be selected under certain circumstances by holders of perpetual leases, or of auriferous lands leases, out of the land leased. (See § 8, 3. ii. and iv.)

(iv.) *Homestead Selections from Pastoral Leases.* A lessee of a pastoral allotment, upon compliance with all conditions, may at any time during the currency of the lease select any portion of the allotment as a homestead not exceeding 200, 320 or 640, acres of first, second or third-class land respectively on payment therefor at the rate of £1, fifteen shillings or ten shillings per acre, according to the class of the land. Further particulars of pastoral allotments are given below, under the heading of *Leases*. (See § 8, 3, vi.)

(v.) *Mallee Agricultural Licenses.* These licenses are issued for first, second, and third-class Mallee lands, similarly to licenses for agricultural and grazing lands explained above, but for larger areas, the maximum being 640, 1000, and 1280 acres of first, second, and third-class land respectively. Selections must form one continuous area, separated only by roads. The purchase price for selection is fixed at £1 an acre for first-class, fifteen shillings for second-class, and ten shillings for third-class land, unless the value of the land is greater than the amounts stated. The licenses are for six years, and are issued subject to similar conditions (both residential and non-residential) as agricultural allotments. (See above.) At the expiration of a license, or on obtaining a lease, if all conditions have been complied with, the selector is entitled to a grant upon payment of the difference between the amount of rent actually paid and the entire purchase-money. Holders of Mallee perpetual leases may select thereout an agricultural allotment. (See § 8, 3, iii.)

(i.) *Swamp or Reclaimed Lands Purchase Leases.* The special conditions attached to conditional purchase leases of swamp or reclaimed lands are referred to below. (See § 8, 3, v.)

(vii.) *Area Selected Conditionally and Area Sold, 1901 to 1907.* The subjoined table gives particulars shewing the areas selected conditionally during each year from 1901 to 1907. A large proportion of the areas shewn has reverted to the Crown in consequence of non-fulfilment of conditions. The particulars given include conditional purchases under Closer Settlement and similar Acts. (See § 9, below.)

VICTORIA.—AREAS PURCHASED CONDITIONALLY, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| With residence ... | 466,155 | 281,387 | 249,793 | 226,925 | 189,442 | 149,893 | 151,865 |
| Without residence ... | 50,257 | 18,115 | 84,797 | 26,667 | 27,977 | 23,220 | 39,367 |
| Total ... | 516,412 | 299,502 | 334,590 | 253,592 | 217,419 | 173,113 | 191,232 |
| No. of selectors ... | 2,979 | 1,586 | 1,756 | 1,611 | 1,448 | 1,579 | 1,518 |

Particulars as to total areas alienated and in process of alienation are given in a later part of this section. (See § 12.)

4. **Queensland.**—The several types of selections under which the freehold may be acquired by conditional purchase are as follows:—(i.) Agricultural farms; (ii.) agricultural homesteads; (iii.) prickly pear selections and (iv.) free homesteads.

Land is made available for selection by proclamation in the *Gazette*, specifying the modes in which the land may be selected, the area, rent, price and conditions. Any person of either sex over the age of sixteen years, who does not seek to acquire the land merely as the agent or servant of another, is allowed to select; but a single girl under the age of twenty-one is debarred from selecting an agricultural or grazing homestead, as also is a married woman, unless she is judicially separated, or possesses separate estate, or is living apart from her husband and has been specially empowered by the Land Court to select a homestead. A married woman may, however, acquire a grazing homestead

by transfer after the expiration of five years of the term of the lease. An alien may, under certain circumstances, acquire a selection, but must become a naturalised British subject within three years.

Applications for selections must be made in the prescribed form, in triplicate, and be lodged with the land agent for the district in which the land is situated, and must be accompanied by the prescribed deposit. In the case of a prickly pear selection the deposit must be the full amount of the survey fee, and in other cases, except free homesteads, a year's rent and one-fifth of the survey fee. In the case of a free homestead application the deposit consists of an application fee of £1 and one-fifth of the survey fee. If land is open for selection in two or more modes alternatively, and there are simultaneous applications to select it under different modes, priority among such applications is given to an application for the land as an agricultural homestead, as against an application for it as an agricultural farm; to an application for it as an agricultural farm as against an application for it as an unconditional selection; and to an application for it as a grazing homestead, as against an application for it as a grazing farm. In the case of simultaneous applications for the same land as an agricultural farm, priority is secured by an applicant other than a married woman or a single girl under twenty-one years of age, who, when making application, undertakes to personally reside on the land during the first five years of the lease. When an application has been accepted by the Land Commissioner and approved by the Land Court, and the applicant has paid for any improvements there may be on the land, he becomes entitled to receive a license to occupy the land in the case of an agricultural selection or a grazing selection, or a lease in the case of a scrub selection, unconditional selection, or prickly pear selection. Within six months after the issue of a license, the selector must commence to occupy the land, and thereafter continue to occupy it in the manner prescribed. Selectors may, under certain conditions, by application to the Under Secretary for Public Lands, obtain concessions in respect of the carriage by rail to the railway station nearest to his selection of himself, his family and his effects, and in respect of the carriage of any such material intended for use in improving the selection.

(i.) *Agricultural Farms.* The more accessible lands are usually set apart for agricultural selection up to the maximum area of 1280 acres allowed to each selector of an agricultural farm. If the same person be the selector of both an agricultural farm and an agricultural homestead, the joint areas must not exceed 1280 acres. The term is twenty years and the price ranges from ten shillings per acre upwards, as may be fixed by the proclamation. The annual rent is one-fortieth of the purchasing price, and the payments are credited as part of the price. The selector must occupy the land continuously, either in person or by agent, for the whole term of the lease. The cost of survey, ranging from about £10 to £12 for a farm of 160 acres to about £20 to £40 for a farm of 1280 acres, must be borne by the selector.

Within five years from the issue of the license to occupy, the selector must enclose his land with a substantial fence, or make permanent improvements of equivalent value. On the completion of the improvements the selector becomes entitled to a lease of the farm, and may thereafter mortgage it; or, with the permission of the Minister, may subdivide or transfer it; or, with the approval of the Court, may sublet it. After five years of the term have elapsed, the prescribed conditions of occupation and improvement having been duly performed, a deed of grant may be obtained on payment of the balance of the purchase-money.

(ii.) *Agricultural Homesteads.* When land is taken up as an agricultural homestead, the maximum area is restricted to 160 acres, 320 acres, or 640 acres, according as the price specified in the proclamation is determined at not less than twenty shillings; less than twenty shillings but not less than fifteen shillings; or less than fifteen shillings per acre respectively. The price for a homestead is two shillings and sixpence an acre, the annual rent threepence an acre, and the term ten years. The selector must himself reside continuously on the land, and within five years from the issue of the license to occupy, must also fence the land, or must make permanent improvements of equivalent value. On the completion of the improvements the selector is entitled to a lease.

At any time after five years from the commencement of the term, on the selector proving that the conditions have been performed and that the sum expended in improvements on the land has been at the rate of ten shillings, five shillings, or two shillings and sixpence an acre respectively according to the value of the land, he may pay up the remaining rent, so as to make his total payments equal to two shillings and sixpence an acre, and obtain a deed of grant of the land in fee simple. Under the amending Act of 1905 agricultural homesteads may, on certain conditions, be converted into agricultural farms.

(iii.) *Prickly Pear Selections.* Prickly pear infested selections comprise areas thickly covered with prickly pear. The area selected must not exceed 5000 acres. The term is thirteen years, with a peppercorn rental for the first ten years, and an annual rent of one-third of the purchasing price for the remaining three years. During the first ten years of the term the land must be absolutely cleared of prickly pear (one-tenth during each year), and must be kept clear for the remainder of the term.

Prickly pear frontage selections are confined to prickly pear frontage areas, comprising lands free from or only lightly infested with prickly pear, but which adjoin and do not extend for more than seven miles from lands heavily infested. The greatest area allowed is 5000 acres. The term is eight years, with a peppercorn rental during the first five years, and an annual rent of one-third of the purchasing price during the remaining three years. During the first five years the land must be absolutely cleared of prickly pear (one-fifth each year), and must be kept clear during the balance of the term.

In the case of prickly pear (bonus) selections, the freehold of the land, and a bonus in addition, are granted in return for the complete eradication of the pear. The maximum amount payable as bonus is stated in the opening proclamation, but each applicant must lodge a tender specifying a bonus per acre not in excess of that mentioned in the proclamation. The size of the portions opened out must not exceed 2560 acres. The term of the lease is ten years, at a peppercorn rental throughout. The land must be absolutely cleared of prickly pear during the first seven years (one-seventh each year), and the land must be maintained clear till the end of the lease. One-seventh of the bonus payable may be claimed at the end of each of the first seven years of the term on proof to the satisfaction of the Commissioner that the condition of eradication has been complied with. If the eradication be completed at an earlier date than is required by the condition of the lease, the balance of the bonus will then become payable. In all prickly pear selections the freehold may be obtained prior to the expiry of the term on proof being made that the land has been maintained free from prickly pear for three years consequent on the eradication having been completed in advance of the prescribed period.

(iv.) *Number and Area of Conditional Purchases, 1901 to 1907.* The following table shows the number and area of conditional purchases for which applications were accepted during each year from 1901 to 1907:—

**QUEENSLAND.—CONDITIONAL PURCHASES (APPLICATIONS ACCEPTED),
1901 to 1907.**

| Year. | Agricultural Farms. | | Agricultural Homesteads. | | Prickly Pear Selections. | | Total. | |
|----------|---------------------|-------------------|--------------------------|-------------------|--------------------------|------------------|---------|-------------------|
| | Number. | Area. | Number. | Area. | Number. | Area. | Number. | Area. |
| 1901 ... | 661 | Acres. 160,804 | 669 | Acres. 155,512 | 19 | Acres. 48,450 | 1,349 | Acres. 364,766 |
| 1902 ... | 688 | 168,301 | 523 | 118,246 | 10 | 51,058 | 1,216 | 337,605 |
| 1903 ... | 499 | 124,026 | 424 | 89,037 | 6 | 5,423 | 929 | 218,486 |
| 1904 ... | 516 | 136,092 | 355 | 73,705 | 1 | 200 | 872 | 209,997 |
| 1905 ... | 962 | 254,117 | 448 | 97,543 | 7 | 31,457 | 1,417 | 383,117 |
| 1906 ... | 1,427 | 438,605 | 392 | 96,561 | 3 | 9,562 | 1,822 | 544,728 |
| 1907 ... | 1,948 | 689,916 | 267 | 68,464 | 439 | 524,956 | 2,654 | 1,283,336 |

Particulars as to total areas alienated and in process of alienation may be found below. (See §'12.)

(v.) *Free Homesteads.* This form of tenure was introduced by the Land Acts Amendment Act, 1908. Any country lands may be proclaimed open for free homestead selection. The maximum area which may be selected in this manner is 160 acres. The term is five years, and during that period the selector must occupy the land by personally residing on it, and must effect improvements to the total value of ten shillings per acre. A free homestead cannot be sold or mortgaged until a deed of grant is obtained.

5. **South Australia.**—The types of conditional purchases under which land may be alienated in this State (exclusive of the Northern Territory) are as follows:—(i.) Agreement to purchase, and (ii.) Agreement under the Pinnaroo Railway Act 1903. The Land Board, composed of three members, arranges the subdivision of lands and fixes the price at which each block is to be offered. When approved by the Commissioner the lands are gazetted as open to application, which must be made in writing, and must specify the name, address, and occupation of the applicant, and the land applied for. A month's notice is usually given, during which applications may be made. No person under eighteen years of age can hold a lease, agreement, or license under the Act. The applicant has the choice as to whether he will take the land on perpetual lease or on an agreement to purchase, except in the case of repurchased lands and lands within the schedule to the Pinnaroo Railway Act, which are offered on agreement to purchase only. As early as possible after the date for receiving applications the Board meets, takes the evidence of applicants, and allots the blocks to each applicant who, in the opinion of the Board, should have the block. Preference is given to applicants who will reside on the land applied for, involving continuous residence on the land for at least nine months in each year. Other considerations which assist the Board to come to a decision are the ability, through means and experience, to utilise and improve the land applied for, and the number of members of the family which would become settled on the land. Any blocks not allotted on the date fixed may be applied for, and may be allotted on application. Agreements and leases are liable to forfeiture if payments due thereunder are six months in arrear and remain unpaid for three months after the same have been demanded, or for breach of any of the covenants or conditions. In place of forfeiture of any lease or agreement the holder's interest therein may be sold by auction, the proceeds to pay all arrears on the land and expenses of sale. If any balance remain the outgoing holder may be paid for substantial improvements made by him on the land. Any purchase-money the outgoing holder may have paid on the land sold may also be reimbursed to him if the proceeds of the sale admit. Interest at the rate of 5 per cent. is charged on arrears due under leases and agreements; if over two months in arrears the Commissioners may recover the same in court. No perpetual lease or agreement to purchase is granted for lands the unimproved value of which exceeds £5000, or in such a way that the lessee or purchaser would hold lands under any tenure, except under pastoral lease, the aggregate unimproved value whereof would, in the opinion of the Board, exceed £5000. Exceptions are made in cases where land to be included in the lease or agreement is suitable only for pastoral purposes, the carrying capacity thereof unimproved, and of all other lands held by the lessee or purchaser under any tenure not exceeding 5000 sheep; if the land is outside Goyder's line¹ the limitation may be increased to a carrying capacity of 10,000 sheep. Municipal Corporations and District Councils may apply for land in the same manner as individuals.

(i.) *Agreement to Purchase.* No lands may be held under this form of tenure unless they have been surveyed, or their boundaries delineated on the public maps. The Commissioner, on the recommendation of the Land Board, determines the area of blocks.

1. Goyder's line is not exactly based on rainfall, but on the evidence of vegetation ("salt-bush" and "blue-bush," etc.), and marked the northern limit of what was thought to be fit land for agricultural pursuits. The vegetation which was supposed incapable of flourishing in regions of regular rainfall afforded the indications for locating the line.

and the price and annual rent at which each block may be taken up on lease with the right of purchase. Applications must be made in writing to the Commissioner, and must be accompanied by a deposit equal to the first half-yearly instalment of the purchase-money of the land and improvements. The purchaser must covenant to pay for his block at the price fixed by the Land Board, and to pay the purchase-money and interest for land and improvements, if any, at not less than the rate of 2 per cent. per annum by sixty equal half-yearly instalments payable in advance. The land must be fenced within five years, and vermin and weeds must be destroyed. Having complied with the terms and conditions of the agreement, the purchaser has the option of completing the purchase of his block at any time after the expiration of six years, on paying all principal due under his agreement and all interest due up to the time of purchase. Where the land is allotted on personal residence, each agreement must contain a covenant for personal residence by the purchaser on the lands purchased for nine months during each year. The conditions as to reservation of Crown rights, and also as to subletting, are the same as in the case of perpetual leases. (See § 8 below.)

(ii.) *Pinnaroo Railway Lands.* Under the Pinnaroo Railway Act 1903 provision was made for opening up to conditional purchase certain scheduled lands, amounting to about 1,500,000 acres of good agricultural country in the vicinity of a line from Pinnaroo to Tailern Bend, a distance of eighty-seven miles. The line was opened for traffic in 1906. The lands scheduled may be sold by the Crown under agreement, with a covenant to purchase the same at the price fixed by the Land Board, together with interest thereon at the rate of 2 per cent. per annum, by sixty half-yearly payments, payable in advance. Any purchaser may complete his purchase at any time. Application is to be made, the price fixed and accepted, the agreement entered into and executed, and all matters in connection with the sale, transfer, resale, surrender, and forfeiture of any of the lands are to be carried out, as far as practicable, as if the lands were taken up under the existing regulations as to the acquisition of land for the purposes of closer settlement.

(iii.) *Particulars of Conditional Purchases, 1901 to 1907.* The subjoined table gives particulars of the areas alienated by conditional purchase, on fulfilment of the conditions, during each year from 1901 to 1907, inclusive.

**SOUTH AUSTRALIA.—AREAS ALIENATED UNDER AGREEMENTS TO PURCHASE,
1901 to 1907.**

| Year | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------|--------|---------|---------|---------|--------|-------|--------|
| Area in acres | 57,460 | 101,393 | 114,431 | 189,427 | 16,106 | 6,439 | 57,890 |

The figures given in the above table include areas sold under credit agreements, none of which have, however, been issued since the year 1903. Particulars as to the total areas alienated and in process of alienation are given in a later part of this section. (See § 12.)

6. **Western Australia.**—The various types of selections under which the freehold can be alienated by conditional purchase in this State are as follows:—(i.) Residential conditional purchase; (ii.) non-residential conditional purchase; (iii.) conditional purchase by direct payment; (iv.) conditional purchase of blocks for vineyards, orchards, or gardens; (v.) conditional purchase of grazing lands; and (vi.) free homestead farms.

All applications must be lodged, with the prescribed deposit and fees, at the agency in which the land is situated. No person may acquire under homestead farm, conditional purchase, and grazing lease, collectively, or any two or more of them, either as lessee or transferee, more than 2000 acres of cultivable land (that is, land acquired as homestead farm and by conditional purchase), or an equivalent area of grazing land, or cultivable

and grazing land mixed. Where a man has selected up to the maximum allowed, his wife may hold a further area of 1000 acres of cultivable land or its equivalent area of grazing or of cultivable and grazing land. Five acres of grazing land are deemed to be an equivalent of two acres of cultivable land, and all unclassified land disposed of prior to the 1st February, 1907, is deemed to be cultivable land until otherwise classified by the Lands Department. If the holder require the land to be classified he must pay the prescribed fee.

(i.) *Residential Conditional Purchase.* Under this form of tenure any person over the age of sixteen years may select from a minimum area of 100 acres to a maximum of 1000 acres in any part of the State. The usual price of the land is ten shillings an acre, payable in twenty years by half-yearly instalments, or sooner, at the occupier's option. Applications must be accompanied by a deposit of a half or a quarter-year's rent, as the case may be; that is to say, if the application be made during the first quarter of the half-year, a half-year's rent is required; if in the second quarter, only a quarter-year's rent need be deposited. In the event of the application not being approved the deposit is refunded. Half the cost of survey must be paid by the selector in two instalments, the first with the application and the second within twelve months. The selector is required to take up residence on his allotment within six months from the date of survey, and to reside thereon for at least six months during each of the first five years; the residence condition may, however, be performed on any rural land held by the selector within twenty miles. Residence by the wife, parent, or a child of over sixteen years of age, may also be accepted. Improvements must be effected equal in value to the amount of the purchase-money, and must be at the rate of one-fifth of the purchase-money every two years of the first ten years, but are not required to be more than £1 per acre in value should the price of the land exceed that amount. One-half of the land must be fenced within five years and the whole within ten years. Half the value of great and small stock-proof fencing is allowed towards the improvements required, and two-thirds of the value of a dog or rabbit-proof fence; but no allowance in respect to the fencing is made until after the fourth year of the term of the lease. A lease fee of ten shillings is payable with every application for a lease, at the expiration of which, or at any time after five years from the date of which, provided that all the conditions of residence and improvements have been complied with and the purchase-money paid, the lessee may obtain a Crown grant of the land on payment of the grant fee of thirty shillings.

(ii.) *Non-residential Conditional Purchase.* If the selector does not wish to reside upon the land he may take up from 100 to 1000 acres, subject to the same conditions with regard to improvements, purchase-money, and survey, lease, and grant fees as in the case of residential purchases, with the exception that the total value of the improvements required is 50 per cent. over and above the amount of the purchase-money, but not more than thirty shillings per acre need be spent on improvements, although the price of the land may be over £1 per acre.

(iii.) *Conditional Purchase by Direct Payment.* Any unalienated Crown lands may be acquired by conditional purchase by direct payment. The price is not less than ten shillings an acre, payable within twelve months; the maximum area that may be selected by one person is 1000 acres, and the minimum is 100 acres. An amount equal to 10 per cent. of the purchase-money must be deposited with the application, on the approval of which by the Minister a license is issued for seven years, dating from the first day of the quarter next preceding the date of the approval of the application. The balance of the purchase-money must be paid within twelve months by four equal quarterly instalments, or sooner, at the option of the selector, but no Crown grant will be issued until the Minister is satisfied that the prescribed conditions have been fulfilled. The licensee must within three years fence in the whole of the land, and within seven years must expend upon the land in prescribed improvements at least ten shillings an acre in addition to the cost of fencing. Half the cost of survey must be paid by the purchaser, as previously explained. The Crown grant may be obtained at any time,

provided that all the conditions have been complied with and the purchase-money and fee have been paid.

(iv.) *Conditional Purchase of Small Blocks for Vineyards, Orchards or Gardens.* Areas of from five to fifty acres may be selected for any of these purposes on the following terms:—The price of the land is not less than £1 an acre; a deposit of 10 per cent. of the purchase-money must be made upon application, and the balance must be paid within three years from the date of the approval of the application by equal half-yearly instalments. A lease is granted for three years, during which time the whole of the land must be fenced with a great and small stock-proof fence, and at least one-tenth of the area must be planted with vines or fruit trees, or cultivated *bona-fide* as a vegetable garden. A Crown grant will be issued as soon as all the conditions have been complied with and the purchase completed.

(v.) *Conditional Purchase of Grazing Lands.* The Governor may declare any lands which, in the opinion of the Minister are unsuitable for agriculture, but suitable for grazing purposes, and which are not within an agricultural area, as open for selection as grazing leases. The application must be accompanied by the usual deposit of rent, as explained above with reference to conditional purchase with residence, together with the first instalment of the survey fee and the lease fee of ten shillings. An inspection fee may be charged if the Minister so directs. The land is inspected and reported on by a surveyor, and the price is fixed by the Governor, but may not be less than three shillings and ninepence per acre, and must be paid half-yearly at the rate of one-twentieth of the total purchase-money per annum. The maximum area allowed is 5000 acres, and the minimum 500 acres, but if the land applied for adjoins a holding of the applicant the minimum may be 300 acres. Within six months the lessee must take possession of his lease, and residence is required for six months of the first year and for nine months during each of the next four years. These conditions as to residence may be performed by an agent or servant of the lessee, and if the lessee be the owner of any rural lands within twenty miles, and reside thereon, such residence is sufficient. Expenditure on improvements to the extent of one-fifth of the purchase-money is required during every two years of the first ten years of the lease, and the whole of the land must be fenced within the first ten years. Half the value of a great and small stock-proof fence, and two-thirds of the value of a dog or rabbit-proof fence, may be allowed towards the value of the improvements required after the fourth year of the lease. At the expiration of the term of the lease, or at any time after five years from the date of the lease, a Crown grant will be issued, provided that all conditions have been complied with and the full purchase-money paid.

(vi.) *Free Homestead Farms.* Every person who is not already the holder of more than 100 acres of land within the State, and being the head of a family, or a male of sixteen years of age and upwards, may select an area of from 10 to 160 acres as a free homestead farm, on lands declared open for such selection within the South-West, Central, or Eucla Divisions, not being within a goldfield. The application must be accompanied by a statutory declaration with a one-shilling duty stamp and a fee of twenty shillings; half the cost of survey must be paid in two instalments of thirty shillings each, the first instalment with the application and the second within twelve months. Upon approval of the application an occupation certificate for seven years is issued; the selector must take personal possession of the land within six months from the date of such certificate, and must reside thereon for at least six months in each of the first five years of the term, but residence on rural land held by the same person within twenty miles of the free homestead farm is sufficient compliance with the above residence condition. Residence of the holder's wife, parent, or child over sixteen years of age, may be accepted at the Minister's discretion. Four shillings per acre must be spent in prescribed improvements during the first two years; a further six shillings per acre during the next three years; and an additional four shillings per acre during the last two years. Not more than £30 of the amount spent on a habitable house will be allowed

towards the total amount of fourteen shillings per acre required to be expended upon improvements. Half of the land must be fenced during the first five years, and the whole must be enclosed with a great and small stock-proof fence by the end of the term of seven years. Half the value of a sheep and cattle-proof exterior fence, and two-thirds of the value of a rabbit or dog-proof exterior fence will be allowed towards the amount required to be spent upon improvements after the fourth year of the term. A Crown grant will be issued upon compliance with all the conditions and upon payment of a fee of thirty shillings at the expiration of the term of seven years, but may be issued earlier if the holder has completed twelve months' residence, has made all the required improvements, and pays the sum of five shillings per acre for the land.

(vii.) *Conditional Auction Sales.* Sales of town and suburban lands at auction have already been referred to. (See § 6, vi., above.) In the case of suburban lands the sale is of the nature of a conditional purchase, inasmuch as the land must be fenced within two years. In the case of the sale at auction of suburban lands set apart for cultivation, the balance of the purchase-money, after paying a deposit of 10 per cent., must be paid by half-yearly instalments within five years; the land must be fenced within two years, and within three years at least one-tenth of the area must be planted as an orchard or vineyard, or cultivated as a vegetable garden, or one-quarter of the area must be cultivated otherwise. The purchaser may pay the balance of the purchase-money at an earlier date, if he so desire, but no grant may issue until the prescribed improvements have been effected.

(viii.) *Areas Alienated Absolutely under Forms of Conditional Purchase, 1901 to 1907.* The following table shews the area of the selections for which grants were issued, the prescribed conditions having been fulfilled, during each year from 1901 to 1907:—

WESTERN AUSTRALIA.—AREAS SELECTED CONDITIONALLY FOR WHICH CROWN GRANTS WERE ISSUED, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. ¹ | 1907. ¹ |
|---------------------------|--------|--------|---------|--------|--------|--------------------|--------------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Free Homestead Farms | 147 | 440 | 1,490 | 5,172 | 9,471 | 9,655 | 12,765 |
| Conditional Purchases ... | 5,234 | 17,841 | 8,591 | 30,578 | 19,100 | 20,351 | 38,116 |
| Poison Land Leases ... | ... | 27,705 | 116,832 | 37,072 | 11,521 | ... ² | 135,444 |
| Village Allotments ... | ... | ... | 5 | 3 | 3 | 2 | ... |
| Total ... | 5,381 | 45,986 | 126,918 | 72,825 | 40,095 | ... | 186,325 |
| Number of Holdings ... | 48 | 100 | 91 | 181 | 186 | ... | 1,366 |

1. For financial year ended the 30th June 2. Not available.

Particulars as to the total areas alienated absolutely, and in process of alienation, are given in a later part of this section. (See § 12.)

(ix.) *Area Conditionally Alienated, 1901 to 1907.* The following table shews the areas conditionally alienated under various methods of selection during each year from 1901 to 1907:—

Particulars as to the total areas in process of alienation are given in a later part of this section. (See § 12.)

State, and from the Crown Lands Office, Hobart, and Lands Branch Office, Launceston. Intending selectors can obtain ready assistance in making their choice of lands from the District Surveyors or from the officers of the Crown Lands Office. The price of first-class land is not less than £1 an acre, with one-third of that price added as a premium for credit, which extends over a period of eighteen years. For second-class land ten shillings an acre is the minimum price, with one-third added for credit, the period of which is fourteen years. For third-class land the price is not less than five shillings an acre, with one-third added for credit for fourteen years.

In the case of first-class land the purchaser must pay a deposit of twopence an acre, and must pay the residue by eighteen annual instalments at the following rates per acre:—Threepence during the first and second years; one shilling during each year from the third to the sixth; one shilling and sixpence during each year from the seventh to the tenth, and two shillings during each of the remaining eight years. For second or third-class land the purchaser must pay a deposit of one-fortieth part of the purchase-money, and must pay the residue by fourteen annual instalments, of which the first two instalments must equal one-twenty-sixth part of the residue, and each remaining instalment must equal one-thirteenth part of the residue. The conditions as to residence on first-class land and as to improvements on all classes are as stated above.

(ii.) *Selection of Homestead Areas.* Any person of the age of eighteen years or over who has not previously purchased land in Tasmania may make a selection of a homestead area of first-class land not exceeding fifty acres, at the price of £1 an acre, with one-third added for credit. The selector of a homestead area must pay a cash deposit of twopence an acre at the time of purchase, but need pay nothing further towards the purchase-money until the fourth year, when the payments for that year and for the fifth year are at the rate of tenpence an acre, and for the remaining fourteen years, during which the credit extends, the annual payment is at the rate of two shillings an acre. The selector must reside on his homestead for a term of five years commencing to run one year after the date of contract, and must effect improvements to the value of £1 an acre before a grant is issued.

(iii.) *Selection in Mining Areas.* A "Mining Area," under the Crown Lands Act, comprises land in the vicinity of a mining field, and which is specially proclaimed a mining area. The land so proclaimed may be selected as first-class agricultural land, not exceeding 100 acres, on the terms provided for the purchase of these lands; but if the land is within one mile of a town the maximum area is twenty acres and the minimum ten acres. Second-class lands within a mining area can be sold at auction, but no lands within a mining area can be sold as third-class. All lands purchased within a mining area are open to any person to search or mine for minerals, gold, or other metals; but before any such person can commence searching or mining he must obtain permission in writing from the Secretary for Mines or the nearest Commissioner of Mines. The terms as to payment of purchase-money for mining area selections are the same as in the case of selections of rural lands, mentioned above.

(iv.) *Conditional Sales on Credit.* Both town and rural lands may be sold on credit, either at auction or by private contract, subject to certain conditions. The maximum and minimum area which may be so sold have already been specified. (See above § 6. *Sales by Auction*, 7.) In the case of sales of town lands on credit, the purchaser may not receive a grant until he has effected improvements to the value of a sum equal to the purchase-money. When first-class rural lands (except lands within mining areas) are sold on credit, the purchaser must reside thereon for at least five years, commencing two years after the date of contract, and must effect substantial improvements to the value of £1 an acre before a grant will issue. In the case of the sale of second and third-class land similar improvement conditions to the value of five shillings and two shillings and sixpence an acre in each class respectively are imposed. A sum equal to one-third of the price is added for credit. The purchaser must pay a deposit of one-fortieth, and the remainder by fourteen annual instalments.

(v.) *Areas Sold Conditionally, 1901 to 1907.* The following table shews the areas alienated absolutely under systems of conditional purchases and sales on credit, the conditions having been fulfilled, and also shews the areas sold conditionally and the applications for conditional purchases received and confirmed, during each year from 1901 to 1907, inclusive:—

TASMANIA.—CONDITIONAL PURCHASES, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| <i>Completion of Conditional Purchases</i> ¹ ... | Acres. 23,781 | Acres. 33,272 | Acres. 22,232 | Acres. 28,697 | Acres. 15,926 | Acres. 27,528 | Acres. 36,492 |
| <i>Sold Conditionally—</i> | | | | | | | |
| Free Selections | 40,001 | 40,565 | 59,035 | 112,861 | 161,815 | 139,433 | 121,186 |
| Homestead Areas | 9,108 | 4,167 | 6,460 | 8,513 | 2,554 | 1,884 | 1,148 |
| Auction Sales on Credit | 12,961 | 19,742 | 21,578 | 11,255 | 4,980 | 1,415 | 2,571 |
| Other Sales (Town Lands) | 636 | 663 | 1,577 | 1,225 | 1,384 | 1,553 | 2,093 |
| Total | 62,709 | 65,137 | 88,650 | 133,854 | 170,133 | 144,585 | 126,998 |
| <i>Applications—</i> | | | | | | | |
| Received | 1,444 | 1,789 | 2,924 | 2,549 | 2,848 | 2,448 | 1,995 |
| Confirmed... .. | 768 | 901 | 1,455 | 1,131 | 1,655 | 1,164 | 932 |

1. Including selections and sales on credit.

Particulars of total areas alienated and in process of alienation are given below.
(See § 12.)

§ 8. Leases and Licenses.

1. **Introduction.**—Leases and licenses are issued in all the States for various terms and upon various conditions. In Victoria, Queensland, and South Australia perpetual leases are issued for an indefinitely long period upon payment of an annual rent, while in all the States leases or licenses of comparatively large areas may be obtained for pastoral purposes. Provisions have also been made in all the States for convenient forms of leases and licenses for various special purposes, and also of special classes of lands. The leases and licenses dealt with below are exclusive of those issued under Closer Settlement and kindred Acts, and also of those issued for mining and auxiliary purposes. (See § 9 and § 10 below).

2. **New South Wales.**—The following are the various types of leases and licenses issued in this State:—(i.) Conditional leases; (ii.) conditional purchase leases; (iii.) settlement leases; (iv.) improvement leases; (v.) annual leases; (vi.) residential leases; (vii.) special leases; (viii.) snow leases; (ix.) leases under Section 18, Act of 1903; (x.) scrub leases; (xi.) inferior lands leases; and (xii.) Western lands leases.

(i.) *Conditional Leases.* Conditional leases may be granted to any selector of a conditional purchase, other than a non-residential one, or one whose selection is within a special area in the Eastern Division. In other words, before applying for a conditional lease it is necessary to apply for a residential conditional purchase, in virtue of which such a lease may be held. The provisional deposit with application is, if the amount of rent has been notified prior to the date of application, a sum equal to half a year's rent, and if not so notified, is at the rate of twopence an acre, but is subject to appraisalment by the Local Board. A survey fee in accordance with a fixed scale must also be lodged with the application.

The area of land which may be conditionally leased must not be less than 40 acres, nor more than three times the area of the conditional purchase, and the two together must not amount to more than 1280 acres in the Eastern, or 2560 acres in the Central

Division, except in cases where the Land Board has allowed either of these areas to be exceeded by virtue of the power vested in them under the Crown Lands Act 1903 or 1905, as stated above. The lease is for a period of forty years, and this term is divided into four periods of ten years each. The annual rent for each period may, on application by the lessee, or on a reference by the Minister, be separately determined by appraisalment in accordance with Section 6 of the Crown Lands Act of 1889. The lessee may at any time during the currency of the lease convert the whole or part into an additional conditional purchase.

(ii.) *Conditional Purchase Leases.* This tenure was created by the Crown Lands Amendment Act of 1905, and its chief advantages are that the intending settler can for a small initial outlay by way of deposit, for a moderate rent and under easy conditions, obtain a lease for forty years, together with a right of converting it into a conditional purchase at any time during its currency, and ultimately into a freehold. These leases can only be acquired within areas subdivided and specially set apart by proclamation in the *Government Gazette* for holdings of this class, and an applicant, if a male, must not be under the age of eighteen years, or of twenty-one years if a female. No one may apply who already holds any land, other than town or suburban land under the Crown Lands Acts, or land leased from a private individual, or who is either disqualified under the provisions of sec. 40 of the Crown Lands Act of 1895, or is subject to any of the disabilities specified in sec. 14 of the Act of 1905. These sections should be carefully read by intending applicants, as it is impracticable, within the limits of this summary, to fully explain all the details of the qualification clauses. The deposit, which must be lodged with an application for a conditional purchase lease, is always the half of one year's rent of the land, the rent being calculated at the rate of $2\frac{1}{2}$ per cent. of the capital value of the land. The amounts of the annual rent and of the survey fee required for each block are always stated in the *Gazette*, and on the lithographs issued by the Lands Department shewing the subdivision. Only one-fifth of the survey fee need be lodged with the application, although two or more instalments of one-fifth of the full amount may be deposited, and the balance may be paid subsequently in equal annual instalments, with interest at the rate of 4 per cent. The capital value of the land is fixed by the Minister for the first ten years of the lease, but the lessee may, within six months after confirmation of his application for the lease, apply in the prescribed manner to have such capital value determined by appraisalment, and for each succeeding period of ten years the capital value is determined by the Local Land Board on a similar basis.

A condition of ten years' personal continuous residence is attached to holdings of this class, and such residence must, under ordinary circumstances, be commenced within twelve months from the date of confirmation of the application, but the Local Board may, if the circumstances of the case warrant the concession, permit the commencement of residence to be extended to any date within five years of such confirmation, and on such terms and conditions as to improvements and cultivation as may be agreed upon between the Board and the lessee, and the Board may also, on application in the prescribed manner, permit the residence condition to be performed in any adjacent village or town.

The following statement gives particulars of conditional purchase leases applied for and confirmed during the year ended the 30th June, 1907 :—

NEW SOUTH WALES—CONDITIONAL PURCHASE LEASES,
YEAR ENDED 30TH JUNE, 1907.

| Applications Received. | | Applications Confirmed. | | | |
|------------------------|---------|-------------------------|---------|----------------|--------------|
| Number. | Area. | Number. | Area. | Capital Value. | Annual Rent. |
| | Acres. | | Acres. | £ | £ |
| 356 | 182,485 | 319 | 157,241 | 228,835 | 5,483 |

(iii.) *Settlement Leases.* Under the Lands Act of 1895 provision was made for a convenient form of tenure by way of settlement leases for persons who require a considerable area for agricultural or grazing purposes, or for these purposes combined. The area which might be taken up as a settlement lease was originally limited to 1280 acres for agricultural and to 10,240 acres for grazing purposes, but provision has now been made under which larger areas may be taken as additional settlement leases, in cases where the Local Land Board is of the opinion that the area sought to be acquired, together with other lands held by the applicant, does not in the aggregate exceed such an area as is sufficient to enable him to maintain his home thereon in average seasons and under ordinary circumstances. The additional holding need not necessarily adjoin the original holding, but must, in the opinion of the Board, be situated within a reasonable working distance thereof. The lease is for a term of forty years, which is divided into four periods of ten years each. The annual rent for the first ten years is fixed by the Minister before the land is made available for lease, and the lessee may, if dissatisfied with the amount, apply to have it determined by appraisal. The rent for each succeeding period of ten years may, on the application of the lessee or on a reference by the Minister, be separately determined in a similar manner. The lessee must make the holding his *bonâ-fide* residence during the whole term of the lease. He must fence the holding within five years, must conform to any regulations made by the Minister for the destruction of vermin, noxious weeds, scrub, etc., and may not assign or sublet his holding without the Minister's consent. Tenant right in improvements is secured to an outgoing lessee, and the lessee may apply at any time after the first five years of the lease for an area not exceeding 1280 acres, not being reserved from sale, on which his house is situated, as a homestead grant.

The following statement gives particulars of applications for settlement leases received and confirmed during the year ended the 30th June, 1907 :—

**NEW SOUTH WALES—SETTLEMENT LEASES,
YEAR ENDED 30TH JUNE, 1907.**

| Applications Received. | | Applications Confirmed. | | | |
|------------------------|------------------|-------------------------|-------------------|--------------------------|------------|
| Number. | Area. | Number. | Area. | Capital Value. | Rent. |
| 215 | Acres 680,187 | 171 | Acres. 503,795 | £ 58,657 ¹ | £ 5,793 |

1. The capital value was not determined in respect of 371,015 acres in the Central Division.

(iv.) *Improvement Leases.* Improvement leases may comprise any scrub or inferior land in the Eastern or Central Divisions, and can only be let by auction or tender on the recommendation of the Land Board, or, if not taken up, may be tendered for afterwards at the upset rental. Leases of large areas at moderate rentals can be obtained of lands which are not suitable for settlement until improved, and in the improvement of which it would be necessary to spend large sums before they could be rendered suitable for settlement. The lease is for a term not exceeding twenty-eight years, the rent being payable annually. During the last year of the lease, the lessee may convert into a homestead selection 640 acres not being reserved land, on which his dwelling-house may be erected; he has tenant right in certain improvements, except when such right is stated to be barred. During the year ended the 30th June, 1907, there were 96 improvement leases, comprising an area of 370,886 acres, either sold by auction or let by tender, the total annual rent of these leases amounting to £2409.

(v.) *Annual Leases.* These are leases from year to year, renewable by payment of a year's rent in advance before the termination of the current year. The area is restricted to 1920 acres under any one lease, but there is no limit to the number of leases which one individual may hold. The deposit is thirty shillings for each 320 acres or part thereof

applied for, and the annual rent is as appraised and notified in the *Gazette*. No conditions as to residence or improvements are attached to these leases, but security of tenure is not guaranteed, and the land may be alienated by conditional purchase or lease, etc.

(vi.) *Residential Leases*. Only lands situated within proclaimed gold or mineral fields are available for holdings of this class. An applicant must be a holder of what is termed a "miner's right," or "mineral license," and must pay a deposit of £1, a provisional rental of one shilling per acre applied for, and the survey fee. The maximum area that may be leased is twenty acres, and the term may not exceed twenty-eight years. The annual rent will be appraised by the Local Land Board, and a condition of perpetual residence is attached to the lease. Within twelve months from the commencement of the lease, fences and buildings of a character suitable for the beneficial occupation of the land must be erected. Tenant right in improvements is conferred upon the lessee.

(vii.) *Special Leases*. These leases are issued chiefly to meet cases where land is required for some industrial or business purpose, or for such purpose as the Governor, by proclamation in the *Gazette*, may declare, such as the erection of dams, tanks, irrigation works, saw-mills, etc. The area may not exceed 320 acres, except in the case of leases under secs. 89 and 92 of the Act of 1884, for such purposes as wharves, jetties, tramways, and irrigation works, and the term of a special lease may not exceed twenty-eight years. One person may, however, hold more than one special lease. The annual rent, if the land has not been notified for lease in the *Gazette*, is determined after report by the Local Board. Special leases may be obtained either by application, purchase at auction, or by tender. If the lease be sold at auction or let by tender, the rent will be the amount bid at auction, or offered by the successful tenderer, but must not be less than the upset rent. Leases of this kind which have been offered at auction and not sold, or for which tenders have been invited without any being lodged, may be obtained by after-auction tender. In such cases the rent will be the upset rent as notified, and the application will be subject to the approval of the Minister.

(viii.) *Snow Leases*. Lands not held under pastoral or other lease, which may be usually covered with snow for a part of each year, and which are consequently unfit for continuous occupation, may be leased in areas of not less than 1280 acres, nor more than 10,240 acres, and during the currency of such lease the land is exempt from sale or from other lease under the Lands Acts. Such leases are sold by auction or let by tender or by after-auction tender for terms not exceeding seven years, but may be extended for a term of three years by giving twelve months' notice prior to the expiration of the lease. The upset rental is fixed by the Minister after report by the Local Land Board, and the annual rent payable will be the amount bid at auction or tendered. If the lease be applied for after auction or after the time for lodging tenders has expired, the amount will be the notified upset rent.

(ix.) *Leases under Section 18, Act of 1903*. Under the provisions of the amending Act of 1903, Section 18, leases may, on the recommendation of the Local Land Board, be granted to the registered holder of any pastoral lease, occupation license, or preferential occupation license, for an area not exceeding one-third of the total area comprised within the lease, license, or lease and license, at the date of expiration of the pastoral lease. The term of the lease may not exceed twenty-eight years, and the lease is subject to rent and conditions determined by the Governor.

(x.) *Scrub Leases*. The Minister has power, on the recommendation of the Local Land Board (a) to declare as "Scrub Lands" any Crown lands wholly or partly covered by scrub or noxious undergrowth, and (b) to grant leases of such lands on application, or sell the same by auction or tender for a term not exceeding twenty-one years, which term may be extended by the Governor to twenty-eight years.

(xi.) *Inferior Lands Leases.* The Minister may, after report by the Local Land Board, lease by auction or tender for a period not exceeding twenty years (which term may be extended by the Governor to twenty-eight years) such lands as, in consequence of their inferior character or isolated position, may not have been held under any tenure, or, having been held, have been abandoned.

(xii.) *Western Lands Leases.* Subject to existing rights and to the extension of tenure to the 30th June, 1943, which might be granted to a lessee on bringing his lease within the provisions of the Western Lands Act 1901 (see § 2. 1. iii., above), all forms of alienation, other than by auction and leases, prescribed by the Crown Lands Act, ceased to operate within this division from the 1st January, 1902. Lands are declared open for lease by notice in the *Government Gazette*, and applications therefor may be made in the prescribed form, accompanied by a deposit of 20 per cent. on the amount of the first year's rent. Within one month from the date of issue of the lease the successful applicant must pay the balance of the first year's rent and execute the lease. The annual rent is determined by the Commissioners for periods not exceeding ten years, and the rent fixed for the first period cannot on reappraisal be either increased or decreased more than 25 per cent. on the first reappraisal, and this provision applies at each subsequent reappraisal to the rent last determined. The Minister may, on application and after report from the Commissioners, extend over a period not exceeding five years the payment of any money due to the Crown. All lands leased must be fenced within such period and with such class of fencing, not being a rabbit-proof fence, as the Commissioners may determine.

(xiii.) *Leases Current, 1903 to 1907.* On the 30th June, 1907, there were 54,673 leases current under the Lands Department and the Western Land Board, comprising 125,904,700 acres of Crown lands. Of these leases there were 36,194, comprising 21,922,399 acres, in the Eastern Division; 15,990, comprising 28,167,598 acres, in the Central; and 2489, comprising 75,814,703 acres, in the Western Division.

The following table shews the areas held under various descriptions of leases and licenses at the end of each of the years 1901 to 1904, and on the 30th June, 1906 and 1907:—

NEW SOUTH WALES.—AREAS OCCUPIED UNDER LEASES AND LICENSES.

1901 to 1907.

| Leases and Licenses. | 1901. | 1902. | 1903. | 1904. | 1905-6. | 1906-7. |
|--|--------------------------|--------------------------|-------------------------|------------------------|------------------------|------------------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Pastoral | 44,805,221 | 44,976,148 | 20,332,042 | 9,191,101 | 3,668,661 | 3,393,372 |
| Outgoing pastoral lessees ... | — | — | — | 135,225 | 656,340 | 807,359 |
| Western land leases | — | 223,689 | 27,922,498 | 58,684,786 | 66,307,201 | 69,766,491 |
| Occupation (i.) Ordinary licenses (ii.) Preferential | 25,812,215 12,985,651 | 25,695,215 12,535,523 | 24,582,802 9,777,274 | 9,964,239 7,206,504 | 9,039,134 5,138,896 | 8,640,653 3,969,825 |
| Homestead leases | 10,953,388 | 10,692,748 | 6,540,407 | 4,039,272 | 2,616,472 | 1,650,309 |
| Condit'l. leases—(i.) Gazetted (ii.) Not gazetted (under provisional rent) | 13,014,055 966,887 | 13,262,618 1,076,863 | 13,696,779 1,053,569 | 13,974,188 278,224 | 14,798,801 977,850 | 15,178,016 17,647 |
| Conditional purchase leases... | — | — | — | — | 30,598 | 187,839 |
| Settlement leases | 3,468,675 | 4,036,919 | 4,203,056 | 4,399,579 | 5,113,847 | 5,711,520 |
| Improvement " | 5,551,060 | 7,062,865 | 7,951,340 | 6,196,133 | 6,275,138 | 6,527,792 |
| Annual " | 6,755,942 | 8,537,921 | 8,687,837 | 6,229,923 | 5,846,127 | 6,344,890 |
| Scrub " | 1,535,415 | 1,825,043 | 1,958,406 | 2,010,867 | 2,029,949 | 2,030,149 |
| Snow land " | 79,582 | 78,582 | 66,122 | 49,822 | 45,812 | 27,682 |
| Special " | 124,877 | 159,845 | 200,128 | 217,741 | 252,525 | 298,612 |
| Inferior land " | 288,530 | 354,030 | 365,930 | 243,230 | 247,330 | 251,579 |
| Artesian well " | 358,071 | 368,311 | 368,311 | 378,551 | 378,551 | 255,692 |
| Blockholders' " | — | 12 | 9 | 8 | 7 | 7 |
| Residential leases (on gold and mineral fields) | 5,751 | 6,131 | 6,749 | 7,571 | 9,017 | 10,211 |
| Church and school lands ... | 97,207 | 75,112 | 61,035 | 58,298 | 51,979 | 41,611 |
| Permissive occupancies ... | 118,634 | 682,064 | 560,122 | 637,671 | 604,445 | 724,861 |
| Prickly pear leases | — | — | — | — | — | 68,583 |
| Total under Lands Dept. and Western Land Board | 126,921,161 | 131,649,639 | 128,334,418 | 123,902,933 | 124,088,660 | 125,904,700 |

The total annual rent derived from the leases and licenses issued by the Lands Department and the Western Lands Board amounted to £547,312. Particulars regarding leases and licenses issued by the Mines Department are given in a later part of this section. (See § 10. *Occupation of Crown Lands for Mining Purposes.*)

3. **Victoria.**—The various types of leases and licenses (exclusive of Closer Settlement and Mines Department leases and licenses) under which Crown lands in this State may be issued are as follows:—(i.) Grazing area leases; (ii.) perpetual leases; (iii.) Mallee perpetual leases; (iv.) licenses of auriferous lands; (v.) swamp or reclaimed lands leases; (vi.) grazing licenses and pastoral leases; (vii.) leases and licenses for other than pastoral purposes; and (viii.) State forests and timber reserves licenses.

(i.) *Grazing Area Leases.* These leases may be granted for any term of years expiring not later than the 29th December, 1920. The area leased must not exceed 200, 640, or 1280 acres of first, second, or third-class land respectively, but may comprise two or more grazing areas, provided that the total acreage does not exceed the limit in each class. The annual rent is, according to the valuation and classification, not less than threepence an acre for first-class, twopence an acre for second, and one penny an acre for third-class land, payable half-yearly in advance. The lessee must fence the land within three years, or he may, if he prove to the Board that such fence is impracticable, or is not required, expend on permanent improvements a sum equal to the cost of fencing. The written consent of the Board must be obtained before the lessee can assign, sublet, or divide his land, and before he can use growing timber for other purposes than for erecting fences and buildings on the land. The lessee must destroy all vermin, keep down the growth of all noxious weeds, and keep all improvements in good repair. He is also required to erect swing gates in places where there is a fence across any track required by any other pastoral lessee, or by the public. The right is reserved to the Crown to take at any time any portion of the area which may be required for railways or other public purposes, and to issue licenses to enter on the land for the purpose of obtaining timber, coal, stone, etc. The Crown also has a right to resume possession, after having given two years' notice in writing, upon payment to the lessee for his interest in such lease, together with the value of houses, fences, wells, reservoirs, tanks, dams, and all permanent improvements constructed by the lessee prior to such notice and during the currency of his lease. An outgoing lessee is entitled to payment from an incoming tenant for all fences, wells, reservoirs, tanks and dams constructed during the currency of his lease, but the sum to be paid in respect of such improvements must in no case exceed ten shillings, seven shillings and sixpence, or five shillings an acre for first, second, or third-class land respectively.

The lessee may select an agricultural or grazing allotment out of the land leased in the manner indicated above. (See § 7, 3, iii.)

(ii.) *Perpetual Leases.* Perpetual leases of any Crown lands available as agricultural or grazing lands, swamp or reclaimed lands, and mallee lands may be granted to any person who is entitled to take up an agricultural or grazing allotment license in similar areas according to the classification of the land, but no person may hold under perpetual lease directly, or by transfer or otherwise, more than three times the areas that may be selected from the Crown. The lessee must destroy all vermin within two years, and must within six years from the date of issue of the lease enclose his land with a fence and keep the same in repair, or, if proved to the satisfaction of the Board that the erection of such fence is impracticable or not necessary, may expend on permanent improvements a sum equal to the cost of fencing. The lessee must reside on the land, or within five miles thereof, for at least six months during the first year of his term, and for at least eight months during each of the following four years; but this covenant as to residence does not operate in the event of the cultivation by the lessee of at least one-fourth of his allotment within the first two years of his lease, and at least one-half thereof before the end of the fourth year. Permanent improvements must be made to the value of ten shillings an acre for first-class land, seven shillings and sixpence an acre for second-class land, and five shillings an acre for third-class land, before the end of

the third year, and further improvements to the same values before the end of the sixth year of the lease. The lessee may not transfer, assign, mortgage, sublet, or part with the possession of the whole or any part of his allotment within the first six years of his lease, but at the end of that period, if no rent be owing and all conditions have been fulfilled, the lessee may, with the written consent of the Board, transfer, mortgage, sublet, or part with the land. The Crown reserves the right to resume any part of the lands demised, required for public or mining purposes, on payment to the lessee of the cost of moving and re-erecting his improvements and the loss sustained in relinquishing improvements not removable.

The rent payable by every perpetual lessee (other than for mallee and swamp or reclaimed lands, which is specially dealt with under the respective headings) is 4 per cent. on the unimproved value of the land, which is deemed to be twenty shillings an acre for first-class, fifteen shillings an acre for second-class, ten shillings an acre for third-class land until 29th December, 1909. For every successive period of ten years the unimproved value will be fixed by the Board, and the rent will be 4 per cent. of such value. The rent must be paid yearly in advance. Any lessee whose rent is not in arrear may surrender his lease by making written application to the Board within six months after the expiration of a period of ten years from the 29th December, 1909, or within six months after any successive period of ten years, and if the Board is satisfied that the applicant holds the allotment *bonâ-fide* for his sole use and benefit, he may obtain a residential or non-residential agricultural or grazing allotment license. (See § 7, 3, i. and ii.) The value of all permanent improvements will be credited to the licensee.

(iii.) *Mallee Perpetual Leases.* Perpetual leases of mallee land may be granted to any person who is entitled to select under agricultural license in similar areas according to the classification of the land. The rent payable is $1\frac{1}{4}$ per cent. per annum on the estimated unimproved value of the land reviewed every ten years, and is payable annually in advance. The lessee must fence the land within six years, take up his residence on the land within six months after the grant of the lease, and continue to reside on or within five miles thereof for at least six months during the first year of his lease, and for at least eight months during each of the four following years. If, however, at least one-fourth of the allotment be cultivated within the first four years, and at least one-half before the end of the sixth year, or the allotment improved to the extent of ten shillings, seven shillings and sixpence, or five shillings per acre for first, second, or third-class lands respectively, the condition as to residence will not be enforced. The lessee must not cut or remove any live pine, box, or gum trees, and must protect all belts or clumps of such trees from fire. The perpetual lease conditions (previously explained) apply except that a perpetual lessee who so selects out of a Mallee allotment lease is entitled to transfer or mortgage within the first six years, and a Mallee perpetual lessee may at any time surrender and obtain a Mallee agricultural license (see above, § 7, 3, v.), or if the necessary conditions required under license have already been fulfilled, including improvements and residence, a Mallee agricultural lease may be issued.

(iv.) *Licenses of Auriferous Lands.* The "auriferous lands" are distributed over various parts of the State. Annual licenses are issued for areas not exceeding twenty acres, entitling the holders to reside on or cultivate the area upon payment of a license fee of five shillings for areas of three acres or under, ten shillings for areas from three to ten acres, and one shilling per acre for areas over ten acres. Not more than one such license may be granted to or held by any one and the same person. The licensee is required to reside on the land during the continuance of the license, or to fence the land within four months from the date of issue of the license, and cultivate one-fifth of the area, allowance being made for any portion occupied by buildings; he cannot assign or sublet without permission. Notices must be posted on the land indicating that it is auriferous, and subject to Mining conditions. If the land has been improved to the value of £1 an acre, and if, in the opinion of the Board, the occupation is *bonâ-fide*, the licensee may, with the consent of the Minister of Mines, surrender his annual license and obtain in lieu thereof a license for an agricultural or

grazing allotment (see above, § 7, 3, ii. and iii.), which will enable the freehold to be obtained. All rents paid and improvements effected may be credited, and the license will be antedated if the residence condition has been complied with.

(v.) *Swamp or Reclaimed Lands.* Swamp or reclaimed lands comprise the areas so classed under the Land Act 1901, and such other areas as may from time to time be drained or reclaimed, and proclaimed as swamp or reclaimed lands in the *Government Gazette*. The Governor-in-Council is empowered to cause any swamp lands to be drained and reclaimed by prison or other labour, and the Board and other persons authorised by them may enter upon any lands whatsoever for the purpose of making surveys and taking levels, and may also appropriate such parts of any lands as may be necessary for the construction of any canals or drainage works, provided that full satisfaction be made under the Lands Compensation Act 1890 to the owner or occupier of such lands for all damage sustained through the exercise of such powers.

These swamp or reclaimed lands are divided into allotments not exceeding 160 acres, and the value of each allotment is provisionally determined by a Land Classification Board; an allotment may be leased either for a term of twenty-one years, or under a perpetual lease, or under a conditional purchase lease (see § 7, 3, vi.), or may be disposed of by public auction. Every lease for twenty-one years, every perpetual lease, every conditional purchase lease, and every contract for sale of an allotment of swamp or reclaimed lands, must *inter alia* contain (a) a condition that the lessee or purchaser will keep open all canals, ditches and drainage works on the land and adjacent to the land; and also (b) a condition that the lessee or purchaser will make permanent improvements on the land to the extent of ten shillings an acre in each of the three first years, unless the Minister is of opinion that such expenditure would not be advantageous or profitable, in which case the condition may be omitted or modified. The rent payable by the perpetual lessee of any swamp or reclaimed land for the period ending on the 29th December, 1909, is at the rate of four per cent. per annum on the value of the land, as fixed by the Classification Board and reassessed every ten years, not including any improvements which do not belong to the Crown. Conditional purchase leases are issued for a period of 31½ years, providing for the payment of the value of the allotment together with interest thereon at 4½ per cent. per annum, which, calculated over the whole term, is £3 half-yearly for every £100, and in sixty-three instalments pays off the purchase-money and interest. Residence is not necessary. Stringent conditions are imposed preventing assignment during the first six years. At any time after the expiration of six years from date of lease, if all conditions have been complied with, assignment is allowed on obtaining consent, and on payment of the balance of purchase-money at the end of any half-year, less interest for the unexpired term, the Crown grant may be obtained.

(vi.) *Grazing Licenses and Pastoral Leases.* Large areas of pastoral lands still remain in Victoria, chiefly in the north-eastern districts, but a considerable proportion of these areas, being mountainous, is difficult of access, and will be only made available for selection as the advancement of settlement demands. Provision is made in the Land Act for pastoral leases, but only a few such leases were issued, and no others are to be issued in the future.

Annual grazing licenses are granted for pastoral lands, reserves, and other Crown lands not required for other purposes. There is no limit to the area which may be so held, the rental charged varying according to the grazing value. Licenses may be renewed annually for any term not exceeding seven years, with the right to fence and make dams, but are subject to cancellation at any time if the land be required for other purposes.

(vii.) *Leases and Licenses for other than Pastoral or Agricultural Purposes.* Leases are granted of any Crown lands not exceeding (except in the case of leases for guano or other manure) three acres, for a term of not more than twenty-one years, and at an annual rent of not less than £5. These leases are granted for various purposes, such as—For obtaining guano, stone or earth; for sites of inns, stores, bridges, ferries, factories,

quays, or landing places; for the working of mineral springs, and for the manufacture of salt. If the lessee fail to use the land *bona-fide* for the purpose for which he leased it, the lease may be cancelled at any time. Leases are also granted to persons who are willing to construct canals, docks, roads or tramways. Annual licenses are issued for any of the purposes for which leases are granted as above, and if the licensee has been in possession for five years and has constructed improvements on the land, provided that there are no objections to the alienation of the land on the ground of being auriferous or other reasons of a public nature, he may purchase the allotment at an appraised price and receive credit for all rent paid. Similar holdings under miner's right for areas not exceeding one acre may be purchased under Sec. 36, Mines Act 1890, after two and a half years' possession.

Any unalienated Crown lands may be proclaimed as available for being licensed for the purpose of being used for bee-range areas. Annual licenses are granted of areas, to be used as bee-range areas, at a rent of not less than one half-penny for every acre within one mile of the site of the apiary as specified in the license. Annual licenses may also be granted at a rental of one shilling an acre for the purpose of a bee farm upon any Crown lands or upon any lands held under a pastoral or grazing lease or under an annual grazing license. No person may hold more than three bee-farm licenses, nor more than a total area of ten acres, and the holder of a grazing area or pastoral lease or of a grazing license may not keep more than ten hives of bees on his holding unless he is also the holder of a bee-farm license. The licenses may be renewable annually for seven years and cannot be sublet or transferred without consent. A bee-farm licensee may, at his own risk, erect buildings, fences, and improvements, but must remove same at any time if directed. No dog may be kept or allowed to remain on a bee-farm site.

(viii.) *State Forests and Timber Reserves Licenses.* Grazing licenses, residence licenses, and licenses to cut timber are issued for lands situated within State forests and timber reserves, which are now controlled by the Forest Branch of the Department of Mines under the Forests Act 1907.

(ix.) *Areas held under Leases and Licenses, 1901 to 1907.* The following statement shows the areas of Crown lands occupied under leases and licenses at the end of each year, from 1901 to 1907 inclusive:—

**VICTORIA.—OCCUPATION OF CROWN LANDS UNDER LEASE OR LICENSE,
1901 to 1907.**

| Tenure. | Area in Acres. | | | | | | |
|--|-------------------|-------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| Pastoral Lease | 39,450 | 52,150 | 52,150 | 52,150 | 52,150 | 64,150 | 59,510 |
| Grazing Area Lease | 2,338,649 | 2,846,052 | 3,420,534 | 3,528,986 | 3,631,974 | 3,533,792 | 3,402,536 |
| Grazing Licenses— | | | | | | | |
| Land Acts 1890-91 | 5,908,985 | 5,657,676 | 2,422,271 | — | — | — | — |
| Land Acts 1901 (exclusive of Mallee) | — | — | — | 6,998,278 | 7,481,535 | 5,820,997 | 5,833,488 |
| Mallee Lands | — | — | — | — | 4,272,652 | 4,897,943 | 5,217,846 |
| Auriferous Lands | 377,427 | 363,269 | 378,653 | 400,592 | 99,774 | 101,163 | 104,555 |
| Swamp Lands | 4,200 | 3,901 | 4,090 | 4,030 | 4,369 | 4,450 | 4,513 |
| Perpetual Leases | 8,137 | 11,475 | 11,766 | 15,637 | 28,944 | 29,267 | 33,319 |
| Mallee Pastoral Leases | 7,980,592 | 7,746,433 | — | — | — | — | — |
| Mallee Allotment Leases | — | — | 2,631,459 | 2,274,317 | 1,934,246 | 1,731,217 | 1,305,914 |
| Perpetual Leases under Mal- lee Lands Act 1896 | 448,842 | 510,709 | 543,927 | 417,146 | 431,214 | 501,013 | 604,236 |
| Wattles Act 1890 | 4,427 | 4,427 | 4,427 | 1,980 | 1,980 | — | — |
| Total | 17,110,709 | 17,196,092 | 9,469,277 | 13,693,116 | 17,938,838 | 16,683,992 | 16,565,917 |

4. *Queensland.*—In this State Crown lands may be occupied under the following types of leases and licenses:—(i.) Grazing farms; (ii.) grazing homesteads; (iii.) scrub selections; (iv.) occupation licenses; (v.) special leases; (vi.) perpetual lease selections;

and (vii.) pastoral leases. General conditions as to applications for selections have been mentioned above. (See § 7, 4.)

(i.) *Grazing Farms.* Areas of land already surveyed are available for selection as grazing farms over a great extent of territory. The greatest area which may be applied for under any circumstances is 60,000 acres, but each proclamation opening land for grazing selection declares the maximum area which may be selected in the area to which it applies. In the event of lands open under different proclamations, and of a total area exceeding 20,000 acres being applied for by the same person, a rental limitation of £200 per annum must be observed. Thus, of lands open at twopence per acre, the maximum area obtainable would be 24,000 acres; at three halfpence per acre, 32,000 acres, and so on. The term may be fourteen, twenty-one, or twenty-eight years, as the opening proclamation may declare. The annual rent for the first period of seven years may range from one halfpenny an acre upwards, as may be proclaimed or tendered. The rent for each subsequent period of seven years will be determined by the Land Court.

A grazing farm must be continuously occupied by the selector residing personally on it, or by his manager or agent doing so. Within three years of the issue of the license to occupy, the selector must enclose the land with a substantial fence, and must keep it so fenced during the whole of the term. In the case of two or more contiguous farms, not exceeding in the aggregate 20,000 acres, the Court may permit the selectors to fence only the outside boundaries of the whole area. If so declared by proclamation, the enclosing fence must be of such a character as to prevent the passage of rabbits.

The selectors of a group of two or more grazing farms, the area of none of which exceeds 4000 acres, may associate together for mutual assistance, and on making proof of *bona fides* to the Commissioner, may receive from him a special license, enabling not less than one-half of the whole number by their personal residence on some one or more of the farms to perform the condition of occupation in respect of all the farms. The applicant for a grazing farm must first obtain an occupation license, and as soon as the land is fenced in the manner prescribed, the selector becomes entitled to a lease of it, and may thereafter mortgage it; or, with the permission of the Minister may subdivide or transfer it; or with the consent of the Land Court, may underlet it. The cost of survey—of which one-fifth must be paid when application is made—ranges from about £30 for a farm of 2560 acres to about £65 for 20,000 acres.

(ii.) *Grazing Homesteads.* Lands available as grazing farms are also available for selection as grazing homesteads at the same rental and for the same term of lease. As already stated, an application to select as a grazing homestead takes precedence of a simultaneous application to select the land as a grazing farm. The conditions and provisions stated above in respect of grazing farms are applicable also to grazing homesteads, with the following two exceptions:—(a) During the first five years of the term of a grazing homestead the condition of occupation must be performed by the continuous personal residence of the selector on the land. (b) Before the expiration of five years from the commencement of the term, or the death of the original lessee, whichever first happens, a grazing homestead is not capable of being assigned or transferred. Unless with the special permission of the Minister, a grazing homestead may not be mortgaged.

(iii.) *Scrub Selections.* Lands which are entirely or extensively overgrown with scrub are available for selection in different classes according to the proportion of the land covered with scrub. The area selected must not exceed 10,000 acres, and the term of the lease is thirty years, the rent ranging from a peppercorn an acre in the first five years, one halfpenny an acre for the next succeeding ten years, and one penny an acre for the remaining fifteen years in respect of lands in the first class; to a peppercorn for the first twenty years, and one penny an acre for the remaining ten years in respect of those in the fourth class. During the first period in which the selector pays a peppercorn rent he must clear the whole of the scrub in equal proportions each year, and must keep it cleared, and must enclose the selection with a good and substantial fence. A negotiable lease is issued to the selector when his application is approved.

The following table shews the number of grazing farms, grazing homesteads, and scrub selections, for which applications were accepted during each year from 1901 to 1907:—

**QUEENSLAND.—GRAZING FARMS, HOMESTEADS AND SCRUB SELECTIONS,
1901 to 1907.**

| Year. | Grazing Farms. | | Grazing Homeste'ds. | | Scrub Selections. | | Total. | |
|----------|----------------|-----------|---------------------|---------|-------------------|--------|--------|-----------|
| | No. | Area. | No. | Area. | No. | Area. | No. | Area. |
| | | Acres. | | Acres. | | Acres. | | Acres. |
| 1901 ... | 247 | 1,371,283 | 47 | 290,785 | 19 | 48,450 | 313 | 1,710,518 |
| 1902 ... | 245 | 1,410,364 | 38 | 171,104 | 10 | 51,058 | 293 | 1,632,526 |
| 1903 ... | 106 | 709,183 | 25 | 123,026 | 6 | 5,423 | 137 | 837,632 |
| 1904 ... | 150 | 1,244,072 | 21 | 176,435 | 1 | 200 | 172 | 1,420,707 |
| 1905 ... | 210 | 1,738,882 | 23 | 120,982 | 7 | 31,457 | 240 | 1,891,321 |
| 1906 ... | 262 | 2,067,275 | 56 | 404,499 | 3 | 9,562 | 321 | 2,481,336 |
| 1907 ... | 374 | 3,028,696 | 54 | 315,444 | 8 | 58,954 | 436 | 3,403,094 |

Particulars of total areas held under leases and licenses are given in a later part of this section. (See § 12.)

(iv.) *Occupation Licenses.* Annual licenses are granted to occupy Crown lands which have been declared open for such occupation by notification in the *Gazette*. The rent is as specified by the notification or as bid by the licensee, but the Minister may by notice before the 1st September in any year increase the rent by an amount not exceeding 25 per cent. The licensee is entitled to compensation for improvements effected of which the Land Court has approved. The total number of licenses in force at the end of the year 1907 was 1690, comprising an area of 67,287½ square miles, the total rent being £31,051. Particulars of the area held under license for previous years are given in a later part of this section. (See § 12.)

(v.) *Special Leases.* Leases of any land not exceeding fifty acres in area may be issued for the erection of wharves, store-houses, ship-building yards, baths, waterworks, gas or electricity works, or for any manufacturing, industrial, residential, or business purposes, for a term not exceeding thirty years, and upon conditions to be determined by the Governor-in-Council. Leases for a similar term may be issued for any country lands reserved for public purposes and which are infested with noxious weeds, on the conditions that steps are taken to destroy such weeds and that the land is held so that it may be used for the public purpose for which it was reserved without undue obstruction.

Under Section 30 of the Land Act 1905 special leases of lands infested with noxious animals or plants may be issued on easy terms.

During the year 1907 there were 1690 leases for special purposes granted, comprising an area of 67,287½ square miles, the total annual rent being £31,051. Particulars of special leases for previous years are given in a later part of this section. (See § 12.)

(vi.) *Perpetual Lease Selections.* This form of tenure was introduced by the Lands Act Amendment Act 1908. Land proclaimed to be open for agricultural farm selection (see § 7, 4, above) may also be opened for perpetual lease selection, and the latter mode may be conceded priority of application over the former. The rent for the first period of ten years of the lease is 1½ per cent. on the proclaimed purchasing price of the land for agricultural farm selection. The rent for each succeeding period of ten years is determined by the Land Court. The same conditions of occupation and improvement as are prescribed for agricultural farms are attached to perpetual lease selections, and, except as specially prescribed, the provisions relating to agricultural farms apply to them also. As the name implies, the selections are leases in perpetuity, and are not capable of being converted to freeholds.

(vii.) *Special Licenses*: Licenses to cut timber or to dig for any stone, gravel, earth, shells, or guano, may^a be issued. The prescribed fees and a royalty must be paid.

(viii.) *Pastoral Leases*. By far the greater number of pastoral leases are now held under the Land Act 1902 in conjunction with the Act of 1897. Under the former Act existing lessees could surrender their leases and obtain new leases for terms varying from ten to forty-two years. The Governor-in-Council was empowered to grant leases of lands according to the areas and terms to be notified in the *Gazette*. The term may not, however, in any case exceed forty-two years.

The following table shews the total areas of pastoral leases (including resumed parts) occupied under the various Acts at the end of each year from 1901 to 1907, inclusive:—

QUEENSLAND.—PASTORAL LEASES OCCUPIED UNDER VARIOUS ACTS, 1901 to 1907.

| Particulars. | Area in Square Miles. | | | | | | |
|---|-----------------------|----------|----------|----------|----------|----------|----------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| Pastoral Leases Act 1869 ... | 39,306½ | 41,931½ | 35,938½ | 16,259½ | 11,423½ | 5,494 | 3,524½ |
| Crown Lands Act 1884 ... | 243,585½ | 238,752½ | 230,638½ | 118,335 | 65,992½ | 37,625½ | 31,801½ |
| Land Act 1897 ... | 15,046½ | 14,937½ | 14,937½ | 10,993½ | 10,679½ | 4,653½ | 3,686 |
| Pastoral Leases Act 1900 ... | 50,076½ | 50,721½ | 53,196 | 34,176½ | 31,589½ | 27,249½ | 27,130½ |
| Pastoral Holdings New Leases Act 1901 ... | — | 260 | 260 | 108 | 108 | 129½ | 336½ |
| Land Act 1902 ... | — | — | 2,452½ | 104,032½ | 161,022½ | 209,823½ | 235,597½ |
| Totals ... | 348,015½ | 346,602½ | 337,422½ | 288,904½ | 280,816½ | 284,975½ | 302,078½ |

5. **South Australia.**—The following are the various types of leases and licenses which are issued in this State:—(i.) Perpetual leases; (ii.) miscellaneous leases; (iii.) grazing and cultivation leases; (iv.) reclaimed swamp leases; (v.) licenses for special purposes; (vi.) leases under the Pastoral Act 1904; and (vii.) leases with right of purchase. General information regarding applications for leases and agreements has been given above. (See § 7, 5.) Leases of lands in the Northern Territory are dealt with in the next succeeding part of this sub-section.

(i.) *Perpetual Leases*. Any Crown lands which have been surveyed, or the boundaries thereof delineated on the public maps, are available for perpetual lease. The area and rent are determined by the Commissioner on the recommendation of the Land Board, and applications therefor must be accompanied by a deposit of 20 per cent. of the first year's rent, as notified in the *Gazette*. The lessee is required to execute and deliver the lease within twenty-eight days, and to pay the balance of the first year's rent and the prescribed fees within the same period. The land is vested in the lessee in perpetuity, and the rent is determined by the Board for each term of fourteen years, at least twelve months before the expiration of such period of fourteen years. If the lessee does not accept a revaluation of the rent within six months his lease determines at the then current period of fourteen years of his lease. All perpetual leases not subject to revaluation of rent are liable to the land tax, and the rent originally reserved shall be payable during the whole of the term. In respect of any land which, on account of deficiency of rainfall, is only suitable for pastoral purposes, the rent of such land is fixed at pastoral rates. The Crown reserves the right to resume any part of the land for the purposes of roads, tramways, railways, mining, etc., on making reasonable compensation to the lessee, and there is also in all leases a reservation to the Crown of all minerals, precious stones, coal, and mineral oils. The lessee may, after six years, with the consent of the Commissioner, sublet the whole or any part of his holding for a period not exceeding three years.

(ii.) *Miscellaneous Leases*. Leases of Crown lands, not exceeding 640 acres in extent, may be granted on such terms and conditions as the Governor may think fit to any *bonâ-fide* discoverer of any guano or other valuable substance or deposit (not including minerals).

The Governor has power to resume possession of any well or place where water has been found, and also of not more than one square mile of land contiguous thereto. If the water so found is artesian the area resumed may be increased to five square miles. The Governor may offer a lease of such land resumed by private contract or public auction.

Leases may also be granted by sale by auction for a term not exceeding twenty-one years of any Government buildings not required for Government purposes or of any Crown lands, for a variety of purposes, such as—for obtaining guano, stone, clay, or earth; for sites for inns, stores, factories, wharves, or for any other purpose approved by the Commissioner. Leases of lands comprised within any forest reserve may also be granted for any term not exceeding forty-two years.

(iii.) *Grazing and Cultivation Leases.* Every miscellaneous lease under any of the Crown Lands Acts for grazing and cultivation purposes, or grazing purposes only, is held to have been lawfully granted, and the power of resumption, if required for any purpose of public utility, is reserved to the Crown. Any lessee under any such miscellaneous lease may, with the consent of the Commissioner, cultivate the whole of the land without rendering the lease liable to forfeiture, provided that no trees be injured or timber be cut down or destroyed without the consent of the Commissioner.

(iv.) *Reclaimed Swamp Lands.* These are subdivided and offered on perpetual lease in the same manner as other lands are offered. The rent may not be less than 4 per cent. per annum on the cost of reclaiming and the unimproved value of the land. During the first year only one-quarter of the annual rent need be paid, one-half during the second year, three-quarters during the third year; afterwards the whole annual rent must be paid yearly. No person may hold more than two blocks of reclaimed lands. Any of these lands remaining unallotted for a year may be let at reduced rental, or on miscellaneous lease.

(v.) *Licenses.* Licenses to remove timber, stone, guano, manure, shell or seaweed from Crown lands, and for fishermen's residences and drying grounds, for manufactures, slaughter-houses or saw mills, for depasturing stock, or other approved purposes for any term not exceeding a year, may be granted by the Commissioner or any person authorised by him on payment of fee as fixed by regulation.

(vi.) *Leases under the Pastoral Act 1904.* This Act deals with Crown lands which do not come within the scope of the Lands Acts. The Act is administered, under the Commissioner of Crown Lands, by a Board consisting of three members appointed by the Governor. The duties of the Board are to decide upon the area, rent, and term of lease of land, and to allot the same. In fixing the size of the blocks allotted regard is paid to natural features, so as to utilise improvements and waters to each block as equally as possible. The amount to be paid for any improvement is fixed, distinguishing between amounts payable to the Crown and to the outgoing lessee.

(a) *General Provisions.* Notice of land available is published in the *Gazette*, shewing the area, situation, term of rent of each block, price to be paid for improvements, and the cost of valuing such improvements. Any land not applied for within a month of the date of the notice may be reoffered at a reduced price, and so on at intervals of three months until applied for. Each application must be accompanied by a quarter of a year's rent and 5 per cent. of the price payable for improvements, or 10 per cent. if the improvements do not belong to the Crown. The successful applicant must pay the balance of the first year's rent and the lease fee within one month after allotment. A lease does not entitle the holder to mining rights, or to remove timber, but only to use the surface of the land for pastoral purposes, or for other purposes approved by the Commissioner. The cost at the nearest port or railway station of barbed wire and netting required for vermin-proof boundary fences may be advanced to the lessee by the Commissioner in certain cases, upon the recommendation of the Board, after wire and netting

to the amount of such cost have been utilised in vermin-proofing boundary fences. These advances bear interest at 4½ per cent. per annum, principal and interest being repaid in twenty equal annual instalments of £7 13s. 9d. for every £100 advanced. Leases may be granted to charitable incorporated bodies for any term not over twenty-one years, at such rent and terms as the Governor may think fit, of land for aboriginal reserves, in blocks not exceeding 1000 square miles, with right of renewal so long as the land is used for the aboriginals.

- (b) *Terms and Conditions.* The term of the lease is forty-two years, unless the land is likely to be required for closer settlement, when the term is twenty-one years; forty-two-year leases are subject to revaluation of rent for the latter twenty-one years. In determining the rent the Board must in all cases have regard to the land's carrying capacity for stock, its value for other purposes, its proximity and facility of approach to railways, ports, rivers, or markets. Within twelve months of the expiry of a lease all improvements on the land must be valued, and their position indicated on a plan. Unless already improved up to £3, every lessee is required to expend in improvements on the land a sum fixed by the Board, not exceeding ten shillings per mile per annum, until at least £3 per mile has been so expended. Payment for improvements belonging to the Crown may be made by annual instalments, extending if desired over forty-two years, the lessee meanwhile keeping such improvements in repair. Improvements must consist of wells, tanks, dams of a permanent character, machinery, and appliances for raising water, vermin-proof or other fences, huts or sheds erected for residence or shearing or other purposes required in connection with live stock. The lessee must stock his holding in the proportion of five head of sheep or one head of cattle for every square mile within three years, and within seven years in the proportion of twenty head of sheep or four head of cattle for every square mile. The average annual rental of pastoral lands is about three shillings and twopence per square mile.

- (c) *Resumption and Free Leases of Pastoral Lands.* Any run may be resumed for public works, sites for a town or cemetery, for mining, or for park lands, on a month's notice; or for intense culture, after the first ten years of the term, after a year's notice. The lessee is entitled to compensation for land resumed from his run, or for loss or depreciation in value of his lease caused by such resumption, and for improvements. The Commissioner or any person authorised by him, may enter on any run to sink bores or wells, or to construct dams or other water conservation works, outside of one mile from any improvements consisting of well, dam, or building worth £100. If water is so discovered, an area of one square mile may be resumed, and a lease thereof granted to the discoverer. Where artesian water is discovered, five square miles may be resumed. If a lessee discover artesian water on his run, at least ten miles from any other artesian supply on his run, which yields not less than 5000 gallons per day of water suitable for stock, he is entitled to 100 square miles of land surrounding the well, rent free for ten years, for each well so discovered up to four.

(vii.) *Leases with Right of Purchase.* Under the Crown Lands Act of 1888, now repealed by the Crown Lands Act 1903, and the Pastoral Act 1904, leases were granted with a right of purchase for a term of twenty-one years, containing a right of renewal for a further term of twenty-one years and a right of purchase, exercisable at any time after the first six years at a price of not less than five shillings an acre. The renewed leases are now governed by Part V. Division V. of the Act of 1903. The rent for the term of any renewed lease with a right of purchase is fixed by the Board by revaluation at least twelve months before the expiration of the original lease, and the renewed lease contains a right of purchase exercisable at any time during the term of the renewed lease. In

fixing the purchase-money and rent for a renewed lease the Board, in cases of revaluation, does not consider the value of the improvements made.

(viii.) *Area held under Lease, 1901 to 1907.* The following table shows the area held under leases and licenses at the end of each year from 1901 to 1907 :—

SOUTH AUSTRALIA (Proper).—AREA UNDER LEASES AND LICENSES, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Right of Purchase Leases ... | 5,639,519 | 5,640,488 | 5,528,011 | 5,186,467 | 4,888,422 | 4,724,954 | 4,579,418 |
| Perpetual Leases ... | 7,115,782 | 7,652,494 | 8,536,990 | 9,607,388 | 10,573,154 | 11,445,372 | 12,568,576 |
| Pastoral Leases ... | 68,916,125 | 72,408,435 | 73,368,105 | 75,154,310 | 76,402,950 | 76,685,510 | 79,388,240 |
| Other Leases ... | 3,905,729 | 3,551,167 | 2,896,936 | 2,473,940 | 2,273,383 | 2,113,718 | 1,985,866 |
| Total held under Lease ... | 85,577,155 | 89,252,604 | 90,330,042 | 92,422,105 | 94,147,909 | 94,969,554 | 98,522,100 |

6. **Northern Territory.**—In the Northern Territory the freehold of the land may only be acquired either by purchase at auction or by private agreement (see § 6, 5, (iii.) above) or by first taking a lease with right of purchase. The various types of leases issued are as follows:—(i.) Agricultural leases; (ii.) pastoral leases; (iii.) special leases; (iv.) Leases with right of purchase; and (v.) perpetual leases. No person may hold more than 3000 acres under lease.

(i.) *Agricultural Leases.* Leases may be granted for a term of five years at an annual rent of sixpence an acre for blocks, not exceeding 640 acres, of any lands north of 17° Lat. S. for the production of rice, sugar, coffee, tea, indigo, tobacco, cotton, or of any other agricultural product which may be allowed by the regulations. Leases for blocks not exceeding 160 acres may be granted, on residential conditions, at a rent of threepence an acre. The lessee must fence his holding during the term of the lease; within two years from the date of the lease he must cultivate at least one-tenth of the land, and during the third and every subsequent year must cultivate at least one-twentieth additional part of the area.

(ii.) *Pastoral Leases.* Leases for pastoral purposes are regulated by the Pastoral Act of 1899, which provides that leases may be granted for a term of forty-two years at an annual rental of sixpence per mile for the first seven years, not less than one shilling per mile for the second period of seven years, and two shillings for the third period of seven years; the rent for the remainder of the term is fixed by valuation. It is also provided that land which has been once leased for pastoral purposes may not be leased again for the same purposes unless a lease thereof has been offered for sale by auction at an upset yearly rent of sixpence per square mile. The lessee must stock the land before the end of the third year with five head of sheep or one head of cattle per square mile, and before the end of the seventh year must increase the stock to ten sheep or two head of cattle per square mile. The land may be resumed for public purposes upon three months' notice, or for other purposes upon two years' notice. Since the year 1902 long leases for pastoral purposes have not been granted. Land has been let only on annual permits; if the holder of a permit can shew that he is making good use of the land, and if no application has been made for it for agricultural purposes, the permit is extended.

(iii.) *Special Leases.* Discoverers' leases may be granted, on such terms as the Minister may think fit, for areas not exceeding 640 acres for coal, petroleum, guano, or other valuable substance (excluding minerals). Special leases may be sold at auction for the purpose of obtaining clay and stone as sites for stores, inns, wharves, factories, etc.

(iv.) *Leases with Right of Purchase.* These leases are granted for twenty-one years, with a right of renewal for a further period of twenty-one years and a right of purchase

at a price to be fixed by the District Land Board, not being less than five shillings an acre. The rent is as notified in the *Gazette*. The land must be fenced within seven years.

(v.) *Perpetual Leases*. These leases are granted at a rent for the first fourteen years as notified in the *Gazette*, and for every subsequent period of fourteen years as fixed by the Board on revaluation. The land must be fenced within seven years.

(vi.) *Area held under Lease, 1901 to 1907*. The following table shows the total area held under lease at the end of each year from 1901 to 1907:—

NORTHERN TERRITORY.—AREAS HELD UNDER LEASE, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Right of Purch. Leases | 1,067 | 1,227 | 1,407 | 1,567 | 2,087 | 2,397 | 2,771 |
| Pastoral Leases | 111,476,240 | 113,755,920 | 104,609,200 | 104,641,200 | 102,030,240 | 108,347,680 | 105,918,880 |
| Other Leases | 1,176,981 | 108,821 | 28,181 | 28,181 | 1,248,019 | 1,376,010 | 1,347,858 |
| Total Leased | 112,654,288 | 113,865,968 | 104,638,788 | 104,670,948 | 103,280,346 | 109,726,067 | 107,269,509 |

7. **Western Australia.**—The following are the various types of leases and licenses issued in this State:—(i.) Pastoral leases; (ii.) permits and licenses to cut timber; (iii.) special leases; and (iv.) licenses for quarrying.

(i.) *Pastoral Leases*. Leases are granted for pastoral purposes throughout the State, but such leases give no right to the soil, or to the timber, except to such timber as may be required for domestic purposes or for the construction of improvements, and the lands leased may be reserved, sold, or otherwise disposed of by the Crown at any time during the currency of the term. All pastoral leases expire on the 31st December, 1928; the following are the conditions upon which such leases are issued in the various divisions of the State:—(a) In the South-west Division in blocks of not less than 3000 acres, at an annual rent of £1 for each 1000 acres or part thereof. (b) In the Central and North-west Divisions, in blocks of not less than 20,000 acres at an annual rent of ten shillings for each 1000 acres or part thereof. (c) In the Eucla Division, in blocks of not less than 20,000 acres at an annual rent of three shillings for each 1000 acres or part thereof. (d) In the Eastern Division, in blocks of not less than 20,000 acres at an annual rent of five shillings for each 1000 acres or part thereof. (e) In the Kimberley Division, in blocks of not less than 50,000 acres when on a frontage, nor less than 20,000 acres when no part of the boundary is on a frontage, at an annual rent of ten shillings for each 1000 acres or part thereof. Any lessee in the Kimberley Division may obtain a reduction of one-half the rent due for the remaining years of his lease, who at any time during the term of his lease has, and for so long as he has in his possession on the land the subject of the lease, or of any other lease not separated by a greater distance than twenty-five miles, owned and worked by the lessee as one station, ten head of sheep or one head of large stock for each 1000 acres leased. Under the Amendment Act of 1906, which is not retrospective, it is provided that if any pastoral lease or group of leases worked as one station is not kept stocked, after the first two years from the commencement of the term, at the rate of at least ten head of sheep or one head of large stock for every 1000 acres comprised therein, such lease or leases are liable to forfeiture.

(ii.) *Permits and Licenses to Cut Timber*. The alienation of forests and timber lands is now regulated by the Lands Act Amendment Acts of 1904 and 1906, under which the Governor is authorised to appoint an Inspector-General of Forests and an Advisory Board consisting of three persons, whose duty it is to advise the Minister upon all matters relating to forest conservation and timber lands. The Governor is authorised to declare any Crown Lands to be a State forest or timber reserve, and to grant to persons desirous of erecting saw-mills permits to cut timber in any State forest or timber reserves, or on

any Crown land, upon the following conditions:—(a) That the right of cutting timber is granted over an area proportional to the horse-power of the mill proposed to be erected on the basis of the provision of ten years' cutting; (b) that the railway or tramway connecting such mill with any Government railway shall be located in such manner as will best serve the country requiring an outlet in that vicinity; (c) that the permit is liable to forfeiture in the event of the mill being closed for a period of one month without the consent of the Governor, or in the event of any breach of any condition or provision; (d) such other conditions as may be prescribed. Licenses may also be granted to hew and fell timber for piles, poles, or baulks, subject to the payment by the licensee of royalties proportional to the measurement of the timber hewn or felled. The amount of all fees or royalties is fixed by the Governor.

(iii.) *Special Leases.* On receiving an application in the prescribed form the Governor may grant leases of any Crown land for any area not exceeding (except in the cases of leases for guano or other manure, or for the collection or manufacture of salt) twenty-five acres, for a term not exceeding twenty-one years, at a yearly rental of not less than £2, for a variety of purposes, such as:—For obtaining guano, stone, or earth; for sites for inns, stores, bridges, factories, wharves, and jetties; for the working of mineral springs; for the collection and manufacture of salt; for works for supplying water, gas, or electricity; or for any other purpose approved by the Governor. The lessee must pay a deposit of one-half of the first year's rent, and must also pay for the cost of survey. In all cases where it is proposed to grant a lease for a longer period than ten years, notice of the application for such lease and of the purpose and term thereof must be published in four consecutive numbers of the *Gazette*.

(iv.) *Licenses for Quarrying.* Licenses are granted to any person to quarry and dig for any rock, soil, or other material, on any lands vested in the Crown, not being on a goldfield or in a mining district, for building purposes and to make bricks or any other commodity. The fee to be paid for such license is determined by the Governor, not being, however, less than five shillings per month for each man employed.

(v.) *Areas Held under Leases and Licenses, 1901 to 1907.* The following table shows the number and area of leases and licenses issued during each year from 1901 to 1907:—

WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. ¹ | 1907. ¹ |
|--|------------|------------|------------|------------|------------|--------------------|--------------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Pastoral Leases | 19,909,251 | 23,679,928 | 30,737,486 | 19,363,189 | 16,609,822 | 19,255,374 | 26,367,463 |
| Special Leases | 149 | 196 | 322 | 303 | 3,866 | 2,805 | 13,727 |
| Leases in Reserves | 324 | 300 | 100 | — | 100 | 1,000 | 75,640 |
| Timber Leases and Permits ² | 109,630 | 47,360 | 14,720 | — | — | 41,370 | 19,300 |
| Residential Lots | 221 | 159 | 196 | 143 | 171 | 19 | 21 |
| Total | 20,019,575 | 23,727,943 | 30,752,824 | 19,363,635 | 16,613,959 | 19,300,748 | 26,476,151 |
| Number Issued | 1,466 | 1,334 | 1,579 | 1,192 | 1,245 | 1,370 | 873 |

1. For financial year ended the 30th June. 2. No timber leases granted since 1903.

Particulars as to the total area occupied under leases and licenses are given in a later part of this section. (See § 12.)

8. *Tasmania.*—The several forms of leases and licenses in this State are as follows:—(i.) Grazing leases; (ii.) miscellaneous leases; (iii.) timber licenses; and (iv.) occupation licenses.

(i.) *Grazing Leases.* Grazing leases of unoccupied country may be offered at auction, but such runs are liable at any time to be sold or occupied by virtue of a license for other than pastoral purposes, and to be otherwise alienated and dealt with. The rent

is fixed by the Commissioner, and the run is put up for auction, the highest bidder receiving a lease to occupy the same for fourteen years, which may be transferred by the lessee with consent of the Commissioner, and on payment of a fee of one shilling in the pound on the annual rental. The rent is payable half-yearly in advance, and the lease is determinable, should the rent not be paid within one month of becoming due. In the event of the land being required for sale or for any public purpose, six months' notice must be given to the lessee, who becomes entitled to receive from the Crown compensation for the value of all permanent improvements he may have made during the currency of his lease.

(ii.) *Miscellaneous Leases.* The Governor-in-Council may grant leases for a period not exceeding fourteen years of any land bordering upon a navigable river, or on the sea, if required for the purpose of constructing wharves, docks, jetties, or any other works of public utility. For whatever purpose the land is leased, the lease may be determined in case of non-completion of the works. Leases may also be granted, on similar conditions and terms, for the purpose of constructing watercourses, or of erecting a manufactory, mill, or such other work, or for constructing railways or tramways.

(iii.) *Timber Licenses.* Temporary licenses for a period not exceeding five years may be granted for the purpose of felling timber, or for removing gravel, clay, or stone, etc., on or from particular localities.

(iv.) *Occupation Licenses.* Occupation licenses may be issued by the Commissioner for a period not exceeding twelve months, to any person of the age of twenty-one or over, upon payment of a fee of five shillings. The license must describe the position and area of the land; no person can hold more than one such license at any time. Any person holding an occupation license is entitled to occupy, during the current year, the surface of any Crown land within any mining area not exceeding one-quarter of an acre. An occupation license is not transferable, and the holder thereof is not entitled to any compensation in respect of any improvements effected on the land, should the same be resumed by the Crown. The license is terminable at any time by three months' notice.

Residence licenses are granted on similar terms upon payment of a fee of ten shillings, and any person holding a residence license is entitled to occupy as a domicile, during the current year, the surface of the land described, which cannot exceed one-quarter of an acre in extent, within any town situate within a mining area.

Business licenses are also granted on similar conditions upon payment of a fee of twenty shillings, and entitle the holder to occupy, during the current year, the surface of any Crown land situate within any mining area not exceeding one-quarter of an acre, not being within a town. Residence and business licenses may be transferred by endorsement to any person eligible.

(v.) *Area held under Leases and Licenses.*—The following table shews the areas of Crown lands occupied under leases and licenses at the end of each year from 1901 to 1907 :—

TASMANIA.—LEASES AND LICENSES, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Ordinary Leased Land | 1,280,688 | 1,292,959 | 1,366,063 | 1,133,152 | 1,082,851 | 1,117,311 | 1,145,623 |
| Islands | 149,165 | 110,135 | 88,590 | 121,850 | 89,003 | 91,131 | 109,531 |
| Land Leased for Timber | 40,768 | 68,109 | 82,335 | 90,300 | 87,932 | 86,817 | 88,035 |
| Total | 1,470,621 | 1,471,203 | 1,536,988 | 1,345,302 | 1,259,786 | 1,295,259 | 1,343,389 |

§ 9. Closer Settlement.

1. **Introduction.**—In all the States, Acts have been passed authorising the Governments to repurchase alienated lands for the purpose of cutting them up into blocks of suitable size and throwing them open to settlement on easy terms and conditions. Special Acts have also been passed in several of the States authorising the establishment on particular lines of co-operative communities, village settlements, and labour colonies.

2. **Government Loans to Settlers.**—For the purpose of promoting pastoral, agricultural, and similar pursuits, and with the object of assisting settlers in erecting buildings and carrying out improvements on their holdings, general systems have been established in all the States, under which financial aid is rendered to settlers by the State Governments. These general systems are more particularly referred to in the section in this book dealing with "Agriculture." In many of the Closer Settlement and similar Acts, however, special provisions have been inserted with the object of lending money to settlers taking up land under these Acts, with which to build homes or effect improvements. The principal features of these provisions are referred to below.

3. **New South Wales.**—Under the Closer Settlement Act of 1901 provision was made for the acquisition of private lands or of Crown lands held under lease, for the purpose of closer settlement. No power of compulsory resumption was conferred by the Act, which was consequently practically inoperative. Under the Closer Settlement Act of 1904, as amended in 1906 and 1907, the Government is empowered to resume private lands, either by agreement or by compulsory purchase, and to alienate them on favourable terms to persons who desire to settle and make homes for themselves and their families on the soil. Land acquired under the Act is subdivided into blocks or farms, and by notification in the *Government Gazette* is declared to be a settlement purchase area available for application. The *Gazette* notice also gives all necessary information as to the class and character of the land, and the capital value, area, etc., of each block or farm.

(i.) *Closer Settlement Purchase.* Under this tenure a settler may acquire the freehold of the land under a system of deferred payments. A male applicant must not be under the age of eighteen years, or female twenty-one years. A deposit of 5 per cent. of the notified value of the settlement purchase must be lodged with the application, and a similar amount by way of instalment, paid annually until the purchase money, together with interest at the rate of 4 per cent., is paid off. Under this system the balance due to the Crown will be paid off in thirty-eight years, the holding then becoming a freehold. A condition of residence for ten years attaches to every settlement purchase, and the purchaser must commence to reside on his holding within twelve months after the date of the Land Board's decision allowing the purchase, unless the commencement of residence is extended to some date within five years from the date of purchase, on such terms and conditions as to improvements and cultivation as may be agreed on between the Local Board and the purchaser. With the Board's permission, residence may be performed in any adjacent village or town.

(ii.) *Closer Settlement Annual Leases.* Leases for areas not exceeding 320 acres may be obtained under the Closer Settlement Acts, subject to such conditions as the Governor may prescribe. Land so leased may not be improved without the written consent of the Minister, or of the Chairman of the Local Land Board, which Board fixes the annual rent. These leases expire on the 31st day of December of the year in which they are granted, but may be renewed from year to year on payment of the yearly rent in advance, not later than the 10th December of each year. The granting of a lease of this kind will not exempt the land held thereunder from being granted as a settlement purchase, and on a valid application for a settlement purchase the lease of so much of the land as is

applied for is thereby determined from the date of that application. In such cases the rent will be adjusted, and any balance paid in excess refunded. The Minister has power to cancel the lease at any time by giving not less than three months' notice in the *Gazette* of his intention to do so.

(iii.) *Sales by Auction.* Areas within closer settlement districts necessary for township settlement may be set apart by notification in the *Gazette*. Allotments, each of which may not exceed half an acre in extent, within such areas may be sold by auction.

(iv.) *Areas Acquired and Disposed of, 1901 to 1908.* Up to the 30th June, 1908, three areas—namely, those at Myall Creek, Gobbagombalin, and Marrar—had been opened for settlement under the Closer Settlement Acts.

The following statement gives particulars of the areas opened up to the 30th June, 1906 to 1908:—

NEW SOUTH WALES.—CLOSER SETTLEMENT AREAS, 1906 to 1908.

| Year Ended the 30th June. | Areas. | | | Capital Values. | | |
|---------------------------|-----------------|------------------------|---------|-----------------|------------------------|---------|
| | Acquired Lands. | Adjoining Crown Lands. | Total. | Acquired Lands. | Adjoining Crown Lands. | Total. |
| | Acres. | Acres. | Acres. | £ | £ | £ |
| 1906 ... | 53,523 | 13,166 | 66,689 | 137,795 | 24,589 | 162,384 |
| 1907 ... | 142,403 | 25,712 | 168,115 | 438,490 | 37,178 | 475,668 |
| 1908 ... | 145,365 | 25,757 | 171,122 | 448,235 | 37,351 | 485,586 |

The total area thus set apart has been divided into 326 farms comprising 157,866 acres, the remaining 10,249 acres being reserved for recreation areas, roads, stock routes, schools, etc. Up to the 30th June, 1907, 320 farms, comprising an area of 154,922 acres and valued at £470,787, had been allotted. At the same date the improvements effected by settlers were valued at £22,932. The following table gives particulars as to the disposal of the farms by closer settlement purchase for each year ended the 30th June, 1905 to 1908:—

NEW SOUTH WALES.—CLOSER SETTLEMENT ALLOTMENTS, 1905 to 1908.

| Year. | Farms Alloted by Board to Date. | | | Total Amount received in respect of Settlement Purchases. | Total Number of Applications received. |
|------------|---------------------------------|---------------|----------|---|--|
| | Number. | Area. | Value. | | |
| 1904-5 ... | No. 49 | Acres. 18,568 | £ 56,235 | £ 2,817 | No. 50 |
| 1905-6 ... | 98 | 48,567 | 120,445 | 6,560 | 120 |
| 1906-7 ... | 319 | 154,922 | 470,787 | 24,698 | 551 |
| 1907-8 ... | 326 | 157,642 | 475,540 | 31,793 | 558 |

(v.) *Labour Settlements.* These settlements were founded by the Labour Settlements Acts 1893 and 1894, which have now been amended and repealed by the Labour Settlements Act 1902. Land may be set apart for lease for a period of 28 years as a labour settlement under the superintendence of a Board of Control, consisting of from eight to sixteen members appointed by the Governor. The rent is fixed by the Minister after appraisalment by the local board. The functions of the Board of Control are to enrol members of the settlement; to make regulations concerning the work to be done; to apportion the work among the members; and to distribute the wages and profits. The Board may establish any trade or industry, and must distribute the profits among the enrolled members.

(a) *Government Aid to Settlers.* The Minister is empowered to grant financial assistance to the Board of Control to an amount not exceeding £50 for each

enrolled member, who is the head of a family dependent upon him; £40 for each married person without a family; and £30 for each unmarried person. On the expiration of four years from the commencement of the lease, and at the end of each year following, 8 per cent. of the total sum advanced to the Board is a charge on its revenue, until the total amount, with interest at 4 per cent., is repaid.

(b) *Settlements Established.* Only two settlements had been established under the Act up to the 30th June, 1907. Particulars are given in the following statement:—

NEW SOUTH WALES.—PARTICULARS OF LABOUR SETTLEMENTS, 30th JUNE, 1907.

| Settlement. | Date of Establishment. | Area. | Population. | | | | Value of Improvements. | Loans Advanced by the Government. |
|-----------------|------------------------|-----------------|---------------|--------|-----------|--------|------------------------|-----------------------------------|
| | | | Men Enrolled. | Women. | Children. | Total. | | |
| Bega ... | 1893 | Acres. 1,360 | 31 | 29 | 140 | 200 | £ 2,296 | £ 2,421 |
| Wilberforce ... | 1893 | 409 | 11 | 9 | 32 | 52 | 2,360 | 2,495 |
| Total ... | — | 1,769 | 42 | 38 | 172 | 252 | 4,656 | 4,916 |

4. *Victoria.*—(i) *Closer Settlement Acts, 1898 to 1907.* All private lands acquired either compulsorily or by agreement by the Lands Purchase and Management Board (see § 3, above) must be paid for at the option of the owner by money, debentures, or stock. The Governor is authorised from time to time during the first five years from the date on which the Act came into force to increase the amount of Victorian Government Stock by an amount not exceeding £500,000 in any one year, or he may issue debentures for the whole or any part of such sum in lieu of increasing the amount of stock. The Board may dispose of all lands acquired, either Crown lands or repurchased lands, on conditional purchase leases either as farm allotments, workmen's homes allotments, or agricultural labourers' allotments. The price of the land disposed of is to be so fixed as to cover the cost of original purchase, the cost of survey and subdivision, the value of lands absorbed by roads and reserves, and the cost of clearing, draining, fencing, or of other improvements which the Board may effect prior to the disposal of the land. The land to be disposed of is divided into (a) farm allotments not exceeding £1500 in value, (b) workmen's homes allotments not exceeding £100 in value, and (c) agricultural labourers' allotments not exceeding £200 in value. Land acquired by the Board may also be sold in small areas in fee simple as sites for churches, public halls, butter factories, creameries, or recreation reserves, and if any land is not taken up under lease within one year after being declared available, it may be sold by auction.

(b) *Closer Settlement Leases.* An application for a lease must be accompanied by a deposit equal to one instalment, equal to 3 per cent., of the purchase money of the allotment of the highest value of those applied for, and the registration and lease fees thereof. Not more than one allotment may be held by one lessee. Every conditional purchase lease is for such a term of years as may be agreed upon by the lessee and the Board, and payment must be made with interest at 4½ per cent. per annum by sixty-three half-yearly instalments, or such lesser number as may be agreed upon. The lease is subject to the following conditions:—The lessee must destroy vermin and noxious weeds to the satisfaction of the Board within three years; he must enclose the land within one year, or if he use the allotment for grazing purposes only, within three months; he must personally reside during eight months in each year, during the currency of the lease, on his allotment; he must make improvements equivalent in value to at least two instalments payable for the land before the end of the first

year; to the value of 10 per cent. of the purchase-money before the end of the third year, and to the value of a further 10 per cent. before the end of the sixth year, being a total of one-fifth of the value of the land. If all covenants and conditions have been duly complied with the lessee may, after six years, and with the written consent of the Board, transfer, assign, mortgage, or sublet his allotment. A Crown grant may be issued after the expiration of twelve years on payment of the balance of the purchase-money, if all conditions have been complied with. Any land may be resumed by the Crown for public purposes upon payment of compensation to the lessee for the loss of his allotment or part thereof, and for any improvements erected by him thereon. In the case of workmen's homes allotments the land must be fenced within one year, and a dwelling-house to the value of at least £50 must be erected within the same time; within two years further improvements must be made to the value of at least £25. As regards agricultural labourers' allotments, a dwelling-house to the value of at least £30 must be erected within one year, and in two years the allotment must be fenced.

(b) *Advances to Settlers.* The Board may make advances for the purpose of fencing and building dwelling-houses, and is empowered to erect dwelling-houses, outbuildings, or improvements on any allotment at a cost not exceeding £250 for any one allotment. Any sum so expended, together with interest at 5 per cent. per annum, is repayable by equal half-yearly, quarterly, or monthly instalments, extending over such a period not greater than twenty years as may be prescribed. Provision has been made to enable lessees, who, through unpropitious seasons or other adverse circumstances, are unable to meet their instalments as they fall due, to have them deferred, and those lessees who have expended all their available capital in improving their holdings, are enabled to obtain an advance to continue working and improving their allotments. All such deferred payments or moneys advanced carry interest at 5 per cent.

(c) *Loans to Municipalities.* The Amendment Act of 1907 provides that by approval of the Minister of Lands and under the certificate of the Inspector-General of Public Works, loans may be made to the council of any municipality out of the Closer Settlements Fund for the purpose of carrying out any road-making or other public works within the boundaries of an estate.

(d) *Areas acquired and made available for Closer Settlement, 1901 to 1908.* The following statement shews the operations which have taken place in Victoria under the provisions of the Closer Settlement Acts, 1898 to 1906, up to the 30th June in each year from 1901 to 1908, inclusive:—

VICTORIA.—CLOSER SETTLEMENT, 1901 to 1908.

| Year ended 30th June. | Total Area Acquired by Government to Date. | Total Cost to Date. | How Made Available for Settlement. | | | | | | Number of Applications Granted to Date. | Total Receipts to Date. | Repayments of Principal to Date. | Area Available for Settlement. |
|--------------------------|---|------------------------|------------------------------------|-----------------------------------|---|---------------------|---------------------------|--------|---|----------------------------|-------------------------------------|--------------------------------------|
| | | | Farm Allotments. | Workmen's Homes Allotments. | Agricultural Labourers' Allotments. | Town Allotments. | Roads and Reserves. | Acres. | | | | |
| | Acres. | £ | Acres. | Acres. | Acres. | Acres. | Acres. | No. | £ | £ | Acres. | |
| 1901 | 28,553 | 151,566 | 28,461 | 69 | — | 44 | 240 | 193 | 7,529 | — | — | |
| 1902 | 33,655 | 205,715 | 33,477 | 69 | — | 48 | 329 | 239 | 21,181 | 5,002 | — | |
| 1903 | 33,662 | 206,285 | 33,483 | 69 | — | 48 | 329 | 239 | 28,846 | 6,921 | — | |
| 1904 | 33,662 | 209,341 | 33,483 | 69 | — | 48 | 329 | 239 | 42,128 | 16,625 | — | |
| 1905 | 36,516 | 228,982 | 35,513 | 152 | 366 | 48 | 335 | 336 | 56,549 | 18,110 | 19 | |
| 1906 | 148,902 | 1,008,839 | 116,371 | 186 | 924 | 232 | 775 | 933 | 92,638 | 28,869 | 2,790 | |
| 1907 | 207,775 | 1,349,661 | 156,358 | 428½ | 1,108 | 308½ | 827½ | 1,212 | 163,203 | 60,224 | 2,429 | |
| 1908 | 211,140 | 1,471,300 | 186,971 | 473 | 917 | 724 | 1,706 | 1,470 | 245,095 | 85,501 | 10,549 | |

- (e) *Areas Alienated and in Process of Alienation, 1901 to 1908.* The following table shews, so far as available, particulars of areas alienated absolutely and in process of alienation on the 30th June of each year from 1901 to 1908, inclusive :—

VICTORIA.—CLOSER SETTLEMENT. AREAS ALIENATED AND IN PROCESS OF ALIENATION, 1901 to 1908.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. |
|-------------------------------------|-------|-------|-------|-------|--------|---------|---------|---------|
| | Acres | Acres | Acres | Acres | Acres. | Acres. | Acres. | Acres. |
| <i>Alienated Absolutely—</i> | | | | | | | | |
| Conditional Purchases completed ... | ... | ... | ... | ... | ... | 274 | 1,700 | 2,504 |
| Sold for cash, etc. ... | 183 | 187 | 187 | 187 | 193 | 237 | 239 | 268 |
| Total ... | ... | ... | ... | ... | ... | 511 | 1,939 | 2,772 |
| <i>In Process of Alienation</i> ... | ... | ... | ... | ... | 37,996 | 114,691 | 164,561 | 174,812 |

(ii.) *The Small Improved Holdings Act 1906.* The object of this Act is to assist deserving persons to acquire small improved holdings in rural districts as close as possible to centres of population, where industrial employment may be obtained. The Governor is authorised to set apart any unoccupied Crown lands, or any land acquired under the Closer Settlements Acts, for the purpose of small improved holdings, and is empowered during the first three years in which the Act is in force to raise money, by the issue of Victorian Government stock, to the extent of not more than £150,000 in any one financial year, for the purpose of acquiring private land adapted for small holdings. All lands so set apart are divided into holdings not exceeding £200 in value, and the Minister may direct that the land be adapted for any purposes of husbandry by erecting improvements to the value of not more than £150 on any one allotment, which sum is paid out of a fund created for the purpose.

- (a) *Permissive Occupancy.* Any person who is over twenty-one years of age, is of good repute, and is unable by his personal means to acquire land suited to his requirements, may become a probationary tenant of a holding by making application to the Minister, who will grant a permissive occupancy. The occupant must, if required, enter into employment under the direction of a foreman, upon improvement works on his allotment. In case of such employment being required the occupant will be paid twenty shillings per week during the first six months, fifteen shillings a week during the second six months, and ten shillings a week during the third six months of such employment.
- (b) *Leases of Holdings.* At the expiration of six, twelve, or eighteen months from the time when permissive occupancy was granted, the tenant may obtain a conditional purchase lease, on payment of the registration and lease fees, for a term of 31½ years. The lessee must pay the value of the allotment and of any improvements effected out of the fund referred to above. He must destroy vermin and noxious weeds, and must within one year from the date of issue of the lease enclose his holding with a fence. Either the lessee or an approved member of his family must, during the currency of the lease, reside personally for at least eight months in each year on the allotment; he must insure buildings and improvements against fire, and he may not transfer, assign, mortgage, or sublet his holdings during the first six years of the lease. If at any time after the expiration of twelve years of the lease the Minister is satisfied that all conditions have been complied with, and that the full purchase-money has been paid, a Crown grant may be issued to the lessee.

(c) *Areas Made Available for Settlement.* Land for settlement has been purchased at Mordialloc, Thomastown, Geelong, Wangaratta, Bellarine, Daylesford, and Warragul, comprising in all 2822 acres of land at a cost of £53,568. Up to the 30th June, 1908, a total of 2745 acres had been subdivided into 249 allotments, and eleven lots were provided out of Crown lands. For these allotments 3126 applications were received. The work of building houses for the settlers was undertaken by the Government, the settlers being employed on the work. The Government has also hired out the necessary teams and implements to the settlers, thereby assisting them in making the land immediately productive.

(iii.) *Village Communities.* Under the Settlement on Lands Act 1893, as amended by the Land Acts, any unalienated Crown lands, provided they are not auriferous or are not permanently reserved for any purpose, may be proclaimed and appropriated for the purposes of village communities. Such lands were originally surveyed into allotments of from one to twenty acres, according to the quality of the soil and the situation of the land, and the price fixed at not less than twenty shillings an acre, but under the Land Act 1901 (Secs. 344-346), additional areas may be acquired by conditional purchase, the value of which, together with the original holding, may not exceed £200. An applicant must not be under the age of eighteen years, nor the owner of the fee simple of two acres or over, nor the lessee of a pastoral allotment or grazing area, nor the holder of an agricultural allotment license. Permits to occupy may be granted for a period not exceeding three years at a nominal rental, and it is provided that monetary assistance not exceeding £50 may be advanced for the purpose of erecting buildings and improvements, but Parliament has not voted any money for this of recent years. Such loan is repayable in twenty equal annual instalments. The total amount of monetary aid advanced up to the 30th June, 1908, was £67,379, of which sum the amount repaid to date was £29,887. On the expiration of the period for which the permit is granted a lease may be obtained, provided that the conditions of occupancy have been fulfilled. The lessee must pay the value of the allotment by forty equal half-yearly instalments and must also pay within five years the cost of survey in ten equal half-yearly instalments. A Crown grant of the freehold may be obtained at any time after six years from date of lease on payment of the balance of amounts due if all the conditions have been fully complied with. Within one year from the date of the lease the land must be enclosed by a fence, and within two years one-tenth of the area must be cultivated, which must be increased to one-fifth by the end of the fourth year. Within six years, in addition to the cultivation, permanent improvements to the value of £1 for each acre must be effected. Any person in occupation of an allotment under permit or lease may surrender the same and acquire the land under a perpetual lease or a conditional purchase lease, when rents paid and improvements effected may be credited.

Homestead Associations and Labour Colonies, originally provided for under the Settlement on Lands Act 1893, did not prove successful. The provisions relating thereto were therefore repealed in 1904.

The area originally made available under the Settlement on Lands Act was 156,020 acres in eighty-five different localities in the State. A large portion of that area was, however, found to be unsuitable for village settlement purposes, and has been withdrawn from the operation of the Act. Particulars of areas in process of alienation under the Act are given below. (See § 12, 3).

On the 30th June, 1908, there were 1546 settlers actually residing, and there were 146 not residing, but improving, making a total of 1692 in occupation. Including wives and children the total number in residence was 7628. At the same date the area under cultivation was 24,033 acres; the value of live stock £72,636, and of improvements £267,385.

5. *Queensland.*—Under the provisions of the Closer Settlement Act of 1906 private lands may be repurchased by the Crown, either by agreement or compulsorily. The price of all land so acquired is paid for in cash from the Consolidated Revenue Fund, or in cash the proceeds of the sales of debentures, or at the option of the Minister, and with the consent of the owner, wholly or in part by the issue to the owner of debentures. Any

land which it is proposed to acquire under the provisions of the Act must be inspected by a member of the Land Court, who must furnish a report to the Minister; the land may thereupon be acquired by agreement, with the approval of the Governor-in-Council, at a price not exceeding by more than one-tenth the value thereof stated in the said report.

(i.) *Compulsory Acquisition.* The compulsory provisions of the Act only apply where the private land proposed to be acquired exceeds £20,000 in value, exclusive of improvements. All claims for compensation are determined by the Land Appeal Court, whose award is final and without appeal. The owner of an estate in possession, the whole of which is proposed to be taken compulsorily, has the right to retain in one block out of the estate, for the purposes of residence or business, land the value of which (exclusive of improvements) does not exceed £10,000, or £15,000 in the case of an estate the unimproved value whereof exceeds £50,000, or £20,000 in the case of an estate the unimproved value whereof exceeds £100,000. The maximum sum which may be expended on the acquisition of land for the purposes of closer settlement is £500,000 in any one year.

(ii.) *Disposal of Land.* A sufficient part of the land acquired must be set apart for roads, public reserves, and townships, and the remainder is proclaimed open for selection as agricultural farms under the Land Acts 1897 to 1902; the term of the lease is, however, twenty-five years instead of twenty years as provided by the Land Acts. The selector must fence the land within two years from the issue of the license to occupy, or must make permanent improvements of an equivalent value. The rent to be paid for the first year is equal to £10 for every £100 of the purchasing price; and (no payment being required during the second, third, or fourth years) an annual payment of £8 2s. 7d. for every £100, continued from the fifth to the twenty-fifth year will, at the end of the term, have paid off the principal sum together with interest. Payment of the balance of the purchase-money may be made at any time after the expiration of the fifth year of the lease, and a rebate of interest will be made accordingly. Land remaining open for selection as agricultural farms for at least twelve months may thereafter be proclaimed also open for selection as unconditional selections. Areas set apart for townships may be sold at auction.

(iii.) *Areas Acquired and Selected, 1901 to 1907.*—The operations under the Agricultural Lands Purchase Acts 1894 to 1905 (now repealed by the Closer Settlement Act 1906) resulted up to the end of the year 1907 in the acquisition by the Government of twenty-six estates, of a total area of 409,563 acres, at a total cost of £1,057,463. The following table gives particulars of the operations under the above Acts at the end of each year from 1901 to 1907, inclusive:—

QUEENSLAND.—CLOSER SETTLEMENT, 1901 to 1907.

| Year. | Number of Estates Acquired. | Total Area Acquired to Date. | Total Amount of Purchase Money. | Total Area Selected to Date. |
|-------|-----------------------------|------------------------------|---------------------------------|------------------------------|
| | | Acres. | £ | Acres. |
| 1901 | 15 | 132,760 | 335,056 | 124,710 |
| 1902 | 19 | 266,925 | 699,815 | 230,149 |
| 1903 | 20 | 286,952 | 790,445 | 253,096 |
| 1904 | 21 | 308,605 | 877,058 | 277,939 |
| 1905 | 21 | 308,605 | 877,058 | 289,873 |
| 1906 | 24 | 381,724 | 968,844 | 301,908 |
| 1907 | 26 | 409,563 | 1,057,463 | 340,405 ¹ |

1. In addition there were at the end of the year 1907, 10,442 acres sold at auction and 2700 acres retained by the Government for experimental farms.

The total area opened for selection up to the end of the year 1907 was 359,364 acres, of which 340,405 acres had been selected by 1576 selectors at a total purchasing price of £966,467. There remained 18,959 acres unselected or reserved. The total amount of rent paid up to the same date was £400,092, the amount in arrear being £3009.

(v.) *The Special Agricultural Selections Act 1901.* Under the Special Agricultural Selections Act 1901, as amended in 1904, land may be set apart as homesteads, farms, or prickly pear selections, for any body of settlers, who, having some measure of common interest or capacity for mutual help, are desirous of acquiring land in the same locality. The procedure to be followed is for a request to be made to the Minister by the members of the body, explaining the grounds on which they are co-operating, and setting out the land they desire to acquire. Should the request be acceded to the land will be opened for selection in the usual way, but for a period to be stated in the proclamation it will only be available for the members of the body of settlers for whom it has been set apart. By the Lands Act Amendment Act 1905 a new departure has been made in providing that lands may be set apart for exclusive selection in Great Britain. Application to select such lands should be made at the office of the Agent-General, and selectors of such lands will have credited towards the purchasing price the money paid for the passages of themselves and families to Queensland, not exceeding, however, £17 per "statute adult."

6. **South Australia.**—Under the provisions of the Crown Lands Acts the Commissioner may repurchase land for the purposes of closer settlement, at a cost not exceeding £200,000 in any one year, subject to the conditions (1) that the repurchase be recommended and the improvements valued by the Board and the Surveyor-General, and (2) that full particulars as to the locality, area, and quality of the land, and the price paid, be laid before Parliament.

(i.) *Disposal of Land.* Repurchased areas, except such portions as may be required for town lands, which are sold by auction, or for reservation for public purposes, are cut up into blocks, each of which does not exceed £2000 in unimproved value, or in the case of improved blocks or grazing land does not exceed £4000. These blocks are offered for sale, and the purchaser must enter into an agreement to purchase his block and the improvements at the price fixed by the Board, and to pay the purchase-money and interest thereon at 4 per cent. per annum by seventy half-yearly instalments, the first ten payments being interest only. Purchase may be completed by paying the balance of the purchase-money after holding the land for nine years. Each person holding an agreement to purchase repurchased lands must spend in substantial improvements on his block, during each year for the first five years, a sum equal to £3 for every £100 of his purchase-money. Should any repurchased land remain unallotted over a year after being offered, it may be offered on miscellaneous lease on terms fixed by the Board, or, if the Board so recommend and the Commissioner approve, it may be sold by public auction, a reserve being fixed by the Board, the terms being 25 per cent. of the purchase-money in cash, and the balance in five yearly instalments, bearing interest at 4 per cent. per annum. Any amount in arrear on repurchased lands may, with interest at 5 per cent., be sued for in court by the Receiver of Rents.

(ii.) *Areas Acquired and Selected.* The following table shews the area of land acquired by the Government in South Australia for the purposes of closer settlement, and the manner in which the same has been disposed of under the provisions of the Crown Lands Acts:—

SOUTH AUSTRALIA (PROPER).—CLOSER SETTLEMENT, 1902 to 1907.

| Particulars. | Area in Acres | | | | | |
|--|---------------|---------|---------|---------|---------|---------|
| | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| 1. <i>Area of Lands Repurchased to Date</i> ... | 156,481 | 156,481 | 174,963 | 214,752 | 260,355 | 326,576 |
| 2. <i>Agreements with Covenants to Purchase</i> ... | — | 60,331 | 81,556 | 116,854 | 168,930 | 235,673 |
| 3. <i>Total Area Leased as Homestead Blocks—</i> | | | | | | |
| (i.) <i>Right of Purchase</i> ... | 2,717 | 2,487 | 2,268 | 2,057 | 1,930 | 1,758 |
| (ii.) <i>Perpetual Lease</i> ... | 3,073 | 2,895 | 2,795 | 2,907 | 2,482 | 2,306 |
| 4. <i>Perpetual Leases</i> ... | 90,128 | 89,378 | 86,881 | 82,431 | 78,642 | 77,017 |
| 5. <i>Miscellaneous Leases</i> ... | 309 | 274 | 295 | 285 | 295 | 211 |
| 6. <i>Sold</i> ... | 403 | 566 | 626 | 736 | 1,987 | 4,806 |
| 7. <i>Remainder Unoccupied (including Roads)</i> ... | 59,851 | 550 | 542 | 9,472 | 6,069 | 4,803 |

(iii.) *Village Settlements.* Out of the reserved lands the Commissioner is directed to set apart for the purpose of village settlement such land as he shall consider fit (1) for horticultural purposes, to be termed "horticultural land"; (2) for agricultural purposes, to be termed "commonage land"; and (3) land whereon any irrigation works are situated. Land so set apart is to be divided as follows:—Horticultural lands into blocks of as nearly as practicable equal unimproved value, and of about ten acres in extent; and the commonage lands into one or more blocks of such area as the Commissioner may determine, and the lands so set apart in each case form the district of the association. Upon such subdivision separate valuations are to be made of the irrigation works in each district, of the improvements on each block, and of all the personal estate belonging to each association. In the event of the Commissioner and any association not agreeing as to valuation, provision is made for arbitration under the Arbitration Act of 1891. When the valuation in a district is agreed or fixed, the Governor has power to determine the occupancy by any person or association of any reserved land, which thereupon reverts to the Crown. The Commissioner may forthwith lease such of the horticultural blocks within an area which has reverted to the Crown as he may think fit to individual members of the association on perpetual lease, or to a person not a member of any association, and thereupon such person becomes a member of the association in whose district the block is situated. No person may hold more than two blocks. Commonage lands may only be leased to the association on perpetual lease, and all unleased horticultural blocks are under the control of the association. The annual rent reserved by any lease is fixed by the Board, and commences at a date fixed by the Commissioner. The value of the improvements on each horticultural block, and the value of irrigation works and of improvements on commonage lands, and interest thereon at $4\frac{1}{2}$ per cent. per annum, are first charges upon the block and upon the property of the association respectively, and are to be paid by forty-two annual instalments. The Commissioner is empowered to expel any member from any association; to control the expenditure of any moneys by associations; to call upon any trustee of an association to retire; to require an association to increase the number of its members; to make, amend, and repeal rules for the management of an association, and for the regulation of any irrigation works. Every member of each association must provide or contribute towards the maintenance and regulation of irrigation works and the care and cultivation of the commonage lands, such labour (not being less than thirty-six days every six months) as the Commissioner may require, or an equivalent sum in cash. Every association must prepare an account once a year of the working of the commonage land, shewing all expenditure and income in connection therewith, and after providing for rent, working expenses, and for depreciation and renewal of plant, the surplus, after deducting 25 per cent. for sinking fund for renewal of plant, etc., may be divided among the members of the association.

On the 30th June, 1907, there were four village settlements in existence, viz., Lyrup, Kingston, Ramco, and Waikerie. The number of lessees was 77 and the population 311, while the area under orchards and vineyards was 582 acres, and under cereals 724 acres.

(iv.) *Homestead Blocks.* The Commissioner may cause any Crown lands reserved for the use of aboriginals, except such lands as are reserved for the occupation of aboriginals at Point McLeay or Point Pearce, to be surveyed and offered as homestead blocks on perpetual lease or lease with a right of purchase, and may, subject to the approval of Parliament, by purchase, exchange, or otherwise, acquire lands suitable for homestead blocks, and lease them in a similar manner. Each block must not exceed £100 in value, and must be resided on at least nine months every year by the lessee or purchaser, or by his wife or a member of his family. The holder may have his lease or agreement endorsed "Protected Homestead Block," and the effect of such endorsement will be that no subsequent encumbrance on the land by the holder will be valid, nor will the block be liable to seizure for debt, except for rates and taxes, nor, unless so willed, will it become assets for payment of debts after the death of the holder. If a holder is unable to continue in occupation of his block he may, on the recommendation of the Land Board, and with the Commissioner's consent, assign or sublet it.

- (a) *Advances to Blockholders.* Advances up to £50 may be made by the Commissioner to any homestead blockholder who has complied with the conditions of his lease or agreement, to assist in erecting permanent buildings on the blocks and other improvements which permanently increase the capital value thereof, such as clearing the land, fencing the same, erecting or making thereon permanent water improvements, such as dams, wells, reservoirs, watercourses, windmills, etc. The advances must not exceed half the cost to the blocker of the improvements then in good repair on the land. Advances must be repaid, with interest at 4 per cent. per annum, by twenty equal instalments, commencing twelve months from the date of advance. The whole amount may, however, be repaid at an earlier date. Failure to repay renders the holding liable to cancellation, and a grant of the land cannot issue until the advance is repaid. The Commissioner may, in case of hardship, extend the time for repayment, deferred payments bearing interest at 5 per cent. per annum. The total amount advanced to blockholders up to the 30th June, 1907, was £39,227, of which £29,817 had been repaid.
- (b) *Particulars of Homestead Blocks.* The total number of leases and agreements of which purchase had been completed to the 30th June, 1907, was 1056, comprising 15,944 acres, at a purchase price of £34,511 or an average of £2 3s. 3d. per acre, the average of each holding of which purchase was completed being 15 acres.

7. *Western Australia.*—Under the Agricultural Lands Purchase Act 1896 to 1904, the Colonial Treasurer, with the approval of the Governor, is authorised to expend from time to time sums not exceeding in the whole £200,000 on the repurchase of Crown lands near the railways, suitable for immediate cultivation.

(i.) *Acquisition of Land by the Government.* For the purpose of carrying out the provisions of the Acts, a Land Purchase Board, consisting of not more than five persons, appointed by the Governor, is constituted. The duties of this Board are to report on various matters in connection with the repurchase of any lands, such as the fair value of the land to the owner; the demand for land in the neighbourhood for agricultural settlement; and the suitability for agricultural settlement, and the distance from a railway of the land proposed to be acquired. If the report of the Board be favourable, the Minister, with the approval of the Governor, may make a contract for the acquisition of the land by surrender at the price fixed by the Board, or at any lesser price.

(ii.) *Sale of Repurchased Land.* All land repurchased may be improved prior to disposing of it and the cost of the improvements is added to the price to be paid for the land when sold. Reserves may be set aside for public purposes, roads, and town sites; and town and suburban lands may be disposed of in the same way as such lands are alienated under the provisions of the Land Acts 1898 to 1906. The remainder of the land is thrown open to selection. The maximum quantity held by one person must not exceed 1000 acres. No person under the age of eighteen years is eligible as a selector, nor is any person who is the beneficial owner of land exceeding 1000 acres in area held either in freehold or under any of the provisions of the Land Acts. If, however, the land at the time of its surrender was classified as second or third-class land, the maximum area may be increased to 3000 and 5000 acres of each class respectively, or to 4000 acres if the land is partly second and partly third class. If land thrown open to selection is not applied for, it may be put up for sale by public auction.

(iii.) *Conditions of Sale to Selectors.* The selling price of any repurchased land is ascertained by adding a sum equal to one-tenth part of the price actually paid for the land and for any improvements made upon it, and the total is the least price at which it may be selected. Applications must be in the prescribed form and must be accompanied

by the first half-year's instalment of the purchase-money, at the rate of £7 12s. 10d. per annum for each £100 of the selling price; on approval of the application, a lease for twenty years is issued at an annual rent, at the same rate at which the first year's instalment was paid. The lessee must, within two years, fence in at least one-fourth of his selection, and within five years the whole must be fenced, and at least one-tenth of the land must be cleared and cropped. Within ten years he must spend upon prescribed improvements an amount equal to the full purchase-money, which amount includes the cost of the exterior fencing. Improvements existing on the land at the time of sale are counted in the lessee's favour. At the expiration of the lease, or at any time during the currency of the lease, if all conditions have been complied with and the full purchase-money paid, a Crown grant may be obtained. Loans may be granted under the provisions of the Agricultural Bank Acts to any selectors under the Agricultural Land Purchase Acts, who have fenced in the whole of their selection and have cleared and cropped at least one-tenth of it.

(iv.) *Areas Acquired and Selected, 1901 to 1907.* The transactions conducted under the provisions of the Agricultural Lands Purchase Acts are shewn for each year since 1901 in the subjoined table:—

WESTERN AUSTRALIA.—CLOSER SETTLEMENT, 1901 to 1907.¹

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905-6. | 1906-7. |
|---|--------|--------|--------|---------|---------|---------|
| Total area of estates acquired ... Acres | 46,624 | 55,439 | 72,372 | 131,283 | 165,945 | 170,881 |
| Total amount of purchase-money ... £ | 52,764 | 60,514 | 73,395 | 82,580 | 100,811 | 109,373 |
| Set aside for roads, reserves, etc. ... Acres | 1,459 | 1,712 | 2,665 | 4,734 | 9,009 | 8,624 |
| Area originally available for selection .. | 45,165 | 53,727 | 69,707 | 126,549 | 156,936 | 157,321 |
| Area selected during the year | 4,295 | 11,540 | 16,232 | 42,305 | 24,933 | 11,673 |
| Total area occupied to date | 37,235 | 48,616 | 65,368 | 105,106 | 139,553 | 147,817 |
| Balance of area available for selection .. | 7,929 | 5,111 | 4,339 | 21,443 | 17,383 | 9,504 |
| Total revenue received to date ... £ | 14,451 | 23,538 | 29,815 | 37,371 | 52,445 | 65,420 |

1. Since the year 1904 the figures are given as up to the 30th June instead of the 31st December; 1905 figures are therefore, omitted.

On the 30th June, 1907, the total expenditure was £32,955, which left a balance of £32,465. At the same date the amount invested as sinking fund was £29,844. During the year 1907, two properties, namely those at Brunswick and Wannaru, having a total area of 4936 acres, were thrown open to settlement.

(v.) *Working Men's Blocks.* Any person not already holding land within the State is entitled to obtain a lease of lands which have been surveyed and thrown open for selection as working men's blocks. The maximum area that may be selected by one person is, if within any town or goldfield, half an acre, or five acres elsewhere. The price is not less than twenty shillings per acre, payable in ten years by half-yearly instalments. The application must be in the prescribed form and must be accompanied by the first instalment of the purchase-money and a lease fee of ten shillings. The selector must take personal possession within three months, and must reside upon the land for nine months in each of the first five years, but residence by the wife, parent, or child over sixteen years of age, may be accepted. Within three years the land must be fenced with a great and small stock-proof fence, and within five years an amount equal to double the purchase-money must be expended upon prescribed improvements, in addition to the cost of the exterior fencing. One-half the cost of any house may be allowed towards the improvements required. At the expiration of the lease, or at any time after five years from the date of the commencement of the lease, upon compliance with all conditions and upon payment of the full purchase-money and fee, a Crown grant will be issued. No person who has once held a working man's block is allowed to select another, except under very special circumstances.

The following table shows the number and area of accepted applications for working men's blocks during each year, as well as the total number and area in existence at the end of each year from 1901 to 1907, inclusive:—¹

**WESTERN AUSTRALIA.—PARTICULARS OF WORKING MEN'S BLOCKS,
1901 to 1907.**

| Year | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. ¹ | 1907. ¹ |
|-------------|-------|-------|-------|-------|-------|--------------------|--------------------|
|-------------|-------|-------|-------|-------|-------|--------------------|--------------------|

NUMBER AND AREA OF ACCEPTED APPLICATIONS DURING YEAR.

| | | | | | | | |
|------------------|---|----|----|-----|-----|-----|-----|
| Number | 2 | 33 | 17 | 196 | 45 | 37 | 201 |
| Area in Acres... | 6 | 99 | 59 | 154 | 106 | 104 | 149 |

NUMBER AND AREA OF BLOCKS OCCUPIED AT END OF YEAR.

| | | | | | | | |
|------------------|----|-----|-----|-----|-----|-----|-----|
| Number | 7 | 40 | 49 | 228 | 211 | 229 | 401 |
| Area in Acres... | 31 | 130 | 158 | 273 | 333 | 393 | 489 |

1. For financial year ended the 30th June.

During the year 1907 residential blocks on the goldfields were made available as workingmen's blocks, instead of under residential lease, as before.

8. **Tasmania.**—The principles of closer settlement were not introduced into Tasmania until the Closer Settlement Act of 1906 was passed. Under this Act power is given to the Minister for Lands, on the recommendation of the Closer Settlement Board, to purchase by agreement private land in any part of Tasmania for the purpose of closer settlement, and also to deal with and dispose of any unoccupied Crown land for the same purpose. Repurchased lands are to be paid for at the option of the owner by debentures, stock, or money, which may be raised by the Treasurer up to an amount not exceeding £50,000 in each financial year, provided that the total amount so raised may not exceed £250,000.

(i.) *Lease of Allotments.* Lands so bought under the Act are subdivided into farm allotments of a suitable size—not exceeding £1500 in value—and are disposed of by way of lease for ninety-nine years. The capital value of each allotment is fixed by the Closer Settlement Board, and the rental is determined by the Board at a rate not exceeding 5 per cent. per annum on the capital value of the land. In the case of the Cheshunt Estate, which has recently been subdivided for disposal under the Act, the rent was fixed at the rate of 4 per cent. on the capital value. Although the allotments are in the first place leased, any lessee, after the expiration of ten years of the term of his lease, may acquire and purchase the land leased to him, provided that he does not then hold land (exclusive of the land leased under the Act) of a value exceeding £1500, and that he has duly complied with the terms and conditions imposed by the Act, regulations, and his lease. At the expiration of five years from the date of lease, a lessee may dispose of his interest to any eligible person, the consent of the Board being first obtained.

(ii.) *Qualifications of Lessees.* Persons who apply for land under the provisions of the above Act must not be less than eighteen years of age, and those applicants who are landless have preference over those who are not. A person is deemed to be landless, if, at the time of making his application, he does not hold, under any tenure, such area of land as is, in the opinion of the Board, sufficient for the maintenance of himself and his.

family (if any). In the case of husband and wife, if either of them is not landless, neither of them is deemed to be landless. Only one allotment is granted to one person.

(iii.) *Advances to Settlers.* Under the Act provision is also made for advances to lessees, in aid of the cost of fencing the allotments and building dwelling-houses thereon; the total advance to any one lessee must not exceed one-fifth of the capital value of such lessee's allotment, and must not exceed pound for pound the sum expended by him in fencing and building. Such advances must be repaid, together with interest at 5 per cent., in equal half-yearly instalments.

(iv.) *Special Sales.* The fee-simple of land acquired may be disposed of by sale on the recommendation of the Board as sites for churches, public halls, dairy factories, fruit-preserving factories, mills, or creameries. The area sold may not exceed one acre in the case of a church or public hall, or five acres in other cases.

(v.) *Areas Acquired and Selected.* Up to the 30th June, 1907, one area—the Cheshunt estate—had been opened up for closer settlement. Particulars are given in the following statement:—

TASMANIA.—CLOSER SETTLEMENT, 1907.

| Number of Farms Available. | Number of Farms Allotted. | Area of Farms Allotted. | Rental of Farms Allotted. | Total Area Purchased. |
|----------------------------|---------------------------|-------------------------|---------------------------|-----------------------|
| 61 | 54 | Acres. 10,365 | £ 1,923 | Acres. 13,397 |

§ 10. Occupation of Crown Lands under Leases and Licenses Issued by Mines Departments.

1. **Introduction.**—Leases and licenses for the occupation of Crown lands for mining and other purposes are issued by the Mines Departments in all the States. Such leases and licenses may be issued with respect to all Crown lands, whether otherwise unoccupied or whether occupied also under leases and licenses issued by the Lands Departments. Certain Crown lands, such as reserves, etc., are, however, subject to special conditions.

(i.) *Mining on Private Lands.* Certain of the Crown lands of the several States have been alienated from time to time, subject to various reservations in respect of gold and other minerals which might afterwards be found therein. Other lands have been alienated without such reservation, but as the mineral gold does not pass from the Crown unless by express conveyance, it has remained the property of the State on all alienated lands. All lands alienated or in process of alienation are open to mining for gold, but to mining for other minerals, those lands only are open in respect of which the rights are reserved in the grants. There are, however, generally certain reservations, such as those with reference to town or village lands and lands which have been built on or are used for special purposes. The working of minerals on private lands is regulated in the several States either by special Acts or by special provisions of the Acts relating to mining.

(ii.) *Leases and Licenses Issued and Total Areas of Crown Lands Occupied, 1901 to 1907.* The following tables shew the total areas of Crown lands for which leases and licenses for mining purposes were issued in each State during each year from 1901 to 1907, inclusive, and also the total areas of Crown lands occupied for mining purposes at the end of each year during the same period:—

CROWN LANDS, LEASES AND LICENSES FOR MINING PURPOSES, 1901 to 1907.

| Year | ... | ... | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---|-----|---------|---------|---------|---------|---------|---------|---------|--------|
| AREAS FOR WHICH LEASES AND LICENSES ISSUED. | | | | | | | | | |
| New South Wales | ... | Acres. | 50,349 | 46,017 | 40,111 | 34,308 | 64,593 | 27,164 | 96,159 |
| Victoria ¹ | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Queensland ² | ... | 55,698 | 69,172 | 81,970 | 40,876 | 17,373 | 25,490 | 25,333 | ... |
| South Australia | ... | 93,985 | 84,488 | 762,225 | 100,600 | 102,154 | 170,260 | 136,312 | ... |
| Western Australia | ... | 37,593 | 54,473 | 75,012 | 49,646 | 55,757 | 41,443 | 51,514 | ... |
| Tasmania | ... | 18,125 | 13,932 | 11,918 | 11,859 | 8,964 | 19,415 | 31,255 | ... |
| Total ⁵ | ... | 255,750 | 268,082 | 971,236 | 237,289 | 248,841 | 283,772 | 340,573 | ... |

TOTAL AREA OCCUPIED AT END OF YEAR.

| | | | | | | | | |
|------------------------------|-----|---------|---------|-----------|---------|---------|---------|---------|
| New South Wales | ... | 134,209 | 131,690 | 127,514 | 124,773 | 147,074 | 134,723 | 183,916 |
| Victoria ³ | ... | ... | 58,376 | 46,909 | 38,287 | 45,845 | 84,720 | 67,048 |
| Queensland ² | ... | 124,182 | 143,861 | 163,792 | 111,180 | 102,952 | 112,013 | 123,321 |
| South Australia ⁴ | ... | 14,140 | 103,334 | 793,583 | 130,281 | 128,045 | 213,492 | 170,204 |
| Western Australia | ... | 66,682 | 115,703 | 102,919 | 121,439 | 116,390 | 110,670 | 117,361 |
| Tasmania | ... | 50,362 | 47,692 | 45,298 | 44,341 | 45,075 | 53,122 | 79,163 |
| Total | ... | 389,575 | 600,656 | 1,280,015 | 570,301 | 585,381 | 708,740 | 741,013 |

1. Not available. 2. Exclusive of lands held under miner's rights only, amounting in 1907 to approximately 27,000 acres. 3. Including private lands. Leases only. 4. Exclusive of miners' rights. 5. Excluding Victoria.

The increase in the area held during 1903 is due to the unusually large number of search licenses issued in South Australia during that year, no less than 466 being registered with areas varying from 640 to 3200 acres each,

2. **New South Wales.**—Under the provisions of the Mining Act 1906 and the regulations made thereunder, Crown lands may be occupied for mining or other purposes by virtue of (i.) miners' rights; (ii.) business licenses; (iii.) authorities to prospect; or (iv.) leases.

(i.) *Miners' Rights.* A miner's right may be issued for a period of twelve months upon payment of the sum of five shillings. The holder is entitled to take possession of and exclusively occupy for mining purposes Crown lands not expressly exempted from such occupation. Areas so occupied are styled tenements, which are divided into nine classes, viz.:—(a) prospecting areas; (b) dams or reservoirs; (c) roads; (d) claims; (e) races; (f) machinery areas; (g) tramways; (h) water rights; and (i) tunnel sites. Any holder of a miner's right may occupy one tenement of any or each of the foregoing classes, but for every additional tenement of the same class he must hold an additional miner's right. The holder of a miner's right may, in addition to the above, occupy a residence area not exceeding one-quarter acre within the boundaries of a town or village, or two acres outside such boundaries.

(ii.) *Business Licenses.* These licenses are issued upon payment of an annual sum of £1, and entitle the holder to occupy as a business area not more than one-quarter acre within the boundaries of a town or village, or one acre outside such boundaries.

(iii.) *Authorities to Prospect.* The Minister for Mines may grant to the holder of a miner's right an authority to prospect upon any area of Crown lands, whether exempted from ordinary occupation under a miner's right or not.

(iv.) *Leases.* The Governor may grant leases of Crown lands for (a) mining, (b) mining purposes, or (c) dredging.

(a) *Mining Leases.* These leases may be either *gold-mining leases*, for which the rental is at the rate of five shillings per acre per annum, the maximum area which may be demised being twenty-five acres; *mineral leases* (other than coal or shale), for which the rental is at the rate of five shillings per acre per annum, the maximum area being eighty acres; *coal or shale leases*, for which the rental is at the rate of one shilling per acre per annum, with a royalty of sixpence per ton on all shale or large coal, and threepence per ton on all small coal raised, the maximum area being 640 acres. *Special leases* may be granted for gold or minerals, other than shale or coal, if by reason of unusual circumstances the Minister is of the opinion that it is necessary that an area in excess of the limit prescribed for ordinary leases should be leased.

(b) *Leases for Mining Purposes* are granted for the surface of the land and to a limited depth below the surface. Such leases do not authorise mining on the land, but are for such purposes as the construction of dams and reservoirs, tramways, buildings, and machinery.

(c) *Dredging Leases* may be granted for the purpose of mining for gold or any other mineral by dredging, pumping, sluicing, etc., on any Crown lands forming the bed of any river or other suitable land. The rent is two shillings and sixpence per acre per annum, and a royalty of 1 per cent. on the value of all gold and other minerals won must be paid to the Crown. Labour and capital expenditure conditions are attached to dredging leases.

(v.) *Particulars of Leases and Licenses Issued, 1907.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1907:—

NEW SOUTH WALES.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT DURING YEAR 1907.

| Particulars. | Act under which Issued. | Purpose for which Issued. | Area. |
|----------------------------------|-------------------------------------|--|---------------|
| <i>Leases—</i> | Mining Act 1874 & amending Acts | To mine for— | Acres. |
| | " " " " " " | Gold | 1,106 |
| | " " " " " " | Minerals other than coal | 27,125 |
| | " " " " " " | Coal | 36,107 |
| | Mining Act 1906 | Gold | 357 |
| <i>Licenses—</i> | " " " " " " | Minerals other than coal | 1,441 |
| | " " " " " " | Coal | 2,864 |
| | Mining Act 1874 (section 28) | Minerals other than coal and shale... .. | 223 |
| <i>Other forms of occupancy—</i> | " " " " " " | Coal and shale... .. | 26,036 |
| | Mining Act 1874 & amending Acts | Sites for dams, machinery, etc. | 848 |
| | Mining Act 1906 | " " " " " " | 52 |
| Total | — | — | 96,150 |

(vi.) *Leases and Licenses Issued and Areas Occupied, 1901 to 1907.*—The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total areas of Crown lands occupied under such leases and licenses at the end of each year from 1901 to 1907, inclusive:—

NEW SOUTH WALES.—LEASES AND LICENSES
ISSUED BY MINES DEPARTMENT, 1901 TO 1907.

| Purposes for which Issued or Occupied. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| LEASES AND LICENSES ISSUED. | | | | | | | |
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Gold mining | 2,272 | 2,305 | 1,882 | 2,333 | 1,664 | 1,776 | 1,463 |
| Mining for other minerals ... | 47,990 | 43,579 | 38,127 | 31,895 | 62,844 | 25,018 | 93,796 |
| For other purposes | 87 | 135 | 102 | 80 | 85 | 370 | 900 |
| Total | 50,346 | 46,019 | 40,111 | 34,308 | 64,593 | 27,164 | 96,159 |
| TOTAL AREAS OCCUPIED. | | | | | | | |
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Gold-mining... .. | 6,942 | 6,514 | 6,488 | 6,311 | 5,754 | 5,963 | 5,669 |
| Mining for other minerals ... | 126,885 | 124,678 | 120,415 | 117,757 | 140,551 | 127,749 | 176,558 |
| For other purposes | 382 | 498 | 613 | 705 | 765 | 1,011 | 1,689 |
| Total | 134,209 | 131,690 | 127,514 | 124,773 | 147,074 | 134,723 | 183,916 |

3. **Victoria.**—Leases of Crown lands for mining and auxiliary purposes in this State are issued by the Department of Mines and Forests under the Mines Acts 1890 to 1907. Miners' rights are issued by the Treasury under the authority of the same Acts.

(i.) *Mining Leases.* These are of three kinds—(a) Gold mining leases; (b) mineral leases, and (c) dredging leases. (a) *Gold-mining Leases* are granted for a term of fifteen years in such areas as the Minister may recommend. The annual rent is two shillings and sixpence an acre. (b) *Mineral Leases* are granted for a term of 15 years, the maximum area being 640 acres. The annual rent varies from one shilling to £1 per acre. (c) *Dredging Leases* are issued upon the recommendation of the Sludge Abatement Board and on the approval of the Minister. The annual rent is five shillings an acre.

(ii.) *Special Licenses.* Special licenses are also granted by the Department of Mines and Forests. (a) *Searching Licenses* are granted to search for minerals over Crown lands for a term of three months at a minimum rent of £1. (b) *Tailings Licenses* are issued over tailings, which have become the property of the Crown, for a term of five years at a rent of one penny per 100 cubic yards, the minimum rent being ten shillings. (c) *Water-right Licenses* are issued, to divert water by cutting races, etc., over Crown lands, for a term of fifteen years, at a rent fixed according to the length of race, the quantity of water diverted, and the size of the reservoir.

(iii.) *Miners' Rights, Business Licenses, and Residence Areas.* Miners' rights are issued by the Treasury Department upon payment of a fee of two shillings and sixpence, and are available for a period of twelve months. The holder is entitled to take possession for mining purposes of Crown lands, not otherwise exempted, in any mining district. Upon registration and payment of the prescribed fees the holder of a miner's right may occupy not more than one acre of Crown lands on any goldfield as a business or residence area. Particulars of areas occupied, other than those given in paragraph 1, above, are not available.

Licenses of auriferous lands not for mining purposes may be issued by the Lands Department. (§ 8. 3. iv.)

4. **Queensland.**—The occupation of Crown lands for mining purposes in this State is regulated by the Mining Acts 1898 to 1902. Under these Acts the Department of Mines

is authorised to issue—(i.) Miners' rights; (ii.) mining leases; (iii.) coal-mining leases and licenses; and (iv.) miners' homestead leases.

(i.) *Miners' Rights.* The foundation of title under a miner's right is prior appropriation, and the permanency of any such title depends upon compliance by the occupier with certain prescribed conditions of use and working. The ground occupied under a miner's right is known as a "claim," which term may include an area taken up for purposes auxiliary to the actual operation of mining, such as machine areas. Water rights and residence areas do not come within the definition of "claim," being licenses which may be granted or refused. The forfeiture of a claim on account of non-compliance with the prescribed conditions may be decreed by the Warden on the application of any holder of a miner's right. The forfeiture of water rights or of residence areas may be declared only by the Crown, who alone can challenge the title of the occupier.

(ii.) *Mining Leases.* These leases are divided into two classes—(a) Gold-mining leases, and (b) mineral leases. Both classes contain certain covenants as to rent and the employment of labour and other matters. Special leases may be granted for auxiliary purposes, such as constructing tramways, erecting buildings, cutting water-races, etc. (a) *Gold-mining Leases.* The maximum area is fifty acres, the term twenty-one years, renewable for a further term of like duration, and the annual rent is £1 an acre. (b) *Mineral Leases.* The maximum area is 160 acres (except for coal, as mentioned hereinafter), the term twenty-one years, renewable for a like period, and the annual rent is ten shillings an acre.

(iii.) *Coal-mining Leases and Licenses.* Mineral leases for coal may be granted for a term of twenty-one years at an annual rent of sixpence an acre, together with a royalty of threepence per ton of coal raised during the first ten years of the lease and of sixpence per ton during the remainder of the term. Special concessions may be granted to discoverers of payable seams of coal. Licenses to occupy not more than 640 acres may be granted to any person desiring to prospect Crown lands for coal upon payment of sixpence for every acre comprised in the application.

(iv.) *Miners' Homestead Leases.* These leases are issued to holders of miners' rights who reside on gold or mineral fields, for the purpose of residence or carrying on business, and range in area from one to eighty acres, in accordance with the proximity to a proclaimed township. The rent ranges from sixpence to five shillings an acre. In the case of homesteads situated outside the limits of a township, after thirty years' rent has been paid the rent ceases to be payable, and in lieu thereof the rent shall be one shilling, if demanded.

(v.) *Particulars of Leases and Licenses Issued, 1907.* The following table gives particulars of the leases and licenses issued for mining purposes during the year 1907:—

QUEENSLAND.—MINING LEASES AND LICENSES ISSUED, 1907.

| Lease or License. | Mining Leases. | | | | Miners' Homestead Leases. | Coal Prospecting Licenses. | Miscellaneous Rights & Licenses. |
|-------------------|--------------------------|------------------|--------------------------------------|----------|---------------------------|----------------------------|----------------------------------|
| | Purpose for which Issued | To mine for gold | To mine for minerals other than gold | Tramways | | | |
| Area in acres ... | 2,333 | 7,465 | 19 | 114 | 2,225 | 13,177 | *27,000 |

* Approximate.

(vi.) *Particulars of Areas Occupied, 1901 to 1907.* The following table shews the areas for which leases and licenses were issued during each year, and the total area occupied at the end of each year from 1901 to 1907, inclusive:—

QUEENSLAND.—LEASES AND LICENSES
ISSUED BY MINES DEPARTMENT, 1901 TO 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| * LEASES AND LICENSES ISSUED DURING YEAR. | | | | | | | |
| Gold mining ... | Acres. 3,581 | Acres. 3,137 | Acres. 3,890 | Acres. 2,397 | Acres. 1,315 | Acres. 2,207 | Acres. 2,333 |
| Mining for other minerals... | 7,142 | 3,265 | 5,553 | 4,429 | 2,415 | 10,998 | 7,598 |
| For other purposes ... | 44,975 | 62,770 | 72,527 | 34,050 | 13,643 | 12,285 | 15,402 |
| Total ... | 55,698 | 69,172 | 81,970 | 40,876 | 17,373 | 25,490 | 25,333 |
| * TOTAL AREA OCCUPIED AT END OF YEAR. | | | | | | | |
| Gold mining ... | 11,296 | 13,883 | 14,540 | 10,499 | 10,093 | 10,067 | 10,562 |
| Mining for other minerals... | 23,113 | 19,546 | 24,313 | 13,467 | 24,699 | 28,897 | 33,021 |
| For other purposes ... | 89,773 | 110,432 | 124,939 | 87,214 | 68,160 | 73,049 | 79,738 |
| Total ... | 124,182 | 143,861 | 163,792 | 111,180 | 102,952 | 112,013 | 123,321 |

* Exclusive of lands held under miners' rights only.

5. South Australia.—In this State leases and licenses for mining purposes are issued by the Department of Mines under the authority of the Mining Act 1893, as amended in 1900. Under these Acts mining and prospecting are permitted in virtue of (i) miners' rights; (ii.) mining leases; (iii.) coal or oil leases; and (iv.) miscellaneous leases, and in addition occupation of Crown lands is permitted by virtue of (v.) business claims, and (vi.) occupation licenses.

(i.) *Miners' Rights.* These rights are issued for a period of one year upon payment of five shillings. The holder is authorised to prospect for any mineral or oil, and to peg out a claim in the prescribed manner on any Crown lands. Under the Amendment Act of 1900, special licenses to search, on specific mineral lands not exceeding five square miles in extent, may be granted for (a) precious stones; (b) mineral phosphates; (c) oil; and (d) rare metals, minerals, and earths, the mining for which has not proved payable in any portion of the State.

(ii.) *Mining Leases.* These leases are of two classes—(a) Gold leases and (b) mineral leases. (a) *Gold Leases* may be issued for a term not exceeding forty-two years to holders of miners' rights at an annual rent of one shilling an acre. The maximum area which may be so leased is twenty acres. (b) *Mineral Leases* may be issued to holders of miners' rights for lands not comprised in a goldfield. The area leased may not exceed forty acres, nor the term forty-two years. The annual rent is one shilling an acre, together with a royalty of sixpence in the pound on the net profits.

(iii.) *Coal or Oil Leases.* These leases are issued to holders of miner's rights for Crown lands not comprised in goldfields. The maximum area is 640 acres, and the maximum term forty-two years. The rent and conditions are as prescribed. In addition to the rent a royalty of sixpence in the pound on the net profits must be paid.

(iv.) *Miscellaneous Leases.* Leases for any term not exceeding forty-two years may be granted to holders of miners' rights on the prescribed terms and conditions (a) for manufacturing or obtaining salt or gypsum; (b) as sites for smelting or mining works. The maximum area, if the land leased is on a water frontage, is twenty-one acres. A royalty of sixpence in the pound on the net profits must be paid.

(v.) *Business Claims.* Business licenses are granted on payment at the rate of ten shillings for six months, entitling the holder to peg out and occupy for business and resi-

dential purposes a claim not exceeding a quarter of an acre in extent, if within a township, or one acre on other lands.

(vi.) *Occupation Licenses.* Licenses are granted authorising the holder to occupy, for purposes of residence and cultivation, any Crown lands not exceeding half an acre in extent for a term of fourteen years at an annual rent not exceeding two shillings an acre.

(vii.) *Particulars of Leases and Licenses, 1907.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1907:—

SOUTH AUSTRALIA.—LEASES AND LICENSES

ISSUED BY THE MINES DEPARTMENT DURING YEAR 1907.

| Particulars. | Act under which Issued. | Purpose for which Issued. | Area. |
|---|-----------------------------------|--|-----------------|
| <i>Leases</i> ... | Mining Act 1893 ... | To mine for— Gold and other metals and minerals | Acres. 4,859 |
| <i>Mineral claims</i> <i>Licenses</i> ... | Mining Act Amendment Act 1900 ... | To "search for" precious stones, mineral phosphates, oil, rare metals, minerals, and earths, the mining for which has not proved payable in any portion of the State | 20,688 |
| <i>Other forms of</i> <i>occupancy</i> ... | Mining Act, 1893 ... | — | 110,720 45 |
| Total ... | — | — | 136,313 |

(viii.) *Leases and Licenses Issued and Areas Occupied, 1901 to 1907.* The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of each year from 1901 to 1907, inclusive:—

SOUTH AUSTRALIA.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT, 1901 TO 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------------|--------|---------|---------|---------|---------|---------|---------|
| LEASES AND LICENSES ISSUED. | | | | | | | |
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Gold mining ... | 1,377 | 550 | 300 | 120 | 100 | 1,380 | 370 |
| Mining for other minerals... | 92,587 | 83,920 | 759,211 | 100,466 | 102,040 | 168,875 | 135,897 |
| For other purposes ... | 21 | 18 | 14 | 14 | 14 | 5 | 45 |
| Total ... | 93,935 | 84,488 | 759,525 | 100,600 | 102,154 | 170,260 | 136,312 |
| TOTAL AREAS OCCUPIED. | | | | | | | |
| Gold mining ... | 14,140 | 11,720 | 4,320 | 2,916 | 5,295 | 10,171 | 7,952 |
| Mining for other minerals... | ... | 91,614 | 789,263 | 127,365 | 122,750 | 203,321 | 162,113 |
| For other purposes ... | ... | ... | ... | ... | ... | ... | 139 |
| Total ... | 14,140 | 103,334 | 793,583 | 130,281 | 128,045 | 213,492 | 170,204 |

6. **Western Australia.**—The issue of leases and licenses by the Mines Department is regulated by the Mining Act 1904. Under this Act Crown lands may be occupied by virtue of (i.) Miners' rights; (ii.) mining leases; and (iii.) miners' homestead leases.

(i.) *Miners' Rights.* Any holder of a miner's right may take up and occupy ground, subject to the approval of the Warden, for the following purposes:—Prospecting for any

minerals; claims, water rights, residence and business areas, and machinery, tailings, washing, or market garden areas. Lands may be occupied by the holder of a miner's right for the purpose of mining for alluvial gold without registration, the only restriction being that the occupier must peg out his holding according to the prescribed regulations.

(ii.) *Mining Leases.* These leases are granted for mining and auxiliary purposes, and are of three descriptions, viz.:—(a) Gold-mining leases; (b) mineral leases; and (c) coal leases. (a) *Gold-mining Leases.* The maximum area is twenty-four acres, except in the case of a mine which has already been worked and abandoned, is excessively wet, or requires costly appliances, when the maximum area is forty-eight acres. (b) *Mineral Leases.* The maximum area is forty-eight acres, except under the special circumstances referred to in the case of gold-mining leases, when the maximum area is ninety-six acres. (c) *Coal Leases.* The maximum area is 320 acres, but special leases of larger areas may be granted to the discoverer of a payable seam.

(iii.) *Miners' Homestead Leases.* These leases are granted for agricultural purposes on land within goldfields. The area is restricted to twenty acres, if within two miles of a township, and if beyond that distance to 500 acres. Improvement conditions are imposed.

(iv.) *Particulars of Leases and Licenses Issued, 1907.* The following table gives particulars of mining leases and licenses issued during 1907:—

WESTERN AUSTRALIA.—MINING LEASES AND LICENSES ISSUED, 1907.

| Particulars. | Gold-Mining. | Minerals other than Gold. | Miners' Homesteads. | Miscellaneous. | Total. |
|--------------|--------------|---------------------------|---------------------|----------------|--------|
| | Acres. | Acres. | Acres. | Acres. | Acres. |
| Leases ... | 10,720 | 9,390 | 6,835 | 83 | 27,028 |
| Licenses ... | 17,330 | 6,595 | ... | 561 | 24,486 |

(v.) *Particulars of Areas Occupied, 1901 to 1907.* The following table shews the areas for which leases and licenses were issued during each year, and the total area occupied at the end of each year from 1901 to 1907, inclusive:—

**WESTERN AUSTRALIA.—LEASES AND LICENSES
ISSUED BY MINES DEPARTMENT, 1901 TO 1907.**

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|--------|---------|---------|---------|---------|---------|---------|
| LEASES AND LICENSES ISSUED DURING YEAR. | | | | | | | |
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Gold mining ... | 17,454 | 17,028 | 47,806 | 19,846 | 26,678 | 28,572 | 28,050 |
| Mining for other minerals... | 19,281 | 36,561 | 14,097 | 23,077 | 23,856 | 9,787 | 15,985 |
| For other purposes ... | 888 | 884 | 13,109 | 6,723 | 5,223 | 3,084 | 7,479 |
| Total ... | 37,593 | 54,473 | 75,012 | 49,646 | 55,757 | 41,443 | 51,514 |
| TOTAL AREA OCCUPIED AT END OF YEAR. | | | | | | | |
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Gold mining ... | 40,525 | 37,721 | 36,528 | 42,943 | 45,995 | 48,398 | 46,374 |
| Mining for other minerals... | 14,091 | 66,917 | 45,957 | 53,700 | 44,561 | 36,019 | 41,470 |
| For other purposes ... | 12,066 | 11,065 | 20,434 | 24,796 | 25,834 | 26,253 | 29,517 |
| Total ... | 66,682 | 115,703 | 102,919 | 121,439 | 116,390 | 110,670 | 117,361 |

7. *Tasmania.*—Under the provisions of the Mining Act 1905, Crown lands in this State may be occupied for mining and auxiliary purposes by virtue of (i.) prospectors' licenses; (ii.) miners' rights; (iii.) mining leases; and (iv.) miscellaneous licenses. Busi-

ness and residence licenses within mining areas may be issued by the Lands Department. (See § 8, 8, iv.)

(i.) *Prospectors' Licenses.* These licenses are granted to the end of the calendar year in which they are applied for, upon payment of the sum of ten shillings if applied for before the 30th June, or five shillings if after that date. They confer the right to prospect upon prescribed Crown lands, and any discoveries made may be protected in the prescribed manner.

(ii.) *Miners' Rights.* These rights are also issued each year upon payment of five shillings if applied for before the 30th June, or of two shillings and sixpence after that date. They confer the right to occupy specified Crown lands and to mine thereon.

(iii.) *Mining Leases.* Mining leases are of three kinds—(a) gold-mining leases; (b) mineral leases; and (c) miscellaneous leases. (a) *Gold-mining Leases* are granted for a term not exceeding twenty-one years at an annual rent of £1 an acre. The maximum area which may be so leased is forty acres. The lessee has the exclusive right to mine for gold and other minerals on the land demised. (b) *Mineral Leases* are issued for mining for minerals other than gold on areas not exceeding eighty acres for a term of not more than twenty-one years, and at an annual rent of five shillings an acre. Leases to mine for coal, shale, slate, freestone, or limestone, may be issued for areas not exceeding 320 acres at an annual rent of two shillings and sixpence an acre. (c) *Miscellaneous Leases.* The Minister may grant leases for mining purposes, for a term not exceeding ten years, of the bed or banks of any river flowing through Crown lands, at a rent of five shillings an acre. The area leased may not exceed forty chains in length by five chains on either side from the centre of the river. Special leases may be granted by the Governor upon resolutions assenting thereto passed by both Houses of Parliament.

(iv.) *Miscellaneous Licenses.* Licenses granting easements for various purposes may be issued, for a term not exceeding twenty-one years, to persons holding mining leases or miner's right for the more advantageous working of the land occupied.

(v.) *Particulars of Leases and Licenses Issued, 1907.* The following table shows particulars of leases and licenses of Crown lands, exclusive of prospectors' licenses and miners' rights, issued by the Mines Department during the year 1907 :—

TASMANIA.—LEASES AND LICENSES
ISSUED BY THE MINES DEPARTMENT DURING 1907.¹

| Particulars. | Act under which Issued. | Purpose for which Issued. | Area. |
|------------------|-------------------------|---------------------------|---------------|
| <i>Leases—</i> | | To mine for— | Acres |
| 1 ... | The Mining Act 1905 ... | Bismuth | 40 |
| 9 ... | " " ... | Coal | 2,758 |
| 38 ... | " " ... | Copper | 2,900 |
| 84 ... | " " ... | Gold | 1,055 |
| 1 ... | " " ... | Iron | 80 |
| 152 ... | " " ... | Minerals | 9,486 |
| 1 ... | " " ... | Nickel | 80 |
| 26 ... | " " ... | Silver lead | 1,632 |
| 4 ... | " " ... | Shale | 740 |
| 394 ... | " " ... | Tin | 11,352 |
| 1 ... | " " ... | Wolfram | 120 |
| 32 ... | " " ... | Dredging claims | 576 |
| <i>Licenses—</i> | | | |
| 6 ... | " " ... | Machinery sites... .. | 30 |
| 27 ... | " " ... | Mining easements | 121 |
| | " " ... | Dam sites | 284 |
| Total ... | — | — | 31,255 |

1. Exclusive of prospectors' licenses and miners' rights, which are issued by officers in different districts throughout the State, and as to which particulars are not available.

(vi.) *Leases and Licenses Issued and Areas Occupied, 1901 to 1907.* The following table gives particulars of the areas of Crown lands for which leases and licenses (exclusive of prospectors' licenses and miners' rights) were issued during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of each year from 1901 to 1907, inclusive :—

TASMANIA.—LEASES AND LICENSES

ISSUED BY MINES DEPARTMENT, 1901 TO 1907.¹

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|
| LEASES AND LICENSES ISSUED. | | | | | | | |
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Gold mining ... | 1,067 | 1,454 | 647 | 700 | 543 | 459 | 1,056 |
| Mining for other minerals ... | 17,058 | 12,478 | 11,271 | 11,159 | 8,421 | 18,956 | 29,188 |
| For other purposes ... | — | — | — | — | — | — | 1,011 |
| Total ... | 18,125 | 13,932 | 11,918 | 11,859 | 8,964 | 19,415 | 31,255 |
| TOTAL AREAS OCCUPIED. | | | | | | | |
| Gold mining ... | 3,394 | 3,024 | 2,505 | 2,268 | 2,087 | 1,836 | 2,671 |
| Mining for other minerals ... | 46,968 | 44,668 | 42,444 | 41,370 | 41,510 | 49,061 | 73,009 |
| For other purposes ... | — | — | 349 | 703 | 1,478 | 2,225 | 3,483 |
| Total ... | 50,362 | 47,692 | 45,298 | 44,341 | 45,075 | 53,122 | 79,163 |

1. See note to preceding table.

§ II. Resumption by Crown of Alienated Lands.

1. **General.**—Under various Acts alienated lands may be compulsorily resumed by the Crown in the several States for certain purposes, generally connected with works of a public nature. Resumptions for closer settlement purposes have already been referred to (see § 9, above). In most of the States there are Lands Clauses or similar Acts providing the machinery, and indicating the procedure to be adopted in assessing the compensation to be paid by the Crown to private owners in cases where the parties have failed to agree as to the amount to be paid. The provisions of these Acts are generally incorporated in the special Acts specifying the purposes for which alienated lands may be resumed. Lands leased for pastoral purposes may generally be resumed by the Crown on short notice. The lessee is ordinarily entitled to compensation for land resumed, for loss or depreciation in value of the lease caused by such resumption, and for improvements.

(a) *New South Wales.* Alienated lands may be recovered by the Crown for authorised works and certain public purposes under the provisions of the Public Works Act 1900, and in other cases may be acquired by the Crown by purchase, gift, or surrender under Executive authority. Alienated lands required for public roads may be resumed under the Public Roads Act 1902, and if containing gold may be resumed for mining under Section 72 of the Mining Act 1906. Lands dedicated or granted by the Crown for public purposes may be resumed under Section 105 of the Crown Lands Act, 1884, Section 41 of the Crown Lands Act 1889, and Section 1 of the Public Trusts Act 1897. Surrender and exchange of lands alienated or in process of alienation may be carried out under Section 47 of the Crown Lands Act 1895.

(b) *Victoria.* In Victoria lands may be resumed in accordance with the provisions of the Lands Compensation Act 1890, the Public Works Act 1890, the Railways Acts,

the Land Act 1901, the Local Government Act 1903, the Water Act 1905, the Vacant Unclaimed Lands Act 1906, and the Forests Act 1907.

(c) *Queensland.* In this State alienated lands may be resumed under the provisions of the Public Works Land Resumption Act 1906, for any of the purposes specified in section 4 of that Act.

(d) *South Australia.* In this State the principal Acts under which land is re-purchased for public works are the Railways Commissioners Act 1887, the Water Conservations Acts 1886, 1889, and 1900, the Waterworks Act 1882, and the Sewers Act 1878.

(e) *Western Australia.* In Western Australia private lands may be resumed under the provisions of the Land Act 1898, the Roads Act 1902, and the Public Works Act 1902.

(f) *Tasmania.* In the greatest number of cases private lands have been resumed in this State for the purpose of roads by agreement under the Lands Vesting Act 1894 and the Roads Acts, which were to a large extent repealed and consolidated by the Local Government Act 1906. In case of the owners failing to agree as to price, the land is acquired under the Lands Clauses Act 1857, incorporated in the Public Works and the Crown Land Acts. The Lands Resumption Act 1891 provides for the compulsory acquisition of land without waiting for the usual formalities. Under that Act a notification may be given to the owner that the land is required; after the expiration of thirty days the land may be resumed by notification in the *Gazette*, the amount of purchase money being afterwards decided by arbitration, as provided by the Lands Clauses Act.

2. **Areas Resumed, 1901 to 1907.**—The subjoined table shews, so far as particulars are available, the areas of private lands resumed, exclusive of resumptions for closer settlement purposes, in each State during each year from 1901 to 1907, inclusive:—

AREAS OF PRIVATE LANDS RESUMED BY THE CROWN
(EXCLUSIVE OF RESUMPTIONS FOR CLOSER SETTLEMENT), 1901 TO 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|--------|--------|--------|--------|--------|--------|--------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| N. S. Wales ... | 7,864 | 8,392 | 10,275 | 6,591 | 6,173 | 20,875 | 10,511 |
| Victoria* ... | 52 | 18 | 2,787 | 3,337 | 2,653 | 665 | 1,930 |
| Queensland ... | 26 | 2 | ... | ... | ... | ... | 76 |
| S. Australia† | ... | ... | ... | ... | ... | ... | ... |
| W. Australia... | 91 | 30 | ... | ... | ... | ... | ... |
| Tasmania ... | 120 | 150 | 160 | 210 | 184 | 200 | 252 |
| Total‡ ... | 8,153 | 8,592 | 13,222 | 10,138 | 9,010 | 21,740 | 12,769 |

* Exclusive of resumptions for railway purposes, which for the years 1901 to 1906, inclusive, amounted to 13,081 acres. † Not available. ‡ Exclusive of South Australia.

§ 12. Alienation and Occupation of Crown Lands in the Several States.

1. **Introduction.**—The tables given in the previous parts of this section shew separately the areas alienated, in process of alienation, and occupied under various tenures in the several States. The tables given below shew collectively the general condition of the public estate in each State, having regard to (a) the area alienated absolutely, which includes free grants, sales, and conditional purchases for which grants have issued, the conditions having been complied with; (b) the area in process of alien-

ation, comprising holdings for which the fee-simple has not yet been alienated, but which are in process of sale under systems of deferred payments; (c) the area occupied under all descriptions of leases and licenses; and (d) the area unoccupied, which, unless otherwise stated, includes roads, reserves, forests, etc. It should be observed that in many cases lands occupied under leases or licenses for pastoral purposes are held on short tenures only, and could thus be made available for settlement practically whenever required.

2. **New South Wales.**—The total area of the State of New South Wales is 198,638,080 acres, of which on the 30th June, 1907, 33,921,508 acres, or about one-sixth, were alienated absolutely, 50,486,733 acres, or about one-quarter, were in process of alienation, 126,081,293 acres, or about three-fifths, were occupied under Lands Department, Western Land Board, or Mines Department leases and licenses, and the remaining 22,070,054 acres, or about one-ninth, were unoccupied. The following table shows the areas alienated, in process of alienation, held under leases and licenses, and unoccupied for each year from 1901 to 1907 :—

NEW SOUTH WALES.—ALIENATION AND OCCUPATION OF CROWN LANDS,

1901 TO 1907.¹

| Particulars. | Area in Acres. | | | | | |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 1901. | 1902. | 1903. | 1904. | 1905-6. | 1906-7. |
| 1. Alienated. | | | | | | |
| Granted and sold by private tender and pub. auction, at prices ranging from five to twenty shillings per acre, prior to 1862 | 7,146,579 | 7,146,579 | 7,146,579 | 7,146,579 | 7,146,579 | 7,146,579 |
| Sold by auction and other sales, 1862 to date | 14,638,858 | 14,690,640 | 14,731,720 | 14,783,302 | 14,841,958 | 14,868,442 |
| Conditionally sold, 1862 to date | 4,212,189 | 5,217,580 | 6,010,028 | 6,969,625 | 9,002,561 | 10,264,221 |
| Granted under Volunteer Land Regulations, 1867 to date | 168,545 | 168,595 | 168,645 | 168,745 | 169,164 | 169,464 |
| Granted for public and religious purposes | 241,968 | 240,805 | 235,943 | 237,233 | 238,759 | 224,883 |
| Homestead grants | 35,385 | 194,702 | 472,175 | 662,833 | 1,087,065 | 1,247,919 |
| Total area alienated | 26,443,554 | 27,658,901 | 28,765,090 | 29,968,317 | 32,486,086 | 33,921,508 |
| 2. In Process of Alienation. | | | | | | |
| Under system of deferred payments | 20,044,703 | 19,369,027 | 18,823,660 | 18,100,517 | 16,499,823 | 15,691,906 |
| Under system of homestead selections (including leases converted, but excluding grants issued) | 1,550,985 | 1,673,966 | 1,734,949 | 1,195,970 | 964,426 | 873,319 |
| Total area in process of alienation | 21,595,688 | 21,042,993 | 20,558,609 | 19,296,487 | 17,484,249 | 16,565,225 |
| 3. Held under Leases and Licenses. | | | | | | |
| Total under Lands Department and Western Land Board | 126,921,161 | 131,649,639 | 128,334,418 | 123,002,033 | 124,088,680 | 125,904,700 |
| Mineral and auriferous leases and licenses (Mines Department) | 134,209 | 131,690 | 127,514 | 124,773 | 148,351 | 176,593 |
| Total leases under all Government Departments | 127,055,370 | 131,781,329 | 128,461,932 | 124,027,706 | 124,237,031 | 126,081,293 |
| 4. Unoccupied | 23,543,468 | 18,154,857 | 20,852,449 | 25,345,570 | 24,430,714 | 22,070,054 |

Area of State—198,638,080 acres.

1. The figures for 1906 and 1907 are up to the 30th June, while for the other years given they are up to the 31st December; 1905 figures are therefore omitted.

3. **Victoria.**—The total area of the State of Victoria is 56,245,760 acres, of which 22,940,143 acres, or about three-eighths, had been alienated absolutely up to the end of the year 1907; 4,488,346 acres, or about one-twelfth, were in process of alienation under deferred payments; and 16,632,965 acres were occupied under leases and licenses, the remainder consisting of reserves, roads, and other unalienated Crown lands. The following table shows the areas alienated and in process of alienation, together with the areas reserved, leased, and available for occupation at the end of each year from 1901 to 1907, inclusive. The corresponding table given in Year Book No. 1 was exclusive of particulars of operations under the Closer Settlement Acts. These particulars have now been included where available:—

VICTORIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,

1901 TO 1907.

| Particulars. | Area in Acres | | | | | | |
|--|---------------|------------|------------|------------|------------|------------|------------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| 1. <i>Alienated</i> | 20,066,875 | 20,585,413 | 21,095,566 | 21,679,596 | 22,584,092 | 22,816,538 | 22,940,143 |
| 2. <i>In Process of Alienation</i> — | | | | | | | |
| Exclusive of Mallee, etc. ... | 3,587,668 | 3,323,378 | 3,237,957 | 2,868,869 | 2,136,411 | 1,922,654 | 1,897,796 |
| Mallee Lands ... | 87,606 | 115,822 | 159,237 | 1,215,372 | 1,589,981 | 1,948,460 | 2,372,316 |
| Under Closer Settlement Acts ... | ... † | ... † | ... † | ... † | 37,996 | 114,691 | 164,561 |
| Settlement on Lands Act 1903 ... | 55,077 | 52,613 | 51,532 | 56,626 | 55,395 | 54,404 | 52,673 |
| Total ... | 3,730,351 | 3,491,813 | 3,448,726 | 4,140,867 | 3,819,783 | 4,040,209 | 4,488,346 |
| 3. <i>Leases and Licenses Held</i> — | | | | | | | |
| Under Lands Department | 17,110,709 | 17,196,092 | 9,469,277 | 13,693,116 | 17,938,838 | 16,683,992 | 16,565,917 |
| Under Mines Department* | — | 58,376 | 46,909 | 38,287 | 45,845 | 84,720 | 67,048 |
| Total ... | 17,110,709 | 17,254,468 | 9,516,186 | 13,731,403 | 17,984,683 | 16,768,712 | 16,632,965 |
| 4. <i>Unoccupied Crown Lands</i> — | | | | | | | |
| Roads ... | 1,571,182 | 1,587,289 | 1,614,773 | 1,623,139 | 1,634,449 | 1,643,436 | 1,653,314 |
| Water Reserves ... | 291,718 | 291,254 | 292,910 | 292,055 | 290,120 | 289,908 | 288,477 |
| Agricultural Colleges, etc. | 155,483 | 155,483 | 155,483 | 155,483 | 155,483 | 155,483 | 155,483 |
| State Forests ... | 4,273,910 | 4,341,248 | 4,327,142 | 4,328,693 | 4,330,383 | 4,329,417 | 4,323,420 |
| Timber Reserves ... | 344,345 | 338,292 | 332,133 | 335,180 | 328,438 | 326,062 | 325,176 |
| Permanently Reserved for Public Purposes ... | 1,592,400 | 1,592,400 | 1,592,400 | 1,592,400 | 1,592,400 | 1,592,400 | 1,592,400 |
| Other Reserves ... | 197,900 | 197,750 | 197,750 | 200,280 | 200,065 | 203,136 | 202,810 |
| Reserves in the Mallee ... | 397,881 | 397,881 | 397,881 | 397,881 | 397,881 | 397,881 | 397,881 |
| Unsold Land in Towns, etc. | 233,067 | 2,476,632 | 2,834,017 | 1,871,721 | 1,980,457 | 1,795,641 | 1,460,023 |
| Available for Occupation | 6,279,939 | 3,535,787 | 10,440,773 | 5,897,062 | 947,526 | 1,886,917 | 1,785,322 |
| Total ... | 15,337,825 | 14,914,066 | 22,185,262 | 16,693,894 | 11,857,202 | 12,620,301 | 12,184,306 |

Total area of State—56,245,760 acres.

† Not available. * Leases only.

4. **Queensland.**—The total area of this State is 429,120,000 acres, of which, on the 30th June, 1907, 14,924,417 acres, or about one-thirtieth, were alienated absolutely; 4,778,908 acres, or about one-ninetieth, were in process of alienation; 264,219,200, or about five-eighths, were occupied under leases and licenses, the remaining 145,197,475 acres, or about five-sixteenths, being unoccupied. The following table shows the area alienated absolutely, the area in process of alienation, and the area held under various forms of lease and license at the end of each year from 1901 to 1905, inclusive, and on the 30th June, 1906 and 1907:—

QUEENSLAND.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 to 1907.

| Particulars. | Area in Acres. | | | | | | |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| 1. Alienated Absolutely | | | | | | | |
| By Purchase ... | 13,462,304 | 13,588,572 | 13,695,403 | 13,956,341 | 14,174,907 | 14,504,707 | 14,842,621 |
| Without Payment ... | 71,164 | 74,874 | 75,322 | 75,545 | 77,757 | 80,853 | 81,796 |
| Total ... | 13,533,468 | 13,663,446 | 13,770,725 | 14,031,886 | 14,252,664 | 14,585,560 | 14,924,417 |
| 2. In Process of Alienation ... | 2,791,664 | 3,160,909 | 3,220,402 | 3,165,737 | 3,407,210 | 3,737,083 | 4,778,908 |
| 3. Occupied under Leases and Licenses— | | | | | | | |
| Runs Settled Districts ... | 176,000 | 106,080 | 106,080 | 510,800 | 179,732,320 | 182,384,400 | 192,346,480 |
| Unsettled Districts ... | 222,553,760 | 221,719,680 | 215,844,400 | 181,187,920 | | | |
| Occupation Licenses ... | 35,103,600 | 44,801,760 | 40,854,800 | 32,812,000 | 37,085,040 | 39,354,240 | 43,138,000 |
| Grazing Farms and Homesteads ... | 21,793,242 | 22,550,073 | 20,409,753 | 21,405,356 | 22,997,960 | 24,961,495 | 28,232,332 |
| Scrub Selections ... | 272,946 | 228,254 | 264,030 | 218,790 | 251,549 | 252,603 | 275,621 |
| Timber Licenses ... | ... | ... | ... | ... | ... | ... | 92,000 |
| Leases Sp'cl Purposes ... | 249 | 3,149 | 3,860 | 3,122 | 3,133 | 3,789 | 11,446 |
| Under Mines Dept. ... | 124,182 | 143,361 | 163,792 | 111,180 | 102,952 | 112,013 | 123,321 |
| Total ... | 280,023,979 | 289,552,857 | 277,639,715 | 236,249,168 | 240,162,954 | 247,068,540 | 264,219,200 |
| 4. Unoccupied ... | 132,770,889 | 122,743,788 | 134,480,158 | 175,673,209 | 171,297,172 | 163,728,817 | 145,197,475 |

Total area of State—429,120,000 acres.

5. **South Australia and Northern Territory.**—The subjoined tables shew for South Australia proper and for the Northern Territory respectively the area of land alienated absolutely, and in process of alienation under deferred payments, and the area held under different forms of leases:—

SOUTH AUSTRALIA (PROPER).—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 to 1907.

| Particulars. | Area in Acres. | | | | | | |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| 1. Alienated— | | | | | | | |
| Sold ... | 7,413,510 | 7,533,499 | 7,678,007 | 7,899,173 | 7,992,302 | 8,065,792 | 8,194,032 |
| Granted Pub. Purposes ... | 121,613 | 121,705 | 121,722 | 121,735 | 121,822 | 121,829 | 122,027 |
| Total ... | 7,535,123 | 7,655,204 | 7,799,729 | 8,020,908 | 8,114,124 | 8,187,621 | 8,316,059 |
| 2. In Process of Alienation— | 553,774 | 451,232 | 344,258 | 310,589 | 455,381 | 750,337 | 1,134,424 |
| 3. Held under Lease and License— | | | | | | | |
| Right of Purchase ... | 5,639,519 | 5,640,468 | 5,528,011 | 5,186,467 | 4,898,422 | 4,724,954 | 4,579,418 |
| Perpetual ... | 7,115,782 | 7,652,494 | 8,536,990 | 9,607,388 | 10,573,154 | 11,445,372 | 12,568,576 |
| Pastoral ... | 68,916,125 | 72,408,435 | 73,368,105 | 75,154,310 | 76,402,950 | 76,685,510 | 79,388,240 |
| Other Leases & Licenses ... | 3,905,729 | 3,551,187 | 2,896,936 | 2,473,940 | 2,273,383 | 2,113,718 | 1,985,866 |
| *Mining " " ... | 14,140 | 103,334 | 793,583 | 130,281 | 128,045 | 213,492 | 170,204 |
| Total ... | 85,591,295 | 89,355,938 | 91,123,625 | 92,552,386 | 94,275,954 | 95,183,046 | 98,692,304 |
| 4. Total Occupied ... | 93,680,192 | 97,462,374 | 99,267,612 | 100,883,883 | 102,845,459 | 104,130,004 | 108,142,787 |
| 5. Area Unoccupied ... | 149,564,608 | 145,782,426 | 143,977,188 | 142,360,917 | 140,399,341 | 139,114,796 | 135,102,013 |

Total area of State (proper), south of lat. 26° S.,—243,244,800 acres.

* Exclusive of miners' rights.

The area of the State of South Australia south of lat. 26° S. is 243,244,800 acres, and of the Northern Territory, 335,116,800 acres, making a total of 578,361,600 acres. In South Australia (proper) at the end of the year 1907, there were 8,316,059 acres, or about one-thirtieth, alienated absolutely; 1,134,424 acres, or about one-two hundred and fortieth, were in process of alienation; 98,692,304 acres, or about two-fifths were occupied under leases and licenses; while the remaining 135,102,013 acres were unoccupied.

In the Northern Territory at the end of the year 1907, there were 473,230 acres, or only about one-seven-hundredth part alienated absolutely: 107,269,509 acres or nearly one-third were held under leases and licenses, while the remaining 227,374,011 acres, or over two-thirds, were unoccupied.

**NORTHERN TERRITORY.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 to 1906.**

| Particulars. | Area in Acres. | | | | | | |
|------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| 1. Alienated— | | | | | | | |
| Sold | 473,230 | 473,230 | 473,230 | 473,230 | 473,231 | 473,232 | 473,232 |
| Granted Pub. Purposes | 48 | 48 | 48 | 48 | 48 | 48 | 48 |
| Total Alienated ... | 473,278 | 473,278 | 473,278 | 473,278 | 473,279 | 473,280 | 473,280 |
| 2. Leased— | | | | | | | |
| Right of Purchase ... | 1,067 | 1,227 | 1,407 | 1,567 | 2,067 | 2,397 | 2,771 |
| Pastoral | 111,476,240 | 113,755,920 | 104,609,200 | 104,641,200 | 102,030,240 | 108,347,660 | 105,918,880 |
| Other Leases | 1,176,981 | 108,821 | 26,181 | 28,181 | 1,248,019 | 1,376,010 | 1,347,858 |
| Total Leased ... | 112,654,288 | 113,865,968 | 104,638,788 | 104,670,948 | 103,280,346 | 109,726,067 | 107,269,509 |
| 3. Total Occupied ... | 113,127,566 | 114,339,246 | 105,112,066 | 105,144,226 | 103,753,625 | 110,199,367 | 107,742,789 |
| 4. Remainder Unopd. | 221,989,234 | 220,777,554 | 230,004,734 | 229,972,574 | 231,363,175 | 224,917,433 | 227,374,011 |

Total area of Northern Territory—335,116,800 acres

6. Western Australia.—The total area of Western Australia is 624,588,800 acres, of which on the 30th June, 1907, 3,969,965 acres, or about a one hundred and fiftieth part, were alienated absolutely; 9,100,041 acres, or about one-seventieth part, were in process of alienation; while 160,205,944 acres, or about one-quarter, were occupied under leases and licenses issued either by the Lands or the Mines Departments. The remaining 451,312,850 acres, or about two-thirds, were unoccupied.

The table on page 348 shews the area alienated absolutely and conditionally, and the areas held under leases and licenses at the end of each year, from 1901 to 1905, inclusive, and on 30th June, 1906 and 1907.

7. Tasmania.—Of the total area of Tasmania, namely, 16,777,600 acres, there were at the end of the year 1907, 4,805,697 acres, or about one-quarter, alienated absolutely; 796,725 acres, or about one-twentieth, were in process of alienation; 1,432,917 acres, or about one-eighth, were occupied under leases and licenses for either pastoral, agricultural, timber, or mining purposes; the remaining 9,742,261 acres, or about five-eighths, being unoccupied. The table on page 348 shews the areas alienated, in process of alienation, and held under lease or license, and the area unoccupied at the end of each year from 1901 to 1907.

**WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 to 1907.**

| Particulars. | Area in Acres. | | | | | |
|--|----------------|-------------|-------------|-------------|-------------|-------------|
| | 1901. | 1902. | 1903. | 1904. | 1905-6.* | 1906-7.* |
| 1. <i>Absolutely Alienated</i> | 3,468,878 | 3,517,724 | 3,646,139 | 3,724,789 | 3,781,613 | 3,969,965 |
| 2. <i>In Process of Alienation</i> — | | | | | | |
| Midland Railway Concessions | 2,768,810 | 2,768,810 | 2,768,810 | 2,768,810 | 2,768,810 | 2,768,810 |
| Free Homestead Farms | 283,455 | 365,468 | 573,585 | 785,585 | 950,966 | 969,939 |
| Conditional Purchases | 1,349,554 | 1,550,530 | 2,003,288 | 2,504,094 | 3,282,024 | 3,715,035 |
| Selections from the late W.A. Company | 75,213 | 74,247 | 72,464 | 60,478 | 55,848 | 53,094 |
| Selections under the Agricultural Lands Purchase Act | 37,235 | 48,675 | 62,956 | 102,696 | 136,022 | 142,647 |
| Special Occupation Leases and Licenses | 8,867 | 7,057 | 5,860 | 4,284 | 5,090 | 5,090 |
| Homestead or Grazing Leases | 286,425 | 462,371 | 714,045 | 1,114,373 | 1,254,139 | 1,242,839 |
| Poison Land Leases or Licenses | 1,306,270 | 1,061,173 | 700,345 | 492,719 | 340,873 | 201,965 |
| Immigrants' Grants | 400 | 400 | 400 | 200 | 100 | 100 |
| Village Allotments | 6 | 7 | 7 | 7 | 24 | 33 |
| Working-men's Blocks | 31 | 130 | 158 | 273 | 393 | 489 |
| Total in Process of Alienation | 6,116,266 | 6,338,868 | 6,901,918 | 7,833,519 | 8,794,289 | 9,100,041 |
| 3. <i>Leases and Licenses in Force</i> — | | | | | | |
| (i.) <i>Issued by Lands Department</i> | | | | | | |
| Pastoral Leases | 96,508,549 | 111,165,639 | 134,687,972 | 138,876,509 | 151,582,656 | 159,130,182 |
| Special Leases | 448 | 531 | 716 | 848 | 3,505 | 15,431 |
| Leases of Reserves | 5,296 | 3,301 | 982 | 981 | 2,021 | 77,518 |
| Selections in Goldfields | 3,955 | 2,653 | 2,653 | 2,653 | 100 | 100 |
| Timber Leases and Licenses | 865,180 | 889,540 | 904,260 | 885,140 | 851,250 | 864,521 |
| Residential Lots | 550 | 626 | 686 | 781 | 884 | 831 |
| (ii.) <i>Issued by Mines Department</i> | | | | | | |
| Gold Mining Leases | 34,066 | 32,570 | 30,415 | 32,530 | 29,370 | 27,587 |
| Mineral Leases | 6,576 | 34,739 | 33,083 | 33,083 | 27,171 | 34,101 |
| Other Leases | 8,623 | 8,165 | 17,803 | 21,959 | 24,747 | 28,020 |
| Licenses | 17,397 | 40,229 | 21,618 | 33,867 | 29,382 | 27,653 |
| Total under Leases and Licenses | 97,450,660 | 112,177,993 | 135,700,188 | 139,888,351 | 152,551,086 | 160,205,944 |
| 4. <i>Area Unoccupied</i> | 517,552,996 | 502,554,215 | 478,340,555 | 473,142,141 | 459,461,812 | 451,312,850 |

Total area of State—624,588,800 Acres.

* Figures are now given as up to the 30th June, instead of as up to 31st December. Figures for previous years may be obtained from the Statistical Registers of Western Australia.

TASMANIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 to 1907.

| Particulars. | Area in Acres. | | | | | | |
|--|----------------|------------|------------|------------|------------|-----------|-----------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| 1. <i>Alienated Absolutely</i> | 4,621,585 | 4,658,878 | 4,685,521 | 4,724,380 | 4,740,710 | 4,768,701 | 4,805,697 |
| 2. <i>In Process of Alienation</i> | 272,376 | 296,672 | 354,892 | 444,441 | 598,243 | 710,837 | 796,725 |
| 3. <i>Leases or Licenses</i> | | | | | | | |
| (i.) <i>Issued by Lands Department</i> — | | | | | | | |
| Islands | 149,165 | 110,135 | 88,590 | 121,850 | 89,003 | 91,131 | 109,531 |
| Ordinary Leased Land | 1,280,688 | 1,292,959 | 1,366,063 | 1,133,152 | 1,082,851 | 1,112,311 | 1,145,823 |
| Land Leased for Timber Closer Settlement | 40,768 | 68,109 | 82,335 | 90,300 | 87,932 | 86,817 | 88,035 |
| (ii.) <i>Issued by Mines Department</i> | 50,362 | 47,692 | 45,298 | 44,341 | 45,075 | 53,122 | 79,163 |
| Total | 1,520,983 | 1,518,895 | 1,582,286 | 1,389,643 | 1,304,861 | 1,343,381 | 1,432,917 |
| 4. <i>Total Area Occupied</i> | 6,414,944 | 6,474,445 | 6,622,699 | 6,558,464 | 6,643,814 | 6,822,919 | 7,085,339 |
| 5. <i>Area Unoccupied</i> | 10,362,656 | 10,303,155 | 10,154,901 | 10,219,136 | 10,133,786 | 9,954,681 | 9,742,261 |

Total area of State—16,777,600 acres.

§ 13. Classification of Holdings according to Size.

1. **General.**—The classification of holdings according to their area is of interest chiefly in relation to the efforts made by the several States in recent years to promote settlement on the land on blocks of suitable size, especially by means of the Closer Settlement Acts. Returns shewing such a classification are only available for three of the States, viz., New South Wales, Victoria, and Western Australia.

2. **New South Wales.**—The total number of holdings of one acre and over in area in this State on the 31st March, 1901, was 69,439. On the 31st March, 1907, the corresponding number was 79,026, shewing an increase of 9587, or about 13.8 per cent. The following table shews the number of holdings of various sizes alienated absolutely, and in process of alienation, on the 31st March of each year from 1903 to 1907, together with the total area occupied by each class on the 31st March, 1907 :—

NEW SOUTH WALES.—CLASSIFICATION OF HOLDINGS ALIENATED AND IN PROCESS OF ALIENATION, 1901 to 1907.

| Size of Holdings. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | |
|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|
| | | | | | | | Number. | Area. |
| Acres. | Number. | Number. | Number | Number. | Number. | Number. | | Acres. |
| 1 to 5 ... | 11,460 | 12,190 | 12,824 | 13,290 | 13,955 | 14,365 | 14,966 | 38,192 |
| 6 " 15 ... | 5,806 | 6,017 | 6,132 | 6,484 | 6,629 | 6,905 | 7,038 | 68,188 |
| 16 " 30 ... | 3,813 | 3,821 | 3,913 | 4,047 | 4,056 | 4,045 | 4,090 | 92,974 |
| 31 " 50 ... | 7,076 | 7,076 | 7,037 | 7,143 | 7,094 | 7,098 | 7,090 | 295,041 |
| 51 " 100 ... | 8,929 | 8,884 | 8,895 | 9,064 | 9,108 | 9,217 | 9,185 | 725,272 |
| 101 " 200 ... | 9,407 | 9,479 | 9,648 | 9,863 | 10,003 | 10,042 | 10,379 | 1,565,912 |
| 201 " 300 ... | 4,705 | 4,789 | 4,813 | 5,012 | 5,117 | 5,254 | 5,449 | 1,369,180 |
| 301 " 400 ... | 4,146 | 4,141 | 4,256 | 4,379 | 4,465 | 4,536 | 4,621 | 1,589,589 |
| 401 " 500 ... | 2,246 | 2,238 | 2,278 | 2,302 | 2,404 | 2,436 | 2,537 | 1,154,523 |
| 501 " 600 ... | 1,491 | 1,565 | 1,577 | 1,585 | 1,617 | 1,658 | 1,791 | 991,435 |
| 601 " 700 ... | 2,382 | 2,402 | 2,388 | 2,430 | 2,458 | 2,442 | 2,448 | 1,579,057 |
| 701 " 800 ... | 890 | 973 | 955 | 979 | 1,015 | 1,034 | 1,094 | 826,133 |
| 801 " 900 ... | 677 | 682 | 702 | 711 | 765 | 796 | 828 | 706,840 |
| 901 " 1,000 ... | 665 | 693 | 734 | 755 | 752 | 805 | 783 | 750,186 |
| 1,001 " 1,500 ... | 1,939 | 2,021 | 2,079 | 2,160 | 2,234 | 2,391 | 2,513 | 3,100,252 |
| 1,501 " 2,000 ... | 872 | 887 | 882 | 886 | 927 | 972 | 1,006 | 1,759,750 |
| 2,001 " 3,000 ... | 920 | 946 | 939 | 952 | 983 | 1,024 | 1,037 | 2,555,528 |
| 3,001 " 4,000 ... | 446 | 452 | 475 | 475 | 488 | 491 | 521 | 1,796,805 |
| 4,001 " 5,000 ... | 287 | 278 | 286 | 291 | 296 | 307 | 296 | 1,336,528 |
| 5,001 " 7,500 ... | 356 | 348 | 352 | 356 | 350 | 362 | 388 | 2,355,317 |
| 7,501 " 10,000 ... | 223 | 228 | 224 | 234 | 234 | 236 | 237 | 2,058,475 |
| 10,001 " 15,000 ... | 213 | 224 | 234 | 227 | 216 | 216 | 218 | 2,659,415 |
| 15,001 " 20,000 ... | 139 | 138 | 144 | 144 | 141 | 140 | 146 | 2,531,136 |
| 20,001 " 30,000 ... | 139 | 148 | 152 | 152 | 155 | 150 | 156 | 3,826,763 |
| 30,001 " 40,000 ... | 63 | 59 | 55 | 56 | 55 | 63 | 63 | 2,158,093 |
| 40,001 " 50,000 ... | — | 40 | 43 | 40 | 46 | 41 | 40 | 1,823,836 |
| 40,001 & upwards | 149 | — | — | — | — | — | — | — |
| 50,001 & upwards | — | 110 | 110 | 111 | 109 | 110 | 106 | 9,701,454 |
| Total ... | 69,439 | 70,820 | 72,127 | 74,128 | 75,672 | 77,136 | 79,026 | 49,415,883 |

3. **Victoria.**—Lands alienated absolutely and in process of alienation in this State were classified according to size in March, 1908. In the instances where Crown lands were held in conjunction therewith the area was distributed, regardless of its size, as held by the different occupiers of lands alienated or in process of alienation. The following table shews the number and area of holdings of lands alienated absolutely and in process of alienation, together with the area of Crown land held under lease or license in conjunction therewith, on the 1st March, 1908 :—

VICTORIA.—CLASSIFICATION OF PRIVATE HOLDINGS, 1908.

| Lands Alienated and in Process of Alienation. | | | | | | Extent of Crown Land Held in Conjunction with Private Land. | Extent of Land under Cultivation. | |
|---|---------------------|--------------------------|---------------------|--------------------------|------------|---|-----------------------------------|--------|
| Size of Holdings. | 1906. | | 1908. | | Acres. | | | Acres. |
| | Number of Holdings. | Extent of Land Occupied. | Number of Holdings. | Extent of Land Occupied. | | | | |
| Acres. | | Acres. | | Acres. | | | | |
| 1 to 5 ... | 2,465 | 7,655 | 2,852 | 8,860 | 57,062 | 3,222 | | |
| 6 ,, 15 ... | 3,486 | 35,597 | 3,833 | 39,217 | 32,706 | 14,383 | | |
| 16 ,, 30 ... | 4,012 | 89,213 | 4,380 | 97,103 | 96,293 | 30,351 | | |
| 31 ,, 50 ... | 3,346 | 137,561 | 3,627 | 148,913 | 81,921 | 39,839 | | |
| 51 ,, 100 ... | 5,864 | 451,643 | 6,223 | 476,344 | 231,619 | 108,818 | | |
| 101 ,, 200 ... | 7,998 | 1,206,509 | 8,653 | 1,297,931 | 574,765 | 250,778 | | |
| 201 ,, 320 ... | 8,123 | 2,252,782 | 8,363 | 2,312,443 | 685,649 | 474,096 | | |
| 321 ,, 500 ... | 5,507 | 2,247,258 | 5,494 | 2,242,286 | 1,075,165 | 478,660 | | |
| 501 ,, 640 ... | 3,812 | 2,250,073 | 3,815 | 2,254,744 | 726,734 | 601,470 | | |
| 641 ,, 1,000 ... | 3,876 | 3,164,404 | 4,002 | 3,258,380 | 1,615,654 | 700,931 | | |
| 1,001 ,, 2,500 ... | 3,466 | 5,112,200 | 3,728 | 5,479,097 | 2,392,619 | 1,014,799 | | |
| 2,501 ,, 5,000 ... | 617 | 2,106,732 | 681 | 2,333,321 | 2,858,631 | 220,329 | | |
| 5,001 ,, 10,000 ... | 220 | 1,567,251 | 231 | 1,589,186 | 424,276 | 52,539 | | |
| 10,001 ,, 20,000 ... | 116 | 1,652,910 | 118 | 1,648,582 | 111,524 | 30,583 | | |
| 20,001 ,, 50,000 ... | 73 | 2,114,391 | 61 | 1,746,728 | 10,303 | 9,396 | | |
| 50,001 and upwards | 6 | 366,766 | 4 | 241,010 | 1,396 | 2,027 | | |
| Total | 52,987 | 24,762,945 | 56,065 | 25,174,145 | 10,976,317 | 4,032,221 | | |

In the above table the Crown land is not classified according to area, but is simply the total Crown land held in conjunction with each group of holdings. In addition to the areas of Crown land specified above, there are 1,162,930 acres held under various forms of leases and licenses. Particulars as to the number and size of the holdings are given in the subjoined table:—

VICTORIA.—CLASSIFICATION OF HOLDINGS UNDER LEASE OR LICENSE, 1908.

| Size of Holdings. | | Number of Holdings. | Extent of Land Held. | Extent of Land under Cultivation. |
|-----------------------|-----|---------------------|----------------------|-----------------------------------|
| Acres. | | | Acres. | Acres. |
| 1 to 5 ... | ... | 380 | 862 | 238 |
| 6 ,, 15 ... | ... | 106 | 973 | 197 |
| 16 ,, 30 ... | ... | 139 | 3,006 | 287 |
| 31 ,, 50 ... | ... | 68 | 2,759 | 220 |
| 51 ,, 100 ... | ... | 92 | 7,289 | 521 |
| 101 ,, 200 ... | ... | 182 | 27,924 | 1,969 |
| 201 ,, 320 ... | ... | 144 | 39,519 | 4,530 |
| 321 ,, 500 ... | ... | 127 | 54,174 | 10,033 |
| 501 ,, 640 ... | ... | 138 | 81,709 | 18,807 |
| 641 ,, 1,000 ... | ... | 188 | 158,990 | 22,883 |
| 1,001 ,, 2,500 ... | ... | 129 | 194,651 | 23,738 |
| 2,501 ,, 5,000 ... | ... | 18 | 64,981 | 5,031 |
| 5,001 ,, 10,000 ... | ... | 10 | 70,701 | 128 |
| 10,001 ,, 20,000 ... | ... | 2 | 25,880 | 57 |
| 20,001 ,, 50,000 ... | ... | 8 | 228,512 | 31 |
| 50,001 and upwards... | ... | 2 | 201,000 | 5,832 |
| Total ... | ... | 1,733 | 1,162,930 | 94,602 |

4. **Western Australia.**—In this State the number of holdings of one acre and over in area was 5699 for the season 1900-1 (see "Year Book" No. 1), and was 9157 for the season 1906-7, shewing an increase of 3458, or about 37.76 per cent. The subjoined table shews the number of holdings of lands alienated absolutely, and in process of alienation, from which returns were received for the different seasons since the season 1900-1901, classified according to size.

WESTERN AUSTRALIA.—NUMBER OF HOLDINGS OF ALIENATED LANDS, AND LANDS IN PROCESS OF ALIENATION, 1901 to 1907.

| Area Series. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. |
|------------------|-----------------|---------|---------|---------|---------|---------|---------|
| Acres. | | | | | | | |
| 1 to 5 | 789 | 955 | 1,004 | 1,064 | 1,198 | 1,236 | 1,250 |
| 6 .. 15 | 544 | 429 | 476 | 578 | 669 | 752 | 808 |
| 16 .. 30 | 245 | 238 | 240 | 336 | 367 | 375 | 391 |
| 31 .. 50 | 150 | 181 | 171 | 197 | 215 | 230 | 265 |
| 51 .. 100 | 198 | 490 | 453 | 502 | 523 | 518 | 518 |
| 101 .. 200 | 1,027 | 811 | 872 | 904 | 925 | 1,000 | 1,033 |
| 201 .. 300 | 607 | 582 | 575 | 593 | 620 | 642 | 707 |
| 301 .. 500 | 668 | 719 | 775 | 829 | 886 | 937 | 1,058 |
| 501 .. 750 | 475 | 484 | 520 | 604 | 648 | 743 | 858 |
| 751 .. 1,000 | 242 | 297 | 312 | 389 | 537 | 568 | 639 |
| 1,001 .. 2,000 | 412 | 423 | 486 | 611 | 737 | 830 | 916 |
| 2,001 .. 3,000 | 102 | 104 | 128 | 166 | 216 | 249 | 264 |
| 3,001 .. 5,000 | 93 | 86 | 99 | 111 | 164 | 184 | 219 |
| 5,001 .. 7,000 | 51 | 45 | 54 | 60 | 78 | 86 | 85 |
| 7,501 .. 10,000 | 22 | 29 | 33 | 26 | 33 | 48 | 52 |
| 10,001 .. 15,000 | 26 | 32 | 28 | 39 | 42 | 35 | 48 |
| 15,001 .. 20,000 | 12 | 7 | 13 | 12 | 10 | 14 | 17 |
| 20,001 .. 30,000 | 18 | 9 | 13 | 9 | 16 | 13 | 12 |
| 30,001 .. 50,000 | 18 ¹ | 10 | 12 | 10 | 11 | 11 | 10 |
| 50,001 & upwards | — | 9 | 4 | 4 | 10 | 5 | 7 |
| Total | 5,699 | 5,940 | 6,268 | 7,044 | 7,905 | 8,475 | 9,157 |

1. Number of holdings of 30,001 acres and upwards.

§ 14. The Progress of Land Settlement, 1897 to 1907.

1. **Recent Progress.**—The progress of settlement and the growth of land alienation in the States of the Commonwealth under recent legislation is seen in the subjoined statement which shews concisely the condition of the public estate in each State and in the Commonwealth at the end of each year from 1897 to 1907, inclusive. The effect of the land laws during that period has been generally to diminish the number of large holdings, at the same time decreasing the area held under lease, while both the area alienated and the area in process of alienation have increased. As leases of large areas fall in or are otherwise terminated they are in many cases not renewed, but the land leased is cut up for the purpose of settlement under systems of deferred payment; the State Governments, also, have in many cases acquired by repurchase considerable areas under the provisions of the various Closer Settlement Acts. Further, greater facilities have been granted to the working classes to acquire possession of the soil, and special inducements have been offered to *bonâ fide* settlers by the introduction of new forms of tenure on easy terms and conditions.

**TOTAL AREAS ALIENATED, IN PROCESS OF ALIENATION,
HELD UNDER LEASE OR LICENSE, AND UNOCCUPIED, IN EACH STATE AND IN
THE COMMONWEALTH AT THE END OF EACH YEAR FROM 1897 TO 1907,
INCLUSIVE, EXPRESSED ABSOLUTELY AND AS PERCENTAGES OF AREA OF
ENTIRE STATE.**

NEW SOUTH WALES.—AREA, 198,638,080 ACRES.

| Year. | Alienated. | | In Process of Alienation. | | Held under Lease or License. | | Unoccupied. | |
|-------------------|-------------------------|-----------|---------------------------|-----------|------------------------------|-----------|----------------|-----------|
| | Area in Acres. | Per Cent. | Area in Acres. | Per Cent. | Area in Acres. | Per Cent. | Area in Acres. | Per Cent. |
| 1897 | 24,853,074 | 12.51 | 20,886,016 | 10.51 | 124,184,284 | 62.52 | 28,714,706 | 14.46 |
| 1898 | 25,081,572 | 12.63 | 21,307,018 | 10.73 | 127,609,598 | 64.24 | 24,639,892 | 12.40 |
| 1899 | 25,374,603 | 12.77 | 21,481,974 | 10.82 | 128,034,958 | 64.46 | 23,746,545 | 11.95 |
| 1900 | 25,856,698 | 13.02 | 21,546,284 | 10.85 | 126,085,148 | 63.47 | 25,149,950 | 12.66 |
| 1901 | 26,443,554 | 13.32 | 21,595,688 | 10.87 | 127,055,370 | 63.96 | 23,543,468 | 11.85 |
| 1902 | 27,658,901 | 13.93 | 21,042,993 | 10.59 | 131,781,329 | 66.34 | 18,154,857 | 9.14 |
| 1903 | 28,765,090 | 14.48 | 20,558,609 | 10.35 | 128,461,932 | 64.67 | 20,852,449 | 10.50 |
| 1904 | 29,968,317 | 15.09 | 19,296,487 | 9.71 | 124,027,706 | 62.44 | 25,345,570 | 12.76 |
| 1905 | 30,721,430 ¹ | 15.47 | 18,797,421 ¹ | 9.46 | 124,027,706 ² | 52.44 | 25,091,523 | 12.63 |
| 1906 ¹ | 32,486,086 | 16.36 | 17,484,249 | 8.80 | 124,237,031 | 62.54 | 24,430,714 | 12.30 |
| 1907 ¹ | 33,921,508 | 17.08 | 16,565,225 | 8.34 | 126,081,293 | 63.47 | 22,070,054 | 11.11 |

1. To 30th June. 2. To 31st December, 1904.

VICTORIA.—AREA, 56,245,760 ACRES.

| | | | | | | | | |
|------|------------|-------|-----------|------|------------|-------|------------|-------|
| 1897 | 18,194,656 | 32.35 | 4,929,962 | 8.76 | 19,857,682 | 35.31 | 13,263,460 | 23.58 |
| 1898 | 18,500,353 | 32.89 | 4,675,268 | 8.31 | 16,820,291 | 29.91 | 16,249,848 | 28.89 |
| 1899 | 19,198,794 | 34.13 | 4,053,769 | 7.21 | 19,195,896 | 34.13 | 13,797,301 | 24.53 |
| 1900 | 19,689,359 | 35.01 | 3,679,436 | 6.54 | 17,324,015 | 30.80 | 15,552,950 | 27.65 |
| 1901 | 20,066,875 | 35.67 | 3,730,351 | 6.63 | 17,110,709 | 30.42 | 15,337,825 | 27.28 |
| 1902 | 20,585,413 | 36.60 | 3,491,813 | 6.21 | 17,254,468 | 30.67 | 14,914,066 | 26.52 |
| 1903 | 21,095,586 | 37.51 | 3,448,726 | 6.13 | 9,516,186 | 16.92 | 22,185,262 | 39.44 |
| 1904 | 21,679,596 | 38.54 | 4,140,867 | 7.37 | 13,731,403 | 24.41 | 16,693,894 | 29.68 |
| 1905 | 22,584,092 | 40.15 | 3,819,783 | 6.79 | 17,984,683 | 31.98 | 11,857,202 | 21.08 |
| 1906 | 22,816,538 | 40.57 | 4,040,209 | 7.18 | 16,768,712 | 29.81 | 12,620,301 | 22.44 |
| 1907 | 22,940,143 | 40.74 | 4,488,346 | 8.05 | 16,632,965 | 29.57 | 12,184,306 | 21.64 |

QUEENSLAND.—AREA, 429,120,000 ACRES.

| | | | | | | | | |
|------|------------|------|-----------|------|--------------|-------|-------------|-------|
| 1897 | 12,959,694 | 3.02 | 1,854,399 | 0.43 | *294,149,566 | 68.55 | 120,156,341 | 28.00 |
| 1898 | 13,043,806 | 3.04 | 2,033,651 | 0.47 | *285,923,131 | 66.63 | 128,119,412 | 29.86 |
| 1899 | 13,164,767 | 3.07 | 2,476,875 | 0.58 | 280,801,539 | 65.43 | 132,676,819 | 30.92 |
| 1900 | 13,323,524 | 3.10 | 2,585,996 | 0.60 | 281,231,821 | 65.54 | 131,978,659 | 30.76 |
| 1901 | 13,533,468 | 3.15 | 2,791,664 | 0.65 | 280,023,979 | 65.26 | 132,770,889 | 30.94 |
| 1902 | 13,663,446 | 3.18 | 3,160,909 | 0.74 | 289,552,857 | 67.48 | 122,742,788 | 28.60 |
| 1903 | 13,770,725 | 3.21 | 3,220,402 | 0.75 | 277,639,715 | 64.70 | 134,489,158 | 31.34 |
| 1904 | 14,031,886 | 3.27 | 3,165,737 | 0.74 | 236,249,168 | 55.05 | 175,673,209 | 40.94 |
| 1905 | 14,252,664 | 3.32 | 3,407,210 | 0.79 | 240,162,954 | 55.97 | 171,297,172 | 39.92 |
| 1906 | 14,585,560 | 3.40 | 3,737,083 | 0.87 | 247,068,540 | 57.58 | 163,728,817 | 38.15 |
| 1907 | 14,924,417 | 3.48 | 4,778,908 | 1.11 | 264,219,200 | 61.57 | 145,197,475 | 33.84 |

* The returns available for 1897 and 1898 give the areas occupied for pastoral purposes only; the figures here given comprise, in addition, an area of 43,232,179 acres held for purposes other than pastoral at the end of 1899.

SOUTH AUSTRALIA.—AREA, 243,244,800 ACRES.

| | | | | | | | | |
|------|-----------|------|-----------|------|-------------|-------|-------------|-------|
| 1897 | 7,329,210 | 3.01 | 705,593 | 0.29 | 120,207,539 | 49.42 | 115,002,458 | 47.28 |
| 1898 | 7,374,599 | 3.03 | 680,470 | 0.28 | 76,810,409 | 31.58 | 158,379,322 | 65.11 |
| 1899 | 7,412,425 | 3.05 | 644,465 | 0.26 | 79,512,996 | 32.69 | 155,674,914 | 64.00 |
| 1900 | 7,466,353 | 3.07 | 607,461 | 0.25 | 84,274,133 | 34.65 | 150,896,853 | 62.03 |
| 1901 | 7,535,123 | 3.10 | 553,774 | 0.23 | 85,591,295 | 35.18 | 149,564,608 | 61.49 |
| 1902 | 7,655,204 | 3.15 | 451,232 | 0.19 | 89,355,938 | 36.74 | 145,782,426 | 59.92 |
| 1903 | 7,799,729 | 3.21 | 344,258 | 0.14 | 91,123,625 | 37.46 | 143,977,188 | 59.19 |
| 1904 | 8,020,908 | 3.30 | 310,589 | 0.13 | 92,552,386 | 38.04 | 142,360,917 | 58.53 |
| 1905 | 8,114,124 | 3.34 | 455,381 | 0.19 | 94,275,954 | 38.76 | 140,399,341 | 57.71 |
| 1906 | 8,187,621 | 3.37 | 759,337 | 0.31 | 95,183,046 | 39.13 | 139,114,796 | 57.19 |
| 1907 | 8,316,059 | 3.42 | 1,134,424 | 0.47 | 98,692,304 | 40.57 | 135,102,013 | 55.54 |

NORTHERN TERRITORY.—AREA, 335,116,800 ACRES.

| Year. | Alienated. | | In Process of Alienation. | | Held under Lease or License. | | Unoccupied. | |
|-------|----------------|-----------|---------------------------|-----------|------------------------------|-----------|----------------|-----------|
| | Area in Acres. | Per Cent. | Area in Acres. | Per Cent. | Area in Acres. | Per Cent. | Area in Acres. | Per Cent. |
| 1897 | 473,140 | 0.14 | ... | ... | 100,847,817 | 30.09 | 233,795,843 | 69.77 |
| 1898 | 473,146 | 0.14 | ... | ... | 89,040,576 | 26.57 | 245,603,078 | 73.29 |
| 1899 | 473,195 | 0.14 | ... | ... | 183,687,605 | 54.81 | 150,956,000 | 45.05 |
| 1900 | 473,195 | 0.14 | ... | ... | 186,749,480 | 55.73 | 147,894,125 | 44.13 |
| 1901 | 473,278 | 0.14 | ... | ... | 112,654,288 | 33.62 | 221,989,234 | 66.24 |
| 1902 | 473,278 | 0.14 | ... | ... | 113,865,968 | 33.98 | 220,777,554 | 65.88 |
| 1903 | 473,278 | 0.14 | ... | ... | 104,638,788 | 31.23 | 230,004,734 | 68.63 |
| 1904 | 473,278 | 0.14 | ... | ... | 104,670,948 | 31.23 | 229,972,574 | 68.63 |
| 1905 | 473,279 | 0.14 | ... | ... | 103,280,346 | 30.82 | 231,363,175 | 69.04 |
| 1906 | 473,280 | 0.14 | ... | ... | 109,726,087 | 32.74 | 224,917,433 | 67.12 |
| 1907 | 473,280 | 0.14 | ... | ... | 107,269,509 | 32.01 | 227,374,011 | 67.85 |

WESTERN AUSTRALIA.—AREA, 624,588,800 ACRES.

| | | | | | | | | |
|-------------------|-----------|------|-----------|------|-------------|-------|-------------|-------|
| 1897 | 6,230,345 | 1.00 | 2,616,349 | 0.42 | 88,186,489 | 14.12 | 527,555,617 | 84.46 |
| 1898 | 3,382,475 | 0.54 | 2,909,946 | 0.47 | 91,100,510 | 14.58 | 527,195,869 | 84.41 |
| 1899 | 3,413,529 | 0.55 | 3,065,420 | 0.49 | 90,314,932 | 14.46 | 527,794,919 | 84.50 |
| 1900 | 3,462,490 | 0.55 | 3,156,798 | 0.51 | 87,375,981 | 13.99 | 530,593,531 | 84.95 |
| 1901 | 3,468,878 | 0.56 | 6,116,266 | 0.98 | 97,450,660 | 15.60 | 517,552,996 | 82.86 |
| 1902 | 3,517,724 | 0.56 | 6,338,868 | 1.02 | 112,177,993 | 17.95 | 502,554,215 | 80.47 |
| 1903 | 3,646,139 | 0.58 | 6,901,918 | 1.11 | 135,700,188 | 21.72 | 478,340,555 | 76.59 |
| 1904 | 3,724,789 | 0.60 | 7,833,519 | 1.25 | 139,888,351 | 22.39 | 473,142,141 | 75.76 |
| 1905 | 3,765,975 | 0.60 | 8,614,060 | 1.38 | 145,802,790 | 23.34 | 466,405,975 | 74.68 |
| 1906 ¹ | 3,781,613 | 0.60 | 8,794,289 | 1.41 | 152,551,086 | 24.42 | 459,461,812 | 73.57 |
| 1907 ¹ | 3,969,965 | 0.63 | 9,100,041 | 1.46 | 160,205,944 | 25.65 | 451,312,850 | 72.26 |

1. To 30th June.

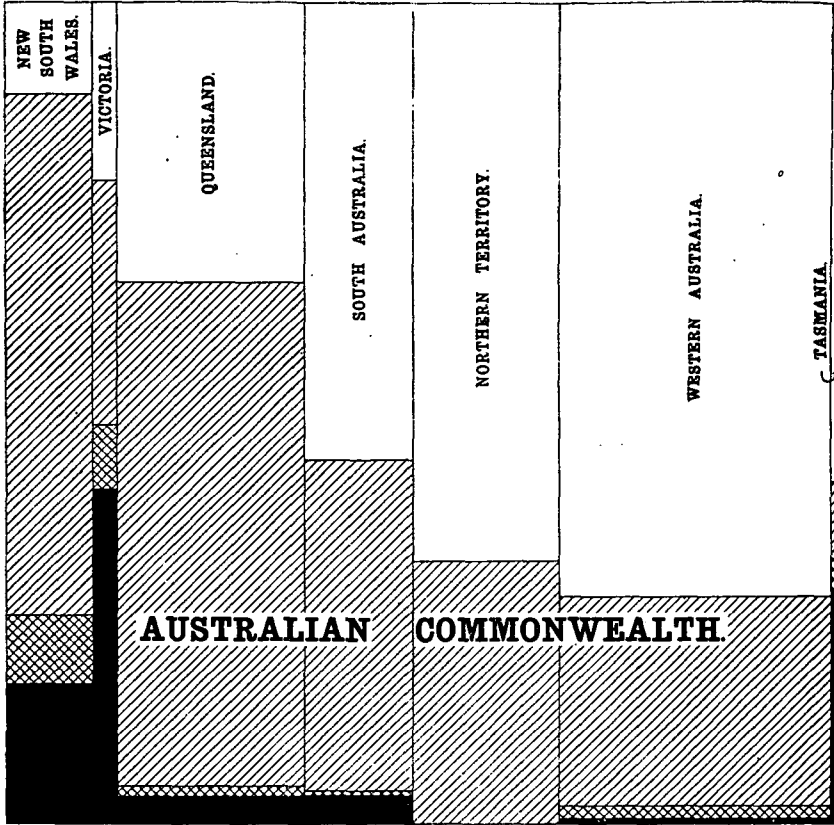
TASMANIA.—AREA, 16,777,600 ACRES.

| | | | | | | | | |
|------|-----------|-------|-----------------------------------|------|-----------|------|------------|-------|
| 1897 | 4,768,901 | 28.42 | Included in area alienated. | ... | 891,244 | 5.31 | 11,117,455 | 66.27 |
| 1898 | 4,777,640 | 28.48 | | ... | 993,785 | 5.92 | 11,006,175 | 65.60 |
| 1899 | 4,801,266 | 28.62 | | ... | 1,040,701 | 6.20 | 10,935,633 | 65.18 |
| 1900 | 4,834,944 | 28.82 | | ... | 1,267,185 | 7.55 | 10,675,471 | 63.63 |
| 1901 | 4,621,585 | 27.54 | 272,376 | 1.62 | 1,520,983 | 9.06 | 10,362,656 | 61.78 |
| 1902 | 4,658,878 | 27.76 | 296,672 | 1.77 | 1,518,895 | 9.05 | 10,303,155 | 61.42 |
| 1903 | 4,685,521 | 27.93 | 354,892 | 2.11 | 1,582,286 | 9.43 | 10,154,901 | 60.53 |
| 1904 | 4,724,380 | 28.16 | 444,441 | 2.65 | 1,389,643 | 8.28 | 10,219,136 | 60.91 |
| 1905 | 4,740,710 | 28.26 | 598,243 | 3.56 | 1,304,861 | 7.77 | 10,133,786 | 60.41 |
| 1906 | 4,768,701 | 28.42 | 710,837 | 4.24 | 1,343,381 | 8.01 | 9,954,681 | 59.33 |
| 1907 | 4,805,697 | 28.64 | 796,725 | 4.75 | 1,432,917 | 8.54 | 9,742,261 | 58.07 |

THE COMMONWEALTH.—AREA 1,903,731,840 ACRES.

| | | | | | | | | |
|------|------------|------|------------|------|-------------|-------|---------------|-------|
| 1897 | 74,809,020 | 3.93 | 30,992,319 | 1.63 | 748,324,621 | 39.30 | 1,049,605,880 | 55.14 |
| 1898 | 72,633,591 | 3.82 | 31,606,353 | 1.66 | 688,298,300 | 36.15 | 1,111,193,596 | 58.37 |
| 1899 | 73,838,579 | 3.88 | 31,722,503 | 1.67 | 782,588,627 | 41.10 | 1,015,582,131 | 53.35 |
| 1900 | 75,106,563 | 3.94 | 31,575,975 | 1.66 | 784,307,763 | 41.20 | 1,021,741,539 | 53.20 |
| 1901 | 76,142,761 | 4.00 | 35,060,119 | 1.84 | 721,407,284 | 37.89 | 1,071,121,676 | 56.27 |
| 1902 | 78,212,844 | 4.11 | 34,782,487 | 1.82 | 755,507,448 | 39.66 | 1,035,229,061 | 54.41 |
| 1903 | 80,236,068 | 4.21 | 34,828,805 | 1.82 | 748,662,720 | 39.32 | 1,040,004,247 | 54.65 |
| 1904 | 82,623,154 | 4.34 | 35,191,640 | 1.84 | 712,509,605 | 37.42 | 1,073,407,441 | 56.40 |
| 1905 | 84,652,274 | 4.44 | 35,692,098 | 1.87 | 726,839,294 | 38.18 | 1,056,548,174 | 55.51 |
| 1906 | 87,099,399 | 4.57 | 35,526,004 | 1.86 | 746,877,883 | 39.22 | 1,034,228,554 | 54.35 |
| 1907 | 89,351,069 | 4.69 | 36,863,669 | 1.93 | 774,534,132 | 40.68 | 1,002,982,970 | 52.70 |

2. **Diagram shewing Condition of Public Estate.**—The following diagram shews the condition of the public estate in the Commonwealth at the end of the year 1907. The square itself represents the total area of the Commonwealth, while the relative areas of individual States are shewn by the vertical rectangles. The areas alienated absolutely, in process of alienation under systems of deferred payments, and the areas held under leases or licenses, are designated by the differently-shaded areas as described in the reference given below the diagram, while the areas unoccupied are left unshaded:—



| | | | |
|-------------------------------|---|-----------------------------|---|
| Area alienated absolutely |  | Area held under lease, etc. |  |
| Area in process of alienation |  | Area unoccupied |  |

SECTION VII.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

1. **Early Statistics.**—The live stock which Captain Phillip brought with him when establishing the first settlement in Australia, in January, 1788, is stated to have comprised seven horses, six cattle, twenty-nine sheep, twelve pigs, and a few goats. Later in the same year, in a letter from Captain Phillip to Lord Sydney, then Secretary of State for the Colonies, an enclosure signed by "Andrew Miller, Commissary," sets forth in detail the numbers of each kind of live stock in the colony on 1st May, 1788. A summary of the particulars supplied is as follows:—Horses, 7; cattle, 7; sheep, 29; pigs, 74; rabbits, 5; turkeys, 18; geese, 29; ducks, 35; fowls, 209. In view of the depredation since caused by rabbits their inclusion in this return as part of the live stock of the Commonwealth is of interest.

2. **Subsequent Development.**—During the years immediately succeeding the first settlement the growth of the number of live stock was slow, and notwithstanding importations from India and the Cape of Good Hope the total of the flocks and herds of Australia amounted in 1800 to only 203 horses, 1044 cattle, 6124 sheep, and 4017 pigs. During the next fifty years, however, the pastoral industry made rapid strides, and at the end thereof (1850) the totals reached were 159,951 horses, 1,894,834 cattle, 15,993,954 sheep, and 114,000 pigs.

The statistical records of live stock in Australia prior to the year 1860 are somewhat defective, but from that year onwards fairly complete particulars are available in most of the States. At the present time statistics of live stock are collected annually in all the States, principally through the agency of the police, but in the years 1885 to 1888 inclusive, and 1893 to 1895 inclusive, no such particulars were collected in South Australia, and similar gaps occur in the Victorian records for the periods 1895 to 1899 inclusive, and 1901 to 1903. In order to obtain totals for the Commonwealth for these years the missing numbers have been supplied by interpolation. The results so obtained probably differ but slightly from the actual numbers for the respective years.

3. **Increase in Numbers.**—Particulars concerning the numbers of each kind of live stock in the Commonwealth from 1860 to 1900 at quinquennial intervals, and thence onwards in single years, are given in the following table, and are shewn continuously in the graphs as given hereinafter.

During the forty-seven years covered by the table on the next page the live stock of the Commonwealth increased considerably, horses by 334 per cent., cattle 157 per cent., sheep 335 per cent., and pigs 115 per cent. The average annual increases which these aggregates represent are as follows:—Horses, 3.17 per cent. per annum; cattle, 2.03 per cent.; sheep, 3.18 per cent.; and pigs, 1.64 per cent.

COMMONWEALTH LIVE STOCK, 1860 to 1907.

| Year. | Horses. | Cattle. | Sheep. | Pigs. |
|-------------|-----------|------------|------------|-----------|
| 1860 | 431,525 | 3,957,915 | 20,135,286 | 351,096 |
| 1865 | 566,574 | 3,724,813 | 29,539,928 | 345,704 |
| 1870 | 716,772 | 4,276,326 | 41,593,612 | 543,388 |
| 1875 | 835,393 | 6,389,610 | 53,124,209 | 549,808 |
| 1880 | 1,068,402 | 7,527,142 | 62,186,702 | 815,776 |
| 1885 | 1,143,064 | 7,397,947 | 67,491,976 | 748,908 |
| 1890 | 1,521,588 | 10,299,913 | 97,881,221 | 891,138 |
| 1895 | 1,680,419 | 11,767,488 | 90,689,727 | 822,750 |
| 1900 | 1,609,654 | 8,640,225 | 70,602,995 | 950,349 |
| 1901 | 1,620,420 | 8,493,678 | 72,040,211 | 931,309 |
| 1902 | 1,524,601 | 7,067,242 | 53,668,347 | 777,289 |
| 1903 | 1,546,054 | 7,254,258 | 56,932,705 | 837,368 |
| 1904 | 1,595,256 | 7,849,520 | 65,823,918 | 1,062,703 |
| 1905 | 1,673,805 | 8,525,025 | 74,403,704 | 1,014,853 |
| 1906 | 1,765,186 | 9,349,409 | 83,687,655 | 813,569 |
| 1907 | 1,871,714 | 10,180,214 | 87,650,263 | 754,101 |

4. **Fluctuations.**—The increases referred to, however, have not been continuous, marked fluctuations having taken place during the period, mainly on account of the droughts which have from time to time left their impress on the pastoral history of Australia. These were in evidence in 1869, 1877, 1884, 1895 and subsequent years, and in 1902. The last-mentioned was one of the most severe experienced in Australia, the number of sheep in the Commonwealth diminishing under its influence from 72,040,211 on 31st December, 1901, to 53,668,347 at the same date in 1902—a decrease of more than 25 per cent.

The extraordinary recuperative power of Australia is evidenced by the large increases in the numbers of stock which the good seasons, supervening on the various droughts, have witnessed. Thus, in the five years from 1902 to 1907, horses increased by 347,113, cattle by 3,112,972, and sheep by 33,981,916, the corresponding increases per cent. being horses 22.77 per cent., cattle 44.05 per cent., and sheep 63.32 per cent.

The number of horses in the Commonwealth at the end of 1907 was higher than for any previous year. The number of cattle was higher than for any year since 1898, and the number of sheep higher than for any year since 1896. The years in which the numbers of live stock attained their maxima are as follows:—Horses, 1907, 1,871,714; cattle, 1894, 12,311,617; sheep, 1891, 106,421,068; and pigs, 1904, 1,062,703.

5. **Live Stock in Relation to Population.**—The number of each kind of live stock per head of the population of the Commonwealth has varied during the past forty-seven years in the manner shewn in the succeeding table:—

NUMBER OF LIVE STOCK PER HEAD OF POPULATION, 1860 to 1907.

| Year. | Horses. | Cattle. | Sheep. | Pigs. | Year. | Horses. | Cattle. | Sheep. | Pigs. |
|----------|---------|---------|--------|-------|----------|---------|---------|--------|-------|
| 1860 ... | 0.38 | 3.45 | 17.58 | 0.31 | 1900 ... | 0.43 | 2.29 | 18.75 | 0.25 |
| 1865 ... | 0.41 | 2.68 | 21.25 | 0.25 | 1901 ... | 0.42 | 2.22 | 18.83 | 0.24 |
| 1870 ... | 0.43 | 2.60 | 25.24 | 0.33 | 1902 ... | 0.39 | 1.82 | 13.82 | 0.20 |
| 1875 ... | 0.44 | 3.37 | 27.99 | 0.29 | 1903 ... | 0.39 | 1.85 | 14.50 | 0.21 |
| 1880 ... | 0.48 | 3.37 | 27.87 | 0.37 | 1904 ... | 0.40 | 1.97 | 16.52 | 0.27 |
| 1885 ... | 0.42 | 2.75 | 25.05 | 0.28 | 1905 ... | 0.41 | 2.10 | 13.36 | 0.25 |
| 1890 ... | 0.48 | 3.27 | 31.06 | 0.28 | 1906 ... | 0.43 | 2.27 | 20.31 | 0.20 |
| 1895 ... | 0.48 | 3.36 | 25.93 | 0.24 | 1907 ... | 0.45 | 2.43 | 20.88 | 0.18 |

Considered in relation to population, the live stock attained its maximum in the period 1890-5, and its minimum in the year 1902. During the period of forty-seven years under review, the number of horses varied but slightly in proportion to population, the range being from 0.38 to 0.48 per head. In the case of cattle, the limits of variation were 1.82 and 3.45; sheep, 13.82 and 31.06; and pigs, 0.18 and 0.37.

6. **Live Stock in Relation to Area.**—The numbers of live stock per square mile in the several States of the Commonwealth on 31st December, 1907, were as follows:—

NUMBER OF LIVE STOCK PER SQUARE MILE, 31st DECEMBER, 1907.

| State. | Horses. | Cattle. | Sheep. | Pigs. |
|--------------------|---------|---------|--------|-------|
| New South Wales | 1.86 | 8.86 | 143.26 | 0.70 |
| Victoria | 4.83 | 20.97 | 160.97 | 2.40 |
| Queensland | 0.73 | 5.80 | 24.96 | 0.20 |
| South Australia... | 0.25 | 0.78 | 7.61 | 0.10 |
| Western Australia | 0.12 | 0.79 | 3.78 | 0.05 |
| Tasmania | 1.54 | 8.22 | 66.56 | 1.78 |
| Commonwealth | 0.63 | 3.42 | 29.47 | 0.25 |

7. **Net Exports of Principal Pastoral Products.**—The quantities by which the exports of the principal pastoral products of the Commonwealth exceeded the imports for the years 1901 to 1907 are as follows:—

QUANTITIES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE COMMONWEALTH, 1901 to 1907.

| Products. | Unit of Quantity. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Animals (living)— | | | | | | | | |
| Cattle | No. | 2,299 | 1,560 | 778 | 625 | 258 | 391 | 504 |
| Horses | " | 32,228 | 17,249 | 9,346 | 13,812 | 20,487 | 10,346 | 12,116 |
| Sheep | " | 11,541 | 23,358 | 13,384 | 5,132 | 6,569 | 6,477 | —398 |
| Bones | cwt. | 13,921 | 13,186 | | 4,719 | 8,745 | 1,570 | 4,459 |
| Hoofs | " | 24,027 | 21,085 | 29,341 | 16,952 | 19,396 | 4,897 | 6,784 |
| Horns | " | | | | 19,832 | 21,912 | 15,973 | 15,944 |
| Glue Pos. & Sinews | cwt. | 21,062 | 19,420 | 17,812 | 19,832 | 21,912 | 19,355 | 21,941 |
| Glycerine | lb. | * | * | 600,022 | 760,282 | 1,217,175 | 921,828 | 592,435 |
| Hair | " | 364,692 | 432,900 | 400,173 | 244,649 | 235,161 | 337,933 | 313,275 |
| Meats— | | | | | | | | |
| Frozen Beef | lb. | 90,707,274 | 77,510,532 | 59,999,559 | 37,072,455 | 43,460,360 | 41,561,252 | 52,050,592 |
| Frozen Mutton † | " | 66,288,326 | 42,535,383 | 34,965,939 | 46,472,597 | 86,764,222 | 90,684,899 | 109,227,757 |
| Skins— | | | | | | | | |
| Hides | No. | 111,826 | 206,469 | 86,724 | 38,900 | 67,123 | 1,556 | 33,623 |
| Sheep | " | * | * | 6,537,308 | 4,164,063 | 7,237,303 | 7,696,990 | 9,691,688 |
| Rabbit and Hare | cwt. | * | * | 34,595 | 60,190 | 73,417 | 105,569 | 100,802 |
| Other, including Undressed Furs | " | * | * | o | * | * | * | * |
| Tallow | | | | | | | | |
| Wool—Greasy | lb. | 571,680 | 328,289 | 241,286 | 512,684 | 693,117 | 689,178 | 674,723 |
| Scoured | " | 385,087,467 | 286,499,002 | 263,241,958 | 339,137,226 | 380,257,165 | 415,141,932 | 512,036,100 |
| | " | 66,358,262 | 49,362,423 | 61,135,654 | 55,697,173 | 56,753,160 | 64,882,602 | 72,295,353 |

* Quantity not available. † Including lamb. Note. — signifies net imports.

The values of the net exports for the same seven years are furnished in the table on the next page and amount to no less a total than £162,813,452 for the period, or an average of £23,259,065 per annum, of which wool represents about 80 per cent. Skins, meats, and tallow, rank next in order of importance.

**VALUES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS
OF THE COMMONWEALTH, 1901 to 1907.**

| Products. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Animals (living)— | £ | £ | £ | £ | £ | £ | £ |
| Cattle ... | 18,497 | —30,229 | —267 | —788 | 4,860 | —1,389 | —1,445 |
| Horses ... | 418,647 | 218,386 | 149,946 | 188,542 | 327,447 | 206,006 | 266,325 |
| Sheep ... | —30 | —50,484 | 14,628 | —1,837 | —6,834 | —2,704 | —2,127 |
| Bones ... | 4,061 | 4,030 | | 2,022 | 3,585 | 3,503 | 5,628 |
| Hoofs ... | 25,934 | 25,525 | 22,159 | 22,468 | 24,262 | 2,355 | 2,064 |
| Horns ... | | | | | | 22,870 | 18,969 |
| Glue Pcs. & Sinews | 12,952 | 10,669 | 9,135 | 11,010 | 11,253 | 13,948 | 17,458 |
| Glycerine ... | 8,538 | 10,184 | 9,567 | 10,624 | 15,513 | 9,186 | 6,983 |
| Hair ... | 13,967 | 17,293 | 15,519 | 14,192 | 20,650 | 28,754 | 22,767 |
| Meats— | | | | | | | |
| Frozen Beef ... | 1,175,144 | 1,024,098 | 807,072 | 442,110 | 441,210 | 434,455 | 575,732 |
| Frozen Mutton* ... | 726,296 | 516,839 | 479,076 | 637,476 | 1,111,421 | 1,094,984 | 1,377,502 |
| Other ... | 451,969 | 431,701 | 143,503 | 222,384 | 236,442 | 147,725 | 166,421 |
| Sausage Casings ... | —16,104 | 2,614 | 4,321 | —8,690 | 2,552 | 1,478 | 41,122 |
| Skins— | | | | | | | |
| Hides ... | 102,941 | 151,338 | 35,842 | 26,633 | 71,209 | —9,764 | —10,079 |
| Sheep ... | 685,562 | 1,065,105 | 1,050,413 | 820,319 | 1,321,021 | 1,587,579 | 1,822,604 |
| Rabbit and Hare ... | 117,329 | 139,111 | 137,259 | 208,884 | 297,222 | 476,972 | 374,882 |
| Other, including Undressed Furs | 299,820 | 518,230 | 385,909 | 183,695 | 308,408 | 445,201 | 304,130 |
| Tallow ... | 662,094 | 454,854 | 298,496 | 549,459 | 783,396 | 876,748 | 1,014,870 |
| Wool—Greasy ... | 11,671,210 | 9,593,234 | 9,595,586 | 13,137,837 | 15,568,290 | 17,539,836 | 22,898,318 |
| Scoured ... | 3,560,767 | 3,146,938 | 4,396,214 | 3,974,502 | 4,246,634 | 5,098,195 | 5,962,599 |
| Total Values ... | 19,939,594 | 17,249,436 | 17,554,378 | 20,440,842 | 24,788,541 | 27,975,938 | 34,864,723 |

* Including lamb.

Note. — signifies net imports.

§ 2. Horses.

1. Suitability of Australia for Horse-breeding.—From the earliest times the suitability of the climate and pastures of Australia for the production of serviceable breeds of horses has been fully recognised. By the importation of high-class sires, and the careful selection of breeding mares, these natural advantages were utilised to the fullest extent, all classes of horses being bred. As a consequence of this combination of advantages the Australian horse, whether of the heavy draught, medium weight or light saddle and carriage variety, compares more than favourably with the product of other lands. The Australian horse has been found suitable for the army in India, and large numbers are obtained annually for remount purposes.

2. Distribution throughout the Commonwealth.—As regards numbers, the State of New South Wales, the earliest settled of the group, established a lead, which it has ever since retained. The figures for the several States for a series of years are as follows:—

NUMBER OF HORSES, STATES AND COMMONWEALTH, 1860 to 1907.

| Year. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Commonwealth. |
|----------|------------------|-----------|-------------|------------------|--------------------|-----------|---------------|
| 1860 ... | 251,497 | 76,536 | 23,504 | 49,399 | 9,555 | 21,034 | 431,525 |
| 1865 ... | 282,587 | 121,051 | 51,091 | 73,993 | 15,700 | 22,152 | 566,574 |
| 1870 ... | 337,597 | 167,220 | 83,358 | 83,744 | 22,174 | 22,679 | 716,772 |
| 1875 ... | 357,696 | 196,184 | 121,497 | 107,164 | 29,379 | 23,473 | 835,393 |
| 1880 ... | 395,984 | 275,516 | 179,152 | 157,915 | 34,568 | 25,267 | 1,068,402 |
| 1885 ... | 344,697 | 304,098 | 260,207 | 171,060 | 34,392 | 28,610 | 1,143,064 |
| 1890 ... | 444,163 | 436,459 | 365,812 | 199,605 | 44,384 | 31,165 | 1,521,588 |
| 1895 ... | 499,943 | 424,995 | 468,743 | 196,652 | 58,506 | 31,580 | 1,680,419 |
| 1900 ... | 481,417 | 392,237 | 456,788 | 179,352 | 68,253 | 31,607 | 1,609,654 |
| 1901 ... | 486,716 | 387,277 | 462,119 | 178,199 | 73,710 | 32,399 | 1,620,420 |
| 1902 ... | 450,125 | 382,317 | 399,122 | 179,413 | 80,158 | 33,466 | 1,524,601 |
| 1903 ... | 458,014 | 377,357 | 401,984 | 192,411 | 82,747 | 33,541 | 1,546,054 |
| 1904 ... | 482,663 | 372,397 | 413,165 | 200,241 | 90,225 | 36,565 | 1,595,256 |
| 1905 ... | 506,884 | 385,513 | 430,565 | 216,345 | 97,397 | 37,101 | 1,673,805 |
| 1906 ... | 537,762 | 406,840 | 452,916 | 224,447 | 104,922 | 38,299 | 1,765,186 |
| 1907 ... | 573,326 | 424,648 | 488,486 | 226,532 | 113,330 | 40,392 | 1,871,714 |

3. **Proportion in the Several States.**—The percentages of the numbers of horses in the several States on the totals for the Commonwealth for the past seven years are as follows:—

**PERCENTAGE OF HORSES IN EACH STATE ON TOTAL FOR COMMONWEALTH,
1901 TO 1907.**

| Year. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Commonwealth. |
|----------|------------------|-----------|-------------|------------------|--------------------|-----------|---------------|
| | % | % | % | % | % | % | % |
| 1900 ... | 29.91 | 24.37 | 28.38 | 11.14 | 4.24 | 1.96 | 100.00 |
| 1901 ... | 30.03 | 23.90 | 28.52 | 11.00 | 4.55 | 2.00 | 100.00 |
| 1902 ... | 29.52 | 25.08 | 26.18 | 11.77 | 5.26 | 2.19 | 100.00 |
| 1903 ... | 29.62 | 24.41 | 26.00 | 12.45 | 5.35 | 2.17 | 100.00 |
| 1904 ... | 30.26 | 23.34 | 25.90 | 12.55 | 5.66 | 2.29 | 100.00 |
| 1905 ... | 30.28 | 23.03 | 25.72 | 12.93 | 5.82 | 2.22 | 100.00 |
| 1906 ... | 30.47 | 23.05 | 25.66 | 12.71 | 5.94 | 2.17 | 100.00 |
| 1907 ... | 30.90 | 22.69 | 26.10 | 12.10 | 6.05 | 2.16 | 100.00 |

During the period under review, the proportions in New South Wales, South Australia, Western Australia and Tasmania have increased, while those in Victoria and Queensland have diminished.

4. **Export Trade in Horses.**—Australia's export trade in horses is a fairly considerable, though somewhat fluctuating, one. During the past seven years it has varied in number between 9527 for the year 1903 and 32,474 in 1901, and in value between £164,224 and £438,248 respectively for the same two years. The total number of horses exported during the seven years amounted to 116,752, an average of 16,679 per annum. The total value of the exports for the period was £2,015,374 or £287,911 per annum. The average export value per head for the period was £17 5s. 3d. The numbers exported to the principal countries concerned in this trade are as follows:—

NUMBER AND DESTINATION OF HORSES EXPORTED, 1901 to 1907.

| Country to which Exported. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|
| | No. | No. | No. | No. | No. | No. | No. |
| India ... | 5,391 | 5,590 | 5,894 | 8,801 | 7,706 | 7,931 | 9,136 |
| Natal ... | 10,939 | 7,078 | 684 | 141 | 232 | 413 | 165 |
| Cape of Good Hope ... | 14,054 | 3,382 | 42 | 367 | 58 | 51 | 2 |
| Hong Kong ... | 54 | 71 | 1 | 34 | 8,248 | 6 | 5 |
| Straits Settlements ... | 923 | 530 | 416 | 592 | 702 | 903 | 991 |
| Java ... | 104 | 272 | 308 | 587 | 326 | 501 | 954 |
| Mauritius ... | 109 | 120 | 708 | 1,207 | 56 | 127 | ... |
| Japan ... | 2 | ... | 25 | 69 | 1,754 | 51 | 284 |
| New Zealand ... | 276 | 96 | 556 | 659 | 184 | 80 | 75 |
| Philippine Islands ... | 19 | 13 | 290 | 165 | 773 | 118 | 295 |
| China ... | 219 | 102 | 22 | 38 | 112 | 298 | 178 |
| Other Countries ... | 384 | 183 | 581 | 442 | 657 | 293 | 547 |
| Total ... | 32,474 | 17,437 | 9,527 | 13,102 | 20,808 | 10,772 | 12,632 |

The corresponding particulars relative to the value of the horses exported are given in the next table.

VALUE OF HORSES EXPORTED FROM THE COMMONWEALTH, 1901 to 1907.

| Country to which Exported. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | £ | £ | £ | £ | £ | £ | £ |
| India | 76,485 | 78,867 | 81,251 | 141,682 | 144,802 | 185,254 | 224,341 |
| Natal | 161,028 | 99,714 | 14,555 | 3,303 | 6,550 | 8,193 | 4,026 |
| Cape of Good Hope ... | 159,094 | 37,413 | 2,610 | 3,830 | 1,190 | 1,030 | 70 |
| Hong Kong | 775 | 1,765 | 14 | 1,023 | 119,504 | 160 | 205 |
| Straits Settlements ... | 15,513 | 7,530 | 8,618 | 11,195 | 15,107 | 18,022 | 26,952 |
| Java | 2,105 | 5,745 | 6,330 | 11,373 | 4,440 | 12,296 | 25,502 |
| Mauritius | 1,034 | 2,400 | 5,195 | 7,786 | 1,140 | 1,791 | ... |
| Japan | 100 | ... | 715 | 8,095 | 30,215 | 1,990 | 11,715 |
| New Zealand | 6,934 | 2,786 | 22,051 | 19,310 | 13,206 | 8,261 | 4,020 |
| Philippine Islands ... | 190 | 369 | 8,087 | 3,827 | 10,151 | 2,603 | 4,949 |
| China | 4,460 | 2,330 | 440 | 851 | 2,671 | 5,942 | 3,299 |
| Other Countries | 10,530 | 3,747 | 14,358 | 13,505 | 17,754 | 12,714 | 14,391 |
| Total | 438,248 | 242,666 | 164,224 | 225,780 | 366,730 | 258,256 | 319,470 |

It will be seen from the foregoing tables that the export trade in horses with India, the Straits Settlements, and Java has been fairly uniform throughout the seven years under review, but that the particulars for some of the other countries specified exhibit marked fluctuations. Thus in the case of Natal and Cape of Good Hope a large export trade took place in 1901 and 1902, which, on the cessation of the South African war, dropped to comparative insignificance. The exports to Hong Kong and Japan also were exceptionally large in 1905.

The number of horses imported into the Commonwealth is comparatively small, consisting mainly of valuable animals introduced for breeding purposes, and imported principally from New Zealand and the United Kingdom. The average value per head of the horses imported during the seven years was £110 14s. 9d., as compared with £17 5s. 3d. per head for the exports for the same period. The average number imported per annum was, however, only 310, and the average annual value £34,296. The following table furnishes a comparison of imports and exports of horses during the seven years 1901 to 1907:—

COMMONWEALTH IMPORTS AND EXPORTS OF HORSES, 1901 to 1907.

| Year. | Imports. | | Exports. | | Net Exports. | |
|--------------------------|--------------|----------------|----------------|------------------|----------------|------------------|
| | No. | Value. | No. | Value. | No. | Value. |
| | | £ | | £ | | £ |
| 1901 | 246 | 19,601 | 32,474 | 438,248 | 32,228 | 418,647 |
| 1902 | 188 | 24,280 | 17,437 | 242,666 | 17,249 | 218,386 |
| 1903 | 181 | 14,278 | 9,527 | 164,224 | 9,346 | 149,946 |
| 1904 | 290 | 37,238 | 13,102 | 225,780 | 12,812 | 188,542 |
| 1905 | 321 | 39,283 | 20,808 | 366,730 | 20,487 | 327,447 |
| 1906 | 426 | 52,250 | 10,772 | 258,256 | 10,346 | 206,006 |
| 1907 | 516 | 53,145 | 12,632 | 319,470 | 12,116 | 266,325 |
| Total for 7 years | 2,168 | 240,075 | 116,752 | 2,015,374 | 114,584 | 1,775,299 |

5. **Comparison with other Countries.**—The numbers of horses in some of the leading horse-breeding countries of the world, according to the latest available returns, are as follows:—

| Country. | Date. | Number of Horses. | Country. | Date. | Number of Horses. |
|----------------------------------|-------------|-------------------|-------------------|-------|-------------------|
| Russian Empire ... | 1906 | 28,785,338 | Uruguay ... | 1902 | 659,726 |
| Utd. States America | 1906 | 19,746,583 | Sweden ... | 1905 | 554,999 |
| Argentine Republic | 1895 | 4,446,859 | Denmark ... | 1903 | 486,935 |
| Germany ... | 1904 | 4,267,403 | Spain ... | 1891 | 397,172 |
| Austria-Hungary ¹ ... | 1895 & 1900 | 4,024,945 | Bulgaria ... | 1893 | 343,946 |
| France ² ... | 1905 | 3,169,224 | New Zealand ... | 1906 | 342,608 |
| United Kingdom ³ ... | 1907 | 2,088,932 | Holland ... | 1904 | 295,277 |
| Australia... | 1907 | 1,871,714 | Cape of Good Hope | 1904 | 255,060 |
| Canada ... | 1901 | 1,577,493 | Belgium... | 1905 | 245,212 |
| Japan ⁴ ... | 1905 | 1,367,615 | Algeria ... | 1905 | 221,140 |
| British India ⁵ ... | 1905 | 1,280,679 | Servia ... | 1900 | 184,849 |
| Rumania ... | 1900 | 864,324 | Norway ... | 1900 | 172,999 |
| Mexico ... | 1902 | 859,217 | Transvaal ... | 1905 | 150,000 |
| Italy ⁶ ... | 1900 | 741,739 | Switzerland ... | 1906 | 135,091 |

1. Austria, 1900; Hungary, 1895. 2. Employed on farms and in Paris. 3. Agricultural horses, unbroken horses, and breeding mares only. 4. Exclusive of Formosa. 5. Exclusive of Bengal. 6. Exclusive of cavalry horses and horses for the Royal household.

6. **Relation to Population.**—In proportion to population, horses are much more numerous in Queensland than in any of the other States. South Australia is next in order, while Tasmania has the smallest number of horses per head. In all the States except Queensland the number of horses per head of population was somewhat higher in 1907 than in 1900. Particulars for the past eight years are as follows:—

**NUMBER OF HORSES PER HEAD OF POPULATION, COMMONWEALTH AND STATES,
1900 TO 1907.**

| Year. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|----------|--------|------|---------|----------|----------|------|-----------|
| 1900 ... | 0.35 | 0.33 | 0.92 | 0.50 | 0.38 | 0.18 | 0.43 |
| 1901 ... | 0.35 | 0.32 | 0.91 | 0.49 | 0.38 | 0.19 | 0.42 |
| 1902 ... | 0.32 | 0.32 | 0.78 | 0.49 | 0.38 | 0.19 | 0.39 |
| 1903 ... | 0.32 | 0.31 | 0.78 | 0.52 | 0.36 | 0.19 | 0.39 |
| 1904 ... | 0.33 | 0.31 | 0.79 | 0.54 | 0.37 | 0.20 | 0.40 |
| 1905 ... | 0.34 | 0.32 | 0.82 | 0.57 | 0.38 | 0.20 | 0.41 |
| 1906 ... | 0.35 | 0.33 | 0.85 | 0.58 | 0.40 | 0.21 | 0.43 |
| 1907 ... | 0.37 | 0.34 | 0.90 | 0.58 | 0.43 | 0.22 | 0.45 |

7. **Value of Australian Horses.**—An accurate valuation of the horses in Australia cannot readily be obtained, but the following estimate may be taken as furnishing a rough approximation to the values as at 31st December, 1907:—

ESTIMATED VALUE OF HORSES IN AUSTRALIA, 31st DECEMBER, 1907.

| State ... | N.S.W. | Victoria. | Q'nsland. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|-----------|-----------|-----------|-----------|-----------|-----------|---------|------------|
| Value... | £ | £ | £ | £ | £ | £ | £ |
| | 5,780,000 | 5,100,000 | 3,910,000 | 2,270,000 | 1,360,000 | 480,000 | 18,900,000 |

§ 3. Cattle.

1. Purposes for which Raised.—In all the States of the Commonwealth cattle-raising is carried out on a more or less extensive scale, the main object in certain States being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. The great impetus which the development of the export trade in Australian butter gave to the dairying industry in the Commonwealth led to a considerable increase in the numbers and quality of the dairy herds of the States of Victoria and New South Wales in particular, the sub-tropical portion of Australia being apparently the best adapted to this industry. On the other hand, by far the finest specimens of beef-producing cattle are those raised in the tropical districts of the Commonwealth, *i.e.*, in the northern parts of Queensland, in the Northern Territory of South Australia, and in the Kimberley districts in the north of Western Australia.

2. Distribution throughout Commonwealth.—Until 1880 New South Wales occupied the leading position in the Commonwealth group as a cattle-raising State, but in that year Queensland forged ahead and obtained a lead which it has since maintained. The extent of this lead has, however, varied considerably, owing principally to the effects produced by the tick fever and droughts, from both of which causes the Queensland herds suffered more severely than those of the other States. In fact, during the period from 1894, when the number of cattle in Queensland attained its maximum of rather more than 7,000,000, to 1903, when the number recorded was less than 2,500,000, an uninterrupted decline was experienced. During the past four years, however, a rapid improvement has taken place, and the total reached on 31st December, 1907, was nearly 3,900,000.

The numbers of cattle in the several States at quinquennial intervals from 1860 to 1900 and thence onwards for each year are as follows:—

NUMBER OF CATTLE IN STATES AND COMMONWEALTH, 1860 to 1907.

| Year. | N.S.W. | Victoria. | Queensland. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|-------|-----------|-----------|-------------|----------|----------|-----------|------------|
| 1860 | 2,408,586 | 722,332 | 432,890 | 278,265 | 32,476 | 83,366 | 3,957,915 |
| 1865 | 1,961,905 | 621,337 | 848,346 | 158,057 | 45,148 | 90,020 | 3,724,813 |
| 1870 | 2,195,096 | 721,096 | 1,076,630 | 136,832 | 45,213 | 101,459 | 4,276,326 |
| 1875 | 3,134,086 | 1,054,598 | 1,812,576 | 219,240 | 50,416 | 118,694 | 6,389,610 |
| 1880 | 2,580,040 | 1,286,267 | 3,162,752 | 307,177 | 63,719 | 127,187 | 7,527,142 |
| 1885 | 1,317,315 | 1,290,790 | 4,162,652 | 418,140 | 70,408 | 138,642 | 7,397,947 |
| 1890 | 2,091,229 | 1,782,978 | 5,553,264 | 574,032 | 130,970 | 162,440 | 10,299,913 |
| 1895 | 2,150,057 | 1,795,314 | 6,822,401 | 636,824 | 200,091 | 162,801 | 11,767,488 |
| 1900 | 1,983,116 | 1,602,384 | 4,078,191 | 472,428 | 338,590 | 165,516 | 8,640,225 |
| 1901 | 2,047,454 | 1,625,532 | 3,772,707 | 480,777 | 398,547 | 168,661 | 8,493,678 |
| 1902 | 1,741,226 | 1,648,680 | 2,543,471 | 519,163 | 437,136 | 177,566 | 7,067,242 |
| 1903 | 1,880,578 | 1,671,828 | 2,481,717 | 536,580 | 497,617 | 185,938 | 7,254,258 |
| 1904 | 2,149,129 | 1,694,976 | 2,722,340 | 520,379 | 561,490 | 201,206 | 7,849,520 |
| 1905 | 2,337,973 | 1,737,690 | 2,963,695 | 647,631 | 631,825 | 206,211 | 8,525,025 |
| 1906 | 2,549,944 | 1,804,323 | 3,413,919 | 680,095 | 690,011 | 211,117 | 9,349,409 |
| 1907 | 2,749,193 | 1,842,807 | 3,892,232 | 709,352 | 771,107 | 215,523 | 10,180,214 |

3. Proportion in each State.—During the period elapsing between 1900 and 1907 the proportion of cattle in the several States has varied considerably, as shewn hereunder:—

**PERCENTAGE OF CATTLE IN EACH STATE ON TOTAL FOR COMMONWEALTH,
1900 TO 1907.**

| Year. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|----------|--------|-------|---------|----------|----------|------|-----------|
| | % | % | % | % | % | % | % |
| 1900 ... | 22.95 | 18.55 | 47.20 | 5.47 | 3.92 | 1.91 | 100.00 |
| 1901 ... | 24.10 | 19.14 | 44.42 | 5.66 | 4.69 | 1.99 | 100.00 |
| 1902 ... | 24.64 | 23.33 | 35.99 | 7.35 | 6.18 | 2.51 | 100.00 |
| 1903 ... | 25.92 | 23.05 | 34.21 | 7.40 | 6.86 | 2.56 | 100.00 |
| 1904 ... | 27.38 | 21.59 | 34.68 | 6.63 | 7.15 | 2.57 | 100.00 |
| 1905 ... | 27.42 | 20.38 | 34.77 | 7.60 | 7.41 | 2.42 | 100.00 |
| 1906 ... | 27.27 | 19.30 | 36.52 | 7.27 | 7.38 | 2.26 | 100.00 |
| 1907 ... | 27.00 | 18.10 | 38.23 | 6.97 | 7.58 | 2.12 | 100.00 |

A comparison of the positions of the several States in 1900 and 1907 shows that, while Queensland's proportion of the Commonwealth herds has suffered a marked diminution, and that of Victoria a slight diminution, the Tasmanian proportion was slightly higher in the latter than in the former year, and fairly large increases were in evidence in New South Wales, South Australia and Western Australia. The most noticeable increase in proportion is that of Western Australia, from 3.92% in 1900 to 7.58% in 1907.

4. Imports and Exports of Cattle.—Although the various products of the cattle-raising industry bulk largely in the export trade of the Commonwealth, the export of live cattle from Australia has never been considerable. The number of cattle imported is also small, consisting, as in the case of horses, mainly of valuable animals for breeding. One effect of this is that although more than twice as many cattle were exported during the past seven years as were imported, the value of imports exceeded the value of exports by no less than £10,761. Details are as follows:—

COMMONWEALTH IMPORTS AND EXPORTS OF CATTLE, 1901 to 1907.

| Year. | Imports. | | Exports. | | Net Exports. | |
|----------|----------|--------|----------|--------|--------------|----------|
| | No. | Value. | No. | Value. | No. | Value.* |
| | | £ | | £ | | £ |
| 1901 ... | 114 | 3,591 | 2,413 | 22,088 | 2,299 | 18,497 |
| 1902 ... | 2,929 | 49,231 | 4,489 | 19,002 | 1,560 | — 30,229 |
| 1903 ... | 161 | 9,569 | 939 | 9,302 | 778 | — 267 |
| 1904 ... | 145 | 7,903 | 770 | 7,115 | 625 | — 788 |
| 1905 ... | 1,022 | 10,591 | 1,280 | 15,451 | 258 | — 4,860 |
| 1906 ... | 161 | 6,762 | 552 | 5,373 | 391 | — 1,389 |
| 1907 ... | 183 | 10,204 | 687 | 8,759 | 504 | — 1,445 |
| | 4,715 | 97,851 | 11,130 | 87,090 | 6,415 | — 10,761 |

* — Signifies net imports.

The comparatively large export figures for 1901 and 1902 were due to exports to Natal and Cape of Good Hope.

5. Cattle Slaughtered.—Complete returns of the number of cattle slaughtered annually in the Commonwealth are not obtainable, as these particulars are collected in Tasmania for Hobart and Launceston only, and were collected in South Australia for

the first time in 1908. Estimates for the missing years for these States have, however been made, as shewn in the following table :—

**CATTLE (INCLUDING CALVES) SLAUGHTERED, COMMONWEALTH AND STATES,
1901 TO 1907.**

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|----------|---------|-----------|---------|----------|----------|--------|-----------|
| 1901 ... | 335,823 | 251,477 | 377,433 | 72,000 | 39,424 | 34,000 | 1,110,157 |
| 1902 ... | 288,131 | 233,206 | 344,731 | 72,000 | 43,882 | 34,000 | 1,015,950 |
| 1903 ... | 275,199 | 235,284 | 262,423 | 73,000 | 40,501 | 35,000 | 921,407 |
| 1904 ... | 299,089 | 243,937 | 210,715 | 73,000 | 44,199 | 35,000 | 905,940 |
| 1905 ... | 320,857 | 249,454 | 214,462 | 74,000 | 51,758 | 35,000 | 945,531 |
| 1906 ... | 358,877 | 261,034 | 223,469 | 75,000 | 55,034 | 35,000 | 1,008,414 |
| 1907 ... | 395,370 | 289,709 | 227,814 | 60,527 | 56,000 | 36,000 | 1,065,420 |

For Hobart and Launceston only, the figures for the years 1901 to 1907 were, respectively, 8815, 10,193, 9842, 10,708, 12,035, 10,503, and 12,037.

6. Export of Frozen Beef.—A large export trade in beef preserved by cold process is carried on by the Commonwealth, mainly with South Africa, the United Kingdom, and the Philippine Islands. The quantities so exported during the seven years 1901 to 1907 are as follows:—

QUANTITY OF FROZEN BEEF EXPORTED FROM AUSTRALIA, 1901 to 1907.

| Country to which Exported. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|------------|------------|------------|------------|------------|------------|------------|
| | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. |
| Cape of Good Hope ... | 27,444,815 | 31,452,143 | 29,494,957 | 16,596,558 | 6,117,907 | 5,419,763 | 10,695,660 |
| Natal ... | 8,353,519 | 22,096,398 | 14,459,823 | 6,437,661 | 18,632,290 | 8,881,485 | 8,657,618 |
| Philippine Islands ... | 11,090,789 | 7,154,841 | 6,848,594 | 7,448,649 | 12,904,318 | 10,453,286 | 9,626,173 |
| United Kingdom ... | 40,964,214 | 14,258,593 | 7,779,859 | 3,668,850 | 1,603,195 | 1,706,386 | 8,360,147 |
| Russia ... | ... | ... | ... | ... | ... | 10,247,609 | 10,551,438 |
| Malta ... | 944,673 | 794,414 | 1,375,152 | 1,887,526 | 947,363 | ... | 781,382 |
| Egypt ... | 359,977 | 96,864 | 758,136 | 392,804 | 1,372,096 | 1,979,830 | 1,540,290 |
| Straits Settlements ... | ... | 1,578,628 | ... | ... | 719,981 | 736,796 | 972,507 |
| Gibraltar ... | 759,052 | 166,721 | 19,372 | ... | 119,272 | 1,247,683 | 345,374 |
| Mauritius ... | ... | 1,495,430 | 409,058 | 455,602 | 371,077 | 391,664 | ... |
| Other countries ... | 790,335 | 359,216 | 31,279 | 203,295 | 837,587 | 496,750 | 520,003 |
| Total ... | 90,707,374 | 79,453,248 | 61,176,230 | 37,090,945 | 43,525,086 | 41,561,252 | 52,050,592 |

The value of the frozen beef exported from the Commonwealth during the same years is as follows:—

VALUE OF FROZEN BEEF EXPORTED FROM AUSTRALIA, 1901 to 1907.

| Country to which Exported. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|-----------|-----------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ |
| Cape of Good Hope ... | 338,207 | 421,529 | 370,714 | 220,249 | 56,220 | 63,185 | 125,204 |
| Natal ... | 116,012 | 293,622 | 204,007 | 70,593 | 179,342 | 83,694 | 90,884 |
| United Kingdom ... | 545,072 | 178,379 | 123,193 | 35,632 | 16,788 | 15,896 | 87,903 |
| Philippine Islands ... | 137,540 | 102,522 | 93,751 | 84,287 | 140,350 | 112,546 | 108,505 |
| Russia ... | ... | ... | ... | ... | ... | 105,445 | 112,098 |
| Malta ... | 12,323 | 9,944 | 18,852 | 20,318 | 10,540 | ... | 8,852 |
| Egypt ... | 5,132 | 1,710 | 10,724 | 3,954 | 16,861 | 22,027 | 19,135 |
| Straits Settlements ... | ... | 22,716 | ... | ... | 7,553 | 8,080 | 11,515 |
| Gibraltar ... | 10,361 | 2,090 | 242 | ... | 1,490 | 12,204 | 4,432 |
| Mauritius ... | ... | 22,350 | 5,541 | 4,748 | 3,296 | 4,665 | ... |
| Other countries ... | 10,498 | 4,966 | 477 | 2,656 | 9,485 | 6,713 | 7,204 |
| Total ... | 1,175,145 | 1,050,828 | 827,501 | 442,437 | 441,925 | 434,455 | 575,732 |

During the seven years under review the most consistent of Australia's leading customers for frozen beef has been the Philippine Islands. Cape of Good Hope and Natal are the countries to which the largest export took place during the period, while the United Kingdom was third in this respect. A considerable trade with Russia has also sprung into existence during the last few years.

7. **Comparison with other Countries.**—In the following comparison of the herds of Australia with those of some of the principal cattle-raising countries of the world, the latest available figures have been inserted in each case:—

NUMBER OF CATTLE IN VARIOUS COUNTRIES.

| Country. | Date. | No. of Cattle. | Country. | Date. | No. of Cattle. |
|----------------------------------|----------------|-------------------|---------------------------|-------|----------------|
| British India ¹ ... | 1904-5 | 90,597,053 | Spain ... | 1891 | 2,217,659 |
| United States of America ... | 1906 | 72,533,996 | Cape of Good Hope ... | 1904 | 1,954,390 |
| Russian Empire ... | 1906 | 43,203,711 | New Zealand ... | 1906 | 1,851,750 |
| Argentine Republic ... | 1895 | 21,701,526 | Denmark ... | 1903 | 1,840,466 |
| Germany ... | 1904 | 19,331,568 | Belgium ... | 1905 | 1,788,328 |
| Austria-Hungary ³ ... | 1895 & 1900 | 16,249,535 | Bulgaria ² ... | 1893 | 1,767,974 |
| France ... | 1905 | 14,315,552 | Holland ... | 1904 | 1,690,463 |
| United Kingdom ... | 1907 | 11,628,483 | Ceylon ... | 1906 | 1,542,909 |
| Australia ... | 1907 | 10,180,214 | Switzerland ... | 1906 | 1,497,904 |
| Uruguay ... | 1902 | 7,029,078 | Japan ⁴ ... | 1905 | 1,167,610 |
| Canada ... | 1901 | 5,576,451 | Algeria ... | 1905 | 1,066,404 |
| Mexico ... | 1902 | 5,142,457 | Servia ... | 1900 | 956,661 |
| Italy ... | 1890 | 5,000,000 | Norway ... | 1900 | 950,201 |
| Rumania ... | 1900 | 2,588,526 | Transvaal ... | 1905 | 800,000 |
| Sweden ... | 1905 | 2,549,928 | Natal ... | 1905 | 783,887 |
| | | | Orange River Colony | 1905 | 525,372 |

1. Exclusive of Bengal. 2. Inclusive of buffaloes. 3. Austria 1900, Hungary 1895. 4. Exclusive of Formosa.

8. **Relation to Population.**—The number of cattle per head of population differs considerably in the several States, and is also subject to marked variation from year to year in the same State. Particulars for the past eight years are as follows:—

NUMBER OF CATTLE PER HEAD OF POPULATION, 1901 to 1907.

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W.Aust. | Tas. | C'wealth. |
|----------|--------|-----------|---------|----------|---------|------|-----------|
| 1900 ... | 1.46 | 1.34 | 8.26 | 1.30 | 1.88 | 0.96 | 2.29 |
| 1901 ... | 1.49 | 1.34 | 7.46 | 1.31 | 2.05 | 0.97 | 2.22 |
| 1902 ... | 1.24 | 1.37 | 4.98 | 1.42 | 2.05 | 1.00 | 1.82 |
| 1903 ... | 1.32 | 1.38 | 4.81 | 1.45 | 2.19 | 1.04 | 1.85 |
| 1904 ... | 1.47 | 1.40 | 5.22 | 1.40 | 2.32 | 1.12 | 1.97 |
| 1905 ... | 1.57 | 1.43 | 5.61 | 1.71 | 2.48 | 1.14 | 2.10 |
| 1906 ... | 1.67 | 1.46 | 6.38 | 1.77 | 2.64 | 1.17 | 2.27 |
| 1907 ... | 1.75 | 1.48 | 7.18 | 1.81 | 2.95 | 1.17 | 2.43 |

For the Commonwealth as a whole the ratio of cattle to population is slightly greater for 1907 than for 1900. This excess of the 1907 figures over those for 1900 is in evidence in all the States except Queensland, and is most marked in the case of Western Australia. In Queensland also the ratio has increased very rapidly during the past four years.

9. **Value of Australian Cattle.**—The value of the cattle in the several States of the Commonwealth on the 31st December, 1907, was approximately as follows:—

VALUE OF CATTLE IN AUSTRALIA, 31st DECEMBER, 1907.

| State. | N.S.W. | Victoria. | Q'sland. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|--------|--------------|--------------|--------------|-------------|-------------|-------------|--------------|
| Value | £ 16,500,000 | £ 11,980,000 | £ 17,520,000 | £ 4,260,000 | £ 5,010,000 | £ 1,620,000 | £ 56,890,000 |

§ 4. Sheep.

1. **The Founding of the Commonwealth Pastoral Industry.**—Fortunately for Australia, the suitability of its climate and general conditions for the production of a high class of wool was, at an early date in the history of its settlement, surmised and tested by Captain Macarthur, one of the pioneer sheep-breeders of New South Wales. To the energy of this enterprising pastoralist is due in large measure the rapid and extremely satisfactory development of Australia as a producer of fine wool, and though it would appear that the introduction of the Merino sheep into Australia was not due to Macarthur, a great deal of the credit for having successfully established the pastoral industry in Australia must certainly be his.

2. **Distribution throughout Commonwealth.**—With the exception of a short period in the early sixties, when the flocks of Victoria outnumbered those of the mother State, New South Wales has maintained amongst the Commonwealth group the lead in sheep production which naturally attached to it as the portion of the Commonwealth in which settlement was first effected. From 1878 onwards, the number of sheep in New South Wales has, in every year except 1902, represented more than half the total for the Commonwealth.

The number of sheep in the several States at quinquennial intervals from 1860 to 1900, and for each year onwards to 1907, are as follows:—

NUMBER OF SHEEP IN AUSTRALIA, 1860 to 1907.

| Year. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Total C'wealth. |
|-------|------------------|------------|-------------|------------------|--------------------|-----------|-----------------|
| 1860 | 6,119,163 | 5,780,896 | 3,449,350 | 2,824,811 | 260,136 | 1,700,930 | 20,135,286 |
| 1865 | 8,132,511 | 8,835,380 | 6,594,966 | 3,779,308 | 445,044 | 1,752,719 | 29,539,928 |
| 1870 | 16,308,585 | 10,761,887 | 8,163,818 | 4,400,655 | 608,892 | 1,349,775 | 41,593,612 |
| 1875 | 25,353,924 | 11,749,532 | 7,227,774 | 6,179,395 | 881,861 | 1,731,723 | 53,124,209 |
| 1880 | 35,398,121 | 10,360,285 | 6,935,967 | 6,463,897 | 1,231,717 | 1,796,715 | 62,186,702 |
| 1885 | 37,820,906 | 10,681,837 | 8,994,322 | 6,643,565 | 1,702,719 | 1,648,627 | 67,491,976 |
| 1890 | 55,986,431 | 12,692,843 | 18,007,234 | 7,050,544 | 2,524,913 | 1,619,256 | 97,881,221 |
| 1895 | 47,617,687 | 12,791,084 | 19,856,959 | 6,604,319 | 2,295,832 | 1,523,846 | 90,689,727 |
| 1900 | 40,020,506 | 10,841,790 | 10,339,185 | 5,283,247 | 2,434,311 | 1,683,956 | 70,602,995 |
| 1901 | 41,857,099 | 10,673,265 | 10,030,971 | 5,060,540 | 2,625,855 | 1,792,481 | 72,040,211 |
| 1902 | 26,649,424 | 10,504,741 | 7,213,985 | 4,922,662 | 2,704,880 | 1,672,655 | 53,668,347 |
| 1903 | 28,656,501 | 10,336,216 | 8,392,044 | 5,350,258 | 2,600,633 | 1,597,053 | 56,932,705 |
| 1904 | 34,526,894 | 10,167,691 | 10,843,470 | 5,874,979 | 2,853,424 | 1,557,460 | 65,823,918 |
| 1905 | 39,506,764 | 11,455,115 | 12,535,231 | 6,202,330 | 3,120,703 | 1,583,561 | 74,403,704 |
| 1906 | 44,132,421 | 12,937,440 | 14,886,438 | 6,661,217 | 3,340,745 | 1,729,394 | 83,687,655 |
| 1907 | 44,461,839 | 14,146,734 | 16,738,047 | 6,873,869 | 3,684,974 | 1,744,800 | 87,650,263 |

3. **Proportion in the Several States.**—Particulars concerning the relative positions of the several States with respect to the total flocks of Australia, and the variations in such positions which have taken place during the past seven years, are as hereunder:—

**PERCENTAGE OF SHEEP IN EACH STATE ON TOTAL FOR COMMONWEALTH,
1900 TO 1907.**

| Year. | N.S.W. | Vic. | Q'nsland. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|----------|--------|-------|-----------|----------|----------|------|-----------|
| | % | % | % | % | % | % | % |
| 1900 ... | 56.68 | 15.36 | 14.64 | 7.48 | 3.45 | 2.39 | 100.00 |
| 1901 ... | 58.10 | 14.82 | 13.92 | 7.02 | 3.65 | 2.49 | 100.00 |
| 1902 ... | 49.66 | 19.57 | 13.44 | 9.17 | 5.04 | 3.12 | 100.00 |
| 1903 ... | 50.33 | 18.16 | 14.74 | 9.40 | 4.57 | 2.80 | 100.00 |
| 1904 ... | 52.45 | 15.45 | 16.47 | 8.93 | 4.33 | 2.37 | 100.00 |
| 1905 ... | 53.10 | 15.40 | 16.85 | 8.33 | 4.19 | 2.13 | 100.00 |
| 1906 ... | 52.73 | 15.46 | 17.79 | 7.96 | 3.99 | 2.07 | 100.00 |
| 1907 ... | 50.73 | 16.14 | 19.10 | 7.84 | 4.20 | 1.99 | 100.00 |

During 1907 the New South Wales proportion of total Commonwealth flocks declined considerably, smaller decreases being also in evidence in the cases of South Australia and Tasmania. In the other three States an advance in proportion was experienced, being most marked in the case of Queensland.

4. **Imports and Exports of Sheep.**—As in the case of cattle, the exports of live sheep from Australia are of comparatively small importance. The principal countries to which such exports have been consigned during recent years are Natal, Cape of Good Hope, Straits Settlements, and New Caledonia. The following are the particulars of the imports and exports for the past seven years:—

COMMONWEALTH IMPORTS AND EXPORTS OF SHEEP, 1901 to 1907.

| Year. | Imports. | | Exports. | | Net Exports. | |
|-------------------|----------|---------|----------|---------|--------------|---------|
| | No. | Value. | No. | Value. | No. | Value. |
| | | £ | | £ | | £ |
| 1901 ... | 553 | 12,134 | 12,094 | 12,104 | 11,541 | —30 |
| 1902 ... | 47,654 | 66,042 | 24,296 | 15,558 | —23,358 | —50,484 |
| 1903 ... | 4,727 | 9,840 | 18,111 | 24,468 | 13,384 | 14,628 |
| 1904 ... | 2,614 | 13,056 | 7,746 | 11,219 | 5,132 | —1,837 |
| 1905 ... | 5,521 | 24,263 | 12,090 | 17,429 | 6,569 | —6,834 |
| 1906 ... | 11,502 | 51,403 | 17,979 | 48,699 | 6,477 | —2,704 |
| 1907 ... | 11,759 | 42,167 | 11,361 | 40,040 | —398 | —2,127 |
| Total for 7 years | 84,330 | 218,905 | 103,677 | 169,517 | 19,347 | —49,388 |

Note. — signifies net imports.

5. **Sheep Slaughtered.**—The numbers of sheep slaughtered in those States for which slaughtering statistics are available, are as follows:—

SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1901 to 1907.

| Year. | N.S.W. | Victoria. | Q'sland. | Sth. Aust. ¹ | West Aust. | Tasmania. ² | C'wealth. |
|-------|-----------|-----------|----------|-------------------------|------------|------------------------|------------|
| 1901 | 4,519,133 | 2,469,797 | 554,705 | 678,000 | 428,534 | 322,000 | 8,972,169 |
| 1902 | 4,635,850 | 2,827,938 | 715,443 | 681,000 | 482,882 | 325,000 | 9,668,113 |
| 1903 | 3,277,120 | 2,652,569 | 453,666 | 684,000 | 412,549 | 332,000 | 7,811,904 |
| 1904 | 3,058,536 | 2,305,729 | 400,688 | 691,000 | 499,585 | 334,000 | 7,289,538 |
| 1905 | 4,283,631 | 2,576,316 | 587,406 | 700,000 | 476,010 | 335,000 | 8,958,363 |
| 1906 | 4,482,055 | 2,826,144 | 449,547 | 710,000 | 468,759 | 335,000 | 9,271,505 |
| 1907 | 6,304,692 | 3,226,141 | 642,730 | 1,020,355 | 470,000 | 336,000 | 11,999,918 |

1. Estimated for years 1901 to 1906.

2. Estimated.

For Hobart and Launceston only the figures for the years 1901 to 1907 were respectively:—101,627, 114,900, 122,223, 109,992, 101,863, 104,081, and 107,859.

6. Exports of Frozen Mutton and Lamb.—Australia's export trade in mutton and lamb preserved by cold process is one which has, in recent years, advanced rapidly, and at the present time amounts to nearly £1,400,000 per annum. In all the States considerable attention is now being paid to the breeding of a class of sheep that will best meet the requirements of consumers. Crosses between the Merino and the Lincoln, or between the Merino and the Leicester breeds, have proved exceedingly valuable, as they furnish both a good quality of wool and also an excellent carcase for export purposes. The breeding of Shropshire and Southdown sheep with a view to combining meat production with that of wool is also on the increase. Special attention is being paid to the raising of lambs for the home markets, as it is becoming very widely recognised that with suitable breeds, the export trade in lambs is a very profitable one.

Australia's principal customers in this trade are the United Kingdom and South Africa, while in Egypt and Canada a demand for Australian frozen mutton and lamb has developed in recent years, the exports to Canada for 1907 reaching a total of over £30,000. A regular, though not very extensive, trade is also done with the Philippine Islands. The quantities exported to various countries are as follows:—

**QUANTITY OF FROZEN MUTTON AND LAMB EXPORTED FROM AUSTRALIA,
1901 TO 1907.**

| Country to which Exported. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. |
| United Kingdom ... | 45,562,565 | 19,063,120 | 18,202,206 | 35,069,929 | 62,767,593 | 67,251,672 | 88,676,913 |
| Natal ... | 6,250,816 | 12,667,264 | 10,350,121 | 6,980,584 | 14,011,235 | 13,349,876 | 11,038,858 |
| Cape of Good Hope ... | 11,435,804 | 9,475,714 | 4,577,341 | 3,625,294 | 6,524,229 | 5,974,671 | 3,406,999 |
| Philippine Islands ... | 1,107,499 | 870,264 | 720,284 | 749,378 | 677,221 | 552,233 | 791,154 |
| Malta ... | 534,439 | 416,204 | 1,229,867 | 763,909 | 639,171 | ... | 864,062 |
| Egypt ... | 66,832 | 160,346 | 223,483 | 186,348 | 744,377 | 1,125,423 | 589,210 |
| Canada ... | 124,544 | 154,000 | ... | ... | 196,331 | 969,352 | 2,215,533 |
| Hong Kong ... | 358,960 | 147,056 | 273,810 | 161,535 | 302,077 | 166,059 | 270,325 |
| Gibraltar ... | 115,248 | 118,100 | 292,138 | 76,396 | 225,659 | 285,510 | 168,453 |
| Ceylon ... | 281,264 | 320,492 | 5,200 | 119,684 | 145,078 | 151,549 | 172,504 |
| Mauritius ... | ... | 497,422 | ... | 90,545 | 58,651 | ... | ... |
| Straits Settlements ... | ... | ... | ... | ... | 382,101 | 243,508 | 511,813 |
| Other Countries ... | 450,355 | 215,618 | 9,453 | 39,990 | 164,621 | 622,532 | 521,993 |
| Total ... | 66,288,326 | 44,105,600 | 35,883,903 | 47,863,532 | 86,858,344 | 90,692,385 | 109,227,757 |

The corresponding particulars concerning the values of the exports are:—

**VALUES OF FROZEN MUTTON AND LAMB EXPORTED FROM AUSTRALIA,
1901 to 1907.**

| Country to which Exported. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|----------------|----------------|----------------|----------------|------------------|------------------|------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| United Kingdom... | 467,013 | 234,385 | 268,697 | 488,830 | 834,629 | 839,360 | 1,141,718 |
| Natal ... | 80,139 | 162,032 | 131,152 | 91,388 | 156,950 | 142,031 | 119,667 |
| Cape of Good Hope ... | 142,027 | 111,467 | 58,109 | 50,037 | 79,294 | 65,801 | 39,631 |
| Philippine Islands ... | 13,047 | 10,881 | 9,199 | 9,680 | 7,442 | 6,309 | 8,674 |
| Malta ... | 6,783 | 4,143 | 14,492 | 8,741 | 7,276 | ... | 9,497 |
| Egypt ... | 993 | 2,278 | 2,945 | 2,144 | 8,580 | 12,674 | 7,760 |
| Canada ... | 1,244 | 965 | ... | ... | 2,792 | 12,260 | 30,216 |
| Hong Kong ... | 3,022 | 1,923 | 3,991 | 2,234 | 3,473 | 1,906 | 3,011 |
| Gibraltar ... | 1,770 | 1,230 | 3,273 | 955 | 2,765 | 2,974 | 1,955 |
| Ceylon ... | 4,706 | 4,542 | 70 | 1,613 | 1,774 | 1,713 | 2,802 |
| Mauritius ... | ... | 6,205 | ... | 1,214 | 672 | ... | ... |
| Straits Settlements ... | ... | ... | ... | ... | 4,514 | 2,579 | 5,711 |
| Other Countries ... | 5,552 | 3,371 | 186 | 525 | 1,808 | 7,513 | 6,920 |
| Total ... | 726,296 | 543,422 | 492,114 | 657,361 | 1,111,969 | 1,095,120 | 1,377,502 |

7. **Comparison with other Countries.**—As regards the size of its flocks and the quantity and quality of wool produced, Australia occupies the foremost position amongst the sheep-raising countries of the world. The following comparison gives the latest available figures relative to the number of sheep in the principal wool-producing countries:—

NUMBER OF SHEEP IN VARIOUS COUNTRIES.

| Country. | Date. | No. of Sheep | Country. | Date. | No. of Sheep. |
|---------------------------------|--------|--------------|---------------------|-------|---------------|
| Australia ... | 1907 | 87,650,263 | Bulgaria ... | 1893 | 6,868,291 |
| Argentine Republic ... | 1895 | 74,379,562 | Rumania ... | 1900 | 5,655,444 |
| Russian Empire ¹ ... | 1906 | 61,549,251 | Orange River Colony | 1905 | 4,194,247 |
| United States of America | 1906 | 53,240,282 | Mexico ... | 1902 | 3,424,430 |
| United Kingdom ... | 1907 | 30,011,219 | Servia ... | 1900 | 3,061,759 |
| New Zealand ... | 1906 | 20,108,471 | Canada ... | 1901 | 2,510,239 |
| Uruguay ... | 1902 | 17,927,071 | Transvaal ... | 1905 | 1,200,000 |
| France ... | 1905 | 17,783,209 | Sweden ... | 1905 | 1,074,386 |
| British India ² ... | 1904-5 | 17,578,623 | Norway ... | 1900 | 998,819 |
| Spain ... | 1891 | 13,359,473 | Denmark ... | 1903 | 876,830 |
| Cape of Good Hope | 1904 | 11,818,829 | Natal ... | 1905 | 769,601 |
| Austria-Hungary ³ | 1895 | 10,743,707 | Falkland Islands | 1905 | 700,894 |
| | 1900 | 10,743,707 | Netherlands ... | 1904 | 606,785 |
| Algeria ... | 1905 | 9,062,636 | Belgium ... | 1895 | 235,722 |
| Germany ... | 1904 | 7,907,173 | Switzerland | 1906 | 209,243 |
| Italy ... | 1890 | 6,900,000 | | | |

1. Including goats. 2. Exclusive of Bengal. 3. Austria 1900, Hungary 1895.

8. **Relation to Population.**—The relation of the flocks of the several States to the populations at the end of each of the past eight years is as follows:—

NUMBER OF SHEEP PER HEAD OF POPULATION.

| Year. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|----------|--------|-------|---------|----------|----------|-------|-----------|
| 1900 ... | 29.42 | 9.06 | 20.94 | 14.59 | 13.53 | 9.74 | 18.75 |
| 1901 ... | 30.44 | 8.81 | 19.83 | 13.84 | 13.53 | 10.28 | 18.83 |
| 1902 ... | 18.99 | 8.67 | 14.12 | 13.43 | 12.68 | 9.43 | 13.82 |
| 1903 ... | 20.08 | 8.55 | 16.28 | 14.51 | 11.46 | 8.90 | 14.50 |
| 1904 ... | 23.69 | 8.40 | 20.79 | 15.76 | 11.78 | 8.64 | 16.52 |
| 1905 ... | 26.48 | 9.40 | 23.74 | 16.40 | 12.25 | 8.74 | 18.36 |
| 1906 ... | 28.91 | 10.50 | 27.82 | 17.35 | 12.76 | 9.60 | 20.31 |
| 1907 ... | 28.34 | 11.33 | 30.90 | 17.51 | 14.09 | 9.48 | 20.88 |

9. **Value of Australian Sheep.**—The total value on the 31st December, 1907, of the sheep in the Commonwealth and its several States is approximately as follows:—

ESTIMATED VALUE OF AUSTRALIAN SHEEP, 31st DECEMBER, 1907,

| State ... | N.S.W. | Victoria. | Q'nsland. | Sth. Aust. | W. Aust. | Tasmania. | C'wealth. |
|-------------|------------|-----------|-----------|------------|-----------|-----------|------------|
| Value ... £ | 22,230,000 | 8,490,000 | 7,530,000 | 3,440,000 | 2,210,000 | 1,050,000 | 44,950,000 |

§ 5. Wool.

1. **Importance of Wool Production.**—The chief contributing factor to the pastoral wealth of Australia is the production of wool, the value of the output for the year 1907 being about £29,000,000. Most of the wool produced in the Commonwealth is exported, but with the increased activity of the local woollen mills there has, in recent years, been an increasing quantity used in Australia, although even now the quantity so used represents only $1\frac{1}{4}$ per cent. of the whole clip.

2. **Greasy and Scoured Wool.**—In the returns of imports and exports of wool furnished to the Customs Department the quantities are shewn as “greasy,” or as “scoured and washed,” but for the purposes of comparing the clips of the several States or of the Commonwealth as a whole for a series of years, it is convenient to have the total production expressed in terms of greasy wool.

The total quantity of Australian wool, scoured and washed before export, is usually only about 25 per cent. of the total clip. The ratio of loss of weight in scouring, however, varies largely with season, locality, breed, and condition. It seems preferable to express “scoured and washed” wool in terms of “greasy” rather than *vice versa*, since the absolute error arising from any uncertainty as to the average loss of weight has thus the least effect.

3. **Total Production.**—In the following tables, relative to the production of wool in the several States for the seven years 1901 to 1907, wool returned as “scoured and washed” has been converted into the estimated equivalent amount of “greasy” on the assumption that two pounds of “greasy” wool are on the average required to produce one pound of “scoured and washed.” On this basis the estimated total production of wool (in the grease) in the several States of the Commonwealth for the years 1901 to 1907 may be said to be as in the following table:—

PRODUCTION OF WOOL, ESTIMATED AS “GREASY,” COMMONWEALTH AND STATES, 1901 TO 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. |
| New South Wales | 311,318,648 | 218,505,670 | 228,173,045 | 252,194,736 | 298,490,955 | 326,999,426 | 369,130,784 |
| Victoria | 81,227,029 | 71,109,528 | 55,044,659 | 80,036,363 | 66,118,195 | 67,426,109 | 109,555,748 |
| Queensland | 70,872,670 | 42,100,238 | 53,908,667 | 66,037,701 | 70,393,840 | 86,363,630 | 102,396,272 |
| South Australia | 40,415,378 | 37,285,621 | 37,766,673 | 36,727,324 | 37,262,504 | 44,602,680 | 53,547,076 |
| Western Australia | 14,290,156 | 13,380,181 | 13,312,326 | 12,513,185 | 17,732,597 | 15,405,132 | 20,465,045 |
| Tasmania | 9,805,154 | 9,167,911 | 5,731,783 | 11,539,735 | 10,666,430 | 11,359,760 | 9,840,944 |
| Commonwealth | 527,929,035 | 391,549,149 | 393,937,153 | 459,049,044 | 500,664,521 | 552,156,737 | 664,935,869 |

4. **Wool Locally Used.**—Of this production the quantity used in the local manufacturing of the several States of the Commonwealth was approximately as follows:—

QUANTITY OF WOOL, ESTIMATED AS “GREASY,” COMMONWEALTH AND STATES, 1901 TO 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. |
| New South Wales | 1,343,070 | 1,358,920 | 1,293,600 | 726,900 | 729,470 | 836,730 | 963,408 |
| Victoria | 3,408,526 | 3,473,635 | 3,772,390 | 4,027,080 | 4,493,041 | 4,765,687 | 5,600,873 |
| Queensland | 312,000 | 219,292 | 164,234 | 185,802 | 224,860 | 253,842 | 211,362 |
| South Australia | 184,846 | 201,657 | 271,285 | 311,469 | 376,615 | 387,264 | 603,848 |
| Western Australia | ... | ... | ... | ... | ... | ... | ... |
| Tasmania | 776,000 | 780,000 | 812,000 | 811,500 | 1,067,050 | 1,005,628 | 929,572 |
| Commonwealth | 6,024,442 | 6,033,704 | 6,313,509 | 6,062,751 | 6,891,036 | 7,249,151 | 8,309,063 |

5. Exports of Wool.—Nearly half of the exports of wool from the Commonwealth are despatched to the United Kingdom, the other leading consignees being France, Germany, Belgium, and the United States of America. The following table shews for the years 1901 to 1907, the quantities of "greasy" wool exported from the Commonwealth to the principal countries of destination :—

COMMONWEALTH EXPORTS OF WOOL IN THE GREASE, 1901 to 1907.

| Country to which Exported. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. |
| United Kingdom | 234,671,708 | 171,255,911 | 131,981,041 | 170,961,234 | 167,675,702 | 193,740,722 | 227,246,663 |
| France | 54,651,054 | 48,207,243 | 52,700,279 | 71,302,579 | 95,812,717 | 85,755,279 | 130,937,517 |
| Germany | 51,223,381 | 40,559,728 | 45,946,327 | 48,954,745 | 62,727,286 | 56,479,224 | 71,423,340 |
| Belgium | 33,176,804 | 20,302,265 | 21,579,126 | 28,318,161 | 35,213,749 | 53,972,671 | 56,605,510 |
| U.S. of America | 8,162,316 | 4,439,461 | 8,461,508 | 17,023,952 | 14,996,174 | 21,090,888 | 18,401,395 |
| Italy | 2,674,495 | 1,312,711 | 2,208,104 | 2,245,207 | 3,065,474 | 1,184,080 | 1,546,395 |
| Japan | 157,514 | 162,607 | 266,398 | 290,491 | 453,645 | 2,465,742 | 5,907,962 |
| New Zealand | 483,844 | 84,827 | 101,880 | 101,029 | 197,948 | 183,845 | 55,208 |
| India | 62,157 | 156,659 | 275,637 | 96,736 | 91,431 | 162,724 | 212,759 |
| Canada | ... | ... | 24,000 | 53,513 | 138,416 | 173,944 | 264,513 |
| Other Countries | 17,151 | 40,157 | 2,352 | 47,003 | 27,882 | 144,471 | 157,633 |
| Total | 385,280,424 | 286,621,569 | 263,546,652 | 339,394,650 | 380,420,424 | 415,353,590 | 512,756,895 |

Similar particulars concerning the exports of "scoured and washed" wool are as follows :—

COMMONWEALTH EXPORTS OF "SCOURED AND WASHED WOOL," 1901 to 1907.

| Country to which Exported. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|------------|------------|------------|------------|------------|------------|------------|
| | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. |
| United Kingdom | 49,176,041 | 31,387,903 | 38,789,131 | 30,108,654 | 28,469,808 | 35,301,652 | 38,037,138 |
| France | 7,321,775 | 7,229,229 | 10,354,637 | 8,578,307 | 13,816,332 | 11,290,425 | 13,607,538 |
| Germany | 5,606,254 | 5,325,117 | 7,531,339 | 8,682,885 | 6,897,390 | 6,905,990 | 8,649,996 |
| Belgium | 3,175,954 | 4,512,635 | 3,431,979 | 3,992,454 | 5,556,547 | 9,098,036 | 9,288,704 |
| Japan | 776,322 | 765,866 | 827,041 | 4,235,144 | 1,579,164 | 2,106,820 | 2,490,953 |
| Italy | 187,276 | 68,176 | 82,359 | 40,651 | 165,444 | 99,663 | 85,937 |
| India | 81,262 | 85,531 | 108,804 | 85,199 | 64,198 | 68,007 | 151,851 |
| New Zealand | 21,870 | ... | 4,560 | 19,631 | 6,266 | 18,624 | 1,770 |
| Canada | ... | ... | 12,750 | 5,841 | 781 | ... | ... |
| Other Countries | 22,101 | ... | 720 | 162,280 | 216,493 | 138 | 4,178 |
| Total | 66,368,855 | 49,374,477 | 61,143,320 | 55,911,046 | 56,775,423 | 64,889,295 | 72,318,065 |

The total value of the wool exported from the Commonwealth to each of the various countries during the seven years under review was :—

TOTAL VALUE OF WOOL EXPORTED FROM THE COMMONWEALTH, 1901 to 1907.

| Country to which Exported. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|------------|------------|------------|------------|------------|------------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| United Kingdom | 9,797,001 | 7,610,114 | 7,366,423 | 8,498,648 | 8,750,240 | 10,706,181 | 12,933,800 |
| France | 2,013,197 | 2,133,975 | 2,676,582 | 3,419,045 | 5,053,870 | 4,577,034 | 7,004,581 |
| Germany | 1,852,053 | 1,755,053 | 2,342,619 | 2,569,677 | 3,143,614 | 2,962,586 | 4,117,394 |
| Belgium | 1,146,349 | 924,447 | 1,044,297 | 1,390,261 | 1,905,822 | 3,113,778 | 3,417,193 |
| United States of America | 273,333 | 168,588 | 388,247 | 783,938 | 647,236 | 912,679 | 815,254 |
| Italy | 90,842 | 55,367 | 92,377 | 94,268 | 143,985 | 58,971 | 77,413 |
| Japan | 48,653 | 55,802 | 71,582 | 332,602 | 140,704 | 279,860 | 481,771 |
| India | 5,915 | 6,483 | 13,671 | 10,518 | 7,928 | 12,084 | 20,115 |
| New Zealand | 17,461 | 3,784 | 3,950 | 4,992 | 5,218 | 8,565 | 2,860 |
| Canada | ... | ... | 1,756 | 2,620 | 5,459 | 8,215 | 11,903 |
| Other Countries | 2,050 | 850 | 95 | 15,338 | 18,070 | 5,816 | 9,546 |
| Total | 15,237,454 | 12,744,463 | 14,001,599 | 17,122,270 | 19,822,216 | 22,645,769 | 28,891,830 |

6. **Care needed in Comparing Clips.**—The Customs returns, from which statistics of wool production are usually compiled, do not furnish a reliable indication of increase or decrease in successive clips, since in each case they relate to the year ended 31st December. Ordinarily, therefore, they include for any year imports and exports of wool belonging to two distinct clips. A further defect in the comparability of successive clips arises as follows:—Owing to climatic or other conditions the time of shearing is so far delayed that one clip may include almost thirteen months' growth of wool, while the succeeding one may include little more than eleven months' growth. An instance of this occurred in some portions of the Commonwealth in connection with the clips of 1906 and 1907. The shearing in the former case was somewhat late, while in the latter it took place at the usual time, the result being that the 1906 clip was above and that of 1907 below the normal.

7. **Wool-producing Countries in Southern Hemisphere.**—The next table, compiled by Messrs. Helmut Schwartze and Co., the well-known firm of English wool brokers, furnishes interesting evidence of the relative importance of the three great wool-producing countries of the Southern Hemisphere. The figures given represent for the respective years the imports of wool into Europe and North America:—

IMPORTS OF WOOL INTO EUROPE AND NORTH AMERICA.

| Year. | Commonwealth and New Zealand. | Cape of Good Hope. | River Plate. | Total |
|-------------|----------------------------------|-----------------------|--------------|-----------|
| | Bales. | Bales. | Bales. | Bales. |
| 1901 | 1,745,000 | 217,000 | 532,000 | 2,494,000 |
| 1902 | 1,699,000 | 234,000 | 512,000 | 2,445,000 |
| 1903 | 1,451,000 | 234,000 | 558,000 | 2,243,000 |
| 1904 | 1,371,000 | 201,000 | 476,000 | 2,048,000 |
| 1905 | 1,633,000 | 209,000 | 488,000 | 2,330,000 |
| 1906 | 1,833,000 | 238,000 | 487,000 | 2,558,000 |
| 1907 | 2,103,000 | 287,000 | 478,000 | 2,868,000 |

It will be seen that of the total importations shewn in this table, the Commonwealth of Australia and the Dominion of New Zealand account for about 70 per cent.

8. **England's Importation of Wool.**—The quantity and value of wool imported into the United Kingdom during the year 1907 from the principal wool-producing countries, furnish evidence of the important position which the Commonwealth occupies in the supply of wool to the mother country. This is shewn in the following table:—

IMPORTS OF WOOL INTO THE UNITED KINGDOM, 1907.

| Country from which Imported. | Quantity. | Value. | Country from which Imported. | Quantity. | Value. |
|---------------------------------|-------------|------------|---------------------------------|-------------|------------|
| | lbs. | £ | | lbs. | £ |
| Australia | 321,470,554 | 14,587,701 | Uruguay | 5,592,538 | 251,113 |
| New Zealand | 158,406,255 | 7,657,013 | China | 3,905,062 | 134,713 |
| Cape of Good Hope | 73,469,469 | 2,736,989 | Falkland Islands | 3,650,475 | 136,752 |
| British India | 46,683,905 | 1,449,955 | Egypt | 3,502,747 | 96,257 |
| Argentine Republic | 40,554,965 | 1,689,639 | Peru | 2,371,447 | 102,695 |
| France | 24,486,763 | 1,188,060 | Portugal | 2,042,997 | 69,213 |
| Chile | 20,704,208 | 715,289 | U.S. of America ... | 1,957,512 | 84,746 |
| Natal | 18,136,669 | 570,598 | Morocco | 1,294,988 | 49,389 |
| Turkey | 8,893,460 | 303,995 | Italy | 1,281,704 | 46,207 |
| Belgium | 7,720,075 | 335,574 | Other Countries ... | 2,829,881 | 102,102 |
| Russia | 6,385,272 | 224,320 | | | |
| Germany | 3,896,299 | 160,691 | Total | 759,237,245 | 32,693,011 |

It will be seen that of the total importations of wool into the United Kingdom, Australian wool represented about 42 per cent. of the quantity and nearly 46 per cent. of the value.

9. **The Wool Market.**—The clip of 1906 was an exceptional one from two points of view—the number of bales of wool exceeded 2,000,000 for the first time in the history of Australia, and the prices realised were on the average considerably higher than have been touched for many years, with the result that the wool season of 1906-7 was one of the most prosperous experienced in the Commonwealth.

Notwithstanding the variations in shearing time in 1906 and 1907 previously referred to, the clip for 1907 was an excellent one, and has been estimated to have fallen short of that for 1906 by only about 3 per cent. The prices realised for the clip, however, were not nearly so satisfactory, owing largely to the world-wide influence of the disastrous financial crisis which occurred in America during the latter portion of 1907.

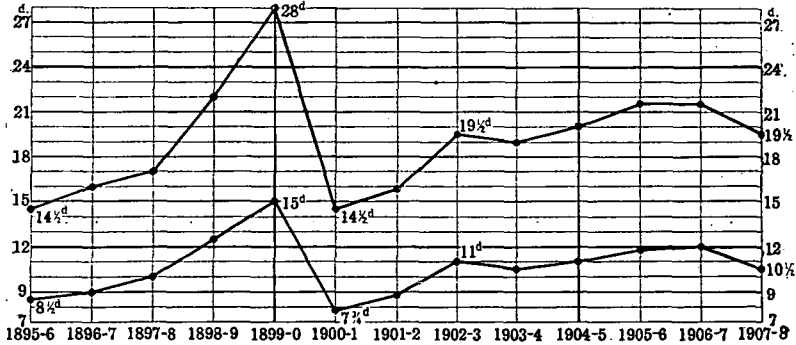
The following particulars concerning the prices of greasy Merino wool which ruled in the Australian markets in June, 1908, at the close of the wool season 1907-8 are taken from Dalgety's *Review* for July, 1908 :—

GREASY MERINO WOOL, 1907-8.

| Class of Wool. | State. | | | | |
|-----------------|---------|-----------|-------------|-------------|-----------|
| | N.S.W. | Victoria. | Queensland. | South Aust. | Tasmania. |
| | d. | d. | d. | d. | d. |
| Super | 10 — 11 | 12 — 14 | 10 — 11½ | 11½ — 12½ | 11 — 11½ |
| Good | 8½ — 9½ | 10½ — 11½ | 8½ — 9½ | 7½ — 9 | 8½ — 9½ |
| Inferior | 5 — 7 | 5½ — 9 | 5½ — 7 | 5 — 6 | 6 — 6½ |

The fluctuations in the prices of greasy and scoured wool of good average quality from 1895-6 to 1907-8, shewn by the graphs hereinunder, are in agreement with the results given in Dalgety's *Review* for 1908 :—

AVERAGE PRICES OF AUSTRALIAN WOOL, 1895-6 to 1907-8.



The upper line and lower line shew respectively the average prices of scoured and greasy Merino fleece of good average quality.

§ 6. Graphical Representation of Pastoral Production.

1. **General.**—(See *graphs, page 375.*) The figures for the total number of horses, cattle, sheep and pigs being known with considerable accuracy only from 1860 onwards, the graphs are restricted to the period indicated. It will be observed on a general survey of these that up to 1890 there was a fairly uniform increase in the number of each class of animals, or, more exactly, the number of horses increased up to 1895, of cattle to 1894, of sheep to 1891, of pigs say up to 1904. This, however, was followed by diminutions, a small one of horses till 1902—followed by a rapid recovery, and enormous ones also till 1902 in the number of cattle and sheep—again followed by very rapid recovery.

It is worthy of notice that the rate of recovery is very satisfactory. There has never been a quadrennium in Australian history when the number of sheep increased as it did from 1903 to 1907; the increases of cattle and of horses for the same period are similar to the very remarkable increases between 1889 and 1892 and 1888 and 1891 respectively. The year 1902 shews a great falling-off in all four classes, due to the prolonged drought conditions which culminated in that year. The fact that after so prolonged an adverse condition the numbers should increase as rapidly as they have, points to the elasticity of the natural resources of Australia, and its great recuperative power.

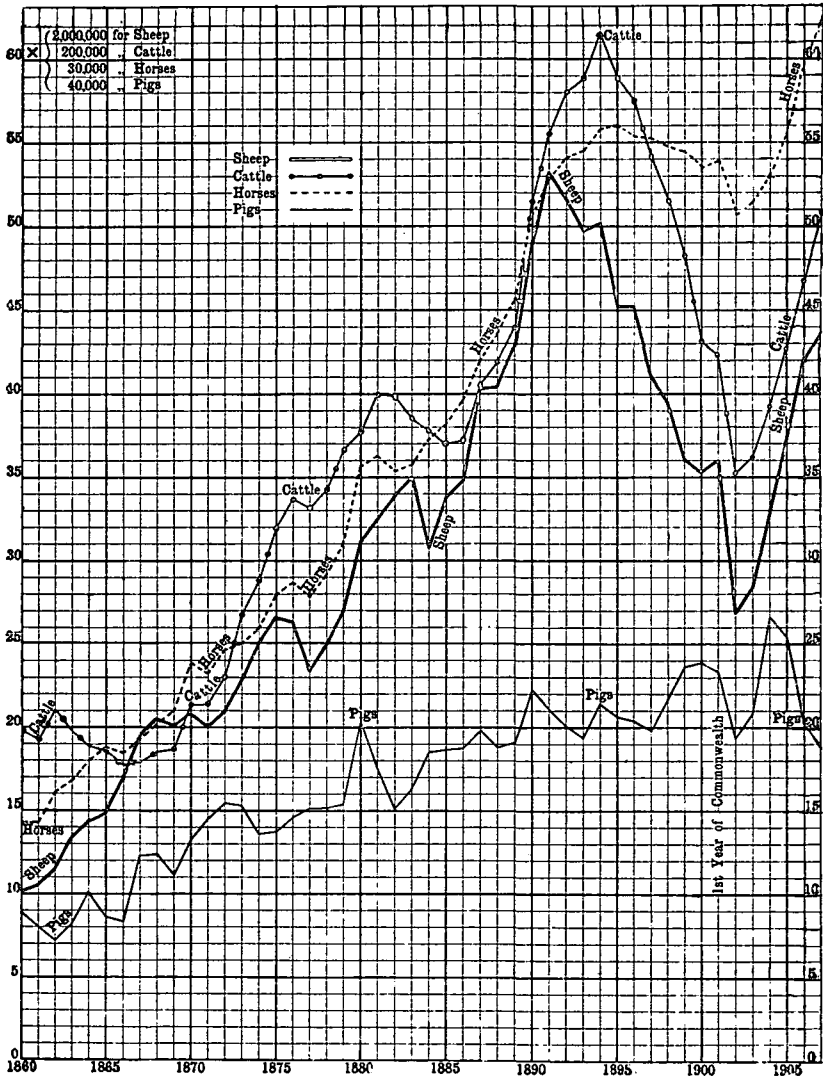
2. **Graph for Cattle.**—For the Commonwealth, the number of cattle declined from 1862 to 1866, from 1881 to 1885, and again from 1894 to 1901, but increased very rapidly for the intermediate periods and since. Among the States the increases for Queensland are the most remarkable, and the figures for that State have a predominating influence on the result.

3. **Graph for Horses.**—For the Commonwealth, the graph shews that the number of horses increased with considerable regularity practically from 1860 to 1895, and then again from 1902 onwards. No one State's figures have a predominating influence on the graph for the Commonwealth, since the largest, viz., those of New South Wales, Queensland, and Victoria, are all comparable in magnitude.

4. **Graph for Sheep.**—For the Commonwealth, the figures for the total number of sheep shew a fairly steady and rapid progression from 1860 to 1891, a decline from 1891 to 1902, and again a rapid progression from that last date onwards. The figures for New South Wales have a predominating influence.

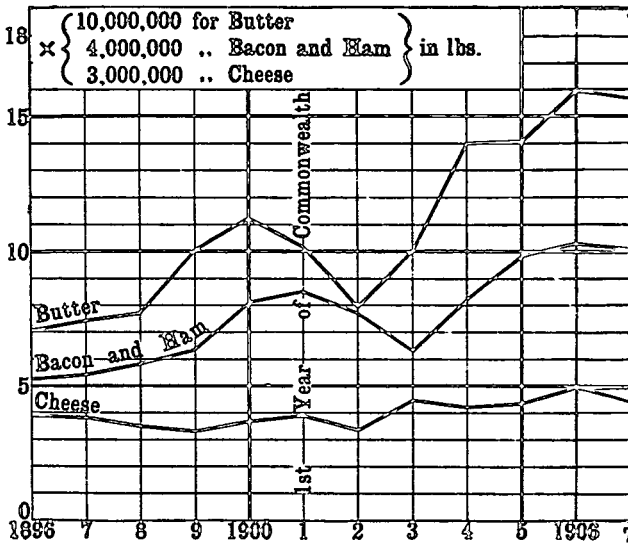
5. **Graph for Pigs.**—The graph for the Commonwealth, while shewing marked fluctuations every two or three years, shews also a steady increase on the whole. The form of this graph is profoundly influenced by the numbers for New South Wales and Victoria.

GRAPHS SHEWING NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS IN AUSTRALIA
FROM 1860 TO 1907.



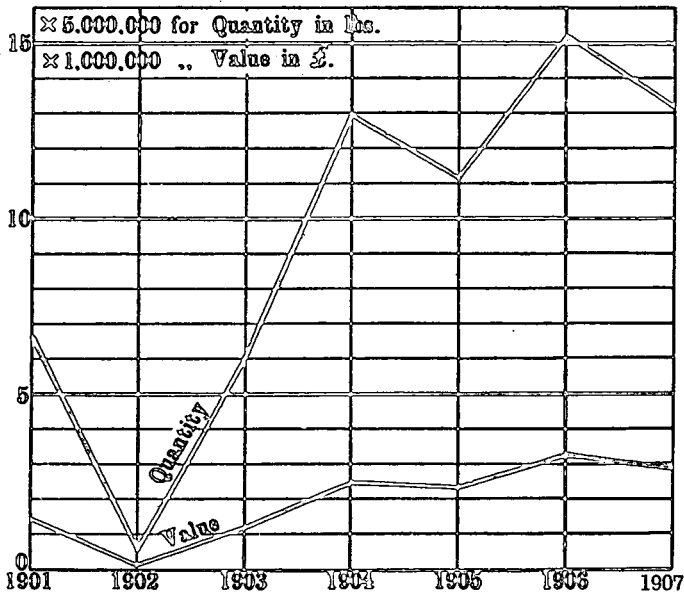
EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. The total of the sheep, cattle, horses, and pigs for the Commonwealth is indicated by the several curves or graphs, the vertical side of a small square representing 2,000,000 in the case of sheep; 200,000 for cattle; 30,000 for horses; 40,000 for pigs.

GRAPHS SHEWING THE PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM, IN THE COMMONWEALTH, FROM 1896 TO 1907.



EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each rectangle denotes in the case of butter 10,000,000 lbs.; in the case of bacon and ham, 4,000,000 lbs.; and in the case of cheese, 3,000,000 lbs.

GRAPHS SHEWING THE QUANTITY AND VALUE OF NET EXPORTS OF BUTTER FROM THE COMMONWEALTH, FROM 1901 TO 1907.



EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle represents 5,000,000 lbs. in weight, or £1,000,000 in value.

SECTION VIII.

AGRICULTURAL PRODUCTION.

§ 1. Introductory:

1. Early Attempts at Agriculture.—The instructions issued to Captain Phillip on the 25th April, 1787, directed him, amongst other things, to proceed as soon as possible to the cultivation of the soil “under such regulations as may appear to be necessary and best calculated for securing supplies of grain and provisions.” When the settlers landed at Botany Bay, however, it was found that the glowing accounts published in England by members of Captain Cook’s expedition of the fertility of the soil in the vicinity of the existing settlement were considerably overdrawn. Even when Phillip and his company moved round to Port Jackson on the 26th January, 1788, matters were for a time in no better case. The ground in the immediate neighbourhood of the settlement was not suitable for the cultivation of cereal crops, and when the time came to cultivate the soil it was found that there were very few who possessed the slightest acquaintance with the art of husbandry.

2. The First Sowing.—In his despatch of the 15th May, 1788, Captain Phillip states that it was proposed to sow eight acres with wheat and barley, although, owing to the depredations of field mice and ants, he was doubtful of the success of the crops.

3. Discovery of Suitable Agricultural Land.—A branch settlement was formed at Rosehill, on the Parramatta River, towards the close of 1788, and here corn crops were successfully raised. In his despatch of 12th February, 1790, Phillip refers to the harvest at Rosehill at the end of December, 1789, as consisting of 200 bushels of wheat and sixty of barley, in addition to small quantities of oats, Indian corn, and flax. By the year 1791 there were 213 acres under crop in this locality. In 1792 a new settlement was formed at Toongabbie, about three miles westward of Parramatta, where Phillip states “there are several thousand acres of exceeding good ground.” The Hawkesbury Valley, which probably contains some of the richest land in the world, was first settled in 1794. For a long time agricultural operations in Australia were restricted to the narrow belt of country between the tableland and the east coast of New South Wales, as it was not until the year 1813 that a passage was discovered across the Blue Mountains to the fertile plains of the west.

§ 2. Progress of Agriculture.

1. Early Records.—In an “Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797,” Governor Hunter gives the acreage under crop as follows:—Wheat, 3361 acres; maize, 1527 acres; barley, 26 acres; potatoes, 11 acres; and vines, 8 acres.

At a muster taken in 1808 the following was the return of crops:—Wheat, 6877 acres; maize, 3389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 34 acres.

By the year 1850 the area under crop had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000 acres in Tasmania. At the end of 1850 the area under cultivation in Victoria, which was then the Port Phillip District of New South Wales, was 52,190 acres.

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854; the area under cultivation in New South Wales decreased by nearly 66,000 acres, while in Tasmania a falling-off of over 41,000 acres was experienced. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia totalled over a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres, South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales 223,000 acres.

2. Progress of Cultivation since 1860.—The following table shews the area under cultivation in each of the Commonwealth States at various periods since 1860 and during each year of the period 1901-8. The area under permanent artificially-sown grasses is excluded in all the States, except for the years 1860-79 in the case of New South Wales, where the acreage cannot be separated. During those years, however, the area laid down under permanent grasses could not have been very large:—

AREA UNDER CROP IN AUSTRALIA, 1860-1 to 1907-8.

| Season. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Commonwealth. |
|------------|------------------|-----------|-------------|------------------|--------------------|-----------|---------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1860-1 ... | 260,798 | 387,282 | 3,353 | 359,284 | 24,705 | 152,860 | 1,188,282 |
| 1865-6 ... | 378,255 | 448,194 | 14,414 | 547,124 | 38,180 | 159,547 | 1,585,714 |
| 1870-1 ... | 426,976 | 692,840 | 52,210 | 801,571 | 54,527 | 157,410 | 2,185,534 |
| 1875-6 ... | 451,139 | 736,520 | 77,347 | 1,111,882 | 47,571 | 142,547 | 2,567,006 |
| 1880-1 ... | 629,180 | 1,548,809 | 113,978 | 2,087,287 | 57,707 | 140,788 | 4,577,699 |
| 1885-6 ... | 737,701 | 1,867,496 | 198,334 | 2,298,412 | 60,058 | 144,761 | 5,306,762 |
| 1890-1 ... | 852,704 | 2,031,955 | 224,993 | 2,093,515 | 69,678 | 157,376 | 5,430,221 |
| 1895-6 ... | 1,348,600 | 2,413,235 | 285,319 | 2,092,942 | 97,821 | 212,703 | 6,450,620 |
| 1900-1 ... | 2,445,564 | 3,114,132 | 457,397 | 2,369,680 | 201,338 | 224,352 | 8,812,463 |
| 1901-2 ... | 2,278,370 | 2,965,681 | 483,460 | 2,236,552 | 217,441 | 232,550 | 8,414,054 |
| 1902-3 ... | 2,249,092 | 3,246,568 | 275,383 | 2,224,593 | 229,992 | 246,923 | 8,472,551 |
| 1903-4 ... | 2,545,940 | 3,389,069 | 566,589 | 2,256,824 | 283,752 | 259,611 | 9,301,785 |
| 1904-5 ... | 2,674,896 | 3,321,785 | 539,216 | 2,275,506 | 327,391 | 226,228 | 9,365,022 |
| 1905-6 ... | 2,840,235 | 3,219,962 | 522,748 | 2,255,569 | 364,704 | 230,237 | 9,433,455 |
| 1906-7 ... | 2,826,657 | 3,303,586 | 559,753 | 2,150,291 | 460,825 | 244,744 | 9,545,856 |
| 1907-8 ... | 2,572,873 | 3,232,523 | 532,624 | 2,265,017 | 494,987 | 257,028 | 9,355,052 |

The increase in the area under crop during the past seven years has been most marked in the case of Western Australia, the total advancing from 201,338 acres in the season 1900-1 to 494,987 acres in 1907-8, an increase of 293,649 acres. During the same period an increase of 127,309 acres was experienced in New South Wales, 118,391 acres in Victoria, 75,227 acres in Queensland, and 32,676 acres in Tasmania, while the area under crop in South Australia exhibited a decline of 104,663 acres. The total area under crop in the Commonwealth increased during the period by 542,589 acres. In the case of New South Wales, Victoria, and Queensland the drought conditions prevailing resulted in a smaller area being cropped for 1907-8 than for 1906-7. In the other three States the area under crop in 1907-8 was larger than in 1906-7.

3. Relation to Population.—From the following table it will be seen that for the Commonwealth as a whole the area under crop has, during the past seven seasons, increased at a rate which is only slightly greater than that at which the population of

the Commonwealth has increased. Only in the case of Western Australia has the ratio of area under crop to total population made any marked advance during the period, while in South Australia a decline in ratio, though not in actual area, took place. Details for the seven seasons are as follows:—

TOTAL AREA UNDER CROP PER 1000 OF POPULATION.

| Season. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|---------------|--------|-----------|---------|----------|----------|--------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1901-2 | 1,671 | 2,463 | 964 | 6,164 | 1,154 | 1,349 | 2,219 |
| 1902-3 | 1,617 | 2,682 | 540 | 6,103 | 1,117 | 1,419 | 2,197 |
| 1903-4 | 1,798 | 2,804 | 1,105 | 6,168 | 1,282 | 1,463 | 2,384 |
| 1904-5 | 1,855 | 2,751 | 1,039 | 6,157 | 1,384 | 1,265 | 2,368 |
| 1905-6 | 1,926 | 2,656 | 994 | 6,020 | 1,457 | 1,285 | 2,348 |
| 1906-7 | 1,872 | 2,699 | 1,051 | 5,660 | 1,773 | 1,368 | 2,337 |
| 1907-8 | 1,659 | 2,609 | 988 | 5,872 | 1,887 | 1,433 | 2,251 |

4. **Relation to Total Area.**—The next table furnishes a comparison of the area under crop in the Commonwealth and the several States with the respective total areas. For the Commonwealth as a whole the area under crop represented for 1907-8 only about one acre in every 204. In Victoria the area under crop was about one acre in every 17½, in Tasmania one in 65, in New South Wales one in 77, in South Australia one in 255, in Queensland one in 806, and in Western Australia one in 1266.

PERCENTAGE OF AREA UNDER CROP TO TOTAL AREA OF EACH STATE AND OF COMMONWEALTH FOR SEASONS 1901-2 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|---------------|--------|-----------|---------|----------|----------|-------|-----------|
| | % | % | % | % | % | % | % |
| 1901-2 | 1.147 | 5.273 | 0.113 | 0.387 | 0.035 | 1.336 | 0.442 |
| 1902-3 | 1.132 | 5.772 | 0.064 | 0.385 | 0.037 | 1.472 | 0.445 |
| 1903-4 | 1.282 | 6.025 | 0.132 | 0.390 | 0.045 | 1.547 | 0.489 |
| 1904-5 | 1.347 | 5.906 | 0.126 | 0.393 | 0.052 | 1.348 | 0.492 |
| 1905-6 | 1.430 | 5.725 | 0.122 | 0.390 | 0.058 | 1.372 | 0.496 |
| 1906-7 | 1.423 | 5.873 | 0.130 | 0.372 | 0.074 | 1.459 | 0.501 |
| 1907-8 | 1.295 | 5.747 | 0.124 | 0.392 | 0.079 | 1.532 | 0.491 |

5. **Artificially-Sown Grasses.**—Complete statistics regarding the area under sown grasses are available for the whole of the States only since the year 1896, and are as shewn hereunder:—

AREA UNDER SOWN GRASSES, 1896-7 to 1907-8.

| Season. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Commonwealth. |
|---------|------------------|-----------|-------------|------------------|--------------------|-----------|---------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1896-7 | 384,016 | 172,582 | 11,960 | 20,027 | 4,044 | 253,306 | 845,935 |
| 1901-2 | 467,839 | 162,954 | 34,679 | 23,510 | 3,711 | 314,422 | 1,007,115 |
| 1902-3 | 477,629 | 565,635 | 24,286 | 23,636 | 3,228 | 319,090 | 1,413,504 |
| 1903-4 | 552,501 | 962,665 | 15,639 | 24,118 | 2,952 | 343,284 | 1,901,159 |
| 1904-5 | 607,997 | 953,543 | 35,589 | 24,912 | 3,964 | 378,346 | 2,004,351 |
| 1905-6 | 627,530 | 1,040,335 | 40,802 | 26,082 | 5,456 | 404,653 | 2,144,858 |
| 1906-7 | 697,631 | 1,095,642 | 45,990 | 23,679 | 6,787 | 432,128 | 2,301,857 |
| 1907-8 | 736,080 | 1,095,471 | 76,943 | 34,635 | 7,990 | 465,673 | 2,416,792 |

The considerable increase in the area of the grass lands of the Commonwealth is due in large measure to the great development of the dairying industry which has taken place during the last ten years, and which is referred to in the succeeding section.

§ 3. Relative Importance of Crops.

1. **Various Crops.**—The following table has been compiled in order to show the relative importance of the various crops in each State and in the Commonwealth as a whole. The figures refer to the season 1907-8:—

DISTRIBUTION OF CROPS IN AUSTRALIA, 1907-8.

| Crop. | N.S.W. | Victoria. | Qsl'd. | S. Aust. | W. Aust. | Tas. | Total for C'wealth. |
|---------------------|-----------|-----------|---------|-----------|----------|---------|---------------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Wheat ... | 1,390,171 | 1,847,121 | 82,461 | 1,753,755 | 279,609 | 30,794 | 5,383,911 |
| Oats ... | 75,762 | 398,749 | 715 | 66,297 | 46,666 | 54,625 | 642,814 |
| Barley— | | | | | | | |
| Malting ... | 9,932 | 41,940 | 5,846 | 23,199 | 3,162 | 5,078 | 89,157 |
| Other... .. | 1,958 | 21,134 | 1,097 | 14,122 | 2,857 | 774 | 41,942 |
| Maize ... | 160,980 | 10,844 | 127,119 | 549 | 87 | ... | 299,579 |
| Beans and Peas ... | 237 | 13,613 | ... | 7,514 | 904 | 12,557 | 34,825 |
| Rye ... | 5,268 | 1,441 | 91 | 426 | 638 | 696 | 8,560 |
| Other Cereals ... | ... | ... | 14 | 37 | 6 | 127 | 184 |
| Potatoes ... | 31,917 | 54,149 | 7,889 | 9,062 | 1,854 | 38,640 | 143,511 |
| Onions ... | 356 | 4,249 | 47 | 366 | 54 | 61 | 5,133 |
| Other Root Crops | 478 | 1,680 | 3,344 | 660 | 169 | 6,654 | 12,985 |
| Hay ... | 541,761 | 682,194 | 54,037 | 328,672 | 131,056 | 73,859 | 1,811,579 |
| Green Forage ... | 261,810 | 59,897 | 91,444 | 15,434 | 4,773 | 6,367 | 439,725 |
| Grass Seed ... | ... | 1,076 | 218 | 141 | ... | 3,105 | 4,540 |
| Sugar Cane— | | | | | | | |
| Productive ... | 9,916 | ... | 94,384 | ... | ... | ... | 104,300 |
| Unproductive ... | 8,037 | ... | 32,426 | ... | ... | ... | 40,463 |
| Vines— | | | | | | | |
| Productive ... | 7,750 | 23,334 | 1,856 | 19,415 | 2,789 | ... | 55,144 |
| Unproductive ... | 733 | 3,131 | 117 | 1,665 | 442 | ... | 6,088 |
| Tobacco... .. | 533 | 345 | 459 | ... | ... | ... | 1,337 |
| Hops ... | ... | 248 | ... | 6 | ... | 1,007 | 1,261 |
| Orchards and other | | | | | | | |
| Fruit Gardens ... | 46,714 | 54,111 | 14,397 | 20,736 | 15,049 | 19,441 | 170,448 |
| Market Gardens ... | 10,052 | 9,022 | 2,365 | 2,961 | 3,543 | 1,791 | 29,734 |
| All other Crops ... | 8,508 | 4,245 | 12,298 | ... | 1,329 | 1,452 | 27,832 |
| Total Area ... | 2,572,873 | 3,232,523 | 532,624 | 2,265,017 | 494,987 | 257,028 | 9,355,052 |

2. **Relative Areas of Crops in States.**—Taking the principal crops, *i.e.*, those in the case of which the cultivation amounts to more than 50,000 acres in the Commonwealth, the proportion of each in the various States to the total area under crop for the season 1907-8 is shewn in the table on the next page. In four of the States, *viz.*, New South Wales, Victoria, South Australia, and Western Australia, wheat-growing for grain is by far the most extensive form of cultivation, while in each of these States the hay crop is second in importance. In New South Wales green forage ranks third, but in Victoria, South Australia, and Western Australia, and also in the Commonwealth as a whole, the oat crop occupies third position. In Queensland, on the other hand, the three principal crops in the order of importance are maize, sugar cane, and green forage, while in Tasmania hay, oats, and potatoes occupy the leading positions. For the Commonwealth as a whole, the wheat, hay, and oat crops represent nearly 84 per cent. of the total area under crop.

PROPORTION OF AREA UNDER CHIEF CROPS, 1907-8.

| Crop. | N.S.W. | Victoria. | Qsl'd. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|--------------------|--------|-----------|--------|----------|----------|--------|-----------|
| | % | % | % | % | % | % | % |
| Wheat ... | 54.03 | 57.14 | 15.48 | 77.43 | 56.49 | 11.98 | 57.55 |
| Hay ... | 21.06 | 21.10 | 10.15 | 14.51 | 26.48 | 28.74 | 19.37 |
| Oats ... | 2.94 | 12.34 | 0.13 | 2.93 | 9.43 | 21.25 | 6.87 |
| Maize ... | 6.26 | 0.34 | 23.87 | 0.02 | 0.02 | ... | 3.20 |
| Green Forage | 10.18 | 1.85 | 17.17 | 0.68 | 0.96 | 2.48 | 4.70 |
| Orchards and Fruit | | | | | | | |
| Gardens ... | 1.81 | 1.67 | 2.70 | 0.92 | 3.04 | 7.56 | 1.82 |
| Potatoes ... | 1.24 | 1.68 | 1.48 | 0.40 | 0.37 | 15.03 | 1.53 |
| Sugar Cane... | 0.70 | ... | 23.81 | ... | ... | ... | 1.55 |
| Barley ... | 0.46 | 1.95 | 1.30 | 1.65 | 1.22 | 2.28 | 1.40 |
| Vineyards ... | 0.33 | 0.82 | 0.37 | 0.93 | 0.65 | ... | 0.66 |
| All Other ... | 0.99 | 1.11 | 3.54 | 0.53 | 1.34 | 10.68 | 1.35 |
| Total ... | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

3. **Acreege of Principal Crops, Commonwealth.**—The acreage devoted to each of the principal crops in the whole Commonwealth during the last seven seasons is shewn below :—

ACREAGE OF CHIEF COMMONWEALTH CROPS, 1901-2 to 1907-8.

| Crops. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Wheat ... | 5,115,965 | 5,156,049 | 5,566,340 | 6,269,778 | 6,122,746 | 5,977,794 | 5,383,911 |
| Hay ... | 1,688,402 | 1,590,488 | 1,853,864 | 1,367,321 | 1,574,412 | 1,654,399 | 1,811,579 |
| Oats ... | 461,430 | 592,247 | 620,856 | 493,317 | 466,567 | 581,843 | 642,814 |
| Maize ... | 294,849 | 303,375 | 371,906 | 324,265 | 314,901 | 325,581 | 299,579 |
| Green Forage | 204,988 | 210,641 | 159,884 | 179,603 | 225,879 | 236,484 | 439,725 |
| Orchards and | | | | | | | |
| Fruit Gardens | 145,281 | 146,675 | 154,254 | 158,604 | 159,724 | 162,274 | 170,448 |
| Sugar Cane ... | 132,840 | 105,498 | 131,698 | 141,842 | 155,912 | 153,885 | 144,763 |
| Potatoes ... | 109,685 | 116,521 | 116,112 | 116,707 | 118,533 | 146,681 | 143,511 |
| Barley ... | 74,511 | 76,260 | 121,088 | 113,207 | 90,945 | 106,436 | 131,099 |
| Vineyards ... | 63,677 | 63,943 | 65,463 | 65,673 | 64,344 | 62,546 | 61,232 |
| All other Crops | 122,426 | 110,854 | 140,320 | 134,705 | 139,492 | 137,933 | 126,391 |
| Total ... | 8,414,054 | 8,472,551 | 9,301,785 | 9,365,022 | 9,433,455 | 9,545,856 | 9,355,052 |

During the period under review the area under the various crops has fluctuated considerably, that under wheat attaining a maximum for the period in the season 1904-5, and a minimum in 1901-2, while hay reached its maximum area in 1903-4 and its minimum in 1904-5. It is of interest to note that notwithstanding individual fluctuations of considerable extent in the three principal Commonwealth crops, viz., wheat, hay, and oats, the aggregate area under these three crops has, during the past five seasons, varied within comparatively narrow limits, the figures being:—1903-4, 8,041,060 acres; 1904-5, 8,130,416 acres; 1905-6, 8,163,725 acres; 1906-7, 8,214,036 acres; 1907-8, 7,838,304 acres.

§ 4. Wheat.

1. **Progress of Wheat-Growing.**—(i.) *Acreage.* The area under wheat for grain is given below for each State at various periods since 1860, and is shewn diagrammatically in the graph hereinafter:—

AREA UNDER WHEAT, 1860-1 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'sland. | Sth. Aust. | West Aust. | Tasmania. | C'wealth. |
|---------|-----------|-----------|----------|------------|------------|-----------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1860-1 | 128,829 | 161,252 | 196 | 273,672 | 13,584 | 66,450 | 643,983 |
| 1865-6 | 131,653 | 178,628 | 2,068 | 410,608 | 22,249 | 73,270 | 818,476 |
| 1870-1 | 147,997 | 284,167 | 2,892 | 604,761 | 26,640 | 57,382 | 1,123,839 |
| 1875-6 | 133,609 | 321,401 | 4,478 | 898,820 | 21,561 | 42,745 | 1,422,614 |
| 1880-1 | 253,138 | 977,285 | 12,632 | 1,733,542 | 27,686 | 50,022 | 3,054,305 |
| 1885-6 | 264,867 | 1,020,082 | 10,093 | 1,922,555 | 29,511 | 30,266 | 3,277,374 |
| 1890-1 | 333,233 | 1,145,163 | 10,390 | 1,673,573 | 33,820 | 32,452 | 3,228,631 |
| 1895-6 | 596,684 | 1,412,736 | 27,090 | 1,649,929 | 23,241 | 64,652 | 3,774,332 |
| 1900-1 | 1,530,609 | 2,017,321 | 79,304 | 1,913,247 | 74,308 | 51,825 | 5,666,614 |
| 1901-2 | 1,392,070 | 1,754,417 | 87,232 | 1,743,452 | 94,710 | 44,084 | 5,115,965 |
| 1902-3 | 1,279,760 | 1,994,271 | 1,880 | 1,746,842 | 92,398 | 40,898 | 5,156,049 |
| 1903-4 | 1,561,111 | 1,968,599 | 138,096 | 1,711,174 | 137,946 | 49,414 | 5,566,340 |
| 1904-5 | 1,775,955 | 2,277,537 | 150,958 | 1,840,157 | 182,080 | 43,091 | 6,269,778 |
| 1905-6 | 1,939,447 | 2,070,517 | 119,356 | 1,757,036 | 195,071 | 41,319 | 6,122,746 |
| 1906-7 | 1,866,253 | 2,031,893 | 114,575 | 1,681,982 | 250,283 | 32,808 | 5,977,794 |
| 1907-8 | 1,390,171 | 1,847,121 | 82,461 | 1,753,755 | 279,609 | 30,794 | 5,383,911 |

The great reduction in the area under wheat for grain during 1907-8 was mainly due to the unfavourable nature of the season, which affected the acreage in two ways—(a) by diminishing the total area placed under wheat, and (b) by increasing the proportion cut for hay. It will be seen that in New South Wales and Queensland the area under wheat for grain was lower than in any season since 1902-3, and that in Victoria it was lower than for any season since 1901-2. In South Australia and Western Australia, which were unaffected by the drought conditions of the eastern States, satisfactory increases in area are shewn.

(ii.) *Yield.* The production during the same period for each State and for the Commonwealth as a whole is given below:—

PRODUCTION OF WHEAT, 1860-1 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'sland. | Sth. Aust. | W. Aust. | Tasmania. | C'wealth. |
|---------|------------|------------|-----------|------------|-----------|-----------|------------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. |
| 1860-1 | 1,581,598 | 3,459,914 | 3,136 | 3,576,593 | 208,332 | 1,415,896 | 10,245,469 |
| 1865-6 | 1,013,863 | 3,514,227 | 33,088 | 3,587,800 | 231,594 | 1,273,766 | 9,654,338 |
| 1870-1 | 999,595 | 2,870,409 | 39,787 | 6,961,164 | 316,769 | 896,881 | 12,084,605 |
| 1875-6 | 1,958,640 | 4,978,914 | 97,400 | 10,739,834 | 237,171 | 700,092 | 18,712,051 |
| 1880-1 | 3,717,355 | 9,727,369 | 223,243 | 8,606,510 | 332,232 | 750,040 | 23,356,749 |
| 1885-6 | 2,733,133 | 9,170,538 | 51,598 | 14,612,876 | 339,376 | 524,348 | 27,431,869 |
| 1890-1 | 3,649,216 | 12,751,295 | 207,990 | 9,399,389 | 467,389 | 642,980 | 27,118,259 |
| 1895-6 | 5,195,312 | 5,669,174 | 123,630 | 5,929,300 | 188,077 | 1,164,855 | 18,270,348 |
| 1900-1 | 16,173,771 | 17,847,321 | 1,194,088 | 11,253,148 | 774,653 | 1,110,421 | 18,353,402 |
| 1901-2 | 14,808,705 | 12,127,332 | 1,692,222 | 8,012,762 | 956,886 | 963,662 | 38,561,619 |
| 1902-3 | 1,585,097 | 2,569,364 | 6,165 | 6,354,912 | 985,559 | 876,971 | 12,378,068 |
| 1903-4 | 27,334,141 | 28,525,579 | 2,436,799 | 13,209,465 | 1,876,252 | 767,398 | 74,149,634 |
| 1904-5 | 16,464,415 | 21,092,139 | 2,149,663 | 12,023,172 | 2,013,237 | 792,956 | 54,535,582 |
| 1905-6 | 20,737,200 | 23,417,670 | 1,137,321 | 20,143,798 | 2,308,305 | 776,478 | 68,520,772 |
| 1906-7 | 21,817,938 | 22,618,043 | 1,108,902 | 17,145,796 | 2,753,567 | 651,408 | 66,100,654 |
| 1907-8 | 9,155,884 | 12,100,780 | 693,527 | 19,135,557 | 2,925,690 | 644,235 | 44,655,673 |

It may be noted that notwithstanding the fact that owing to unfavourable conditions in some of the States the total wheat yield of the Commonwealth for 1907-8 fell considerably short of the total for the preceding season, it was yet in excess of the highest aggregate yield obtained in the Commonwealth for any season prior to 1900-1. On seven occasions only has the aggregate yield exceeded 40,000,000 bushels, viz., in 1898-9, 1900-1, 1903-4, 1904-5, 1905-6, 1906-7, and 1907-8. The prospects for an abundant harvest in the forthcoming season, 1908-9, are excellent, and it appears probable that an aggregate of considerably more than 60,000,000 bushels will be reaped.

(iii.) *Average Yields.* In the next table will be found the average yield of wheat per acre in each of the last seven seasons :—

YIELD OF WHEAT PER ACRE, 1901-2 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'nsland. | Sth. Aust. | W. Aust. | Tasmania. | C'wealth. |
|---------|----------|-----------|-----------|------------|----------|-----------|-----------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. |
| 1901-2 | 10.64 | 6.91 | 19.40 | 4.60 | 10.10 | 21.86 | 7.54 |
| 1902-3 | 1.24 | 1.29 | 3.28 | 3.64 | 10.67 | 21.44 | 2.40 |
| 1903-4 | 17.51 | 14.49 | 17.65 | 7.72 | 13.60 | 15.53 | 13.32 |
| 1904-5 | 9.27 | 9.26 | 14.24 | 6.53 | 11.06 | 18.40 | 8.70 |
| 1905-6 | 10.69 | 11.31 | 9.53 | 11.46 | 11.83 | 18.79 | 11.19 |
| 1906-7 | 11.69 | 11.13 | 9.68 | 10.19 | 11.02 | 19.86 | 11.06 |
| 1907-8 | 6.59 | 6.55 | 8.41 | 10.91 | 10.46 | 20.92 | 8.29 |

As the above figures shew, there were remarkable variations in the average yields, chiefly of course due to the vagaries of the season. The season 1902-3 was an especially lean one in all the States except Western Australia and Tasmania. A large proportion of the area sown with wheat had to be ploughed in or else fed off by stock, but the comparatively heavy yields in the succeeding year shew that this additional cultivation was very beneficial.

(iv.) *Relation to Population.* During the past seven seasons the Commonwealth's production of wheat per head of population has varied between 3½ bushels in 1902-3 and 19 bushels in 1903-4. The State in which wheat growing occupies the most important position relatively to population is South Australia, which in 1905-6 had a yield which averaged 53½ bushels per head. Queensland is the State in which the average production of wheat per head is least. Particulars for the past seven seasons are as follows:—

AUSTRALIAN WHEAT PRODUCTION PER 1000 OF POPULATION.

| Season. | N.S.W. | Victoria. | Queensland. | South Aust. | West Aust. | Tasmania. | C'wealth. |
|---------|----------|-----------|-------------|-------------|------------|-----------|-----------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. |
| 1901-2 | 10,860 | 10,073 | 3,375 | 22,082 | 5,077 | 5,591 | 10,168 |
| 1902-3 | 1,140 | 2,122 | 12 | 17,433 | 4,787 | 5,041 | 3,210 |
| 1903-4 | 19,311 | 23,598 | 4,753 | 36,099 | 8,476 | 4,324 | 19,005 |
| 1904-5 | 11,415 | 17,469 | 4,141 | 32,530 | 8,509 | 4,435 | 13,793 |
| 1905-6 | 14,065 | 19,314 | 2,163 | 53,760 | 9,222 | 4,332 | 17,058 |
| 1906-7 | 14,448 | 18,481 | 2,081 | 45,127 | 10,614 | 3,642 | 16,180 |
| 1907-8 | 5,905 | 9,767 | 1,287 | 49,616 | 11,154 | 3,592 | 10,746 |

2. *Australian and Foreign Wheat Yields.*—In the next table will be found a statement of the average return per acre in the principal wheat-growing countries of the world. The figures are, wherever possible, based on the average of the latest available quinquennial periods.

The average for New Zealand for the past five years was 31.50 bushels per acre, but the acreage sown is comparatively small, amounting in 1907 to only 193,000 acres.

AVERAGE YIELDS OF WHEAT IN VARIOUS COUNTRIES.

| Country. | Average yield in bushels per acre. | Country. | Average yield in bushels per acre. |
|------------------------------|------------------------------------|---------------------------|------------------------------------|
| Belgium | 34.02 | Japan | 15.20 |
| Holland | 31.61 | United States | 13.47 |
| New Zealand... .. | 31.50 | Spain | 13.00 |
| United Kingdom | 30.77 | Italy | 12.75 |
| Germany | 28.39 | Servia | 12.28 |
| Sweden | 24.32 | Caucasia (Russia) | 11.22 |
| Saskatchewan (Canada) | 21.26 | India | 11.21 |
| Manitoba (Canada) | 20.66 | Argentine Republic | 10.58 |
| Ontario (Canada) | 20.54 | Australia | 10.50 |
| France | 19.54 | Siberia (Russia) | 10.49 |
| Austria | 18.09 | Russia in Europe | 10.06 |
| Hungary | 17.89 | Algeria | 9.00 |
| Rumania | 17.70 | Uruguay | 8.32 |

3. **Wheat Crop of the World.**—According to “Beerbohm’s,” the wheat crop of the world during the last five years was as follows:—

THE WHEAT CROP OF THE WORLD.¹

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. | Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------|---------|---------|---------|---------|---------|--------------|---------|---------|---------|---------|---------|
| | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| | Qrs. | Qrs. | Qrs. | Qrs. | Qrs. | | Qrs. | Qrs. | Qrs. | Qrs. | Qrs. |
| Austria ... | 5,750 | 6,800 | 6,750 | 7,200 | 6,250 | Algeria ... | 4,250 | 3,550 | 2,700 | 4,250 | 3,890 |
| Hungary ... | 21,700 | 18,300 | 21,500 | 25,900 | 16,250 | Tunis ... | 1,200 | 1,200 | 750 | 1,250 | 1,250 |
| Belgium ... | 1,500 | 1,750 | 1,500 | 1,750 | 1,850 | Argentine R | 15,500 | 19,500 | 17,500 | 19,100 | 22,000 |
| Bulgaria ... | 4,500 | 5,250 | 3,750 | 5,150 | 2,500 | Australasia | 10,100 | 7,900 | 9,500 | 10,000 | 6,000 |
| Denmark... | 500 | 510 | 500 | 500 | 500 | Asia Minor | 4,250 | 4,500 | 5,000 | 5,000 | 3,500 |
| France ... | 45,600 | 37,400 | 42,000 | 41,000 | 46,000 | Canada ... | 9,750 | 8,500 | 13,500 | 15,400 | 10,500 |
| Germany... | 16,500 | 17,500 | 17,000 | 18,000 | 15,935 | Cape Colony | 500 | 550 | 500 | 500 | 500 |
| Greece ... | 750 | 750 | 750 | 750 | 750 | Chile ... | 1,700 | 2,000 | 1,550 | 1,750 | 1,800 |
| Holland ... | 750 | 750 | 500 | 600 | 650 | Egypt ... | 1,500 | 1,500 | 1,500 | 1,500 | 1,000 |
| Italy ... | 22,000 | 21,000 | 20,000 | 20,000 | 20,000 | India ... | 36,750 | 44,700 | 35,000 | 40,000 | 39,000 |
| Portugal ... | 650 | 350 | 500 | 500 | 400 | Persia ... | 3,000 | 3,000 | 3,500 | 3,500 | 4,000 |
| Rumania... | 9,400 | 6,750 | 12,750 | 13,600 | 5,350 | Syria ... | 3,000 | 2,500 | 2,500 | 3,000 | 3,000 |
| Russia ... | 76,500 | 82,000 | 79,000 | 63,300 | 63,675 | U.S.A. ... | 77,000 | 66,000 | 85,000 | 91,000 | 79,000 |
| Servia ... | 1,500 | 1,500 | 1,400 | 1,850 | 1,500 | Uruguay ... | 1,000 | 750 | 575 | 800 | 1,500 |
| Spain ... | 12,500 | 12,000 | 11,000 | 17,600 | 12,000 | Mexico ... | 1,550 | 1,100 | 750 | 1,000 | 1,000 |
| Sweden ... | 670 | 700 | 620 | 750 | 725 | Japan ... | 8,125 | 11,600 | 10,000 | 12,000 | 10,000 |
| Switzerland | 500 | 450 | 500 | 500 | 500 | Total out of | | | | | |
| Turkey (E) | 5,000 | 4,500 | 5,000 | 5,000 | 4,500 | Europe ... | 179,175 | 178,850 | 189,825 | 210,050 | 187,940 |
| United Kd. | 6,000 | 4,750 | 7,550 | 7,580 | 7,000 | Grand total | 411,445 | 401,860 | 422,485 | 441,580 | 394,275 |
| Total for Europe | 232,270 | 223,010 | 232,660 | 231,530 | 206,335 | | | | | | |

1. In quarters of 480lb. Add 000 to the figures in columns for number of quarters.

The figures given for Australasia in the above total are considerably overstated for the year 1906, the actual return being about 8,964,000 quarters as against 10,000,000 quoted in the table. Taking the average of the five years the yield of wheat in the Commonwealth constitutes about 2 per cent. of the world’s production.

4. **Prices of Wheat.**—(i.) *British Wheat.* As the United Kingdom is the largest importer of wheat, the price of the cereal in the British markets naturally has a considerable influence on the price in the local markets, especially since the position of Australia as an exporting country became assured. The table below gives the average price per

Imperial quarter of British wheat at various intervals since 1861, together with the highest and lowest weekly average:—

PRICES OF BRITISH WHEAT, 1861 to 1907.

| Year. | Average for Year. | | Highest Weekly Average. | | Lowest Weekly Average. | | Year. | Average for Year. | | Highest Weekly Average. | | Lowest Weekly Average. | |
|----------|-------------------|----|-------------------------|----|------------------------|----|----------|-------------------|----|-------------------------|----|------------------------|----|
| | s. | d. | s. | d. | s. | d. | | s. | d. | s. | d. | s. | d. |
| 1861 ... | 55 | 4 | 61 | 6 | 50 | 0 | 1903 ... | 26 | 9 | 30 | 3 | 24 | 11 |
| 1871 ... | 56 | 8 | 60 | 0 | 52 | 6 | 1904 ... | 28 | 4 | 30 | 6 | 26 | 3 |
| 1881 ... | 45 | 4 | 55 | 2 | 40 | 9 | 1905 ... | 29 | 8 | 32 | 3 | 26 | 8 |
| 1891 ... | 37 | 0 | 41 | 8 | 32 | 3 | 1906 ... | 28 | 3 | 30 | 9 | 25 | 9 |
| 1901 ... | 26 | 9 | 27 | 8 | 25 | 8 | 1907 ... | 30 | 7 | 36 | 3 | 26 | 0 |
| 1902 ... | 28 | 1 | 31 | 8 | 24 | 10 | | | | | | | |

(ii.) *Australian and other Wheat.* Generally speaking, Australian wheat shows a grain of bright clear texture, rich in gluten, and of fine milling quality. Its excellence is attested by the high price which it realises in the Home markets. The statement below shews, for the last four years, the average value per Imperial quarter of the wheat imported into the United Kingdom from the chief producing countries:—

AVERAGE PRICE OF FOREIGN WHEAT IMPORTED INTO THE UNITED KINGDOM,

1904 TO 1907.

| Country. | Average Price per Imperial Quarter. | | | | Country. | Average Price per Imperial Quarter. | | | | | | | |
|--------------------|-------------------------------------|-------|-------|-------|----------|-------------------------------------|-------|-------|--------------------|----|----|----|---|
| | 1904. | 1905. | 1906. | 1907. | | 1904. | 1905. | 1906. | 1907. | | | | |
| | s. d. | s. d. | s. d. | s. d. | | s. d. | s. d. | s. d. | s. d. | | | | |
| Argentina ... | 30 | 1 | 30 | 7 | 29 | 10 | 31 | 6 | United States— | | | | |
| Bulgaria ... | 28 | 7 | 29 | 4 | 27 | 5 | 25 | 9 | Atlantic Coast ... | 30 | 7 | 31 | 9 |
| Chile ... | 30 | 8 | 30 | 4 | ... | ... | 36 | 8 | Pacific Coast ... | 30 | 9 | 31 | 7 |
| Germany ... | 31 | 2 | 31 | 11 | 27 | 7 | 25 | 0 | Canada ... | 30 | 10 | 31 | 8 |
| Rumania ... | 29 | 5 | 31 | 0 | 28 | 11 | 30 | 2 | British India ... | 28 | 7 | 29 | 8 |
| Russia— | | | | | | | | | New Zealand ... | 29 | 7 | 30 | 1 |
| Northern Ports ... | 30 | 9 | 31 | 2 | 28 | 6 | 32 | 11 | Australia ... | 31 | 4 | 32 | 4 |
| Southern Ports ... | 30 | 9 | 31 | 9 | 29 | 10 | 32 | 8 | | | | | |

In the next table will be found a statement of the export prices of Australian wheat during each of the last seven years:—

EXPORT PRICES OF AUSTRALIAN WHEAT, 1901 to 1907.

| Year | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------|---------|---------|---------|---------|---------|---------|---------|
| Price per bushel | 2s. 9d. | 3s. 1d. | 3s. 1d. | 3s. 2d. | 3s. 5d. | 3s. 3d. | 3s. 4d. |

The export prices here shewn are the average declared values for the successive years at the several ports of shipment in the Commonwealth.

5. **Imports and Exports of Wheat and Flour.**—(i.) *Quantities.* The table hereunder shews the imports, exports, and net exports of wheat and flour during each year of the period 1901-7. For the sake of convenience flour has been expressed at its equivalent in wheat, one ton of flour being taken as equal to 50 bushels of grain:—

**IMPORTS AND EXPORTS OF WHEAT AND FLOUR, COMMONWEALTH,
1901 TO 1907.**

| Year. | Imports. | | | Exports. | | | Net Exports. |
|-------|-----------|-------------------------|------------|------------|-------------------------|------------|--------------------------|
| | Wheat. | Flour. | Total. | Wheat. | Flour. | Total. | |
| | Bushels. | Eq. Bshls. ¹ | Bushels. | Bushels. | Eq. Bshls. ¹ | Bushels. | Bushels. |
| 1901 | 22,992 | 302,550 | 325,542 | 20,260,058 | 4,840,700 | 25,100,758 | 24,775,216 |
| 1902 | 176,133 | 553,650 | 729,783 | 8,999,282 | 1,659,150 | 10,658,432 | 9,928,649 |
| 1903 | 9,114,490 | 3,493,450 | 12,607,940 | 1,530,143 | 402,500 | 1,932,643 | -10,675,297 ² |
| 1904 | 618 | 58,200 | 58,818 | 33,346,066 | 5,247,500 | 38,593,566 | 38,534,748 |
| 1905 | 258 | 55,550 | 55,808 | 24,648,182 | 7,715,850 | 32,364,032 | 32,308,224 |
| 1906 | 745 | 43,800 | 44,545 | 30,262,335 | 8,344,050 | 38,606,385 | 38,561,840 |
| 1907 | 2,010 | 18,700 | 20,710 | 28,784,130 | 8,171,900 | 36,956,030 | 36,935,320 |

1. Equivalent in bushels of wheat. 2. — Denotes net imports.

As shewn above, the Commonwealth imports of wheat and flour during 1903 were equivalent to 12,607,940 bushels of wheat. This importation was necessitated by the failure of the crop in the preceding season. The principal sources of supply were the United States, which contributed 5,000,000 bushels of wheat and 56,000 tons of flour, the Argentine which sent 3,000,000 bushels of wheat and 2000 tons of flour, and Canada which sent 57,000 bushels of wheat in addition to 11,000 tons of flour. Wheat to the extent of 134,000 bushels was obtained from India, while Brazil furnished 122,000 bushels.

(ii.) *Destination of Exported Breadstuffs.* In the next two tables will be found the principal countries to which the Commonwealth exported wheat and flour during each year of the period 1901-7. The countries are as shewn in the Australian Customs returns, but owing to the fact that wheat ships are frequently instructed to call for orders at various African ports, some of these African countries cannot be properly considered as the ultimate destination of the whole of the wheat said to be exported to them.

EXPORTS OF WHEAT FROM THE COMMONWEALTH, 1901 to 1907.

| Country to which Exported. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|-------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. |
| United Kingdom ... | 10,821,975 | 7,343,019 | 1,134,466 | 27,176,293 | 16,910,925 | 20,138,149 | 21,487,355 |
| Cape of Good Hope ... | 2,963,215 | 1,329,352 | 254,232 | 4,632,456 | 3,763,657 | 4,017,233 | 3,734,272 |
| Ceylon ... | 1,857 | 372 | ... | 41 | 18 | 164,358 | 4,835 |
| Fiji ... | ... | ... | 12 | 44 | 173 | 138 | 285 |
| Hong Kong ... | ... | ... | ... | 41,215 | 27,412 | 2,903 | 65,493 |
| India ... | 297,159 | 245 | ... | ... | 233 | 437,317 | 31,573 |
| Malta ... | 5,002 | 8,253 | ... | ... | 16,800 | ... | ... |
| Mauritius ... | 12,406 | 1,917 | ... | ... | ... | ... | ... |
| Natal ... | 232,456 | 32,553 | 43,486 | 381,602 | 238,797 | 145,995 | 422,433 |
| New Zealand ... | 16 | 56 | 176 | 512 | 138 | 548 | 36,340 |
| Other British Possessions | 642 | 1,984 | 76 | 396 | 541 | 132 | 207 |
| Austria ... | ... | ... | ... | ... | ... | 9,375 | ... |
| Belgium ... | 801,229 | 122,285 | ... | 97,713 | 24,810 | 42,442 | 57,448 |
| Canary Islands ... | ... | ... | ... | ... | 323,882 | 327,255 | ... |
| Chile ... | 1,102,395 | ... | ... | 138,567 | 382,377 | 2,212,410 | 568,675 |
| China ... | ... | ... | ... | 4,148 | ... | 10,487 | 599,222 |
| Denmark ... | ... | 50,237 | ... | ... | ... | ... | ... |
| Egypt ... | 258,521 | ... | ... | 16,972 | ... | 161,470 | 179,132 |
| France ... | 126,868 | 49,397 | ... | 62,377 | 106,328 | 27,803 | 19,103 |
| Germany ... | 150,448 | ... | ... | 15,969 | 15,507 | 59,960 | 33,278 |
| Guam ... | 3,059,855 | ... | 13,311 | ... | 57,523 | ... | ... |
| Italy ... | 43,821 | ... | ... | ... | 11,040 | 208,528 | 7,773 |
| Japan ... | 83,937 | 402 | 11,082 | 300,705 | 565,133 | 40,710 | 313,419 |
| Java ... | 50 | 37 | 23 | 59 | 45 | 100 | 9 |
| New Caledonia ... | 115,088 | 58,774 | 952 | 69,555 | 128,893 | 60,563 | 4,153 |
| Peru ... | 162,796 | ... | 71,743 | 401,919 | 1,213,877 | 1,244,112 | 1,204,897 |
| Philippine Islands ... | ... | ... | ... | ... | 3 | 833 | ... |
| Portuguese East Africa ... | ... | ... | ... | 3,773 | 29,635 | 4,353 | 12,210 |
| South Sea Islands ... | 286 | 309 | 336 | 28 | 135 | 237 | 340 |
| Spain ... | ... | ... | ... | ... | 809,785 | 864,367 | ... |
| Sweden ... | ... | ... | ... | ... | ... | 80,414 | ... |
| Other Foreign Countries | 36 | 90 | 218 | 1,702 | 515 | 143 | 1,743 |
| Total ... | 20,260,058 | 8,999,282 | 1,530,143 | 33,346,066 | 24,648,182 | 30,262,335 | 28,784,130 |

The exports of flour during the same period and the principal countries of destination were as follows:—

EXPORTS OF FLOUR FROM THE COMMONWEALTH, 1901 to 1907.

| Country to which Exported. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------|--------|--------|-------|---------|---------|---------|---------|
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| United Kingdom ... | 27,625 | 822 | 105 | 52,114 | 54,019 | 26,796 | 7,181 |
| Cape of Good Hope ... | 13,919 | 9,465 | 7 | 9,031 | 17,212 | 13,722 | 7,944 |
| Ceylon ... | 3,516 | 840 | 153 | 1,035 | 2,105 | 2,408 | 2,345 |
| Fiji ... | 830 | 738 | 384 | 1,084 | 1,093 | 1,168 | 1,362 |
| Hong Kong ... | 725 | 191 | 23 | 419 | 10,269 | 20,455 | 25,332 |
| India ... | 172 | 29 | 2 | 1 | 23 | 228 | 67 |
| Malta ... | 50 | ... | ... | ... | ... | ... | ... |
| Mauritius ... | 6,302 | 1,130 | 140 | 791 | 1,681 | 5,471 | 2,579 |
| Natal ... | 21,338 | 7,704 | 1,306 | 19,642 | 23,910 | 24,358 | 20,264 |
| New Zealand ... | 33 | 712 | 118 | 521 | 441 | 1,032 | 6,427 |
| Straits Settlements ... | 2,050 | 520 | 104 | 842 | 7,650 | 17,608 | 18,133 |
| Other British Possessions ... | 337 | 506 | 340 | 259 | 546 | 290 | 402 |
| Belgium ... | 15 | ... | ... | ... | 497 | ... | ... |
| Canary Islands ... | ... | 5 | ... | ... | 2 | ... | ... |
| Celebes ... | 15 | 10 | ... | 50 | 302 | 622 | 532 |
| Chile... .. | 5 | 2 | 45 | 20 | 8 | 1,979 | ... |
| China ... | 186 | ... | 10 | 31 | 414 | 586 | 6,479 |
| Cochin China ... | ... | ... | ... | 75 | 10 | 100 | 384 |
| Denmark ... | ... | ... | ... | 1 | ... | ... | ... |
| Egypt ... | ... | ... | ... | ... | ... | 33 | 16 |
| France ... | ... | ... | ... | 1 | 7 | ... | ... |
| Germany ... | 90 | ... | ... | 298 | 8 | 28 | 25 |
| Guam ... | 105 | 44 | 44 | 36 | 4,925 | 496 | ... |
| Japan ... | 1,117 | 10 | 270 | 730 | 1,555 | 4,793 | 491 |
| Java ... | 13,170 | 6,501 | 2,323 | 8,360 | 11,890 | 15,021 | 17,320 |
| Molucca Islands ... | 19 | 16 | 3 | 58 | 42 | 195 | 111 |
| New Caledonia ... | 2,994 | 2,784 | 1,979 | 2,974 | 3,030 | 3,613 | 4,293 |
| Peru ... | ... | ... | 2 | 1 | 4 | ... | ... |
| Philippine Islands ... | 620 | 400 | 32 | 1,163 | 6,442 | 12,126 | 16,947 |
| Portuguese East Africa ... | 524 | 155 | ... | 3,193 | 4,410 | 11,139 | 22,678 |
| Réunion ... | 290 | ... | ... | 1,350 | 500 | 700 | ... |
| South Sea Islands ... | 552 | 516 | 512 | 553 | 716 | 836 | 953 |
| Sumatra ... | ... | 1 | ... | 53 | 260 | 685 | 732 |
| Other Foreign Countries ... | 215 | 82 | 148 | 262 | 316 | 443 | 331 |
| Total... .. | 96,814 | 33,183 | 8,050 | 104,948 | 154,317 | 166,881 | 163,438 |

(iii.) *Interstate Trade in Wheat.* A fairly considerable trade in wheat is carried on between the several States, the net result for 1907 shewing New South Wales, South Australia, and Western Australia as exporters, and Tasmania, Victoria, and Queensland as importers. The total quantity of wheat consigned from the several States to other States of the Commonwealth during 1907 was 2,316,490 bushels. Details for the year are as follows:—

INTERSTATE TRADE IN WHEAT, 1907.

| State. | Imports from other States of the C'wealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports.* | |
|---------------------|--|---------|--|---------|--------------------------|----------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Bushels. | £ | Bushels. | £ | Bushels. | £ |
| New South Wales | 250,785 | 61,336 | 1,457,650 | 214,465 | 1,206,865 | 153,129 |
| Victoria ... | 890,325 | 131,297 | 272,798 | 45,599 | —617,527 | —85,698 |
| Queensland ... | 499,271 | 78,973 | 6,892 | 1,117 | —492,379 | —77,856 |
| South Australia :.. | 7,760 | 1,158 | 510,865 | 106,893 | 503,105 | 105,735 |
| Western Australia | 6,837 | 1,185 | 67,052 | 15,947 | 60,215 | 14,762 |
| Tasmania ... | 661,512 | 110,359 | 1,233 | 287 | —660,279 | —110,072 |

* — Denotes net imports.

(iv.) *Interstate Trade in Flour.* In the case of flour the importing States are Queensland, Western Australia, and Tasmania, while the exporters are South Australia,

New South Wales, and Victoria. The following table contains particulars for the year 1907:—

INTERSTATE TRADE IN FLOUR, 1907.

| State. | Imports from other States of the C'wealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports.* | |
|---------------------|--|---------|--|---------|--------------------------|----------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Tons. | £ | Tons. | £ | Tons. | £ |
| New South Wales | 13,860 | 121,250 | 22,465 | 188,668 | 8,605 | 67,418 |
| Victoria ... | 1,635 | 13,715 | 6,908 | 55,597 | 5,273 | 41,882 |
| Queensland ... | 30,942 | 253,550 | 8 | 83 | —30,934 | —253,467 |
| South Australia ... | 307 | 2,504 | 21,540 | 179,714 | 21,233 | 177,210 |
| Western Australia | 3,013 | 24,334 | 27 | 215 | —2,986 | —24,119 |
| Tasmania ... | 1,332 | 10,328 | 141 | 1,404 | —1,191 | —8,924 |

* — Denotes net imports.

(v.) *Interstate Trade in Bran, Pollard, and Sharps.* Bran, pollard, and sharps, collectively known as wheat offal, represent about 30 per cent. of the total wheat ground, and figure somewhat largely in the interstate exports of South Australia and the interstate imports of Western Australia for 1907. Queensland is also an interstate importer, and Victoria and New South Wales exporters. In the case of Tasmania it is peculiar that this State appears for 1907 as an importer of wheat and flour and an exporter of wheat offal. Details for 1907 are as follows:—

INTERSTATE TRADE IN BRAN, POLLARD, AND SHARPS, 1907.

| State. | Imports from other States of the C'wealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports.* | |
|-------------------|--|--------|--|--------|--------------------------|---------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Bushels. | £ | Bushels. | £ | Bushels. | £ |
| New South Wales | 467,990 | 25,701 | 816,565 | 32,497 | 348,635 | 6,796 |
| Victoria ... | 267,090 | 12,015 | 479,975 | 21,197 | 212,885 | 9,182 |
| Queensland ... | 254,650 | 10,231 | 350 | 16 | —254,300 | —10,215 |
| South Australia | 87,310 | 3,992 | 983,545 | 47,178 | 896,235 | 43,186 |
| Western Australia | 1,208,855 | 50,035 | ... | ... | —1,208,855 | —50,035 |
| Tasmania ... | 50,135 | 1,876 | 55,535 | 2,962 | 5,400 | 1,086 |

* — Denotes net imports.

(vi.) *Exports of Wheat and Flour.* From the foregoing returns it will be seen that the quantity of Australian wheat exported in the form of flour does not represent, on the average, more than 20 per cent. of the total wheat export of the Commonwealth. One cause of this, and probably the chief one, is the fact that Australian wheats are in considerable demand with the English millers for mixing purposes, while the Australian flour has not, up to the present, received that consideration from the English bakers which its admitted qualities undoubtedly merit. Steps which have recently been taken for bringing these qualities before the British public may possibly have the effect of increasing the proportion of wheat exported in the form of flour.

A point of some interest in connection with the export of wheat, and one which bears also on the proportions of wheat and flour exports just referred to, is that concerning the quantity of phosphoric acid which this export has the effect of removing from the Commonwealth, and the necessity which exists for the return to the soil of this substance in some form.

According to an estimate furnished by the chemist to the New South Wales Department of Agriculture (F. B. Guthrie, Esq., F.C.S., etc.), the proportions of milled product from a bushel (60 lbs.) of wheat are, approximately, 42 lbs. of flour, 9 lbs. of bran, and 9 lbs. of pollard, while the percentage of phosphoric acid contained in these products is as follows:—

| | |
|----------------|--|
| Flour | 0.32 per cent., or 0.13 lbs. per bushel. |
| Bran | 3.00 " 0.27 " |
| Pollard | 0.90 " 0.08 " |

The total amount of phosphoric acid contained in a bushel of wheat is, therefore, 0.48 lbs., of which 0.13 lbs. is in the flour and 0.35 lbs. in the offal.

During the past seven years the net exports from the Commonwealth of wheat and its milled products have amounted to 138,512,950 bushels of wheat, 637,113 tons of flour, and 3,036,183 bushels of bran, pollard, and sharps. On the basis of the figures quoted above this export would contain no less than 71,736,000 lbs. of phosphoric acid, the value of which as a fertiliser would be about £448,350.

6. Value of the Wheat Crop.—The estimated value of the wheat crop in each State and in the Commonwealth during the season 1907-8 is shewn below:—

VALUE OF THE WHEAT CROP, 1907-8.

| State. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'w'lh. |
|------------------------|-------------|-------------|-----------|-------------|-----------|-----------|-------------|
| Aggregate value | £ 2,021,920 | £ 2,596,625 | £ 121,367 | £ 3,747,380 | £ 621,709 | £ 136,899 | £ 9,245,900 |
| Value per acre | £1/9/1 | £1/8/1 | £1/9/5 | £2/2/8 | £2/4/6 | £4/8/11 | £1/14/4 |

§ 5. Oats.

1. Progress of Cultivation.—Oats comes next in importance to wheat amongst the cereal crops cultivated last season, but while wheat grown for grain accounted for more than 57½ per cent., oats represented less than 7 per cent. of the area under crop in the Commonwealth. The progress of cultivation since 1860 is shewn in the table hereunder, and more fully in the graphs hereinafter:—

CULTIVATION OF OATS, 1860-1 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'nsland. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|---------------|--------|-----------|-----------|----------|----------|--------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1860-1 | 6,535 | 86,337 | 7 | 2,273 | 507 | 30,303 | 125,962 |
| 1865-6 | 10,939 | 102,817 | 348 | 2,872 | 1,232 | 28,538 | 146,746 |
| 1870-1 | 10,683 | 149,309 | 122 | 6,188 | 2,095 | 30,946 | 199,343 |
| 1875-6 | 18,856 | 124,100 | 114 | 3,640 | 1,256 | 32,556 | 180,522 |
| 1880-1 | 17,923 | 134,089 | 116 | 4,355 | 1,319 | 19,853 | 177,655 |
| 1885-6 | 14,117 | 215,994 | 208 | 7,871 | 1,596 | 29,247 | 269,033 |
| 1890-1 | 14,102 | 221,048 | 411 | 12,475 | 1,934 | 20,740 | 270,710 |
| 1895-6 | 23,750 | 255,503 | 922 | 34,098 | 1,880 | 32,699 | 348,852 |
| 1900-1 | 29,383 | 362,689 | 385 | 27,988 | 4,790 | 45,073 | 470,338 |
| 1901-2 | 32,245 | 329,150 | 1,535 | 34,660 | 9,751 | 54,039 | 461,430 |
| 1902-3 | 42,992 | 433,489 | 78 | 50,296 | 10,334 | 55,058 | 592,247 |
| 1903-4 | 51,621 | 433,638 | 2,808 | 57,558 | 14,568 | 63,663 | 620,856 |
| 1904-5 | 40,471 | 344,019 | 643 | 50,630 | 13,864 | 43,630 | 493,317 |
| 1905-6 | 38,543 | 312,052 | 533 | 56,950 | 15,713 | 42,776 | 466,567 |
| 1906-7 | 56,431 | 380,493 | 1,236 | 57,000 | 28,363 | 58,320 | 581,843 |
| 1907-8 | 75,762 | 398,749 | 715 | 66,297 | 46,687 | 54,625 | 642,815 |

2. **Total Yield.**—The total oats crop of the several States for the same period is furnished in the following table:—

COMMONWEALTH OATS CROP, 1860-1 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|------------|-----------|------------|----------|----------|----------|-----------|------------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. |
| 1860-1 ... | 98,814 | 2,633,693 | 91 | 52,989 | 11,925 | 926,418 | 3,723,930 |
| 1865-6 ... | 116,005 | 2,279,468 | 4,524 | 42,642 | 19,005 | 688,740 | 3,150,384 |
| 1870-1 ... | 119,365 | 2,237,010 | 1,586 | 88,383 | 39,974 | 691,250 | 3,177,568 |
| 1875-6 ... | 352,966 | 2,719,795 | 1,482 | 60,749 | 18,840 | 827,043 | 3,980,875 |
| 1880-1 ... | 356,121 | 2,362,425 | 2,081 | 50,070 | 21,104 | 439,446 | 3,231,247 |
| 1885-6 ... | 279,107 | 4,692,303 | 1,006 | 97,201 | 23,142 | 784,325 | 5,877,084 |
| 1890-1 ... | 256,659 | 4,919,325 | 8,967 | 116,229 | 38,791 | 519,395 | 5,859,366 |
| 1895-6 ... | 374,196 | 2,880,045 | 10,887 | 184,012 | 19,326 | 906,934 | 4,375,400 |
| 1900-1 ... | 593,548 | 9,582,332 | 7,853 | 366,229 | 86,433 | 1,406,913 | 12,043,310 |
| 1901-2 ... | 687,179 | 6,724,900 | 42,208 | 469,254 | 163,654 | 1,702,659 | 9,789,854 |
| 1902-3 ... | 351,758 | 4,402,982 | 520 | 620,823 | 167,882 | 1,752,745 | 7,296,710 |
| 1903-4 ... | 1,252,156 | 13,434,952 | 70,713 | 902,936 | 258,503 | 1,621,950 | 17,541,210 |
| 1904-5 ... | 652,646 | 6,203,429 | 15,137 | 555,696 | 226,318 | 1,178,819 | 8,832,045 |
| 1905-6 ... | 883,081 | 7,232,425 | 5,858 | 869,146 | 283,987 | 1,200,024 | 10,474,521 |
| 1906-7 ... | 1,404,554 | 8,845,654 | 28,884 | 896,166 | 457,155 | 1,979,574 | 13,611,987 |
| 1907-8 ... | 851,776 | 5,201,408 | 9,900 | 874,388 | 721,753 | 1,526,002 | 9,185,227 |

The principal oat-growing State of the Commonwealth is Victoria. During the past eight seasons it has produced nearly 70 per cent. of the total quantity of oats grown in the Commonwealth; Tasmania, New South Wales, and South Australia come next in order of importance. In Western Australia, the highest production of oats for any season was that of 1907-8, while Victoria, South Australia, and Queensland experienced a maximum yield in 1903-4, and Tasmania and New South Wales, in 1906-7. For the Commonwealth as a whole the record yield was that of 17,541,210 bushels in the season 1903-4.

3. **Average Yield.**—The average yield per acre of the oats crop of the Commonwealth varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield for the past seven seasons are given in the succeeding table:—

AVERAGE YIELD OF OATS PER ACRE.

| Season. | N.S.W. | Victoria. | Q'nsland. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|------------|----------|-----------|-----------|----------|----------|-----------|-----------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. |
| 1901-2 ... | 21.31 | 20.43 | 27.50 | 13.54 | 16.78 | 31.48 | 21.22 |
| 1902-3 ... | 8.18 | 10.16 | 6.67 | 12.34 | 16.25 | 31.83 | 12.32 |
| 1903-4 ... | 24.26 | 30.98 | 25.18 | 15.69 | 17.74 | 26.74 | 28.25 |
| 1904-5 ... | 16.13 | 18.03 | 23.54 | 10.98 | 16.32 | 26.93 | 17.90 |
| 1905-6 ... | 22.91 | 23.18 | 10.99 | 15.26 | 18.07 | 28.05 | 22.45 |
| 1906-7 ... | 24.89 | 23.25 | 23.37 | 15.72 | 16.12 | 33.94 | 23.39 |
| 1907-8 ... | 11.24 | 13.04 | 13.85 | 13.19 | 15.47 | 27.94 | 14.29 |

It will be seen that as in the case of the wheat crop, the smallest average yield per acre for the Commonwealth for the period was that experienced in the season 1902-3, while the largest was that of the succeeding season.

4. **Relation to Population.**—The State in which oats production occupies the most important position in relation to population is Tasmania, the yield for that State representing for 1907-8 about eight and a-half bushels per head, as compared with two and

a-quarter bushels per head for the Commonwealth as a whole. Particulars for the past seven seasons are furnished in the succeeding table:—

OATS PRODUCTION PER 1000 OF POPULATION.

| Season. | N.S.W. | Victoria. | Q'land. | Sth. Aust. | W. Aust. | Tas. | C'wealth. |
|---------|----------|-----------|----------|------------|----------|----------|-----------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. |
| 1901-2 | 504 | 5,586 | 84 | 1,293 | 868 | 9,879 | 2,581 |
| 1902-3 | 253 | 3,637 | 1 | 1,703 | 815 | 10,076 | 1,892 |
| 1903-4 | 885 | 11,114 | 138 | 2,467 | 1,168 | 9,139 | 4,496 |
| 1904-5 | 453 | 5,138 | 29 | 1,503 | 957 | 6,593 | 2,234 |
| 1905-6 | 599 | 5,965 | 11 | 2,320 | 1,135 | 6,695 | 2,608 |
| 1906-7 | 930 | 7,228 | 54 | 2,359 | 1,759 | 11,068 | 3,332 |
| 1907-8 | 549 | 4,198 | 18 | 2,267 | 2,752 | 8,508 | 2,210 |

5. **Value of Oats Crop.**—The estimated value of the oats crop of the several States of the Commonwealth for the season 1907-8 is as follows:—

VALUE OF OATS CROP, 1907-8.

| State. | N.S.W. | Victoria. | Q'sland. | Sth Aust. | West Aus. | Tas. | C'wealth. |
|---------------------|----------|-----------|----------|-----------|-----------|----------|------------|
| Aggregate Value ... | £138,410 | £823,560 | £1,485 | £131,158 | £132,321 | £228,900 | £1,455,834 |
| Value per Acre ... | £1/16/1 | £2/1/4 | £2/1/6 | £1/19/7 | £2/16/8 | £4/3/10 | £2/5/4 |

6. **Imports and Exports.**—The production of oats in the Commonwealth has not yet reached such a stage as to admit of a regular export trade in this cereal; in fact in certain years the imports have exceeded the exports, notably in 1903 and 1906. The quantities and values of oats imported into and exported from the Commonwealth during the seven years 1901 to 1907 are given hereunder:—

COMMONWEALTH IMPORTS AND EXPORTS OF OATS, 1901 to 1907.

| Year. | Imports. | | Exports. | | Net Exports.* | |
|-------|-----------|---------|-----------|---------|---------------|----------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Bushels. | £ | Bushels. | £ | Bushels. | £ |
| 1901 | 1,526,599 | 153,674 | 2,874,334 | 285,347 | 1,347,735 | 131,673 |
| 1902 | 1,037,596 | 157,981 | 1,427,620 | 181,450 | 390,024 | 23,469 |
| 1903 | 2,066,365 | 229,395 | 184,823 | 23,305 | -1,881,542 | -206,090 |
| 1904 | 185,652 | 15,921 | 1,713,578 | 115,659 | 1,527,926 | 99,738 |
| 1905 | 392,400 | 45,460 | 882,740 | 83,479 | 490,340 | 38,019 |
| 1906 | 215,330 | 27,445 | 154,063 | 18,559 | -61,267 | -8,886 |
| 1907 | 21,945 | 2,850 | 533,485 | 60,204 | 511,540 | 57,354 |

* — Signifies net imports.

The principal country from which the Commonwealth imports of oats have been obtained is the Dominion of New Zealand, while the principal countries to which oats were exported during the period under review were the South African colonies in the earlier, and New Zealand in the later years.

7. **Oatmeal, etc.**—Importations of oatmeal, etc., into the Commonwealth take place principally from the United Kingdom, the United States and Canada. The

total importations of groats, oatmeal, wheatmeal, and rolled oats during 1907 amounted to 1,314,483 lbs., and represented a value of £20,237.

8. **Comparisons with other Countries.**—A comparison of the Australian production of oats with that of the leading oat-producing countries of the world, is furnished in the following table:—

PRODUCTION OF OATS IN VARIOUS COUNTRIES, 1906.

| Country. | Quantity of Oats produced. | Country. | Quantity of Oats produced. | Country. | Quantity of Oats produced. |
|--------------------|----------------------------|---------------------|----------------------------|---------------------------|----------------------------|
| | Bushels. | | Bushels. | | Bushels. |
| United States ... | 935,571,424 | Austria ... | 130,886,880 | Saskatchewan (Canada) ... | 23,965,528 |
| Russian Empire ... | 583,152,920 | Ontario (Can.) ... | 108,341,456 | Netherlands ... | 18,230,432 |
| Germany ... | 476,481,008 | Sweden ... | 66,509,576 | Australia ... | 13,611,987 |
| France ... | 250,466,816 | Manit'ba (Can.) ... | 50,692,976 | New Zealand ... | 11,201,789 |
| United Kingdom ... | 174,872,608 | Rumania ... | 25,356,336 | | |

9. **Comparison of Yields.**—The average yield per acre of oats in Australia is a somewhat low one compared with the results obtained in other countries, where the cultivation of this cereal is more extensively carried on. Arranging the countries contained in the foregoing table according to the magnitude of the average yield of oats for a period of five years, the results are as follows:—

AVERAGE YIELD OF OATS PER ACRE.

| Country. | Average per Acre. | Country. | Average per Acre. | Country. | Average per Acre. |
|-----------------------|-------------------|---------------------------|-------------------|----------------------|-------------------|
| | Bushels. | | Bushels. | | Bushels. |
| Netherlands ... | 52.29 | Germany ... | 38.06 | France ... | 27.17 |
| Manitoba (Canada) ... | 41.71 | Saskatchewan (Canada) ... | 37.06 | Austria ... | 22.90 |
| New Zealand ... | 41.27 | United States ... | 30.00 | Rumania ... | 21.97 |
| United Kingdom ... | 41.17 | Sweden ... | 27.72 | Australia ... | 20.97 |
| Ontario (Canada) ... | 39.03 | | | Russia ... | 16.32 |

10. **Interstate Trade.**—Particulars concerning the interstate trade in oats for the year 1907 are contained in the following table. These show that Victoria and Tasmania are the largest exporters, while New South Wales and Western Australia are the largest importers of oats:—

INTERSTATE TRADE IN OATS, 1907.

| State. | Imports from Other States of the Commonwealth. | | Exports to Other States of the Commonwealth. | | Net Interstate Exports.* | |
|-----------------------|--|---------|--|---------|--------------------------|----------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Bushels. | £ | Bushels. | £ | Bushels. | £ |
| New South Wales ... | 827,590 | 112,018 | 18,925 | 2,343 | —808,665 | —109,675 |
| Victoria ... | 147,128 | 20,274 | 603,620 | 71,099 | 456,492 | 50,825 |
| Queensland ... | 101,276 | 12,772 | 223 | 27 | —101,053 | —12,745 |
| South Australia ... | 4,278 | 531 | 211,288 | 25,282 | 207,010 | 24,751 |
| Western Australia ... | 618,655 | 72,015 | 113 | 12 | —618,542 | —72,003 |
| Tasmania ... | 11,302 | 1,229 | 876,060 | 120,076 | 864,758 | 118,847 |

* — Signifies net imports.

11. **Price of Oats.**—The average wholesale prices of oats in the Melbourne market for each of the years 1903 to 1907 are given in the following table:—

AVERAGE WHOLESALE PRICE OF OATS PER BUSHEL.

| Particulars. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------|-------|-------|-------|-------|-------|
| | s. d. | s. d. | s. d. | s. d. | s. d. |
| Algerian Oats ... | 2 5 | 1 3 | 1 10 | 2 4 | 2 5 |
| White Oats ... | 2 8 | 1 11 | 2 7 | 2 8 | 2 6 |

§ 6. Maize.

1. **States Growing Maize.**—The only States in which maize is at all extensively grown for grain are those of New South Wales and Queensland, the area so cropped in these two States during the season 1907-8 being 288,099 acres, or more than 96 per cent. of the total for the Commonwealth. Of the balance, Victoria contributed 10,844 acres, South Australia 549 acres, and Western Australia 87 acres. The climate of Tasmania prevents the growing of maize for grain in that State. In South Australia prior to 1903 particulars concerning maize had not been specially asked for on the form used in the collection of agricultural statistics. In all the States maize is grown to a greater or less extent as green forage, particularly in connection with the dairying industry.

2. **Area under Maize.**—The area devoted to the growing of maize for grain in each State, with the total for the Commonwealth, from 1875 onwards, is as follows:—

AREA UNDER MAIZE, STATES AND COMMONWEALTH, 1875-6 to 1907-8.

| Season. | N.S.W. | Victoria. | Queensland. | South Aust. | West Aust. | C'wealth. |
|---------|---------|-----------|-------------|-------------|------------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1875-6 | 117,582 | 2,346 | 38,711 | ... | 60 | 158,699 |
| 1880-1 | 127,196 | 1,769 | 44,109 | ... | 32 | 173,106 |
| 1885-6 | 132,709 | 4,530 | 71,741 | ... | 120 | 209,100 |
| 1890-1 | 191,152 | 10,357 | 99,400 | ... | 81 | 300,990 |
| 1895-6 | 211,104 | 7,186 | 100,481 | ... | 23 | 318,794 |
| 1900-1 | 206,051 | 9,389 | 127,974 | ... | 91 | 343,505 |
| 1901-2 | 167,333 | 10,020 | 116,983 | ... | 513 | 294,849 |
| 1902-3 | 202,437 | 10,906 | 89,923 | ... | 109 | 303,375 |
| 1903-4 | 226,834 | 11,810 | 133,099 | ... | 163 | 371,906 |
| 1904-5 | 193,614 | 11,394 | 119,171 | ... | 86 | 324,265 |
| 1905-6 | 189,353 | 11,785 | 113,720 | ... | 43 | 314,901 |
| 1906-7 | 174,115 | 11,559 | 139,806 | ... | 101 | 325,581 |
| 1907-8 | 160,980 | 10,844 | 127,119 | 549 | 87 | 299,579 |

The actual fluctuations from year to year are shown more fully on the graph hereinafter.

The total area under maize in the Commonwealth exceeded 300,000 acres for the first time in the season 1890-1, and although it has fluctuated somewhat since then, it may be considered to have remained practically stationary at about that figure. The greatest divergence occurred in 1903-4, when a record total of 371,906 acres was harvested. The area cropped with maize appears to be on the decline in New South Wales, the maximum cropping being that of 1903-4, while each subsequent season furnished a smaller area than the preceding. In Queensland, on the other hand, the area appears

to be on the increase, and that for 1906-7 was the highest ever attained in that State. The area under maize in New South Wales in 1907-8 represents about $6\frac{1}{2}$ per cent. of that State's total area under crop, while in the case of Queensland the maize crop amounts to nearly 24 per cent. of the total.

3. **Total Yield.**—Notwithstanding the fact that the area under maize in the Commonwealth for 1906-7 fell considerably short of that for some of the previous seasons, the 1906-7 production established a record, the total attained being 10,172,154 bushels. Only once previously had a total exceeding ten millions been reached, viz., in the season 1897-8, when 10,036,083 bushels were harvested. For the season 1907-8, both the area under maize and also the average yield per acre were lower in all the States than for the preceding season, the consequence being that the total production reached only 8,137,745 bushels. Particulars concerning the yield from 1875 onwards are as hereunder :—

MAIZE CROP, STATES AND COMMONWEALTH, 1875-6 to 1907-8.

| Season. | N.S.W. | Victoria. | Queensland. | S. Aust. | W. Aust. | C'wealth. |
|------------|-----------|-----------|-------------|----------|----------|------------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. |
| 1875-6 ... | 3,410,517 | 37,177 | 1,006,486 | ... | 1,200 | 4,455,380 |
| 1880-1 ... | 4,518,897 | 49,299 | 1,409,607 | ... | 896 | 5,978,699 |
| 1885-6 ... | 4,336,163 | 181,240 | 1,574,294 | ... | 1,417 | 6,093,114 |
| 1890-1 ... | 5,713,205 | 574,083 | 2,373,803 | ... | 1,526 | 8,662,617 |
| 1895-6 ... | 5,687,030 | 351,891 | 2,391,378 | ... | 600 | 8,430,899 |
| 1900-1 ... | 6,292,745 | 604,180 | 2,456,647 | ... | 1,399 | 9,354,971 |
| 1901-2 ... | 3,844,993 | 615,472 | 2,569,118 | ... | 5,203 | 7,034,786 |
| 1902-3 ... | 3,049,269 | 750,524 | 1,033,329 | ... | 2,110 | 4,835,232 |
| 1903-4 ... | 6,836,740 | 904,239 | 1,923,623 | ... | 2,487 | 9,667,089 |
| 1904-5 ... | 4,951,132 | 623,736 | 2,542,766 | ... | 896 | 8,118,530 |
| 1905-6 ... | 5,539,750 | 641,216 | 2,164,674 | ... | 428 | 8,346,068 |
| 1906-7 ... | 5,763,000 | 704,961 | 3,703,274 | ... | 919 | 10,172,154 |
| 1907-8 ... | 4,527,852 | 508,761 | 3,093,789 | *6,263 | 1,080 | 8,137,745 |

* Particulars for previous years not available.

4. **Average Yield.**—In the following table particulars are given of the average yield per acre of the maize crops of the several States for the seven seasons, 1901-2 to 1907-8 :—

AVERAGE YIELD OF MAIZE PER ACRE, COMMONWEALTH AND STATES,

1901-2 TO 1907-8.

| Season. | N.S.W. | Victoria. | Queensland | S. Aust. | W. Aust. | C'wealth. |
|------------|----------|-----------|------------|----------|----------|-----------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. |
| 1901-2 ... | 22.98 | 61.42 | 21.96 | ... | 10.16 | 23.86 |
| 1902-3 ... | 15.06 | 68.32 | 11.49 | ... | 19.36 | 15.94 |
| 1903-4 ... | 30.14 | 76.57 | 14.45 | ... | 15.26 | 25.99 |
| 1904-5 ... | 25.57 | 54.74 | 21.34 | ... | 10.42 | 25.04 |
| 1905-6 ... | 29.26 | 54.41 | 19.04 | ... | 9.95 | 26.50 |
| 1906-7 ... | 33.10 | 60.99 | 26.49 | ... | 9.10 | 31.24 |
| 1907-8 ... | 28.13 | 46.92 | 24.34 | *11.41 | 12.41 | 27.16 |

* Particulars for previous years not available.

The extraordinarily high average yield obtained in Victoria is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts that are peculiarly suited to the production of this grain. The yield in New South Wales is appreciably higher than that obtained in Queensland.

5. **Value of Maize Crop.**—The value of the Commonwealth maize crop for the season 1907-8 has been estimated at £1,518,577, made up as follows:—

VALUE OF MAIZE CROP, 1907-8.

| State | New South Wales. | Victoria. | Queensland. | S. Aust. | Western Australia. | Commonwealth. |
|-----------------|------------------|-----------|-------------|----------|--------------------|---------------|
| Aggregate value | £1,018,770 | £111,820 | £386,724 | £939 | £324 | £1,518,577 |
| Value per acre | £6 6/7 | £10 6/3 | £3 0/10 | £1 14/2 | £3 14/6 | £5 1/5 |

6. **Relation to Population.**—During the past seven seasons the Commonwealth production of maize has ranged between 1½ bushels per head of population in 1902-3 and 2½ bushels per head in 1906-7. The production in Queensland, the State in which the maize yield per head of population is highest, ranged during the same period between 2 bushels per head in 1902-3 and 7 bushels per head in 1906-7. Details for the several States for the seven seasons are as follows:—

MAIZE PRODUCTION PER 1000 OF POPULATION.

| Season. | N.S.W. | Victoria. | Qsld. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|---------------|----------|-----------|----------|----------|----------|---------|-----------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels | Bushels. |
| 1901-2 | 2,820 | 511 | 5,125 | ... | 28 | ... | 1,855 |
| 1902-3 | 2,192 | 620 | 2,027 | ... | 10 | ... | 1,254 |
| 1903-4 | 4,830 | 748 | 3,753 | ... | 11 | ... | 2,478 |
| 1904-5 | 3,433 | 517 | 4,898 | ... | 4 | ... | 2,053 |
| 1905-6 | 3,757 | 529 | 4,117 | ... | 2 | ... | 2,078 |
| 1906-7 | 3,816 | 576 | 6,951 | ... | 4 | ... | 2,490 |
| 1907-8 | 2,920 | 411 | 5,740 | *16 | 4 | ... | 1,958 |

* Particulars for previous years not available.

7. **Imports and Exports.**—Except in the years 1902 and 1903, when, owing to the severe drought experienced in Australia, many of the maize crops failed, the Commonwealth trade in maize has been practically insignificant. In the former of the years mentioned nearly two million, and in the latter considerably more than a million bushels were imported. Details of the imports and exports for the past seven years are as follows:—

COMMONWEALTH IMPORTS AND EXPORTS OF MAIZE, 1901 to 1907.

| Year. | Imports. | | Exports. | | Net Exports.* | |
|-------------|-----------|---------|-----------|--------|---------------|---------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Bushels. | £ | Bushels. | £ | Bushels. | £ |
| 1901 | 188,423 | 24,764 | 533 | 75 | 187,890 | 24,689 |
| 1902 | 1,910,587 | 319,859 | 1,450 | 351 | 1,909,137 | 319,508 |
| 1903 | 1,346,702 | 204,484 | 17,296 | 2,749 | 1,329,406 | 201,735 |
| 1904 | 35,096 | 3,018 | 48,109 | 5,421 | 13,013 | 2,403 |
| 1905 | 9,785 | 1,922 | 7,033 | 985 | 2,752 | 937 |
| 1906 | 24,727 | 3,243 | 63,168 | 9,256 | 38,441 | 6,013 |
| 1907 | 31,327 | 5,541 | 43,429 | 6,220 | 12,102 | 679 |

* — Signifies net imports.

The principal countries to which maize has been exported from the Commonwealth are South Africa, New Zealand, and China, while the principal countries from which importations have taken place are the Argentine Republic, New Zealand, the United States, and the New Hebrides.

8. **Prepared Maize.**—A fairly large quantity of maizena and corn-flour is imported annually into the Commonwealth, the principal countries of supply being the United Kingdom and the United States. During the year 1907 these importations amounted to 1,851,582 lbs., and represented a value of £19,667.

9. **Maize-growing in other Countries.**—The world's production of maize for the year 1906 has been estimated at 3,520,000,000 bushels, and of this amount the United States of America was responsible for 2,840,000,000, or slightly more than 80 per cent. The other leading maize-producing countries of the world are Mexico, the Argentine Republic, India, Italy, and Austria-Hungary.

10. **Interstate Trade in Maize.**—In addition to being the largest producer of maize in the Commonwealth, New South Wales is also the largest importer from the other States. Particulars of the Interstate imports and exports are contained in the table given hereunder:—

INTERSTATE TRADE IN MAIZE, 1907.

| State. | Imports from other States of the Commonwealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports.* | |
|-----------------------|--|--------------|--|------------|--------------------------|---------------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| New South Wales ... | Bushels. 898,942 | £ 117,901 | Bushels. 20,956 | £ 3,564 | Bushels. —877,986 | £ —114,337 |
| Victoria ... | 6,103 | 1,033 | 91,327 | 17,315 | 85,224 | 16,282 |
| Queensland ... | 13,828 | 2,975 | 839,559 | 105,977 | 825,731 | 108,002 |
| South Australia ... | 21,184 | 3,045 | 34 | 7 | —21,150 | —3,038 |
| Western Australia ... | 8,591 | 1,354 | ... | ... | —8,591 | —1,354 |
| Tasmania ... | 3,228 | 555 | ... | ... | —3,228 | —555 |

* — Signifies net imports.

11. **Price of Maize.**—The average wholesale price of maize in the Sydney market is given in the following table for each of the years 1901 to 1907:—

AVERAGE PRICE OF MAIZE PER BUSHEL.

| Year | ... | ... | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------------|-----|-----|-------|-------|-------|-------|-------|-------|-------|
| | | | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. |
| Average price per bushel | | | 2 9 | 4 10 | 4 1 | 2 4 | 3 3 | 3 0 | 3 2 |

§ 7. Barley.

1. **Area under Barley.**—The barley crop of the Commonwealth is one which has fluctuated very considerably as regards area, but the net result of these fluctuations has left it in practically the same position as that which it occupied twenty-six years ago. The area harvested for the season 1907-8 is certainly higher than for any previous season since 1894-5, when a total of 133,175 acres was reaped, but the area under barley in 1905-6 was less and that in 1906-7 only slightly more than was harvested at as early a period as 1880-1. The principal barley-growing State of the Commonwealth is Victoria,

which, for the season 1907-8, accounted for nearly 50 per cent. of the Commonwealth area devoted to this crop. The figures here given relate to the areas harvested for grain; only small areas are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this sub-section. The area under barley for grain in the several States from 1875 onwards is shewn in the following table:—

COMMONWEALTH AREA UNDER BARLEY 1875-6 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'nsland. | Sth. Aust. | W. Aust. | Tasmania. | C'wealth. |
|---------|--------|-----------|-----------|------------|----------|-----------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1875-6 | 4,817 | 31,568 | 613 | 13,969 | 5,014 | 5,939 | 61,920 |
| 1880-1 | 8,056 | 68,630 | 1,499 | 13,074 | 6,363 | 3,297 | 105,919 |
| 1885-6 | 5,298 | 74,112 | 406 | 16,493 | 6,178 | 6,833 | 109,320 |
| 1890-1 | 4,937 | 87,751 | 584 | 14,472 | 5,322 | 4,376 | 117,442 |
| 1895-6 | 7,590 | 78,438 | 721 | 14,184 | 1,932 | 6,178 | 109,043 |
| 1900-1 | 9,435 | 58,853 | 7,533 | 15,352 | 2,536 | 4,502 | 98,211 |
| 1901-2 | 6,023 | 32,423 | 11,775 | 15,517 | 2,669 | 6,104 | 74,511 |
| 1902-3 | 4,557 | 37,716 | 430 | 21,493 | 3,783 | 8,281 | 76,260 |
| 1903-4 | 10,057 | 47,760 | 22,881 | 28,697 | 3,609 | 8,084 | 121,088 |
| 1904-5 | 14,930 | 46,089 | 17,387 | 23,904 | 3,251 | 7,646 | 113,207 |
| 1905-6 | 9,519 | 40,938 | 5,201 | 26,250 | 3,665 | 5,372 | 90,945 |
| 1906-7 | 7,979 | 52,816 | 8,601 | 28,122 | 3,590 | 5,328 | 106,436 |
| 1907-8 | 11,890 | 63,074 | 6,943 | 37,321 | 6,019 | 5,852 | 131,099 |

The only State in which a comparatively consistent increase in the area devoted to this crop is in evidence is that of South Australia.

2. **Malting and other Barley.**—In recent years the statistics of all the States, except South Australia, have distinguished between "malting" and "other" barley and for 1907-8 this distinction has also been made in South Australia. Particulars for the Commonwealth are as follows:—

AREA UNDER MALTING AND OTHER BARLEY, COMMONWEALTH, 1907-8.

| State ... | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|------------------|--------|-----------|---------|----------|----------|--------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Malting barley | 9,932 | 41,940 | 5,846 | 23,199 | 3,162 | 5,079 | 89,157 |
| Other barley ... | 1,958 | 21,134 | 1,097 | 14,122 | 2,857 | 774 | 41,942 |
| Total ... | 11,890 | 63,074 | 6,943 | 37,321 | 6,019 | 5,852 | 131,099 |

It will be seen that taking the Commonwealth as a whole, about 68 per cent. of the area devoted to this grain is cropped with malting barley. The proportion varies considerably in the several States.

3. **Total Yield.**—The total production of barley in the Commonwealth for the season 1907-8 was 1,991,652 bushels, and fell short of the preceding season's harvest by 256,780 bushels. An increased output occurred in South Australia, Western Australia, and Tasmania, but extensive shortages were experienced in New South Wales, Victoria, and Queensland. Particulars concerning the yields of the several States from 1875 onwards are as follows:—

COMMONWEALTH BARLEY CROP, 1875-6 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'sland. | Sth. Aust. | West Aust. | Tasmania. | C'wealth. |
|---------|----------|-----------|----------|------------|------------|-----------|-----------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. |
| 1875-6 | 98,576 | 700,665 | 12,260 | 197,315 | 70,196 | 165,357 | 1,244,369 |
| 1880-1 | 163,395 | 1,068,830 | 31,433 | 151,886 | 89,082 | 169,156 | 1,673,782 |
| 1885-6 | 85,606 | 1,302,854 | 9,826 | 218,334 | 89,581 | 176,466 | 1,882,667 |
| 1890-1 | 81,383 | 1,571,599 | 12,673 | 175,583 | 85,451 | 99,842 | 2,026,531 |
| 1895-6 | 96,119 | 715,592 | 7,756 | 140,391 | 18,691 | 138,833 | 1,117,382 |
| 1900-1 | 114,228 | 1,215,478 | 127,144 | 211,102 | 29,189 | 116,911 | 1,814,052 |
| 1901-2 | 103,361 | 693,851 | 277,037 | 243,362 | 34,723 | 167,485 | 1,519,819 |
| 1902-3 | 18,233 | 561,144 | 3,595 | 317,155 | 46,255 | 201,133 | 1,147,515 |
| 1903-4 | 174,147 | 1,218,003 | 510,557 | 487,920 | 53,227 | 212,459 | 2,656,313 |
| 1904-5 | 266,781 | 874,099 | 331,772 | 346,718 | 37,332 | 163,194 | 2,019,896 |
| 1905-6 | 111,266 | 1,062,139 | 61,816 | 505,916 | 49,497 | 106,042 | 1,896,676 |
| 1906-7 | 152,739 | 1,255,442 | 158,283 | 491,246 | 48,827 | 141,895 | 2,248,432 |
| 1907-8 | 75,148 | 1,059,295 | 64,831 | 566,937 | 76,205 | 149,186 | 1,991,652 |

4. **Value of Barley Crop.**—The estimated value of the total barley crop of the Commonwealth for the season 1907-8 was £467,294, the extent to which the several States have contributed to this total being shewn in the following table:—

VALUE OF BARLEY CROP.

| State | N.S.W. | Victoria. | Q'sland. | Sth. Aust. | Wst. Aus. | Tas. | C'wealth. |
|-----------------|---------|-----------|----------|------------|-----------|---------|-----------|
| Total value ... | £18,040 | £257,400 | £16,221 | £130,241 | £15,836 | £29,556 | £467,294 |
| Value per acre | £1/10/4 | £4/1/7 | £2/6/9 | £3/9/10 | £2/12/7 | £5/1/0 | £3/11/3 |

5. **Relation to Population.**—During the seven seasons, 1901-2 to 1907-8, the quantity of barley produced in the Commonwealth has averaged about half a bushel per head of population. Details for the period are as follows:—

BARLEY PRODUCTION PER 1000 OF POPULATION.

| Season. | N.S.W. | Victoria. | Qsld. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|---------------|----------|-----------|---------|----------|----------|---------|-----------|
| | Bushels. | Bushels. | Bushels | Bushels. | Bushels | Bushels | Bushels. |
| 1901-2 | 76 | 576 | 553 | 671 | 184 | 972 | 401 |
| 1902-3 | 13 | 464 | 7 | 870 | 225 | 1,156 | 298 |
| 1903-4 | 123 | 1,008 | 996 | 1,333 | 240 | 1,197 | 681 |
| 1904-5 | 184 | 724 | 639 | 938 | 158 | 913 | 511 |
| 1905-6 | 75 | 876 | 118 | 1,350 | 198 | 517 | 469 |
| 1906-7 | 101 | 1,026 | 297 | 1,293 | 188 | 793 | 550 |
| 1907-8 | 48 | 855 | 120 | 1,470 | 291 | 832 | 479 |

6. **Imports and Exports Oversea.**—The Commonwealth oversea trade in barley is not extensive, and in most years the imports exceed the exports. In 1902 and 1903 somewhat extensive importations of barley from the United States and New Zealand took place, owing to the shortage in local supply resulting from the severe drought of that period. In 1904, the record crop of the season 1903-4 furnished the material for a heavy exportation to Japan, the total exported thither during that year being 551,825 bushels. Particulars of the Commonwealth oversea imports and exports of barley for the seven years 1901 to 1907 are contained in the following table:—

OVERSEA IMPORTS AND EXPORTS OF BARLEY, 1901 to 1907.

| Year. | Imports. | | Exports. | | Net Exports.* | |
|----------|-----------|---------|-----------|--------|---------------|----------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Bushels. | £ | Bushels. | £ | Bushels. | £ |
| 1901 ... | 55,508 | 7,208 | 17,474 | 1,942 | — 38,034 | — 5,266 |
| 1902 ... | 686,478 | 123,194 | 8,267 | 1,465 | —678,211 | —121,729 |
| 1903 ... | 731,494 | 136,997 | 14,286 | 5,561 | —717,208 | —131,436 |
| 1904 ... | 246,908 | 39,012 | 568,640 | 65,950 | 321,732 | 26,938 |
| 1905 ... | 124,850 | 19,672 | 244,456 | 28,618 | 119,606 | 8,946 |
| 1906 ... | 210,586 | 34,468 | 3,150 | 562 | —207,436 | — 33,906 |
| 1907 ... | 232,154 | 53,802 | 38,350 | 5,533 | —193,804 | — 48,269 |

* — Signifies net imports.

It will be seen that in only two years out of the seven dealt with have the Commonwealth exports of barley exceeded the imports, viz., in 1904 and 1905. During the seven years the total importations amounted to 2,237,978 bushels, valued at £414,353, and the total exports to 894,923 bushels, valued at £109,631, giving a net importation of 1,393,355 bushels in quantity and £304,722 in value.

In addition to the above, which relates to the unprepared grain, there is a small importation into the Commonwealth of pearl and Scotch barley, mainly from the United Kingdom, Germany, and China. The total imported during 1907 amounted to only 14,579 lbs. in weight, with a value of £302.

7. Oversea Imports and Exports of Malt.—The importations of malt into the Commonwealth are fairly extensive, the bulk of the supply being obtained from the United Kingdom and Germany, principally from the former. Details of imports and exports for the past seven years are given hereunder :—

OVERSEA IMPORTS AND EXPORTS OF MALT, 1901 to 1907.

| Year. | Imports. | | Exports. | | Net Imports. | |
|----------|-----------|---------|-----------|--------|--------------|---------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Bushels. | £ | Bushels. | £ | Bushels. | £ |
| 1901 ... | 516,135 | 140,615 | ... | ... | 516,135 | 140,615 |
| 1902 ... | 293,637 | 91,410 | ... | ... | 293,637 | 91,410 |
| 1903 ... | 175,212 | 54,532 | 198 | 76 | 175,014 | 54,456 |
| 1904 ... | 189,500 | 57,571 | 787 | 313 | 188,713 | 57,258 |
| 1905 ... | 170,712 | 53,247 | 41 | 14 | 170,671 | 53,233 |
| 1906 ... | 172,433 | 55,714 | 539 | 85 | 171,894 | 55,629 |
| 1907 ... | 153,415 | 48,262 | 1,087 | 371 | 152,328 | 47,891 |

8. Interstate Trade in Barley and Malt.—Victoria, as well as being the largest grower of barley in the Commonwealth, is also the largest importer from the other States, the supply being chiefly obtained from South Australia, the principal interstate exporter during 1907. In the cases of both pearl barley and malt New South Wales was the largest importer from the other States and Victoria the largest exporter.

INTERSTATE TRADE IN BARLEY AND MALT, 1907.

BARLEY (UNPREPARED).

| State. | Imports from Other States of the Commonwealth. | | Exports to Other States of the Commonwealth. | | Net Interstate Exports.* | |
|---------------------|--|--------|--|--------|--------------------------|--------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Bushels. | £ | Bushels. | £ | Bushels. | £ |
| New South Wales | 57,192 | 7,434 | 10,086 | 2,028 | 47,106 | 5,406 |
| Victoria ... | 186,662 | 38,384 | 46,290 | 7,181 | 140,372 | 31,203 |
| Queensland ... | 398 | 63 | 19,900 | 2,726 | 19,502 | 2,663 |
| South Australia ... | 474 | 122 | 199,322 | 38,821 | 198,848 | 38,699 |
| Western Australia | 27,768 | 4,454 | 134 | 111 | 27,634 | 4,343 |
| Tasmania ... | 8,606 | 1,447 | 5,368 | 1,037 | 3,238 | 410 |

BARLEY (PEARL AND SCOTCH).

| | Lbs. | £ | Lbs. | £ | Lbs. | £ |
|---------------------|---------|-------|---------|-------|---------|-------|
| New South Wales | 268,535 | 1,281 | 14,470 | 86 | 254,065 | 1,195 |
| Victoria ... | 12,376 | 67 | 687,477 | 3,499 | 675,101 | 3,432 |
| Queensland ... | 44,026 | 252 | ... | ... | 44,026 | 252 |
| South Australia ... | 178,100 | 970 | 16,750 | 154 | 161,350 | 816 |
| Western Australia | 175,119 | 922 | ... | ... | 175,119 | 922 |
| Tasmania ... | 40,541 | 247 | ... | ... | 40,541 | 247 |

MALT.

| | Bushels. | £ | Bushels. | £ | Bushels. | £ |
|---------------------|----------|---------|----------|---------|----------|---------|
| New South Wales | 368,817 | 105,912 | 4,433 | 1,624 | 364,384 | 104,288 |
| Victoria ... | 867 | 284 | 466,200 | 134,956 | 465,333 | 134,672 |
| Queensland ... | 57,753 | 16,518 | 782 | 216 | 56,971 | 16,302 |
| South Australia ... | 1,835 | 545 | 42,762 | 12,615 | 40,927 | 12,070 |
| Western Australia | 83,975 | 25,855 | ... | ... | 83,975 | 25,855 |
| Tasmania ... | 930 | 297 | ... | ... | 930 | 297 |

* — Signifies net imports.

9. Comparison with other Countries.—In comparison with the barley production of other countries of the world that of Australia appears very small indeed. Particulars for some of the leading countries for the year 1906 are as follows, the Australian figures being added for the sake of comparison:—

PRODUCTION OF BARLEY IN VARIOUS COUNTRIES, 1906.

| Country. | Production of Barley. | Country. | Production of Barley. |
|--------------------|-----------------------|----------------------|-----------------------|
| | Bushels. | | Bushels. |
| Russian Empire ... | 298,622,880 | Rumania ... | 32,502,616 |
| United States ... | 173,477,424 | Ontario (Canada) ... | 25,253,008 |
| Germany ... | 137,146,496 | Manitoba ... | 17,532,552 |
| Austria ... | 69,406,840 | Sweden ... | 14,490,024 |
| United Kingdom ... | 67,479,688 | Netherlands ... | 3,159,384 |
| France ... | 35,859,920 | Australia ... | 2,248,432 |

10. **Average Yield.**—The average yield per acre of barley varies considerably in the different States, being highest in Tasmania and Victoria, and lowest in Western Australia and Queensland. Details for each State for the seven seasons 1901-2 to 1907-8 are given in the following table :—

AVERAGE YIELD PER ACRE OF BARLEY, 1901-2 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'sland. | Sth. Aust. | West Aust. | Tas. | C'wealth. |
|------------|----------|-----------|----------|------------|------------|----------|-----------|
| | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. | Bushels. |
| 1901-2 ... | 17.16 | 21.40 | 23.53 | 15.68 | 13.01 | 27.44 | 20.40 |
| 1902-3 ... | 4.00 | 14.88 | 8.36 | 14.76 | 12.23 | 24.29 | 15.05 |
| 1903-4 ... | 17.32 | 25.50 | 22.31 | 17.00 | 14.75 | 26.28 | 21.94 |
| 1904-5 ... | 17.87 | 18.97 | 19.08 | 14.50 | 11.48 | 21.94 | 17.84 |
| 1905-6 ... | 11.69 | 25.95 | 11.89 | 19.27 | 13.51 | 19.74 | 20.86 |
| 1906-7 ... | 19.14 | 23.77 | 18.40 | 17.47 | 13.60 | 26.63 | 21.12 |
| 1907-8 ... | 6.32 | 16.79 | 9.34 | 15.19 | 12.66 | 25.49 | 15.19 |

11. **Price of Barley.**—The average prices of barley in the Melbourne market during each of the years 1903 to 1907 are given in the following table :—

AVERAGE PRICE OF BARLEY PER BUSHEL 1903 to 1907.

| Particulars. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------|-------|-------|-------|-------|-------|
| | s. d. | s. d. | s. d. | s. d. | s. d. |
| Malting barley ... | 3 11 | 3 6 | 4 0 | 4 5 | 4 8 |
| Cape barley ... | 3 1 | 1 9 | 2 7 | 2 4 | 2 8 |

§ 8. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the only grain and pulse crops at all extensively grown in the Commonwealth are beans, peas and rye. The total area under the two former for the season 1907-8 was 34,824 acres, giving a total yield of 597,251 bushels, or an average of 17.15 bushels per acre. The States in which the greatest area is devoted to beans and peas are Victoria, Tasmania and South Australia. The total area under rye in the Commonwealth during the season 1907-8 was 8560 acres, yielding 100,072 bushels, and giving an average of 11.69 bushels per acre. More than half the rye grown during the season was produced in New South Wales. In addition to these grain crops a small area of rice has for some years past been cultivated in Queensland. The results obtained, however, have not offered sufficient inducement to growers to continue this crop, and the total area devoted to it has declined from 863 acres in 1898-9 to 14 acres in 1907-8. Should rice-growing ever be seriously taken up in Australia, it is probable that large tracts of country in the northern parts of Western Australia and in the Northern Territory will be found well suited to its cultivation.

§ 9. Potatoes.

1. **Area.**—The principal potato-growing State of the Commonwealth, as regards area is Victoria, Tasmania ranking second and New South Wales third. The area devoted to this crop in the Commonwealth, which has fluctuated somewhat, reached its highest point in the season 1906-7, with a total of 146,681 acres, while the area under potatoes for 1907-8 fell but little short of the 1906-7 record. The largest areas planted

in any previous seasons were 139,397 acres in 1899-1900, and 127,592 acres in 1894-5. The area under potatoes in each State from 1890 onwards is given hereunder :—

COMMONWEALTH AREA UNDER POTATOES, 1890-1 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'nsland. | Sth. Aust. | W. Aust. | Tasmania. | C'wealth. |
|---------|--------|-----------|-----------|------------|----------|-----------|-----------|
| | Acres. | Acres | Acres. | Acres | Acres. | Acres. | Acres. |
| 1890-1 | 19,406 | 53,818 | 6,270 | 6,626 | 511 | 20,133 | 106,764 |
| 1895-6 | 24,722 | 43,895 | 9,240 | 6,448 | 668 | 19,247 | 104,220 |
| 1900-1 | 29,408 | 38,477 | 11,060 | 6,628 | 1,794 | 23,068 | 110,435 |
| 1901-2 | 26,158 | 40,058 | 9,948 | 6,248 | 1,829 | 25,444 | 109,685 |
| 1902-3 | 19,444 | 49,706 | 2,899 | 7,763 | 2,084 | 34,625 | 116,521 |
| 1903-4 | 20,851 | 48,930 | 6,732 | 8,616 | 1,823 | 29,160 | 116,112 |
| 1904-5 | 23,855 | 46,912 | 9,771 | 8,315 | 1,906 | 25,948 | 116,707 |
| 1905-6 | 26,374 | 44,670 | 7,170 | 9,540 | 2,145 | 28,634 | 118,533 |
| 1906-7 | 36,815 | 55,372 | 8,031 | 9,894 | 2,264 | 34,305 | 146,681 |
| 1907-8 | 31,917 | 54,149 | 7,889 | 9,062 | 1,854 | 38,640 | 143,511 |

2. **Total Yield.**—Although only second amongst the States in respect of area under potatoes, Tasmania has, in several recent years, occupied the leading position in point of production. For the season 1907-8, Tasmania's production represented nearly 39 per cent. of the total for the Commonwealth, Victoria and New South Wales coming next in order. The total Commonwealth production for the season 1906-7, viz., 507,153 tons, was the highest ever attained, the yield which most nearly approached it being 449,383 tons in 1903-4. Details as to production in the several States during the period from 1890 onwards are as follows :—

COMMONWEALTH PRODUCTION OF POTATOES, 1890-1 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'nsland. | Sth. Aust. | W. Aust. | Tasmania. | C'wealth. |
|---------|---------|-----------|-----------|------------|----------|-----------|-----------|
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons |
| 1890-1 | 52,791 | 204,155 | 13,112 | 23,963 | 1,900 | 73,153 | 369,079 |
| 1895-6 | 56,179 | 117,238 | 19,027 | 18,412 | 2,290 | 81,423 | 294,569 |
| 1900-1 | 63,253 | 123,126 | 20,014 | 14,566 | 4,836 | 93,862 | 319,657 |
| 1901-2 | 39,146 | 125,474 | 22,402 | 15,059 | 5,739 | 114,704 | 322,524 |
| 1902-3 | 30,732 | 168,759 | 3,257 | 28,312 | 6,488 | 163,518 | 401,066 |
| 1903-4 | 56,743 | 167,736 | 17,649 | 31,415 | 4,542 | 171,298 | 449,383 |
| 1904-5 | 48,754 | 92,872 | 19,231 | 19,521 | 5,614 | 110,547 | 296,539 |
| 1905-6 | 49,889 | 115,352 | 11,308 | 20,328 | 6,297 | 64,606 | 267,780 |
| 1906-7 | 114,856 | 166,839 | 15,830 | 22,277 | 5,028 | 182,323 | 507,153 |
| 1907-8 | 55,882 | 135,110 | 13,177 | 20,263 | 5,671 | 145,483 | 375,586 |

3. **Average Yield.**—The suitability of the soil, climate, and general conditions of Tasmania for potato growing is evidenced by the high yields per acre which are almost invariably obtained in the island State. The lowest average yield is that obtained in Queensland. Particulars for each State for the seven seasons 1901-2 to 1907-8 are given hereunder :—

**AVERAGE YIELD OF POTATOES, COMMONWEALTH AND STATES,
1901-2 TO 1907-8.**

| Season. | N.S.W. | Victoria. | Queensl'd. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|---------|--------|-----------|------------|----------|----------|-----------|-----------|
| | Tons. | Tons | Tons. | Tons. | Tons. | Tons. | Tons. |
| 1901-2 | 1.50 | 3.13 | 2.25 | 2.41 | 3.14 | 4.51 | 2.94 |
| 1902-3 | 1.58 | 3.40 | 1.12 | 3.65 | 3.11 | 4.72 | 3.44 |
| 1903-4 | 2.72 | 3.43 | 2.62 | 3.65 | 2.49 | 5.87 | 3.87 |
| 1904-5 | 2.04 | 1.98 | 1.97 | 2.35 | 2.95 | 4.26 | 2.54 |
| 1905-6 | 1.89 | 2.58 | 1.58 | 2.13 | 2.94 | 2.26 | 2.26 |
| 1906-7 | 3.12 | 3.01 | 1.97 | 2.25 | 2.22 | 5.31 | 3.46 |
| 1907-8 | 1.75 | 2.50 | 1.67 | 2.24 | 3.06 | 3.77 | 2.62 |

4. **Value of Potato Crop.**—The estimated value of the potato crop of each State for the season 1907-8 is furnished in the following table together with the value per acre :—

VALUE OF POTATO CROP, 1907-8.

| State. | N.S.W. | Victoria. | Queensl'd. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|----------------|----------|-----------|------------|----------|----------|-----------|------------|
| Total value | £263,420 | £489,770 | £59,296 | £70,920 | £34,025 | £436,449 | £1,353,880 |
| Value per acre | £8/5/1 | £9/0/11 | £7/10/4 | £7/16/6 | £18/7/0 | £11/5/11 | £9/8/8 |

5. **Relation to Population.**—The average production of potatoes per annum per head of the population of the Commonwealth for the past seven seasons has been approximately 1½ cwt. In Tasmania, where this crop is of far greater importance in relation to population than is the case in any other State, the production per head in 1906-7 was more than a ton, and in 1907-8 about 16½ cwt. Details for the past seven seasons are as follows :—

POTATO PRODUCTION PER 1000 OF POPULATION.

| Season. | N.S.W. | Victoria. | Q'land. | Sth. Aust. | W. Aust. | Tas. | C'wealth. |
|---------------|--------|-----------|---------|------------|----------|-------|-----------|
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| 1901-2 | 29 | 104 | 45 | 42 | 30 | 665 | 85 |
| 1902-3 | 22 | 139 | 6 | 78 | 32 | 940 | 104 |
| 1903-4 | 44 | 139 | 34 | 86 | 25 | 965 | 115 |
| 1904-5 | 34 | 77 | 37 | 53 | 24 | 618 | 75 |
| 1905-6 | 34 | 95 | 22 | 54 | 25 | 360 | 67 |
| 1906-7 | 76 | 136 | 30 | 59 | 19 | 1,019 | 124 |
| 1907-8 | 36 | 109 | 24 | 53 | 22 | 811 | 90 |

6. **Oversea Imports and Exports.**—Under normal conditions there is usually a fairly large export trade in potatoes carried on by the Commonwealth, principally with New Zealand and New Caledonia. Thus, during 1907, out of a total export of 17,842 tons, 13,346 tons went to New Zealand and 4,496 tons to New Caledonia. On the other hand, when in 1902 and 1903 the drought of that period had brought about a shortage in the Australian supplies, importations from New Zealand took place to the extent of 11,471 tons in the former and 2279 tons in the latter year. The quantities and values of the Commonwealth oversea imports and exports of potatoes for the seven years 1901 to 1907 are contained in the following table :—

**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF POTATOES,
1901 TO 1907.**

| Year. | Imports. | | Exports. | | Net Exports.* | |
|-------------|-----------|--------|-----------|--------|---------------|--------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Tons. | £ | Tons. | £ | Tons. | £ |
| 1901 | 17,655 | 86,067 | 6,028 | 45,485 | 11,627 | 40,582 |
| 1902 | 11,608 | 53,919 | 3,383 | 20,192 | 8,225 | 33,727 |
| 1903 | 2,367 | 7,752 | 3,407 | 12,336 | 1,040 | 4,584 |
| 1904 | 2,602 | 8,186 | 5,464 | 14,462 | 2,862 | 6,276 |
| 1905 | 428 | 3,181 | 4,058 | 29,730 | 3,630 | 26,549 |
| 1906 | 295 | 2,205 | 12,908 | 86,248 | 12,613 | 84,043 |
| 1907 | 150 | 981 | 17,842 | 53,452 | 17,692 | 52,471 |

* — Signifies net imports.

7. **Interstate Trade in Potatoes.**—A large trade in potatoes is carried on between the States of the Commonwealth, the principal exporters being Tasmania and Victoria, and the chief importers New South Wales, Western Australia and Queensland. Particulars for each State for the year 1907 are given hereunder :—

INTERSTATE TRADE IN POTATOES, 1907.

| State. | Imports to Other States of the Commonwealth. | | Exports from Other States of the Commonwealth. | | Net Interstate Exports.* | |
|---------------------|--|---------|--|---------|--------------------------|---------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Tons. | £ | Tons. | £ | Tons. | £ |
| New South Wales | 67,561 | 196,991 | 8,621 | 32,695 | 58,940 | 164,296 |
| Victoria ... | 9,857 | 24,117 | 16,768 | 54,824 | 6,911 | 30,707 |
| Queensland ... | 21,111 | 66,472 | 64 | 216 | 21,047 | 66,256 |
| South Australia ... | 3,999 | 13,705 | 2,649 | 8,357 | 1,350 | 5,348 |
| Western Australia | 14,736 | 39,251 | ... | ... | 14,736 | 39,251 |
| Tasmania ... | 139 | 459 | 89,301 | 244,903 | 89,162 | 244,444 |

* — Signifies net imports.

8. **Comparison with other Countries.**—The following table will furnish means for comparing the potato crop of Australia for 1907-8 with those of some of the leading potato-producing countries of the world. The figures given for these countries are the latest available, and relate in the majority of cases to the years 1905 and 1906 :—

POTATO CROPS OF VARIOUS COUNTRIES.

| Country. | Yield. | Country. | Yield. |
|---------------------|------------|----------------------|----------------|
| | Tons. | | Tons. |
| Germany ... | 42,246,648 | Netherlands ... | 2,313,784 |
| Russian Empire ... | 25,548,765 | Sweden ... | 1,537,113 |
| Austria-Hungary ... | 20,422,003 | Belgium ... | 1,530,611 |
| France ... | 14,028,424 | Denmark ... | 720,777 |
| United States ... | 7,466,850 | Australia ... | 375,586 |
| United Kingdom ... | 5,223,973 | | |

§ 10. Other Root and Tuber Crops.

1. **Nature and Extent.**—Root crops, other than potatoes, are not extensively grown in Australia, the total area devoted to them for the season 1907-8 being only 18,118 acres. The principal ones are onions, mangolds, turnips, and "sweet potatoes" (*Batatas edulis*). Of these onions are most largely grown in Victoria, mangolds in Tasmania and Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in the Commonwealth during the season 1907-8 was 5133 acres, giving a total yield of 27,201 tons, and averaging 5.30 tons per acre. The area devoted in 1907-8 to root crops other than potatoes and onions, viz., 12,985 acres, yielded 109,790 tons, and gave an average of 8.46 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," a reference to which will be made later.

2. **Oversea Imports and Exports.**—The only root crop, other than potatoes, in which any considerable oversea trade is carried on by the Commonwealth is that of onions. During the year 1907 oversea imports of onions amounted to 187 tons, the

principal countries from which they were obtained being Japan, India, and the Straits Settlements. For the same year the exports of onions totalled 4528 tons, the principal countries to which they were exported being the Philippine Islands, the United States of America, New Caledonia, and the Hawaiian Islands.

3. **Interstate Trade.**—A fairly extensive trade in onions is carried on between the several States of the Commonwealth. Victoria, the largest producer of onions, is also the largest exporter, while New South Wales, Queensland, and Western Australia are the principal importers. During the year 1907 the interstate onion trade was as follows:—

INTERSTATE TRADE IN ONIONS, 1907.

| State. | Imports from Other States of the Commonwealth. | | Exports to Other States of the Commonwealth. | | Net Interstate Exports.* | |
|-----------------------|--|--------|--|--------|--------------------------|----------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Tons. | £ | Tons. | £ | Tons. | £ |
| New South Wales ... | 10,002 | 35,287 | 290 | 1,379 | — 9,712 | — 33,908 |
| Victoria ... | 102 | 501 | 18,051 | 63,417 | 17,949 | 62,916 |
| Queensland ... | 5,152 | 17,965 | 44 | 154 | — 5,103 | — 17,811 |
| South Australia ... | 102 | 439 | 425 | 1,638 | — 323 | — 1,199 |
| Western Australia ... | 2,947 | 10,369 | ... | ... | — 2,947 | — 10,369 |
| Tasmania ... | 518 | 2,059 | 13 | 32 | — 505 | — 2,027 |

* — Signifies net imports.

§ II. Hay.

1. **Nature and Extent.**—As already stated, the most important crop of the Commonwealth is that of wheat grown for grain. Next to this in importance is the hay crop, which for the season 1907-8 represented rather more than 19 per cent. of the area under crop in the Commonwealth. In most European countries the hay crop consists almost entirely of meadow and other grasses, whilst in Australia a very large proportion of the area under hay comprises cereal crops, mainly wheat and oats. A considerable quantity of lucerne hay is also made, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States from 1860 onwards is given hereunder:—

AREA UNDER HAY, 1860-1 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'land. | Sth. Aust. | W. Aust. | Tas. | Com'wealth. |
|---------|---------|-----------|---------|------------|----------|--------|-------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1860-1 | 46,584 | 90,921 | 276 | 55,818 | 6,626 | 31,837 | 232,062 |
| 1865-6 | 61,909 | 97,902 | 1,449 | 101,996 | 8,824 | 30,244 | 302,324 |
| 1870-1 | 65,404 | 163,181 | 3,671 | 140,316 | 17,173 | 33,612 | 423,357 |
| 1875-6 | 77,125 | 155,274 | 8,531 | 161,429 | 17,319 | 34,758 | 454,436 |
| 1880-1 | 131,153 | 249,656 | 12,022 | 272,567 | 19,563 | 31,615 | 716,576 |
| 1885-6 | 219,886 | 421,036 | 28,881 | 312,672 | 19,677 | 41,693 | 1,043,845 |
| 1890-1 | 175,242 | 413,052 | 31,106 | 345,150 | 23,183 | 45,381 | 1,033,114 |
| 1895-6 | 319,296 | 464,482 | 28,609 | 362,972 | 63,804 | 54,748 | 1,293,911 |
| 1900-1 | 466,236 | 502,105 | 42,497 | 341,330 | 104,254 | 61,541 | 1,517,963 |
| 1901-2 | 442,163 | 650,239 | 63,055 | 369,796 | 92,654 | 61,495 | 1,688,402 |
| 1902-3 | 491,918 | 580,884 | 20,068 | 325,789 | 105,791 | 66,038 | 1,590,488 |
| 1903-4 | 496,017 | 733,353 | 78,393 | 370,152 | 109,002 | 66,947 | 1,853,864 |
| 1904-5 | 435,704 | 452,459 | 48,740 | 269,626 | 105,247 | 55,545 | 1,367,321 |
| 1905-6 | 438,036 | 591,771 | 37,425 | 317,924 | 124,906 | 64,350 | 1,574,412 |
| 1906-7 | 458,072 | 621,139 | 64,498 | 295,895 | 149,830 | 64,965 | 1,654,399 |
| 1907-8 | 541,761 | 682,194 | 54,037 | 328,672 | 131,056 | 73,859 | 1,811,579 |

It will be seen from this table that in all the States marked fluctuations occur in the area devoted to the hay crop from year to year. These fluctuations are due to various causes, the principal being the variations in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop. Thus crops originally sown for grain are frequently cut for hay owing to the improved price of that commodity, or owing to the fact that the outlook for the due development of the grain is not a satisfactory one. On the other hand, improved grain prices or the prospect of a heavy yield will frequently cause crops originally intended for hay to be left for grain. In the season 1903-4, when 1,853,864 acres were devoted to this crop, the maximum area under hay for the Commonwealth was reached, the reason being the shortage and consequent high prices resulting from the poor yield of the previous season, 1902-3. The area cut for hay in the season 1907-8 exceeded that for any previous season except 1903-4.

2. **Kinds of Hay.**—Particulars concerning the kind of crop cut for hay are furnished for a series of years in the returns prepared by four of the States. Totals only were shewn in the cases of South Australia and Tasmania until the season 1907-8, when a specification of details was obtained in South Australia also. Details of the past seven seasons are given in the following table:—

KINDS OF HAY GROWN 1901-2 to 1907-8.

| Kind of Hay Crop. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| N. S. W.— | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| Wheaten ... | 312,858 | 320,588 | 286,702 | 284,367 | 313,582 | 316,845 | 365,925 |
| Oaten ... | 96,833 | 131,891 | 159,828 | 107,805 | 88,495 | 94,420 | 131,325 |
| Barley ... | 981 | 1,782 | 1,242 | 1,285 | 2,397 | 843 | 937 |
| Lucerne ... | 31,491 | 37,657 | 48,245 | 42,247 | 33,562 | 45,964 | 43,574 |
| Total ... | 442,163 | 491,918 | 496,017 | 435,704 | 438,036 | 458,072 | 541,761 |
| VICTORIA— | | | | | | | |
| Wheaten ... | 284,582 | 161,657 | 200,673 | 132,265 | 203,726 | 231,408 | 210,927 |
| Oaten ... | 368,258 | 412,485 | 523,155 | 309,143 | 377,885 | 377,887 | 460,192 |
| Other ... | 6,399 | 6,742 | 9,525 | 11,051 | 10,160 | 11,844 | 11,075 |
| Total ... | 659,239 | 580,884 | 733,353 | 452,459 | 591,771 | 621,139 | 682,194 |
| Q'LAND— | | | | | | | |
| Wheaten ... | 9,719 | 867 | 6,189 | 3,137 | 2,856 | 8,664 | 2,084 |
| Oaten ... | 17,167 | 2,619 | 19,523 | 9,076 | 4,446 | 9,260 | 5,629 |
| Lucerne ... | 34,177 | 15,213 | 49,501 | 35,009 | 28,564 | 44,178 | 44,101 |
| Other ... | 1,992 | 1,369 | 3,180 | 1,518 | 1,559 | 2,396 | 2,223 |
| Total ... | 63,055 | 20,068 | 78,393 | 48,740 | 37,425 | 64,498 | 54,037 |
| WEST AUST.— | | | | | | | |
| Wheaten ... | 92,654 | 79,708 | 78,210 | 79,913 | 99,629 | 116,164 | 95,123 |
| Oaten ... | | 24,543 | 29,100 | 23,914 | 23,910 | 32,521 | 33,854 |
| Other ... | | 1,540 | 1,692 | 1,420 | 1,367 | 1,145 | 2,079 |
| Total ... | 92,654 | 105,791 | 109,002 | 105,247 | 124,906 | 149,830 | 131,056 |

For the season 1907-8 the area cut for hay in South Australia, viz., 328,672 acres, comprised 271,067 acres of wheaten, 48,151 of oaten, 3767 of lucerne, and 5687 of other hay. It will be seen that wheat is the principal hay crop in New South Wales, South Australia, and Western Australia, oats in Victoria, and lucerne in Queensland. Details for Tasmania are not available.

3. **Total Yield.**—The Commonwealth hay crop for the season 1907-8 amounted to 1,739,858 tons, or 516,282 tons less than were produced in 1906-7. The production for the season 1906-7 had, however, only once been exceeded, viz., by the record yield of the season 1903-4, when the hay harvest resulted in a production of 2,903,160 tons. For many years past the State of Victoria has been the largest hay producer in the Commonwealth, and in the season 1907-8 accounted for nearly 40 per cent. of the total production. The total yields of the several States from 1860 onwards is given hereunder:—

COMMONWEALTH HAY CROP, 1860-1 to 1907-8.

| Season. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Commonwealth. |
|---------------|------------------|-----------|-------------|------------------|--------------------|-----------|---------------|
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| 1860-1 | 50,927 | 144,211 | 414 | 71,241 | 8,099 | 62,318 | 337,210 |
| 1865-6 | 54,230 | 96,101 | 2,173 | 88,731 | 7,901 | 34,751 | 283,887 |
| 1870-1 | 69,602 | 183,708 | 5,506 | 197,149 | 20,833 | 40,763 | 517,561 |
| 1875-6 | 88,968 | 206,613 | 12,796 | 194,794 | 17,319 | 49,217 | 569,707 |
| 1880-1 | 174,194 | 300,581 | 23,441 | 261,371 | 19,563 | 35,883 | 815,033 |
| 1885-6 | 191,371 | 442,118 | 30,670 | 307,855 | 19,677 | 51,872 | 1,043,563 |
| 1890-1 | 213,034 | 567,779 | 50,116 | 310,125 | 25,014 | 52,021 | 1,218,089 |
| 1895-6 | 229,671 | 390,861 | 50,881 | 225,462 | 53,758 | 62,345 | 1,012,978 |
| 1900-1 | 526,260 | 677,757 | 78,758 | 353,662 | 103,813 | 94,198 | 1,834,448 |
| 1901-2 | 472,621 | 884,369 | 122,039 | 346,467 | 89,729 | 109,383 | 2,024,608 |
| 1902-3 | 243,379 | 601,272 | 23,181 | 308,825 | 94,007 | 89,210 | 1,359,874 |
| 1903-4 | 816,810 | 1,233,063 | 136,117 | 479,723 | 121,934 | 115,513 | 2,903,160 |
| 1904-5 | 366,293 | 514,316 | 80,662 | 294,252 | 113,794 | 73,457 | 1,442,774 |
| 1905-6 | 459,182 | 864,177 | 56,829 | 435,546 | 139,380 | 90,077 | 2,045,191 |
| 1906-7 | 621,846 | 881,276 | 94,343 | 395,766 | 158,112 | 104,797 | 2,256,140 |
| 1907-8 | 367,800 | 682,370 | 77,601 | 376,170 | 137,511 | 98,406 | 1,739,858 |

4. **Value of Hay Crop.**—The following table furnishes particulars concerning the total value and the value per acre of the hay crop of the several States of the Commonwealth for the season 1907-8:—

VALUE OF HAY CROP, 1907-8.

| Particulars. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Commonwealth. |
|----------------|------------------|------------|-------------|------------------|--------------------|-----------|---------------|
| Total value... | £2,150,820 | £3,411,850 | £277,488 | £1,523,488 | £589,813 | £442,827 | £8,396,286 |
| Value per acre | £3 19/5 | £5 0/0 | £5 2/8 | £4 12/8 | £4 10/0 | £5 19/11 | £4 12/8 |

5. **Average Yield per Acre.**—The States of the Commonwealth in which the highest average yields per acre have been obtained are those of Queensland and Tasmania, these being also the States in which the smallest areas are devoted to this crop. For the past seven seasons the lowest yield for the Commonwealth as a whole was that of 17 cwt. per acre in 1902-3, and the highest that of 31 cwt. in 1903-4. Particulars for the several States for the seasons 1901-2 to 1907-8 are given hereunder:—

AVERAGE YIELD OF HAY PER ACRE, 1901-2 to 1907-8.

| Season. | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|---------------|--------|-----------|-------|----------|----------|-------|-----------|
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| 1901-2 | 1.07 | 1.34 | 1.94 | 0.94 | 0.97 | 1.78 | 1.20 |
| 1902-3 | 0.49 | 1.04 | 1.16 | 0.95 | 0.89 | 1.35 | 0.86 |
| 1903-4 | 1.65 | 1.68 | 1.74 | 1.30 | 1.12 | 1.73 | 1.57 |
| 1904-5 | 0.84 | 1.14 | 1.65 | 1.09 | 1.08 | 1.32 | 1.06 |
| 1905-6 | 1.05 | 1.46 | 1.52 | 1.37 | 1.12 | 1.40 | 1.30 |
| 1906-7 | 1.36 | 1.42 | 1.46 | 1.34 | 1.06 | 1.61 | 1.36 |
| 1907-8 | 0.68 | 1.00 | 1.44 | 1.14 | 1.04 | 1.33 | 0.96 |

6. **Relation to Population.**—During the past seven seasons the Commonwealth hay production per head of population has varied between 7 cwt. in 1902-3 and 15 cwt. in 1903-4, averaging about 10 cwt. per head for the period. The State in which the hay production per head of population is highest is South Australia. Details for the past seven seasons are given hereunder :—

HAY PRODUCTION PER 1000 OF POPULATION.

| Season. | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|---------------|--------|-----------|-------|----------|----------|-------|-----------|
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| 1901-2 | 347 | 735 | 243 | 955 | 476 | 635 | 534 |
| 1902-3 | 175 | 497 | 45 | 847 | 457 | 513 | 353 |
| 1903-4 | 577 | 1,018 | 266 | 1,311 | 551 | 651 | 744 |
| 1904-5 | 254 | 426 | 155 | 796 | 481 | 411 | 365 |
| 1905-6 | 311 | 713 | 108 | 1,162 | 557 | 503 | 509 |
| 1906-7 | 412 | 720 | 177 | 1,042 | 608 | 586 | 552 |
| 1907-8 | 237 | 551 | 144 | 975 | 524 | 549 | 419 |

7. **Oversea Imports and Exports.**—Under normal conditions hay, whether whole or in the form of chaff, is somewhat bulky for oversea trade, and consequently does not in such circumstances figure largely amongst the imports and exports of the Commonwealth. In 1901 and 1902, however, the exceptional demand which was created by the South African war brought about a fairly large export of hay and chaff to Natal and the Cape of Good Hope. These colonies also took and are still taking a considerable quantity of Australian compressed fodder. During the year 1904, when the war between Japan and Russia was being carried on, the exports of compressed fodder to Hong Kong were valued at £42,759 and those to Japan at £23,608. The total value of the hay and chaff exported during 1901 was £406,455, as compared with £20,179 only in 1907, while the exports of fodder, which amounted in value to £142,472 in 1904, had shrunk to £30,166 in 1907.

During 1907 the principal consignees of the hay and chaff exported from the Commonwealth were India, Ceylon, and the Straits Settlements, while the principal countries to which fodder was exported were the Philippine Islands, New Zealand, and India.

8. **Interstate Trade in Hay and Chaff.**—A considerable trade in hay and chaff is carried on between the several States of the Commonwealth, the exporting States during the year 1907 being South Australia, Victoria, Tasmania, and Western Australia, and the importing States New South Wales and Queensland. Western Australia entered the ranks of the exporting States during 1907. Particulars of interstate imports and exports for 1907 are given in the following table :—

INTERSTATE TRADE IN HAY AND CHAFF, 1907.

| State. | Imports from other States of the Commonwealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports.* | |
|---------------------|--|---------|--|---------|--------------------------|----------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Tons. | £ | Tons. | £ | Tons. | £ |
| New South Wales | 86,286 | 337,627 | 1,622 | 5,169 | —84,664 | —332,458 |
| Victoria | 3,202 | 15,425 | 37,491 | 126,966 | 34,289 | 111,541 |
| Queensland | 13,838 | 36,125 | 296 | 1,053 | —13,542 | — 35,072 |
| South Australia ... | 27 | 108 | 58,572 | 228,990 | 58,545 | 228,882 |
| Western Australia | 546 | 1,793 | 2,765 | 13,268 | 2,219 | 11,475 |
| Tasmania | 824 | 2,685 | 3,977 | 18,317 | 3,153 | 15,632 |

* — Signifies net imports.

9. **Hay Production in other Countries.**—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy a prominent place. The statistics of hay production in these countries are not prepared on a uniform basis, and consequently any attempt to furnish an extensive comparison of the production of hay in the various countries would probably be misleading. It may be noted, however, that in the United Kingdom the production of hay from clover, sainfoin, etc., was for the year 1907 represented by 5,441,563 tons from 3,077,173 acres, while from permanent grasses a yield of 10,161,617 tons of hay was obtained from 6,390,399 acres, giving a total of 15,603,180 tons from 9,467,572 acres, or about 93 cwt. per acre.

§ 12. Green Forage.

1. **Nature and Extent.**—In all the States of the Commonwealth a considerable area is devoted to the production of green forage, mainly in connection with the dairying industry. The total area so cropped during the season 1907-8 was no less than 439,725 acres. Of this total the New South Wales area represented about 60 per cent., while that in Queensland amounted to nearly 21 per cent. of the total. The principal crops cut for green forage are maize, sorghum, oats, barley, rye, rape, and lucerne, while small quantities of sugar-cane also are so used. Particulars concerning the area under green forage in the several States from 1890 onwards are furnished in the following table:—

AREA UNDER GREEN FORAGE, 1890-1 to 1907-8.

| Season. | N.S.W. | Vic. | Qld. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|------------|---------|--------|--------|----------|----------|--------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1890-1 ... | 97,473 | 10,091 | 9,546 | 7,349 | 161 | 1,497 | 66,117 |
| 1895-6 ... | 66,833 | 25,939 | 19,552 | 7,309 | 430 | 1,883 | 121,946 |
| 1900-1 ... | 78,144 | 18,975 | 41,445 | 13,196 | 1,024 | 3,749 | 156,473 |
| 1901-2 ... | 113,060 | 32,795 | 39,793 | 13,695 | 1,563 | 4,082 | 204,988 |
| 1902-3 ... | 109,287 | 31,145 | 51,279 | 14,937 | 636 | 3,355 | 210,639 |
| 1903-4 ... | 77,130 | 33,165 | 26,576 | 19,241 | 672 | 3,100 | 159,884 |
| 1904-5 ... | 87,718 | 29,902 | 35,861 | 20,362 | 1,643 | 4,117 | 179,603 |
| 1905-6 ... | 95,058 | 34,041 | 66,183 | 23,842 | 1,873 | 4,882 | 225,879 |
| 1906-7 ... | 122,893 | 36,502 | 50,513 | 17,985 | 3,265 | 5,326 | 236,484 |
| 1907-8 ... | 261,810 | 59,897 | 91,444 | 15,434 | 4,773 | 6,367 | 439,725 |

2. **Value of Green Forage Crops.**—The value of these crops is variously estimated in the several States, and the Commonwealth total for the season 1907-8 may be taken approximately as £1,200,000 or about £2 15s. per acre.

3. **Relation to Population.**—Particulars concerning the area under green forage per 1000 of the population of the Commonwealth and the several States for the past seven seasons are given hereunder:—

AREA UNDER GREEN FORAGE PER 1000 OF POPULATION.

| Season. | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|------------|--------|-----------|--------|----------|----------|--------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1901-2 ... | 83 | 27 | 79 | 38 | 8 | 24 | 54 |
| 1902-3 ... | 79 | 26 | 101 | 41 | 3 | 19 | 55 |
| 1903-4 ... | 54 | 27 | 52 | 53 | 3 | 17 | 41 |
| 1904-5 ... | 61 | 25 | 69 | 55 | 7 | 23 | 45 |
| 1905-6 ... | 64 | 28 | 126 | 64 | 7 | 27 | 56 |
| 1906-7 ... | 81 | 29 | 95 | 47 | 13 | 30 | 58 |
| 1907-8 ... | 169 | 48 | 170 | 40 | 18 | 35 | 106 |

§ 13. Sugar-Cane.

1. **Area.**—Sugar-cane is grown for sugar-making purposes in only two of the States of the Commonwealth, viz., Queensland and New South Wales, and much more extensively in the former than the latter. Thus of the total area of 144,763 acres under sugar-cane in the Commonwealth for the season 1907-8 there were 126,810 acres or about 87½ per cent. in Queensland. Sugar-cane growing appears to have been started in the Commonwealth in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of twenty acres for the season 1862-3. In the following season the New South Wales records shew that an area of two acres was devoted to the crop in the mother State. The area under cane in New South Wales reached its maximum in 1895-6 with a total of 32,927 acres. It then fell continuously to 1902-3, when it was lower than for any previous season since 1889-90. From 1902-3 to 1906-7 it remained practically stationary, but in 1907-8 fell to 17,953 acres, the lowest area under sugar-cane since 1888-9. In Queensland, on the other hand, although fluctuations in area are in evidence throughout, the general trend has been one of satisfactory and somewhat rapid increase, the area under cane for the season 1905-6 being the highest on record, and that for 1906-7 only a little short of it. In 1907-8 the area in Queensland declined to 126,810 acres, but was even then larger than for any season prior to 1905-6. The area under sugar-cane in the Commonwealth from 1865 onwards is given in the following table:—

AREA UNDER SUGAR-CANE, 1865-6 to 1907-8.

| Season. | N.S.W. | Queensland. | C'wealth. | Season. | N.S.W. | Queensland. | C'wealth. |
|---------|--------|-------------|-----------|---------|--------|-------------|-----------|
| | Acres. | Acres. | Acres. | | Acres. | Acres. | Acres. |
| 1865-6 | 141 | 450 | 591 | 1901-2 | 20,809 | 112,031 | 132,840 |
| 1870-1 | 4,082 | 6,342 | 10,424 | 1902-3 | 20,160 | 85,338 | 105,498 |
| 1875-6 | 6,454 | 13,459 | 19,913 | 1903-4 | 20,182 | 111,516 | 131,698 |
| 1880-1 | 10,971 | 20,224 | 31,195 | 1904-5 | 21,525 | 120,317 | 141,842 |
| 1885-6 | 16,419 | 59,186 | 75,605 | 1905-6 | 21,805 | 134,107 | 155,912 |
| 1890-1 | 20,446 | 50,922 | 71,368 | 1906-7 | 20,580 | 133,284 | 153,864 |
| 1895-6 | 32,927 | 77,247 | 110,174 | 1907-8 | 17,953 | 126,810 | 144,763 |
| 1900-1 | 22,114 | 108,535 | 130,649 | | | | |

2. **Productive and Unproductive Cane.**—The areas given in the preceding table represent the total area on which sugar-cane was grown during the seasons specified for purposes other than green forage. The whole area, however, was not in any case cut for crushing during that season, there being always a considerable amount of "stand over" cane, as well as a small amount required for plants. In the season 1907-8 the New South Wales total comprised 9916 acres of productive and 8037 acres of unproductive cane, while in the case of Queensland the productive cane amounted to 94,384 acres and the unproductive to 32,426 acres, the latter including 1338 acres for plants.

3. **Yield of Cane.**—Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897-8. In that season the total for the Commonwealth was 1,073,883 tons, as against 1,942,418 tons for 1907-8. The average yield per acre of productive cane is much higher in New South Wales than in Queensland, and during the six seasons 1901-2 to 1906-7 in the case of the former State remained practically constant at about twenty-one tons per acre. In 1907-8 the yield in New South Wales was so excellent that, notwithstanding the comparative smallness of the area cultivated, the aggregate amount of cane produced was the largest in that State since 1898-9. Particulars relative to the total and average yields of the Commonwealth sugar crops for the seasons 1901-2 to 1907-8 are as follows:—

YIELD OF SUGAR-CANE, 1901-2 to 1907-8.

| Season. | Total Yield of Cane. | | | Average Yield per Acre of Productive Cane. | | |
|------------|----------------------|-------------|-----------|--|-------------|-----------|
| | N.S.W. | Queensland. | C'wealth. | N.S.W. | Queensland. | C'wealth. |
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| 1901-2 ... | 187,711 | 1,180,091 | 1,367,802 | 21.36 | 15.10 | 15.73 |
| 1902-3 ... | 183,105 | 641,927 | 825,032 | 20.90 | 10.86 | 12.16 |
| 1903-4 ... | 227,511 | 823,875 | 1,051,386 | 21.94 | 13.65 | 14.86 |
| 1904-5 ... | 199,640 | 1,326,989 | 1,526,629 | 20.43 | 16.04 | 16.50 |
| 1905-6 ... | 201,998 | 1,415,745 | 1,617,743 | 19.59 | 14.73 | 15.20 |
| 1906-7 ... | 221,560 | 1,728,780 | 1,950,340 | 21.35 | 17.61 | 17.96 |
| 1907-8 ... | 277,390 | 1,665,028 | 1,942,418 | 27.97 | 17.64 | 18.62 |

4. **Relation to Population.**—The sugar-cane production of the Commonwealth during the past seven seasons has averaged about $7\frac{1}{2}$ cwt. per head of population. In Queensland, the principal sugar-producing State, the production of cane per head has ranged between $1\frac{1}{2}$ tons in 1902-3 and $3\frac{1}{2}$ tons in 1906-7. Details for the period are as follows:—

SUGAR-CANE PRODUCTION PER 1000 OF POPULATION.

| State. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|---------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| New South Wales ... | Tons. 138 | Tons. 131 | Tons. 161 | Tons. 138 | Tons. 137 | Tons. 147 | Tons. 179 |
| Queensland ... | 2,354 | 1,259 | 1,607 | 2,556 | 2,693 | 3,244 | 3,090 |
| Commonwealth ... | 361 | 214 | 269 | 386 | 403 | 477 | 467 |

5. **Quality of Cane.**—The quantity of cane required to produce a ton of sugar varies considerably not only with the district in which the cane is grown but also with the season. In Queensland, for instance, during the seasons 1902-3 to 1906-7 the sugar content of the cane crushed continuously diminished, so that whilst in 1902-3 the quantity of cane used in producing a ton of sugar was 8.38 tons, in the season 1906-7 the quantity required was 9.38 tons, the production in the former case being approximately 12 per cent. and in the latter 11 per cent. of the weight of cane crushed. For the season 1907-8, however, the cane was of much better quality, and the quantity required to produce a ton of sugar was only 8.84 tons, the sugar content representing in this case somewhat more than $11\frac{1}{2}$ per cent. of the weight of cane crushed. It should be noted also that in 1901-2 no less than 9.76 tons of cane were needed to produce a ton of sugar. It may be remarked in this connection that the systematic study of the beet in Germany shewed that by suitable culture its sugar content might be greatly increased, and this is by no means impossible in the case of sugar-cane.

6. **Sugar Bounties.**—The provision of bounties or similar aids to the sugar-growers of the Commonwealth early occupied the attention of the Commonwealth Parliament, the object in view being that of assisting the industry whilst at the same time diminishing the employment of coloured labour in connection therewith. The earliest legislative provision made with this object in view was that contained in the Exeise Tariff 1902, under which an excise duty of three shillings per cwt. of manufactured sugar was charged, and a rebate of four shillings per ton allowed on all sugar-cane delivered for manufacture in the production of which white labour only had been employed after 28th February, 1902. This rebate was calculated on the basis of cane giving 10 per cent. of sugar, and was increased or reduced proportionately according to any variation from this standard, that is to say, the rebate amounted to two shillings per cwt. of the sugar content of the cane treated.

In actual practice it was found that this system of rebates was producing effects that had not been anticipated at the time the legislation was passed, and that the greater part of the cost of substituting white for black labour in the sugar-growing industry was thereby being imposed upon the States engaged in the industry, viz., Queensland and New South Wales, instead of being a charge upon the whole Commonwealth. To remedy this state of affairs the Sugar Rebate Abolition Act of 1903 was passed on 30th July, 1903, and the Sugar Bounty Act 1903 received assent on the same day. The rate of bounty provided by this latter Act was, as in the case of the rebate mentioned above, four shillings per ton of cane grown by white labour giving 10 per cent. of sugar, the bounty to be increased or reduced proportionately according to any variation from this standard. This Act remained in force until 31st December, 1906, when it was superseded by the provisions of the Sugar Bounty Act 1905, which extended the principle of bounties to the end of the year 1912, but stipulated that during the years 1911 and 1912 the rates payable on cane delivered should be respectively two-thirds and one-third of the rates prevailing during the earlier years of the period. The rate of bonus allowed under this Act is six shillings per ton of cane of 10 per cent. quality grown by white labour, while under the Excise Tariff 1905, assented to on 21st December, 1905, the excise duty on sugar was, from 1st January, 1907, increased to four shillings per cwt. of manufactured sugar in place of three shillings formerly imposed.

7. **Cost of Bounties.**—The amounts paid by the Commonwealth Government in sugar bounties and the expenses in connection therewith during the six years 1902-3 to 1907-8, as well as the manner in which this expenditure was allocated to the several States, is shewn in the following table:—

EXPENDITURE ON SUGAR BOUNTIES AND EXPENSES, 1902-3 to 1907-8.

| Year. | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|------------|---------|-----------|--------|----------|----------|--------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1902-3 ... | 21,999 | 18,923 | 8,003 | 5,743 | 3,378 | 2,781 | 60,827 |
| 1903-4 ... | 35,273 | 29,873 | 12,740 | 9,115 | 5,608 | 4,436 | 97,045 |
| 1904-5 ... | 46,880 | 38,935 | 16,781 | 11,990 | 7,794 | 5,798 | 128,178 |
| 1905-6 ... | 56,950 | 46,520 | 20,159 | 14,439 | 9,727 | 6,914 | 154,709 |
| 1906-7 ... | 124,492 | 100,456 | 43,635 | 31,299 | 21,344 | 14,690 | 335,916 |
| 1907-8 ... | 218,547 | 173,855 | 75,465 | 54,697 | 36,435 | 25,631 | 584,630 |

8. **Collection of Sugar Excise.**—The table hereunder contains particulars concerning the net amount of excise duty on sugar collected in respect of the several States for the six years 1902-3 to 1907-8. In this table refunds and drawbacks have been deducted and the requisite adjustment has been made between the States.

SUGAR EXCISE, 1902-3 to 1907-8.

| Year. | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|------------|---------|-----------|---------|----------|----------|--------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1902-3 ... | 166,952 | 10,715 | 61,523 | 1,332 | 7,294 | 13,701 | 261,517 |
| 1903-4 ... | 166,646 | Dr. 2,307 | 73,634 | 1,413 | 18,464 | 14,267 | 272,117 |
| 1904-5 ... | 183,335 | 163,247 | 70,576 | 34,626 | 30,980 | 20,863 | 503,627 |
| 1905-6 ... | 183,457 | 149,120 | 98,015 | 45,921 | 35,339 | 24,227 | 536,079 |
| 1906-7 ... | 211,625 | 138,932 | 83,826 | 50,564 | 37,109 | 24,484 | 546,590 |
| 1907-8 ... | 266,876 | 226,638 | 103,272 | 63,788 | 46,238 | 35,117 | 741,929 |

9. **Imports and Exports of Sugar.**—Notwithstanding the increase in the production of sugar in evidence in the Commonwealth during recent years, Australia's over-sea import trade in cane sugar remained fairly extensive until 1906, the principal countries engaged in supplying this commodity being Java, Mauritius, and Fiji. For the year 1907, however, the total importation was valued at only £77,259, obtained chiefly

from Mauritius and Fiji. In 1907 the Commonwealth oversea exports of cane sugar exceeded the imports, the principal countries of destination being the Cape of Good Hope, New Zealand, Canada, and Natal. Particulars concerning the imports and exports of cane sugar for the years 1901 to 1907 are as follows:—

IMPORTS AND EXPORTS OF CANE SUGAR, 1901 to 1907.

| Year. | Oversea Imports. | | Oversea Exports. | | Net Imports.* | |
|----------|------------------|-----------|------------------|---------|---------------|-----------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | cwt. | £ | cwt. | £ | cwt. | £ |
| 1901 ... | 1,970,888 | 1,239,550 | 94,764 | 68,876 | 1,876,119 | 1,170,674 |
| 1902 ... | 1,862,068 | 1,120,554 | 66,736 | 48,751 | 1,795,327 | 1,071,803 |
| 1903 ... | 1,830,595 | 1,054,338 | 47,295 | 33,242 | 1,783,300 | 1,021,096 |
| 1904 ... | 760,702 | 415,120 | 58,882 | 42,699 | 701,820 | 372,421 |
| 1905 ... | 498,670 | 276,157 | 223,161 | 155,514 | 275,509 | 120,643 |
| 1906 ... | 839,519 | 439,916 | 185,072 | 140,466 | 654,447 | 299,450 |
| 1907 ... | 123,351 | 77,259 | 365,213 | 243,380 | — 241,862 | — 166,121 |

*— Signifies net exports.

10. Interstate Trade in Sugar.—The Interstate trade in sugar is an extensive one, the exports from Queensland to the other States of the Commonwealth representing a value of £1,771,719 for the year 1907. The manner in which this trade is distributed amongst the several States is furnished in the table given hereunder:—

INTERSTATE TRADE IN CANE SUGAR, 1907.

| State. | Imports from other States of the Commonwealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports.* | |
|---------------------|--|---------|--|-----------|--------------------------|-----------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | cwt. | £ | cwt. | £ | cwt. | £ |
| New South Wales | 1,384,824 | 789,352 | 285,602 | 234,582 | — 1,099,222 | — 554,770 |
| Victoria | 1,382,225 | 753,826 | 98,602 | 78,333 | — 1,283,623 | — 675,493 |
| Queensland ... | 1,329 | 1,177 | 3,203,518 | 1,771,719 | 3,207,189 | 1,770,542 |
| South Australia ... | 510,174 | 283,831 | 106,442 | 82,427 | — 403,732 | — 201,404 |
| Western Australia | 217,275 | 174,697 | 1 | 1 | — 217,274 | — 174,696 |
| Tasmania | 203,586 | 164,404 | 248 | 225 | — 203,338 | — 164,179 |

*— Signifies net imports.

§ 14. Vineyards.

1. Nature and Extent.—The date of the introduction of the vine into Australia has been set down by different investigators at various dates, of which 1828 and 1815 appear to have had some measure of support. It would seem, however, that the vine really came out with the First Fleet, which initiated the colonisation of Australia, in 1788, and that consequently the Australian vine is as old as Australian settlement. From New South Wales the vine spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area which they have devoted to its cultivation. In Queensland and Western Australia also, vine-growing has been carried on for many years, but in neither State has the industry progressed with the rapidity attained in Victoria and South Australia. In Tasmania the climate is not favourable to the growth of grapes. The purposes for which grapes are grown in Australia are three in number, viz.—(i.) for wine-making, (ii.) for table use, (iii.) for drying. The total area under vines in the several States from 1860 onwards is given in the following table:—

COMMONWEALTH VINEYARDS, 1860-1 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|------------|--------|-----------|---------|----------|----------|-------------------------------------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | There are no vineyards in Tasmania. | Acres. |
| 1860-1 ... | 1,584 | 1,138 | — | 3,180 | 935 | | 6,237 |
| 1865-6 ... | 2,126 | 4,078 | 110 | 6,629 | 634 | | 13,577 |
| 1870-1 ... | 4,504 | 5,466 | 416 | 6,131 | 710 | | 17,227 |
| 1875-6 ... | 4,459 | 5,081 | 376 | 4,972 | 675 | | 15,563 |
| 1880-1 ... | 4,800 | 4,980 | 739 | 4,337 | 659 | | 15,515 |
| 1885-6 ... | 5,247 | 9,775 | 1,483 | 5,142 | 624 | | 22,271 |
| 1890-1 ... | 8,044 | 20,686 | 1,981 | 9,535 | 1,024 | | 41,270 |
| 1895-6 ... | 7,519 | 30,275 | 2,021 | 17,604 | 2,217 | | 59,636 |
| 1900-1 ... | 8,441 | 30,634 | 2,019 | 20,158 | 3,325 | | 64,577 |
| 1901-2 ... | 8,606 | 28,592 | 1,990 | 20,860 | 3,629 | | 63,677 |
| 1902-3 ... | 8,790 | 28,374 | 1,559 | 21,692 | 3,528 | | 63,943 |
| 1903-4 ... | 8,940 | 28,513 | 2,069 | 22,617 | 3,324 | | 65,463 |
| 1904-5 ... | 8,840 | 28,016 | 2,194 | 23,210 | 3,413 | | 65,673 |
| 1905-6 ... | 8,754 | 26,402 | 2,044 | 23,603 | 3,541 | | 64,344 |
| 1906-7 ... | 8,521 | 25,855 | 2,070 | 22,575 | 3,525 | 62,546 | |
| 1907-8 ... | 8,483 | 26,465 | 1,973 | 21,080 | 3,231 | 61,232 | |

The area devoted to vines in the Commonwealth attained its highest point in the season 1904-5, when a total of 65,673 acres was reached. In the course of the three following seasons this area diminished by over 4400 acres, the decline being in evidence in all the States.

The wine-growing industry in Australia, more particularly in Victoria and New South Wales, received a severe check on account of various outbreaks of phylloxera which took place in different parts of these States. With a view to its eradication extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resisting vines, was prohibited.

2. Wine Production.—The production of wine in Australia has not increased as rapidly as the suitability of soil and general favourableness of conditions would appear to warrant. The cause of this is probably twofold, being in the first place due to the fact that the Australians are not a wine-drinking people and consequently do not provide a local market for this product, and in the second to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Active steps are being taken in various ways to bring the Australian wines under notice, and it may be confidently asserted that when their qualities are duly recognised the wine production of Australia will exhibit much more rapid development than has taken place within recent years. Particulars concerning the quantity of wine produced in the several States during the past seven years are contained in the table given hereunder:—

AUSTRALIAN WINE PRODUCTION, 1901-2 to 1907-8.

| Season. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. | Commonwealth. |
|------------|------------------|-----------|-------------|------------------|--------------------|------------------------------------|---------------|
| | Gallons. | Gallons. | Gallons. | Gallons. | Gallons. | No production of wine in Tasmania. | Gallons. |
| 1901-2 ... | 868,479 | 1,981,475 | 148,835 | 2,077,923 | 185,735 | | 5,262,447 |
| 1902-3 ... | 806,140 | 1,547,188 | 100,852 | 2,145,525 | 158,853 | | 4,758,558 |
| 1903-4 ... | 1,086,820 | 2,551,150 | 38,558 | 2,345,270 | 138,371 | | 6,160,169 |
| 1904-5 ... | 928,160 | 1,832,386 | 60,433 | 2,625,430 | 185,070 | | 5,631,479 |
| 1905-6 ... | 831,700 | 1,726,444 | 66,926 | 2,845,853 | 208,911 | | 5,679,834 |
| 1906-7 ... | 1,140,000 | 2,044,833 | 65,016 | 2,441,504 | 195,660 | | 5,887,013 |
| 1907-8 ... | 778,500 | 1,365,600 | 90,191 | 2,061,987 | 153,755 | | 4,450,033 |

3. Relation to Population.—In relation to population the area of the vineyards of the several States exhibits a well-marked decline during the past seven seasons, the

Commonwealth total having fallen during the period from 17 to 15 acres per 1000 of the population. Details for the period are furnished in the succeeding table:—

AREA OF VINEYARDS PER 1000 OF POPULATION.

| Season. | N.S.W. | Victoria. | Q'land. | Sth. Aust. | W. Aust. | Tas. | Total C'wealth. |
|---------------|--------|-----------|---------|------------|----------|--------|--------------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1901-2 | 6 | 24 | 4 | 57 | 19 | ... | 17 |
| 1902-3 | 6 | 23 | 3 | 60 | 17 | ... | 17 |
| 1903-4 | 6 | 24 | 4 | 62 | 15 | ... | 17 |
| 1904-5 | 6 | 23 | 4 | 63 | 14 | ... | 17 |
| 1905-6 | 6 | 22 | 3 | 63 | 14 | ... | 16 |
| 1906-7 | 6 | 21 | 4 | 59 | 14 | ... | 15 |
| 1907-8 | 5 | 21 | 4 | 55 | 12 | ... | 15 |

4. Imports and Exports.—During recent years the importations of wine into the Commonwealth have fallen off considerably, the total value of the wine imported during 1907 being £120,946, as against a value of £161,945 in 1901. The principal countries of origin of wine imported into Australia are France, Spain, Portugal, and Germany, the greater portion of the sparkling wines coming from France and of still wines from Spain and Portugal. Particulars relative to the importations of wine into the Commonwealth during the past seven years are given hereunder:—

COMMONWEALTH IMPORTS OF WINE, 1901 to 1907.

| Year. | Quantity. | | Value. | | |
|-------|------------|----------|------------|--------|---------|
| | Sparkling. | Other. | Sparkling. | Other. | Total. |
| | Gallons. | Gallons. | £ | £ | £ |
| 1901 | 55,341 | 165,472 | 104,700 | 57,245 | 161,945 |
| 1902 | 46,824 | 134,513 | 80,941 | 46,828 | 127,769 |
| 1903 | 41,211 | 81,222 | 78,869 | 29,014 | 107,883 |
| 1904 | 38,738 | 70,982 | 69,643 | 27,227 | 96,870 |
| 1905 | 38,933 | 74,358 | 71,753 | 28,231 | 99,984 |
| 1906 | 43,324 | 71,980 | 81,448 | 24,685 | 106,133 |
| 1907 | 50,393 | 66,138 | 94,549 | 26,397 | 120,946 |

The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand; a small but fairly regular export trade being also carried on with India, Ceylon, Fiji, and the South Sea Islands. Details concerning the exports of wine from Australia during the seven years 1901 to 1907, are given in the following table:—

COMMONWEALTH EXPORTS OF WINE, 1901 to 1907.

| Year. | Quantity. | | Value. | | |
|-------|------------|-----------|------------|---------|---------|
| | Sparkling. | Other. | Sparkling. | Other. | Total. |
| | Gallons. | Gallons. | £ | £ | £ |
| 1901 | 2,936 | 863,147 | 6,972 | 122,751 | 129,723 |
| 1902 | 3,201 | 1,075,713 | 5,989 | 142,994 | 148,983 |
| 1903 | 2,194 | 718,284 | 4,161 | 101,016 | 105,177 |
| 1904 | 2,525 | 789,032 | 4,440 | 103,272 | 107,712 |
| 1905 | 2,749 | 937,932 | 4,990 | 107,988 | 112,978 |
| 1906 | 2,439 | 717,821 | 4,637 | 93,046 | 97,683 |
| 1907 | 2,771 | 979,527 | 5,233 | 121,811 | 127,044 |

The sparkling wine included in the foregoing table consists mainly of foreign wine re-exported.

5. **Interstate Trade.**—A fairly extensive trade in wine is carried on between the States, South Australia being the principal exporting State. Particulars for the year 1907 are furnished hereunder:—

INTERSTATE TRADE IN WINE, 1907.

| State. | Imports from other States of the Commonwealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports.* | |
|-----------------------|--|--------|--|--------|--------------------------|----------|
| | Quantity | Value. | Quantity. | Value. | Quantity. | Value. |
| | Gallons. | £ | Gallons. | £ | Gallons. | £ |
| New South Wales ... | 264,089 | 51,396 | 102,018 | 19,929 | —162,021 | 31,467 |
| Victoria ... | 149,987 | 27,900 | 129,515 | 33,570 | — 20,472 | 5,670 |
| Queensland ... | 89,870 | 27,271 | 1,048 | 405 | — 88,822 | — 26,866 |
| South Australia ... | 20,798 | 3,685 | 384,649 | 85,100 | 363,851 | 81,415 |
| Western Australia ... | 69,209 | 21,524 | 996 | 782 | — 68,213 | — 20,742 |
| Tasmania ... | 24,429 | 8,052 | 106 | 42 | — 24,323 | — 8,010 |

* — Signifies net imports.

6. **Other Viticultural Products.**—In addition to grapes for wine-making purposes, large quantities are grown in all the States for table use, whilst, particularly in Victoria and South Australia, the drying of raisins and currants is also carried on. The quantities of table grapes grown in the several States during the past seven seasons are as follows:—

TABLE GRAPES, 1901-2 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'sland.* | S. Aust.* | W. Aust.* | Tasmania. | C'wealth. |
|------------|--------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Tons. | Tons. | Tons. | Tons. | Tons | Tons. | Tons. |
| 1901-2 ... | 3,475 | 5,110 | 750 | 2,800 | 1,100 | ... | 13,235 |
| 1902-3 ... | 3,561 | 4,327 | 300 | 2,900 | 1,200 | ... | 12,288 |
| 1903-4 ... | 4,213 | 3,862 | 780 | 3,000 | 1,200 | ... | 13,055 |
| 1904-5 ... | 2,933 | 3,186 | 950 | 3,100 | 1,500 | ... | 11,669 |
| 1905-6 ... | 2,749 | 3,008 | 870 | 3,100 | 1,700 | ... | 11,427 |
| 1906-7 ... | 5,470 | 5,184 | 1,130 | 3,000 | 1,700 | ... | 16,484 |
| 1907-8 ... | 2,978 | 3,325 | 1,044 | 2,805 | 2,715 | ... | 12,867 |

* Estimated for seasons prior to 1907-8.

Statistics of the quantities of raisins and currants dried are available for a series of years for Victoria and South Australia, and are as follows for the past seven seasons:—

RAISINS AND CURRANTS DRIED, 1901-2 to 1907-8.

| Season. | Raisins. | | Currants. | |
|------------|------------|-----------------|-----------|-----------------|
| | Victoria. | Sth. Australia. | Victoria. | Sth. Australia. |
| | lbs. | lbs. | lbs. | lbs. |
| 1901-2 ... | 3,083,665 | 822,080 | 285,157 | 382,256 |
| 1902-3 ... | 3,979,798 | 1,294,944 | 416,890 | 547,232 |
| 1903-4 ... | 5,986,060 | 1,463,056 | 838,955 | 1,165,472 |
| 1904-5 ... | 3,393,117 | 974,064 | 669,108 | 1,423,968 |
| 1905-6 ... | 4,813,240 | 1,334,928 | 717,156 | 1,629,824 |
| 1906-7 ... | 10,990,224 | 1,805,776 | 1,313,760 | 1,608,432 |
| 1907-8 ... | 7,685,104 | 2,742,656 | 1,169,280 | 2,235,184 |

§ 15. Orchards and Fruit Gardens.

1. **Nature and Extent.**—Fruit-growing has made rapid progress in the Commonwealth during recent years, the area devoted thereto having increased in the past six years by no less than 25,167 acres. The States in which the increase was most marked were:—Western Australia, 8973 acres; Tasmania, 7956 acres; South Australia, 4421 acres; and Victoria, 4056 acres. During the same period the Queensland fruit-growing area increased slightly, while that in New South Wales exhibited a decline of nearly 1400 acres. The increased areas in Tasmania and Western Australia are mainly due to extensive plantings of apple trees with a view to the possibilities of the London market for fresh fruit. The total area devoted to orchards and fruit gardens in the several States is given hereunder:—

COMMONWEALTH ORCHARDS AND FRUIT GARDENS, 1901-2 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|------------|--------|-----------|---------|----------|----------|--------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1901-2 ... | 48,107 | 50,055 | 13,243 | 16,315 | 6,076 | 11,485 | 145,281 |
| 1902-3 ... | 47,584 | 50,478 | 11,690 | 17,376 | 6,872 | 12,675 | 146,675 |
| 1903-4 ... | 48,316 | 51,357 | 13,784 | 18,725 | 7,938 | 14,134 | 154,254 |
| 1904-5 ... | 47,340 | 52,751 | 14,424 | 18,872 | 9,756 | 15,461 | 158,604 |
| 1905-6 ... | 46,615 | 52,274 | 13,970 | 19,320 | 11,026 | 16,519 | 159,724 |
| 1906-7 ... | 46,177 | 54,021 | 13,310 | 18,199 | 12,517 | 18,050 | 162,274 |
| 1907-8 ... | 46,714 | 54,111 | 14,397 | 20,736 | 15,049 | 19,441 | 170,448 |

The varieties of fruit grown differ materially in various parts of the several States, and range between such fruits as the pineapple, paw-paw, mango, and guava of the tropics, and the strawberry, the raspberry, and the currant of the colder parts of the temperate zone. The principal varieties grown in Victoria are the apple, plum, peach, apricot, cherry, and pear. In New South Wales citrus fruits (orange, lemon, etc.) occupy the leading position, although apples, pears, peaches, plums, and apricots are also extensively grown. In Queensland the banana, the orange, the pineapple, the apple, the peach, the mango, and the plum are the varieties most largely grown. In South Australia, in addition to the apple, pear, peach, apricot, plum, orange, and lemon, the almond and the olive are also largely grown. In Western Australia the apple, orange, peach, pear, plum, fig, and apricot are the sorts chiefly grown, while in Tasmania, although the apple represents more than two-thirds of the area in that State devoted to fruit-growing, small fruits, such as the currant, raspberry, and gooseberry, are very extensively grown, and the balance of the area is mainly occupied with the pear, plum, apricot, peach, and cherry.

2. **Relation to Population.**—In relation to population the orchards and fruit gardens of the Commonwealth have exhibited an increase during the past seven seasons slightly greater than the decline, which was experienced in the case of vineyards. Taking the two in conjunction the relative area under vineyards and orchards has, during the period, remained practically stationary at about 55 acres per 1000 of population. Details for the seven seasons are as follows:—

AREA OF ORCHARDS AND FRUIT GARDENS PER 1000 OF POPULATION.

| Season. | N.S.W. | Victoria. | Q'land. | Sth. Aust. | W. Aust. | Tas. | C'wealth. |
|------------|--------|-----------|---------|------------|----------|--------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1901-2 ... | 35 | 42 | 26 | 45 | 32 | 67 | 38 |
| 1902-3 ... | 34 | 42 | 23 | 48 | 33 | 73 | 38 |
| 1903-4 ... | 34 | 42 | 27 | 51 | 36 | 80 | 40 |
| 1904-5 ... | 33 | 44 | 28 | 51 | 41 | 86 | 40 |
| 1905-6 ... | 32 | 43 | 27 | 52 | 44 | 92 | 40 |
| 1906-7 ... | 31 | 44 | 25 | 48 | 48 | 101 | 40 |
| 1907-8 ... | 30 | 44 | 27 | 54 | 57 | 108 | 41 |

3. **Oversea Imports and Exports.**—A very considerable fruit trade, both import and export, is carried on by the Commonwealth with oversea countries, the major portion of the importations consisting of dried fruits, while the bulk of the exports is made up of fresh fruits. Amongst the imports the principal dried fruits are currants, dates, sultanas, and raisins, and the principal fresh fruits bananas, oranges, lemons, and apples. The currants imported are mainly of Greek origin, the dates of Arabian, Persian, and Turkish, the raisins mainly of Spanish, and the sultanas of Turkish. Of the fresh fruit imported during 1907 the bananas were chiefly from Fiji, the oranges and lemons from Italy, and the apples from the United States. The dried fruit imported during the year was valued at £134,736, and the fresh at £95,015. The Commonwealth exports of dried fruits for 1906, representing in all a value of only £2752, consisted mainly of re-exports of currants, dates, etc. In 1907, however, a very marked development in the trade in Australian dried fruits took place, the total export for the year being valued at £76,872, of which £71,506 represented Australian fruits and £5366 re-exports of foreign fruits. The Australian dried fruit exported consisted mainly of raisins, the principal consignees being the United Kingdom, New Zealand, and Canada. The fresh fruit exported during the year was valued at £266,160, and consisted mainly of apples. The principal countries to which these were sent were the United Kingdom, Germany, New Zealand, and Natal. Particulars concerning the oversea imports and exports of dried fruits for the seven years 1901 to 1907 are as follows:—

**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF DRIED FRUITS,
1901 TO 1907.**

| Year. | Oversea Imports. | | Oversea Exports. | | Net Imports. | |
|-------|------------------|---------|------------------|--------|--------------|---------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | lbs. | £ | lbs. | £ | lbs. | £ |
| 1901 | 14,265,731 | 179,305 | 831,996 | 14,206 | 13,433,735 | 165,099 |
| 1902 | 15,312,229 | 165,926 | 942,342 | 14,024 | 14,369,887 | 151,902 |
| 1903 | 13,479,256 | 106,439 | 913,008 | 11,775 | 12,566,248 | 94,664 |
| 1904 | 14,267,310 | 107,117 | 1,729,725 | 18,497 | 12,537,585 | 88,620 |
| 1905 | 17,285,240 | 134,178 | 344,174 | 5,579 | 16,941,066 | 128,599 |
| 1906 | 15,659,620 | 137,732 | 187,710 | 2,752 | 15,471,910 | 134,980 |
| 1907 | 13,250,392 | 134,736 | 5,281,608 | 76,872 | 7,968,784 | 57,864 |

Similar information with regard to the Commonwealth oversea trade in fresh fruit for the same period is contained in the table given hereunder:—

**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF FRESH FRUITS,
1901 TO 1907.**

| Year. | Oversea Imports. | | Oversea Exports. | | Net Exports. | |
|-------|------------------|--------|------------------|---------|--------------|---------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Centals. | £ | Centals. | £ | Centals. | £ |
| 1901 | * | 45,955 | * | 167,926 | * | 121,971 |
| 1902 | * | 57,744 | * | 142,613 | * | 84,869 |
| 1903 | 91,976 | 47,303 | 371,158 | 216,992 | 279,182 | 169,689 |
| 1904 | 50,397 | 31,137 | 467,343 | 263,767 | 416,946 | 232,630 |
| 1905 | 49,659 | 32,654 | 393,982 | 207,418 | 344,323 | 174,764 |
| 1906 | 204,561 | 82,655 | 265,743 | 173,190 | 61,182 | 90,535 |
| 1907 | 189,052 | 95,015 | 435,534 | 266,160 | 246,482 | 171,145 |

* Not available.

4. **Jams and Jellies.**—A small oversea trade in jams and jellies is carried on by the Commonwealth, the value of the imports for the year 1907 amounting to £6967, and of

the exports to £24,561. The country of origin of the bulk of the importations is the United Kingdom, while the destinations of the exports are principally South Africa, Ceylon, the Philippine Islands, and Fiji. Particulars relative to imports and exports for the seven years 1901 to 1907 are as follows:—

COMMONWEALTH OVERSEA TRADE IN JAMS AND JELLIES, 1901 to 1907.

| Year. | Oversea Imports. | | Oversea Exports. | | Net Exports. | |
|----------|------------------|--------|------------------|--------|--------------|--------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | lbs. | £ | lbs. | £ | lbs. | £ |
| 1901 ... | 1,312,377 | 23,358 | 4,140,072 | 64,389 | 2,827,695 | 41,031 |
| 1902 ... | 837,746 | 13,207 | 5,159,688 | 77,833 | 4,321,942 | 64,626 |
| 1903 ... | 379,300 | 7,410 | 2,097,371 | 40,386 | 1,718,071 | 32,976 |
| 1904 ... | 384,159 | 7,270 | 1,526,747 | 21,962 | 1,142,588 | 14,692 |
| 1905 ... | 317,182 | 7,010 | 1,772,524 | 25,385 | 1,455,342 | 18,375 |
| 1906 ... | 379,129 | 8,277 | 1,580,228 | 24,009 | 1,201,099 | 15,732 |
| 1907 ... | 297,634 | 6,967 | 1,639,239 | 24,561 | 1,341,605 | 17,594 |

The trade carried on in jams and jellies between the States of the Commonwealth is a much more extensive one, the principal exporting States being Victoria and Tasmania; and the principal importing States Queensland and Western Australia. Details for the year 1907 are furnished in the table hereunder:—

INTERSTATE TRADE IN JAMS AND JELLIES, 1907.

| State. | Imports from other States of the Commonwealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports.* | |
|-----------------------|--|--------|--|--------|--------------------------|--------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | lbs. | £ | lbs. | £ | lbs. | £ |
| New South Wales ... | 3,913,871 | 57,752 | 2,802,512 | 34,868 | 1,111,359 | 22,884 |
| Victoria ... | 1,861,580 | 25,583 | 6,023,141 | 81,628 | 4,161,561 | 56,045 |
| Queensland ... | 6,413,110 | 81,619 | 284,602 | 4,768 | 6,128,508 | 76,851 |
| South Australia ... | 721,071 | 10,376 | 1,321,032 | 18,507 | 599,961 | 8,131 |
| Western Australia ... | 4,166,862 | 55,797 | 66 | 2 | 4,166,796 | 55,795 |
| Tasmania ... | 464,331 | 5,582 | 7,109,472 | 96,936 | 6,645,141 | 91,354 |

* — Signifies net imports.

5. **Preserved Fruit.**—Details concerning the quantities and values of preserved fruit imported into and exported from the Commonwealth cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables, other than fresh and dried fruits, imported into Australia during 1907 was £30,294, and the corresponding value of exports was £45,594.

§ 16. Minor Crops.

1. **Nature and Extent.**—In addition to the leading crops which in the foregoing pages have been dealt with in some detail, there are many others which, owing either to their nature or to the fact that their cultivation has advanced but little beyond the experimental stage, do not occupy so prominent a position. Some of the more important of these are those which may be classed under the heads of Market Gardens, Nurseries, Grass Seed, Tobacco, Hops, and Millet, while the possibilities of cotton-growing in the tropical portions of the Commonwealth have in recent years received considerable attention, although the industry cannot yet be said to have assumed definite shape. The total area in the Commonwealth during the season 1907-8 devoted to minor crops was 64,704 acres, of which market gardens accounted for 29,734 acres.

2. Market Gardens.—Under this head are included all areas on which are grown mixed vegetables for sale. Where considerable areas are devoted to the production of one vegetable, such for instance as the potato, the onion, the melon, the tomato, etc., these crops are usually not included with market gardens, but are shewn either under some specific head, or under some such general head as "Other Root Crops," or "All other Crops." The area under market gardens in the several States of the Commonwealth during each of the seven seasons 1901-2 to 1907-8 are given in the table hereunder:—

COMMONWEALTH MARKET GARDENS, 1901-2 to 1907-8.

| Season. | N.S.W. | Victoria. | Q'sland. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|------------|--------|-----------|----------|----------|----------|-----------|-----------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1901-2 ... | 7,834 | 8,752 | 2,328 | 9,005 | 2,142 | 1,746 | 31,807 |
| 1902-3 ... | 8,263 | 7,937 | 2,171 | 9,489 | 2,262 | 1,893 | 32,015 |
| 1903-4 ... | 8,754 | 8,455 | 2,563 | 9,964 | 2,463 | 1,685 | 33,884 |
| 1904-5 ... | 8,827 | 7,904 | 2,099 | 10,160 | 3,538 | 1,759 | 34,287 |
| 1905-6 ... | 9,119 | 7,333 | 2,089 | 10,688 | 3,550 | 1,778 | 34,557 |
| 1906-7 ... | 9,550 | 7,906 | 1,953 | 8,379 | 3,789 | 2,210 | 33,787 |
| 1907-8 ... | 10,052 | 9,022 | 2,365 | 2,961 | 3,543 | 1,791 | 29,734 |

The decline in the Commonwealth total for the season 1907-8 is due to the marked decrease in the area devoted to market gardens in South Australia, and to the smaller falling-off in the cases of Western Australia and Tasmania. In all the other States the area for 1907-8 was in excess of that for 1906-7. In the case of South Australia the falling-off is more apparent than real, being in large part due to a change in the classification of such crops introduced in connection with the new system of collection which came into force for 1907-8. It is believed that the figures for the earlier years are considerably in excess of the truth.

3. Grass Seed.—In only four of the States is the growing of grass seed considered of sufficient importance to be specially shewn in the statistical returns. These States are Tasmania, Victoria, Queensland, and South Australia, and the areas so cropped during 1907 were respectively 3105 acres, 1076 acres, 218 acres, and 141 acres. The total yield was 75,762 bushels, an average of 16.69 bushels per acre.

4. Tobacco.—The tobacco-growing industry is one which has experienced marked fluctuations in Australia, and one which at one time promised to occupy an important place amongst the agricultural industries of the Commonwealth. Thus, as early as the season 1888-9 the area under this crop amounted to as much as 6641 acres, of which 4833 were in New South Wales, 1685 in Victoria, and 123 in Queensland. This promise of prosperity was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2000 acres, and that in Queensland to over 1000 acres, the total area under tobacco for the season 1907-8 was only 1337 acres, distributed as follows:—New South Wales, 533 acres; Victoria, 345 acres; and Queensland, 459 acres. This decline in production appears to have been due to the comparatively small demand which existed in Australia for the locally-produced leaf, and to the fact that the cost of production and preparation in the Commonwealth prevented the Australian leaf from obtaining a footing in the outside markets. Probably under more favourable circumstances, and with greater attention given to the production of leaf of the best quality only, the industry is one which will eventually, in Australia, assume considerable proportions. In all the States in which its cultivation has been tried the soil and climate appear to be very suitable for the growth of the plant, and the enormous importations of tobacco in its various forms into the Commonwealth furnish an indication of the extensive local market which exists for an article grown and prepared in such a manner as to meet with the requirements of consumers. The value of the net importations of tobacco into the Commonwealth during the year 1907 amounted to £653,505, comprising manufactured tobacco (£70,100), unmanufactured tobacco (£425,547), cigars (£109,562), cigarettes (£47,311), and snuff (£985).

5. **Hops.**—Hop-growing in the Commonwealth is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1907-8 being 1261 acres, of which 1007 acres were in Tasmania, 248 acres in Victoria, and 6 acres in South Australia. The Tasmanian area, though still small, has increased rapidly during the past six years, the total for the season 1901-2 being only 599 acres. On the other hand, the Victorian area, which in 1901-2 was 307 acres, has diminished to only 248 acres in 1907-8. The cultivation of hops was much more extensive in Victoria twenty years ago than at present, the area devoted to this crop in 1883-4 being no less than 1758 acres. During the year 1907 the net importations of hops into the Commonwealth represented a weight of 1,007,318 lbs. and a value of £49,024. The total value of the net importations of hops into Australia during the past seven years amounted to £365,284, thus indicating the existence of a regular and extensive local demand.

6. **Millet.**—Millet appears in the statistical records of three of the Commonwealth States, viz., New South Wales, Victoria, and Queensland. The total area devoted thereto in 1907-8 was 3566 acres, by far the greater portion, viz., 3158 acres, being in New South Wales. The particulars here given relate to millet grown for grain and fibre. That grown for green forage is dealt with in the section relating thereto.

7. **Nurseries.**—In all the States somewhat extensive areas are devoted to nurseries for raising plants, trees, etc., but statistics concerning the area so occupied for flowers, fruit trees, etc., are not available, and so far as they relate to forestry are given elsewhere.

8. **Cotton.**—Cotton-growing on a small scale has been tried in Queensland, but so far without marked success. The area under cotton during the season 1905-6, viz., 171 acres, had fallen by 1906-7 to 138 acres, but during the season 1907-8 an increase in the area devoted to cotton took place, a total of 300 acres being attained. Hopes are entertained that with the invention of a mechanical device for the picking of the cotton the industry will become firmly established, since the soil and conditions appear eminently suitable for the growth of this crop. Small areas in the Northern Territory have also been planted with cotton, while the tropical portions of Western Australia have long been regarded as suitable for its cultivation.

9. **Coffee.**—Queensland is the only State of the Commonwealth in which coffee-growing has been at all extensively tried, and here the results have up to the present time been far from satisfactory. The total area devoted to this crop reached its highest point in the season 1901-2, when 547 acres were recorded. Since then the area continuously declined to 1906-7, when it was as low as 256 acres. During the season 1907-8 an improvement occurred and the total reached was 304 acres.

10. **Other Crops.**—Miscellaneous small crops are grown in the several States, amongst which may be mentioned pumpkins, melons, tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

§ 17. Fertilisers.

1. **General.**—In the early days of settlement and cultivation in the Commonwealth, scientific cultivation was in a much less developed state than it is to-day. The early farmers were neither under the necessity, nor were they as a rule aware of the need, of supplying the constituents to the soil demanded by each class of crop. The widely-divergent character of the soils in the Commonwealth, their degeneration by repeated cropping, the limitations of climatic conditions, the difficulties of following any desired order of rotation of crops, all rendered it necessary to give attention to artificial manuring. The introduction of the modern seed-drill, acting also as a fertiliser distributor, has greatly facilitated the use of artificial manures, and much land formerly regarded as useless for cultivation has now been made available. There is reason to believe that this feature will be even more strikingly characteristic of the future.

2. Fertilisers Acts.—In order to protect the interests of users of artificial manures an Act has been passed in each of the States, regulating the sale and preventing the adulteration of fertilisers. The following is a list of such Acts:—

| | |
|-----------------------|---|
| New South Wales ... | The Fertilisers Act of 1904. |
| Victoria ... | The Artificial Manures Acts of 1904 and 1905. |
| Queensland ... | The Fertilisers Act of 1905. |
| South Australia ... | The Fertilisers Act of 1900; amended 1903. |
| Western Australia ... | The Fertilisers and Feeding Stuffs Act of 1904; amended 1905. |
| Tasmania ... | The Manures Adulteration Acts of 1893 and 1898. |

As regards their main features these several Acts are practically identical. The words "fertiliser" and "manure," as used in these Acts, mean any substance containing nitrogen, phosphoric acid, or potash, manufactured, produced, or prepared in any manner for the purpose of fertilising the soil or supplying nutriment to plants, but do not include farm-yard or stable manure or similar articles in their natural or unmanufactured state. The Acts provide that every vendor of fertilisers shall, within a stated period, forward to the Secretary of Agriculture, or corresponding officer, samples of the fertilisers on sale by him, together with the distinctive name or brands by which they are known, and the price at which he intends to sell during the year. On every bag, package, or bundle of fertiliser sold, or exposed for sale, he must attach a printed label shewing thereon:—

- (i.) The number of net pounds of fertiliser in such bag or parcel;
- (ii.) The figure or trade mark attached to the fertiliser and intended to identify it;
- (iii.) The proportion per centum of nitrogen, phosphoric acid, and potash contained therein.

In addition to the above the vendor must furnish every purchaser with an invoice certificate, signed by himself or his agent, stating his full name and place of business and the quality of the fertiliser sold.

Any officer or analyst appointed under the Acts may enter any manufactory, warehouse, store, vessel, wharf, railway station, conveyance, or other place where fertiliser is manufactured, stored, exposed for sale, or in course of delivery or transit, and demand and take samples of such fertiliser. Every sample so taken must be divided by such officer into three parts, and each marked, sealed, and fastened by him in the presence of the person in charge, and disposed of as follows:—

- (i.) One part to be taken by person in charge.
- (ii.) One part to be used for analysis.
- (iii.) One part to be retained by the officer for future comparison.

Every buyer of fertiliser is entitled to submit a sample to the analyst appointed under the Act, and receive a certificate of its analysis. If the analysis prove it to be under what it is represented to be, the vendor must pay the cost of analysis.

3. Imports.—The local production of artificial manures falls short of the existing demand, and large quantities are consequently imported.

The importation of fertilisers has increased nearly 100 per cent. during the seven years of Federation. The chief items, both as regards quantity and value, are those relating to superphosphates, fertilisers apparently very suitable for the growing of cereals in Australian soils. The greater quantity of the manufactured superphosphates are obtained from the United Kingdom, whence came nearly 70 per cent. of the total imported during 1907. Belgium, Germany and the Netherlands also contribute, and of recent years Japan and the United States of America have also assisted in supplying the Australian demand. Guano is imported chiefly from Ocean Island, one of the South Sea group, and in lesser quantities from Malden Island and Surprise Island. Ocean Island is also the principal contributor of rock phosphates, next in order being Christmas

Island and the Straits Settlements. India has practically a monopoly of the bonedust trade with the Commonwealth; only a very small amount comes from the United Kingdom, Belgium, and Germany.

The increasing demand for artificial manures is shewn in the following table. The figures for 1907 are somewhat lower than for 1906 but are considerably in excess of those for any year previous thereto :—

IMPORTS OF FERTILISERS, 1901 to 1907.

| Fertiliser. | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Bonedust ... | Cwt. | 94,680 | 94,387 | | | 64,241 | 80,625 | 93,798 |
| " ... | £ | 22,050 | 18,741 | | | 15,849 | 20,094 | 24,103 |
| Guano ... | Cwt. | 262,866 | 449,236 | 1,588,803 | 1,710,028 | 534,573 | 818,580 | 606,630 |
| " ... | £ | 35,151 | 64,801 | | | 68,088 | 103,953 | 75,130 |
| Superphosphates ... | Cwt. | 895,904 | 795,091 | 246,746 | 287,024 | 1,240,403 | 1,153,249 | 780,464 |
| Rock Superphos. ... | £ | | | | | 158,195 | 131,955 | 192,178 | 170,514 | 133,352 |
| Other " ... | Cwt. | | | | | 306,592 | 547,079 | 769,630 |
| " ... | £ | | | | | 38,327 | 70,782 | 103,609 |
| " ... | | | | | | 33,736 | 84,979 | 227,689 |
| " ... | | | | | | 10,126 | 24,659 | 52,975 |
| Total ... | Cwt. | 1,253,450 | 1,338,714 | 1,588,803 | 1,710,028 | 2,179,545 | 2,684,512 | 2,478,211 |
| | £ | 215,396 | 215,497 | 246,746 | 287,024 | 324,568 | 390,002 | 389,169 |

4. **Statistics of Use of Fertilisers.**—The only statistics available in connection with the use of manures in the Commonwealth are those of Victoria, South Australia, and Western Australia. Particulars concerning the first-mentioned State are given hereunder :—

FERTILISERS USED IN VICTORIA, 1901-2 to 1907-8.

| Season. | Total Area of Crops. | Farmers Using Manure. | Area Manured. | | Manure Used. | |
|------------|----------------------|-----------------------|---------------|-----------------------------------|------------------------------|-------------|
| | | | Aggregate. | Percentage to Total Area of Crop. | Natural (Stable-yard, etc.). | Artificial. |
| | | | | | | |
| 1901-2 ... | 2,965,681 | 11,439 | 556,777 | 18.77 | 153,611 | 23,535 |
| 1902-3 ... | 3,246,568 | 18,537 | 1,099,686 | 33.87 | 206,676 | 36,630 |
| 1903-4 ... | 3,389,069 | 19,921 | 1,205,443 | 35.57 | 207,817 | 41,639 |
| 1904-5 ... | 3,321,785 | 20,167 | 1,521,946 | 45.82 | 190,903 | 45,940 |
| 1905-6 ... | 3,219,962 | 21,586 | 1,791,537 | 55.64 | 210,507 | 54,674 |
| 1906-7 ... | 3,303,586 | 23,072 | 1,985,148 | 60.09 | 205,906 | 60,871 |
| 1907-8 ... | 3,232,523 | 23,733 | 2,018,079 | 62.43 | 232,394 | 62,337 |

The figures relating to the use of fertilisers in South Australia, as shewn in the table below, although not official, may be taken as being approximately correct :—

FERTILISERS USED IN SOUTH AUSTRALIA, 1901-2 to 1907-8.

| Season. | Total Area of Crops. | Area Manured. | | Manure Used. |
|------------|----------------------|---------------|-----------------------------------|--------------|
| | | Aggregate. | Percentage to Total Area of Crop. | |
| | | | | |
| 1901-2 ... | 2,236,552 | 845,000 | 37.78 | 37,500 |
| 1902-3 ... | 2,224,593 | 1,000,000 | 44.95 | 44,500 |
| 1903-4 ... | 2,256,824 | 1,170,000 | 51.84 | 52,000 |
| 1904-5 ... | 2,275,506 | 1,265,600 | 55.62 | 56,500 |
| 1905-6 ... | 2,255,569 | 1,321,600 | 58.59 | 59,000 |
| 1906-7 ... | 2,150,291 | 1,366,400 | 63.54 | 61,000 |
| 1907-8 ... | 2,265,017 | 1,456,000 | 64.28 | 65,000 |

Corresponding particulars relative to Western Australia for the past four seasons are given in the following table, and furnish interesting evidence of the rapid extension of the use of manures in that State:—

FERTILISERS USED IN WESTERN AUSTRALIA, 1904-5 to 1907-8.

| Season. | Total Area of Crops. | Area Manured. | | Manure Used. | |
|------------|----------------------|---------------|------------------------------------|------------------------------|-------------|
| | | Aggregate. | Percentage to Total Area of Crops. | Natural (Stable-yard, etc.). | Artificial. |
| | Acres. | Acres. | % | Loads. | Tons. |
| 1904-5 ... | 327,391 | 205,923 | 63.90 | 72,523 | 10,787 |
| 1905-6 ... | 364,704 | 257,469 | 70.60 | 83,033 | 12,676 |
| 1906-7 ... | 460,825 | 340,401 | 73.87 | 81,653 | 16,127 |
| 1907-8 ... | 494,987 | * | * | * | * |

* Not available.

A marked increase in the proportion of cropped land treated with manure is in evidence in all three of the States for which returns are available. Thus in Victoria the area of manured land represented in 1901-2 only 18½ per cent. of the area under crop, as against 62½ per cent. in 1907-8. Similarly in South Australia the percentage increased from 37½ per cent. in 1901-2 to 64½ per cent. in 1907-8, and in Western Australia from 64 per cent. in 1904-5 to 74 per cent. in 1906-7.

5. Local Production of Fertilisers.—Statistics relative to the local production of fertilisers are necessarily very incomplete, and detailed returns for fertiliser factories other than bone mills are not available. If, however, approximately complete returns of the quantities of fertilisers used in the various States could be given a comparison with the importations would give valuable information, but, as already mentioned, such particulars are only available for three of the States, and even then do not furnish the whole of the information necessary.

6. Benefits derived from the Use of Fertilisers.—There is little doubt that the increased and increasing use throughout the Commonwealth of fertilisers, natural and artificial, combined with the greater attention being devoted to fallowing and to the combination of sheep-farming with agriculture, is having the effect of improving the prospects of those dependent for a livelihood on the products of the soil. Reference has previously been made to the loss to the soil of phosphoric acid which the Commonwealth export of wheat and its milled products involves, and the necessity which thus arises for returning this ingredient in some form. Similarly, other staple products exported impose their respective tolls upon the soil of the Commonwealth, and the increased use of fertilisers furnishes evidence that producers are alive to the necessity for making good the deficiency so arising.

§ 18. Ensilage.

1. Value to Stockowners.—The use of ensilage as a substitute for green fodder during periods of drought or spells of dry weather, or for winter use, is less extensive in Australia than the circumstances would appear to warrant. There is, however, a growing disposition on the part of dairy farmers to make silos on their holdings, as they find that dairy cattle eat ensilage greedily, and that by its means the output of milk, both in regard to quantity and quality, may be kept up long after the supply of ordinary green food is exhausted. Sheepbreeders are also recognising the fact that during protracted periods of dry weather the silo enables them to keep their stock in good condition, and that lambing can take place satisfactorily. Ensilage thus obviates the expense of traveling or trucking sheep for hundreds of miles to get beyond the drought area, or the equally costly and even ruinous alternative of providing chaff for food at high prices and

costly freight. In the rearing of lambs for the London market, ensilage appears to be destined to play an important part, as the lambs thrive upon it much better than upon dry food. By the judicious economising of the surplus growth of green food with the use of the silo, farmers and squatters can carry more stock on their holdings than they otherwise would be justified in doing. Not only is the great waste of superabundant food thus avoided, but it becomes possible to change into a succulent and nutritious food much growth that in any other state would not be eaten by their stock. Thus such vegetation as marsh mallows, thistles, weeds of all sorts, and even the swamp reed, *Arundo phragmites*, which grows in great quantities in lagoons, billabongs, and swamps, are all eaten with avidity when offered to stock in the form of ensilage. The pit and stack silos are rapidly being superseded by those built of red gum and hardwood or concrete. This is found to a great extent to obviate the loss sustained by mould, at the same time reducing the risk of fire. These silos vary in capacity from forty to 130 tons. A portable silo made of iron which has been lately introduced, is made in sections of such size and weight as to admit of ready handling. These silos can be increased in diameter or height by the addition of further sections.

2. Government Assistance in the Production of Ensilage.—The Government of Victoria, recognising the fact that defective methods of making ensilage have often been adopted, leading to partial or total failure, is making special efforts to educate the farming community in this respect, so that mistakes may be avoided and the conditions essential for the production of good ensilage may be better appreciated. These conditions vary with the climate and with the locality. The Government is also undertaking the erection of silos on very liberal terms, repayment extending over three years. Experts supervise the erection of the silos and give practical lessons as to packing them, etc. With the exception of Victoria none of the other States have taken steps to assist the farmers financially, though some of them are making inquiries with the view of ultimately doing so where required.

3. Quantity Made.—Particulars concerning the number of silos and the quantity of ensilage made in the several States of the Commonwealth in the seasons 1901-2 to 1907-8 are furnished in the table given hereunder:—

COMMONWEALTH ENSILAGE-MAKING, 1901-2 to 1907-8.

| State. | 1901-2. | | 1902-3. | | 1903-4. | | 1904-5. | | 1905-6. | | 1906-7. | | 1907-8. | |
|----------|------------|----------------|------------|----------------|------------|----------------|------------|----------------|------------|----------------|------------|----------------|------------|----------------|
| | *Holdings. | Ensilage Made. | *Holdings. | Ensilage Made. | *Holdings. | Ensilage Made. | *Holdings. | Ensilage Made. | *Holdings. | Ensilage Made. | *Holdings. | Ensilage Made. | *Holdings. | Ensilage Made. |
| N.S.W. | No. 147 | Tons. 7,563 | No. 79 | Tons. 3,212 | No. † | Tons. 21,393 | No. † | Tons. 12,609 | No. † | Tons. 9,321 | No. † | Tons. 11,849 | No. 212 | Tons. 12,856 |
| Vic. ... | 125 | 5,065 | 111 | 4,703 | 290 | 10,931 | 300 | 12,779 | 160 | 7,240 | 210 | 10,581 | 203 | 11,031 |
| Q'land | † | 888 | † | 217 | † | 1,273 | † | 1,735 | † | 1,199 | 44 | 3,201 | 63 | 2,947 |
| S.A. ... | 87 | 2,933 | 98 | 1,582 | 107 | 2,217 | 120. | 2,765 | 125 | 3,286 | † | 3,364 | 56 | 2,088 |
| W.A. ... | 51 | 613 | 17 | 280 | 60 | 559 | 34 | 1,127 | 24 | 552 | 23 | 525 | 37 | 1,169 |
| Tas. ... | † | † | † | † | † | † | † | † | † | † | † | † | 11 | 512 |
| C'wlth. | ... | 117,062 | ... | 39,994 | ... | 136,373 | ... | 131,015 | ... | 121,598 | ... | 129,520 | 582 | 30,605 |

* No. of Holdings on which Ensilage was made.
 † Figures not available. Ensilage was made in small quantities in Tasmania, though no returns were published prior to 1907-8.
 ‡ Exclusive of Tasmania.

It will be noted that since the drought of 1902-3 greater attention has been paid to ensilage than heretofore, and though the quantity made in 1905-6 shews a falling-off this does not necessarily indicate that the quantity on hand was less, as owing to the favourable season pasturage was very abundant, and consequently the ensilage on hand was not availed of to as great an extent as would have been the case under less propitious circumstances. The two following years shew an upward tendency in the quantity produced.

§ 19. Agricultural Colleges and Experimental Farms.

1. **Introduction.**—It has been thought preferable to refer to what may be called the effort in the direction of agricultural education, in this section rather than under the heading of education.

The virgin soil of a new country rendered attention to scientific methods of farming less necessary in the earlier days of Australian colonisation than at the present time, and it may also be said that the knowledge of scientific farming was then but little developed. In many parts of Australia, moreover, the regular rotation of crops, of vast importance to all agricultural countries, would appear hardly possible owing to the peculiar climatic conditions. These conditions may, however, be utilised, or made less adverse by a more skilful tillage of the soil, and the restoring to it or adding to it such chemical constituents as may be necessary for particular crops. The fostering of industries, other than those pertaining merely to the production of cereals, is also becoming a matter of consequence, and considerable extensions of knowledge have been made in the past few years in respect to the co-ordination of other industries with agricultural industry. In most of the States agricultural colleges and experimental farms have been established with a view to promoting agriculture and of establishing improved and more scientific systems of stock-breeding and dairying. In these colleges and in some of the farms provision is made for the accommodation of pupils, to whom both practical and theoretical instruction is given by experts in various branches of agriculture. Analyses of soils and fertilisers are made, manures are tested, and elementary veterinary science, etc., is taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of showing that it is practicable to produce certain crops in a given place, but also to shew how it is possible to make farming pay best in that locality. Opportunities are afforded for practice in general agricultural work, and instruction is given in the conservation of fodder, in cheese and butter making, in the management, breeding, and preparation for the market of live stock, in the eradication of pests and weeds, and in the carpenters', blacksmiths' and other trades.

Travelling expert lecturers are sent to the various agricultural and dairying centres, and there is a wide distribution of periodical agricultural gazettes and bulletins on matters of importance at special seasons. Lectures are given on agricultural, pastoral, horticultural, and viticultural subjects, according as they have bearing on the industries of the district in which they are given, and practical demonstrations are frequently held with a view of obtaining the best results. Seeds of cereals, potatoes, and fodder plants are distributed throughout the several States for experimental purposes, on the understanding that result reports will be furnished to the department from which the seed was sent. The object of this is to ascertain the varieties of seed most suitably adapted to the soil in the different localities. Attention is also paid to the proper supervision of exports of produce in order to ensure their being placed on the home markets in the best possible condition. In some of the States agricultural instruction is given at technical schools, while experimental elementary agriculture—practically a form of nature study—is taught at many of the primary schools. Courses for the instruction of school-teachers during the holiday recesses have been established at some of the agricultural colleges.

(i.) *Particulars of Agricultural Colleges and Experimental Farms.* In the table given below particulars of agricultural colleges and experimental farms in the several States of the Commonwealth in 1907-8 are shewn. Tasmania is the only State in which such colleges and farms are not established :—

PARTICULARS OF AGRICULTURAL COLLEGES AND EXPERIMENTAL FARMS IN THE COMMONWEALTH, 1907-8.

| Particulars. | N.S.W. | Vic. | Qld. | S.A. | W.A.* | C'wealth |
|--|--------|-------|--------|-------|-------|----------|
| Number of colleges | 1 | 2 | 1 | 1 | ... | 5 |
| Number of experimental farms ... | 13 | 5 | 7 | 3 | 5 | 33 |
| Total number of students ... | 345 | 198 | 65 | 56 | 45 | 649 |
| Total number of hands employed | 142 | 63 | 61 | 16 | 22 | 304 |
| Area under cereals and hay ... Acres | 1,321 | 947 | 438 | 637 | 594 | 3,937 |
| Area under fruit trees and vines... .. | 274 | 105 | 81 | 71 | 26 | 557 |
| Area under all other crops | 1,484 | 484 | 182 | 174 | 329 | 2,653 |
| Total area under crop | 3,079 | 1,536 | 701 | 882 | 949 | 7,147 |
| Area of arable land | 4,080 | 3,661 | 1,110 | 1,967 | 2,310 | 13,128 |
| Total area of farms | 14,264 | 8,848 | 13,221 | 2,733 | 6,630 | 45,696 |
| Number of Live Stock— | | | | | | |
| Horses No. | 301 | 144 | 106 | 86 | 56 | 693 |
| Cattle | 784 | 393 | 614 | 91 | 197 | 2,079 |
| Sheep | 3,378 | 3,241 | 997 | 2,445 | 1,334 | 11,395 |
| Pigs | 459 | 253 | 189 | 350 | 131 | 1,382 |
| Value of plant and machinery ... £ | 8,432 | 4,728 | 10,704 | 1,437 | 1,722 | 27,023 |
| Value of produce for year ... £ | 16,351 | 9,480 | 1,979 | 3,110 | 3,144 | 34,064 |

* Figures for Western Australia are for 1906-7.

2. **New South Wales.**—In order to meet the demand for agricultural training, and for the purpose of conducting experiments in various branches of agriculture and of disseminating agricultural knowledge, an agricultural college and farm and twelve experimental farms have been established by the New South Wales Government. Theoretical instruction in agriculture, with practical illustrations, forms part of the curriculum of the Sydney Technical College. At the Hurlstone Continuation College there is a special course in both theoretical and practical agriculture for teachers. Instruction in "nature knowledge" is given in the State primary schools, many of which have their own experimental plots. As a means of further encouraging the study of agriculture the Department of Public Instruction has a travelling inspector in agriculture, whose duty it is to visit the country and metropolitan schools, giving lectures on the value, necessity, and advantages of agricultural knowledge, and giving practical demonstrations wherever practicable.

(i.) *The Hawkesbury Agricultural College*, situated near the town of Richmond, on the Hawkesbury River, about thirty-eight miles from Sydney, is under the control of the Agricultural Department and provides accommodation for about 250 students. Attached to the college is a farm of 3551 acres, of which 1038 acres were under crop in the season 1907-8.

(a) *The course of instruction* comprises the principles of agriculture; the breeding, rearing, feeding, and management of live stock; agricultural chemistry, botany, vegetable pathology, and entomology; veterinary science and practice; bacteriology; meteorology; agricultural mechanics; elements of surveying and farm book-keeping; all kinds of practical farm work, including the use of farm implements and machinery; dairying, carpentry, saddlery, blacksmithing, and elementary agricultural engineering; the management of poultry and bees and all branches of orchard and garden work. The course extends over two years, and is divided into four sessions. At the end of the course students may undergo examination for the purpose of obtaining the college diploma.

(b) *Experimental Work.* In addition to the education of the students extensive experimental operations are carried on at the farm for the general benefit of agriculturists. Large numbers of farmers visit the institution in quest of information. During the winter vacation arrangements are made for a winter school for farmers. This school has been in operation for three years. The course extends over one month.

(ii.) *Experimental Farms, Orchards, and Vineyards.* Experimental farms have been established at Wagga, Bathurst, Coolabah, Grafton, Glen Innes, Cowra, and Wollongbar. There are irrigation farms at Moree, Gera, and Yanco, and a dairy stud farm at Berry, while viticultural stations have been established at Howlong and Belmont. At the farms at Wagga, Bathurst, Wollongbar, and Berry, accommodation is provided for students. The educational work undertaken at the four farms where students are received is more practical than academic. Scientific lectures are given as far as possible, and the students, at the end of the full course, undergo an examination for the purpose of obtaining the farm certificate. The fees payable are not large, amounting, as a rule, to about £25 per annum for residential students. With regard to the farm operations, the objects of each farm are to demonstrate the most economic and effective systems of producing and harvesting crops; to carry out experiments to determine the suitability or otherwise of crops, not only for the district where the farm is situated but for other districts having similar climate and soils; and to carry out scientific agricultural experiments generally.

(iii.) *Particulars of Agricultural College and Experimental Farms.* The following table shows the number of students at the Hawkesbury College and at the four experimental farms at which students are received for each year from 1901 to 1907 inclusive:—

NEW SOUTH WALES.—NUMBER OF STUDENTS AT GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS, 1901 to 1907.

| Name. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Hawkesbury Agricultural Coll. | 102 | 116 | 120 | 153 | 144 | 201 | 230 |
| Wagga Farm | 7 | 18 | 29 | 40 | 41 | 40 | 63 |
| Bathurst Farm | 6 | 15 | 15 | 23 | 18 | 25 | 23 |
| Wollongbar Farm | ... | 2 | 3 | 11 | 14 | 9 | 18 |
| Berry Dairy Stud Farm | ... | 5 | 5 | 3 | 11 | 7 | 11 |
| Total | 115 | 156 | 172 | 230 | 228 | 282 | 345 |

It will be seen from this table that in the six years from 1901 there has been a substantial increase in the number of students, the total for 1907 being no less than 200 per cent. greater than that for 1901.

At the Wagga farm a specialty is made of growing seed wheats and fruits for drying, and of breeding dairy stock and swine. The Bathurst farm is devoted to the cross-breeding of sheep, fruit-growing, cereal culture, and general mixed farming. At Coolabah experiments in the dry districts have been carried on, while at Wollongbar experiments have been made on a large scale with grasses for the grazing of dairy cattle, and stags have been taken to assist the dairying industry in the surrounding districts.

The following table gives particulars of the Hawkesbury College and of the thirteen experimental farms for the year ended the 31st March, 1908:—

NEW SOUTH WALES.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS AT THE 31st MARCH, 1908.

| Name of College or Farm. | Total Area of Farm. | Total Area under Crop. | Area under Cereals and Hay. | Area under Fruit Trees and Vines. | Area under all other Crops. | Number of Hands Employed | Value of Plant and Machinery. | Value of Produce for the Year. |
|--------------------------|---------------------|------------------------|-----------------------------|-----------------------------------|-----------------------------|--------------------------|-------------------------------|--------------------------------|
| | Acres. | Acres | Acres | Acres. | Acres. | No. | £ | £ |
| Hawkesbury | 3,551 | 1,038 | 299 | 43 | 696 | 34 | 2,070 | 5,400 |
| Wagga | 3,228 | 836 | 447 | 95 | 294 | 22 | 1,672 | 4,097 |
| Bathurst | 695 | 409 | 178 | 37 | 194 | 20 | 1,430 | 3,008 |
| Coolabah ¹ | 2,282 | 103 | 40 | 3 | 60 | 2 | 440 | 200 |
| Moree ² | 79 | 38 | 26 | 6 | 6 | 3 | 165 | 70 |
| Wollongbar ¹ | 263 | 67 | 15 | 3 | 49 | 13 | 450 | 425 |
| Berry ³ | 323 | 53 | 10 | ... | 43 | 4 | 330 | 650 |
| Howlong ⁴ | 240 | 64 | 27 | 35 | 2 | 8 | 375 | 161 |
| Grafton | 1,000 | 121 | 106 | ... | 15 | 14 | 340 | 1,034 |
| Glen Innes | 1,300 | 134 | 80 | 20 | 34 | 7 | 750 | 638 |
| Cowra | 936 | 168 | 81 | 1 | 86 | 7 | 200 | 352 |
| Pera ² | 67 | 42 | 12 | 25 | 5 | 3 | 200 | 316 |
| Belmont ⁴ | 300 | 6 | ... | 6 | ... | 5 | 10 | ... |
| Yanco ^{2*} | ... | ... | ... | ... | ... | ... | ... | ... |

1. The total area of this farm is 15,000 acres, but 12,718 acres have been let for grazing purposes.
 2. Irrigation farm. 3. Dairy stud farm. 4. Viticultural station.
 * Particulars not available.

iv.) *Other Forms of Agricultural Instruction.* Agricultural education at the Technical College at Sydney includes the following studies:—The character and prospects of Australian agriculture; climate and rainfall; selection of land, clearing, fencing, building and draining; irrigation and water storage; the cultivation of crops; manures; live stock; dairying; sheep and wool; farm and dairy chemistry; the treatment of fungus and insect pests; fruit-growing and preserving; vine-growing and wine-making; pigs, poultry and bee-keeping; and horticulture and home-gardening. Elementary agriculture forms the first year's course, and advanced agriculture is dealt with during the second year. With the object of giving lectures and demonstrations on various subjects, the scientific and expert staff of the agricultural laboratories in Sydney as well as those attached to the college and farm staffs are from time to time placed at the disposal of the farming community, and are constantly in demand by agricultural societies, farmers' and settlers' associations, and other similar bodies. The publication of the *Agricultural Gazette* is a valuable means of imparting knowledge on agricultural matters. Seeds grown at the experimental farms are distributed from a central dépôt in Sydney for trial purposes among the farmers, and are also available to State school teachers for use in connection with the experimental plots, which are now attached to many of the primary schools throughout the State. The only condition in the granting of such samples is that the recipients shall in due course forward a report of their experiments to the Agricultural Department.

3. *Victoria.*—In 1884, the Agricultural Colleges Act, passed to make provision for the establishment of agricultural colleges and experimental farms in Victoria, provided for the permanent reservation from sale of 150,000 acres of Crown lands by way of endowment of agricultural colleges and experimental farms, which, together with other lands reserved as sites for such institutions prior to the passing of the Act, are vested in three trustees appointed by the Governor. Provision was made for the appointment of a Council of Agricultural Education, consisting of eleven members, five of whom are elected by the members of the Agricultural Societies of the State, five are nominated by the Governor, whilst the Secretary for Agriculture is also a member of the Council and its Treasurer. Two agricultural colleges and five experimental farms, orchards and vineyards have now been established in different parts of the State under this Act. There are two Agricultural High Schools under the control of the Education Department,

while elementary experimental agriculture is taught at many of the State primary schools. Instruction in agriculture is also given at the technical schools at Melbourne and Bairnsdale.

(i.) *Agricultural Colleges.* The two colleges are situated respectively (a) at Dookie, in the Goulburn Valley district, and (b) at Longerenong, in the Wimmera district.

(a) *The Dookie Agricultural College*, with its farm of 4846 acres, is situated in a rich agricultural country, eminently suited for farming, grazing, viticulture, and horticulture. The college buildings were erected during 1886, and since then numerous additions have been made, so that at the present time accommodation is provided for seventy students, and provision will shortly be made to accommodate thirty more. The farm is equipped with modern dairy and cowbyres, piggeries, poultry plant, cellars, etc., also large stables and stallion boxes, shearing shed, slaughterhouse, mechanics' and carpenters' shops, silos, barn, sheds, cattle and sheep yards, steam and oil engines, and numerous modern implements of agriculture. Half the students' time is devoted to practical work on the farm, and half to scientific, theoretical, and other work. On the farm the student is taught to manage live stock, handle implements and machinery, work the separator, drive engines, prune vines and trees, break-in horses, shoe horses, mend a break, and erect buildings. At the college instruction is given in determining the fertility of soils, the effects of manuring, the importance of drainage, the improvement of stock and crops, irrigation, and the treatment and eradication of diseases in plants and animals. Considerable attention is paid to experimental work in connection with cereals. The rearing of new varieties of wheat, suitable for the different parts of the State of Victoria, has special attention paid to it. Manurial tests are carried out each year and the results published for the benefit of the farmers. The stock comprise over fifty horses, as well as good herds and flocks of pedigreed cattle, sheep, pigs, and poultry. The annual charge made to residential students is £28 per head. The number of students during 1907-8 was seventy-six.

(b) *The Longerenong Agricultural College*, reopened in 1905, can accommodate forty students, and there were thirty-two on the rolls during last year. The farm contains an area of 2386 acres, and is particularly adapted for demonstrating what can be done in farming with irrigation, water being supplied by one of the channels of the Western Wimmera Irrigation Trust. Including fallow land, about 1000 acres are under cultivation each season; the orchard and vineyard cover an area of about thirty acres. In addition to a number of well-bred horses and cattle, there is a small flock of pedigree sheep. Lamb-raising is one of the principal industries. The course may be taken by either resident or non-resident students, the former doing both class and farm work, while the latter attend for class work only on alternate days. The syllabus of instruction includes the principles and practice of agriculture, agricultural chemistry, agricultural physics and mechanics, botany, entomology, geology, surveying, bookkeeping, mathematics, and English. The fees for resident students amount to £18 5s. per annum, and for non-resident students to £5 per annum.

(ii.) *Agricultural High Schools and Technical Colleges.* During the year 1907 the Education Department opened two agricultural high schools—one at Warnambool and the other at Sale—each having accommodation for about fifty pupils. Similar institutions are to be established in the near future at Wangaratta, Ballarat, and Shepparton, the sites having already been acquired, the direct aims being to give to boys such an education as will direct their attention specially towards the land as a means of gaining a livelihood; to promote agriculture as an occupation and a profession; to provide a central institution for the dissemination of agricultural information by evening lectures,

conferences, and literature; to superintend the Government experimental plots, to record and interpret their results; and to provide a summer school in agriculture for primary school teachers. The course of instruction comprises agricultural science, climatology, physics, chemistry, geography, drawing, English, mathematics, and farm practice. At the Working Men's College at Melbourne lectures are given on agricultural chemistry, wool-classing, poultry-breeding, etc., and at the School of Mines at Bairnsdale a complete course in theoretical and practical agriculture is given, extending over a period of two years. Agricultural courses are also held at the Ballarat School of Mines and at the Gordon College, Geelong.

(iii.) *Experimental Farms.* Experimental farms, orchards, and vineyards have been established at Rutherglen, Wyuna, Whitfield, Heytesbury, and Burnley, demonstrating different methods of cultivation, manuring, stock-breeding, the cultivation of economic plants, the improvement of varieties of cereals by selection and cross fertilisation, and the testing of fodder plants. Six demonstration orchards have been established to shew the effect of proper cultivation and pruning of fruit trees in various districts and the suitability of the trees for the district. At Burnley Horticultural Gardens students are trained in horticulture. Areas have been planted at Rutherglen and Wahgunyah with phyloxera-resistant vines for distribution to vignerons to enable them to reconstitute their vineyards.

(iv.) *Other Forms of Agricultural Instruction.* Since the establishment of butter factories throughout Victoria a travelling dairy formerly utilised has been discontinued. Demonstrations in cheese-making are, however, still given by an expert, while other experts also visit the factories and supply information and instruction. Practical lessons are also given by experts in fruit-preserving, drying, candying, also in flax manufacture, cider-making, poultry-dressing, and the preparation of poultry for export. In addition to these lectures a system of short course classes in agriculture has been established. These classes are held at various centres and lectures are given on the principles of agriculture, the care of farm stock, sheep-breeding and management, dairy-farming, agricultural engineering, and orchard and garden work. In many of the State schools of Victoria elementary agriculture is taught. In connection with these schools there are experimental plots varying in area from half an acre to rather less than a quarter of an acre. Experiments are conducted to shew the benefits of cultivation, drainage, and rotation of crops, to ascertain fodder and other crops suitable for the locality, and to test manures. In some of the schools milk-testing is taught, and the economic native woods, common weeds, and insects are dealt with.

(v.) *Particulars of Agricultural Colleges and Experimental Farms.* The table given hereunder furnishes particulars relating to the agricultural colleges of Dookie and Longerenong, and the experimental farms at Rutherglen, Whitfield, and Wyuna. As the total area of the plots at Burnley and Heytesbury is only thirty acres and twenty acres respectively, figures relative thereto have been omitted from this table:—

VICTORIA.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGES AND EXPERIMENTAL FARMS FOR THE YEAR 1907-8.

| Name of College or Farm. | Total Area of Farm. | Total Area under Crop. | Area under Cereals and Hay. | Area under Fruit Trees & Vines. | Area under all other Crops. | Number of Hands Employed. | Value of Plant and Machinery. | Value of Produce for the Year. |
|--------------------------|---------------------|------------------------|-----------------------------|---------------------------------|-----------------------------|---------------------------|-------------------------------|--------------------------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | No. | £ | £ |
| Dookie ... | 4,846 | 600 | 348 | 56 | 196 | 18 | 1,500 | 5,230 |
| Longerenong | 2,386 | 466 | 435 | 27 | 4 | 6 | 958 | 2,135 |
| Rutherglen | 913 | 181 | 92 | 21 | 68 | 22 | 950 | 1,125 |
| Whitfield ... | 113 | 33 | 18 | ... | 15 | 4 | 120 | 90 |
| Wyuna ... | 540 | 256 | 54 | 1 | 201 | 11 | 1,200 | 900 |

4. **Queensland.**—Organised experimental agriculture in Queensland dates from the establishment of the Department of Agriculture and Stock, but such work as has been done in connection with stock-breeding, other than that carried on by private individuals, has been of later birth, and has been confined to dairy stock and draught horses. Agriculture in Queensland in the early nineties was upon the well-defined lines of the other States, so that the knowledge to be gained as to what could be profitably adapted to Queensland, with its varied climate and rainfall, covered a wide field. Instructors were appointed conversant with the different lines of agriculture, of which grain cultivation, dairying, fruit-growing, tobacco cultivation, and tropical agriculture, such as sugar, rubber, and spices, are the most important. This has been followed by the establishment of an agricultural college, of farms in the temperate parts of the State, and of nurseries in the tropical parts. With wheaten grain a system of experiments has been carried out for some years with the distinctive object of evolving a type of wheat adapted for Queensland, and as far as possible resistant to the attacks of rust. In dairying, a commencement was made by despatching to the different farming centres properly equipped travelling dairies with the latest appliances. The export of Queensland dairy produce has arisen through this effort. No travelling dairies are, however, now employed. A fruit farm has been established, at which fruits suitable for or likely to adapt themselves to the Queensland climate and conditions have been experimented with during a series of years. To cope with the insect and fungus pests to which such fruits are peculiarly susceptible, careful inspection is made of fruits in the markets and for export, and every effort is put forth to prevent the introduction of fresh diseases and to exterminate those which are already within the State.

(i.) *Gatton Agricultural College.* In 1897 the Queensland Government established an agricultural college at Gatton, about fifty-eight miles west of Brisbane, with an associated farm of 1692 acres. Accommodation is provided for sixty residential students. Instruction is afforded in various branches of practical farming and theoretical agriculture, the practical feature being regarded as the more important. Elementary science and physics, dairying, gardening, elementary chemistry, veterinary science, horticulture, stock-breeding, elementary bacteriology, and agricultural chemistry are also taught. A dairy herd of the best known and favoured breeds has been established at the college, whence the young stock of pure breed have been distributed throughout the State. A course for the instruction of school teachers during the summer recess has been established at the college by the Education Department, and the knowledge thus acquired is imparted by the teachers, not only to the school children, but also to the farmers and dairymen. On the 31st December, 1907, there were fifty-four students on the books of the college.

(ii.) *Experimental Farms and Technical Colleges.*

(a) *Experimental Farms* are carried on by the Government at Westbrook (near Toowoomba), Gindie, Biggenden, Hermitage (near Warwick), Warren, and Roma. At the Hermitage farm arrangements were made during the year 1906, whereby instruction in general farm work is given to a number of boys who, from circumstances, are unable to receive the advantages of the college course, and this system has now been applied to the farm at Biggenden. The pupils are apprenticed for a term of three years and are instructed in experimental and acclimatisation work, stock-breeding, hybridising, orchard work, etc. These youths are paid nothing for the first twelve months, £12 for the second, and £24 for the third. A State nursery has been established at Kamerunda, near Cairns, and a sugar experimental station at Mackay, but the State tobacco farm at Texas was relinquished during 1906.

(b) *Technical Colleges.* At the technical colleges established in various parts of the State instruction is given in certain agricultural subjects. Thus, at Brisbane, Ipswich, and Maryborough, botany, milk and cream testing, fruit

preserving and pickling are considered, and at Brisbane wool-classing also. At Bundaberg, Gympie, Rockhampton, South Brisbane, and Toowoomba milk and cream testing is taught, whilst instruction is given in dairy-farming at Warwick.

(iii.) *Other Forms of Agricultural Instruction.* Free lectures are from time to time given at different centres by the Agricultural Department's technical instructors on all agricultural, horticultural, and pastoral subjects. A monthly *Agricultural Journal* is issued, in addition to pamphlets on special subjects. Seeds which are new to the country, and which have not been cultivated there before, are distributed free. In the primary schools instruction is given in nature study and in economic gardening, prizes being awarded both for practical and theoretical work.

(iv.) *Particulars of Agricultural College and Experimental Farms.* In the table given below particulars are given of the Gatton Agricultural College and the seven experimental farms. Figures relating to the technical colleges are not available:—

QUEENSLAND.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS FOR THE YEAR 1907.

| Name of College or Farm. | Total Area of Farm. | Total Area under Crop. | Area under Cereals and Hay. | Area under Fruit Trees and Vines. | Area under all other Crops | Number of Hands Employ'd | Value of Plant and Machinery. | Value of Produce for the Year. |
|--------------------------|---------------------|------------------------|-----------------------------|-----------------------------------|----------------------------|--------------------------|-------------------------------|--------------------------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | No. | £ | £ |
| Gatton ... | 1,692 | 269 | 189 | 6 | 74 | 32 | 6,117 | 1,626 |
| Biggenden ... | 211 | 24 | 3 | 4 | 17 | 1 | 1,349 | 59 |
| Roma ... | 790 | 103 | 78 | 12 | 13 | 5 | 2,237 | 254 |
| Gindie ... | 8,666 | 42 | 16 | 4 | 22 | 3 | 950 | 40 |
| Westbrook ... | 260 | 72 | 20 | 32 | 20 | 4 | ... | ... |
| Warren* ... | 1,128 | ... | ... | ... | ... | 5 | 51 | ... |
| Kamerunda ... | 21 | 16 | ... | 14 | 2 | 6 | ... | ... |
| Hermitage ... | 433 | 175 | 132 | 9 | 34 | 5 | ... | ... |

* Recently established.

5. **South Australia.**—To this State belongs the honour of starting the first experimental farm in the Commonwealth. As far back as the year 1879 a resolution was passed by the local Parliament in favour of the establishment of a School of Agriculture, with an experimental farm, under the charge of a professor of agriculture. Active operations in this connection were commenced in 1882, when the first series of plots of wheat were sown at Roseworthy. Experimental work, chiefly directed towards improving the wheat yield, has been developed along three main lines, viz.: (a) The improvement of varieties of wheat, (b) the improvements of methods of cultivation, and (c) the use of manures. The Central Agricultural Bureau, established at Adelaide under the control of an Advisory Board, had on the 30th June, 1906, a membership of nearly 1900 persons distributed amongst 115 branches. It assists farmers by the dissemination of knowledge; by helping to introduce new economic plants; by improving the breed of stock; and it acts as a means of keeping the Agricultural Department in touch with the producers. The branches of the bureau hold meetings at regular intervals in their several districts, ideas and methods as regards practical subjects are interchanged, and discussions are held on matters of general interest to agriculturists. The Agricultural Department issues a monthly journal, and from time to time special bulletins and pamphlets regarding cultivation, manuring, diseases of stock, etc.

(i.) *The Roseworthy Agricultural College.* The Roseworthy College, situated seven miles from Gawler, and affording accommodation for fifty resident pupils—who must be at least sixteen years of age on admission—has two main objects, viz.: (a) To train young men for the practice of agriculture, horticulture, and viticulture, and (b) to conduct experiments with a view to the advancement of the rural industries in South Australia.

The attached plot is 1551 acres in extent. The course extends over a period of three years, the fees for residential students being £30 per annum. The curriculum includes both scientific and technical subjects, viz., chemistry, physics, anatomy, physiology, botany, and entomology; agriculture, viticulture, œnology, fruit culture, veterinary science, dairying, book-keeping, surveying, wool-classing, and general rural economy.

(ii.) *Experimental Farms.* During the year 1905-6 three experimental farms were handed over to the Agricultural Department, namely, the homestead block at Kybybolite of 1040 acres, 59 acres of reclaimed swamp at Murray Bridge, and 83 acres at Parafield. On these, experiments are carried on with regard to the growing of different varieties of wheat, oats, and barley, both for grain and for hay crops, and also with regard to the growing of root and fodder crops. Investigations cover the manuring of crops, different methods of cultivation, rotation of crops, irrigation, the hybridisation and selection of cereals, feeding of animals, fruit-growing, and wine-making.

(iii.) *Other Forms of Agricultural Instruction.* Lectures are given by the experts of the Agricultural Department under arrangement with the School of Mines at Adelaide and at country branches of that institution, while practical demonstrations are also given by the horticultural instructor. No instruction is given by travelling dairies, but the dairy instructor visits districts as arranged and gives instruction and advice on all matters pertaining to dairying. Lectures and practical demonstrations are given by experts all over the State, principally under the auspices of the Agricultural Bureau or local committees. Though no systematic scheme for agricultural teaching in the primary schools exists, numbers of individual teachers have taken up experimental elementary agriculture—practically a form of nature study—with satisfactory results. Seed of special varieties of wheat is from time to time distributed gratis to applicants; also seed of barley and oats, and of fodder plants of a special character, likely to suit prevailing conditions.

(iv.) *Particulars of Agricultural College and Experimental Farms.* The subjoined table gives details of the several farms in the State during 1907-8 :—

SOUTH AUSTRALIA.—PARTICULARS OF AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS FOR THE YEAR 1907-8.

| Name of College or Farm. | Total Area of Farm. | Total Area under Crop. | Area under Cereals and Hay. | Area under Fruit Trees and Vines. | Area under all other Crops. | No. of Hands Employ'd | Value of Plant and Machinery. | Value of Produce for the Year. |
|--------------------------|---------------------|------------------------|-----------------------------|-----------------------------------|-----------------------------|-----------------------|-------------------------------|--------------------------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | No. | £ | £ |
| Roseworthy | 1,551 | 557 | 429 | 67 | 61 | 7 | 1,217 | 3,000 |
| Kybybolite... | 1,040 | 248 | 168 | 4 | 76 | 4 | ... | ... |
| Murray Bridge | 59 | 41 | 5 | ... | 37 | 2 | ... | ... |
| Parafield ... | 83 | 35 | 35 | ... | ... | 3 | 220 | 110 |

6. *Western Australia.*—A considerable amount of developmental work has been done of late years towards the promulgation of agricultural knowledge on the three State farms at Chapman, Narrogin, and Hamel, and, more recently still, on the experimental farms at Brunswick and Nangeenan.

(i.) *The Chapman Farm* stands in the centre of a vast stretch of country lying twenty-five miles north of Geraldton and fifteen miles east of Northampton. Until five or six years ago the expanse of land referred to was almost exclusively devoted to grazing, and it was mainly to prove its capabilities, and thus promote settlement, that the farm was established. The whole of the available land has since been selected, and settlement has outrun the extent of the area in question. Collaterally the object of the farm has been extended; it has become the medium whereby practical instruction in farming is provided for intending settlers in quest of a training which will fit them for their work. The farm is well watered by the Chapman River and by wells served by windmills; it is securely fenced and subdivided. Stud stock are kept and bred, the young stock being sold annually. The stock consists of a stud of Suffolk Punch horses,

a herd of Dexter Kerries, a flock of pure-bred Shropshire ewes and rams, Angora goats, and various kinds of poultry.

(ii.) *The Narrogin Farm.* The initial object of this farm was to practically demonstrate the larger return consequent upon improved cultivation of the land; to raise stud-stock for the benefit of the farmers, to raise clean seeds for sowing their land, and to offer a field for training farmers' sons and others wishing to settle on the land. Students are admitted at an annual fee of £10; they are taught the practical farm work, such as handling live stock, and the use of various farm implements. Lectures are given at intervals by the scientific staff attached to the Agricultural Department. Experimental work is a merely subsidiary feature. The total area is 2826 acres. On the 30th June, 1907, there were forty-five students on the rolls.

(iii.) *The Hamel State Farm.* Hitherto only experimental work has been carried out on the Hamel State farm, consisting chiefly of testing new varieties of grasses and fodder plants, cereals, fruits and tubers. Students are not taken on at the farm, the work having been carried out chiefly by a gang of good conduct prisoners.

(iv.) *Other Forms of Agricultural Instruction.* The Government dairy expert is continually travelling and lecturing on dairying, and lectures are also given by the field-officer, the horticultural and viticultural experts, and others. Demonstrations are also given in the cultivation of vines and fruit trees, including budding, grafting, and pruning. A regular monthly journal and bulletins at frequent intervals on matters of importance are issued by the Agricultural Department. The distribution of seeds and plants is now practically confined to seeds of fodder plants. While there are no specific regulations, recipients are asked, with a view to collating information as to the most suitable varieties in different localities, to report results. Experimental plots are conducted at some of the State schools under the direction of the teachers. A special feature of the entomological work carried out by the Department of Agriculture is the collection, breeding and distribution of parasites on insect pests. This work has been carried out with excellent results, several pests which were formerly a great source of trouble and expense being now practically non-existent. Experimental farms have been established at Brunswick and Nangeenan.

(v.) *Particulars of State and Experimental Farms.* Particulars of the farms at Narrogin, Chapman, Hamel, Brunswick, and Nangeenan for the year 1906-7 are given hereunder:—

WESTERN AUSTRALIA.—PARTICULARS OF STATE AND EXPERIMENTAL FARMS FOR THE YEAR 1906-7.

| Name of Farm. | Total Area of Farm. | Total Area under Crop. | Area under Cereals and Hay. | Area under Fruit Trees and Vines. | Area under all other Crops. | Number of Hands Employed | Value of Plant and Machinery. | Value of Produce for Year. |
|---------------|---------------------|------------------------|-----------------------------|-----------------------------------|-----------------------------|--------------------------|-------------------------------|----------------------------|
| | Acres. | Acres. | Acres. | Acres. | Acres. | No. | £ | £ |
| Narrogin ... | 2,826 | 440 | 226 | 10 | 204 | 6 | 627 | 1,273 |
| Chapman ... | 1,275 | 257 | 203 | 3 | 50 | 4 | 497 | 409 |
| Hamel ... | 130 | 42 | 3 | 10 | 29 | 2 | 148 | 495 |
| Brunswick ... | 811 | 33 | 15 | 2 | 16 | 8 | * | 370 |
| Nangeenan... | 1,588 | 177 | 147 | 1 | 30 | 2 | 450 | 597 |

* Figures not available.

7. *Tasmania.*—In Tasmania there is a Council of Agriculture consisting of eleven members, whose duties are to collect and publish information of every kind calculated to prove beneficial to colonists engaged in agriculture, such as suitability of various districts for growth or production of animal and vegetable products, information respecting plants, methods of cultivation, of breeding and feeding animals, and how best to improve the same: to prevent as far as possible the introduction and spread of diseases and pests, and to publish bulletins, abstracts, and reports containing all such information as may be desirable. Other matters embrace the employment of experts in any branch

of agricultural science, distribution of plants and seeds for experiment, and the establishment of local boards of agriculture in different parts of the State. Lectures are given by the experts from time to time, and useful information and knowledge is diffused by means of the monthly gazette published by the Council, and also by means of special bulletins. There are no agricultural colleges nor experimental farms, and practically no agricultural teaching is given in the elementary schools.

§ 20. Government Loans to Farmers.

1. **Introduction.**—All the Australian States have established systems under which financial aid is rendered to agriculturists by the Government. The principle upon which such aid is founded was probably first practically applied in Germany, viz., in the year 1770, when the *Landschaften Bank* was created. The establishment of the *Crédit Foncier* somewhat later in France was a creation of a similar character. This latter institution was designed to enable house and land owners to raise money on mortgage at a low rate of interest, with facility for repayment by an annuity including redemption of the capital. It dates from 1852, but the mortgage bank known as the *Caisse Hypothécaire*, which, after a struggling existence, was finally liquidated in 1846, was based essentially on the same principle. Over the operations of the *Crédit Foncier*, created under governmental patronage and invested with such special privileges as to virtually constitute it a monopoly, the Government exercised a direct control, viz., by appointing its governor and its two deputy-governors. The *Crédit Foncier* was empowered to lend money only on a first mortgage, and to the amount of one-half of the estimated value of houses and farms, and one-third that of vineyards, woods, and other plantations and the commission charged could not exceed six-tenths per cent. The system developed and adopted in the Commonwealth, with the object of assisting farmers to make improvements or to develop or utilise the agricultural or pastoral resources of the land, is analogous. Particulars of advances made under the Closer Settlement and similar Acts are dealt with in the section on Closer Settlement. (See page 321.)

2. **Particulars of Transactions in each State, 1905 to 1908.**—The subjoined table gives particulars of transactions in each State in which advances to farmers are made, for the years 1905 to 1908, inclusive. Tasmanian figures are not available:—

STATE GOVERNMENT ADVANCES DEPARTMENTS.—PARTICULARS OF LOANS TO FARMERS, 1905 to 1908.¹

| State. | TOTAL ADVANCED TO DATE. | | | | BALANCE DUE. | | | |
|-------------------------------|-------------------------|-----------|-----------|-----------|------------------------|------------------------|------------------------|-----------|
| | 1905. | 1906. | 1907. | 1908. | 1905. | 1906. | 1907. | 1908. |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| New South Wales | 563,596 | 647,623 | 702,099 | a | 406,405 | 411,208 | 420,531 | a |
| Victoria ... | 1,890,299 | 2,021,333 | 2,111,308 | 2,254,488 | 1,350,515 ³ | 1,328,547 ³ | 1,225,805 ³ | 1,202,785 |
| Queensland ... | 39,378 | 98,484 | 129,361 | 153,238 | 38,417 | 94,268 | 112,216 | 119,344 |
| South Australia ... | 925,071 | 1,011,110 | 1,109,362 | 1,233,264 | 582,214 | 602,365 | 613,730 | 631,413 |
| Western Australia | 297,600 | 394,164 | 525,177 | c | 250,503 | 323,464 | 420,534 | a |
| Commonwealth ... | 3,715,944 | 4,172,714 | 4,577,307 | ... | 2,628,054 | 2,759,852 | 2,792,816 | ... |
| | ANNUAL PROFITS. | | | | ACCUMULATED PROFITS. | | | |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| New South Wales ² | ... | ... | ... | ... | ... | ... | ... | ... |
| Victoria ... | 7,330 | 7,260 | 6,430 | 6,751 | 48,507 | 55,768 | 62,198 | 68,949 |
| Queensland ... | 53 | 444 | 1,051 | 1,326 | ... | 246 | 1,237 | 2,623 |
| South Australia ... | 3,116 | 3,314 | 3,598 | 3,797 | 18,669 | 21,984 | 25,582 | 29,380 |
| Western Australia | 2,409 | 3,754 | 3,988 | a | 5,433 | 9,187 | 13,557 | a |
| Commonwealth ⁴ ... | 12,908 | 14,772 | 15,067 | ... | 72,609 | 87,185 | 102,634 | ... |

1. Compiled from figures furnished by the Government Savings Bank of Victoria. 2. Returns not available. 3. Balance after deduction of special principal payments in advances (see section 41, sub-section 7, of the Savings Banks Act, 1896). 4. Exclusive of New South Wales and Tasmania.

3. **New South Wales.**—(i.) *Initial Legislation.* New South Wales adopted the principle of advances to settlers on 4th April, 1899, when the Advances to Settlers Act received assent. The objects of this Act were to authorise the raising of a loan for making temporary advances to settlers; to provide for the making and repayment of such advances; and for purposes incidental to, or consequent on, those objects. In order to provide the funds necessary for the carrying out of this Act, the Colonial Treasurer was authorised to sell inscribed stock, secured upon the Consolidated Revenue, to an amount not exceeding £500,000, to be sold in amounts of £10 or some multiple of £10, and bearing interest at the rate of 3½ per cent. per annum, payable half-yearly. A board, consisting of not more than three members appointed by the Governor, called the Advances to Settlers Board, was appointed to deal with applications for loans and to decide whether they should be granted. The maximum amount that was authorised to be advanced to any one person was £200, and was to be repaid in full, together with interest at the rate of 4 per cent., within ten years of the making of the loan, but on no account was a loan to be granted except on the recommendation of the Board and when the security given was deemed satisfactory. An Amendment Act was passed in 1902, by which the advance limit of £200 was increased to £500, and the period within which repayments were to be made was extended to thirty-one years. In the latter part of the same year a further Amendment Act came into force. Under the provisions of this Act, the amount of inscribed stock was increased to £1,000,000, and the maximum amount of advance to any person was raised to £1500, interest on the latter being payable at the rate of not less than 4 per cent. per annum.

(ii.) *Legislation now in Force.* The above Acts were all repealed by the Government Savings Bank Act of 1906, which received assent on 21st December of that year. All property held by the Advances to Settlers Board was to be vested in three Commissioners appointed under this Act, who were styled "The Commissioners of the Government Savings Bank of New South Wales." An Advances Department of the Savings Bank was constituted, and debentures to the amount of £305,000 (that being the amount of stock issued under the Advances to Settlers Acts and held at the beginning of this Act) were issued, an equivalent amount of Government Stock transferred to the Savings Bank Department being, at the same time, cancelled. All moneys, securities, documents, property, etc., held by or on behalf of the Advances to Settlers Board were transferred to, and became vested in, the Commissioners, and were carried to the Advances Department of the Savings Bank.

(iii.) *Security on which, and Objects for which, Advances are made.* The Commissioners are authorised to issue debentures to the amount of £2,000,000, bearing interest at a rate not exceeding 4 per cent. per annum. They may lend moneys from the Advances Department (a) upon mortgage of an estate of inheritance in fee simple in any land in the State; (b) upon mortgage of conditional purchases with or without associated conditional leases, homestead grants or selections, settlement leases or purchases, or conditional purchase leases; and (c) on deposit at call or short notice in the Treasury on any bank of issue in the State, or on deposit in the Savings Bank Department. Loans may be made for any of the following purposes:—(a) To pay off existing encumbrances or to purchase the land; (b) to pay off money to the Crown in respect of the land; (c) to make improvements or to develop the agricultural or horticultural resources of the land; and (d) to build homes on the land.

(iv.) *Amount and Repayment of Loans.* No loan to any one person may amount to less than £50 or more than £2000, and applications for loans not exceeding £500 have priority over those of a larger amount. In no case does the amount of the advance exceed 80 per cent. of the Commissioners' valuation of the security. Advances may be made up to two-thirds of the value of the interest of the borrower in the land, buildings and improvements, except where the land is held as a conditional lease, homestead grant, settlement lease, homestead selection, settlement purchase, or conditional purchase as to which the first five years' certificate has not issued, in which cases the amount advanced may not exceed one-half of the holder's interest in the improvements. Loans are made

only in respect of first mortgages, and except in the case of loans on the security of freeholds or certificated conditional purchases, are repayable by equal half-yearly instalments within such period, not exceeding thirty-one years, as the Commissioners think fit. Loans granted on the security of freeholds and certificated conditional purchases are repayable either in the same manner as loans on other securities just mentioned, or at the expiration of a fixed term not exceeding five years, during which period interest only is payable.

(v.) *Advances on Purchases of Farms.* To facilitate close settlement on private estates suitable for the purpose, the Commissioners are authorised to make advances in order to assist persons in purchasing land. In the case of such advances the title to the land must be either freehold or a certificated conditional purchase, and the amount advanced may not exceed 80 per cent. of the Commissioners' valuation.

(vi.) *Particulars of Advances to Farmers, 1904 to 1907.* The following table shews particulars of the advances made up to the 30th June in each year from 1904 to 1907, inclusive:—

PARTICULARS OF GOVERNMENT ADVANCES IN NEW SOUTH WALES TO FARMERS, 1904 to 1907.

| Particulars. | 1904. | 1905 | 1906. | 1907.* |
|---|-----------|-----------|-----------|-----------|
| Total applications received... .. No. | 9,572 | 10,431 | 11,188 | 12,397 |
| Total amount applied for £ | 1,420,001 | 1,581,581 | 1,718,431 | 2,166,901 |
| Total applications refused or withdrawn... .. No. | 4,415 | 4,611 | 4,927 | 5,138 |
| Total applications approved No. | 5,194 | 5,646 | 6,178 | 6,856 |
| Total amount advanced £ | 502,828 | 563,596 | 647,624 | 789,334 |
| Average amount advanced per loan £ | 97 | 100 | 105 | 115 |
| Repayments { of principal £ | 110,083 | 157,191 | 236,415 | 365,823 |
| { of interest £ | 31,620 | 48,043 | 68,646 | † |

* Year ended 31st December, 1907. † Figures not available.

4. **Victoria.**—(i.) *Legislation.* The Advances Department of the Government Savings Bank of Victoria was established by the Savings Bank Act of 1896, amended in 1901 and again in 1903. The funds for the purpose of making advances are raised by the issue of mortgage bonds, the total amount of which is limited to £3,000,000.

(ii.) *Security on which Advances Granted.* In order to assist farmers, graziers, market gardeners, or other persons employed in agricultural, horticultural, viticultural, or pastoral pursuits, the Savings Bank Commissioners are empowered to make advances, either by instalments or otherwise, upon the security of any lands held by such person either (a) in fee simple, or (b) under a Crown lease in which the rent received is taken by the Crown in part payment of the lands demised. Security must be, in every case, a first mortgage. A loan may be either in cash or in mortgage bonds at par face value at the option of the Commissioners.

(iii.) *Amount of Advances.* The limits of the advances are £50 and £2000, as in New South Wales, applications for advances under £500 having also similar priority. In the case of land held in fee simple or under lease as specified in (b) above, the amount of the advance which may be made must not exceed two-thirds of the actual value of such land at the time of advance, which is reduced by the amount of all rent payable in respect of the land, previous to the issue of a Crown grant, for such. If the person appointed by the Commissioners as valuator of any land certify that the improvements effected thereon increase the productive power of the land and exceed £2 per acre, the Commissioners may make, notwithstanding anything contained above, an advance of fifteen shillings for every acre so improved.

(iv.) *Special Provision for Vineyards, Orchards, etc.* In the case of land which has acquired a special value by reason of being cultivated as vineyards, hop-grounds, orchards,

fruit-growing plantations, and other similar purposes, advances may be made on the following terms :—(a) The total amount which may be at any time advanced upon any such land may not be more than £100,000 in the whole. (b) The amount of two-thirds of the actual value referred to above may be increased by one-quarter of any special increase in value, but such increase is in no case to be considered as greater than £30 an acre. (c) No advance may be for a longer period than fifteen years.

(v.) *Purposes for which Advances Granted.* Advances are made for the following purposes only :—(a) To pay off existing liabilities; (b) to pay off money owing to the Crown in respect of the land; (c) to make improvements or to improve and develop the agricultural, horticultural, viticultural, or pastoral resources of the land.

(vi.) *Repayment of Advances.* The rate of interest charged on loans, originally fixed at 4½ per cent. per annum, may, by the Amendment Act of 1903, be altered by the Commissioners with the approval of the Governor-in-Council, up to but not beyond 5 per cent. per annum. All advances, together with interest, must be repaid by sixty-three half-yearly instalments, or such smaller number as may be agreed upon between the borrower and the Commissioners.

(vii.) *Particulars of Advances to Farmers, 1904 to 1908.* The following table gives particulars as to the loans raised and repaid by the Advances Department, the number and amount of applications received and granted, and the amounts advanced and repaid for each financial year from 1904-5 to 1907-8, inclusive :—

LOANS TO FARMERS.—TRANSACTIONS OF ADVANCES DEPARTMENT OF GOVERNMENT SAVINGS BANK, VICTORIA, DURING EACH FINANCIAL YEAR, 1904 to 1908.

| Particulars. | 1904-5. | 1905-6. | 1906-7. | 1907-8. | Total to the 30th June, 1908. |
|---------------------------|-----------|---------|---------|---------|-------------------------------|
| Loans raised ... | £ 200,000 | 100,000 | 100,000 | 100,000 | 2,283,600 |
| „ repaid ... | £ 30,325 | 79,675 | 104,675 | 79,500 | 673,750 |
| „ outstanding ... | £ ... | ... .. | ... .. | ... .. | ... .. |
| Applications received ... | No. 689 | 788 | 550 | 704 | 11,009 |
| „ „ Amount, £ | 323,352 | 319,650 | 217,572 | 344,703 | 5,235,890 |
| Applications granted ... | No. 370 | 371 | 295 | 390 | 5,852 |
| „ „ Amount, £ | 147,140 | 143,515 | 98,840 | 162,615 | *2,477,855 |
| Amounts advanced ... | £ 140,890 | 131,034 | 89,975 | 143,180 | 2,254,488 |
| „ repaid ... | £ 109,226 | 152,626 | 189,547 | 168,800 | 1,029,057 |
| „ outstanding ... | £ ... | ... .. | ... .. | ... .. | 1,202,785 |

* Of this amount £2,254,488 has been actually paid over to borrowers, a further sum of £12,770 being in course of settlement; the balance represents applications withdrawn or lapsed, or amounts offered but not accepted.

The number of loans at the 30th June, 1908, was 3030, and the average balance of each loan was £404 8s. 8d. The falling-off in the number of applications and amount of advances during the year 1906-7 was due, no doubt, partly to the fact that farmers had been favoured with good seasons during several years past, and partly also to the gradual fall in the rates charged for loans by other lenders. The number of repayments by farmers which became due during the year 1907-8 was 6763, representing amounts of £56,080 for interest and £27,765 for principal. These instalments have been well met, and on 30th June, 1908, there were only twenty farmers in arrear, the amount of principal in arrear amounting to £136, and of interest to £210.

(viii.) *Seed Advances Acts.* In 1896 and 1903, Acts were passed to enable seed and fodder to be advanced on certain terms to cultivators of land. These measures applied only to the season in which they were passed. Under the first-mentioned Act the Treasurer was authorised to pay out of the Consolidated Revenue a sum not exceeding £15,000, but no cultivator was to receive such quantity of seed as would sow more than 100 acres, and he had to give a preferable lien over the produce of all crop harvested within twelve months. By the Act of 1903, the amount authorised to be lent was

£100,000, in sums not exceeding value of £65 where granted on the security of a mortgage or license lien, or £40 where granted on the security of a preferable lien on crops. The borrower was required to give, as security, a mortgage over his farm or a license lien over the improvements thereon, and also, if required, a preferable lien on crops somewhat similar to that laid down in the previous Act. In 1904 an Act was passed to enable seed and manure to be advanced on certain terms to cultivators of land within the area controlled by the Carrum Irrigation and Water Supply Trust.

5. **Queensland.**—(i.) *Legislation.* The Queensland Government was authorised, under the Agricultural Bank Act of 1901, to establish a bank for the purpose of promoting the occupation, cultivation, and improvement of the agricultural lands of the State, and a body of three trustees was appointed to administer the Act. The Government was empowered to raise a sum not exceeding £250,000 by the issue of debentures, bearing interest at a rate of not more than 4 per cent. The original Act was amended in 1904 and again in 1905, the latter amendment specifying that no advance be made to any alien.

(ii.) *Security on which and Purposes for which Advances are made.* Advances may be made to owners of agricultural lands or to occupiers of Crown lands held either as agricultural farms or homesteads, grazing farms or homesteads, unconditional selections, or miners' homestead leases, and may be for any of the following purposes:—(a) The payment of existing liabilities; (b) agricultural, dairying, horticultural, or viticultural pursuits on the holding; (c) making improvements or adding to improvements already made; (d) the purchase of stock, machinery, or implements. Advances are only made on the security of first mortgages.

(iii.) *Amount and Repayment of Loans.* No advance may exceed ten shillings in the pound of the fair estimated value of the holding in the cases of (a) and (b) above, while in the other cases the limit of the amount of the advance is twelve shillings in the pound of such value, and the advance at any time must not exceed £800. Applications for amounts not larger than £200 have priority over those for a larger amount. During the first five years following the date of the loan the borrower must pay interest at the rate of 5 per cent. per annum. After the expiration of that period the loan, together with the interest, must be repaid by half-yearly instalments within twenty years, the amount of such half-yearly instalment being £4 0s. 3d. for each £100 advanced. In the case of advances for the purposes of paying off existing liabilities or of buying stock, machinery, or implements, the loan must be repaid by equal half-yearly instalments of the amount of £3 11s. for every £100 advanced within twenty-five years from the date of its granting.

(iv.) *Transactions of Agricultural Bank, 1904 to 1908.* The subjoined table shews particulars of the transactions of the Agricultural Bank for each year from 1904 to 1908, inclusive:—

**PARTICULARS OF TRANSACTIONS OF THE AGRICULTURAL BANK, QUEENSLAND,
DURING EACH FINANCIAL YEAR, 1904 TO 1908.**

| Particulars. | | 1904. | 1905. | 1906. | 1907. | 1908. |
|---------------------------|-----|--------|---------|---------|---------|---------|
| Loans raised ... | £ | * | * | * | * | * |
| " repaid ... | £ | * | * | * | * | * |
| " outstanding ... | £ | * | * | * | * | * |
| Applications received ... | No. | 157 | 699 | 834 | 503 | 512 |
| " " Amount, £ | £ | 21,069 | 108,667 | 120,256 | 69,472 | 70,107 |
| Applications granted ... | No. | 116 | 296 | 558 | 313 | 319 |
| " " Amount, £ | £ | 12,195 | 35,233 | 69,178 | 36,357 | 36,706 |
| Amounts advanced ... | £ | 14,628 | 18,358 | 59,106 | 30,877 | 23,868 |
| " repaid ... | £ | 650 | 311 | 3,229 | 12,908 | 16,716 |
| " outstanding | £ | 20,370 | 38,417 | 94,268 | 112,216 | 119,344 |

* Information not available.

6. *South Australia.*—(i.) *Legislation.* Under the State Advances Act of 1895, amended in 1896 and 1901, a State Bank has been established in South Australia for the purpose of making advances (i.) to farmers and other producers, (ii.) in aid of industries on the security of lands held in fee simple or under Crown leases, and (iii.) to local authorities upon the security of their rates. The bank, managed by a board consisting of five trustees appointed by the Governor, has funds raised by the issue of mortgage bonds, carrying interest at a rate not exceeding 4 per cent., to an amount not greater than the total amount due to the bank for State advances, and in any case not greater than £3,000,000. Several Acts have, from time to time, been passed dealing with seed wheat advances. These were, in the main, similar to those enacted in Victoria, referred to in 4. (viii.) above.

(ii.) *Amount and Repayment of Loans.* No advance to farmers or to other producers, or in aid of any industry, may exceed three-fifths of the unimproved value of the fee simple of the land and permanent improvements thereon, and if the land has acquired a special additional value by reason of cultivation as a vineyard or orchard, *plus* one-third of such special additional value. If the advance be on the security of a Crown lease, the amount of the loan may not exceed one-half the selling value of the lease, including the interest of the holder in any improvements on the land. The amount lent to any one person at any time may not exceed £5000. Advances are repayable by half-yearly instalments, the rate of interest, up to the limit of 5 per cent. per annum, being a matter of arrangement between the bank and the borrower.

(iii.) *Transactions of the State Bank, 1904 to 1907.* The following table shews particulars of the transactions of the State Bank for each year from 1904 to 1907 inclusive:—

**SOUTH AUSTRALIA.—PARTICULARS OF TRANSACTIONS OF THE STATE BANK
FOR EACH YEAR ENDED 31ST MARCH, 1904 TO 1907.**

| Particulars. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|-------------------|---------|---------|---------|
| Loans raised | £ 58,285 | 23,675 | 46,015 | 57,165 |
| „ repaid | £ 32,195 | 36,560 | 38,465 | 50,515 |
| „ outstanding | £ 346,030 | 333,145 | 340,695 | 347,345 |
| Applications received | No. 362 | 225 | 271 | 260 |
| „ „ | Amount, £ 107,159 | 63,340 | 94,794 | 111,609 |
| Applications granted | No. 230 | 126 | 180 | 146 |
| „ „ | Amount, £ 61,530 | 24,865 | 56,181 | 67,420 |
| Amounts advanced | £ 55,507 | 24,529 | 51,826 | 58,060 |
| „ repaid | £ 31,940 | 37,200 | 39,531 | 51,265 |
| „ outstanding | £ 349,532 | 336,861 | 349,156 | 355,951 |

7. *Western Australia.*—(i.) *Legislation.* By the Agricultural Bank Act of 1894 the Governor of Western Australia was empowered to establish a bank for the purpose of promoting the occupation, cultivation, and improvement of the agricultural lands of the State. This Act was amended from time to time until a consolidating Act was passed in the year 1906 repealing all previous enactments on the subject. Under this last Act the bank was placed under the control of three trustees, appointed by the Governor, in whom is vested the whole of the bank property. The necessary funds are provided for by the issue of mortgage bonds bearing interest at a rate not exceeding 4 per cent. per annum. The amount authorised to be raised was £1,000,000, but by an Amendment Act in 1907 this sum was increased to £1,500,000.

(ii.) *Purposes for which Advances may be made.* The bank is authorised to make advances for (a) ringbarking, clearing, fencing, draining, or water conservation; (b) for discharging any existing mortgage; or (c) for the purchase of stock for breeding purposes.

(iii.) *Amount of Loans.* Advances may be made to an amount not exceeding £300 up to the full value of the improvements proposed to be made. Further advances may be

made to an amount not exceeding £200 up to half the value of additional improvements proposed to be made. No advance, however, for the purpose of discharging existing mortgages may be made to an amount exceeding three-quarters of the value of improvements already made, and the total advances to any one person may not at any time exceed £500. Not more than £100 may be advanced to any person for the purpose of purchasing stock. Advances are made only on a first mortgage, but a second mortgage may be taken as collateral security.

(iv.) *Repayment of Loans.* During the five years following the date of the loan the borrower pays interest only, at the rate of 5 per cent. per annum. After the expiration of that period the amount advanced, with interest at 5 per cent., must be repaid within twenty-five years by equal half-yearly instalments. In the case of advances for the purpose of buying stock the bank fixes the time and manner of repayment.

(v.) *Particulars of Transactions of Agricultural Bank, 1904 to 1906.* Under the previous Acts, now repealed, loans up to three-fourths of the estimated value of proposed improvements were paid over by the bank in progress payments as the improvements were completed. The following table gives particulars of transactions under these Acts for each year from 1904 to 1906, inclusive. Particulars of transactions under the Act of 1906 are not yet available.

**PARTICULARS OF TRANSACTIONS UNDER THE AGRICULTURAL BANK ACTS,
WESTERN AUSTRALIA, 1894 to 1905, FOR EACH YEAR FROM 1904 to 1906,
INCLUSIVE.**

AMOUNTS ADVANCED FOR WHICH IMPROVEMENTS HAVE BEEN EFFECTED—

| Year ended the 30th June. | Amounts Advanced | Improvements Effected. | | | | | | | |
|---------------------------|------------------|------------------------|--------------|---------------|----------|-------------|-------------------------|-------------|---------|
| | | Clearing. | Cultivating. | Ring-barking. | Fencing. | Drain- ing. | Wells and Reser- voirs. | Build- ings | Total. |
| | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| 1904 | 215,000 | 243,870 | 60,454 | 10,787 | 17,265 | 1,675 | 9,861 | 33,168 | 377,080 |
| 1905 | 297,600 | 310,602 | 67,342 | 12,454 | 21,243 | 2,012 | 12,355 | 44,203 | 470,211 |
| 1906 | 394,164 | 398,376 | 86,837 | 17,044 | 30,805 | 2,596 | 15,482 | 57,005 | 608,145 |

LOANS APPROVED FOR WHICH IMPROVEMENTS WERE IN PROGRESS—

| Year ended the 30th June. | Amounts Approved | Improvements in Progress. | | | | | | | |
|---------------------------|------------------|---------------------------|----------------|----------------|----------|-------------|-------------------------|--------------|---------|
| | | Clearing. | Cultivat- ing. | Ring- barking. | Fencing. | Drain- ing. | Wells and Reser- voirs. | Build- ings. | Total. |
| | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| 1904 | 95,650 | 78,018 | 23,314 | 2,488 | 6,079 | 897 | 7,857 | 11,234 | 129,887 |
| 1905 | 91,306 | 75,268 | 22,025 | 3,984 | 8,363 | 741 | 6,771 | 11,996 | 129,148 |
| 1906 | 117,511 | 110,126 | 33,297 | 7,469 | 15,008 | 695 | 7,969 | 14,313 | 188,877 |

The following table gives particulars as to the amount of loans raised and repaid, the number and amount of applications received and granted, and the amounts lent and repaid for each year from 1904 to 1907, inclusive :—

WESTERN AUSTRALIA.—PARTICULARS OF TRANSACTIONS OF THE AGRICULTURAL BANK FOR EACH FINANCIAL YEAR, 1904-5 to 1906-7.

| Particulars. | 1905. | 1906 | 1907. |
|----------------------------------|---------|---------|---------|
| Loans raised £ | * | * | * |
| „ repaid £ | * | * | * |
| „ outstanding £ | * | * | * |
| Applications received No. | 971 | 1,270 | 1,970 |
| „ „ Amount, £ | 140,275 | 171,750 | 278,625 |
| Applications granted No. | 795 | 1,073 | 1,604 |
| „ „ Amount, £ | 102,875 | 127,725 | 211,675 |
| Amounts advanced £ | 83,479 | 95,782 | 131,271 |
| „ repaid £ | 22,586 | 23,917 | 34,201 |
| „ outstanding £ | 251,600 | 323,465 | 420,535 |

* Information not available.

8. *Tasmania.*—(i.) *Legislation.* Under the State Advances Act 1907, assented to 22nd November of that year, authority is given to make advances to persons holding land on credit purchase. Three persons called “the Trustees of the Agricultural Bank of Tasmania” have power to administer the provisions of the Act. Funds were raised by the issue of debentures or inscribed stock for a sum not exceeding £50,000, interest at 4 per cent. per annum being payable on same.

(ii.) *Purposes for which Advances may be made.* Loans may be granted for any of the following purposes:—(a) payment of liabilities already existing on the holding; (b) carrying on agricultural, dairying, grazing, or horticultural pursuits; (c) making or adding to improvements.

(iii.) *Amount of Loans.* The minimum amount of any loan must not be less than £25, and the maximum not greater than £500. No advance may exceed one-half of the amount actually paid to the Crown in respect of the land held by the borrower under purchase upon the credit system, plus one-half of the present value of any improvements upon such land.

(iv.) *Repayment of Loans.* Interest at the rate of 6 per cent. per annum is payable on all advances made. After five years the borrower must begin to pay off the principal in fifty half-yearly instalments, but the advance may, at the option of the borrower, be repaid at any time sooner than is provided, and in larger instalments.

Particulars of the operations of the Agricultural Bank are not yet available.

§ 21. Graphical Representation.

1. *Areas of Principal Crops.*—A graphical representation of the areas in the Commonwealth devoted to each of the leading crops from 1860 to the present time is furnished on page 445.

(i.) *Wheat.* In the case of wheat, the Commonwealth’s principal crop, the graph indicates that the forty-seven seasons under review divide themselves naturally into five distinct periods, three of moderate and fluctuating increases and two of extremely rapid increases. Thus, between the seasons 1860-1 and 1875-6, a moderate rate of increase was in evidence, the area increasing from 640,000 to 1,420,000 acres. During the five succeeding seasons a very rapid increase took place, the total in 1880-1 amounting to over 3,000,000 acres. For fifteen years thereafter the increase in area was not large, and in two seasons, viz., 1885-6 and 1890-1, marked decreases were experienced. The total increase for the fifteen years was about 700,000 acres, the total for 1895-6 being rather

more than 3,750,000 acres. The succeeding five years witnessed a rapid increase in area to a total of more than 5,600,000 acres, followed by a further period of marked fluctuations; this latter period, however, contained the season of maximum wheat-cropping, viz., 1904-5, when an area of 6,270,000 acres was so devoted.

(ii.) *Hay.* Hay-growing, which, next to the growing of wheat for grain, is the most important branch of agriculture in the Commonwealth, will be seen from the graph to have fluctuated very considerably from year to year during the period under review, these fluctuations being due in the main to seasonal variations and to variations in the relative prices of grain and hay crops. It will be seen that the features of the graphs are a moderate increase from 1860-1 to 1875-6, a fairly rapid increase from 1875-6 to 1882-3, moderate increase thence to 1896-7, succeeded by marked fluctuations from this point onwards with, on the whole, a moderate rate of increase. The maximum area under hay was reached in the season 1903-4, when a total of 1,850,000 acres was attained.

(iii.) *Oats.* The graph relating to oats exhibits extremely marked fluctuations from year to year in the area devoted to this crop, the general tendency, however, being towards increase. This feature was specially marked from 1892-3 to 1896-7, while the succeeding years were characterised by very extensive fluctuations. The maximum area under oats was reached in the season 1907-8, with a total of nearly 643,000 acres.

(iv.) *Maize.* The graph relating to maize indicates that the area devoted thereto in Australia, although somewhat fluctuating, increased with fair rapidity until the season 1896-7, since when it has varied above and below the point then reached, on the whole remaining practically stationary. The area for the season 1906-7 was, in fact, somewhat less than that for 1896-7. The maximum area under maize, viz., 372,000 acres, was attained in the season 1903-4.

(v.) *Sugar-Cane.* In the case of sugar-cane the graph shews a fairly rapid rate of increase to 1874-5, followed by a period of five years during which the area increased but slowly. From 1879-80, however, the sugar-cane area rose rapidly until in 1884-5 a total of more than 75,000 acres was reached. Then followed a period of diminished cultivation, and it was not until 1892-3 that so high a total was again attained. After this the area rose rapidly to 136,000 acres in 1898-9, but during the next five years a decline took place, the area for 1903-4 being 132,000 acres. A marked decline was in evidence in 1902-3, and a corresponding recovery in 1903-4. The season of maximum area, viz., 156,000 acres, was 1905-6.

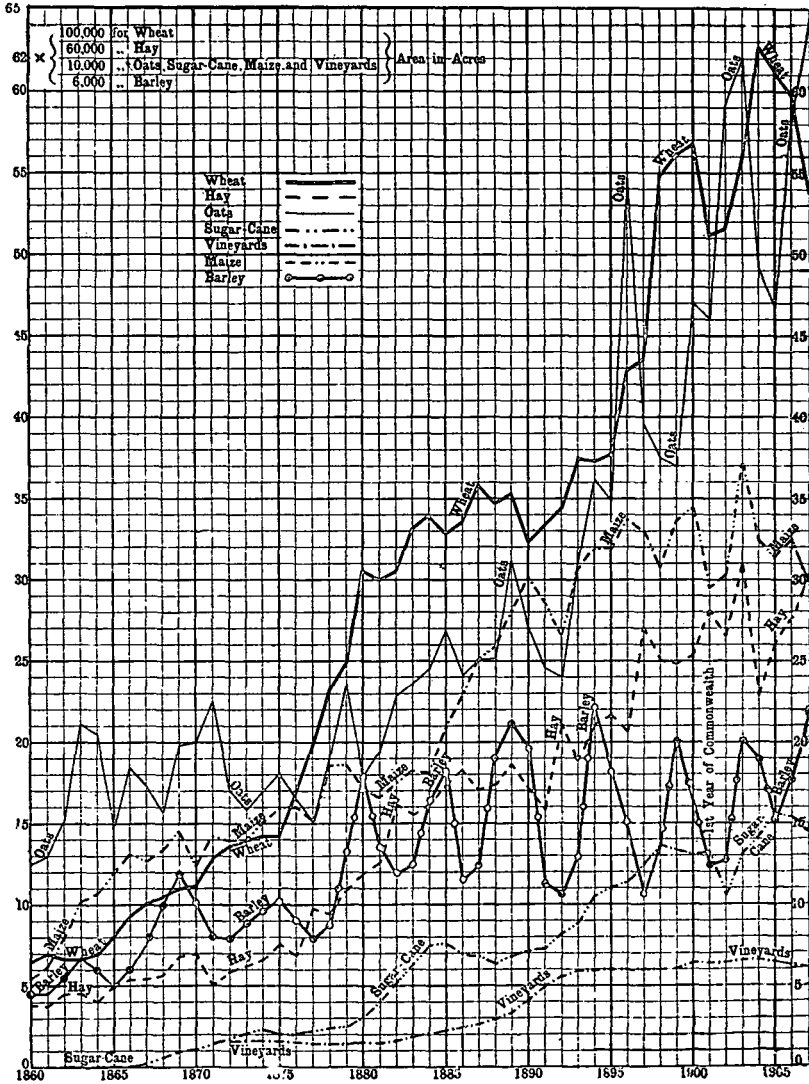
(vi.) *Barley.* The Commonwealth barley crop, although not an extensive one, yet one which has exhibited from time to time very marked fluctuations in area. The graph representing this crop is consequently a very irregular line. The total has, on the whole, increased but slightly since 1880, rapid increases in certain years being succeeded by equally rapid decreases in subsequent years. The maximum area under barley, viz., 133,000 acres, was attained in the season 1894-5.

(vii.) *Vines.* The graph relating to area under vines, from 1872-3 onwards, indicates that there were two periods of very slow increase, one from 1872-3 to 1881-2, the other from 1893-4 onwards. Between these, viz., from 1881-2 to 1893-4, a moderate rate of increase of area was experienced, the total for the Commonwealth advancing during that time from 14,600 acres to 57,400 acres. The season of maximum area under vineyards was 1904-5, with a total of about 65,700 acres.

2. **Production.**—The diagram on page 446 furnishes a graphical representation of the aggregate yields from 1860-1 to 1906-7 of five of the principal crops of the Commonwealth.

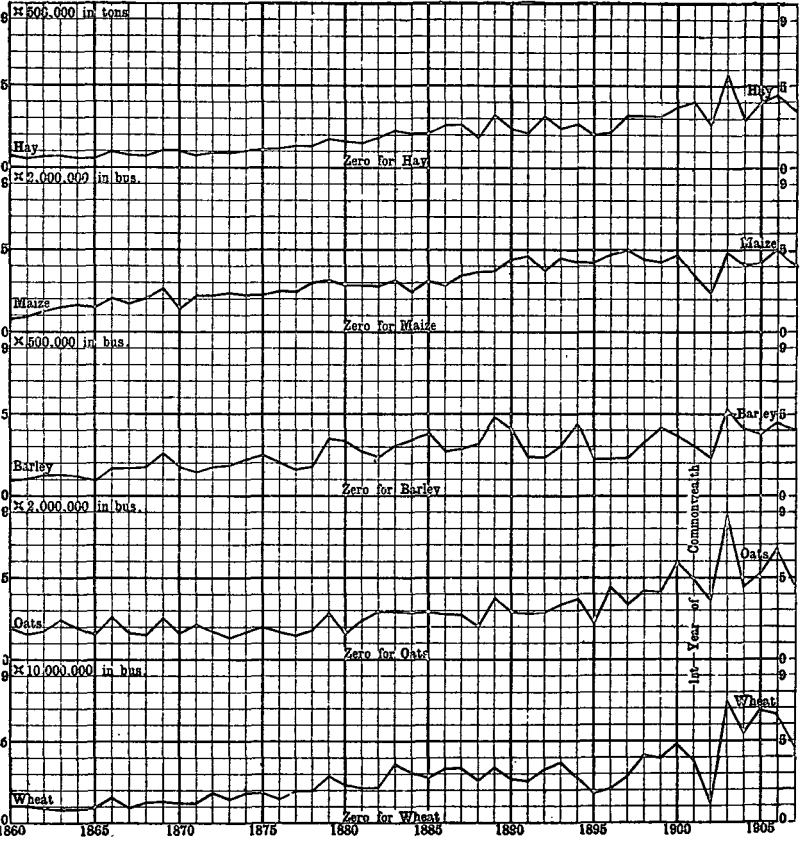
(i.) *Wheat.* This graph brings out clearly the fact that while on the whole the production of wheat in the Commonwealth is increasing with fair rapidity, the fluctuations in the total quantity produced are more marked in recent than in earlier years. Thus

GRAPHS SHEWING THE AREA UNDER THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1907-8.



EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year, while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given in the upper left-hand corner of the diagram. The height of each graph above the base line denotes, for the crop to which it relates, the total area grown in the Commonwealth during the successive seasons.

GRAPHS SHEWING THE PRODUCTION OF THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1907-8.



EXPLANATION OF GRAPHS.—In this diagram a separate base line is provided for each of the crops dealt with. In each instance the base of a small square represents an interval of one year, the vertical height of such square representing in the case of the wheat graph, 10,000,000 bushels; oats, 2,000,000 bushels; barley, 500,000 bushels; maize, 2,000,000 bushels; and hay, 500,000 tons. The height of each graph above its base line denotes the aggregate yield in the Commonwealth of that particular crop during the successive seasons.

since the year 1890 there have been three seasons of extremely low output, viz., in 1891-2, 1895-6, and 1902-3, with aggregate yields respectively of 25,700,000 bushels, 18,300,000 bushels, and 12,400,000 bushels. On the other hand there have been three seasons in which the total production was exceptionally high. These will be seen from the graph to have been the seasons 1893-4, 1900-1, and 1903-4, the total yields for which were 37,100,000 bushels, 48,400,000 bushels, and 74,100,000 bushels respectively. Each of these yields represented at the date of its attainment the maximum Australian wheat crop, the last-mentioned being the highest yet reached.

(ii.) *Oats.* From 1860-1 to 1880-1 the oats crop of the Commonwealth, although exhibiting from year to year fluctuations more or less marked, gave no indications of a tendency to increase with the advance in population. This is well shewn in the diagram, by the persistence with which the oats graph for this period adheres to the line denoting 4,000,000 bushels, the yield for 1880-1 being actually lower than that for 1860-1. From this latter season to 1894-5 the variation was on a somewhat higher level, and is shewn in the diagram to have been in the vicinity of the line representing 6,000,000 bushels. From this point onwards a tendency to more rapid increase in production is in evidence, obscured somewhat by extensive fluctuations corresponding to those referred to above in the case of wheat. Thus in 1895-6 and 1902-3 the total yields were only 4,400,000 and 7,300,000 bushels respectively, while in 1900-1 and 1903-4 aggregates respectively of 12,000,000 and 17,500,000 bushels were reached, this latter being the maximum oats crop of the Commonwealth.

(iii.) *Barley.* The Australian barley crop will from the graph be seen to have fluctuated very considerably throughout, these variations being due rather to fluctuations in the area sown than to adverse seasons. From 1879-80 to 1902-3 the curve rises above and falls below the line representing 1,500,000 bushels. For more recent years the graph bears evidence of an increasing, though still fluctuating, output. The maximum barley crop of the Commonwealth was that of 2,660,000 bushels in 1903-4.

(iv.) *Maize.* The maize graph indicates a rapid increase in output from 1860-1 to 1869-70, followed by a moderate increase from the latter season to 1886-7, and a further rapid increase to 1891-2. From the last-mentioned season onwards the production has fluctuated considerably, but little increase has, on the whole, been experienced, the total for 1891-2 being 9,300,000 bushels, as compared with 10,200,000 bushels for 1906-7, the maximum Australian maize crop. As in the case of all other crops, the maize yield for 1903-4 was much higher than those for the years immediately preceding and succeeding.

(v.) *Hay.* The graph relating to the Commonwealth output of hay indicates a fairly continuous increase in production from the season 1860-1, when the total stood at 340,000 tons, to that of 1887-8, when it reached 1,330,000 tons. In subsequent years marked fluctuations have been in evidence, but the tendency has, on the whole, been one of increase. The maximum hay crop of the Commonwealth was that of the season 1903-4, when the total production reached 2,900,000 tons. The yield for 1906-7, viz., 2,260,000 tons, was higher than for any season except 1903-4.

SECTION IX.

FARMYARD AND DAIRY PRODUCTION.

§ 1. Introductory.

1. **General.**—The live stock which accompanied Captain Phillip in 1788 included one bull, four cows, one calf, and seven pigs, these being established at Farm Cove when Port Jackson was settled. The greater part of the early shipments of cattle was slaughtered to relieve the necessity of early colonists in the famines which several times threatened the existence of the young community. The existing herds have sprung not only from the original stud, but have been steadily improved by the introduction of stud cattle and pigs, continually increasing attention being paid thereto, especially perhaps of late years. Stock-raising with regard to the special requirements of dairying, etc., has in fact been properly considered only in recent times. The technical advances made in the manufacture of butter, cheese, etc., in Europe, and the necessity of having regard thereto in connection with the export trade of Australia, demanded in Australian stock-raising a judicious crossing of strains with a view to increasing the essential contents in the milk for the production of butter or cheese; the eradication of grasses of little or no use, and the planting in lieu thereof of leguminosæ, grasses, and other plants, so as to amplify the nutrient qualities of the natural herbage, which, however, it may be said, is very often excellent. The importation of British and other cattle for breeding purposes is ordinarily under private enterprise. Government supervision has at times been found necessary in order to prevent the introduction of diseases and pests, with the result that there is but little disease among Australian herds. Recently some of the State Governments have made considerable importations for stud purposes. Permanent structures for the shelter of dairy herds, etc., as a rule are not required anywhere in the Commonwealth. State nurseries, however, supply to settlers, gratis, trees for making shelter belts, and these are found to be sufficient. Owing to the mildness of the Australian climate the heavy expenses for housing, stall-feeding, etc., are unnecessary. Where winter fodder must be grown it is given to the cattle in the fields, and consists mostly of lucerne, oats, maize, barley, and rye. Ensilage is highly recommended by dairy experts, and, when necessary, increasing use is made thereof. Continued expansion of the dairying industry, and particularly its extension into non-coastal districts, will involve a more general use of the silo.

Australian grasses are particularly suitable for dairy cattle, since they possess milk-producing, as well as fattening, properties. The area of land devoted to green food and permanent artificially-sown grasses is constantly increasing, its produce being, for the most part, devoted to the depasturing of dairy herds. The opinion, long held, that only heavily-grassed country with good rainfall was profitable for dairying has been controverted by experience, it being shown that more lightly clad regions yield good milk results.

2. **State Supervision of Industry.**—Each of the State Agricultural Departments exercises considerable supervision in regard to the industry. Dairy experts are employed to give instruction in approved methods of production, to examine animals, to inspect

the buildings used for milking and separating, and to examine the marketable produce. A high standard of dairy hygiene, cleanliness of *personnel* and *matériel*, and purity of the article and freedom from adulteration have also been insisted upon under State laws.

To meet complaints of the British consumer regarding tainted butter, and under the operation of the Federal Commerce Act, the Commonwealth Government issued the following standard for the classification of butter intended for export:—

Superfine pure creamery butter, containing not more than 14 per cent. of water, and classified at 95 to 100 points.

First grade pure creamery butter, classified at 90 to 94 points.

Second grade pure butter, classified at 83 to 89 points.

Third grade pure butter, classified at 75 to 82 points.

Pastry butter (branded as such), classified at less than 75 points.

In the first, second, and third grades not more than 16 per cent. of water is allowed.

The recent Butter Act of the British Legislature, designed to put a stop to adulteration, has brought about an increased demand for Australian butter in the United Kingdom.

In general, the method of State butter grading is as follows:—A percentage of the boxes of a consignment is selected and the brands and dates of churning registered. A sample of the full depth of the box is then taken out with the trier. The flavour, texture, colour, salting, finish, and condition of boxes are noted, and, in some States, the boxes are stamped according to grade. The margin in the number of points for flavour for superfine is from 45 to 50; for first grade, 40 to 44; for second grade, 33 to 39; and for third grade, 25 to 32. Under 25 the butter is condemned for table use.

3. **Mixed Farming.**—Dairying is not now, as formerly, wholly confined to farmers, since many graziers in a large way of business have lately given it their attention. In non-coastal regions it is generally carried on in conjunction with agriculture and sheep-raising, sufficient fodder being grown to carry the cattle through the winter months. Local wants are thus met, and in many places removed from the metropolis well-equipped factories have been established.

4. **Factory System.**—Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or "creameries," has resulted in a considerable reduction in cost of manufacture, since improved appliances, such as refrigerators, may be profitably worked at the larger establishments. The product is also of a more uniform quality. The number of farmers who adhere to hand processes is steadily diminishing. Formerly the average quantity of milk used per pound of hand-made butter was about 3 gallons, but separator butter requires only about 2.6 gallons.

5. **Butter and Cheese Factories.**—The establishments in the Commonwealth where the manufacture of butter, butterine, margarine, and cheese was carried on, numbered 579 in 1907. These were distributed as regards the various States as follows:—New South Wales, 190; Victoria, 224; Queensland, 83; South Australia, 57; Western Australia, 2; Tasmania, 23.

§ 2. Milk, Butter, and Cheese.

1. **Dairy Herds.**—Since the drought year 1902, there has been in each State, almost without exception, a yearly increase in the number of dairy cows. In New South Wales, Victoria, South Australia proper, and Tasmania—as will be seen from the table of cattle and dairy cattle given below—the proportion of dairy cattle to all cattle is high. In Queensland, the Northern Territory of South Australia, and Western Australia, there is a greatly preponderating number of other cattle, dairying not having been established in the tropical regions of the Continent:—

CATTLE AND DAIRY CATTLE, AUSTRALIAN COMMONWEALTH, 1901 to 1907.

| State. | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------|------------|-------------|-------------|-------------|-----------|-----------|-----------|------------|
| N.S.W.* | All Cattle | 2,047,454 | 1,741,226 | 1,880,578 | 2,149,129 | 2,337,973 | 2,549,044 | 2,749,193 |
| | Dairy Cows | 417,835 | 351,287 | 523,438 | 591,936 | 644,164 | 713,049 | 755,916 |
| Victoria | All Cattle | 1,625,532 † | 1,648,690 † | 1,671,828 † | 1,694,976 | 1,737,690 | 1,804,323 | 1,842,807 |
| | Dairy Cows | 483,650 | 510,546 | 515,179 | 632,493 | 649,100 | 701,309 | 709,279 |
| Q'land | All Cattle | 3,772,707 | 2,543,471 | 2,481,717 | 2,722,340 | 2,963,695 | 3,413,919 | 3,892,232 |
| | Dairy Cows | 136,000 ‡ | 108,800 ‡ | 119,000 ‡ | 144,000 ‡ | 172,000 ‡ | 215,000 ‡ | 282,883 |
| S. Aust. | All Cattle | 225,256 | 213,343 | 244,610 | 272,459 | 300,721 | 325,724 | 334,669 |
| | Dairy Cows | 74,995 | 75,011 | 83,348 | 88,156 | 93,069 | 97,843 | 100,743 |
| N. Ter. | All Cattle | 255,521 | 305,820 | 291,970 | 247,920 | 346,910 | 354,371 | 374,199 |
| | Dairy Cows | 894 | 627 | 902 | 670 | 756 | 680 | 489 |
| W. Aust. | All Cattle | 398,547 | 437,136 | 497,617 | 561,490 | 631,825 | 690,011 | 771,107 |
| | Dairy Cows | 34,111 | 24,324 | 27,232 | 27,724 | 35,011 | 34,822 | 31,489 |
| Tas. | All Cattle | 168,661 | 177,566 | 185,938 | 201,206 | 206,211 | 211,117 | 215,523 |
| | Dairy Cows | 40,933 | 43,316 | 45,018 | 50,230 | 49,618 | 49,132 | 54,245 |
| C'wealth* | All Cattle | 8,493,678 | 7,067,242 | 7,254,258 | 7,849,520 | 8,525,025 | 9,343,409 | 10,179,730 |
| | Dairy Cows | 1,188,418 | 1,113,911 | 1,314,117 | 1,535,209 | 1,643,718 | 1,811,835 | 1,935,044 |

† Statistics not collected : figures supplied by interpolation.

‡ Statistics not collected : figures estimated.

* In New South Wales, up to 1902 the figures include only the cows actually in milk at the time the returns were taken. The figures for subsequent years are made up as follows :—

| Year. | Milch Cows. | Cows at Present Dry. | Heifers within 3 M'ths of Calving. | Total Dairy Cows. |
|-------|-------------|----------------------|------------------------------------|-------------------|
| 1903 | 362,429 | 117,679 | 43,330 | 523,438 |
| 1904 | 424,936 | 131,335 | 35,405 | 591,936 |
| 1905 | 442,950 | 154,635 | 46,559 | 644,164 |
| 1906 | 494,820 | 172,888 | 45,341 | 713,049 |
| 1907 | 505,395 | 206,828 | 43,693 | 755,916 |

2. **Milk.**—The annual quantity of milk produced per dairy cow varies greatly with locality and season, probably reaching as high as 500 gallons, but averaging for the whole of Australia, for all dairy cows and for all seasons, something under 250 gallons per annum. The best yields over a series of years appear to be in South Australia, New South Wales, Victoria, and Tasmania, while Western Australia is below Queensland. In the following table the average yield per cow for 1907 is taken from the number of dairy cows who were, during any part of the year, milking. The average given is considerably below that for cows which were yielding during the greater part of the year.

PRODUCTION OF MILK, 1907.

| Heading. | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|------------------------------|-------------|-------------|------------|-------------|-----------|--------|-----------|
| Dairy cows... No. | 712,223 | 709,279 | 282,883 | 101,232 | 31,489 | 54,245 | 1,891,351 |
| Production of milk... gals. | 183,303,474 | 181,813,600 | 60,895,582 | *29,743,828 | 4,604,148 | ... | ... |
| Aver. yield per cow... gals. | 257 | 256 | 215 | *294 | 146 | ... | ... |

* Estimated. Exact yield not obtainable.

3. **Butter and Cheese.**—The butter output shews, in general, a tolerably steady increase since the drought year 1902, the most marked development being in Queensland. The production of butter and cheese reached their highest figures in 1906. In both these products a falling-off is shewn in some of the States in 1907, due to the dryness of the season. For the seven years from 1901 to 1907 the figures are :—

PRODUCTION OF BUTTER AND CHEESE, AUSTRALIAN COMMONWEALTH,

1901 TO 1907.

| Year. | New South Wales. | Victoria. | Queensland. | South Australia. | W. Aust. | Tasmania.* | Total for C ^o wealth.† |
|----------------|------------------|------------|-------------|------------------|----------|------------|-----------------------------------|
| | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. |
| BUTTER. | | | | | | | |
| 1901 ... | 39,066,878 | 46,857,572 | 9,741,882 | 4,954,523 | 336,440 | 723,771 | 101,671,066 |
| 1902 ... | 29,950,977 | 39,227,754 | 4,851,362 | 4,521,246 | 321,462 | 699,526 | 79,572,327 |
| 1903 ... | 38,727,107 | 46,685,727 | 7,717,325 | 5,905,756 | 351,885 | 854,442 | 100,332,242 |
| 1904 ... | 53,591,243 | 61,002,841 | 17,538,473 | 6,836,170 | 441,103 | 845,378 | 140,255,208 |
| 1905 ... | 53,040,250 | 57,606,821 | 20,319,976 | 8,226,805 | 423,270 | 1,281,604 | 140,898,726 |
| 1906 ... | 58,877,182 | 68,088,168 | 22,746,593 | 8,873,632 | 380,157 | 904,930 | 159,870,662 |
| 1907 ... | 60,041,449 | 63,746,354 | 22,789,158 | 8,519,340 | 436,529 | 847,860 | 156,380,690 |
| CHEESE. | | | | | | | |
| 1901 ... | 3,838,835 | 3,974,668 | 2,436,912 | 1,053,160 | 3,578 | 268,539 | 11,575,692 |
| 1902 ... | 4,148,038 | 3,849,561 | 952,013 | 705,969 | 1,592 | 348,614 | 10,005,787 |
| 1903 ... | 4,748,176 | 5,681,515 | 1,479,651 | 972,584 | 8,039 | 533,709 | 13,423,674 |
| 1904 ... | 4,223,621 | 4,747,851 | 2,607,475 | 851,800 | 350 | 204,160 | 12,635,257 |
| 1905 ... | 4,625,980 | 4,297,350 | 2,682,069 | 1,174,867 | 4,831 | 369,913 | 13,155,030 |
| 1906 ... | 5,389,345 | 4,877,593 | 2,921,140 | 1,398,785 | 1,314 | 190,481 | 14,778,658 |
| 1907 ... | 4,568,857 | 4,397,909 | 2,684,588 | 1,385,790 | 580 | 381,930 | 13,419,654 |

* Tasmanian statistics of the production of butter and cheese relate only to the quantities made in factories.

† The totals for the Commonwealth here given are exclusive of Tasmanian butter and cheese made elsewhere than in factories.

4. **Concentrated Milk.**—"Condensed" or "concentrated" milk denotes milk the bulk of which is reduced by evaporation, no sweetening agent being added. When a sweetening agent is added it is called "preserved" milk. Small quantities of such milk have been made, but the industry is at present by no means a large one. No condensed or concentrated milk is made in South Australia, Western Australia, or Tasmania. In New South Wales, Victoria, and Queensland the following quantities are returned for 1907:—

CONDENSED AND CONCENTRATED MILK MADE, 1907.

| Year. | New South Wales. | Victoria. | Queensland. |
|----------|------------------|-----------|-------------|
| | lbs. | gallons. | lbs. |
| 1907 ... | 1,526,471 | 390,388 | 2,323,472 |

5. **Overseas Trade in Milk, Butter, and Cheese.**—The tables following give the import, export, or net export or import of butter, cheese, and milk. In each of the seven years exports of butter exceeded imports; in only two did this occur with regard to cheese, and in none with regard to milk.

IMPORTS, EXPORTS, AND NET IMPORTS OF BUTTER, CHEESE, AND MILK,

AUSTRALIAN COMMONWEALTH, 1901 TO 1907.

IMPORTS.

| Products. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---|------------|------------|------------|------------|------------|------------|-----------|
| Butter ... lbs. | 1,342,338 | 6,901,779 | 1,887,148 | 43,873 | 592,201 | 70,143 | 20,885 |
| " ... £ | 61,581 | 357,244 | 88,754 | 1,636 | 25,509 | 3,133 | 910 |
| Cheese ... lbs. | 2,777,464 | 2,318,110 | 1,141,300 | 375,642 | 394,718 | 304,951 | 299,711 |
| " ... £ | 66,006 | 59,674 | 33,071 | 12,349 | 12,494 | 11,533 | 12,371 |
| Milk—concent'd & pres'v'd ¹ lbs. | 10,778,775 | 13,331,341 | 13,664,776 | 11,196,926 | 10,943,788 | 10,672,265 | 9,379,091 |
| " " £ | 190,836 | 241,199 | 238,632 | 197,254 | 196,471 | 189,316 | 170,478 |

1. See definition above.

IMPORTS, EXPORTS AND NET IMPORTS OF BUTTER, CHEESE & MILK.—Continued.

| Products. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------------|------------|-----------|------------|------------|------------|------------|------------|
| EXPORTS. | | | | | | | |
| Butter ... lbs. | 34,607,397 | 9,661,925 | 32,124,709 | 64,807,962 | 56,477,536 | 75,802,856 | 66,076,915 |
| " ... £ | 1,451,168 | 472,772 | 1,267,411 | 2,461,450 | 2,354,399 | 3,240,063 | 2,890,261 |
| Cheese ... lbs. | 293,381 | 253,615 | 243,176 | 514,576 | 193,608 | 252,115 | 495,530 |
| " ... £ | 7,982 | 7,623 | 7,077 | 11,216 | 5,291 | 6,832 | 12,896 |
| Milk—concent'd & pres'v'd' lbs. | 1,059,169 | 876,909 | 709,549 | 659,937 | 495,089 | 311,540 | 322,119 |
| " " £ | 17,582 | 15,360 | 14,183 | 11,857 | 9,319 | 6,375 | 6,305 |

NET EXPORTS.²

| | | | | | | | |
|------------------------------------|------------|------------|------------|------------|------------|------------|------------|
| Butter ... lbs. | 33,265,059 | 2,760,146 | 30,237,561 | 64,764,089 | 55,885,335 | 75,732,713 | 66,056,030 |
| " ... £ | 1,389,587 | 115,528 | 1,178,657 | 2,459,814 | 2,328,890 | 3,236,930 | 2,889,351 |
| Cheese ... lbs. | 2,484,083 | 2,064,495 | 898,124 | 138,934 | 191,110 | 52,836 | 195,819 |
| " ... £ | 58,024 | 52,051 | 25,994 | 1,133 | 7,203 | 4,701 | 525 |
| Milk—concent'd & pres'v'd' lbs. | 9,719,606 | 12,454,432 | 12,955,227 | 10,536,989 | 10,448,699 | 10,360,725 | 8,956,972 |
| " " £ | 173,254 | 225,839 | 224,449 | 185,397 | 187,152 | 182,941 | 164,173 |

1. See definition on page 451.

2. — signifies net imports.

The large quantities of milk imported for local use indicate room for development in the preserving industry.

6. **Interstate Trade in Milk, Butter, and Cheese.**—The extent of interstate trade in dairy products, naturally of considerable magnitude, is worthy of statistical presentation. That for butter, cheese, and milk is as follows:—

INTERSTATE TRADE IN BUTTER AND CHEESE, 1907.

| State. | Imports from other States of the C ^w wealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports. ¹ | |
|--------|---|--------|--|--------|--------------------------------------|--------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |

BUTTER.

| | | | | | | |
|-----------------------|----------------|-----------|----------------|-----------|-------------|---------|
| New South Wales ... | lbs. 2,809,336 | £ 125,222 | lbs. 2,905,196 | £ 132,536 | lbs. 95,860 | £ 7,314 |
| Victoria ... | 1,932,986 | 82,672 | 7,881,576 | 373,074 | 5,948,590 | 290,402 |
| Queensland ... | 21,943 | 855 | 1,313,791 | 53,693 | 1,291,848 | 52,838 |
| South Australia ... | 990,422 | 45,827 | 1,624,255 | 73,247 | 633,833 | 27,420 |
| Western Australia ... | 7,219,263 | 339,738 | 420 | 18 | 7,218,843 | 339,720 |
| Tasmania ... | 1,331,987 | 62,485 | 580,699 | 24,231 | 751,288 | 38,254 |

CHEESE.

| | | | | | | |
|-----------------------|--------------|----------|--------------|---------|--------------|----------|
| New South Wales ... | lbs. 766,640 | £ 22,107 | lbs. 203,131 | £ 5,574 | lbs. 563,509 | £ 16,533 |
| Victoria ... | 216,771 | 5,341 | 1,378,838 | 38,233 | 1,162,067 | 32,892 |
| Queensland ... | 55,168 | 1,667 | 229,438 | 6,189 | 174,270 | 4,522 |
| South Australia ... | 56,979 | 1,643 | 322,946 | 8,777 | 265,967 | 7,134 |
| Western Australia ... | 1,188,225 | 31,473 | 1,147 | 45 | 1,187,078 | 31,428 |
| Tasmania ... | 78,411 | 2,102 | 226,694 | 5,515 | 148,283 | 3,413 |

1. — signifies net imports.

It will be observed from the column of net exports that Victoria occupies the leading position as supplier, and Western Australia the chief position as interstate importer of these products.

INTERSTATE TRADE IN MILK AND CREAM, 1907.

| State. | Imports from other States of the Commonwealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports. ¹ | |
|--------|--|--------|--|--------|--------------------------------------|--------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |

MILK AND CREAM—CONCENTRATED.²

| | lbs. | £ | lbs. | £ | lbs. | £ |
|-----------------------|---------|-------|---------|-------|---------|-------|
| New South Wales ... | 4,862 | 46 | 84,843 | 1,393 | 79,981 | 1,347 |
| Victoria ... | 77,269 | 1,249 | 552,120 | 8,902 | 474,851 | 7,653 |
| Queensland ... | 1,600 | 46 | 14,448 | 271 | 12,848 | 225 |
| South Australia ... | 700 | 23 | ... | ... | 700 | 23 |
| Western Australia ... | 385,453 | 6,166 | ... | ... | 385,453 | 6,166 |
| Tasmania ... | 181,527 | 3,036 | ... | ... | 181,527 | 3,036 |

MILK AND CREAM—PRESERVED.²

| | lbs. | £ | lbs. | £ | lbs. | £ |
|-----------------------|-----------|--------|-----------|--------|-----------|--------|
| New South Wales ... | 1,680,698 | 33,213 | 460,557 | 9,051 | 1,220,141 | 24,162 |
| Victoria ... | 84,413 | 1,599 | 2,327,319 | 46,641 | 2,242,906 | 45,042 |
| Queensland ... | 282,546 | 5,564 | 767,089 | 14,230 | 484,543 | 8,666 |
| South Australia ... | 572,342 | 12,104 | 628,465 | 13,169 | 56,123 | 1,065 |
| Western Australia ... | 1,338,682 | 25,997 | 11,460 | 246 | 1,327,222 | 25,751 |
| Tasmania ... | 242,859 | 4,988 | 6,650 | 128 | 236,209 | 4,860 |

1. — signifies net imports.

2. See definition on page 451.

The remarks relating to the positions of Victoria and Western Australia in the case of butter and cheese apply also to concentrated and preserved milk and cream. New South Wales is a large importer of preserved milk from other States of the Commonwealth. There was no interstate trade in fresh milk and cream in 1907.

7. **Local Consumption of Butter and Cheese.**—The total production of butter and cheese, with the net export or import subtracted or added, gives approximately the consumption in the Commonwealth. In the period considered, 1904 and 1907 were the only years in which the local supply of cheese was adequate:—

BUTTER AND CHEESE LOCALLY CONSUMED, 1901 to 1907.

| Product. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------|------------|------------|------------|------------|------------|------------|------------|
| Butter ... Total | 68,406,007 | 76,812,181 | 70,004,681 | 75,491,119 | 85,013,391 | 84,137,949 | 90,324,660 |
| Per head | 18.0 | 19.9 | 17.9 | 19.1 | 21.2 | 20.6 | 21.7 |
| Cheese ... Total | 14,059,775 | 12,070,282 | 14,321,798 | 12,496,323 | 13,346,140 | 14,831,494 | 13,233,835 |
| Per head | 3.7 | 3.1 | 3.7 | 3.2 | 3.3 | 3.6 | 3.3 |

The consumption in 1907 was, therefore, equal to 21.7 lbs. of butter and 3.2 lbs. of cheese per head of mean population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom is given as 19 lbs. per head, and is therefore only equal to about four-fifths of that of the Commonwealth.

§ 3. Pigs, Bacon, etc.

1. **Pigs.**—The pigs in Australasia numbered 43 in 1792; 4017 in 1800; 8992 in 1810; 33,906 in 1821; 66,086 in 1842; and 121,035 in 1851. The figures for the States in subsequent census years, and in the last five years, were:—

NUMBER OF PIGS, AUSTRALIAN COMMONWEALTH, 1861 to 1907.

| State. | 1861. | 1871. | 1881. | 1891. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------|---------|---------|---------|---------|----------|----------|----------|-----------|-----------|---------|---------|
| N.S.W. ... | 146,091 | 213,193 | 213,916 | 253,189 | 265,730 | 193,097 | 221,592 | 339,666 | 310,702 | 243,370 | 216,145 |
| Victoria ... | 43,480 | 177,447 | 239,926 | 286,780 | 334,295* | 318,220* | 302,145* | 286,070 | 273,682 | 220,452 | 211,002 |
| Queensland | 7,465 | 32,707 | 56,438 | 122,672 | 121,641 | 77,202 | 117,553 | 185,141 | 164,087 | 138,282 | 133,246 |
| South Aust. | 69,286 | 95,542 | 120,718 | 83,797 | 89,875 | 83,791 | 89,331 | 112,584 | 119,005 | 112,277 | 93,605 |
| West. Aust. | 11,984 | 14,265 | 22,530 | 25,330 | 61,052 | 52,883 | 50,209 | 70,293 | 74,567 | 56,203 | 53,399 |
| Tasmania ... | 40,841 | 52,863 | 49,660 | 73,520 | 58,716 | 52,096 | 56,538 | 77,943 | 72,810 | 42,985 | 46,704 |
| C'wealth ... | 319,147 | 566,017 | 703,188 | 845,888 | 931,309 | 777,289 | 837,368 | 1,062,703 | 1,014,853 | 813,569 | 754,101 |

* Statistics not collected. Figures supplied by interpolation.

The number of pigs was highest in 1904, when for the first time it was over a million; prior to 1899 it had never reached 900,000. That year, the two immediately following, and 1904 and 1905 mark the highest totals. An examination of the States' returns shews remarkable fluctuations. It will be noticed that in no State was the number as high in 1906 as in the preceding year, and in Tasmania alone was the figure for 1907 higher than that for 1906. In several States the falling off over the two years is very marked. In Tasmania it exceeded 35 per cent.; in New South Wales it was 30 per cent.; in Western Australia 28 per cent.; in South Australia and Victoria 22 per cent.; and in Queensland 19 per cent.; while for the Commonwealth the decrease was 25 per cent. The number of pigs per head of population, and the number per square mile, will be found in the tables of live stock, page 356.

2. **Bacon and Ham.**—With the exception of Tasmania, the production of bacon and ham increased in the years 1903 to 1906. In 1907, however, there was a general falling off.

PRODUCTION OF BACON AND HAM, AUSTRALIAN COMMONWEALTH, 1901 to 1907.

| Year. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania.* | Total for Commonwealth. |
|----------|------------------|------------|-------------|------------------|--------------------|------------|-------------------------|
| | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. | lbs. |
| 1901 ... | 11,080,891 | 15,011,616 | 7,064,714 | + | 333,393 | 530,015 | 34,020,629† |
| 1902 ... | 8,995,856 | 14,438,370 | 6,512,952 | + | 246,827 | 414,340 | 30,608,345† |
| 1903 ... | 7,864,771 | 12,504,851 | 4,145,900 | + | 178,557 | 401,417 | 25,095,496† |
| 1904 ... | 10,680,532 | 14,851,944 | 6,514,852 | + | 250,264 | 574,781 | 32,872,373† |
| 1905 ... | 11,652,440 | 16,433,665 | 10,500,335 | + | 401,447 | 446,714 | 39,434,601† |
| 1906 ... | 11,843,595 | 18,051,166 | 10,846,959 | + | 272,494 | 151,700 | 41,165,914† |
| 1907 ... | 10,358,526 | 17,545,720 | 10,015,008 | 2,311,004 | 209,419 | 279,504 | 40,719,181 |

* Tasmanian statistics of the production of bacon and ham from 1901 to 1906 relate only to quantities made in factories.

† The totals for the Commonwealth here given are exclusive of Tasmanian bacon and ham made elsewhere than in factories, and also of all South Australian bacon and ham.

‡ Information not available.

3. Oversea Trade in Pig Products.—The oversea trade in pigs and pig products is shewn in the following tables:—

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK,
PIGS, AND LARD, AUSTRALIAN COMMONWEALTH, 1901 to 1907.

| Particulars | 1901. | 1902 | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|----------|----------|----------|---------|---------|---------|---------|
| BACON AND HAM. | | | | | | | |
| Imports ...lbs. | 905,164 | 730,699 | 626,791 | 371,354 | 162,715 | 194,059 | 237,644 |
| " ... £ | 29,516 | 27,738 | 24,152 | 13,425 | 5,807 | 7,171 | 9,625 |
| Exports ...lbs. | 286,699 | 204,266 | 231,570 | 382,580 | 492,076 | 532,851 | 420,819 |
| " ... £ | 10,424 | 8,106 | 9,756 | 12,596 | 15,262 | 18,467 | 17,579 |
| Net Exp. ¹ lbs. | -618,465 | -526,433 | -395,221 | 11,226 | 329,361 | 338,792 | 183,175 |
| " ... £ | -19,092 | -19,632 | -14,396 | 829 | 9,455 | 11,296 | 7,954 |

FROZEN PORK.

| | | | | | | | |
|----------------------------|---------|---------|------------|---------|-----------|-----------|-----------|
| Imports ...lbs. | 106 | 211,678 | 2,467,782 | 211,803 | 154,052 | 139,363 | 187,479 |
| " ... £ | 2 | 6,840 | 65,136 | 4,287 | 4,039 | 3,717 | 5,312 |
| Exports ...lbs. | 303,899 | 647,923 | 277,310 | 521,331 | 2,824,016 | 3,472,224 | 1,446,758 |
| " ... £ | 5,971 | 14,654 | 7,174 | 9,346 | 47,596 | 60,936 | 28,406 |
| Net Exp. ¹ lbs. | 303,793 | 436,242 | -2,190,472 | 309,528 | 2,669,964 | 3,332,861 | 1,259,279 |
| " ... £ | 5,969 | 7,814 | -57,962 | 5,059 | 43,557 | 57,219 | 23,094 |

PIGS.

| | | | | | | | |
|---------------------------|-----|-----|-----|-----|-----|-------|-----|
| Imports ...No. | 39 | 50 | 21 | 73 | 64 | 24 | 7 |
| " ... £ | 765 | 513 | 121 | 832 | 814 | 1,269 | 69 |
| Exports ...No. | 164 | 31 | 77 | 247 | 322 | 220 | 185 |
| " ... £ | 234 | 119 | 106 | 276 | 399 | 263 | 383 |
| Net Exp. ¹ No. | 125 | 19 | 56 | 174 | 258 | 196 | 178 |
| " ... £ | 531 | 394 | 15 | 556 | 415 | 1,006 | 314 |

LARD.

| | | | | | | | |
|----------------------------|--------|----------|----------|---------|-----------|---------|---------|
| Imports ...lbs. | 79,956 | 461,046 | 698,793 | 89,652 | 45,702 | 64,561 | 36,625 |
| " ... £ | 1,716 | 12,459 | 17,703 | 1,736 | 924 | 1,294 | 980 |
| Exports ...lbs. | 93,929 | 64,430 | 426,507 | 952,088 | 1,064,562 | 551,268 | 458,327 |
| " ... £ | 1,791 | 1,361 | 7,770 | 15,311 | 16,163 | 8,373 | 8,554 |
| Net Exp. ¹ lbs. | 13,973 | -396,616 | -272,286 | 862,436 | 1,018,860 | 486,707 | 421,702 |
| " ... £ | 75 | -11,098 | 9,933 | 13,575 | 15,239 | 7,079 | 7,574 |

1. — signifies net imports.

It will be seen that in the first three years shewn in the table there was a considerable net import of bacon and ham, while for the last three years, there was a large net export. The local production of frozen pork was each year more than sufficient for the local demand, excepting only in 1903. The production of lard was in excess of the local demand in each of the seven years, except 1902 and 1903.

4. Interstate Trade in Pig Products.—The interstate trade in pigs, bacon and hams, frozen pork, lard, etc., in 1907 was as follows:—

INTERSTATE TRADE IN PIG PRODUCTS, 1907.

| State. | Imports from other States of the C'wealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports. ¹ | |
|-----------------------|--|--------|--|--------|--------------------------------------|--------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| PIGS. | | | | | | |
| | No. | £ | No. | £ | No. | £ |
| New South Wales ... | 949 | 1,313 | 5,667 | 6,289 | 4,718 | 4,976 |
| Victoria ... | 5,652 | 6,236 | 72 | 144 | 5,580 | 6,092 |
| Queensland ... | 25 | 107 | 2 | 6 | 23 | 101 |
| South Australia ... | 6 | 35 | 894 | 1,275 | 888 | 1,240 |
| Western Australia ... | ... | ... | ... | ... | ... | ... |
| Tasmania ... | 3 | 23 | ... | ... | 3 | 23 |

BACON AND HAMS.

| | lbs. | £ | lbs. | £ | lbs. | £ |
|-----------------------|-----------|---------|-----------|---------|-----------|---------|
| New South Wales ... | 2,859,184 | 97,601 | 256,629 | 8,263 | 2,602,555 | 89,338 |
| Victoria ... | 83,288 | 2,607 | 4,387,540 | 154,454 | 4,304,252 | 151,847 |
| Queensland ... | 117,777 | 4,190 | 2,013,989 | 67,596 | 1,896,212 | 63,406 |
| South Australia ... | 100,963 | 3,593 | 681,515 | 21,413 | 580,552 | 17,820 |
| Western Australia ... | 3,421,470 | 120,571 | 644 | 22 | 3,420,826 | 120,549 |
| Tasmania ... | 779,378 | 23,910 | 21,743 | 724 | 757,635 | 23,186 |

FROZEN PORK.

| | lbs. | £ | lbs. | £ | lbs. | £ |
|-----------------------|---------|-------|---------|-------|---------|-------|
| New South Wales ... | 10,205 | 157 | 297,216 | 6,112 | 287,011 | 5,955 |
| Victoria ... | ... | ... | 88,431 | 1,737 | 88,431 | 1,737 |
| Queensland ... | ... | ... | 12,145 | 195 | 12,145 | 195 |
| South Australia ... | ... | ... | ... | ... | ... | ... |
| Western Australia ... | 387,587 | 7,887 | ... | ... | 387,587 | 7,887 |
| Tasmania ... | ... | ... | ... | ... | ... | ... |

LARD AND REFINED ANIMAL FATS.

| | lbs. | £ | lbs. | £ | lbs. | £ |
|-----------------------|---------|--------|---------|--------|---------|--------|
| New South Wales ... | 716,744 | 14,390 | 156,403 | 3,030 | 560,341 | 11,360 |
| Victoria ... | 205,742 | 3,353 | 390,379 | 6,726 | 124,637 | 3,373 |
| Queensland ... | 45,036 | 751 | 937,786 | 18,791 | 892,750 | 18,040 |
| South Australia ... | 43,966 | 891 | 392,098 | 7,171 | 348,132 | 6,280 |
| Western Australia ... | 622,969 | 12,676 | 1,685 | 27 | 621,284 | 12,649 |
| Tasmania ... | 195,907 | 3,808 | 12,013 | 124 | 183,894 | 3,684 |

1. — signifies net imports

5. **Local Consumption of Bacon and Ham.**—From 1904 to 1907 the production of bacon and ham was sufficient to meet the local demand, and there was a surplus for export, but in 1901, 1902, and 1903 this was otherwise, and considerable quantities were imported.

BACON AND HAM LOCALLY CONSUMED, 1901 to 1907.

| Con- sumption. ¹ | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Total ... | lbs. 34,639,094 | lbs. 31,134,778 | lbs. 25,490,717 | lbs. 32,861,147 | lbs. 39,105,240 | lbs. 40,827,122 | lbs. 40,536,006 |
| Per head ... | 10.1 | 8.9 | 7.2 | 9.2 | 10.7 | 11.0 | 9.8 |

1. This excludes South Australia from 1901 to 1906, for which no figures of production were available.

§ 4. Poultry Farming.

1. **Development of the Industry.**—Until recently, poultry farming as a well organised industry could scarcely be said to exist, although in metropolitan and suburban districts poultry has of course long been kept for the table and egg supplies. The aggregate output, though considerable, represented relatively little value beyond the cost of production, owing to imperfect management. Many farmers also, both wheat-growers and dairymen, have maintained a large poultry stock, erecting poultry yards constructed on modern principles, and feeding from the stubble fields and waste grain with a minimum expenditure in tending. This brought about a considerable addition to the net agricultural or dairying return. The poultry industry during recent years has assumed an independent position among rural industries, notwithstanding that large numbers of poultry runs on wheat and dairy farms are still maintained; poultry farming is also carried on in conjunction with pig farming. In special poultry farms, breeding on scientific principles and a proper arrangement of the runs is secured, and feeding and reproduction are technically attended to, and proper shelter is provided either by means of trees or sheds. Poultry experts are engaged by the State Governments to instruct in matters that will amplify the returns. Poultry for consumption are extensively reared, and the egg-producing qualities of the birds have also been greatly improved by careful breeding.

2. **Production of Poultry.**—Figures for the yield of poultry products are difficult to obtain. The following values are returned :—

ESTIMATED VALUE OF POULTRY AND EGGS, 1907.

| N.S.W. | Victoria.* | Queensland. | S. Australia. | W. Australia. | Tasmania. |
|----------------|----------------|-------------|---------------|---------------|-----------|
| £ 1,035,000 | £ 1,525,000 | £ † | £ 414,696 | £ † | £ † |

* For year 1907-8. † Not available.

3. **Oversea Trade in Poultry Products.**—The imports and exports of eggs shew a considerable balance on the side of imports, in each of the years 1901 to 1906. In 1907, however, the export considerably exceeded the import. The introduction of valuable poultry for breeding is evidenced by the fact that although the exports in 1903, 1904 and 1905 exceeded the imports in number, the imports were of greater value. The figures for frozen poultry shew that a considerable oversea trade is carried on:—

IMPORTS, EXPORTS AND NET EXPORTS OF EGGS AND LIVE AND FROZEN POULTRY, AUSTRALIAN COMMONWEALTH, 1901 TO 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|---------|---------|---------|---------|--------|--------|--------|
| EGGS. | | | | | | | |
| Imports ... doz. | 123,597 | 136,163 | 161,099 | 249,379 | 84,517 | 83,925 | 60,114 |
| „ ... £ | 3,833 | 4,077 | 3,748 | 4,437 | 1,943 | 2,184 | 1,791 |
| Exports ... doz. | 65,924 | 84,133 | 46,973 | 29,841 | 23,041 | 38,090 | 88,684 |
| „ ... £ | 3,319 | 4,078 | 2,292 | 1,245 | 1,199 | 1,718 | 3,421 |
| Net exp. ¹ doz. | 57,673 | 52,030 | 114,126 | 219,538 | 61,476 | 45,835 | 28,570 |
| „ „ £ | 514 | 1 | 1,456 | 3,192 | 744 | 466 | 1,630 |
| LIVE POULTRY. | | | | | | | |
| Imports ... No. | “ | “ | 577 | 1,454 | 1,417 | 3,220 | 2,883 |
| „ ... £ | 1,462 | 1,305 | 1,167 | 2,079 | 1,984 | 1,747 | 957 |
| Exports ... No. | “ | “ | 1,388 | 2,062 | 4,000 | 2,806 | 3,280 |
| „ ... £ | 470 | 1,190 | 371 | 1,086 | 1,863 | 1,767 | 1,248 |
| Net exp. ¹ No. | “ | “ | 811 | 608 | 2,583 | 414 | 397 |
| „ „ £ | 992 | 115 | 796 | 993 | 121 | 20 | 291 |

1. — signifies net imports.

2. Quantity not available.

IMPORTS, EXPORTS, ETC., OF EGGS AND LIVE AND FROZEN POULTRY.—Continued.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|
| FROZEN POULTRY. | | | | | | | |
| Imports ... lb. | 2 | 2 | 23,601 | 15,833 | 22,628 | 8,949 | 1,452 |
| " ... £ | 209 | 5,270 | 963 | 673 | 899 | 331 | 43 |
| Exports ... pair | 2 | 2 | 53,123 | 9,936 | 46,987 | 34,655 | 31,261 |
| " ... £ | 26,738 | 41,283 | 10,364 | 3,509 | 11,765 | 9,506 | 8,556 |
| Net exp. ¹ pair | | | | | | | |
| " " £ | 26,529 | 36,013 | 9,401 | 2,836 | 10,866 | 9,175 | 8,513 |

1. — signifies net imports. 2. Quantity not available.

4. **Interstate Trade in Poultry Products.**—South Australia is the largest supplier to the other States of the Commonwealth of poultry products generally, but Victoria has the largest interstate market for frozen poultry.

INTERSTATE TRADE IN POULTRY AND POULTRY PRODUCTS, 1907.

| State | Imports from other States of the Commonwealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports. ¹ | |
|-------|--|--------|--|--------|--------------------------------------|--------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |

LIVE POULTRY.

| | No. | £ | No. | £ | No. | £ |
|---------------------|--------|-------|--------|-------|--------|-------|
| New South Wales | 59,266 | 5,977 | 2,427 | 634 | 56,839 | 5,343 |
| Victoria ... | 1,382 | 288 | 2,253 | 582 | 871 | 294 |
| Queensland ... | 948 | 255 | 975 | 123 | 27 | 132 |
| South Australia ... | 294 | 102 | 57,074 | 6,073 | 56,780 | 5,971 |
| Western Australia | 875 | 568 | 42 | 27 | 833 | 541 |
| Tasmania ... | 461 | 389 | 455 | 140 | 6 | 249 |

FROZEN POULTRY.

| | lbs. | £ | lbs. | £ | lbs. | £ |
|---------------------|---------|-------|---------|-------|---------|-------|
| New South Wales | 30,114 | 972 | 14,043 | 489 | 16,071 | 483 |
| Victoria ... | 2,637 | 77 | 120,457 | 4,342 | 117,820 | 4,265 |
| Queensland ... | ... | ... | 5,361 | 186 | 5,361 | 186 |
| South Australia ... | 1,147 | 43 | 1,090 | 41 | 57 | 2 |
| Western Australia | 107,053 | 3,966 | ... | ... | 107,053 | 3,966 |
| Tasmania ... | ... | ... | ... | ... | ... | ... |

EGGS.

| | Dozen. | £ | Dozen. | £ | Dozen. | £ |
|---------------------|-----------|--------|-----------|---------|-----------|---------|
| New South Wales | 1,383,764 | 48,914 | 20,306 | 859 | 1,363,458 | 48,055 |
| Victoria ... | 547,810 | 18,796 | 61,095 | 2,773 | 486,715 | 16,023 |
| Queensland ... | 765 | 42 | 247,525 | 8,212 | 246,760 | 8,170 |
| South Australia ... | 1,910 | 70 | 3,076,655 | 120,211 | 3,074,745 | 120,141 |
| Western Australia | 1,423,751 | 62,095 | 6,001 | 244 | 1,417,750 | 61,851 |
| Tasmania ... | 57,233 | 2,501 | 3,651 | 119 | 53,582 | 2,382 |

1. — signifies net imports.

§ 5. Bee Farming.

1. **The Bee-farming Industry.**—Bee farming, like poultry farming, has ordinarily been an adjunct to agricultural or dairying industries, and can hardly yet be said to have been organised as a distinct industry. The returns collected shew that, while production varies greatly, there is on the whole a steady improvement, to which the large increase in the Western Australian product since 1902 has largely contributed. The annual average returns of honey from the hives range between 20 lbs. and 600 lbs. per hive.

2. **Honey and Beeswax.**—The particulars of honey production, available up to 1907 for only three States, are as given below :—

NUMBER OF HIVES AND PRODUCTION OF HONEY AND BEESWAX, 1901 to 1907.

| Particulars. | | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------|---------|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| N.S.W. | Hives | No. | 58,954 | 53,089 | 46,243 | 58,330 | 64,730 | 48,632 | ... |
| " | Honey | lbs. | 2,397,698 | 2,259,177 | 1,815,480 | 2,147,235 | 3,023,468 | 1,841,236 | 1,907,744 |
| " | Beeswax | lbs. | 49,337 | 51,735 | 37,207 | 49,589 | 58,610 | 39,620 | 34,690 |
| Victoria | Hives | No. | 21,412 | 22,083 | 32,126 | 40,759 | 49,120 | 41,780 | 48,005 |
| " | Honey | lbs. | 957,020 | 572,477 | 1,199,331 | 833,968 | 1,906,188 | 1,209,144 | 2,965,299 |
| " | Beeswax | lbs. | 15,269 | 13,530 | 23,061 | 18,979 | 28,653 | 21,844 | 46,780 |
| W. Aust. | Hives | No. | 3,880 | 4,939 | 7,109 | 8,705 | 12,837 | 12,825 | ... |
| " | Honey | lbs. | 138,787 | 42,082 | 262,968 | 179,271 | 287,498 | 555,079 | 382,584 |
| " | Beeswax | lbs. | 3,158 | 2,978 | 3,478 | 4,533 | 6,211 | 9,303 | 8,302 |

The figures for 1908 for all States except Tasmania, where the information was not collected, are :—

HIVES, etc., 1908.

| State. | Bee Hives. | | | Honey Produced. | | Beeswax Produced. | |
|-------------------|------------|----------------|---------|-----------------|--------|-------------------|--------|
| | Productive | Un-productive. | Total. | Quantity. | Value. | Quantity. | Value. |
| | No. | No. | No. | lbs. | £ | lbs. | £ |
| New South Wales | 53,240 | 15,148 | 68,388 | 2,660,363 | 27,700 | 48,427 | 2,700 |
| Victoria | 27,505 | 15,707 | 43,212 | 1,138,992 | 13,050 | 24,521 | 1,330 |
| Queensland | 10,366 | 3,956 | 14,322 | 442,827 | 3,993 | 8,554 | 402 |
| South Australia | 18,529 | 5,101 | 23,630 | 953,395 | 8,938 | 12,854 | 696 |
| Western Australia | 9,881 | 2,140 | 12,021 | 255,489 | 3,726 | 6,454 | 565 |
| Commonwealth* | 119,521 | 42,052 | 161,573 | 5,451,066 | 57,407 | 100,810 | 5,698 |

* Exclusive of Tasmania.

3. **Oversea Trade in Bee Products.**—Both honey and beeswax are produced in the Commonwealth in sufficient quantities to supply all local requirements, and a considerable quantity of each is sent oversea.

**IMPORTS, EXPORTS AND NET EXPORTS OF HONEY AND BEESWAX,
AUSTRALIAN COMMONWEALTH, 1901 TO 1907.**

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | |
|-----------------|----------|---------|--------|--------|--------|---------|--------|---------|
| HONEY. | | | | | | | | |
| Imports | ... lbs. | 71 | 415 | 205 | 1,233 | 12,036 | 2,618 | 2,716 |
| " | ... £ | 2 | 12 | 5 | 10 | 138 | 27 | 35 |
| Exports | ... lbs. | 189,048 | 85,774 | 21,995 | 77,452 | 112,039 | 58,297 | 102,047 |
| " | ... £ | 2,543 | 1,644 | 446 | 875 | 1,333 | 1,001 | 1,541 |
| Net exports | ... lbs. | 188,977 | 85,359 | 21,790 | 76,219 | 100,003 | 55,679 | 99,331 |
| " | ... £ | 2,541 | 1,632 | 441 | 865 | 1,195 | 974 | 1,506 |
| BEESWAX. | | | | | | | | |
| Imports | ... lbs. | 11,301 | 3,135 | 12,851 | 12,520 | 9,767 | 13,725 | 14,070 |
| " | ... £ | 413 | 180 | 652 | 694 | 593 | 787 | 978 |
| Exports | ... lbs. | 64,139 | 68,570 | 63,421 | 39,795 | 86,720 | 30,570 | 27,086 |
| " | ... £ | 3,439 | 3,135 | 3,375 | 2,144 | 4,863 | 1,768 | 1,618 |
| Net exports | ... lbs. | 52,838 | 65,435 | 50,570 | 27,275 | 76,953 | 16,845 | 13,016 |
| " | ... £ | 3,026 | 2,955 | 2,723 | 1,450 | 4,270 | 981 | 640 |

4. **Interstate Trade in Bee Products.**—The interstate trade in honey and beeswax in 1907 is given below:—

INTERSTATE TRADE IN BEE PRODUCTS, 1907.

| State. | Imports from other States of the C ^o wealth. | | Exports to other States of the Commonwealth. | | Net Interstate Exports. ¹ | |
|--------|---|--------|--|--------|--------------------------------------|--------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |

HONEY.

| | lbs. | £ | lbs. | £ | lbs. | £ |
|-----------------------|---------|-------|---------|-------|---------|-------|
| New South Wales ... | 180,050 | 2,175 | 35,011 | 452 | 145,039 | 1,723 |
| Victoria ... | 102,354 | 1,235 | 144,357 | 2,671 | 42,003 | 1,436 |
| Queensland ... | 8,335 | 124 | 28,137 | 369 | 19,802 | 245 |
| South Australia ... | 1,128 | 10 | 269,720 | 3,336 | 268,592 | 3,326 |
| Western Australia ... | 90,238 | 1,830 | 4,480 | 66 | 85,758 | 1,764 |
| Tasmania ... | 99,936 | 1,524 | 336 | 4 | 99,600 | 1,520 |

BEESWAX.

| | lbs. | £ | lbs. | £ | lbs. | £ |
|-----------------------|-------|-----|-------|-----|-------|-----|
| New South Wales ... | 9,306 | 554 | 3,235 | 198 | 6,071 | 416 |
| Victoria ... | 3,340 | 138 | 3,129 | 199 | 211 | 61 |
| Queensland ... | 774 | 48 | 4,735 | 277 | 3,961 | 229 |
| South Australia ... | 507 | 39 | 2,021 | 120 | 1,514 | 81 |
| Western Australia ... | 1,322 | 74 | 896 | 55 | 426 | 19 |
| Tasmania ... | 142 | 10 | 1,375 | 74 | 1,233 | 64 |

1. — signifies net imports.

§ 6. Summary of Australian Farmyard and Dairy Products Exported, 1901 to 1907.

The quantities and values of Australian farmyard and dairy products exported from the Commonwealth during each of the years 1901 to 1907 are shown below:—

QUANTITIES OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING EACH OF THE YEARS 1901 to 1907.

| Products. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------------------------|------------|-----------|------------|------------|------------|------------|------------|
| Beeswax lb. | 64,139 | 68,570 | 63,421 | 39,744 | 85,541 | 30,471 | 27,058 |
| Butter " | 34,536,277 | 7,777,971 | 30,901,910 | 64,788,542 | 55,904,151 | 75,765,536 | 66,076,915 |
| Cheese " | 269,624 | 140,624 | 183,257 | 507,343 | 172,896 | 246,631 | 491,209 |
| Eggs doz. | 65,924 | 66,632 | 7,430 | 21,194 | 21,293 | 37,900 | 88,615 |
| Feathers, undressed | * | * | * | * | * | * | * |
| Honey lb. | 189,048 | 85,774 | 21,851 | 77,452 | 112,039 | 58,297 | 102,047 |
| Lard " | 91,759 | 61,997 | 415,635 | 862,828 | 1,062,966 | 550,021 | 458,059 |
| Meats— | | | | | | | |
| Bacon and ham .. | 285,247 | 187,739 | 223,930 | 369,083 | 484,616 | 530,459 | 415,251 |
| Frozen game ... | * | * | 984 | 1,150 | 11,049 | 2,722 | 6,534 |
| " Poultry pair | * | * | 53,123 | 9,936 | 45,767 | 33,833 | 31,261 |
| " Pork ... lb. | 313,824 | 647,320 | 277,310 | 420,783 | 2,824,016 | 3,472,224 | 1,446,758 |
| Milk, concentrated and preserved ... | 868,530 | 708,983 | 504,108 | 474,777 | 310,797 | 171,639 | 162,367 |
| Pigs, living ... No. | 164 | 31 | 77 | 247 | 322 | 220 | 185 |
| Poultry, living ... " | * | * | 1,388 | 2,060 | 3,993 | 2,806 | 3,280 |

* Quantity not available.

VALUE OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING EACH OF THE YEARS 1901 to 1907.

| Products. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------------------|------------------|----------------|------------------|------------------|------------------|------------------|------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Beeswax | 3,499 | 3,135 | 3,375 | 2,141 | 4,791 | 1,761 | 1,617 |
| Butter | 1,447,682 | 379,244 | 1,213,177 | 2,460,664 | 2,331,595 | 3,238,304 | 2,890,261 |
| Cheese | 6,951 | 4,290 | 5,218 | 11,018 | 4,703 | 6,682 | 12,733 |
| Eggs | 3,319 | 3,493 | 437 | 1,025 | 1,138 | 1,710 | 3,419 |
| Feathers, undressed | 1,830 | 206 | 874 | 1,426 | 3,332 | 1,002 | 2,610 |
| Honey | 2,543 | 1,644 | 444 | 875 | 1,333 | 1,001 | 1,541 |
| Lard | 1,733 | 1,271 | 7,461 | 13,747 | 16,120 | 8,346 | 8,547 |
| Meats— | | | | | | | |
| Bacon and ham | 10,405 | 7,721 | 9,419 | 12,068 | 14,943 | 18,374 | 17,348 |
| Frozen game | | | 40 | 58 | 410 | 79 | 216 |
| " poultry | *42,613 | *48,031 | { 10,364 | 3,509 | 11,515 | 9,291 | 8,556 |
| " pork | 5,971 | 14,654 | 7,174 | 7,875 | 47,506 | 60,936 | 29,406 |
| Milk, concentrat'd & preserv'd | 13,605 | 11,602 | 10,003 | 7,839 | 5,296 | 3,386 | 2,924 |
| Pigs, living | 234 | 113 | 106 | 276 | 399 | 263 | 383 |
| Poultry, living | 470 | 1,115 | 371 | 1,077 | 1,851 | 1,787 | 1,248 |
| Total | 1,540,995 | 476,519 | 1,268,463 | 2,523,598 | 2,445,022 | 3,352,882 | 2,979,909 |

* Poultry and game.

§ 7. British Imports of Dairy Products.

1. **Butter.**—Australia stands third in the value of butter imported into the United Kingdom, but the import of other Australian dairy products is inconsiderable.

IMPORTS OF BUTTER INTO THE UNITED KINGDOM, 1907.

| Country from which Imported. | Quantity. | Value. | Country from which Imported. | Quantity. | Value. |
|------------------------------|-----------|------------|------------------------------|------------------|-------------------|
| | | | | | |
| Denmark | 1,818,811 | 10,192,587 | Argentine Republic | 51,122 | 273,433 |
| Russia | 657,649 | 3,086,821 | Canada | 94,753 | 175,537 |
| Australia | 598,986 | 3,008,225 | Norway | 23,465 | 122,535 |
| France | 281,306 | 1,651,137 | Belgium | 22,120 | 121,673 |
| New Zealand | 313,863 | 1,599,226 | Other Countries ... | 12,845 | 60,644 |
| Sweden | 226,740 | 1,269,820 | | | |
| Netherlands | 168,496 | 856,288 | Total | 4,210,156 | 22,417,926 |

2. **Cheese.**—The value of the British cheese import in 1907 was £6,900,000, of which nearly five million pounds worth was received from Canada. The import from Australia was practically *nil*.

3. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1907 at £18,080,000, Great Britain received goods to the value of £8,430,000 from the United States; £5,390,000 from Denmark; and £4,000,000 from Canada. The British import from Australia was *nil*.

4. **Pork.**—The total value of British imports of fresh pork (including refrigerated and frozen) was £1,338,000 in 1907. Of this the value of Australian products was only £12,000, whilst from the Netherlands pork valued at £1,000,000 was imported.

5. **Other Products.**—There is practically no British import from Australia of honey, beeswax, poultry, game, lard, or eggs, but rabbits to the value of £558,000 were received from the Commonwealth in 1907.

§ 8. Graphical Representation.

Two graphs shewing respectively the increase in dairy production and in the exports of butter will be found on page 376.

SECTION X.

FORESTS, FORESTRY, AND FORESTAL PRODUCTS.

§ 1. The Forests of Australia.

1. **Extent of Forests.**—Although no definite survey of forest lands has been made on a uniform basis for the different States of Australia, the following table gives the results of careful estimates made for each State:—

FOREST RESERVES AND FOREST AREAS, STATES AND COMMONWEALTH, 1907.

| State. | Specially Reserved for Timber. | Total Forest Area. | Percentage of State Area. | | Percentage of Commonwealth Area. | |
|---------------------|--------------------------------|--------------------|---------------------------|---------------|----------------------------------|---------------|
| | | | Specially Reserved | Total Forest. | Specially Reserved | Total Forest. |
| | Acres. | Acres. | % | % | % | % |
| New South Wales | 7,155,900 | 20,000,000 | 3.60 | 10.07 | 0.37 | 1.05 |
| Victoria ... | 4,017,000 | 11,797,000 | 7.14 | 20.97 | 0.21 | 0.62 |
| Queensland ... | 3,672,600 | 40,000,000 | 0.85 | 9.32 | 0.19 | 2.10 |
| South Australia ... | 163,478 | 3,840,000 | 0.03 | 0.66 | 0.01 | 0.20 |
| Western Australia | 52,900 | 10,366,000 | 0.01 | 1.66 | 0.003 | 0.54 |
| Tasmania ... | 278,154 | 11,000,000 | 1.66 | 65.56 | 0.01 | 0.58 |
| Commonwealth | 15,340,032 | 97,003,000 | — | — | 0.81 | 5.10 |

The actual area of wooded land is probably in all cases much greater than shewn above. For example, that of Western Australia is estimated at 97,900,000 acres; Queensland has probably 143,000,000 acres; and Victoria has a considerable extent of "Mallee" country not included in the above estimate. The basis of estimation for each State in any case cannot be regarded as quite identical. Considerable areas not included as forest lands possess timber of local value.

The absolute and relative forest areas of Australia and other countries are shewn in the table on next page.

In each of the States areas have been set apart as State forests and "timber reserves," in some cases the reservation being made in perpetuity, in others for a definite period, in others again the reservation may be cancelled at any time. The characteristics of the forest areas of the different States are referred to seriatim.

RELATIVE AREAS OF FOREST LANDS, AUSTRALIA AND OTHER COUNTRIES, 1907.

| Country. | Total Forest Area. | Percentage of Total Area. | Country. | Total Forest Area. | Percentage of Total Area. |
|----------------------------|--------------------|---------------------------|-------------------|--------------------|---------------------------|
| | Sq. Miles. | % | | Sq. Miles. | % |
| Australian C'wealth | 151,567 | 5.10 | Rumania ... | 10,640 | 20.98 |
| New Zealand ... | 32,150 | 30.69 | Sweden ... | 31,610 | 18.31 |
| United Kingdom ... | 4,325 | 3.56 | Norway ... | 26,330 | 21.21 |
| France ... | 32,421 | 15.66 | Russia in Europe | 860,781 | 40.55 |
| Algeria ... | 10,872 | 3.17 | United States ... | 1,000,000 | 33.67 |
| Germany ... | 54,015 | 25.90 | Canada ... | 1,248,800 | 33.34 |
| Switzerland ... | 3,296 | 20.63 | Cape of Good Hope | 537 | 0.19 |
| Italy ... | 15,803 | 14.29 | British India ... | 107,125 | 9.85 |
| Austria ... | 37,759 | 32.58 | Japan ... | 27,298 | 18.49 |
| Hungary ... | 34,700 | 27.66 | | | |

2. **Characteristics of State Forest Areas.**—(i.) *New South Wales.* Great diversity exists in the more dense distribution of timber trees in the coastal region, between the range and the Pacific Ocean. The areas of natural forest, however, are found in nearly every part of the State except the wide plains of the Murrumbidgee, Lachlan, and Darling districts, the level surface of which is chiefly covered with salt bush, scrub, and indigenous grasses, while the tree-growth is, as a rule, confined to belts of red gum, box, sheoak, and myall along the courses of the rivers and their tributaries, and to groves of cypress pine at intervals. The tree-clad regions of the State may be divided into open, brush, and scrub forests. The first class has the widest distribution, being found in every geological formation, and including some of the finest timbers, such as many species of eucalyptus, angophora, and other genera of the natural order of myrtles. Among the hardwoods, red gum usually marks the courses of streams, while on the rough and stony mountain and hill ridges, with their sheltered gorges, are found several varieties of ironbark, blackbutt, tallowwood, spotted gum, grey box, red mahogany, forest red gum, Sydney blue gum, and turpentine. The brush or jungle forests occupy a considerable tract of country between the Dividing Range and the coast. In this region, interspersed occasionally with large Moreton Bay and other figs, fern trees, cabbage trees, and palms, grow some of the most beautiful timbers known for cabinet work and veneers, such as the red cedar, rosewood, silky oak, beech, red bean, beefwood, tulipwood, and coachwood. In addition to these, there are considerable supplies of the colonial or hoop pine, and the brown or barry pine. The scrub forests are represented by the red or black and white varieties of the cypress pine, and many species of acacia and eucalyptus. These are chiefly situated in the western portion of the State, and although the pines and some of the eucalypts are useful for local building and fencing, the bulk of the timber is of little commercial value.

(ii.) *Victoria.* The mountain ranges, principal of which are the Dividing Range and the Australian Alps, constitute the true forest regions of the country, the trees attaining considerable height and girth, and the brush or scrub growth great luxuriance. The lower elevations of the ranges, remote from settlement, are densely wooded to their summits, but the peaks above the winter snow-line are either bare or covered only with dwarfed vegetation. Dense and luxuriant forests characterise the Otway Ranges and Gippsland, south of the Main Divide. The tree-growth in the Grampians consists chiefly of stringy-bark, white gum, grey and yellow box, and white ironbark, with some red gum and wattle. In the Pyrenees there are more valuable hardwoods, chiefly blue gum and messmate, with stringy-bark, grey and yellow box, red and white ironbark on the lower levels. In Wombat Forest, extending along both sides of the Dividing Range from Creswick to Mount Macedon, the timber is almost wholly young messmate of good quality, with peppermint and swamp gum. Further eastward along the range messmate and stringy-bark prevail, with grey and yellow box and ironbark on the low country. In

Delatite, and in the lower ranges of the Australian Alps generally, the timber increases in height and girth, and includes blue gum, messmate, and peppermint of fine quality with ribbon gum, woollybutt, and silvertop on the higher levels, and grey and yellow box with stringy-bark along the lower slopes and valleys. The northern plains, extending westward from Wodonga to the Grampians, are thinly covered with open forests, the limits of the prevailing trees being defined in clearly-marked belts. Thus the main belt of red gum follows the course of the Murray and extends along the valleys of its tributaries, but is interspersed at intervals near the river with sand ridges bearing grey box and cypress pine. Southward of this belt, and between the streams, the prevailing trees are grey or yellow box, with red and white gum and stringy-bark on the low ridges. From Chiltern a line drawn westward through Rushworth, Heathcote, Bendigo, Dunolly, and St. Arnaud marks a long belt of ironbark, of both red and white varieties, interspersed with stringy-bark and grey or yellow box. In the north-west, between the Wimmera Plains and the Murray, the dwarf eucalypt known as the mallee scrub covers the plains, with belts of cypress pine at intervals, and red gum and box along the courses of streams and lakes. The south-west is poorly timbered, the prevailing tree being stringy-bark, with red gum along the streams and white gum, box, lightwood, and honeysuckle on the plains and undulating country. In the Otway district are valuable timber forests; over 280 square miles are covered with blue gum, spotted gum, messmate, and mountain ash or blackbutt of fine quality, with some stringy-bark and white gum, while the valleys between the ridges bear valuable timber of fine grain such as blackwood, beech, satin box, olive, sycamore, and pencil cedar. Eastward of Melbourne, on the watershed of the Yarra, there is another fine forest region, the trees consisting of spotted gum, mountain ash, messmate, and white gum, with blackwood, beech, sassafras, and silver wattle in the valleys. The ranges of Southern Gippsland bear blue gum, spotted gum, mountain ash, and yellow stringy-bark, while in the western and northern portions of the same district grow the mountain stringy-bark, spotted gum, blackbutt, and the Gippsland mountain ash or silvertop, with woollybutt and ribbon gum on the higher elevations of the Main Divide. In the eastern part of the district, stretching from the Lakes towards the Genoa River, are found the Bairnsdale grey box, the Gippsland mountain ash or silvertop, white and yellow stringy-bark, red ironbark, and bloodwood. The prevailing timber in this part of Gippsland is the white stringy-bark, which forms large forests from the foothills of the Divide to the sea-coast.

(iii.) *Queensland.* The extensive forests of Queensland yield a great variety of woods, esteemed for their strength, durability, or beauty. The principal merchantable timbers lie between the eastern seaboard and the Great Dividing Range, which runs roughly parallel to, and about 200 miles from the coast. At about the 21st parallel of south latitude, a spur runs westward nearly to the South Australian border, and bears on its crests and slopes much valuable timber. Forests are also found on the Denham, Johnstone, and Gilbert Ranges. The principal eucalypts are ironbark, grey, spotted, and red gum, blackbutt, and turpentine; Moreton Bay, brown, and Bunya Bunya pines represent the conifers; and red cedar, beech, tulipwood, rosewood, red bean, and black bean are among the brush timbers of fine grain. On the extensive plateaux west of the Divide there is but little timber; and towards the vast basin of the interior, the low ridges and banks of the short water-courses bear a growth of stunted eucalypts such as the gimlet gum, the desert sheoak, acacias, and mallee.

The chief supply of mill timber (eucalypts, Moreton Bay pine, etc.) is in the southern coastal region, from the New South Wales border as far north as Gladstone. In the regions between Rockhampton and Ingham the supply is not so plentiful; but northward of the latter town, the red cedar, kauri pine, and black bean are luxuriant. Large supplies of these valuable trees are found on the Barron Valley reserves, and in other localities between Ingham and Port Douglas. Inland from this zone of heavy forest is another, less densely timbered, bearing cypress and other pines, ironbarks and acacias. In the south-western regions of the State the cypress pine flourishes.

(iv.) *South Australia and Northern Territory.* The principal forest districts of South Australia proper are restricted largely to the hill ranges in the neighbourhood of

Adelaide and Spencer Gulf, and the trees have not the fulness and lofty growth of those of the eastern and south-western borders of Australia. Red gum is widely distributed, though never far from water; and there are belts of timber where, from the general appearance of the surrounding country, they would hardly be expected. The stringy bark has its habitat principally in the hills, and is but rarely seen on the plains; other useful hardwoods are the white and blue gum and peppermint. Blackwood (in demand for cabinet work) is common in the south-east and along the eastern border, but is rare near Adelaide. Wattle also is cultivated for its gum and bark. Sheoak appears in districts less thickly forest-clad, and ti-trees inhabit low, damp situations. The sandalwood tree grows luxuriantly in Yorke Peninsula. On the great plains of the interior there is little vegetation, patches of forest country being occasionally found, while here and there fertile spots of grass land, but generally not of large extent, are met with. Groups of stunted shrubs, and small ramified trees—sheoak, eucalyptus, and wattle—mostly of limited extent, rise from the plains like islands.

In Central and Northern Australia there is little forest, until the hills where the waters of the northern river system take their rise are encountered. On the plains to the north of the McDonnell Ranges there is a thin clothing of mulga scrub, with gum trees marking the water-courses. Occasionally patches of heavier gum forests are met with. Stirling Creek is lined with the bean tree. The mulga scrub thickens, and with stunted and mallee gums furnishes a uniform vegetation as far north as Powell's Creek. Here, with red gums still lining the water-courses and flooded gums on the flats, the vegetation becomes more varied. On the ranges pines, fig trees, and orange trees (*capparis*) occur. Heavy timber clothes the uplands about the Roper River, and the tableland which stretches across the territory at a distance from the coast of from 30 to 100 miles bears large paperbark trees, Leichhardt pines, and palms. On the higher steppes there is also abundance of bloodwood and other varieties of eucalyptus, besides other kinds of trees. Many prominent fibre plants are native to the territory.

(v.) *Western Australia.* The coastal timber belt runs along the western shore from the Murchison River to the Leeuwin, and along the southern shore from that point to beyond Albany, clothing with trees the Victoria, Herschel, Darling, and Stirling Ranges. Pre-eminent among the trees of this State for strength and durability are the jarrah and karri. A great belt of the former stretches eastward of the Darling Range to upwards of 100 miles in breadth, with a length of 350 miles. Between this region and the coast are two well-marked belts of tuart and red gum. In the extreme south-west of the State the main karri belt stretches from Augusta to Albany. Eastward of the jarrah belt a strip of white gum encloses a narrow belt of York gum, its southern extremity almost reaching the coast, while its northern limit extends even beyond that of the jarrah tract. Still further east the forest thins, a poorer growth of white gum giving place to brushes, scrub, and dwarf trees. Along the shores of the Great Australian Bight there are stunted eucalypts, with casuarinas and wattle. In the north-west, on the King Leopold and St. George's Ranges, there are forest areas, but from Dampier Land to below Shark Bay there is no coastal forest, and in many cases the stunted bush and scrub lands infringe on the sea-coast.

(vi.) *Tasmania.* The Tasmanian forest consists chiefly of eucalypts, widely distributed over the island; and of conifers, such as the Huon, the King William, and the celery-top pines, flourishing in the western and southern parts. The principal hardwoods of the eucalypt family are the blue gum, stringy bark, peppermint, and silvertop iron-bark, while among woods of fine grain are the blackwood, beech or myrtle, sassafras, native cherry, and sheoak. Black and silver wattles also inhabit various parts of Tasmania.

3. **Distribution of Timber in the Commonwealth Generally.**—The more conspicuous timber regions of Australia as a whole are the eastern and southern portions, including Tasmania, and, again, the south-western portion northwards and eastwards from Cape Leeuwin. In regard to distribution, on the eastern side of the continent the largest

timber is found on the crests and coastal slopes of the mountain ranges, but in the south-west, in addition to the vegetation between mountains and sea, a large area of forest stretches inland from the coastal ranges. The hills encircling Adelaide and Yorke and Eyre Peninsulas also bear good forest. The Kimberley district is timbered, and in the Northern Territory and round the shores of the Gulf of Carpentaria there are considerable forest areas. But the coastal regions of West and North-west Australia, except in the case of the districts named and the shores of the Great Australian Bight and Encounter Bay, are devoid alike of mountains and forests. The interior of the continent is thinly timbered, or almost destitute of vegetation, an occasional limited area of forest, generally in connection with mountain systems (though these themselves are scarce), acting as a relief in the landscape, which but for these presents to the eye all the features of a dreary and arid waste.

4. Distribution of Timber in New Zealand.—In the North Island the growth in the Hauraki Peninsula is of a mixed character, kauri being predominant, with red, white, and silver pine, beech, and tawa, extending from the Waikato River to the North Cape. Kauri gum, formed by the hardening of the exuded resin, is dug out of the ground in large quantities and exported chiefly to Europe and America, where it is largely used in the manufacture of varnishes, and also in cotton-spinning centres for glazing calico. Large numbers of men follow the calling of gum-digging, either regularly or intermittently. The great totara region extends from the central part of the west coast to the east and south-east coast, and from the Bay of Plenty southward to Cape Palliser. Among other trees in this region are rimu, white pine, beech, and tawa. The red pine district occupies a considerable tract of the south-western side of the island, and extends from the Makau River to Wellington, being interspersed with totara, tawa, and black and white pine. In the Middle Island the rimu or red pine and the several species of beech may be regarded as the typical forest trees. The former has a very wide range, following the coastal region from Cape Campbell, the extreme north-eastern point, to Cape Farewell on the north-west, and thence the whole of the western and southern coast-line to the Clutha River, while along the eastern coast it is found in well-defined belts near Dunedin, Waimate, and Banks Peninsula. The beech country forms a large, broad belt running through the island from north to south along the Dividing Range.

§ 2. Forestry.

1. Objects.—Economic forestry, aiming at the conservation of forestal wealth by safeguarding forests against inconsiderate destruction, and by the suitable re-forestation of denuded areas, is essential to the preservation of industries dependent upon an adequate supply of timber, and to the perpetuation of a necessary form of national wealth. Though in Australia large areas of virgin forests still remain, the inroads made by timber-getters, by agriculturists, and by pastoralists—who have destroyed large areas by “ringbarking”—are considerable; and it is not unlikely that climatological changes are caused thereby. For it would appear that variations in climate, and alternating periods of drought and flood, desiccation and erosion of soil, with loss or diminution of fertility, have resulted from forest denudation in countries bordering the Mediterranean. In many of the States of America diminished rainfall is said to have followed the destruction of large forest areas. On the other hand beneficial consequences appear also to have followed on the planting of trees on denuded lands, or along encroaching coasts, and it is obvious that a forest covering tends to beneficially regulate the effects of rainfall.

2. Forestry Departments.—Each State of the Commonwealth, excepting Tasmania, has organised a forestry department or branch of service specially charged with forestal matters. The following table gives a comparative indication of the attention paid to the subject, the figures being those for 1907:—

STATE FORESTRY DEPARTMENTS, 1907.

| Particulars. | N.S.W. | Victoria. | Q'sland. | Sth. Aust. | West. Aus. | Tas. |
|---|----------------------|------------------------|---------------------|------------------------|------------------------|------|
| Designation of officer in charge | Chief Forest Officer | Conservator of Forests | Director of Forests | Conservator of Forests | Insp.-Gen. of Forests. | * |
| Salaries of persons engaged in administration and control | 19,313 † | 1,501 | 300 † | 450 | 3,874 † | 240 |
| Salaries of technical experts, forest rangers, etc. ... | | 8,414 | 1,200 † | 790 | | |
| Incidental expenses ... | 231 | 4,891 | 722 | 145 | 1,500 | 104 |
| No. of persons forming office staff | 8 | 6 | 7 | 1 | 6 | 2 |
| No. of persons forming field staff | 61 | 56 | | 35 | 13 | * |

* Administered by Lands Department. † Including travelling allowances. ‡ Excluding travelling expenses.

The revenue and expenditure of the State Forestry Departments from 1901 to 1907 are given below:—

REVENUE OF STATE FORESTRY DEPARTMENTS, 1900-1 to 1907-8.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 14,421* | 19,813* | 31,872* | 36,264* | 34,162 | 42,738 | 50,397 | 56,048 |
| Victoria ... | 14,916 | 16,735 | 15,455 | 16,590 | 17,230 | 21,508 | 24,971 | 29,013 |
| Q'sland ... | 7,608* | 8,877* | 6,663* | 8,959* | 11,440* | 11,576* | 14,560* | 22,236 |
| S. Aust. ... | 3,314 | 3,109 | 4,626 | 3,867 | 3,048 | 2,832 | 2,981 | 3,474 |
| W. Aust. | 18,477 | 18,752 | 20,478 | 20,018 | 18,479 | 21,216 | 22,783 | 10,500 |
| Tasmania | 2,141 | 2,722 | 3,155 | 2,859 | 3,504 | 3,505 | 4,220 | 3,841 |
| C'wealth | 60,877 | 70,008 | 82,249 | 88,557 | 87,863 | 103,375 | 119,912 | 125,112 |

* For calendar year ended previous 31st December.

EXPENDITURE OF STATE FORESTRY DEPARTMENTS, 1900-1 to 1907-8.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 5,101* | 5,627* | 10,639* | 17,080* | 16,202 | 16,639 | 20,259 | 19,545 |
| Victoria ... | 18,561 | 18,174 | 16,766 | 16,136 | 17,733 | 21,974 | 21,108 | 18,754 |
| Q'sland ... | 4,300 | 4,400 | 4,500 | 4,600 | 4,800 | 5,200 | 6,700 | 6,940 |
| S. Aust. ... | 6,661 | 6,512 | 5,747 | 5,843 | 6,067 | 6,445 | 6,801 | 7,542 |
| W. Aust. | 2,747 | 4,301 | 3,789 | 4,192 | 5,089 | 5,785 | 6,270 | 6,271 |
| Tasmania | 375 | 322 | 273 | 254 | 513 | 469 | 426 | 424 |
| C'wealth | 37,745 | 39,336 | 41,714 | 48,105 | 50,404 | 56,512 | 61,564 | 59,476 |

* For calendar year ended previous 31st December.

3. **Sylviculture.**—The growing recognition of the necessity for systematic sylviculture has led to the creation in most of the States of a number of sylvicultural nurseries and plantations.

(i.) *New South Wales.* In this State a small forest nursery is maintained at Gosford, between Sydney and Newcastle, from which young trees are widely distributed throughout the State, the bulk being issued to municipal councils and farmers, and for

planting in parks, town reserves, hospital grounds, and cemeteries. Large sums have been disbursed by the State in improvement fellings and the thinning out of young timber, principally in the Bogan, Narrandera, and Murray River districts. Over a quarter of a million acres of pine forest and red gum have been so treated.

(ii.) *Victoria.* In Victoria there are four forest nurseries, the largest being situated at Macedon, the smaller at Creswick, Havelock, and Tintarra. At Macedon the arboretum contains many fine specimens of the conifers and deciduous trees of Europe, America, and Asia. While the bulk of the yields are retained for the State plantations, there are considerable distributions for public parks and recreation reserves, "Arbor-day" planting of streets and roads, municipal councils and water trusts, mechanics' institutes and libraries, cemeteries, State schools, and other institutions, and farmers and private persons, the applications of those in dry districts receiving first consideration.

Among the principal native hardwoods raised and distributed are blue gum, sugar gum, and tallowwood, with some jarrah for the plantations; among conifers, the Monterey, Corsican, Black Austrian, Canary Island, Maritime, and Aleppo pines, the blue pine of India, the American white and yellow pines, with several spruces; and among other exotics, peppers, Indian cedars, oaks, elms, planes, silver poplars, sycamores, and chestnuts.

The principal forest plantation is along the lower slopes of the You Yangs, near Geelong, where about 1000 acres have been enclosed and planted with eucalypts and conifers. Good results have attended the cultivation of the broad leaf and feather leaf wattles.

At another plantation, viz., at Sawpit Gully, among the foothills of the Dividing Range, near Creswick, conifers are chiefly grown. Minor plantations of blue gum and sugar gum are established at Havelock and Majorca, near Maryborough; and at Mount Macedon, the principal species of oak, elm, ash, plane, sycamore, pine, spruce, eucalypts, and willows are planted.

(iii.) *Queensland.* The questions of replanting and further reservation have lately been attracting attention, and the prominence given to them will probably greatly influence forest policy.

(iv.) *South Australia.* In this State there are several plantations, the most important being at Bundaleer and Wirrabara, situated some 150 and 190 miles respectively to the north of Adelaide in the direction of Spencer Gulf. Of the reserved area, about one-fifth only, it is said, ever bore timber of commercial value, the remainder being covered for the most part with stunted vegetation. Owing to the absence of high mountain ranges and the dryness of the climate, the forests are not dense. Special attention has been given in South Australia to silviculture, and great success has been achieved in clothing areas of treeless plain and hill slope with belts of young trees, such as blue, sugar and red gum, and white ironbark. In some parts the Tasmanian blue gum (*E. globulus*) flourishes; but great success has also been attained with the sugar gum (*E. corynocalyx*), a tree indigenous to the State itself. It is found chiefly in the Flinders Range, and used for railway sleepers, telegraph poles, coachbuilding, and in wharf and jetty construction. Two other eucalypts found in South Australia, the white ironbark (*E. leucocylon*), known locally as "blue gum," and the grey box (*E. hemiphloia*) furnish strong, tough, and durable timber, inlocked in grain and suitable for the same purposes as sugar gum. The common flooded variety of red gum, which has a fairly wide distribution, being found on clay flats and along streams and water-courses, has also been grown in the plantations, but not with the same success as sugar gum. Among conifers which have been grown with fair success are the Monterey, the Maritime, Aleppo, and Stone pines. The Monterey pine (*P. insignis*) outstrips all other trees in growth, and its timber, though softer than other first-class pines, has been utilised for deal tables, packing cases, picket fencing, shelving, and generally for purposes where common deal is useful. The Maritime, Aleppo, and Stone pines are naturally of slower growth. In Europe they furnish useful timber, but in these plantations have not yet reached the age suitable for utilisation. The upright poplar (*P. fastigiata*) growing

well over a large area, serves for packing cases, flooring boards, etc. The locally-grown American ash (*Fraxinus americana*) has been used in coachbuilding work, and compares well in quality with the imported American ash. The area suitable for its cultivation in South Australia is, however, very limited, as it requires favourable conditions of soil and climate.

During the last twenty-six years the Forest Department has issued very large numbers of young plants to the public free of charge, for wind breaks, avenues, and for the shelter of homesteads and buildings generally, nearly seven million trees having been so distributed. Formerly, bounties were paid under the Forest Act for the encouragement of private persons in planting timber trees.

(v.) *Western Australia.* A State silvicultural nursery is established at Drake's Brook, on the south-western railway, the site chosen being a ti-tree swamp, exotic trees of temperate climates being raised. The planting of the Monterey, Maritime, Aleppo, and Canary Island pines, the blue pine of the Himalayas (*P. excelsa*), the Indian cedar, Lawson's cypress, several kinds of poplar, the Virginian catalpa, white cedar, and American ash has been successful. A large number of pepper trees and sugar gums were raised, chiefly for shade purposes. The trees are sold or given away to settlers, being distributed chiefly in the goldfields region and other districts with little natural forest.

There are also three forest plantations—one for conifers at Bunbury, a second for Australian wattles at Spencer's Brook, and a third for the indigenous sandalwood at Meckering. The planted areas are flourishing, the trees making very healthy growth.

Particulars regarding nurseries and plantations in 1907 are given hereunder:—

NURSERIES AND PLANTATIONS, 1907.

| Particulars. | New South Wales. | Victoria. | Qu'ns-land. | South Australia. | Western Australia. | Tasmania. |
|--|------------------|-----------|-------------|------------------|--------------------|-----------|
| Expenditure on plantations and upkeep of silvicultural nurseries | £892 | £3948 | nil | £7542 | £250 | nil |
| No. of persons engaged in nurseries | 8 | 17 | nil | 13 | 5 | nil |
| No. of silvicultural nurseries ... | 1 | 4 | nil | 7 | 2 | nil |
| Area of silvicultural nurseries ... | 80 ac. | 30 ac. | nil | 7 ac. | 150 ac. | nil |
| No. of forest plantations ... | 2 | 13 | 1 | 100 | nil | nil |
| Area of forest plantations ... | 50 ac. | 9676 ac. | 500 ac. | 9505 ac. | nil | nil |
| Extent of public distribution of trees or number of trees issued ... | 54,850 | 45,000 | * | 275,122 | 45,000 | nil |

* There are no forest nurseries issuing trees in Queensland, but a small number of economic and ornamental trees are issued by the Department of Agriculture.

§ 3. Commercial Uses of Principal Australian Timbers.

The uses of the more important of Australian timbers are many and various; four varieties of ironbark, viz., white or grey (*E. paniculata*), narrow-leaved (*E. crebra*), broad-leaved (*E. siderophloia*), and red (*E. sideroxylon*) are largely used for public works, preference being given to the white and narrow-leaved varieties. These timbers are used extensively in the building of bridges and culverts, for railway sleepers and fencing posts, and for framing, naves, spokes, poles and shafts in carriage and waggon building. Ironbark beams are of great strength, hence it is largely employed for girders and joists of upper floors, especially in stores for heavy goods.¹ Another red ironbark (*E. leucoxylon*),

1. Ironbark girders do not burn rapidly and often stand a fire when iron girders yield through the effect of the heat.

heavy, dense, and strong, is greatly valued for bridge beams and piles. Tallowwood (*E. microcorys*) is strong, heavy, very durable, not easily split, and turns and planes well. It is used for bridge-decking, house-flooring (being peculiarly suitable for ballrooms), girders, piles, and fencing posts, and especially for paving blocks, giving even and regular wear under heavy traffic. Even better in this latter regard is blackbutt (*E. pilularis*), a fine hardwood for house and ship building, as well as street paving. Grey gum (*E. propinqua*), makes excellent railway sleepers, and is used for felloes and spokes in coach building. It makes very durable fencing posts, and is also sometimes split for shingles. Murray red gum (*E. rostrata*), the common river gum of all the eastern States, is one of the best hardwoods in contact with the ground, being largely used for poles, house foundations, wood paving, and railway sleepers. It is also extensively cut for mining shafts and public and municipal works. The forest variety of red gum (*E. tereticornis*) serves the same purposes as the river red gum. White mahogany (*E. acmenoides*) is used for posts, poles, girders, and similar classes of work, being an exceedingly durable timber. Red mahogany (*E. resinifera*) is largely employed for general building work, street paving, fencing, and weatherboards. It is very durable and hardens greatly with age. Grey box (*E. hemiphloia*) is very durable in contact with the ground, and is hence used for railway sleepers (lasting from thirty to thirty-five years in the track), telegraph poles, mine props, fence posts, piles, girders, and for heavy framing and naves, wheel cogs, shafts, dray poles, spokes, etc. Bairnsdale grey box (*E. bosistoana*) serves similar purposes. Brush box (*Tristania conferta*), another hard and durable wood, is used for tram rails, bullock yokes, tool handles, planes, etc. Sydney blue gum (*E. saligna*) is greatly valued by shipwrights and wheelwrights, and furnishes ships' planks, felloes of wheels, etc. It is also used for buildings, and makes very durable paving blocks. Woollybutt (*E. longifolia*) is used for house building, fencing, felloes, spokes, and wheelwrights' work generally. Being durable in contact with the ground, and resistant to heavy traffic, it is also used for street paving. Spotted gum (*E. maculata*) is one of the best hardwoods for bending, even when cold, and is therefore specially valuable in wheelwrights' and coachbuilders' work for poles, shafts, crosspieces, naves, and spokes; also for framing and house building, tram rails, ship planking, decking of bridges, and wood paving. Turpentine (*Syncarpia laurifolia*) is of great durability in the ground or under water, being used for piles or jetties, wharves, bridges, pillars and girders of buildings, wood paving, and hewn posts and rails. Yellow stringy-bark (*E. muelleriana*) is chiefly used for jetty and pier work, and for fencing posts. Blue gum (*E. globulus*) is a valuable timber with straight, symmetrical bole, used for upper timbers and decking in jetty and bridge work, bridge piles, shafts, felloes, spokes and frame work of vehicles, and in general building and construction. Spotted gum (*E. goniocalyx*) furnishes a hard, heavy, and durable timber, similar in appearance to blue gum, and serving the same purposes. Yellow box (*E. melliodora*) bears a large quantity of blossom, and hence is a favourite tree with beekeepers. Its timber is used for piles and posts, squared beams, and stringers for bridges. Messmate (*E. obliqua*) is largely sawn by mills for weatherboards, studs, rafters, joists, etc., and is also used for railway sleepers and fencing posts. Stringy-barks (*E. macrorrhyncha*, *E. capitellata*, *E. piperita*) are sawn by mills into ordinary building timber, and split by settlers into posts and rails and rough building material. Mountain ash (*E. amygdalina regnans*) is sawn into building material, and is also split into palings, shingles, rails, and mining laths. Silvertop (*E. sieberiana seu virgata*)—called also Gippsland mountain ash, green top, and white ironbark—is used for ordinary building purposes, and for fencing rails and rough construction. Sugar gum (*E. corymocalyx*) is held in high repute on account of its toughness and durability, and is chiefly used for railway sleepers, telegraph poles, coach building, and in wharf and jetty construction. White or manna gum (*E. viminalis*) is not a good weather timber, but is suitable for interior construction, such as house frames and floors.

The pre-eminent timber trees of the West are jarrah (*E. marginata*) and karri (*E. diversicolor*). Jarrah is in great request for piles in jetty and bridge construction, and for railway sleepers and street paving. It also furnishes a favourite material for boat-building, fencing, and rough furniture, and makes excellent

charcoal. Karri is heavy, dense, elastic, and tough, not so easily wrought as jarrah, and used for bridge-decking, flooring, planking, spokes, feloes, shafts, and street-paving. Tuart (*E. gomphocephala*) is exceedingly strong and tough, suitable for the framework of railway waggons, bridge supports, buffers, keelsons, shafts, wheelwrights' work, and generally for all purposes where great strength and hardness are necessary. The red gum (*E. calophylla*) is a fine shade tree, and is valued for the shelter it affords to cattle and sheep. Its timber, however, is not held in much esteem; but in short lengths it is employed for wheelwrights' work and agricultural implements. Its gum or kino has medicinal properties, and is used locally for tanning hides. Wandoo (*E. redunca*) is used for fencing, wheelwrights' work, and railway buffers and sleepers. The blackbutt (*E. patens*), York gum (*E. loxophleba*), and Yate (*E. cornuta*) of the West are largely used for fencing, building, and rough construction.

The Moreton Bay or hoop pine (*Araucaria cunninghami*) is used for interior work (flooring, ceiling, and lining boards) and for packing cases and butter boxes. Brown pine (*Podocarpus elata*) is also used for interior work, and for bridge, jetty, and pier piles. Cypress pine (*Callitris*), including red or black pine (*C. calcarata*); Murray pine (*C. verrucosa*), Port Macquarie pine (*C. macleayana*), and the Richmond River cypress pine (*C. columellaris*) are used for buildings liable to attacks of white ants, being strongly resistant to these pests. Cypress pine is also suitable for bridge decking and makes fine fuel. Red cedar (*Cedrela australis*) furnishes timber of great beauty; it is easily worked and very durable, and is used for furniture and cabinet-making, doors, panelling, and interior fittings generally. Rosewood (*Dysoxylon fraserianum*) is easily wrought, and is used for furniture, turnery, carving, cabinet work, mouldings, planes, window joints, house-fittings, and wine casks. Red bean (*Dysoxylon muelleri*) has a finely-figured grain and is an excellent furniture wood. White beech (*Glehnina leichhardtii*) is durable and easily worked, and is in great request for decks of vessels, furniture, picture frames, carving, flooring, house-fittings, vats, casks, and general coopers' work. Silky oak (*Grevillea robusta* and *Orites excelsa*) are also in request for coopers' work, and make handsome furniture and wainscoting. The silky oak has also been used for butter kegs, buckets, churns, etc., and makes good butter boxes for the local markets. Black bean (*Castanospermum australe*), or Moreton Bay chestnut, is used for furniture, cabinet-making, and gun stocks. Tulip-wood (*Harpullia pendula*) is highly esteemed for cabinet-work, being used for door panels, dadoes, and billiard tables. Coachwood (*Ceratopetalum apetalum*) is suitable for boat-building, cabinet work, and coach-building. Kauri pine (*Agathis palmerstoni*) gives a light, strong, and durable timber, and is used for general building and construction, wainscoting, furniture and joinery, railway carriages, and ship-decking. Blackwood (*Acacia melanoxylon*) is very strong and durable, diminishing, however, greatly in weight in seasoning, though shrinking very little in volume. Figured blackwood is a beautiful timber; it is used for furniture, such as billiard tables, chairs, secretares, casings of pianofortes and organs, and general cabinet work; dadoes, panelling of railway carriages, boat-building, picture frames, wheel naves, gun stocks, walking sticks, and a great variety of useful and ornamental purposes; it is also split into staves for wine and tallow casks. Evergreen beech (*Fagus cunninghami*) yields also a handsome timber, used for furniture, sashes and doors, light joinery, wood-carving, picture frames, and cog-wheels. Huon pine furnishes a fine, strong, and light timber; it is almost indestructible in water, and hence is largely used for boat planking; its beautiful grain brings it into request for furniture, panelling, and wainscoting. The King William variety is very tough, being used for racing sculls; it is also a favourite timber in joiners' work. Celery-top pine is strong and heavy, suitable for furniture, flooring, house frames, coopers' work, and masts. Other Australian brush timbers of minor importance are sassafras (*Atherosperma moschatum*), used for saddle-trees and boot lasts; and satin box, sycamore, olive, and pencil-wood, giving woods of beautiful grain for parquetry, veneers, carving, and picture frames. The sandalwood of Western Australia (*Santalum cygnorum*) is a very valuable forest product, its export having covered half-a-century.

§ 4. Forestal Industries and Production.

1. **Timber.**—The returns for quantity and value of timber cut and sawn, as given by the States Forestry Departments, are at present very incomplete. Owing to this fact the figures are, in some cases, necessarily merely estimates. It is proposed by the Commonwealth Bureau of Statistics to secure, if possible, more accurate information in future concerning this important industry.

QUANTITY OF LOCAL TIMBER SAWN OR HEWN IN EACH STATE OF THE COMMONWEALTH DURING THE YEARS 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| | Sup. feet. | Sup. feet. | Sup. feet. | Sup. feet. | Sup. feet. | Sup. feet. | Sup. feet. |
| New South Wales | 96,907,000 | 90,308,834 | 100,408,000 | 117,029,000 | 112,580,000 | 119,337,000 | 360,000,000* |
| Victoria | 46,495,885 | 40,494,660 | 38,841,322 | 49,250,000 | 47,635,358 | 51,103,000 | 75,900,000 |
| Queensland | 140,443,099 | 72,478,951 | 69,506,800 | 71,293,811 | 73,930,279 | 82,801,846 | 91,752,000 |
| South Australia ... | 22,877 | 197,088 | 130,565 | 94,396 | 155,662 | 130,763 | 143,009 |
| Western Australia ... | 122,413,865 | 124,005,005 | 126,729,833 | 143,594,953 | 137,250,340 | 136,294,697 | 110,395,000 |
| Tasmania | 45,848,526 | 24,531,922 | 35,196,700 | 34,760,628 | 40,273,429 | 39,498,697 | 85,228,000 |
| Commonwealth | 452,131,252 | 352,016,460 | 370,815,220 | 416,022,788 | 411,825,068 | 429,166,003 | 673,418,000 |

* As returned.

The only States for which an annual return is furnished for the value of locally sawn or hewn timber are South Australia and Tasmania. The values for South Australia for the years 1901 to 1907 are respectively, £23; £154; £413; £400; £340; £230; and £815. For Tasmania the values for the years 1901 to 1906 are respectively, £117,734; £62,573; £89,227; £92,102; £75,817; £110,689; the estimate for Western Australia for the same years is £5,268,235; for New South Wales 1901 to 1906, £4,050,000; and for 1907, £1,440,000; for Victoria, for 1907, £256,590.

2. **Forest Produce.**—Estimates have been made of the total value of forest production, but these must be regarded as mere approximations. Many of the items are very difficult, and some impossible, to obtain. Large returns are credited to firewood, but these have been omitted altogether, since estimates are subject to a wide range of uncertainty.

The Forestry Department of New South Wales estimates that the production in the seven years, 1901-7, averaged at least £685,000 per annum. For Victoria the Government Statist gives the following figures:—1904, £230,567; 1905, £206,725; 1906, £217,569; 1907, £244,170. This is exclusive of hewn timber, which in 1907 was valued at £75,000. No figures on a similar basis are available for Queensland. The estimates for South Australia for 1901 to 1907 are £187; £354; £590; £665; £610; £440 and £1086. Western Australia averages for the seven years, 1901-7, £984,264. Tasmania supplies the following estimates for the years 1901 to 1906, viz., £152,102, £83,943, £114,227, £119,477, £94,987, £126,514.

§ 5. Oversea Trade.

1. Imports.—The quantities of timber imports for 1901 and 1902 are not available. In 1901 the value of imports of dressed timber was £441,665; undressed timber, £717,548. For 1902 the respective values were £395,842 and £704,751. The countries of origin are shewn in the previous issue of the Year Book. For the years 1903 to 1907 the quantities and values were as follow:—

IMPORTS OF DRESSED TIMBER, 1903 to 1907.

| Country whence Imported. | Quantity. | | | | | Value. | | | | |
|----------------------------|------------|------------|------------|------------|------------|---------|---------|---------|---------|---------|
| | 1903. | 1904. | 1905. | 1906. | 1907. | 1903. | 1904. | 1905. | 1906. | 1907. |
| | Super. ft. | Super. ft. | Super. ft. | Super. ft. | Super. ft. | £ | £ | £ | £ | £ |
| United King. | 131,751 | 19,224 | 14,604 | 41,049 | 45,554 | 1,429 | 807 | 361 | 894 | 553 |
| Canada ... | 6,875 | 104,770 | 9,800 | 833 | 1,200 | 46 | 828 | 67 | 2 | 10 |
| New Zealand | 142,323 | 20,336 | 21,238 | 5,125 | 17,810 | 1,109 | 216 | 231 | 65 | 111 |
| Other B. Pos. | 1,034 | 49,322 | 3,549 | 5,437 | 4,133 | 16 | 1,258 | 36 | 51 | 22 |
| Norway ... | 17,642,379 | 41,901,583 | 33,084,662 | 43,712,732 | 52,377,370 | 122,416 | 312,067 | 228,306 | 273,546 | 303,173 |
| Sweden ... | 3,840,459 | 8,739,497 | 2,515,987 | 2,412,087 | 7,122,102 | 20,905 | 51,379 | 11,965 | 15,054 | 48,056 |
| United States | 2,938,450 | 3,516,661 | 2,411,998 | 1,727,363 | 1,710,306 | 26,919 | 28,073 | 23,181 | 19,982 | 19,950 |
| Other Foreign Countries... | ... | 104,934 | 89,888 | 304,596 | 1,153,309 | ... | 523 | 696 | 1,764 | 4,730 |
| Total ... | 24,763,771 | 54,456,327 | 38,151,816 | 48,209,222 | 62,431,784 | 172,840 | 395,151 | 264,843 | 311,358 | 376,605 |

IMPORTS OF UNDRESSED TIMBER, 1903 to 1907.

| Country whence Imported. | Quantity. | | | | | Value. | | | | |
|----------------------------|-------------|-------------|-------------|-------------|-------------|---------|---------|---------|---------|-----------|
| | 1903. | 1904. | 1905. | 1906. | 1907. | 1903. | 1904. | 1905. | 1906. | 1907. |
| | Super. ft. | Super. ft. | Super. ft. | Super. ft. | Super. ft. | £ | £ | £ | £ | £ |
| United King. | 48,246 | 38,677 | 335,792 | 293,086 | 1,321,875 | 535 | 720 | 2,869 | 2,531 | 8,034 |
| Burma ... | ... | ... | 23,208 | 290,060 | 150 | ... | ... | 274 | 7,173 | 1 |
| Canada ... | 7,864,000 | 12,077,976 | 13,684,642 | 8,380,951 | 5,789,872 | 36,601 | 51,270 | 52,119 | 42,538 | 24,777 |
| India ... | 52,392 | 29,703 | 410,797 | 248,989 | 433,888 | 1,656 | 603 | 9,595 | 3,921 | 10,756 |
| New Zealand | 51,182,185 | 54,342,497 | 65,690,179 | 65,164,718 | 68,996,008 | 239,944 | 252,407 | 329,327 | 314,522 | 394,406 |
| Sts. Settlements | 261,279 | 142,395 | 151,930 | 130,898 | 149,257 | 1,197 | 754 | 941 | 955 | 742 |
| Other B. Pos. | 100,827 | 20,926 | 17,832 | 8,580 | 15,473 | 362 | 139 | 671 | 175 | 37 |
| Norway ... | 4,167,679 | 2,450,009 | 1,872,950 | 1,284,969 | 2,118,453 | 32,860 | 16,039 | 11,957 | 6,987 | 12,610 |
| Russia ... | 810,400 | 3,600,067 | 1,647,700 | 285,900 | 1,346,590 | 5,589 | 27,204 | 11,568 | 1,810 | 10,364 |
| Sweden ... | 1,753,237 | 2,911,423 | 3,077,756 | 2,756,200 | 5,546,523 | 15,024 | 21,396 | 20,760 | 17,764 | 35,234 |
| Unit'd States | 85,761,549 | 117,478,797 | 76,814,855 | 121,601,462 | 120,691,566 | 398,139 | 503,442 | 308,479 | 549,534 | 633,642 |
| Other Foreign Countries... | 85,279 | 1,115,766 | 242,870 | 1,122,591 | 1,169,754 | 615 | 2,505 | 1,726 | 5,462 | 10,596 |
| Total ... | 152,087,073 | 194,208,236 | 163,976,501 | 201,568,404 | 207,579,409 | 732,522 | 876,479 | 750,286 | 953,372 | 1,141,199 |

2. Exports.—The quantity and value of undressed (sawn) timber exported from 1903 to 1907 is given below, the countries of destination being also shewn. The quantities for 1901 and 1902 are not available, and the values only are given. Countries to which the produce was exported cannot, however, be stated for these years:—

VALUE OF EXPORTS OF UNDRESSED TIMBER (SAWN), 1901 and 1902.

1901, £631,257; 1902, £544,830.

EXPORTS OF UNDRESSED TIMBER (SAWN), 1903 to 1907.

| Country to which Exported. | Quantity. | | | | | Value. | | | | |
|----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 1903. | 1904. | 1905. | 1906. | 1907. | 1903. | 1904. | 1905. | 1906. | 1907. |
| | 1000 Sup. ft. | 1000 Sup. ft. | 1000 Sup. ft. | 1000 Sup. ft. | 1000 Sup. ft. | £ | £ | £ | £ | £ |
| United Kingdom... | 24,560 | 32,784 | 30,076 | 25,561 | 14,156 | 166,616 | 215,128 | 192,891 | 167,081 | 88,010 |
| Canada ... | 53 | 282 | 420 | 568 | 368 | 360 | 2,307 | 4,207 | 5,566 | 4,240 |
| Cape Colony ... | 27,146 | 12,587 | 15,244 | 4,456 | 4,960 | 190,008 | 78,247 | 102,886 | 23,555 | 25,629 |
| Ceylon ... | 1,408 | 2,694 | 1,765 | 25 | 21 | 9,387 | 17,816 | 6,179 | 213 | 211 |
| Fiji ... | 700 | 1,255 | 1,255 | 1,713 | 1,899 | 4,283 | 8,486 | 8,715 | 11,159 | 12,144 |
| India ... | 9,677 | 28,588 | 47,441 | 63,249 | 40,304 | 64,513 | 182,238 | 293,287 | 384,463 | 266,801 |
| Mauritius ... | 399 | 690 | 1,405 | 820 | 6 | 2,716 | 4,594 | 9,328 | 5,128 | 66 |
| Natal ... | 10,446 | 10,243 | 7,433 | 1,826 | 1,543 | 74,797 | 61,200 | 51,426 | 11,356 | 11,064 |
| New Guinea ... | 49 | 116 | 96 | 142 | 94 | 287 | 783 | 748 | 1,260 | 899 |
| New Zealand ... | 16,476 | 13,582 | 17,671 | 17,705 | 22,212 | 106,817 | 79,587 | 100,438 | 120,480 | 151,985 |
| Ocean Island ... | 16 | 169 | 224 | 574 | 705 | 96 | 1,146 | 1,502 | 3,935 | 5,579 |
| Straits Settlements | 240 | 1,094 | 290 | 1,047 | 254 | 1,600 | 7,296 | 1,952 | 5,849 | 1,909 |
| Other British Pos. | 1,621 | 606 | 769 | 5 | 5 | 6,612 | 4,087 | 5,495 | 38 | 2,777 |
| Argentine Repub. | — | 467 | 835 | 2,948 | 1,142 | — | 3,115 | 5,565 | 19,652 | 7,618 |
| Belgium ... | 146 | 101 | 90 | 509 | 1,286 | 975 | 975 | 537 | 3,913 | 7,659 |
| China ... | 32 | 66 | 8,221 | 12,335 | 2,845 | 211 | 413 | 54,816 | 81,673 | 19,397 |
| Egypt ... | — | 3,117 | 2,073 | 20 | 91 | — | 20,778 | 13,819 | 136 | 635 |
| Germany ... | 872 | 2,476 | 4,410 | 3,985 | 2,199 | 6,880 | 15,219 | 27,394 | 32,716 | 19,884 |
| Japan ... | 7 | 31 | 13 | 403 | 527 | 85 | 450 | 117 | 2,695 | 5,329 |
| Kais'r Wilhelm's L. | 93 | 106 | 77 | 30 | 65 | 596 | 730 | 535 | 195 | 475 |
| Marshall Island ... | 91 | 56 | 101 | 503 | 562 | 611 | 385 | 683 | 3,418 | 4,177 |
| Netherlands ... | 150 | 704 | — | 1,175 | 869 | 1,300 | 4,693 | — | 5,745 | 2,854 |
| New Pommern ... | 116 | 96 | 32 | 121 | 170 | 736 | 666 | 223 | 841 | 1,242 |
| New Caledonia ... | 496 | 135 | 153 | 136 | 147 | 3,264 | 850 | 883 | 843 | 912 |
| Philippine Islands | 1,668 | 3,855 | 2,557 | 2,394 | 10,589 | 11,212 | 23,887 | 21,901 | 12,556 | 64,426 |
| Port'g'esse E. Africa | 21,722 | 10,775 | 10,413 | 3,262 | 825 | 144,811 | 61,966 | 68,786 | 18,636 | 5,039 |
| South Sea Islands | 299 | 220 | 251 | 415 | 421 | 2,049 | 1,480 | 1,710 | 2,760 | 3,233 |
| U. S. of America ... | 159 | 280 | 452 | 582 | 799 | 1,543 | 2,812 | 4,683 | 5,272 | 7,248 |
| Uruguay ... | 666 | — | 1,928 | 6,137 | 4,815 | 4,441 | — | 12,852 | 40,912 | 32,073 |
| Other For. Count. | 11 | 93 | 142 | 1,776 | 967 | 88 | 559 | 961 | 7,184 | 6,669 |
| Total | 119,319 | 126,768 | 155,837 | 154,422 | 115,347 | 806,894 | 801,893 | 994,519 | 979,530 | 760,124 |

In the years 1905 and 1904 the largest quantities of undressed timber were exported. The year 1907 shows a considerable decrease from previous years, both in quantity and value, the decrease in the latter, as compared with 1906, being more than 22 per cent.

**QUANTITIES OF TIMBER IMPORTED INTO, AND EXPORTED FROM, THE
COMMONWEALTH, 1903 to 1907.**

| Description | 1903. | 1904. | 1905. | 1906. | 1907. | |
|-------------------------------------|-----------|-------------|-------------|-------------|-------------|-------------|
| IMPORTS. | | | | | | |
| Dressed ... | Sup. feet | 24,763,771 | 54,456,327 | 38,151,816 | 48,209,222 | 62,431,784 |
| Undressed ... | " | 151,873,945 | 193,685,731 | 163,799,852 | 200,434,075 | 207,579,407 |
| Logs ... | " | 213,128 | 522,505 | 176,649 | 1,134,329 | 12,451,619 |
| Palings ... | No. | ... | ... | ... | ... | ... |
| Pickets ... | " | 760,375 | 1,743,474 | 2,122,685 | 800,260 | 1,106,364 |
| Shingles ... | " | 2,785,554 | 1,079,715 | 3,913,960 | 468,980 | 2,079,041 |
| Staves ... | " | 314,358 | 1,064,033 | 1,968,153 | 2,345,789 | 1,470,765 |
| Laths ... | " | 18,524,843 | 28,222,263 | 17,279,293 | 25,367,993 | 19,966,870 |
| Doors ... | " | 31,341 | 29,876 | 8,799 | 3,343 | 975 |
| Architraves, Mouldings, etc. ... | Lin. feet | 46,257 | 119,192 | 46,622 | 131,830 | 65,581 |
| Other ... | ... | * | * | * | * | * |

* Quantity not available.

QUANTITIES OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

| Description. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---|-------------|-------------|-------------|-------------|-------------|
| EXPORTS. | | | | | |
| Dressed ... Sup. feet | 629,475 | 780,237 | 534,561 | 745,800 | 669,647 |
| Undressed | 109,667,252 | 127,050,520 | 155,837,454 | 154,422,490 | 115,347,179 |
| Logs | 3,129,276 | 3,549,036 | 1,688,258 | 1,740,775 | 4,261,379 |
| Palings ... No. | 527,800 | 612,025 | 972,479 | 656,170 | 730,825 |
| Pickets | 11,830 | 24,325 | 15,390 | 91,594 | 7,147 |
| Shingles | 64,734 | 3,240 | 26,796 | 48,268 | 38,312 |
| Staves | 230 | 1,470 | ... | ... | ... |
| Laths | 355,250 | 1,131,480 | 1,516,120 | 1,533,040 | 1,571,705 |
| Doors | 654 | 816 | 747 | 1,106 | 1,338 |
| Architraves, Mouldings, etc. ... Lin. feet | 30,146 | 12,424 | 47,064 | 56,886 | 50,616 |
| Other | * | * | * | * | * |

EXCESS OF IMPORTS OVER EXPORTS.

| | | | | | |
|---|------------|------------|------------|------------|------------|
| Dressed ... Sup. feet | 24,134,296 | 53,676,090 | 37,617,255 | 47,463,422 | 61,762,137 |
| Undressed | 42,206,693 | 66,635,211 | 7,962,398 | 46,011,585 | 92,232,228 |
| Logs | -2,916,148 | -3,026,531 | -1,511,609 | -606,446 | 8,190,240 |
| Palings ... No. | -527,800 | -612,025 | -972,479 | -656,170 | -730,825 |
| Pickets | 748,545 | 1,719,149 | 2,107,295 | 708,666 | 1,099,217 |
| Shingles | 2,720,820 | 1,076,475 | 3,887,164 | 420,712 | 2,040,729 |
| Staves | 314,128 | 1,062,563 | 1,968,153 | 2,345,789 | 1,470,765 |
| Laths | 18,169,593 | 27,090,783 | 15,763,173 | 23,834,953 | 18,395,165 |
| Doors | 30,687 | 29,060 | 8,052 | 2,237 | -363 |
| Architraves, Mouldings, etc. ... Lin. feet | 16,111 | 106,768 | -442 | 74,944 | 14,965 |
| Other | * | * | * | * | * |

* Quantity not available.

Note. — signifies excess of exports over imports.

VALUES OF TIMBER IMPORTED INTO, AND EXPORTED FROM, THE COMMONWEALTH,
1903 TO 1907.

| Description. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|-----------|-----------|-----------|-----------|-----------|
| IMPORTS. | | | | | |
| Dressed | £ 172,840 | £ 395,151 | £ 264,843 | £ 311,358 | £ 376,605 |
| Undressed | 731,592 | 874,664 | 748,817 | 948,021 | 1,141,199 |
| Logs | 930 | 1,815 | 1,469 | 5,351 | 34,966 |
| Palings | ... | ... | ... | ... | ... |
| Pickets | 3,492 | 9,313 | 4,361 | 2,891 | 3,748 |
| Shingles | 2,010 | 846 | 2,959 | 435 | 2,987 |
| Staves | 6,674 | 11,781 | 15,539 | 20,612 | 13,326 |
| Laths | 16,701 | 23,321 | 12,316 | 18,802 | 18,118 |
| Doors | 13,912 | 12,414 | 3,197 | 1,373 | 438 |
| Architraves, mouldings, etc. | 341 | 511 | 509 | 676 | 489 |
| Other | 13,479 | 21,581 | 18,235 | 19,937 | 40,617 |
| Total values ... | 961,971 | 1,351,397 | 1,072,275 | 1,329,456 | 1,632,493 |

VALUES OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

| Description. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------------|----------------|----------------|------------------|------------------|----------------|
| EXPORTS. | | | | | |
| Dressed | 5,501 | 6,285 | 5,353 | 6,886 | 6,603 |
| Undressed | 727,080 | 805,275 | 994,519 | 979,530 | 760,124 |
| Logs | 23,300 | 16,894 | 12,988 | 12,662 | 22,475 |
| Palings | 2,183 | 2,607 | 4,952 | 3,065 | 3,541 |
| Pickets | 144 | 176 | 117 | 569 | 66 |
| Shingles | 79 | 3 | 41 | 96 | 108 |
| Staves | 16 | 6 | ... | ... | ... |
| Laths | 396 | 1,231 | 1,899 | 1,685 | 1,706 |
| Doors | 395 | 577 | 486 | 746 | 1,027 |
| Architraves, mouldings, etc. | 155 | 91 | 235 | 467 | 354 |
| Other | 9,058 | 6,373 | 7,013 | 6,405 | 9,129 |
| Total values ... | 768,307 | 839,518 | 1,027,603 | 1,012,111 | 805,133 |

EXCESS OF IMPORTS OVER EXPORTS.

| | | | | | |
|-------------------------------------|----------------|----------------|---------------|----------------|----------------|
| Dressed | 167,339 | 388,866 | 259,490 | 304,472 | 370,002 |
| Undressed | 4,512 | 69,389 | —245,702 | —31,509 | 381,075 |
| Logs | —22,370 | —15,079 | —11,519 | —7,311 | 12,491 |
| Palings | —2,183 | —2,607 | —4,952 | —3,065 | —3,541 |
| Pickets | 3,348 | 9,137 | 4,244 | 2,322 | 3,682 |
| Shingles | 1,931 | 843 | 2,918 | 339 | 2,879 |
| Staves | 6,658 | 11,775 | 15,569 | 20,612 | 13,326 |
| Laths | 16,305 | 22,090 | 10,417 | 17,117 | 16,412 |
| Doors | 13,517 | 11,837 | 2,711 | 627 | —589 |
| Architraves, mouldings, etc. | 186 | 420 | 274 | 209 | 135 |
| Other | 4,421 | 15,208 | 11,222 | 13,532 | 31,488 |
| Total values ... | 193,664 | 511,879 | 44,672 | 317,345 | 827,360 |

— signifies excess of exports over imports.

The exports of sandalwood were :—

EXPORTS OF SANDALWOOD, 1901 to 1907.

| Country to which Exported. | Quantity. | | | | | | Value. | | | | | | |
|----------------------------|----------------|---------------|---------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| | cwt. | cwt. | cwt. | cwt. | cwt. | cwt. | £ | £ | £ | £ | £ | £ | £ |
| Hong Kong | 71,283 | 21,606 | 65,946 | 68,657 | 134,769 | 140,586 | 53,991 | 27,005 | 9,782 | 17,369 | 27,306 | 55,970 | 50,903 |
| Straits Settlements | 33,946 | 18,842 | 9,007 | 14,145 | 9,369 | 7,284 | 15,341 | 12,119 | 6,727 | 2,264 | 4,479 | 3,721 | 2,542 |
| Other British Poss. | 1,348 | 10 | 260 | — | 4,364 | 4,593 | 408 | 150 | 51 | 65 | — | 1,782 | 1,603 |
| China | 54,323 | 47,671 | 14,987 | 27,564 | 28,025 | 31,637 | 7,905 | 22,497 | 21,399 | 5,719 | 7,008 | 9,299 | 10,686 |
| Other For. Countries | — | — | — | 61 | 478 | 312 | 65 | — | — | — | 23 | 215 | 103 |
| Total ... | 160,900 | 88,129 | 90,200 | 110,427 | 177,005 | 184,412 | 77,710 | 61,771 | 37,913 | 25,417 | 38,816 | 70,987 | 66,237 |

Quantity for 1901 not available.

Tanning bark is largely exported from the Commonwealth, as the following table shews:—

EXPORTS OF TANNING BARK, 1901 to 1907.

| Country to which Ex-ported. | Quantity. | | | | | | | Value. | | | | | | |
|-----------------------------|-----------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|---------|---------|---------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| | cwt. | cwt. | cwt. | cwt. | cwt. | cwt. | cwt. | £ | £ | £ | £ | £ | £ | £ |
| U.K. | 41,075 | 58,399 | 54,970 | 99,766 | 48,306 | 46,825 | 35,808 | 16,203 | 24,354 | 21,331 | 33,723 | 17,499 | 16,978 | 12,976 |
| N.Z. | 51,350 | 45,250 | 73,752 | 52,834 | 69,945 | 73,831 | 67,541 | 20,614 | 19,493 | 33,138 | 22,270 | 27,553 | 30,844 | 29,160 |
| Other | 520 | 1,546 | 660 | 1,211 | 3,016 | 519 | 462 | 232 | 618 | 332 | 508 | 1,179 | 218 | 214 |
| Brit.Pos. | 3,560 | ... | ... | 4,898 | 14,902 | 6,864 | 27,011 | 1,510 | ... | ... | 2,032 | 5,667 | 2,695 | 10,241 |
| Belgium | 5,300 | 1,211 | 3,874 | 3,325 | 728 | 1,879 | 424 | 2,825 | 512 | 1,927 | 1,553 | 270 | 676 | 192 |
| France | 16,980 | 20,784 | 8,562 | 88,802 | 368,200 | 301,219 | 223,740 | 6,979 | 9,626 | 3,955 | 23,432 | 135,321 | 110,754 | 78,352 |
| Germany | 369 | 3 | 776 | 1,152 | 5,179 | 759 | 3,181 | 151 | 4 | 330 | 409 | 2,210 | 288 | 1,207 |
| Other | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| For.Con. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Total ... | 119,154 | 127,193 | 142,594 | 251,988 | 510,278 | 431,896 | 358,167 | 48,514 | 54,607 | 61,013 | 93,927 | 189,699 | 162,453 | 132,342 |

The import of bark was very small, and the net export is little below the gross export:—

QUANTITIES AND VALUES OF BARK IMPORTED INTO, AND EXPORTED FROM, THE COMMONWEALTH, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|
| QUANTITIES— | cwt. | cwt. | cwt. | cwt. | cwt. | cwt. | cwt. |
| Imports ... | 2,073 | 220 | 265 | 775 | 960 | 63 | 344 |
| Exports ... | 119,154 | 127,193 | 142,594 | 251,986 | 510,278 | 431,896 | 358,167 |
| Ex. of exp. over imp. | 117,081 | 126,973 | 142,329 | 251,211 | 509,318 | 431,833 | 357,823 |
| VALUES— | £ | £ | £ | £ | £ | £ | £ |
| Imports ... | 616 | 128 | 186 | 340 | 632 | 58 | 156 |
| Exports ... | 48,514 | 54,607 | 61,013 | 93,927 | 189,699 | 162,453 | 132,342 |
| Ex. of exp. over imp. | 47,898 | 54,479 | 60,827 | 93,587 | 189,067 | 162,395 | 132,186 |

SECTION XI.

FISHERIES AND PISCICULTURE.

§ 1. Commercial Fisheries.

1. **Early Fishing Excursions of Malays.**—Economic fisheries in Australia date back to a period long before the exploration of the northern and north-western shores of the continent by Tasman and Dampier. The Malays of Macassar, in their proas, made fishing excursions amongst the reefs and shoals skirting the coast, collecting and curing trepang and bêche-de-mer, a practice continued up to the present time. They arrive ordinarily at the beginning of the north-west monsoon, and return to Macassar after a few weeks, as the south-east monsoon sets in. Besides the bêche-de-mer, the Malays barter rice, tobacco, and gaudy handkerchiefs for tortoise-shell, pearl shell, and seed pearls, collected by the aborigines.

2. **Fish Stocks.**—Australasia, extending from 10° to 45° south latitude, produces an abundant and varied fish fauna, embracing both tropical and temperate characters, including destructive, as well as edible species, and on its shores both crustaceans and amphibians. In the rivers and lakes indigenous varieties thrive side by side with imported ones, introduced and acclimatised for industrial and sporting purposes by Governments and angling societies. Exploitation of aquarian products—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is, where necessary, expressly forbidden; areas are closed against net-fishing, and a minimum size of mesh for nets is sometimes fixed. Even where the State has not interfered, the sea-fishers in some districts have made regulations for the purpose of controlling the market supply, and these they rigorously observe.

3. **Economic Fisheries.**—Australia's food fishes, though abundant, have not led to the development of an industry of national importance, though fresh and salt water fisheries pay handsomely in other countries, and could no doubt do so in Australia. It has been authoritatively stated that "The collection and distribution of the knowledge of the world's work in fish-culture would make an acre of water more valuable than an acre of land, and the toilers of the sea could reap manifold their present harvest." This would involve also better arrangements for the distribution of fish than exist at present.

4. **Lake and River Fishing.**—Lake and river fishing take even lower industrial rank than marine fishing, though local catches furnish on the aggregate a not inconsiderable amount of food supply.

5. **Distribution of Supplies.**—The economic arrangements as to distribution impose at present serious difficulties on the development of fishing generally, since there is a wide divergence between the price paid by the consumer and the return received by the producer.

6. **Oyster Fisheries.**—Natural oyster beds, whose ample product is of excellent quality, exist in the shallow waters of inlets and estuaries of several parts of the Australian foreshore. By husbanding the natural crop, and by judicious transplanting, the

oyster output has been very materially augmented. The areas are leased by the Government to private persons, lengths of foreshore being taken up and profitably exploited.

7. **Pearl-shelling.**—Pearl-shelling is carried on in the tropical districts of Queensland, South Australia (Northern Territory), and Western Australia. The pearl oyster inhabits the northern and western coasts from Cape York to Shark Bay, a length of shore of over 2000 miles. Along the north coast the pearls taken are small, and their aggregate value inconsiderable; but the shells are marketed in considerable quantities, the industry giving directly and indirectly employment to a large number of people, mostly Japanese, Chinese, and Malays. The Shark Bay pearling industry, however, is carried on for both gems and shells. The fishing is now generally conducted with the aid of diving apparatus, in water varying from four to twenty fathoms in depth. The inshore banks and shallower waters have been almost entirely worked out, and the deeper waters, from three to twenty miles off shore, are now being worked.

In tropical Queensland pearl-shell diving is actively pursued, and is by far the most important of the fishing industries, Torres Straits being the centre of production. With it the pursuit of *bêche-de-mer* is carried on, and tortoise-shell is obtained on the coasts. The industry is supervised by the Marine Department, which administers the Fisheries Acts. A statutory limit is fixed for the minimum size of shell that may be gathered. Experiments have been made in cultivating the pearl oyster on suitable banks. A small variety has been discovered at Stradbroke Island, in Moreton Bay, but the commercial value of the produce is small.

The discovery of mother-of-pearl shell in Port Darwin Harbour in 1884 caused a rush of pearling boats from Torres Straits. But the muddiness of the water, rendered almost opaque by the heavy tides, prevented the divers from satisfactorily working the area and led to an abandonment of the industry within three years from its birth. Prospecting in new patches has since being carried on and the industry has been revived. In addition to pearl and trepang fishing, dry-salted fish is also exported from the Territory.

In Western Australia the centres of the industry are Broome, Cossack, Onslow, and Shark Bay. There are two distinct species of mother-of-pearl shell exported. The principal trade is done in the large shells (*Meleagrina margaritifera*), limited in distribution to tropical waters and extending in habitat from Exmouth Gulf northwards. It is laid under contribution for the larger manufactured articles, such as dessert and fish knife and fork handles, large buttons, and inlaid work. The largest and finest pearls are obtained from it. The second species is that known commercially as the Shark Bay variety (*Meleagrina imbricata*). It is of smaller size and used chiefly for the manufacture of small buttons. The pearls found are of varying value. The Shark Bay pearl-shell is collected by dredging in the deeper waters and gathered by hand from off the shallow banks at low tide.

The system of licensing boats and men engaged in the pearling industry restricts, in the States where it is in force, indiscriminate exploiting of the areas, and returns a small revenue.

§ 2. Fisheries Statistics.

1. **Departmental Estimates.**—Statistics of the fishing industry have not hitherto been systematically collected. The returns given below have been furnished by the States departments, and estimates, where they have been made, are official. The data do not lend themselves to presentation on a uniform scheme, and are therefore given for the individual States.

2. **New South Wales.**—Much of the information must be regarded as approximate only. An estimate of the number of men employed during the years 1901 to 1906 gives an annual average of 1730, with 849 boats in use; the average annual quantity of fish marketed per year was 5,790,400 lbs., value £193,013. In 1907, the estimated number

of men employed was 1935, and of boats, 1025, and the take of fish was 124,078 baskets, estimated to contain an average weight of 75 lbs. each.

**GENERAL FISHERIES (EXCLUSIVE OF EDIBLE OYSTERS) NEW SOUTH WALES,
1901 TO 1907.**

| — | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------|--------|---------|---------|---------|---------|---------|---------|
| Total take of— | | | | | | | |
| Fish ... Baskets | 90,618 | 118,823 | 141,280 | 125,290 | 123,222 | 128,854 | 124,078 |
| Crayfish ... Dozen | 2,161 | 4,148 | 4,436 | 2,757 | 7,104 | 4,916 | 7,075 |

**FISHERMEN'S AND FISHING BOAT LICENSES, NEW SOUTH WALES,
1901 TO 1907.**

| Licenses. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------|-------|-------|-------|-------|-------|-------|-------|
| Fishermen's ... | 945 | 1,204 | 2,076 | 2,095 | 2,091 | 1,986 | 1,935 |
| Fishing boat ... | 441 | 518 | 1,043 | 1,019 | 1,061 | 1,047 | 1,025 |

REVENUE FROM FISHERIES, NEW SOUTH WALES, 1901 to 1907.

| Year. | From Licenses. | From Leases. | Fines and Forfeitures. | Oyster Spat. | Total |
|-------------|----------------|--------------|------------------------|--------------|--------|
| | £ | £ | £ | £ | £ |
| 1901 | 791 | 3,567 | 148 | * | 4,514† |
| 1902 | 950 | 3,987 | 103 | * | 5,040 |
| 1903 | 1,080 | 4,248 | 32 | 72 | 5,432 |
| 1904 | 1,010 | 4,646 | 193 | 231 | 6,080 |
| 1905 | 1,037 | 4,587 | 130 | 75 | 5,829 |
| 1906 | 1,043 | 4,796 | 58 | 234 | 6,131 |
| 1907 | 983 | 4,824 | 67 | 344 | 6,218 |

* No oyster spat was sold until 1903. † Includes £8 from other sources.

EDIBLE OYSTER FISHERIES, NEW SOUTH WALES, 1901 to 1907.

| Year. | Number of Leases Granted. | Areas under Lease for Oyster Culture. | | Oysters taken. | |
|----------|---------------------------|---------------------------------------|------------|----------------|--------|
| | | Deepwater. | Foreshore. | Quantity. | Value. |
| | | Acres. | Yards. | Bags. | £ |
| 1901 ... | 239 | 6½ | 341,644 | 18,473 | 27,709 |
| 1902 ... | 202 | 6½ | 382,069 | 16,157 | 24,235 |
| 1903 ... | 121 | 6½ | 391,942 | 13,593 | 20,389 |
| 1904 ... | 219 | ... | 435,550 | 12,613 | 19,000 |
| 1905 ... | 123 | 27 | 404,064 | 13,858 | 20,787 |
| 1906 ... | 155 | 64 | 467,592 | 15,006 | 22,509 |
| 1907 ... | 303 | 65 | 553,975 | 14,406 | 25,210 |

Considerable proportions of the foreshores and shallow areas of the river estuaries are excellent natural oyster-beds, and with constant attention to them the annual yield of oysters could no doubt be materially increased. As the table shews, it was less in the years 1903 to 1907 than it had been in the two preceding years.

3. **Victoria.**—In 1908 a Fisheries Committee investigated the conditions of the fishing industry in Victoria. The scope of the inquiry covered questions as to the permanent and temporary closing of areas against fishing; the length and number of nets to be used by any one party; poaching; the destruction of cormorants; and the

handling, freight, and marketing of fish. As a result of this inquiry legislation is proposed that is expected to result in the industry being considerably developed in the near future.

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTERS), VICTORIA, 1901 to 1907.

| Year. | No. of Boats Engaged. | Value of Boats and Equipment. | No. of Men Employed. | Total Take of | | Value of Take. | |
|-------|-----------------------|-------------------------------|----------------------|---------------|-----------|----------------|-----------|
| | | | | Fish. | Lobsters. | Fish. | Lobsters. |
| | No. | £ | No. | cwt. | doz. | £ | £ |
| 1901 | 622 | 28,094 | 982 | 72,517 | 19,003 | 45,017 | 6,269 |
| 1902 | 668 | 32,780 | 1,038 | 111,579 | 19,359 | 68,194 | 6,381 |
| 1903 | 651 | 33,163 | 1,084 | 116,750 | 18,823 | 70,252 | 6,258 |
| 1904 | 654 | 34,610 | 1,089 | 113,650 | 20,560 | 67,009 | 8,014 |
| 1905 | 660 | 34,600 | 1,039 | 96,000 | 19,662 | 58,230 | 7,496 |
| 1906 | 693 | 33,789 | 1,120 | 91,700 | 20,517 | 55,640 | 8,720 |
| 1907 | 726 | 38,666 | 1,153 | 99,707 | 24,889 | 60,442 | 6,179 |

Licenses to net in certain waters are issued without fee. These are not annual, but are supplemented every year by new issues. It is proposed to make the registration annual, and impose a fee.

FISHERMEN'S AND FISHING BOAT LICENSES, VICTORIA, 1901 to 1907.

| Licenses. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Fishermen's licenses to net | 46 | 38 | 175 | 185 | 67 | 39 | 176 |
| Fishing boat | 19 | 22 | 42 | 40 | 36 | 38 | 80 |

The increase in 1907 was caused through a court case calling attention to the fact that the necessary licenses had in many cases not been taken out.

Annual leases have been granted to oyster fisheries, but the return is insignificant.

EDIBLE OYSTER FISHERIES, VICTORIA, 1901 to 1907.

| Year | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------------------|--------|--------|-------|-------|-------|-------|-------|
| Number of leases granted | 5 | 5 | 4 | 4 | 2 | Nil | Nil |
| Length of foreshore in leases ft. | 86,610 | 39,480 | 7,800 | 7,200 | 3,000 | ... | ... |

No separate revenue is credited to fisheries. the small amount derived by way of fines being credited to general revenue.

4. **Queensland.**—Prior to 1907 no account was kept of the value of boats and equipment, but an approximation believed to be very close was furnished. An estimate was made of the total take of fish, giving 1450 tons as the annual average for the years 1901 to 1906, corresponding to an average annual value of £20,300. In 1907 the take was 1625 tons, of an estimated value of £24,437. There are no lobster fisheries. The amount put up in the fish-preserving establishments is not great, but the demand for fish locally tinned is growing. The quantities and values of oysters from 1901 to 1904 given are those exported. In 1905 and 1906 the information was not recorded, and no records were kept of those placed on the local market. The figures for 1907 give total production. The length of foreshore under lease cannot be accurately given. The deep water in Moreton Bay and Sandy Strait is leased as dredge sections, which extend across the channels to the islands, and contain from 100 to 1000 acres each. Within these sections the majority of the oyster banks (ground containing up to 30 acres lying within two feet below low-water mark) are situated on the foreshores of the islands, and on the mud and sand flats.

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTERS, PEARLSHELL AND BÉCHE-DE-MER), QUEENSLAND, 1901 to 1907.

| Year. | No. of Boats Engaged. | Value of Boats and Equip-ment. | No. of Men Employed. | Total Take of Fish. | Value of Fish Taken. |
|----------|-----------------------|--------------------------------|----------------------|---------------------------|---------------------------|
| | | £ | | Estimated Annual Average. | Estimated Annual Average. |
| 1901 ... | 240 | 5,850 | 496 | 29,000 cwt. | £20,300 |
| 1902 ... | 313 | 8,240 | 602 | | |
| 1903 ... | 326 | 8,700 | 602 | | |
| 1904 ... | 245 | 7,357 | 498 | | |
| 1905 ... | 272 | 7,600 | 511 | | |
| 1906 ... | 251 | 6,795 | 446 | | |
| 1907 ... | 242 | 6,596 | 497 | 32,500 cwt. | £24,437 |

FISHERMEN'S AND FISHING BOAT LICENSES, QUEENSLAND, 1901 to 1907.

| Licenses. | 1901. | 1902. | 1903. | 1904 | 1905. | 1906. | 1907. |
|------------------|-------|-------|-------|------|-------|-------|-------|
| Fishermen's ... | 496 | 602 | 602 | 498 | 511 | 446 | 497 |
| Fishing boat ... | 240 | 313 | 326 | 245 | 272 | 251 | 242 |

REVENUE FROM FISHERIES, QUEENSLAND, 1904 to 1907.

| Heads of Revenue. | | | 1904. | 1905. | 1906. | 1907. |
|---------------------------|-----|-----|-------|-------|-------|-------|
| | | | £ | £ | £ | £ |
| From licenses ... | ... | ... | 5,902 | 6,080 | 5,278 | 6,208 |
| „ leases ... | ... | ... | 1,983 | 1,486 | 1,768 | 1,514 |
| Fines and forfeitures ... | ... | ... | 2 | ... | 16 | 40 |
| Other sources ... | ... | ... | 110 | 127 | 100 | 159 |
| Total ... | ... | ... | 7,997 | 7,693 | 7,162 | 7,921 |

Figures for revenue given in the previous edition of the Year Book were exclusive of pearl and edible oyster fisheries.

EDIBLE OYSTER FISHERIES, QUEENSLAND, 1901 to 1907.

| Year. | Number of Boats Engaged. | Value of Boats and Equipment. | Number of Men Employed. | Number of Leases Granted. | Oysters Exported. | |
|----------|--------------------------|-------------------------------|-------------------------|---------------------------|-------------------|---------|
| | | | | | Quantity. | Value. |
| | | | | | Cwt. | £ |
| 1901 ... | 83 | 4,510 | 127 | 575 | 21,658 | 14,370 |
| 1902 ... | 118 | 4,645 | 189 | 679 | 20,682 | 16,120 |
| 1903 ... | 132 | 4,800 | 172 | 635 | 19,482 | 15,887 |
| 1904 ... | 109 | 5,215 | 171 | 652 | 23,900 | 20,073 |
| 1905 ... | 130 | 5,075 | 200 | 675 | * | * |
| 1906 ... | 144 | 7,025 | 200 | 714 | * | * |
| 1907 ... | 149 | 8,000 | 212 | 924 | †60,000 | †37,500 |

* Information not recorded. † Oysters taken.

PEARL-SHELL AND BÉCHE-DE-MER FISHERIES, QUEENSLAND, 1901 to 1907.

| Year. | Number of Boats Engaged. | Value of Boats and Equip-ment. | Number of Men Em-ployed. | Pearl-shell. | | Bêche-de-mer. | | Tortoise-shell. | |
|----------|--------------------------|--------------------------------|--------------------------|--------------|---------|---------------|--------|-----------------|--------|
| | | | | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | | | | Tons. | £ | Tons. | £ | lbs. | £ |
| 1901 ... | 359 | 99,300 | 2,188 | 924 | 105,403 | 52 | 7,399 | 5,579 | 1,935 |
| 1902 ... | 343 | 82,800 | 2,187 | 961 | 129,267 | 71 | 9,444 | 3,608 | 1,521 |
| 1903 ... | 354 | 93,300 | 2,308 | 970 | 165,551 | 59 | 7,270 | 2,801 | 1,326 |
| 1904 ... | 378 | 105,900 | 2,509 | 798 | 108,130 | 45 | 5,865 | 2,209 | 1,027 |
| 1905 ... | 366 | 104,400 | 1,321 | 543 | 62,736 | 105 | 10,624 | 2,413 | 1,320 |
| 1906 ... | 211 | 63,300 | 1,314 | 444 | 47,423 | 131 | 13,938 | 3,659 | 2,007 |
| 1907 ... | 211 | 63,300 | 1,420 | 577 | 70,495 | 338 | 30,033 | 3,095 | 1,927 |

Prior to 1907 no record was taken of the value of pearls obtained, and it is impossible to estimate it. The value in 1907 was approximately £30,000.

5. **South Australia and Northern Territory.**—Prior to 1906 there are no records of the number and value of boats, number of men employed, and take and value of fish. In the year named 558 men and 479 boats were engaged, the value of boats and equipment being £15,377. In 1907, 633 persons and 512 boats were engaged, and the value of boats, equipment, etc., was £21,570. In 1906 the take of fish was 14,569 cwt., valued at £16,770, and 2229 cwt. of lobsters, valued at £1578; in 1907, 20,734 cwt. of fish were taken, and 230 cwt. of lobsters, the values being £25,121 and £369 respectively. The Act imposing licenses was passed in 1904. In 1905, 600 fishermen's licenses were issued, 686 in 1906, and 840 in 1907. The revenue from general fisheries was £552 in 1905, made up of £551 from licenses and £1 fine; £330 in 1906, £267 being from licenses and £63 fines and forfeitures; and £286 in 1907, all from licenses. There are two fish-preserving establishments in the Northern Territory.

From oyster fisheries the revenue in the years 1901, 1902, 1903, and 1904 was only £6 altogether, derived from leases. In 1905 it was £19, all from licenses; in 1906 £17, and in 1907 £21, from the same source. Revenue amounting to £34 was also collected from licenses for Northern Territory in 1907. The figures for edible oyster fisheries, as completely as they can be furnished, are:—

EDIBLE OYSTER FISHERIES, SOUTH AUSTRALIA, 1901 to 1907.

| Year. | Number of Boats Engaged. | Value of Boats and Equipment. | Number of Men Employed. | Number of Leases Granted. | Length of Foreshore leased. |
|-------------|--------------------------|-------------------------------|-------------------------|---------------------------|-----------------------------|
| 1901 | ... | £ ... | ... | 1 | 100 feet |
| 1902 | ... | ... | ... | 1 | 100 " |
| 1903 | ... | ... | ... | 1 | 100 " |
| 1904 | 5 | 550 | 6 | 1 | 100 " |
| 1905 | 7 | 720 | 8 | 1 | 100 " |
| 1906 | 6 | 620 | 8 | 1 | 100 " |
| 1907 | 4 | 730 | 6 | 2 | 15 miles |

The oysters taken in 1907 were 416 bags, valued at £728.

FISHING INDUSTRY, NORTHERN TERRITORY, 1901 to 1907.

| Year. | No. of Pearling Boats Engaged. | Value of Pearls Taken. | Pearl-shell. | | Tortoise-shell. | | Dried Fish. | | Bêche-de-mer. | |
|-------|--------------------------------|------------------------|--------------|----------|-----------------|--------|-------------|--------|---------------|---------|
| | | | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| 1901 | 51 | £ 2,000 | Tons. 141 | £ 17,168 | lbs. 80 | £ 50 | lbs. 28,336 | £ 342 | Tons. 64 | £ 2,628 |
| 1902 | 58 | 956 | 138 | 20,497 | ... | ... | 32,144 | 422 | 121 | 6,110 |
| 1903 | 56 | 1,183 | 126 | 28,391 | ... | ... | 40,096 | 581 | 105 | 3,870 |
| 1904 | 56 | 1,000 | 133 | 18,526 | ... | ... | 29,680 | 428 | 44 | 1,865 |
| 1905 | 52 | ... | 115 | 14,352 | 130 | 50 | 56,672 | 1,046 | 62 | 2,929 |
| 1906 | 24 | 175 | 57 | 7,835 | ... | ... | 43,232 | 858 | 94 | 6,056 |
| 1907 | 31 | 200 | 64 | 8,805 | 342 | 115 | 38,976 | 822 | 20 | 898 |

Not more than half the fleet of boats were engaged in pearling operations during the year owing to the low price of shell, to shelling grounds being limited, and to scarcity of suitable labour. Some new grounds were discovered during the latter end of 1907, which will increase the number of boats engaged, and augment the output. The whole of the trepang industry is in the hands of Europeans. The closing of the coast against the Macassar proas must necessarily cause a shrinkage, but it is expected that in the course of a year or two, this will prove a great boon to local boats, inasmuch as it will give the fishing grounds time to recoup.

6. **Western Australia.**—In Western Australia the fishing industry has attained considerable importance, as will be seen from the tabular statements below:—

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTERS AND PEARL-SHELL)
WESTERN AUSTRALIA, 1901 to 1907.

| Year. | Number of Boats Engaged. | Value of Boats and Equipment. | Number of Men Employed. | Total Take of | | Value of Take. | |
|-------|--------------------------|-------------------------------|-------------------------|---------------|-----------|----------------|-----------|
| | | | | Fish. | Lobsters. | Fish. | Lobsters. |
| | | £ | | Tons. | Doz. | £ | £ |
| 1901 | 218 | 8,000 | 400 | 1,300 | 6,610 | 39,000 | 1,983 |
| 1902 | 205 | 8,400 | 453 | 1,500 | 6,900 | 45,000 | 2,070 |
| 1903 | 250 | 10,400 | 590 | 1,500 | 6,990 | 45,000 | 2,097 |
| 1904 | 251 | 11,000 | 605 | 1,700 | 7,500 | 46,000 | 2,250 |
| 1905 | 249 | 11,300 | 545 | 1,351 | 7,000 | 40,530 | 2,000 |
| 1906 | 237 | 12,000 | 504 | 1,316 | 7,000 | 39,480 | 2,100 |
| 1907 | 235 | 16,500 | 504 | 1,500 | 9,707 | 50,000 | 2,912 |

FISHERMEN'S AND FISHING BOAT LICENSES, WESTERN AUSTRALIA,
1901 TO 1907.

| Licenses. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------|-------|-------|-------|-------|-------|-------|-------|
| Fishermen's | 400 | 453 | 590 | 605 | 545 | 504 | 504 |
| Fishing boat | 218 | 205 | 250 | 251 | 249 | 237 | 235 |

REVENUE FROM FISHERIES, WESTERN AUSTRALIA, 1901 to 1907.

| Year. | From Licenses. | From Leases. | Fines and Forfeitures. | Total |
|-------|----------------|--------------|------------------------|-------|
| | £ | £ | £ | £ |
| 1901 | 870 | 187 | 13 | 1,070 |
| 1902 | 920 | 200 | 20 | 1,140 |
| 1903 | 943 | 231 | 25 | 1,199 |
| 1904 | 951 | 443 | 42 | 1,436 |
| 1905 | 927 | 195 | 24 | 1,146 |
| 1906 | 1,000 | 375 | 250* | 1,625 |
| 1907 | 326 | 361 | 100 | 787 |

* In 1906, 3000 yards of net were forfeited.

PEARL AND PEARL-SHELL FISHERIES, WESTERN AUSTRALIA, 1901 to 1907.

| Year. | Vessels. | | LABOUR. | | | | | | | | | | Quantity of Pearl-shell. | Value of Pearls. | Value of Pearl-shell. | Value of Beche-de-mer. |
|-------|----------|----------|---------|-------------|----------|-----------|--------|----------|---------|----------------|---------------|-------|--------------------------|------------------|-----------------------|------------------------|
| | Number. | Tonnage. | White. | Aboriginal. | Asiatic. | | | | | | Total Labour. | | | | | |
| | | | | | Chinese. | Japanese. | Malay. | Manilla. | Others. | Total Asiatic. | | | | | | |
| 1901 | 232 | 3,330 | 132 | 65 | 11 | 280 | 699 | 307 | 61 | 1,358 | 1,555 | 832 | 30,637 | 95,568 | 120 | |
| 1902 | 267 | 3,753 | 154 | 75 | 12 | 362 | 787 | 294 | 72 | 1,527 | 1,756 | 970 | 45,080 | 142,615 | 162 | |
| *1903 | 337 | 5,083 | 193 | 59 | 15 | 665 | 1,031 | 283 | 71 | 2,065 | 2,317 | 996 | 42,648 | 128,589 | nil. | |
| *1904 | 403 | 5,737 | 217 | 78 | 12 | 812 | 1,235 | 286 | 60 | 2,405 | 2,700 | 1,340 | 41,140 | 129,099 | nil. | |
| *1905 | 323 | 4,441 | 167 | 69 | 8 | 616 | 1,082 | 232 | 54 | 2,192 | 2,228 | 1,155 | 41,685 | 119,786 | 1,645 | |
| 1906 | 368 | 5,118 | 181 | 95 | 16 | 815 | 1,021 | 211 | 116 | 2,179 | 2,455 | 1,246 | 59,349 | 132,065 | 547 | |
| 1907 | 383 | 4,354 | 245 | 50 | 100 | 1000 | 700 | 400 | 5 | 2,205 | 2,500 | 1,393 | 64,690 | 169,815 | nil. | |

* Incomplete.

7. **Tasmania.**—There are no licenses charged against fishermen or fishing vessels, and consequently no records are kept regarding their numbers or value of equipment. The estimated number of boats engaged in the industry is eighty-one, average crew two men, average value per boat £70. The license revenue is almost entirely obtained for rights to angle for salmon and trout with rod and line. Oyster fisheries are not worked except in a most primitive way. The estimate of fish marketed at Hobart in 1907 was £8853.

REVENUE FROM FISHERIES, TASMANIA, 1901 to 1907.

| Year. | | From Licenses. | Fines and Forfeitures. | Other Sources. | Total. |
|-------|-----|----------------|---------------------------|----------------|--------|
| | | £ | £ | £ | £ |
| 1901 | ... | 569 | 8 | 75 | 652 |
| 1902 | ... | 598 | 4 | 18 | 620 |
| 1903 | ... | 715 | 14 | 4 | 733 |
| 1904 | ... | 665 | 21 | ... | 686 |
| 1905 | ... | 607 | 7 | ... | 614 |
| 1906 | ... | 595 | 1 | ... | 596 |
| 1907 | ... | 595 | 1 | ... | 596 |

§ 3. Oversea Trade.

That the development of the fishing industry in Australia leaves much to be desired is evident from the fact that the import of preserved fish into the Commonwealth is large, the export inconsiderable. The figures for the trade are as follows:—

IMPORTS OF FISH, COMMONWEALTH, 1901 to 1907.

| Classification. | 1901. ¹ | 1902. ¹ | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|--------------------|--------------------|--------------|---------|---------|---------|---------|
| Fresh (oysters) cwt. ... | ... | ... | 7,269 | 9,468 | 8,195 | 9,225 | 12,288 |
| " " " £ | 3,185 | 4,264 | 3,526 | 4,309 | 3,564 | 4,075 | 5,607 |
| Fresh, smok'd, or preserv. by cold process cwt. ... | ... | ... | 8,391 | 8,403 | 11,386 | 9,591 | 14,060 |
| " " " £ | 6,639 | 6,282 | 14,623 | 12,060 | 16,507 | 14,632 | 28,524 |
| Potted " " cwt. ... | ... | ... | ... | ... | ... | ... | ... |
| " " " £ | 3,434 | 3,765 | 12,898 | 9,747 | 8,508 | 11,934 | 13,364 |
| Preserved in tins } " " " } " " " } | cwt. 135,300 | 132,526 | cwt. 118,602 | 106,007 | 120,213 | 135,872 | 127,555 |
| Dried or salted... } " " " } | £320,725 | 293,463 | £272,572 | 249,054 | 288,371 | 310,656 | 316,320 |
| " " " } | | | cwt. 20,913 | 15,736 | 16,992 | 17,336 | 14,843 |
| " " " } | | | £30,905 | 24,662 | 27,898 | 29,729 | 27,252 |
| Total ... cwt. ² | 135,300 | 132,526 | 155,175 | 139,614 | 156,786 | 172,024 | 168,746 |
| " " " £ | 333,983 | 307,774 | 334,524 | 299,832 | 344,848 | 371,026 | 391,067 |

1. Quantities for 1901 and 1902 are not available for the first three items. 2. Exclusive of first three items for 1901 and 1902, and of potted fish for 1903 to 1907.

The countries of origin of fish, preserved in tins, and dried and salted, are shown in the following table:—

IMPORTS OF PRESERVED FISH, COMMONWEALTH, 1901 to 1907.

| Country whence Imported. | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------------|------|---------|---------|---------|---------|---------|---------|---------|
| United Kingdom | cwt. | 67,203 | 74,619 | 86,174 | 70,888 | 54,852 | 69,453 | 73,483 |
| " | £ | 158,008 | 161,741 | 173,836 | 138,534 | 105,155 | 131,023 | 151,976 |
| Canada | cwt. | 6,709 | 4,791 | 5,723 | 8,564 | 20,665 | 15,861 | 13,308 |
| " | £ | 15,259 | 10,746 | 12,470 | 23,148 | 54,132 | 39,455 | 36,366 |
| Hongkong | cwt. | 1,764 | 2,034 | 1,743 | 4,261 | 3,833 | 3,244 | 2,695 |
| " | £ | 5,497 | 6,213 | 5,428 | 11,235 | 10,614 | 8,438 | 8,444 |
| New Guinea | cwt. | 1,336 | 2,821 | 2,273 | 942 | ... | 1,004 | 584 |
| " | £ | 4,772 | 4,659 | 3,988 | 2,311 | ... | 2,000 | 1,431 |
| New Zealand | cwt. | 1,250 | 1,282 | 1,295 | 942 | 1,439 | 1,239 | 2,325 |
| " | £ | 3,496 | 4,821 | 4,082 | 4,643 | 7,439 | 4,517 | 7,553 |
| Other British Poss. | cwt. | 888 | 359 | 229 | 257 | 290 | 209 | 832 |
| " | £ | 2,568 | 1,126 | 702 | 701 | 639 | 618 | 2,186 |
| Belgium | cwt. | 258 | 265 | 209 | 495 | 576 | 1,247 | 916 |
| " | £ | 1,066 | 1,007 | 954 | 1,434 | 2,130 | 3,693 | 3,556 |
| China | cwt. | 900 | 1,123 | 1,524 | 1,111 | 641 | 396 | 317 |
| " | £ | 3,747 | 2,932 | 2,995 | 2,772 | 1,196 | 1,365 | 1,073 |
| France | cwt. | 772 | 1,541 | 4,901 | 312 | 940 | 542 | 202 |
| " | £ | 4,212 | 5,394 | 19,707 | 1,538 | 3,632 | 2,014 | 895 |
| Germany | cwt. | 1,130 | 1,113 | 2,652 | 1,748 | 2,333 | 3,945 | 3,778 |
| " | £ | 4,564 | 3,919 | 6,174 | 6,052 | 7,527 | 13,234 | 13,609 |
| Japan | cwt. | 185 | 114 | 485 | 881 | 110 | 248 | 245 |
| " | £ | 728 | 261 | 1,074 | 2,282 | 265 | 574 | 660 |
| Netherlands | cwt. | ... | ... | 25 | 36 | 166 | 617 | 390 |
| " | £ | ... | ... | 31 | 65 | 727 | 2,492 | 1,363 |
| Norway | cwt. | 364 | 1,259 | 1,011 | 1,034 | 1,571 | 2,267 | 1,338 |
| " | £ | 1,507 | 2,379 | 3,397 | 4,130 | 6,635 | 9,941 | 5,307 |
| Portugal | cwt. | 318 | 208 | 1,933 | 1,172 | 1,701 | 5,972 | 3,876 |
| " | £ | 1,520 | 632 | 6,167 | 3,582 | 5,774 | 15,896 | 11,892 |
| United States | cwt. | 51,859 | 39,625 | 28,851 | 28,999 | 47,754 | 46,559 | 37,667 |
| " | £ | 112,551 | 85,607 | 60,819 | 70,987 | 109,485 | 104,013 | 95,845 |
| Other For. C'ntries | cwt. | 353 | 1,372 | 482 | 101 | 334 | 405 | 454 |
| " | £ | 1,230 | 2,026 | 1,653 | 302 | 919 | 1,112 | 1,458 |
| Total Quantity | cwt. | 135,289 | 132,526 | 139,515 | 121,743 | 137,205 | 153,208 | 142,410 |
| Total Value | £ | 320,725 | 293,463 | 303,477 | 273,716 | 316,269 | 340,385 | 343,614 |

EXPORTS OF FISH, 1901 to 1907.

| Article. | | 1901. ¹ | 1902. ¹ | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|------|--------------------|--------------------|--------|--------|--------|--------|--------|
| Fish, smoked, or preserved by cold process | cwt. | ... | ... | 70 | 35 | 179 | 264 | 160 |
| " | £ | 376 | 957 | 117 | 48 | 287 | 468 | 296 |
| Preserved in tins, dried salted, etc. | cwt. | ... | ... | 4,131 | 2,713 | 6,234 | 6,107 | 8,651 |
| " | £ | 13,216 | 19,172 | 15,413 | 12,485 | 22,499 | 24,559 | 38,977 |
| Total | cwt. | ... | ... | 4,201 | 2,748 | 6,413 | 6,371 | 8,811 |
| " | £ | 13,592 | 20,129 | 15,530 | 12,533 | 22,786 | 25,027 | 39,273 |

1. Quantities for 1901 and 1902 are not available.

A considerable development has taken place lately in the fish preserving industry. Two factories were opened in the Northern Territory of South Australia in 1907, and a large output resulted from the operations of those previously established. There is, however, an excess of imports over exports amounting to more than £350,000.

EXPORTS OF PEARL-SHELL AND TORTOISE-SHELL, 1901 to 1907.

| Article. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|
| Pearl-shell ... cwt. | 33,212 | 40,986 | 41,163 | 42,171 | 47,648 | 35,632 | 41,244 |
| „ ... £ | 202,402 | 288,593 | 368,569 | 244,679 | 252,895 | 212,242 | 252,063 |
| Tortoise-shell ... lbs. | * | * | 3,326 | 3,616 | 4,139 | 4,835 | 3,566 |
| „ ... £ | 2,237 | 1,778 | 1,576 | 2,167 | 2,812 | 2,507 | 2,192 |

* Quantity not available.

§ 4. Development of the Industry.

1. **Transport and Marketing.**—The large importations of fish into the Commonwealth indicate the scope for the development of the local fishing industry. Where quick transport by rail or steamer is not provided, the catch of fish in tropical or subtropical waters can only be locally consumed, since speedy marketing is essential. Adequate refrigerating apparatus on railway waggons and coasting steamers, and quick transport to centres of population might, however, alter the economic condition in a satisfactory direction. At the present time the natural wealth of Australia in fish is exploited only to a very slight extent.

2. **Experiment and Culture.**—(i.) *The Existing Fisheries.* In many respects the fishing industry is capable of modification and development. A good deal has been effected by the State Governments in the way of experiment and culture, but much yet remains to be done before the industry is at all commensurate with the industrial development and consuming capacities of the Commonwealth. The existing fishing is inshore, the supplies being obtained from the vicinity of river estuaries and lakes. Deep-sea fishing, as established and carried on in older countries, is, so far, practically non-existent in Australia.

(ii.) *New South Wales.* In New South Wales, trawling experiments have shewn that considerable areas along the coast are suitable, but practical work on commercial lines is yet undeveloped. The stocking of rivers and lakes was begun by private enterprise, since which Government aid has been granted, and eminent success has been attained, among other fish, with the Californian rainbow trout. Young fry are distributed annually from the trout hatchery at Prospect, and the natural reproduction of the fish in the streams that issue from the mountain ranges is regarded as a valuable asset. In 1902 attempts were successfully made to transport European fishes alive to Australia. A marine hatchery and biological station has been completed at Gunnamatta Bay, Port Hacking, by means of which it is proposed to gradually acclimatise suitable fishes. The natural oyster beds are also being extended.

(iii.) *Victoria.* In Victoria very little has been done in the way of hatcheries and culture, and that little has been mainly the work of private individuals and angling clubs. The Government has, however, incurred the expenditure of a sum of money on hatcheries with good results. Fry and yearlings are distributed, and one consignment of the latter was despatched from the Geelong hatchery and liberated without loss at Mundaring, Western Australia. Trawling experiments were conducted some years ago, but the results were inconclusive.

(iv.) *Queensland.* In Queensland artificial hatching was undertaken by the Acclimatisation Society of Southern Queensland. Here, also, the American rainbow trout has succeeded, fry being distributed from the hatchery at Spring Creek, Killarney. The lung-fish, formerly known only in two streams, has been successfully transplanted

to several other streams. Oyster beds are also being developed in several parts, and improved methods of culture have largely increased the output. The trawling experiments of 1901 and 1902 point to the improbability of a great trawling industry being established. The trawling area off Queensland would be a mere strip, because of the presence of the coral region immediately to the north and the fact that the sea deepens very rapidly to the east.

(v.) *South Australia.* In South Australia the indiscriminate exploitation of the Port Lincoln and adjacent oyster beds led to the necessity for their being closed from time to time to prevent the district from being altogether worked out. The future outlook has in this way been improved as regards oyster culture. The South Australian fishing grounds have been stated to be most desirable areas, only wanting men and boats to ensure a large take. Trawling by private individuals has led to satisfactory results.

(vi.) *Western Australia.* In Western Australia the coastal waters have been examined to ascertain whether suitable trawling grounds exist. The Acclimatisation Committee has successfully hatched and liberated trout, the Mundaring weir being stocked with the Loch Leven variety. Perch were stocked in the lakes near Wanneroo Caves.

(vii.) *Tasmania.* Considerable distributions of ova and fry are annually made from the River Plenty in Tasmania. Besides the supplies to Tasmanian waters, the northern States are also recipients of ova.

(viii.) *Commonwealth Investigations.* The Federal Council had power to legislate with regard to fisheries in Australasian waters beyond territorial limits. In the second session (opened 16th January, 1888), an Act was passed to regulate pearl-shell and bêche-de-mer fisheries in Australasian waters adjacent to Queensland, and in the third session, opened shortly afterwards, the Act was made applicable to Western Australia. It was not till the present year, however, that the Federal Government commenced operations in regard to fisheries. A fisheries investigation vessel has been built and launched at Sydney. Its general object is to find out what fish occur around Australian coasts, and how to catch them. Trawling, whereby the fish are disturbed by a large bag-shaped net which is drawn along the sea-bottom, and caught and retained in a trap arrangement at the tail-end of the net, will form one of the branches of experiment. Work will be carried on in all known and recognised methods of capture, including long-line and drift-net fishing, etc.; and survey will be carried out, so as to get information as to the nature of the bottom. The New Zealand Government is experimenting with a view to the introduction of Northern Hemisphere fish into the waters surrounding the shores of the Dominion.

(ix.) *Inquiries by Scottish Fishermen.* In the latter half of 1908 a delegation of Scottish fishermen visited Australia to make inquiries regarding the possibility of the remunerative working of the Australian fisheries. They appeared to be impressed with the excellence of the fishing grounds, and will probably report favourably on the proposal to settle colonies of fishermen, with their wives and families, on the coast, and establish industries for fish catching, smoking, curing, etc., and for manufacturing fertilisers, fish oils, and fish cakes.

§ 5. Fish Preserving.

Bounties have been provided by the Federal Government for fish preserving. These, together with the increased yield that may be expected as a result from the fisheries investigations now being conducted, will probably lead to a considerable output and consumption of locally preserved fish. The abundance of fish in Australian waters offers excellent opportunities for the institution of preserving establishments, particularly in those coastal districts which enjoy a temperate climate. Up to the

present but little development has taken place. The establishments for fish preserving at the present time are very few:—

NUMBER OF FISH-PRESERVING ESTABLISHMENTS, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------|-------|-------|-------|-------|-------|-------|-------|
| New South Wales | 3 | 3 | 2 | 2 | 2 | 2 | 1 |
| Victoria ... | ... | ... | ... | ... | ... | ... | ... |
| Queensland ... | 3 | 3 | 4 | 4 | 4 | 4 | 4 |
| South Australia... | ... | ... | ... | ... | ... | ... | 2* |
| Western Australia | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| Tasmania ... | ... | ... | ... | 1 | 1 | ... | ... |
| Commonwealth | 8 | 8 | 8 | 10 | 10 | 9 | 10 |

* These are in the Northern Territory.

SECTION XII.

MINES AND MINING.

§ 1. Introduction.

1. **Place of Mining in Australian Development.**—Although Australia is pre-eminently a pastoral and agricultural country, the value of the production from its flocks and herds and from its farming industry far exceeding the return from mining, yet its mines and its mining developments are of great and increasing importance. It may also be said that it was the discovery of its immense stores of mineral wealth that first attracted population to Australia, and thus laid the foundations of its nationhood. Though coal was the first discovered mineral of recent times, it was the discovery of gold, overshadowing in popular estimation the former, which brought about a large influx of population and the formation of various settlements.

That Australia was a gold-producing country was known probably 400 years ago. From the Dauphin chart (1530-1536) preserved in the British Museum, it appears that the north-west coast was called by the Portuguese and Spaniards *Costa d'Ouro*, gold-coast. But the knowledge of Australia as a gold-producing territory was not revived until as late as 1823, when James McBrien, making a survey of the Fish River, between Rydal and Bathurst, in New South Wales, wrote in his field notes—"At this place I found numerous particles of gold in the sand."

Reference to subsequent discoveries will be reserved till later.

2. **Extent of Mineral Wealth.**—The large production of gold, silver, copper, and tin, the extent of the coal deposits, the presence of large quantities of iron ore, and the great variety of minerals found in appreciable quantities, suggest that the future history of mining will, in all probability, be more remarkable even than that of the past. For the extent of the total mineral wealth of Australia cannot yet be regarded as well-ascertained, since the mineral exploration of the country is, after all, still in its infancy. The presence of considerable deposits of valuable metals has long been known. Thus, silver was discovered by Count Strzelecki as early as 1839, and was worked as early as 1864; copper mining dates back to 1844; lead to about 1848, and iron to about 1850. Cobalt, nickel, manganese, chromium, tungsten, molybdenum, mercury, antimony, bismuth, zinc, etc., have all been found, some in fairly large quantities.

Among the more valuable non-metalliferous substances may be mentioned coke, kerosene shale, graphite, alunite, asbestos, diatomaceous earth, clays, ochres, etc.; in building stones, sandstones, syenites, granites, basalts, augite-andesite, porphyries, serpentines, slates, limestones, and marbles; in precious stones, diamonds, emeralds, rubies, sapphires, amethysts, precious opal, turquoise, topazes, garnets, chrysolites, cairngorm, agates, etc. In general it may be said that the variety of Australian mineral wealth is very great.

It will be convenient in the succeeding pages to treat first of all gold and the various metals, then to deal with non-metallic minerals and precious stones, and finally to furnish some account of the total mineral wealth of Australia, and of the extent of employment in mining generally.

METALS (A).

§ 2. Gold.

1. **Discovery of Gold in Various States.**—The discovery of gold in payable quantities was an epoch-making event in Australian history, for as one writer aptly phrases it, this event “precipitated Australia into nationhood.” A reference to the population figures prior and subsequent to the year 1851 amply demonstrates this fact. Thus on 31st December, 1841, the population of the Commonwealth was only 220,968¹; at the end of 1851 it was still under half a million, viz., 437,665¹, while by the end of 1861 the total had reached 1,168,149¹ persons, that is, the population had quintupled itself in twenty years. A short account of the chief discoveries in each State and in New Zealand is appended:—

(i.) *New South Wales.* The first authentic discovery of the precious metal in this State was made by “Assistant-Surveyor” James McBrien, on the 16th February, 1823. Mr. McBrien reported that he had “found numerous particles of gold amongst the sand in the hills convenient to the Fish River,” the locality to which he alludes in his field-book being not far from the scene of Hargraves’ memorable discovery twenty-eight years later. The famous Polish explorer, Count Strzelecki, reported the existence of gold, in the form of auriferous pyrites, in the Vale of Clwydd, near Lithgow, in 1839, but Governor Gipps, to whom he had imparted his discovery, requested him to keep the matter secret, being fearful of the effect that such news might have on the discipline of the infant settlement. The Rev. W. B. Clarke, who, in 1841, discovered gold on the Cox River, and on the Wollondilly in 1842, expressed the belief that a large portion of the newly occupied country would prove auriferous. This opinion was shared by several eminent authorities in England, including Sir Roderick Murchison, and the validity of it was in the first instance amply demonstrated by Hargraves’ world-renowned discovery in 1851. Hargraves, who had gained his experience on the goldfields of California, found payable deposits of alluvial gold at Lewis Ponds and Summer Hill Creek, and on the Macquarie River. The news of these discoveries, amplified and distorted by all sorts of rumours, soon caused an enormous influx of people into Australia. The dates of other important finds were as follows:—Rich alluvial leads at Forbes in 1862, Rocky River, near Uralla, 1856, in beach sands at northern rivers, 1870, Gulgong 1871, Mount Drysdale 1892, Wyalong 1893.

(ii.) *Victoria.* The discovery of gold in the mother colony was quickly followed by discoveries on a larger and more important scale in the neighbouring colony of Victoria. According to the report of the Select Committee of the Legislative Council appointed to inquire into the claims of candidates for the rewards offered, the discoveries took place in the following sequence. The Hon. W. Campbell discovered the precious metal in March, 1850, at Clunes, but concealed the fact temporarily through fear lest the announcement should prove injurious to the squatter on whose run the discovery was made, and the gold-discovery committee was not notified until the 8th July, 1851. On the 5th July, 1851, notification was made of the discovery of gold in the Yarra Ranges by Mr. L. J. Nichel. Mr. James Esmond discovered gold in quartz at the Pyrenees Mountains, the notification being made on the 5th July, and soon after the numerous fields near Mount Alexander were opened up. The chief centres of the gold-mining industry at the present time are in the Bendigo, Ballarat, Beechworth, Castlemaine, Maryborough, Gippsland, Ararat, and Stawell districts. In November, 1906, a remarkable discovery of gold was made near Tarnagulla, where a miner who had prospected the district for years obtained seven ounces of gold from a shaft nineteen feet deep, and some fairly large nuggets being found soon after, the so-called Poseidon rush set in. Several of the nuggets were unearthed within a few inches of the surface. The largest weighed 953 ounces and two

1. Figures for these years were given in “A Statistical Account of Australia and New Zealand for 1903-4” as 206,095; 403,889; 1,153,973 respectively, but those refer presumably to the enumerations in the earlier part of the years mentioned.

others weighed 703 and 675 ounces respectively. The shallow ground was soon worked out, but operations have given satisfactory results in the deeper alluvial.

(iii.) *Queensland.* The news of the discoveries in the southern divisions of the continent fired the minds of the few remaining settlers in Queensland, which at this time was still a portion of New South Wales, with the hope that an El Dorado would be discovered in the north. It was not, however, until the year 1858 that payable gold was struck at Canoona by a party under the leadership of Mr. W. C. Capel. Almost immediately a rush set in from all parts of Australia and also from New Zealand—a rush that was attended with disastrous consequences to many that participated in it, for the alluvial deposits were soon worked out, and many of those who reached the diggings suffered great privations through lack of the ordinary necessities of life. In 1863 gold was found at Canal Creek and Gladstone; Crocodile Creek field was discovered in 1865, Ridglands in 1867, followed shortly afterwards by Rosewood and Gympie; Townsville was opened up in the following year, and the Gilbert River fields in 1869. Charters Towers dates from 1872, the Palmer goldfield from 1873, the Hodgkinson from 1875, while the celebrated Mount Morgan was first worked in 1882. Croydon in 1886, Coen in 1900, and Alice River in 1904.

(iv.) *South Australia.* In South Australia, what is believed to have been the first authentic discovery of gold in the Commonwealth from which actual mining operations resulted was made in January, 1846, at a spot about 10 miles east from the City of Adelaide. Although finds were subsequently made at various places, over large areas, the gold-mining industry has never made very great progress in the State, and South Australia contributes the smallest share of the total gold production of the Commonwealth. Included amongst districts where gold has been found are the southern portion of the main range through Echunga, Talunga, Barossa, and Uooloo to Wonna, about 140 miles north from the city; thence north-east, Mount Grainger, Waukarina, Manna-hill, Wadnaminga, and Olary districts. A good find of alluvial gold was made in 1886 at Teetulpa, about 200 miles north-east by north from Adelaide, and £300,000 worth of the precious metal was obtained from an area of about a square mile. The ground was, however, soon worked out, but there is an immense area of similar country in the surrounding district which has not been systematically prospected. A fair amount of gold has been won from reefs at Tarcoola, 300 miles north-west from Port Augusta, while discoveries have been reported from the Peake and Denison Ranges and Yudnamuntuna, in the northern portion of the Main Range. Arltunga, in the MacDonnell Range, within the boundaries of the Northern Territory, was the scene of a reported rich find in 1902, but the yield has since been small. Up to the 31st December, 1907, the ore treated at the Government battery yielded £42,000 worth of gold. There are numerous deposits of the precious metal at various other localities in the Northern Territory, the chief yield in 1907 being 1045 oz. obtained at the Driffield. A large number of Chinese are engaged in mining in the Territory. In 1907, out of a total of 1166 miners employed, the Chinese numbered 958.

(v.) *Western Australia.* The discovery of gold in Western Australia took place at a much later date than in the eastern States; nevertheless the present production far exceeds in value that of any other portion of the continent. It appears that the precious metal was first detected in 1848, in specimens sent for assay to Adelaide from the Murchison copper and lead deposits. In 1852-53 rich specimens of gold-bearing stone were found by shepherds and others in the eastern districts, but they were unable afterwards to locate the places where the stone was discovered. The late Hon. A. C. Gregory found traces of gold in quartz at the Bowes River in 1854. In 1861 Mr. Panton found gold near Northam, while shortly afterwards a shepherd brought in rich specimens of auriferous quartz which he had found to the eastward of Northam, but he failed to locate the spot again. Various small finds were made up to 1882, when Mr. A. McRae, riding from Cossack to Roeburne, picked up a nugget weighing fourteen ounces. In 1885 Messrs. Hall, Slattery, and others found gold on the Elvire, Margaret, and Ord Rivers. The Kimberley goldfield was opened in May, 1886. Next year the precious metal was

discovered at Yilgarn, and the field was proclaimed in 1888, in which year rich finds were also made at Mallina and Pilbara Creek, the Pilbara field being proclaimed in October. The Ashburton field was proclaimed in 1890, and the Murchison in 1891. From the cap of a reef on the Yalgoo field, proclaimed in 1890, gold to the value of £15,000 was obtained in a very short time by the simple process known as "dollying." In 1892 Bayley and Ford discovered the Coolgardie field, obtaining over 500 ozs. of gold in one afternoon by the aid of a tomahawk. Alluvial was discovered by Frost and party at Goongarrie (the Ninety-mile) in May, 1893. Kalgoorlie (Hannan's) was discovered in June of the same year by Messrs. Flannigan and Hannan, Bardoc in August by Messrs. Cashman and Lee, Siberia by Frost and Bonner in October. There were numerous rich discoveries in 1894, such as at "Mount Jackson," "the Pinnacles," "Billy Billy," and at the celebrated Kanowna diggings. Rich finds were also made at Bulong, Londonderry, and the Wealth of Nations, Mr. J. G. Dunn, the discoverer of the latter, obtaining £20,000 of gold in a few days. The "Norseman" was discovered in July by Mr. L. Sinclair, as also the "Lady Shenton" at Menzies. The "Niagara" was discovered in January, 1895, also the rich field known as the "Hands Across the Sea," at Kunanalling. "Blackboy Hill" field was proclaimed in 1897, "Donnybrook" in 1898, while there were further rich finds in 1899.

(vi.) *Tasmania*. The first discovery of the precious metal in the island State is reported to have been made by a Mr. Riva, of Launceston, who is stated to have traced gold in slate rocks in the vicinity of Nine Mile Springs in 1849. A valuable discovery was made in 1852 at the Nook, near Fingal, and further small finds were reported during the same year from Tower Hill Creek and the vicinity of Nine Mile Springs (Lefroy). During 1859 the first quartz mine started operations at Fingal. In the same year James Smith found gold at the River Forth, and Mr. Peter Leete at the Calder, a tributary of the Inglis. Reef gold was discovered in 1869 at Nine Mile Springs (Lefroy) by Mr. S. Richards. The first recorded returns from the Mangana goldfields date from 1870; Waterhouse, 1871; Hellyer, Denison, and Brandy Creek, 1872; Lisle, 1878; Gladstone and Cam, 1881; Minnow and River Forth, 1882; Branxholme and Mount Victoria, 1883; and Mount Lyell, 1886.

(vii.) *New Zealand*. Gold was discovered in New Zealand by Mr. C. Ring, of Coromandel, who obtained a small quantity in the creek which now bears his name. Further discoveries were, however, prevented by the hostility of the natives, and it was not until 1862 that the district was proclaimed a goldfield. A small find was made in the Middle Island during 1853 at a place called "The Fortifications," now known as the West Taieri goldfield. The first payable field was at Collingwood, in the Nelson district, opened in 1857, in which year the production was about 10,500 ozs. A find of the precious metal was reported from the Lindis River in 1861, but the yield from the locality was small. In June of the same year a rich discovery was made by a former Victorian digger named Gabriel, at the place named Gabriel's Gully, although in 1858 Mr. Edward Peters had found payable quantities on the Tokamaro River, at the locality afterwards known as the Woolshed diggings. Early in 1862 further auriferous deposits were found at Waipori and the Woolshed, while in August of that year Messrs. Hartley and Reilly arrived at Dunedin with over 1000 ozs. of gold obtained from beach sands on the Clutha River, and this discovery was succeeded by other alluvial finds on the tributaries of that stream. The Teviot, Benger, and Upper Manuherikia fields were opened up in March, 1863. In May a rich find was made at Hogburn, leading to further discoveries at Hill's Creek, Dunstan's Creek, Kyeburn, Hyde, Hamilton's, Macrae's, and Mount Buister. At the last-mentioned place, which is 4000 feet above the level of the sea, the deposits can be worked during only about half the year. The next discoveries were made at Cambrian's, Tinker's, Matakanaui, Round Hill, Orepuki, and in recent times at Mount Criffel. Rich finds were made at the end of 1863 at Wakamarina, in the Marlborough district. In 1864 deposits were found in the bed of the Greenstone River by Maoris, and at the present time the mining population in the locality is over 80,000. The rush to the West Coast was soon followed by discoveries of auriferous deposits at Waimeri, Kanieri, Blue Spur, and Ross, and these in turn were

followed by finds at Grey Valley, No Town, Red Jack's, Nobles, Orwell Creek, Antonio's, Maori Gully, Lyell, Charleston, Brighton, and Kumara. In the North Island, the out-crop at the Waihi in the Hauraki district was first noted in 1878.

2. **Production of Gold at Various Periods.**—In the table hereunder will be found the value of the gold raised each year in the several States and New Zealand from the dates when payable discoveries were first reported. Owing to defective information in the earlier years the figures fall considerably short of the actual totals, for during the first stages of mining development large quantities of gold were taken out of Australia by successful diggers, who preferred to keep the amount of their wealth secret. For South Australia the records in the earlier years are somewhat irregular, and the remark applies to some extent also to the returns for Western Australia and Tasmania.

VALUE OF GOLD RAISED IN AUSTRALIA AND NEW ZEALAND, 1851 to 1907.

| Year. | N.S.W. | Victoria. | Q'sland. | S.A. | W.A. | Tas. | C'wealth. | N.Z. | Aust'l'sia. |
|-------|--------------|---------------|--------------|-------------|--------------|-------------|---------------|--------------|---------------|
| | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| 1851 | 468,336 | 851,596 | ... | ... | ... | ... | 1,319,932 | ... | 1,319,932 |
| 1852 | 2,660,946 | 9,146,140 | ... | ... | ... | ... | 11,807,086 | ... | 11,807,086 |
| 1853 | 1,781,172 | 10,976,392 | ... | ... | ... | ... | 12,757,564 | ... | 12,757,564 |
| 1854 | 773,209 | 8,873,932 | ... | ... | ... | ... | 9,647,141 | ... | 9,647,141 |
| 1855 | 654,594 | 11,277,152 | ... | ... | ... | ... | 11,931,746 | ... | 11,931,746 |
| 1856 | 689,174 | 12,214,976 | ... | 8,800 | ... | ... | 12,912,950 | ... | 12,912,950 |
| 1857 | 674,477 | 11,320,852 | ... | 876 | ... | ... | 11,996,205 | 40,422 | 12,036,627 |
| 1858 | 1,104,175 | 10,384,924 | ... | 2,348 | ... | ... | 11,491,447 | 52,464 | 11,543,911 |
| 1859 | 1,259,127 | 9,394,812 | ... | 730 | ... | ... | 10,654,669 | 28,427 | 10,683,096 |
| 1860 | 1,465,373 | 8,896,276 | 11,631 | ... | ... | ... | 10,373,280 | 17,585 | 10,390,865 |
| 1861 | 1,806,171 | 8,140,692 | 3,137 | ... | ... | ... | 9,950,000 | 751,873 | 10,701,873 |
| 1862 | 2,467,780 | 6,920,804 | 499 | 12,442 | ... | ... | 9,401,525 | 1,591,389 | 10,992,914 |
| 1863 | 1,796,170 | 6,779,276 | 11,820 | ... | ... | ... | 8,587,266 | 2,431,723 | 11,018,989 |
| 1864 | 1,304,926 | 6,489,788 | 66,513 | ... | ... | ... | 7,861,227 | 1,856,837 | 9,718,064 |
| 1865 | 1,231,243 | 6,446,216 | 74,216 | ... | ... | ... | 7,751,675 | 2,226,474 | 9,978,149 |
| 1866 | 1,116,404 | 6,187,792 | 68,325 | ... | ... | ... | 7,372,521 | 2,844,517 | 10,217,038 |
| 1867 | 1,053,578 | 6,005,784 | 151,125 | ... | ... | 4,382 | 7,214,869 | 2,698,862 | 9,913,731 |
| 1868 | 994,665 | 6,739,672 | 473,956 | 2,936 | ... | 2,536 | 8,213,765 | 2,504,326 | 10,718,091 |
| 1869 | 974,149 | 6,179,024 | 417,681 | 15,593 | ... | 514 | 7,586,961 | 2,362,995 | 9,949,956 |
| 1870 | 931,016 | 5,217,216 | 390,925 | 24,217 | ... | 7,475 | 6,570,849 | 2,157,585 | 8,728,434 |
| 1871 | 1,250,485 | 5,475,768 | 492,635 | 6,000 | ... | 14,218 | 7,239,106 | 2,787,520 | 10,026,626 |
| 1872 | 1,644,177 | 5,325,508 | 527,365 | 6,363 | ... | 16,055 | 7,519,468 | 1,731,261 | 9,250,729 |
| 1873 | 1,396,375 | 4,681,588 | 572,996 | 293 | ... | 18,390 | 6,669,642 | 1,987,425 | 8,657,067 |
| 1874 | 1,041,614 | 4,390,572 | 1,082,899 | 4,175 | ... | 18,491 | 6,537,751 | 1,505,331 | 8,043,082 |
| 1875 | 877,694 | 4,273,668 | 1,196,583 | 7,034 | ... | 11,982 | 6,366,961 | 1,407,770 | 7,774,731 |
| 1876 | 613,190 | 3,855,040 | 1,140,282 | 9,888 | ... | 44,923 | 5,663,323 | 1,284,328 | 6,947,651 |
| 1877 | 471,448 | 3,238,612 | 1,043,780 | ... | ... | 23,289 | 4,777,129 | 1,496,080 | 6,273,209 |
| 1878 | 430,200 | 3,032,160 | 1,149,240 | 1,225 | ... | 100,000 | 4,712,825 | 1,240,079 | 5,952,904 |
| 1879 | 407,219 | 3,035,788 | 1,034,216 | 90 | ... | 230,895 | 4,708,208 | 1,148,108 | 5,856,316 |
| 1880 | 444,253 | 3,316,484 | 944,869 | ... | ... | 201,297 | 4,906,903 | 1,227,252 | 6,134,155 |
| 1881 | 573,582 | 3,333,512 | 957,570 | 112,825 | ... | 216,901 | 5,194,390 | 1,080,790 | 6,275,180 |
| 1882 | 526,522 | 3,458,440 | 785,868 | 85,354 | ... | 187,337 | 5,043,521 | 1,002,720 | 6,046,241 |
| 1883 | 458,530 | 3,121,012 | 736,810 | 87,729 | ... | 176,442 | 4,580,523 | 993,352 | 5,573,875 |
| 1884 | 396,059 | 3,114,472 | 1,062,471 | 93,404 | ... | 160,404 | 4,826,810 | 921,797 | 5,748,607 |
| 1885 | 378,665 | 2,940,872 | 1,062,514 | 88,709 | ... | 155,309 | 4,626,069 | 948,615 | 5,574,684 |
| 1886 | 366,294 | 2,660,784 | 1,187,189 | 95,674 | 1,148 | 117,250 | 4,428,339 | 903,569 | 5,331,908 |
| 1887 | 394,579 | 2,471,004 | 1,481,990 | 140,777 | 18,517 | 158,533 | 4,665,400 | 811,100 | 5,476,500 |
| 1888 | 317,241 | 2,500,104 | 1,690,477 | 69,007 | 13,273 | 147,154 | 4,737,256 | 801,066 | 5,538,322 |
| 1889 | 434,784 | 2,459,352 | 2,695,629 | 84,956 | 58,871 | 119,703 | 5,853,295 | 808,549 | 6,661,844 |
| 1890 | 460,285 | 2,354,240 | 2,182,563 | 101,577 | 86,664 | 75,888 | 5,261,217 | 773,438 | 6,034,655 |
| 1891 | 559,231 | 2,305,596 | 2,030,312 | 126,081 | 115,182 | 145,459 | 5,281,861 | 1,007,488 | 6,289,349 |
| 1892 | 575,299 | 2,617,824 | 2,164,391 | 135,755 | 226,284 | 158,917 | 5,878,470 | 954,744 | 6,833,214 |
| 1893 | 651,286 | 2,684,504 | 2,167,794 | 120,691 | 421,385 | 141,326 | 6,186,986 | 913,138 | 7,100,124 |
| 1894 | 1,156,717 | 2,867,816 | 2,330,282 | 143,100 | 787,099 | 217,024 | 7,502,338 | 887,839 | 8,389,877 |
| 1895 | 1,315,929 | 2,960,344 | 2,150,561 | 128,876 | 879,748 | 206,115 | 7,641,573 | 1,162,164 | 8,803,737 |
| 1896 | 1,073,360 | 3,220,348 | 2,132,979 | 95,560 | 1,068,808 | 237,574 | 7,828,629 | 1,041,428 | 8,870,057 |
| 1897 | 1,104,315 | 3,251,064 | 2,552,668 | 120,230 | 2,564,977 | 296,660 | 9,889,919 | 980,204 | 10,870,118 |
| 1898 | 1,201,743 | 3,349,028 | 2,750,348 | 95,465 | 3,990,698 | 291,946 | 11,678,778 | 1,080,691 | 12,759,469 |
| 1899 | 1,623,320 | 3,418,000 | 2,838,446 | 79,147 | 6,246,732 | 327,545 | 14,533,190 | 1,513,173 | 16,046,363 |
| 1900 | 1,070,920 | 3,229,628 | 2,871,578 | 82,482 | 6,007,610 | 316,220 | 13,578,438 | 1,439,602 | 15,018,040 |
| 1901 | 737,164 | 3,102,753 | 2,541,764 | 93,222 | 7,235,653 | 295,176 | 14,005,732 | 1,753,783 | 15,759,515 |
| 1902 | 684,970 | 3,062,028 | 2,720,512 | 95,203 | 7,947,662 | 301,573 | 14,811,948 | 1,951,433 | 16,763,381 |
| 1903 | 1,080,029 | 3,259,482 | 2,839,801 | 90,250 | 8,770,719 | 254,403 | 16,294,684 | 2,037,881 | 18,332,515 |
| 1904 | 1,146,109 | 3,325,045 | 2,714,934 | 80,008 | 8,424,226 | 280,015 | 15,897,337 | 1,987,501 | 17,884,838 |
| 1905 | 1,165,013 | 3,173,744 | 2,517,295 | 76,824 | 8,305,654 | 312,380 | 15,550,910 | 2,093,996 | 17,644,846 |
| 1906 | 1,078,866 | 3,280,478 | 2,313,464 | 81,225 | 7,622,749 | 254,963 | 14,631,745 | 2,270,904 | 16,902,649 |
| 1907 | 1,050,730 | 2,954,617 | 1,978,938 | 42,468 | 7,210,749 | 277,607 | 13,515,109 | 2,027,490 | 15,542,599 |
| Total | £ 55,364,882 | £ 279,471,595 | £ 66,313,841 | £ 2,749,609 | £ 78,004,408 | £ 6,523,821 | £ 488,428,156 | £ 71,528,978 | £ 559,957,134 |

3. **Changes in Relative Positions of States as Gold Producers.**—A glance at the figures in the preceding table will sufficiently explain the enormous increase in the population of Victoria during the period 1851 to 1861, when an average of over 40,000 persons reached that State each year. Victoria maintained its position as the chief gold-producer for a period of forty-seven years, or up to 1898, when its production was first outstripped by that of Western Australia, the latter State from this year onward contributing practically half the entire yield of the Commonwealth. New South Wales occupied the second place on the list until 1876, when Queensland returns exceeded those of the parent State, a condition of things that has been maintained ever since. Up to the year 1884 Tasmania and South Australia in turn occupied the position of lowest contributor to the total gold yield of the Commonwealth, but from 1894 onwards the returns from the former State have been in excess of those of the latter. Taking the average of the last seven years the relative positions of each State and of New Zealand in regard to the gold production of Australia were, as follows:—

RELATIVE POSITIONS OF STATES AS GOLD PRODUCERS, 1901 to 1907.

| State. | Annual Average of Gold Production, 1901 to 1907. | Percentage on Commonwealth. | State. | Annual Average of Gold Production, 1901 to 1907. | Percentage on Commonwealth. |
|-------------------|--|-----------------------------|-----------------|--|-----------------------------|
| Commonwealth ... | £ | 100.00 | New Zealand ... | 2,017,554 | 11.89* |
| Western Australia | 7,981,059 | 53.02 | New South Wales | 991,840 | 6.63 |
| Victoria ... | 3,155,021 | 21.09 | Tasmania ... | 282,302 | 1.89 |
| Queensland ... | 2,518,101 | 16.84 | South Australia | 79,886 | 0.53 |

* Percentage on production of Australasia.

4. **Methods of Gold Mining adopted in Each State.**—The circumstances of gold mining in the various States are not quite identical, for which reason reference is made to that of each State.

(i.) *New South Wales.* In New South Wales the earlier "rushes" were to surface alluvial or shallow-sinking grounds. Many of these were apparently soon worked out, but there is reason to believe that in some instances payable results would be obtained by treating the rejected wash-dirt on more scientific principles. With the exhaustion of the surface deposits discoveries were made by sinking to what are called deep alluvial leads, representing the beds of old drainage channels in Pliocene times. The first of these deep alluvial leads was discovered at Forbes, in New South Wales, in 1862. The Tertiary deep leads at Gulgong were discovered in 1871. Cretaceous leads occur at Tibooburra, and detrital gold has been found in Permo-carboniferous conglomerates at Tallawang. The method of dredging is at present being extensively used for winning gold from the beds of running streams, and also in loose river flats and other wet ground where sinking would be impracticable. The system was introduced from New Zealand, where it was originally applied with great success on the Clutha River, and there are now dredges working on practically all the auriferous rivers of New South Wales. Hydraulic sluicing is also employed in several places, the necessary machinery being fitted to a pontoon for convenience in moving from place to place. The quantity of alluvial gold obtained, other than by dredging, amounted to 16,540 ozs. in 1907, the chief yields being—Braidwood, 1442 ozs.; Adelong, 1247 ozs.; Batlow, 1027 ozs.; Stuart Town, 978 ozs.; Wattle Flat, 900 ozs. The quantity obtained by dredging was 39,946 ozs., the largest returns being obtained at Adelong, with 11,786 ozs.; Araluen, 11,523 ozs.; Stuart Town, 7198 ozs.; Wellington, 3212 ozs.; and Sofala, 2331 ozs. At the present time the Cobar district is the chief centre of the production from quartz, the yields from the Canbelego and Cobar fields included therein being respectively 31,464 ozs. and 26,935 ozs. Next comes the Wyalong field, with 20,347 ozs.; Wellington, with 12,260 ozs.; Hillgrove, with 11,777 ozs.; and Murrumburrah, 9879 ozs.

The table below shews the yield from alluvial and quartz working in each of the principal districts during 1907 :—

GOLD WON IN NEW SOUTH WALES, ALLUVIAL AND QUARTZ, 1907.

| District. | Alluvial. | | Quartz. | Total |
|-----------------------------|-------------------------------|-----------------|---------|--------|
| | Other than by Dredging. | By Dredging. | | |
| | ozs. | ozs. | ozs. | ozs. |
| Bathurst | 2,678 | ... | 12,609 | 15,287 |
| Cobar | ... | ... | 58,464 | 58,464 |
| Lachlan | 811 | ... | 36,951 | 37,762 |
| Mudgee | 2,289 | 3,212 | 21,204 | 26,705 |
| Peel and Uralla | 1,782 | 1,348 | 12,950 | 16,080 |
| Southern | 2,324 | 12,803 | 9,556 | 24,683 |
| Tambaroora and Turon | 1,505 | 9,529 | 790 | 11,824 |
| Tumut and Adelong | 4,317 | 13,053 | 1,469 | 18,839 |
| Other districts | 834 | 1 | 3,005 | 3,840 |

(ii.) *Victoria.* Quartz-reefing predominates in Victoria, although a considerable amount of gold is obtained from alluvial workings, both surface and deep leads. The deepest mines in Australia are found in the Bendigo district, where two shafts were at the 31st December, 1907, 4318 and 4300 feet deep respectively. Altogether there were at the close of 1907 no less than thirty-one shafts in this district which had reached a depth of over 3000 feet, while the bottom of the winze at the Victoria Reef Quartz was 4363 feet from the surface. A considerable amount of attention is given to dredging and hydraulic sluicing, particularly in the Beechworth, Castlemaine, and Ballarat districts, the number of plants in operation at the end of 1907 being 133. The yields from alluvial and quartz in the chief mining districts of the State during last year were as follows :—

GOLD WON IN VICTORIA, ALLUVIAL AND QUARTZ, 1907.

| District. | Alluvial. | Quartz. | Total. |
|---------------------------|-----------|---------|---------|
| | ozs. | ozs. | ozs. |
| Ararat and Stawell | 9,093 | 12,178 | 21,271 |
| Ballarat | 41,286 | 106,782 | 148,068 |
| Beechworth | 104,007 | 25,255 | 129,262 |
| Bendigo | 18,696 | 177,768 | 196,464 |
| Castlemaine | 38,446 | 63,944 | 102,390 |
| Gippsland | 8,467 | 66,715 | 75,182 |
| Maryborough | 47,835 | 33,366 | 81,201 |

(iii.) *Queensland.* Operations in Queensland are at present chiefly confined to quartz reefing, the yield from alluvial in 1907 being only about 9000 ozs. out of a total production of 465,900 ozs. The celebrated Mount Morgan mine occupies the position of being at the same time the most productive gold mine and the most productive copper mine in the State. The yields from the principal fields are given below :—

GOLD WON IN QUEENSLAND, ALLUVIAL AND QUARTZ, 1907.

| District. | Alluvial. | Quartz. | Total. |
|------------------------------|-----------|---------|---------|
| | ozs. | ozs. | ozs. |
| Charters Towers | 846 | 174,706 | 175,552 |
| Gympie | 466 | 63,761 | 64,227 |
| Mount Morgan | 354 | 145,420 | 145,774 |
| Ravenswood | 364 | 34,466 | 34,830 |
| Croydon | ... | 13,411 | 13,411 |
| Clermont | 4,364 | 421 | 4,785 |
| Etheridge and Woolgar | 812 | 7,290 | 8,102 |
| Other districts | 2,127 | 17,074 | 19,201 |

(iv.) *South Australia.* In South Australia alluvial gold has been worked for many years in the gullies round Adelaide, while a fair amount of gold has been obtained by this method at Teetulpa, in the northern areas. There are some valuable reefing fields in the Echunga district, at Mt. Grainger, Barossa, Wadnaminga, Mannahill, etc., but they have not been developed to the extent they deserve. Good stone was discovered a few years ago at Tarcoola, but the present returns are comparatively small. The rich finds at Arltunga in the centre of the continent, within the boundaries of the Northern Territory, have not yielded up to expectations, but the field has not been systematically prospected. It is stated that the gold occurs chiefly in vughs, crevices, and cellular quartz, the latter being at times exceedingly rich. The solid stone is low grade and is not worked. Operations are confined to the vein matter, which is passed through screens, and the larger lumps hand picked, the fines and all that contains vughs or cellular quartz being saved for treatment and the balance discarded. The official returns shew that there were forty gold-dredging leases in existence last year. South Australia is not divided into mining districts as is the case in the other States.

(v.) *Western Australia.* In Western Australia the operations are confined principally to quartz reefing, the returns from ordinary alluvial and hydraulic sluicing being comparatively small. The total production of gold from all sources during last year was 1,697,554 ounces, of which only 0.6 per cent. was alluvial. The production from the more important mines was as follows:—

GOLD WON IN WESTERN AUSTRALIA, ALLUVIAL AND QUARTZ, 1907.

| District. | Alluvial. | Dollied and Specimens. | Crushed. | Total. |
|------------------------------|-----------|------------------------|----------|---------|
| | ozs. | ozs. | ozs. | ozs. |
| Peak Hill | 119 | 80 | 7,912 | 8,111 |
| East Murchison | 259 | 89 | 118,860 | 119,208 |
| Murchison | 1,021 | 530 | 167,846 | 169,397 |
| Mount Margaret | 231 | 341 | 168,894 | 169,466 |
| North Coolgardie | 103 | 278 | 86,410 | 86,791 |
| North-east Coolgardie | 1,432 | 799 | 32,900 | 35,131 |
| East Coolgardie | 3,658 | 1,836 | 931,744 | 937,238 |
| Coolgardie | 220 | 925 | 59,665 | 60,810 |
| Yilgarn | ... | 28 | 19,264 | 19,292 |
| Dundas | 73 | 80 | 23,449 | 23,602 |
| Broad Arrow | 660 | 171 | 21,077 | 21,908 |
| Other districts | 1,863 | 117 | 19,059 | 21,039 |

(vi.) *Tasmania.* The yield from Tasmania is also chiefly obtained from quartz reefing, although there is a little alluvial mining carried on in the Lyell district. The yields from the chief centres in 1907 are shewn hereunder:—

GOLD WON IN TASMANIA, ALLUVIAL AND QUARTZ, 1907.

| | Northern & Southern. | North-eastern. | Eastern. | Western. | Total. |
|-----------------|----------------------|----------------|----------|----------|--------|
| | ozs. | ozs. | ozs. | ozs. | ozs. |
| Quartz | 34,674 | 325 | 4,986 | 24,574 | 64,559 |
| Alluvial | 475 | 242 | 33 | 45 | 795 |

The total production equalled 65,354 fine ounces, valued at £277,607.

(vii.) *New Zealand.* The yield of gold in New Zealand during 1907 was £2,027,490, of which quartz mining was responsible for £1,544,572, dredging £419,634, and alluvial £63,284. Of the total yield from quartz the Northern district returned £1,375,035, the West Coast £160,533, and the Southern £9004. The principal quartz mines are situated in the Ohinemuri and Thames counties. On the Waihi and Karangahake the veins give every indication of permanency. The Waihi is the most productive gold mine

in Australasia, and during 1907, from a total of 356,974 tons of quartz, gave a yield valued at £826,010. The company paid in dividends during 1907 the sum of £396,726. In the Thames district the Waiotahi produced 11,562 tons of ore during the year, averaging £12 19s. 2d. per ton, and declared a dividend of £117,000. The Progress mines were the chief producers in the South Island during 1907, their output of bullion being £87,805. New Zealand may be considered as the pioneer of dredge-mining in Australia, although the supply from this source is annually falling off owing to the depletion of suitable areas. In the West Coast and Southern districts 128 dredges were at work in 1907, producing, as previously stated, £419,634 worth of gold. The production from alluvial was £63,284, the greater portion being obtained in the Otago and Southland districts. Hydraulic sluicing, or sluicing and elevating, are the methods employed in working the deposits, but the long-continued dry weather in 1907 caused a great falling off in production as compared with the previous year.

5. Remarkable Masses of Gold.—The first "nugget" found in Australia was obtained at Hargraves, in New South Wales, on the 13th May, 1851, and weighed a little over 1 lb. In the same year the Burrandong nugget, found near Orange, weighed 2217 ozs. 16 dwts., and the "Brennan" was sold in Sydney for £1156. During the period 1880-82 nuggets weighing from 59 ozs. to 1393 ozs. were found at Temora. The "Jubilee," which weighed 347 ozs., was found in 1887.

In Victoria a nugget found at Canadian Gully in 1853 weighed 1620 ozs.; the "Welcome," found at Ballarat in 1858, weighed 2217 ozs.; and the "Welcome Stranger," unearthed in 1869 at Mount Moliagul, near Dunolly, weighed 2315 ozs., of which 2284 ozs. were fine gold and 31 ozs. silver, and was valued at £9534.

In addition to these alluvial nuggets large masses of gold have been found *in situ* in reefs. A mass known as "Kerr's Hundredweight," discovered in 1851 at Hargraves, in New South Wales, yielded 106 lbs. of gold. Probably the largest mass of gold ever found was obtained in Beyers and Holtermann's claim at Hill End in 1872. The total weight of the specimen, including the small amount of quartz in which it was encased, was 630 lbs. Its dimensions were 4 ft. 9 in. high, 2 ft. 2 in. wide, and about four inches thick. The value was not definitely known, but an offer of £13,000 was refused.

6. Modes of Occurrence of Gold in Australia.—(i.) *New South Wales.* The principal gold deposits worked with profit in New South Wales are classified by the Government Geologist of that State as follows:—1. Alluvial or detrital gold. 2. Auriferous reefs or lodes. 3. Impregnations in stratified deposits, such as slate, quartzite, and volcanic tuff. 4. Impregnations in igneous rocks, such as granite, serpentine, felsite, etc. 5. Irregular deposits, such as bunches of auriferous ironstone. The detrital gold is found chiefly in Recent and Pleistocene alluvials, in beach sands along the coast, in Tertiary alluvial leads, in Cretaceous alluvial leads, and in Permo-carboniferous conglomerates. In the beach sands the gold is found in association with platinum and tin. In reefs the gangue is principally composed of quartz; calcide is often present, and barytes and fluor-spar are also met with. At Hill End gold was found associated with muscovite. In the oxidised portions of auriferous reefs, limonite, malachite, azurite, and cuprite are found, while below the water-line the veins are impregnated with iron pyrites, galena, copper pyrites, zinc blende, pyrrhotine, and stibnite. The auriferous quartz veins fall into three categories—fissure veins, bedded veins, and contact veins. Large masses of gold have occasionally been found in lodes, such as "Kerr's Hundredweight," alluded to in a preceding paragraph. The so-called saddle reefs in the Hargraves district are identical with those worked so profitably and at such great depths round Bendigo, in Victoria. Altogether gold has been found in association with over forty minerals in New South Wales, one of the most peculiar products being known as "mustard" gold, resultant on the decomposition of tellurides. The substance has the appearance of dull yellow clay; but it readily burnishes when pressed with a knife blade. Native gold has never been found in an absolutely pure state in New South Wales, being always alloyed with silver and also traces of other metals.

(ii.) *Victoria.* In Victoria the occurrence of gold is noted under two main headings—1. Matrix gold. 2. Redistributed gold. The so-called matrix gold occurs in quartz reefs of various kinds, in Ordovician, Silurian, and Lower Devonian sedimentary, metamorphic, and granitoid and porphyritic rocks; in reefs, veins, and lenticular deposits in dykes of granitoid, porphyritic, dioritic, and felspathic rocks, or between dykes and walls of intruded rocks; or in fracture planes or joints in granitoid rocks. Under the above conditions the gold is either free or in combination with iron, arsenic and iron, copper and iron, zinc, lead, antimony, silver, etc.

The redistributed gold is found in sands and gravels of existing streams, in deep leads, in littoral gravels and sands, and in cleavage and joint planes of rocks underlying the deep leads.

(iii.) *Queensland.* The most remarkable mode of occurrence in Queensland is that at the Mount Morgan mine, which presents so many novel features as to demand special reference. At this mine the siliceous material forming the ore body was found enclosed in igneous rock, which continued to the surface, except for a funnel-shaped mass of sandy beds and secondary ore outcropping near the summit of the mount. In a crevice of these sandy beds was deposited a plug of desert sandstone nearly 100 feet deep at its thickest part, with a surface area of three-fifths of an acre, quite distinct from and unconformable to, the beds of loose sand which underlay and surrounded it, and more ferruginous towards the outside than in the centre of its area. A ferruginous belt extended outside the plug, attaining a depth of 150 feet from the surface. It was hard and extremely rich in gold, which was disseminated through the stone in microscopic particles. Beneath the ironstone there was a band of loose sand or soft bed, in some places many feet in thickness, also extremely rich in gold. Underlying and almost surrounding the secondary ores, a great mass of siliceous and kaolin ore was found, denuded of its gold, which is supposed to have been leached out and conveyed in solution and again deposited in the enriched zone. The impoverishment prevails between the depths of 180 and 300 feet, the friable silica being cellular from the removal of the pyrites. The evidences of the oxidation and leaching action are greater towards the centre than along the walls of the mass. Below the skeleton ore an unaltered zone of copper sulphide ore was found, in which gold was irregularly distributed, the copper increasing with the depth. Outside both sulphide and skeleton ore are walls of crystalline igneous rocks. Dykes, later than the massive igneous rocks but older than the enriched zone, traverse the siliceous sulphides in various directions. The theory advanced by Dr. Jack that the formations at Mount Morgan were due to geyser action at one time found wide acceptance, but later investigations tend to discredit it. So far, however, no completely satisfactory explanation has been put forward.

(iv.) *Western Australia.* The Government Geologist of Western Australia classifies the conditions under which gold is found in that State as follows:—(a) Native metal. (b) Compounds with tellurium and other elements. (c) Associated with other minerals.

Native gold occurs in several different forms, to which popular names descriptive of their appearance have been given, such as crystalline, dendritic, rough, flake, mustard, and sponge gold. Tellurides of gold abound at Kalgoorlie and Mulgabbie. Calaverite is the most frequently occurring mineral, but petzite, goldschmidtite, and the minerals termed kalgoorite and coolgardite are also found. Of the metallic minerals, iron in the form of iron pyrites and oxides is widely distributed. Galena comes next, whilst amongst other minerals found in association with the precious metal may be mentioned zinc blende, arsenopyrite, vanadinite, bismuth, pyrrhotite, chalcocopyrite, bourmonite, copper, scheelite. Quartz is of course the commonest of the earthy secondary minerals, but calcite, chalcedony, gypsum, actinolite, chlorite, and others are also found in association with gold. Some of the native gold is found to be remarkably pure, specimens of sponge gold from lodes at Boulder, Kalgoorlie, and East Coolgardie being found to contain 99.91 per cent. of the precious metal with but 0.09 per cent. of silver.

7. **Place of Commonwealth in the World's Gold Production.**—In the table given below will be found the estimated value of the world's gold production, and the share of the Commonwealth therein during the ten years 1897 to 1906. The figures given in the table have been compiled from returns obtained direct by the Commonwealth Bureau of Census and Statistics from the gold-producing countries of the world.

WORLD'S GOLD PRODUCTION, 1897 to 1906.

| Year. | World's Production of Gold. | Gold produced in Commonwealth. | Percentage of C'wealth on Total. |
|-------------|-----------------------------|--------------------------------|----------------------------------|
| | £ | £ | % |
| 1897 | 48,196,000 | 9,890,000 | 20.52 |
| 1898 | 58,136,000 | 11,679,000 | 20.09 |
| 1899 | 63,015,000 | 14,533,000 | 23.06 |
| 1900 | 51,515,000 | 13,578,000 | 26.36 |
| 1901 | 53,544,000 | 14,006,000 | 26.16 |
| 1902 | 60,869,000 | 14,812,000 | 24.33 |
| 1903 | 66,650,000 | 16,295,000 | 24.45 |
| 1904 | 70,688,000 | 15,897,000 | 22.49 |
| 1905 | 76,675,000 | 15,551,000 | 20.28 |
| 1906 | 82,569,000 | 14,632,000 | 17.72 |

The latest published estimates place the world's gold yield at about 82½ millions sterling in 1907, towards which the Commonwealth contributed 13½ millions, or about 16½ per cent. While the production of gold in the Commonwealth rose by about 48 per cent. in the decennium 1897-1906, the world's total increased by over 71 per cent. in the same period. The following table, which has been compiled from official returns forwarded to this Bureau, will be found interesting as shewing the various foreign countries where the chief increases have taken place during the interval in question:—

INCREASE IN GOLD YIELD, VARIOUS COUNTRIES, 1897 to 1906.

| Country. | 1897. | 1900 | 1903 | 1906. |
|----------------------|------------|------------|------------|------------|
| | £ | £ | £ | £ |
| United States | 11,787,000 | 16,269,000 | 15,122,000 | 19,392,000 |
| Canada | 1,240,000 | 5,742,000 | 3,877,000 | 2,365,000 |
| Mexico | 2,045,000 | 1,122,000 | 2,197,000 | 3,424,000 |
| Transvaal | 11,654,000 | 1,481,000 | 12,628,000 | 24,606,000 |
| Rhodesia | 800 | 308,000 | 828,000 | 1,985,000 |
| Gold Coast | 85,000 | 38,000 | 255,000 | 322,000 |
| Madagascar | 8,500 | 142,000 | 232,000 | 268,000 |
| India | 1,571,000 | 1,893,000 | 2,303,000 | 2,230,000 |
| Korea | 208,000 | 371,000 | 557,000 | 476,000 |
| Japan | 142,000 | 290,000 | 428,000 | 926,000 |
| Java | 24,000 | 100,000 | 280,000 | 371,000 |
| Costa Rica | 2,000 | 14,000 | 7,000 | 28,000 |

The largest increase was recorded in the Transvaal, where the production practically doubled itself in the four years 1903 to 1906.

The number of persons engaged in gold mining in each State and New Zealand during the last six years is shewn in the following table. The figures for South Australia include 227 Chinese working on the fields in the Northern Territory.

PERSONS EMPLOYED IN GOLD MINING, 1901 to 1907.

| State. | Persons Employed in Gold Mining. | | | | | | |
|-----------------------|----------------------------------|--------|--------|--------|--------|--------|--------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| | No. | No. | No. | No. | No. | No. | No. |
| New South Wales ... | 12,064 | 10,610 | 11,247 | 10,648 | 10,309 | 8,816 | 7,468 |
| Victoria ... | 27,777 | 26,151 | 25,208 | 24,331 | 25,369 | 25,304 | 23,291 |
| Queensland ... | 9,438 | 9,045 | 9,229 | 9,620 | 10,641 | 9,842 | 8,883 |
| South Australia ... | 1,000 | 1,000 | 1,000 | 1,000 | 900 | 900 | 914 |
| Western Australia ... | 19,771 | 20,476 | 20,716 | 18,804 | 18,382 | 17,926 | 17,237 |
| Tasmania ... | 1,112 | 1,038 | 973 | 1,076 | 1,207 | 988 | 953 |
| Commonwealth ... | 71,162 | 68,320 | 68,373 | 65,479 | 66,808 | 63,776 | 58,746 |
| New Zealand ... | 12,732 | 11,398 | 10,210 | 10,898 | 9,362 | 9,039 | 9,138 |

§ 3. Platinum and the Platinoid Metals.

1. **Platinum.**—The existence of platinum was first noted in New South Wales in 1851 by Mr. S. Stutchbury, who found a small quantity near Orange. Since the year 1878 small quantities of the metal have been obtained from beach sands in the northern coastal district. Platiniferous ore was noted in 1889 at Broken Hill. The chief deposits at present worked in the State are situated at Fifield, near Parkes, but the entire production last year was small, amounting to only 276 ozs., valued at £1014.

In Victoria the metal has been found in association with copper at the Walhalla Copper Mine in Gippsland, but the mine is not at present being worked. The metal has also been found in small quantities in black sand beaches in the Otago district of New Zealand, and is present in the alluvial wash at Takaka, Nelson. Up to the present, however, the production has been trifling.

2. **Osmium, Iridium, etc.**—Small quantities of osmium, iridium, and rhodium are also found in various localities. As far back as 1860, the Rev. W. B. Clarke states that he found native iridium. Platinum, associated with iridium and osmium, has been found in the washings from the Aberfoil River, about 15 miles from Oban, on the beach sands of the northern coast; in the gem sand at Bingara, Mudgee, Bathurst, and other places. In some cases, as for example in the beach sands of Ballina, the osmiridium and other platinoid metals amount to as much as 40 per cent. of the platinum, or about 28 per cent. of the whole metallic content.

In Victoria, iridosmine has been found near Foster, and at Waratah Range, South Gippsland.

§ 4. Silver.

1. **Discovery in Each State.**—The famous Polish explorer, Count Strzelecki, was the first to note the occurrence of silver in New South Wales. In a letter addressed to Captain King, R.N., bearing date 26th October, 1839, he speaks of a "specimen of native silver in hornblende rock." In his work, "The Southern Goldfields," published in 1860, the Rev. W. B. Clarke also mentions a discovery of the metal. Since that date silver has been found in a large number of localities throughout the entire State. The Broken Hill field, the chief lode on which was discovered in 1882 by Mr. Charles Rasp, constitutes one of the richest and most productive mining centres in the world. Further reference to the production from the Broken Hill district will be made on a subsequent

page. Amongst other important finds in New South Wales may be mentioned Boorook, near Tenterfield, discovered in 1878; Sunny Corner, originally worked for gold in 1875; Emmaville, 1884; Rivertree, on the Clarence River, 1887; Borah Creek, near Inverell, 1870; Rockvale, 1895.

Mining for silver is not carried on to any extent in Victoria, the production recorded in the mining returns being chiefly obtained in the process of refining gold, and the same applies in the case of the production from Western Australia. In Queensland most of the important gold mines yield also supplies of silver, but the credit of establishing the silver mining industry *per se* belongs to the Ravenswood field, where in 1879 the recovery of a parcel of 40 tons of galena assaying 130 ozs. of silver to the ton, marked the opening of the industry. At Chillagoe in 1884 there were thirty-two silver lead shows being worked, while during the decade 1885-1895 over 1½ million ozs. were raised at the Mount Albion mine. The Lady Jane and Girofla mines in the Mungana group at present are producing large supplies of silver lead ore of high grade. The Silver Spur mine at Texas produced £11,500 worth of silver lead in 1894, and the ore deposits in the vicinity are reckoned to be the richest in Southern Queensland. In South Australia, silver lead is found in the main range, south of Adelaide. The Wheal Gawler mine, near Glen Osmond, opened in 1841, was probably the first mine worked in the Commonwealth. Silver lead deposits have also been noted north-east from Farina and west from Beltana. The production of both silver and lead in 1907 was only about £700. A small amount of silver lead is also obtained in the Northern Territory, the production in 1907 being valued at £4164. Tasmania is the only other State in the Commonwealth which produces any considerable quantity of silver. The famous Zeehan mine, on the west coast, was discovered in 1885, and the deposits at Heazlewood River in 1887. Both districts are still opening up rich deposits of ore. In New Zealand, and particularly in the North Island, the gold generally contains a large proportion of silver, but the rich deposits of argenteriferous ores at Puhupuhi, Collingwood, Mount Rangitoto, and other places have not yet been systematically exploited.

2. **Development of Silver Mining.**—In illustration of the great development of silver mining in Australia the following table has been compiled, shewing the production of silver, silver lead and ore, and lead from each State during the years 1881, 1891, and 1901 to 1907:—

PRODUCTION OF SILVER AND LEAD, AUSTRALASIA, 1881 to 1907.

| State. | Silver, Silver Lead Ore, Lead, etc., produced during | | | | | | | | |
|---------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1881. | 1891. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| N. S. W. ... | ... | 3,621,614 | 1,954,964 | 1,487,837 | 1,539,969 | 2,131,504 | 2,496,709 | 2,564,057 | 4,290,128 |
| Victoria ... | 5,239 | 6,017 | 6,550 | 4,900 | 4,898 | 4,990 | 4,100 | 4,980 | 4,355 |
| Queensland ... | 13,494 | 21,879 | 69,234 | 72,851 | 109,177 | 96,418 | 102,368 | 151,577 | 187,870 |
| South Australia ... | 1,182 | 5,927 | 3,866 | 42,063 | 10,870 | 1,387 | 3,244 | 12,982 | 13,873 |
| West. Australia ... | 11,224 | 250 | 7,718 | 9,467 | 19,153 | 45,912 | 44,278 | 37,612 | 26,674 |
| Tasmania ... | ... | 62,138 | 325,335 | 387,024 | 426,125 | 318,971 | 415,248 | 552,704 | 572,560 |
| Commonwealth | 31,139 | 3,717,625 | 2,367,687 | 2,004,142 | 2,112,212 | 2,599,182 | 3,065,967 | 3,623,912 | 5,095,460 |
| New Zealand ... | 4,236 | 5,151 | 65,258 | 71,975 | 91,497 | 112,875 | 120,542 | 143,372 | 163,484 |

The figures quoted for New South Wales in the above table represent the *net* value of the product (excluding zinc) of the silver-lead mines of the State, and clearly show the great progress made by this branch of the mining industry during the last quinquennium. In explanation of the values thus given, it must be noted that the metallic contents of the larger portion of the output from the silver-lead mines in the State is extracted outside New South Wales, and it is considered, therefore, that the State should not take full credit for the finished product. Hence the *net* value referred to above refers to that of the ore, concentrates, and bullion, as declared by the several companies

to the Customs Department at date of export. The real importance of the State as a producer of silver, lead, and zinc is thus to some extent lost sight of. The next table, however, which indicates the quantity and value of these metals locally produced, and the quantity and value of concentrates exported during the last five years, will shew the estimated total value of the yield:—

**VALUE OF PRODUCTION FROM SILVER-LEAD MINES OF NEW SOUTH WALES,
1903 TO 1907.**

| Year. | Value of Silver, Lead, and Spelter produced within the C'wealth. | Value of Concentrates Exported | Total. |
|-------------|--|-----------------------------------|-----------|
| | £ | £ | £ |
| 1908 | 1,790,929 | 308,714 | 2,099,643 |
| 1904 | 2,088,784 | 642,125 | 2,730,909 |
| 1905 | 2,131,317 | 1,181,720 | 3,313,037 |
| 1906 | 2,112,977 | 1,876,834 | 3,989,811 |
| 1907 | 2,228,420 | 3,574,775 | 5,803,195 |

3. Chief Centres of Silver Production.—Broken Hill, in New South Wales, and Zeehan, in Tasmania, are the great centres of silver production in Australasia. The production in Queensland has, however, considerably expanded during the last few years.

(i.) *Broken Hill.* The bulk of the production is, of course, from New South Wales, being contributed mainly by the mines in the celebrated Broken Hill district.

At Broken Hill a considerable quantity of high-grade ore has been found at or near the surface, while shafts and drives have been put in along the lode to intersect ore bodies at greater depths. The deepest shaft on the field is on Block 10, where a depth of 1490 ft. has been reached, while shafts at the Proprietary and Junction North have been put down to a depth of 1300 and 1200 ft. respectively. Broken Hill itself consists of a low range about two miles in length, composed of crystalline gneisses passing into banded quartzites, micaceous and hornblendic schists, and garnetiferous sandstones. The rocks are bent into an anticlinal fold, the axis being coincident with the crown of the range, and the strata dipping away on each side almost parallel to the surface of the slope. The lode occupies the saddle-shaped cavity formed by the contortion of the strata, and its outcrop is coincident with the highest part of the range for about a mile and a half in length. Practically the whole of this outcrop has been removed in an open cut varying in width from 20 to 100 ft. The outcrop was composed of massive manganeseiferous limonite associated with siliceous and aluminous material, and containing numerous vughs bearing cerussite, chloride, iodide, and bromide of silver and stalactites of psilomelane. The iron ore contained from 2 to 30 ozs. of silver to the ton and from 10 to 25 per cent. of lead, and was extremely useful in fluxing the siliceous ores beneath it. Underneath the ironstone were found (1) deposits of carbonate of lead and a gangue composed of siliceous and aluminous material containing manganeseiferous iron oxide; (2) other high-grade ores containing kaolin, garnets, quartz with native silver, and also chlorides, chloro-bromides, and iodides, and yielding 4 to 300 ozs. of silver to the ton and a small quantity of lead; (3) a dry low-grade ore yielding from 5 to 40 ozs. to the ton. Below these so-called oxidised ores the lode consisted of rich sulphides containing galena, zinc blende, quartz, garnet, rhodonite, feldspar, iron and copper pyrites, and small quantities of mispickel, wulfenite, and fluorspar. The sulphide ore contains from 6 to 36 ozs. of silver and 2 to 3 dwts. of gold to the ton, from 5 to 50 per cent. of lead, and 14 to 30 per cent. of zinc.

Although the returns are not complete in all cases, the following table relating to the mines at Broken Hill will give some idea of the richness of the field:—

RETURNS OF BROKEN HILL SILVER MINES, 1907.

| Mine. | Authorised Capital. | Value of Output to end of 1907. | Dividends and Bonuses Paid to end of 1907. |
|--|---------------------|---------------------------------|--|
| | £ | £ | £ |
| Broken Hill Proprietary Co. Ltd. ... | 384,000 | 30,966,293 | 11,424,000 |
| Broken Hill Proprietary Block 14 Co. ... | 155,000 | 3,104,253 | 430,827 |
| British Broken Hill Proprietary Co. ... | 264,000 | 1,993,616 | 337,500 |
| Broken Hill Proprietary Block 10 Co. ... | 1,000,000 | 3,242,781 | 1,155,000 |
| Sulphide Corporation Ltd. (Central Mine) ... | 1,100,000 | 7,727,887* | 501,875* |
| Broken Hill South Silver Mining Co. ... | 200,000 | 2,767,650 | 575,000 |
| North Broken Hill Mining Co. ... | 140,000 | 625,893* | 172,440 |
| Broken Hill Junction Mining Co. ... | 100,000 | 797,673* | 85,000 |
| Broken Hill Junction North Silver Mining Co. ... | 180,000 | 336,219* | 25,793 |
| Broken Hill South Blocks Ltd. ... | 200,000 | 197,806 | ... |
| Broken Hill South Extended Ltd. ... | 337,500 | 150,344 | 50,000 |
| Totals ... | 4,060,500 | 51,910,415* | 14,757,435 |

* Incomplete.

(ii.) *Yerranderie and Conrad Stannite.* The mines on the Yerranderie field in the Southern Mining District produced 479,000 ozs. of silver in 1907, besides small quantities of gold and lead. The total production was valued at £80,000, as compared with £9000 in 1900. During 1907 the Conrad Stannite Mines Ltd., at Howell, in the Tingha Division, raised 38,800 tons of ore, valued at £81,097.

(iii.) *West Coast of Tasmania.* The silver-lead mines on the west coast are now well established. Amongst the most important are the Mt. Zeehan, Zeehan-Montana, Zeehan-Western, Florence, Oonah, Silver Queen Extended, and South Comstock. The total production of silver-lead ore in 1907 was 89,762 tons, valued at £572,560.

(iv.) In Queensland the two great Mungana mines, the Lady Jane and Girofla, produced in 1907, £34,027 worth of copper, £22,307 worth of silver, and £30,978 worth of lead. The Silver Spur mine at Texas produced £25,749 worth of metals, chiefly silver and lead. It is believed that silver lead will also prove an important factor in the development of the Etheridge goldfield.

The effect of the improved treatment of refractory ores is seen particularly in the returns for the Broken Hill district of New South Wales, where the export of zinc spelter and concentrates has increased from 97 tons valued at £988 in 1889, to 237,219 tons valued at £536,620 in 1907. In addition to the numerous plants for dealing with refractory ores on the fields itself, the Broken Hill Company possesses extensive smelting works at Port Pirie in South Australia. At Dapto and Cockle Creek in New South Wales there are also smelting establishments capable of dealing with considerable bodies of ore of various classes. The Tasmanian silver and lead ores are principally dealt with by the Tasmanian Smelting Company's works at Zeehan.

4. *World's Production of Silver.*—The world's production of silver during the last six years is estimated to have been as follows:—

WORLD'S PRODUCTION OF SILVER, 1901 to 1907.

| Year ... | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---|---------|---------|---------|---------|---------|---------|---------|
| World's production* in 1000 fine ozs. ... | 174,851 | 163,937 | 173,222 | 176,840 | 181,338 | 185,035 | 193,542 |

* Add 000 to figures for fine ounces.

The Commonwealth's share in the world's silver production averages about 13 per cent.

5. **Prices of Silver.**—As the production of silver is dependent to a very large extent on the price realised, a statement of the average price per standard ounce paid by the London Mint at various periods and during the last six years is given below.

PRICES OF SILVER, 1871 to 1907.

| Year | 1871. | 1881. | 1891. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|------------------|-------------------|-------------------|-------------------|
| Pence per standard oz. | 60 $\frac{7}{16}$ | 51 $\frac{1}{8}$ | 45 $\frac{5}{16}$ | 27 $\frac{1}{8}$ | 24 $\frac{5}{16}$ | 23 $\frac{1}{8}$ | 26 $\frac{1}{2}$ | 27 $\frac{7}{16}$ | 31 $\frac{1}{16}$ | 30 $\frac{9}{16}$ |

During the month of November, 1906, owing to the small sales in New York, and also to the fact that the Indian, American, and Mexican Governments were all buying silver, the price rose to 33 $\frac{1}{2}$ d., the highest realised since 1893, when the average stood at 36 $\frac{1}{16}$ d.

6. **Employment in Silver Mining.**—The number of persons employed in silver mining during each year of the period 1901 to 1907 is given below :—

PERSONS EMPLOYED IN SILVER MINING, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|-------|-------|-------|-------|-------|--------|--------|
| N.S.W. ... | 6,298 | 5,382 | 6,035 | 7,071 | 7,887 | 9,414 | 10,021 |
| Victoria ... | ... | ... | ... | ... | ... | 13 | 10 |
| Queensland ... | 40 | 100 | 458 | 45 | 293 | 282 | 785 |
| South Australia | 150 | 150 | 150 | 50 | 50 | 50 | 86 |
| West. Australia | ... | ... | ... | ... | ... | ... | 8 |
| Tasmania ... | 2,414 | 2,893 | 1,681 | 1,101 | 1,512 | 1,745 | 1,908 |
| Commonwealth | 8,902 | 8,525 | 8,324 | 8,267 | 9,742 | 11,504 | 12,818 |

As the table shews, the bulk of the employment was in New South Wales and Tasmania, the quantity of silver raised in the other States, excepting Queensland, being unimportant.

§ 5. Copper.

1. **History.**—(i.) *New South Wales.* It is believed that copper was the first metal mined for in New South Wales, the earliest attempts at working taking place about the year 1844. The deposits at Copper Hill, near Molong, were worked in 1845, as well as those in the neighbourhood of Canowindra. In 1847 mining for copper was commenced at the Summerhill Estate, near Rockley. The Rev. W. B. Clarke reported the discovery of copper ores near Marulan in 1851, and at Quidong, in the Snowy River district, in 1852. The principal seat of the copper-mining industry at the present date is in the Cobar district, the value of the deposits there being first recognised in 1869. The Mount Hope field was opened in 1878, Nymagee 1880, and Lake George in 1882.

At present, in addition to the yield from Cobar, good returns are being obtained at Mount Hope, at Cadia near Orange, at the Lloyd mine, Burruga, and at Cangai in the Grafton district.

(ii.) *Victoria.* In Victoria copper has been found at Bethanga, Sandy Creek, near Bogong, Walhalla on the Thomson River, and on the Snowy River and at Mount Tara near Buchan, but there are no mines at present being worked for their copper contents.

(iii.) *Queensland.* The first important discovery of copper in Queensland was made in the year 1862, when a rich lode was found near Clermont, on the Peak Downs. A

further discovery was made during the same year at Mount Perry. Copper, tin, silver, and gold were found on the Herberton, Walsh, and Tinaroo mineral fields in 1879. The famous Mount Morgan, discovered in 1882, also produces a considerable amount of copper, the production therefrom in 1907 exceeding that from any other district. The production in 1907 from the more important districts was as follows:—Mount Morgan, £386,000; Herberton, £314,000; Mount Perry, £170,000; Cloncurry, £55,000; Gladstone, £42,000.

(iv.) *South Australia.* Taking the entire period over which production extended, the yield of copper in South Australia easily outstrips that of any other State in the Commonwealth. In recent years, however, Tasmania, Queensland, and New South Wales have come to the front as copper producers, as the table on the next page will shew. Deposits of copper ore are found over a large portion of South Australia. The Kapunda mine, discovered in 1842 by Messrs. Dutton and Bagot, is situated fifty miles north of Adelaide, and is the oldest copper mine in the State. Up to the end of 1879 the production amounted to 70,000 tons, the metal possessing such a high standard of purity that it always obtained the highest prices in the world's markets. During the nine years 1870 to 1878 the production was valued at £157,000. The Burra Burra mine, located in 1845 by a shepherd named Pickett, is situated about 100 miles north of Adelaide. The original capital invested in this mine was £12,320 in £5 shares, on which no call was ever made, while dividends to the amount of £800,000 were paid. For many years this mine produced from 10,000 to 13,000 tons of ore, averaging 22 to 23 per cent. of copper. During the 29½ years in which the mine was worked the production was valued at £4,749,000. In 1859 as many as 1170 persons were employed on it. The mine has lain practically idle for many years, but recently there have been attempts at re-working.

Yorke's Peninsula, between Spencer's Gulf and St. Vincent's Gulf, contains a large area of copper-bearing country. The principal mines at Wallaroo and Moonta are situated a few miles from Port Wallaroo, and date back to 1860. For about thirty years the Moonta mines were worked independently, selling their ores to the Wallaroo company. During its separate existence the Wallaroo field produced about £2,600,000 worth of copper, while Moonta yielded £5,396,000, and was the first Australian mining field to produce £1,000,000 in dividends. The amalgamation took place in 1889, and since that year the united properties have produced about £4,281,000 worth of copper. The entire yield from the date of first working is estimated at about £12,500,000. On the 30th. June, 1907, the number of employees was stated as 3107. The mines just enumerated represent a very small proportion only of those opened on the copper bearing areas of the State. The latest returns shew that at Mutooroo near the New South Wales border, 100 men are employed in mining for copper, while work is proceeding at Yudnamutana, the Daly mine, and some of the old mines to the south of Adelaide.

Copper is also obtained in the Northern Territory, the production being chiefly from the mines of the Northern Territories Mining and Smelting Co. Ltd. at Yam Creek.

(v.) *Western Australia.* The inception of active mining operations in Western Australia dates from the year 1842, when lead and copper mines were discovered in the Northampton district, but working was carried on in a most perfunctory manner in the early days, sinking being discontinued as soon as the lodes shewed signs of contraction. Rich ores of copper have been located at Whim Creek, in the Pilbara district, about fifty miles eastward of Roeburne, the copper ore being removed by quarrying. Promising lodes have also been struck at the Irwin mines, between Arrino Springs and the Irwin River. The Kimberley district is intersected in places by copper and lead deposits in association with gold, and a rich lode has been located at Mount Barren, about 120 miles to the eastward of Albany, while various quartz reefs in the Wongan Hills contain copper in association with gold and iron. The West Pilbara field, from which there was no production in 1906, yielded £63,000 worth of copper ore in 1907. From the mines at Eulaminna in the Mount Morgans district, the yield was £59,000 and the Phillips River fields shewed a total output of £57,000.

(vi.) *Tasmania.* For a long time Tasmania was the largest producer of copper in the Commonwealth, but during the last two years Queensland has occupied the premier position. The cupriferous area in the island State stretches from Mount Lyell, Mount Tyndall, Mount Read, and Mount Murchison, in the western district, to some distance north of the Pieman River. Copper mining has also been started on the North-west Coast, notably in the Stowport and Blythe River districts, and some attention has been given to the deposits at Rocky Cape and Boat Harbour. In 1907 the output of the Mount Lyell Mining and Railway Co. Ltd. was 8247 tons of blister copper, which contained copper valued at £745,253, silver £87,438, and gold £81,876.

(vii.) *New Zealand.* Copper ore has been found and worked in different localities in New Zealand, but in a desultory fashion only, the export in 1907 being 56 tons, valued at £595.

2. **Production of Copper.**—The production of copper during the years 1901 to 1907 in the various States of the Commonwealth has been influenced considerably by the ruling prices, which have fluctuated in an extraordinary way. The value of the production in earlier years and for 1901 to 1907 is shewn in the following tables :—

VALUE OF PRODUCTION OF COPPER, AUSTRALASIA, 1881 to 1907.

| State. | 1881. | 1891. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------|---------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 267,884 | 119,195 | 412,292 | 307,806 | 462,640 | 406,001 | 527,403 | 789,527 | 727,774 |
| Victoria | 8,186 | 216 | ... | ... | 500 | ... | ... | ... | 2,356 |
| Q'land ... | 19,637 | 865 | 194,227 | 189,200 | 285,122 | 257,896 | 503,547 | 916,546 | 1,028,179 |
| S. Aust. ... | 418,296 | 239,436 | 500,077 | 432,525 | 472,033 | 438,960 | 483,431 | 743,671 | 705,031 |
| W. Aust. ... | ... | 4,463 | 75,246 | 8,090 | 56,541 | 25,180 | 16,266 | 50,337 | 180,387 |
| Tasmania | ... | ... | 1,026,748 | 710,146 | 511,801 | 569,053 | 563,275 | 844,663 | 869,665 |
| C'wealth | 714,003 | 364,175 | 2,208,590 | 1,647,767 | 1,788,697 | 1,697,090 | 2,093,922 | 3,344,744 | 3,513,393 |
| N.Z. ... | 36 | 4 | 105 | ... | 123 | ... | 17 | ... | 595 |

3. **Price of Copper.**—The great variation in price that the metal has undergone is shewn in the following table of prices realised for standard and best selected copper since 1897 :—

FLUCTUATION IN THE VALUE OF COPPER, 1897 to 1908.

| Year. | Average Price of Copper per Ton. | | | | | | Year. | Average Price of Copper per Ton. | | | | | |
|----------|----------------------------------|----|----|----------------|----|----|-------------------|----------------------------------|----|----|----------------|----|----|
| | Standard. | | | Best Selected. | | | | Standard. | | | Best Selected. | | |
| | £ | s. | d. | £ | s. | d. | | £ | s. | d. | £ | s. | d. |
| 1897 ... | 49 | 2 | 6 | 52 | 5 | 6 | 1905—Jan. to June | 67 | 2 | 1 | 71 | 3 | 9 |
| 1898 ... | 51 | 16 | 7 | 55 | 8 | 3 | July to Dec. | 72 | 1 | 11 | 77 | 7 | 11 |
| 1899 ... | 73 | 13 | 9 | 78 | 2 | 3 | 1906—Jan. to June | 82 | 2 | 8 | 86 | 18 | 11 |
| 1900 ... | 73 | 2 | 5 | 78 | 9 | 1 | July to Dec. | 92 | 15 | 1 | 97 | 11 | 1 |
| 1901 ... | 66 | 19 | 1 | 73 | 8 | 2 | 1907—Jan. to June | 103 | 4 | 4 | 111 | 8 | 4 |
| 1902 ... | 52 | 8 | 3 | 56 | 12 | 7 | July to Dec. | 70 | 18 | 10 | 76 | 0 | 6 |
| 1903 ... | 58 | 3 | 2 | 62 | 13 | 8 | 1908—Jan. to June | 59 | 0 | 9 | 62 | 5 | 10 |
| 1904 ... | 59 | 0 | 7 | 62 | 13 | 0 | | | | | | | |

There is no doubt that the steady rise in the price of copper from the year 1902 onwards caused a large amount of overtrading with consequent unhealthy inflation of values, while the sudden drop in 1907 was directly due to the financial panic in America. It is believed, however, that the increasing demand for the metal in electrical and other industries will, under ordinary circumstances, tend to establish prices on a sounder basis, and at higher rates than those quoted for the last six months in the table above.

4. **Relationship to World's Production.**—The world's production of copper during the last seven years is estimated to have been as follows:—

WORLD'S PRODUCTION OF COPPER, 1901 to 1907.

| Year | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------|---------|---------|---------|---------|---------|---------|---------|
| World's production (short tons) | 586,712 | 597,805 | 664,644 | 731,342 | 771,239 | 788,890 | 798,023 |

Of the total production last year the share of the Commonwealth amounted to about 6 per cent.

5. **Employment in Copper Mining.**—The number of persons employed in copper mining during the last six years was as follows:—

PERSONS ENGAGED IN COPPER MINING, 1901 to 1907.

| State. | Persons Engaged in Copper Mining. | | | | | | |
|-----------------|-----------------------------------|-------|-------|-------|--------|--------|--------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| N.S.W. | 2,964 | 1,699 | 1,816 | 1,850 | 2,171 | 3,047 | 3,764 |
| Victoria | 4 | ... | ... | ... | ... | 3 | 10 |
| Queensland | 814 | 666 | 1,418 | 1,094 | 1,435 | 2,598 | 3,941 |
| South Australia | 4,000 | 4,000 | 4,000 | 4,000 | 4,500 | 5,000 | 5,254 |
| West. Australia | 321 | 113 | 193 | 169 | 125 | 296 | 611 |
| Tasmania | * | * | * | 925 | 2,269 | 2,391 | 2,614 |
| Commonwealth | 8,103 | 6,478 | 7,427 | 8,038 | 10,500 | 13,335 | 16,194 |

* Included with silver miners.

There were 112 persons engaged in mining for copper during 1907 in New Zealand.

§ 6. Tin.

1. **History.**—(i.) *New South Wales.* The probable occurrence of tin in New South Wales was first referred to by the Rev. W. B. Clarke as early as 1849, while the same author notes having obtained a specimen in the Kosciusko district in 1851 and in the New England district in 1853. He also reported the discovery of stanniferous deposits at different localities in the Darling Downs, Queensland. In 1872 the Messrs. Fearby discovered tinstone near Inverell, and the present Elsmore mine was opened near the spot. The news of the discovery of tin in the New England district attracted a mild rush, and in March, 1872, valuable deposits of stream tin were found at Vegetable Creek. It is interesting to note that native tin, which is extremely rare, was discovered at Oban, in this district. At Cope's Creek stanniferous gravels occur in the channel of the stream and in the slopes adjacent to it. Post-tertiary deposits of tin-bearing ore have been found at Emmaville, where mining was commenced soon after the opening of the district. In the southern portion of the State deposits have been discovered at Dora Dora, near Albury, and Pulletpop, near Wagga, in the central-western district at Burra Burra, near Parkes, and in the far west at Poolamacca and Euriowie. The bulk of the yield, however, still comes from the Tingha-Inverell district, the production last year being £194,000 out of a total for the whole State of £293,000. Of the total production in 1907 £176,212, or 60 per cent., represents the value obtained by dredging.

(ii.) *Victoria.* In Victoria lode tin has been discovered at Mt. Wills, Beechworth, Eldorado, Chiltern, Stanley, and other places in the north-eastern district; and stream tin has been found in a large number of places, including those just mentioned in the north-eastern district. The bulk of the production last year was obtained by dredging and hydraulic sluicing, the chief yields being 36 tons of ore, valued at £3721, raised by the Cock's Pioneer Dredging Company at Beechworth, and 27 tons, valued at £2903, raised by the Franklin River Hydraulic Sluicing Company at Toora.

(iii.) *Queensland.* The first notable discovery of the metal in Queensland occurred in 1872, when rich deposits of stream tin were found in the country to the south of Warwick and on the borders of New South Wales. This district proved to be surprisingly rich, the value of the metal raised there during the five years subsequent to its discovery being £715,000. The alluvial deposits, however, soon became exhausted, so far as the ordinary miner is concerned, but some degree of success has attended dredging operations in the district. In 1879 important discoveries were made in the Herbert River district, and the rich Herberton, Walsh, and Tinaroo mineral fields were opened up, further discoveries being shortly after reported on the Russell, Mulgrave, Jordan, and Johnstone. At the Annan River tinfield, near Cooktown, alluvial mining has been carried on continuously since 1886. The production in 1907 amounted to 5140 tons, valued at £496,766, more than three-fourths of which were produced by the Herberton mineral field.

(iv.) *Northern Territory.* Valuable lodes of tin are found in the Northern Territory at West Arm and Bynoe Harbour, and at Horseshoe Creek, south of Pine Creek, but the deposits have not yet been exploited to the extent they deserve.

The metal has also been discovered near Earea Dam in the province proper.

(v.) *Western Australia.* Tin was first discovered in Western Australia in the year 1888, and since that date has been found in several widely distant localities in the State—at the head of the Bow and Lennard Rivers, in the Kimberley district; on the Thomas River, Gascoyne goldfield; at Brockman's Soak and the Western Shaw, in the Pilbara district; and at Greenbushes, in the south-western portion of the State. The production of tin for the State during 1907 amounted to 1624 tons, valued at £158,648, to which the Greenbushes field contributed 770 tons, valued at £73,045, and Pilbara 854 tons, valued at £85,603. Lode tin has been discovered at Wodgina, in the Pilbara field, and the deposits are being developed.

(vi.) *Tasmania.* Tin mining in Tasmania dates from the year 1871, when the celebrated Mount Bischoff mine was discovered by Mr. James Smith. This mine, which is probably the richest in existence, is worked as an open quarry, and a large proportion of the original hill has been removed in the course of developmental operations. Soon after rich deposits were located in the north-east district by Mr. G. B. Bell, while deposits of stream tin were discovered near St. Helens by Messrs. Wintle and Hunt. Further finds were reported from Flinders and Cape Barren Islands, and in 1875 the metal was discovered at Mount Heemskirk. The total production of Tasmania in 1907 was 4343 tons of ore, valued at £501,681, the largest producer being the Briseis Tin Mines Limited, in the North-East Division, with a return of 1017 tons. This company distributed during the year £112,500 in dividends. The Mount Bischoff mine paid dividends amounting to £36,000, making a total to the end of 1907 of £2,124,000. Good returns are being obtained at the North-East Dundas and at Mount Heemskirk, and a fair amount of alluvial is furnished by the Eastern mining division.

(vii.) *New Zealand.* In New Zealand tin ore has been found widely distributed among the gravel drifts in the neighbourhood of the Remarkables, in Stewart Island, but the deposits have up to the present not proved sufficiently rich to pay for working.

2. Value of Tin Produced.—The development of tin mining is, of course, largely dependent on the price realised for the metal, and, as in the case of copper, the production

has been subjected to somewhat violent fluctuations. The table below shews the production in each of the Commonwealth States during the years 1881, 1891, and 1901 to 1907. There is no record of production in New Zealand:—

TIN PRODUCED IN AUSTRALIA, 1881 to 1907.

| State. | Value of Tin Produced in | | | | | | | | |
|---------------------|--------------------------|---------|---------|---------|---------|---------|-----------|-----------|-----------|
| | 1881. | 1891. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| New South Wales ... | 568,795 | 133,963 | 76,544 | 59,593 | 150,208 | 188,377 | 226,110 | 255,744 | 293,305 |
| Victoria ... | 7,334 | 5,092 | 4,181 | 500 | 2,165 | 5,190 | 11,159 | 11,644 | 10,531 |
| Queensland ... | 193,699 | 116,387 | 93,723 | 116,171 | 243,149 | 270,276 | 297,454 | 490,283 | 496,766 |
| South Australia ... | ... | 1,938 | 5,586 | 6,078 | 10,773 | 24,179 | 23,768 | 36,907 | 41,365 |
| West Australia ... | ... | 10,200 | 40,000 | 39,783 | 55,890 | 58,817 | 86,840 | 157,644 | 158,648 |
| Tasmania ... | 375,775 | 293,170 | 212,542 | 237,846 | 308,594 | 257,256 | 368,796 | 537,266 | 501,681 |
| Commonwealth ... | 1,145,603 | 560,750 | 432,576 | 459,971 | 770,779 | 804,095 | 1,014,127 | 1,509,488 | 1,502,296 |

3. **World's Production of Tin.**—According to "The Mineral Industry" the world's supplies of tin during each of the last five years were obtained as follows:—

THE WORLD'S TIN SUPPLIES, 1903 to 1907.

| Origin. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|--------|--------|--------|---------|--------|
| | Tons. | Tons. | Tons. | Tons. | Tons. |
| English production ... | 4,282 | 4,132 | 4,468 | 4,522 | 4,700 |
| Chinese exports ... | ... | ... | 4,482 | 4,052 | 4,000 |
| Straits to Europe and America ... | 52,212 | 57,419 | 56,840 | 57,143 | 52,520 |
| Straits to India and China ... | 3,123 | 3,261 | 1,484 | 1,292 | 3,140 |
| Australia to Europe and America ... | 4,934 | 4,846 | 5,028 | 6,482 | 6,612 |
| Banka sales in Holland ... | 15,070 | 11,363 | 9,960 | 9,286 | 11,264 |
| Billiton sales in Java and Holland ... | 3,650 | 3,215 | 2,715 | 1,968 | 2,229 |
| Bolivian arrivals on Continent ... | 9,630 | 12,978 | 14,245 | 16,394 | 15,500 |
| Bolivian arrivals in England ... | | | | | |
| Total (long tons) ... | 92,901 | 97,214 | 99,222 | 101,139 | 99,965 |

The main users of tin are the manufacturers of tin-plates, while it is also required in conjunction with other metals to produce bronze, brass, Britannia metal, pewter, printers' type, and solder. It is stated that the rising tendency of prices during recent years is due to the fact that production has not been commensurate with the demands for consumption, and also in some measure to the fact that for industrial purposes the metal can be replaced by others to a limited extent only.

4. **Prices of Tin.**—The average price of the metal in the London market for the year 1897 and from 1901 to 1907, was as follows:—

PRICE PER TON OF TIN, 1897 to 1907.

| Year. | Price per Ton. | Year. | Price per Ton. |
|----------|----------------|----------|----------------|
| | £ s. d. | | £ s. d. |
| 1897 ... | 61 8 0 | 1904 ... | 126 14 8 |
| 1901 ... | 118 12 8 | 1905 ... | 143 1 8 |
| 1902 ... | 120 14 5 | 1906 ... | 180 12 11 |
| 1903 ... | 127 6 5 | 1907 ... | 172 12 9 |

According to "The Mineral Industry" the maximum price obtained for tin during the period 1897-1907 was reached in December, 1906, when the metal was quoted at £195 19s. 9d. per ton.

5. **Employment in Tin Mining.**—The number of persons employed in tin mining during each of the years 1901 to 1907 is shewn below:—

PERSONS ENGAGED IN TIN MINING, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|
| New South Wales ... | 1,428 | 1,288 | 2,502 | 2,745 | 2,884 | 3,795 | 3,173 |
| Victoria ... | ... | ... | ... | 50 | 50 | 95 | 87 |
| Queensland ... | 1,148 | 1,467 | 1,598 | 2,237 | 2,936 | 2,872 | 2,582 |
| South Australia ... | ... | ... | ... | ... | ... | ... | 554 |
| Western Australia ... | 413 | 249 | 294 | 284 | 479 | 890 | 1,003 |
| Tasmania ... | 1,065 | 1,260 | 1,331 | 1,304 | 1,351 | 1,659 | 1,828 |
| Commonwealth ... | 4,054 | 4,264 | 5,725 | 6,620 | 7,700 | 9,311 | 9,227 |

§ 7. Zinc.

1. **Production of Zinc.**—The production of spelter is practically confined to the Broken Hill district of New South Wales, where zincblende forms one of the chief constituents in the enormous deposits of sulphide ores.

Improvements in means of extraction have led to a largely increased production in recent years as the following table shews:—

| Year. | Quantity of Zinc (Spelter and Concentrates) Produced. | Value. | Year. | Quantity of Zinc (Spelter and Concentrates) Produced. | Value. |
|-------|---|--------|-------|---|---------|
| | Tons. | £ | | Tons. | £ |
| 1889 | 97 | 988 | 1906 | 103,666 | 292,806 |
| 1891 | 219 | 2,622 | 1907 | 237,219 | 536,620 |
| 1899 | 49,879 | 49,207 | | | |

The average price of spelter per ton in the London market during the last three years was £25 8s. 8d. in 1905, £27 0s. 5d. in 1906, and £23 15s. 5d. in 1907.

§ 8. Iron.

1. **History.**—(i.) *New South Wales.* The existence of large deposits of iron ore in New South Wales has been known since the early years of the history of the State, but until quite recently little was accomplished in the way of utilising these deposits so as to produce any extensive supply of marketable metal. According to a report furnished by the Government Geologist in 1905, the total quantity of ore available for exploitation is 53,000,000 tons, the deposits at Cadia, near Orange, being computed to contain no less than 39,000,000 tons, of which a large proportion consists of ores capable of yielding a high-grade metal. The aluminous ores at Wingello are estimated to contain 3,000,000 tons, the titaniferous magnetic ores on the Williams and Karuah Rivers nearly 2,000,000 tons, the hematite and brown ores at Carcoar, 3,000,000 tons; while several other districts are capable of supplying over 1,000,000 tons. There are extensive supplies of

coal and limestone within reasonable distance of some of the more extensive deposits. The increasing demand for iron and steel manufactures and the enhanced price of the metal, will probably enable the State in the near future to take its place amongst the iron-producing countries of the world. Ironworks were established at Fitzroy, near Mittagong, as far back as 1852, and at Eskbank, near Lithgow, in 1875, but the production of pig iron and manufactures was in neither case considerable. In May, 1907, however, works on a much larger scale were opened at Lithgow, and their success for some time seemed practically assured, since the Government contracted with them for a supply of rails and other ironwork for a period of seven years. The ironstone used in this establishment was obtained at Carcoar, where the deposit is calculated to yield 2000 tons of ore for a period of twenty-five years. Coke was obtained in large quantities from the South Coast district, but it was proposed to obtain the main supply from the Oakey Park Coal Company, while the limestone was furnished by the Portland Cement Company. During 1907 the ore raised amounted to 34,731 tons. The following materials were also received at the blast furnace:—Limestone, 13,433 tons; coke, 20,873 tons; and slag, 2831 tons. The output was 18,631 tons of pig iron, valued at £60,550. In addition 11,271 tons of iron and steel, bars, castings, etc., valued at £118,082, were made from scrap, and 5700 tons of steel ingots, valued at £28,075, were made from pig iron and steel scrap. The mine and works employed 871 hands, and the wages paid amounted to £79,944. At date of writing this article operations were suspended.

(ii.) *Victoria.* Iron ore has been located at various places in Victoria, particularly at Nowa Nowa, in the Gippsland district, and at Dookie. In his report for 1905 the Secretary for Mines states that without special assistance to the industry there does not seem to be any prospect of the deposits being cheaply worked.

(iii.) *Queensland.* Queensland possesses some extensive deposits of iron ore, which is mined chiefly for fluxing purposes in connection with the reduction of gold and copper ores.

(iv.) *South Australia.* In South Australia iron ore is raised for fluxing purposes only, although the State possesses some rich deposits capable of being mined for an indefinite period. The best known deposit is the Iron Knob, a veritable hill of iron of high percentage, situated about forty miles W.S.W. from Port Augusta. This property has been leased by the Broken Hill Proprietary Company, the ore being transported to the smelting works at Port Pirie. Extensive beds of limonite with a little hematite are found at Cutana, near Mingary, and it was from this district that the Broken Hill Company at one time obtained ore for fluxing purposes. At Mount Jagged, where a small quantity of pig iron was made about thirty-five years ago, there are large deposits of hematite. Ore beds of varying extent have been located at Peralilla, near Port Victor, at Oodla Wirra, at Donnelly's, near Quorn, and several other localities.

The estimated quantity of iron ore in sight at the Iron Knob and Iron Monarch has been set down at 21,000,000 tons.

(v.) *Western Australia.* This State has some very rich deposits of iron ore, but owing to their geographical position the most extensive fields at the present time are practically unexploited, the production in the State being confined chiefly to that needed for fluxing purposes. The Murchison field possesses some extensive deposits of high-grade ore.

(vi.) *Tasmania.* The existence of large quantities of iron ore in Tasmania was noted as far back as 1822, when Surveyor-General Evans alluded to the "surprising abundance of iron within a few miles of Launceston." A company known as the Tasmanian Charcoal Iron Company was formed to work these deposits, and commenced operations in June, 1876. Unfortunately, however, the presence of chromium rendered the pig-iron so hard and brittle that the works had to be abandoned. Extensive deposits of specular iron ore are also found in the neighbourhood of the Blythe and Gawler Rivers.

(vii.) *New Zealand.* The deposits of iron ore in the Auckland, Otago, and Nelson districts have up to the present been little utilised, but it is proposed to float a company to exploit the rich hematite deposit at Parapara.

§ 9. Other Metals.

1. **Aluminium.**—In the form of bauxite or hydrous sesquioxide, aluminium is found in New South Wales at Emmaville, Inverell, and Wingello, its existence being first recognised in 1889. The metal, however, has not been manufactured locally.

2. **Antimony.**—This metal is widely distributed in New South Wales, and has been found native at Lucknow, near Orange. Dyscrasite, a silver antimonide, has been found in masses up to one ton in weight in the Broken Hill lodes. It has also been found at various places in Victoria, chiefly in association with gold. In 1906 the export of antimony metal and ore from New South Wales amounted to £52,645, and in 1907 to £46,278. The chief production in 1907 was from the Hillgrove district, and amounted to £22,372. The production of antimony ore in Victoria during 1907 amounted to 4500 tons, valued at £13,290. The ore was raised by two syndicates operating at Costerfield. In New Zealand the metal has been found associated with gold and silver in quartz lodes at Puhipuhi, Thames, and Te Aroha, in the Auckland district, and at Rēefton, Langdons, and the west coast of Middle Island, as well as at several localities in the Otago district. An extensive lode was at one time worked at Endeavour Inlet, and a good sulphide lode at Collingwood. Extensive deposits were discovered at Neerdie, in the Wide Bay district of Queensland, during 1872, also at Wolfram Camp on the Hodgkisson field, on the Palmer River, and in the Ravenswood district. In 1907 the yield from the Hodgkisson mines was valued at £6356, while ore to the value of £550 was raised at Ravenswood. In Western Australia good lodes of stibnite, carrying gold, have been found in the Roeburne district.

3. **Arsenic.**—In the form of arsenopyrite, arsenic is of wide distribution in Victoria, but the deposits are worked to a limited extent only. At Ballarat a small quantity of the oxide is obtained from the flues of roasting furnaces.

4. **Barium.**—A valuable lode of barium sulphate has been discovered near Dalwin, on the North Lyell railway, in Tasmania, and the necessary plant is in course of erection to develop the deposit. It is stated that the lode is from 2½ to 7 feet wide over a length of over 40 chains.

5. **Bismuth.**—This metal has been found in New South Wales, near Glen Innes, and also in the vicinity of Pambula, its discovery dating from 1877. About seventeen tons of metal and ore were exported during 1907. In Queensland the metal is found in the Hodgkisson and Herberton districts, at Ukalunda in the Ravenswood district, and at Biggenden, in the Burnett district. The production in 1907 was valued at £1806. In South Australia deposits are found at Balhannah, at Mount MacDonald, and at Winninnie, on the shores of Spencer's Gulf. Small quantities are also produced in Tasmania.

6. **Chromium.**—In New South Wales chromium is found at Bowling Alley Point, on the Peel River, and also near Coolac, but the quantity raised at present is insignificant. The metal is also found in the Nelson district in New Zealand.

7. **Carnotite.**—A discovery of carnotite ore was made twenty miles from the Olary railway station in South Australia, and steps are being taken to test its value commercially.

8. **Cobalt.**—This metal was found at Carcoar in New South Wales in 1888, and subsequently at Bungonia, Port Macquarie, and various other places. Deposits have been noted in South Australia near Bimbourie, and South Blinman, in Western Australia at Norseman and Kanowna, and at various places in Victoria.

9. **Lead.**—This metal was first noted in New South Wales in 1849, when small specimens of native metal were found by the Rev. W. B. Clarke. At present lead mining *per se* is not practised to any extent in the Commonwealth, the supply of the metal being

chiefly obtained in conjunction with silver. In Victoria oxides, sulphides, and carbonates of lead are found in the reefs of most of the goldfields. The deposits are not, however, of sufficient extent to repay the cost of working. In Queensland the deposits are worked chiefly for the silver contents of the ore. Galena is found in several districts in New Zealand, but is not worked to any extent.

10. **Mercury.**—In New South Wales mercury was first recorded by the Rev. W. B. Clarke in 1843. Cinnabar has been found in lodes and impregnations at various places, such as Bingara, Clarence River, etc. Up to the present the production of quicksilver has been small, the total being only a little over 1000 lbs. Lodes of cinnabar have been found in Queensland at Kilkivan, and at Black Snake, in the Wide Bay district, about four tons were produced between 1874 and 1891. Small quantities have been found near Willunga in South Australia. In New Zealand cinnabar has been located at Waipori, Waitahuna, Puhipuhi, Te Aroha, and Ohaeawai. Cinnabar in the form of grains is of frequent occurrence in the alluvial deposits of the Middle Island.

11. **Manganese.**—Ores of this metal occur in considerable quantity in widely separated districts in New South Wales, but the low price of the metal precludes mining to any great extent, and the production to date has been trifling. In Queensland there are extensive deposits at Gladstone, the product being utilised chiefly by the Mount Morgan mine. The production from the Mount Miller mine amounted in 1907 to 1116 tons of ore, valued at £4464. Extensive deposits of the ore were mined at Boolcunda in South Australia some years ago, but latterly the production has ceased. Deposits have also been noted at Kangaroo Island, Quorn, Tumby, and various other parts of the State. In Western Australia ores of the metal are found widely scattered, the black oxide being especially plentiful in the Kimberley district. In New Zealand deposits are found in various localities, but little has been done in the way of exploration.

12. **Molybdenum.**—In New South Wales molybdenite is obtained at Kingsgate near Glen Innes, the export in 1907 being 22 tons, valued at £3564. The production in Queensland for the same year was valued at £3442, the bulk of which was contributed by the Hodgkinson field.

13. **Tungsten.**—Wolfram and scheelite, the principal ores of tungsten, are both mined to a small extent in New South Wales. During 1907 the export of wolfram was 207 tons, valued at £26,235, and of scheelite 196 tons, valued at £23,781. Wolfram was mined chiefly at Torrington, Emmaville, and Wagga, and scheelite at Hillgrove. In Queensland wolfram and molybdenum are both obtained on the Hodgkinson, Etheridge, and Herberton fields, and at Kangaroo Hills and Star River. The production in 1907 was over £90,000, chiefly contributed to by the mines on the Hodgkinson and Herberton fields. The Northern Territory of South Australia exported ore to the value of £7000 in 1906 and £11,450 in 1907. Wolfram is mined in Tasmania at Ben Lomond and in the Middlesex district, the quantity exported in 1907 being 41 tons, valued at £4411. A rich lode of scheelite has been discovered on King Island in Bass Strait. Rich deposits of scheelite have been found in New Zealand, where it is mined principally at Macrae's Flat, Otago, and Top Valley, Marlborough. The export from the scheelite mines of Otago reached £15,486 in 1907.

14. **Tantalum.**—Tantalite in small quantities has been found in the Greenbushes tinfield for some time past, but recently a lode of fairly extensive proportions was located at the Wodgina tinfield. Up to the end of 1905 the production of this mineral amounted to 73 tons, valued at about £10,000, but early in 1906 it was found that the supply exceeded the demand and production was temporarily stopped. Small quantities of the mineral are also produced in the Northern Territory.

In addition to the metals enumerated above there is a large number of others occurring in greater or less degree, while fresh discoveries are being constantly reported.

NON-METALLIC MINERALS (B).

§ 10. Coal.

1. **Historical.**—Coal was discovered at a very early period in the history of Australia, the first mention of it dating from August, 1797, when its existence was noted in New South Wales by some survivors from the wreck of a vessel, who had walked from the southern portion of Australia up the coast to Sydney. The discovery was shortly afterwards confirmed by Surgeon Bass, who found coal in the cliffs southward of Point Solander, but the locality was at the time looked upon as so inaccessible that no attempt was made to utilise the deposits. During 1907, however, the South Coast district, in which the site of these discoveries occurs, produced over 1,835,000 tons of coal. In 1797 coal was also discovered at the mouth of the Hunter (or Coal) River by Lieutenant Shortland, and in this case, the deposits being more easily worked, it was not long before they were utilised, and a township sprang up which is now the port of one of the greatest coalfields in the world. The production for the northern district, of which Newcastle is the port, amounted in 1907 to 6,059,000 tons, valued at £2,232,000.

The discovery of coal in *Victoria* dates from the year 1825, when the mineral is reported to have been found at Cape Patterson. There is no record of production in the earlier years, but it is stated that the first Victorian coal placed on the Melbourne market came from Kileunda, in the vicinity of the original discovery. Up to 1889, with the exception of a little work by the companies at Moe and Narracan, the industry languished, the total production to the beginning of the year named being only about 25,000 tons. Early in 1889 the Government determined to come to the assistance of the industry, and the Coal Creek Company at Korumburra was registered, followed during next year by the Jumbunna Company, and the Outtrim, Howitt, and British Consolidated in 1894. The unfortunate strike of 1903 completely disorganised coal mining in *Victoria*, and the industry still suffers from its disastrous effects. In 1908 a seam of good black coal 9 ft. 3 in. thick was reached by boring in the basin of the Powlett River. Other payable seams outcrop about five miles away, near Cape Patterson, and it is believed that the coal-bearing area extends over twelve to fifteen square miles. The Government of *Victoria* proposes to retain a considerable area in this district with a view to establish a State coal mine.

The existence of coal in *Queensland* was known soon after the establishment of the first settlement at Moreton Bay, mines near Ipswich, on the banks of the Bremer Creek and Brisbane River, having been worked almost continuously since that date. Seams in the Wide Bay district have been operated on since 1870, while good coal was mined at Clermont shortly after the establishment of the copper mines in that locality. A seam of good coal has also been discovered at Mount Mulligan, 32 miles from Dimbulah Station, on the Chillagoe railway. The industry is at present in a very satisfactory position in the northern State, and owing to the wide area over which the deposits stretch practically no limit can be set to its possibilities of extension.

In *South Australia* brown coal of fair quality was found in 1889 at Kuntha Hill, 110 miles north of Hergott, and at Lee Creek, on the Great Northern railway line. The discovery of coal in *Western Australia* dates from 1846, when the mineral was found on the Murray River. Since that year coal has been met with in other localities, but production at the present time is confined to the deposits at the Collie River. In *Tasmania* coal was discovered between the Don and Mersey Rivers in 1850. The value of the deposits at Fingal was first proved in 1863, two tons of this coal producing nearly 14,000 feet of gas. The first official record of production in *New Zealand* dates from the year 1878, when about 160,000 tons were raised.

2. **Production of Coal.**—The production of coal in each State and New Zealand at various periods since 1881, and the *value* of such production are shewn in the following table:—

PRODUCTION OF COAL, AUSTRALIA, 1881 to 1907.

| State. | 1881. | 1891. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| QUANTITY. | | | | | | | | | |
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| N.S.W. ... | 1,769,597 | 4,037,929 | 5,968,426 | 5,942,011 | 6,354,846 | 6,019,809 | 6,632,138 | 7,626,362 | 8,657,924 |
| Victoria ... | ... | 22,834 | 209,329 | 225,164 | 69,861 | 121,742 | 155,136 | 160,631 | 138,535 |
| Q'land ... | 65,612 | 271,603 | 539,472 | 501,531 | 507,801 | 512,015 | 529,326 | 606,772 | 683,272 |
| S. Aust. ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| W. Aust. ... | ... | ... | 117,836 | 140,884 | 133,427 | 138,550 | 127,364 | 149,755 | 142,373 |
| Tasmania ... | 11,163 | 43,256 | 45,438 | 48,863 | 49,069 | 61,109 | 51,993 | 52,896 | 58,891 |
| C'wealth | 1,846,372 | 4,375,622 | 6,880,501 | 6,858,453 | 7,115,004 | 6,853,225 | 7,495,957 | 8,596,416 | 9,681,095 |
| N. Z'land | 337,262 | 668,794 | 1,227,638 | 1,362,702 | 1,420,193 | 1,537,838 | 1,585,756 | 1,729,536 | 1,831,009 |
| VALUE. | | | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 603,248 | 1,742,796 | 2,178,929 | 2,206,598 | 2,319,660 | 1,994,952 | 2,003,461 | 2,337,227 | 2,922,419 |
| Victoria ... | ... | 19,731 | 147,228 | 155,850 | 43,645 | 70,208 | 79,060 | 80,283 | 79,706 |
| Q'land ... | 29,033 | 128,198 | 189,877 | 172,286 | 164,798 | 166,536 | 155,477 | 173,282 | 222,135 |
| S. Aust. ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| W. Aust. ... | ... | ... | 68,561 | 86,188 | 69,128 | 67,174 | 55,312 | 57,998 | 55,158 |
| Tasmania ... | 4,465 | 17,303 | 18,175 | 19,546 | 19,628 | 24,444 | 20,797 | 21,158 | 23,556 |
| C'wealth | 636,746 | 1,908,028 | 2,602,770 | 2,640,468 | 2,616,859 | 2,323,314 | 2,314,107 | 2,669,948 | 3,302,974 |
| N. Z'land | * 168,631 | * 334,397 | 676,174 | 741,759 | 762,858 | 826,207 | 838,531 | 916,563 | 965,766 |

* Estimated.

As the table shews, the great bulk of the production is confined to New South Wales, although New Zealand has been steadily increasing its output during the last few years.

3. **Distribution and Quality of Coal in each State.**—(i) *New South Wales.* Estimates have from time to time been made as to the total quantity of coal available for working in the deposits in New South Wales, and while these naturally differ to some extent, they agree in placing the amount at well over a thousand million tons, without taking into consideration the deposits existing below a depth of 4000 feet. According to Mr. E. F. Pittman, the coal-bearing rocks of New South Wales may be classified as follows:—

COAL-BEARING ROCKS OF NEW SOUTH WALES.

| Geological Age. | Maximum Thickness of Coal-bearing Strata. | Locality. | Character of Coal. |
|------------------------------------|---|---|--|
| I. Tertiary—Eocene to Pliocene ... | Approx. 100 ft. | Kiandra, Gulgong, and Chouta Bay | Brown coal or lignite. |
| II. Mesozoic—Triassic ... | 2,500 .. | Clarence and Richmond Rivers | Coal suitable for local use only. |
| III. Palæozoic—Permo-Carboniferous | 13,000 .. | Northern, Southern and Western Coalfields | Good coal, suitable for gas, household and steaming. |
| IV. Palæozoic—Carboniferous ... | 10,000 .. | Stroud | Very inferior. |

No serious attempt has been made to use the deposits of brown coal or lignite as a source of fuel. The Triassic deposits in the Clarence and Richmond districts contain

numerous seams, but the coal is largely intersected by bands, while its large percentage of ash renders it unfit for use as fuel for industrial purposes. Probably these beds extend under the great western plains, but the presence of artesian water precludes the possibility of their being worked. It is in the Permo-Carboniferous division that the great productive coal seams of the State are found, the area which they cover being estimated at about 25,000 square miles. The coal from the various districts embraced in this division differs considerably in quality—that from the Newcastle district being especially suitable for gas-making and household purposes, while the product of the Southern (Illawarra) and Western (Lithgow) is an excellent steaming coal. The Permo-Carboniferous measures have in various places been disturbed by intrusions of volcanic rocks, which in some instances have completely cindered the seams in close proximity to the intrusive masses, while in other instances the coal has been turned into a natural coke, some of which has realised good prices as fuel.

The quantity and value of the coal raised in each district during the years 1887, 1901, and 1907 will be seen in the following table :—

COAL RAISED IN NEW SOUTH WALES, 1887 to 1907.

| District. | 1887. | | 1901. | | 1907. | |
|--------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| Northern ... | Tons. 2,243,792 | £ 1,096,720 | Tons. 3,999,252 | £ 1,669,519 | Tons. 6,058,580 | £ 2,231,901 |
| Southern ... | 376,568 | 170,684 | 1,544,454 | 407,196 | 1,835,425 | 515,786 |
| Western ... | 302,137 | 79,036 | 424,720 | 102,214 | 763,919 | 174,732 |
| Total ... | 2,922,497 | 1,346,440 | 5,968,426 | 2,178,929 | 8,657,924 | 2,922,419 |

So far back as 1847 the Rev. W. B. Clarke expressed the belief that workable coal would be found in the strata below Sydney, a belief that was also held by subsequent geologists, who based their contentions on stratigraphical and palæontological evidence. The later geologists urged that the Illawarra coal measures of the South Coast district were identical with the Newcastle measures of the Northern district, although it was agreed that the deposits in the neighbourhood of Sydney would probably be found at a considerable depth. Borings were made in several localities close to Sydney, and in 1891 a drill put down at Cremorne Point in Sydney Harbour passed through a seam of coal seven feet four inches thick and at a depth of 2801 feet. Unfortunately the site of the bore happened to be in the vicinity of a volcanic dyke, which had cindered the coal near the locality of its intrusion. A second bore was commenced in July, 1892, and in November, 1893, a seam of excellent coal, ten feet three inches thick, was reached at 2917 feet. The results attained led to the formation of a company which acquired land at Balmain, and expended a considerable sum of money in the purchase of plant suitable for working coal at such a great depth. Sinking operations were commenced in June, 1897, and coal was struck at a depth of 2880 feet on the 21st November, 1901. Up to the present developmental work has not sufficiently advanced to permit of any considerable production.

(ii.) *Victoria.* The deposits of black coal in Victoria occur in the Jurassic system, the workable seams, of a thickness ranging from two feet three inches to six feet, being all in the Southern Gippsland district. The coal is of excellent quality for steaming and household purposes. The full exploitation of the Victorian coal deposits has, however, been rather severely hindered by various obstacles. In the Report of the Royal Commission on the Coal Industry, 1906, these have been summarised as follows:—(1) Labour troubles. (2) Difficulties of working arising from faults, displacements, and thin seams. (3) Increased cost of production as the workings extend. (4) The low price ruling for coal.

Deposits of brown coal and lignite of immense extent occur in gravels, sands, and clays of the Cainozoic period throughout Gippsland, Mornington Peninsula, Werribee Plains, Gellibrand, and Barwon and Moorabool basins. In the Latrobe Valley the beds reach a thickness of over 800 feet. When dried, the material makes good fuel, but owing to its excessive combustibility and friability requires to be consumed in specially constructed grates. Attempts have been made to manufacture briquettes from the brown coal, but so far without any great measure of success.

The output of coal from the chief Victorian collieries during the last six years was as follows:—

PRODUCTION OF COAL IN VICTORIA, 1902 to 1907.

| Year. | Outtrim Howitt Company. | Jumbunna Coal Company. | Coal Creek Proprietary. | Silkstone Co-operative Company. | Other Companies. | Total Production. | Value. |
|-------|-------------------------------|------------------------------|----------------------------|---------------------------------------|---------------------|----------------------|---------|
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | £ |
| 1902 | 114,686 | 67,876 | 39,257 | 2,257 | 1,088 | 225,164 | 155,850 |
| 1903 | 20,602 | 18,517 | 20,727 | 4,354 | 5,661 | 69,861 | 43,645 |
| 1904 | 57,828 | 39,364 | 22,547 | 2,014 | 489 | 121,742 | 70,208 |
| 1905 | 71,989 | 49,009 | 27,710 | 1,624 | 4,804 | 155,136 | 79,060 |
| 1906 | 74,812 | 64,222 | 13,214 | 3,977 | 4,406 | 160,631 | 80,283 |
| 1907 | 64,033 | 61,755 | 3,762 | 7,565 | 1,470 | 138,635 | 79,706 |

The figures for 1903 include 5661 tons of brown coal.

The coal from Leigh's Creek in South Australia is subject to similar disabilities as the Victorian brown coal, and until some means are devised of overcoming these, production will necessarily languish.

(iii.) *Queensland.* In Queensland the coal-bearing strata are of vast extent and wide distribution, being noted under the greater portion of the South-eastern districts, within 200 miles of the sea, as far north as Cooktown, and under portions of the far western interior. The Ipswich beds are estimated to occupy about 12,000 square miles of country, while the Burrum fields occupy a considerably larger area. At Callide, fifty miles west of Gladstone, a seam of coal free from bands has been struck in a shaft only sixty feet deep, and borings have proved the deposit to be of considerable magnitude. Extensive beds occur in the basin of the Fitzroy River, in the Broadsound district, and at the Bowen River. Amongst other places where the mineral is found may be enumerated Clermont, the Palmer River, Tambo, Winton, Mount Mulligan, and the Flinders River. A bituminous coal is yielded by the Ipswich seams, those of the Darling Downs yield a cannel, while anthracite of good quality is furnished by the Dawson River beds.

The quantity and value of coal raised in Queensland at various periods since 1861 were as shewn below:—

PRODUCTION OF COAL IN QUEENSLAND, 1861 to 1907.

| Year | ... | ... | 1861 | 1871. | 1881. | 1891. | 1901. | 1906 | 1907. |
|----------|------|-----|--------|--------|--------|---------|---------|---------|---------|
| Quantity | Tons | | 14,212 | 17,000 | 65,612 | 271,603 | 539,472 | 606,772 | 683,272 |
| Value | ... | £ | 9,922 | 9,407 | 29,033 | 128,198 | 189,877 | 173,282 | 222,135 |

At present coal mining in Queensland is in a very satisfactory position, the increasing volume of the trade being chiefly due to the action of the Government in granting concessions to vessels coaling at local ports.

The distribution of production during the last two years was as follows:—

QUEENSLAND COLLIERIES, 1906 and 1907.

| Collieries. | 1906. | | 1907. | |
|---|--------------|-------------------------------|--------------|-------------------------------|
| | Tons Raised. | Average Value at Pit's Mouth. | Tons Raised. | Average Value at Pit's Mouth. |
| Ipswich and Darling Downs | 509,989 | s. d. 5 2½ | 591,174 | s. d. 6 1½ |
| Wide Bay and Maryborough | 86,634 | 8 0½ | 77,921 | 8 4 |
| Rockhampton and Central District | 10,079 | 11 2½ | 14,077 | 11 6½ |
| Other (Nundah) | 70 | ... | 100 | ... |
| Total | 606,772 | 5 8½ | 683,272 | 6 6 |

A considerable proportion of the produce of the Ipswich district is supplied to vessels for bunker coal, the total in 1907 being 334,000 tons, as against 272,000 tons in 1906. Queensland coal despatched abroad amounted to 3019 tons, 3000 tons of which were shipped in one cargo to Valparaiso.

(iv.) *Western Australia.* The coal seams in Western Australia belong to the Carboniferous, Mesozoic, and Post-tertiary ages. Most of the coal contains a large proportion of moisture, and belongs partly to the hydrous bituminous and partly to the lignite class. The only coalfield at present worked is at Collie, in the Mesozoic beds of the south-west. The coal produced is bright and clean, but very fragile when free from moisture. The production from this field during the last seven years was as follows:—

PRODUCTION OF COAL IN WESTERN AUSTRALIA, 1901 to 1907.

| Year | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------|---------|---------|---------|---------|---------|---------|---------|
| Quantity ... Tons | 117,836 | 140,884 | 133,427 | 138,550 | 127,364 | 149,755 | 142,373 |
| Value ... £ | 68,561 | 86,188 | 69,128 | 67,174 | 55,312 | 57,998 | 55,158 |

(v.) *Tasmania.* In Tasmania coal occurs in the Carboniferous and Mesozoic systems, the product of the former class being, however, far inferior to that of the latter. Carboniferous seams occur at the Don, Tarleton, Latrobe, Port Cygnet, Tippagory Range, St. Mary's, and Adventure Bay, the seam at Port Cygnet having a thickness of two feet and being of fair quality. The Mesozoic coal measures are well developed in the Fingal basin, the Cornwall coal from this locality being excellent for household purposes. The chief production of recent years has been furnished by the Mt. Nicholas and Cornwall mines, but it is hoped that ere long the production from the Sandfly mine will assume considerable proportions. The quantity of coal raised during the last seven years in the various districts was as follows:—

PRODUCTION OF COAL IN TASMANIA, 1901 to 1907.

| District. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------|--------|--------|--------|--------|--------|--------|---------|
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| North-western | 2,952 | 1,683 | 1,735 | 2,282 | 1,261 | 1,878 | 1,045 |
| North-eastern (Fingal) | 37,239 | 41,735 | 43,157 | 54,567 | 46,708 | 46,803 | 53,214 |
| Midland | 1,536 | 725 | 1,047 | 940 | 200 | 393 | 624 |
| South-eastern | ... | 60 | 30 | 200 | 200 | 1,483 | } 4,008 |
| South-western | 3,711 | 4,660 | 3,100 | 3,120 | 3,624 | 2,339 | |
| Total | 45,438 | 48,863 | 49,069 | 61,109 | 51,993 | 52,896 | 58,891 |

(vi.) *New Zealand.* New Zealand possesses coal measures of vast extent and great wealth, but as yet in a comparatively undeveloped state through lack of efficient shipping facilities on the coasts adjacent to the site of the chief deposits. The greater portion of the coal produced is of the bituminous or semi-bituminous character, but considerable quantities of brown coal and lignite are mined, and there is a small production of pitch coal. Bituminous coals are most largely mined on the west coast of the Middle Island, while the Southern district yields the chief production of brown coal, lignite, and pitch coal. Competent judges have pronounced the bituminous coals of the West Coast to be equal, if not superior, to the best description from any part of the world. Large quantities of Westport coal are supplied to the warships on the Australian Naval Station. The output of coal from the chief districts during each of the last seven years was as follows:—

PRODUCTION OF COAL IN NEW ZEALAND, 1901 to 1907.

| District | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| Northn. | 175,084 | 192,045 | 209,795 | 242,517 | 259,876 | 301,186 | 316,977 |
| W.Coast | 669,535 | 753,816 | 781,032 | 836,950 | 856,227 | 962,915 | 1,052,022 |
| Southn. | 395,067 | 419,179 | 429,402 | 458,371 | 469,653 | 465,435 | 462,010 |
| Total... | 1,239,686 | 1,365,040 | 1,420,229 | 1,537,838 | 1,585,756 | 1,729,536 | 1,831,009 |

Two collieries in New Zealand, situated at Seddonville and Port Elizabeth, are owned by the State, and depôts for the sale and distribution of State coal have been established at Wellington, Christchurch, Wanganui, and Dunedin. For the year ended 31st March, 1908, the profits of the mines amounted to £8440. A briquette factory has been established in connection with the Seddonville State Colliery, and is manufacturing a product of first-rate quality, largely used on the Government railways.

4. **Production of Coal in Various Countries.**—The total known coal production of the world in 1906 amounted to about 905 million tons, towards which the Commonwealth and New Zealand contributed 10 million tons, or about 1 per cent. The following table shews the production of the British Empire and the chief foreign countries in units of 1000 tons during each year of the period 1901 to 1906:—

BRITISH EMPIRE.

| Year. | United Kingdom. | British India. | Canada. | Australian C'wealth. | New Zealand. | South Africa. |
|----------|-----------------|----------------|------------|----------------------|--------------|---------------|
| | 1000 tons. | 1000 tons. | 1000 tons. | 1000 tons. | 1000 tons. | 1000 tons. |
| 1901 ... | 219,047 | 6,636 | 5,791 | 6,884 | 1,228 | 1,465 |
| 1902 ... | 227,095 | 7,424 | 6,667 | 6,860 | 1,363 | 2,179 |
| 1903 ... | 230,334 | 7,438 | 7,107 | 7,112 | 1,420 | 2,911 |
| 1904 ... | 232,428 | 8,216 | 7,370 | 6,854 | 1,538 | 3,163 |
| 1905 ... | 236,129 | 8,418 | 7,739 | 7,496 | 1,586 | 3,603 |
| 1906 ... | 251,068 | 9,783 | 8,717 | 8,596 | 1,730 | 3,950 |

FOREIGN COUNTRIES.

| Year. | Russian Empire. | Sweden. | German Empire. | Belgium. | France. | Spain. | Austria-Hungary. | Japan. | United States. |
|-------|-----------------|------------|----------------|------------|------------|------------|------------------|------------|----------------|
| | 1000 tons. | 1000 tons. | 1000 tons. | 1000 tons. | 1000 tons. | 1000 tons. | 1000 tons. | 1000 tons. | 1000 tons. |
| 1901 | 16,215 | 268 | 106,795 | 21,856 | 31,126 | 2,600 | 12,895 | 8,885 | 261,875 |
| 1902 | 16,156 | 300 | 105,747 | 23,493 | 28,693 | 2,679 | 12,012 | 9,589 | 269,277 |
| 1903 | 17,532 | 315 | 114,763 | 23,415 | 33,668 | 2,654 | 12,526 | 9,979 | 319,068 |
| 1904 | 19,042 | 316 | 118,874 | 22,395 | 32,964 | 2,974 | 12,613 | 10,602 | 314,122 |
| 1905 | 18,389 | 317 | 119,350 | 21,506 | 34,652 | 3,152 | 13,454 | 11,593 | 350,821 |
| 1906 | 21,302 | 292 | 134,914 | 23,232 | 33,762 | 3,157 | 14,437 | 12,791 | 369,672 |

Including New Zealand the production from Australasia takes first place amongst the possessions of the British Empire.

5. **Export of Coal.**—(i.) *New South Wales.* The exports of coal from Australasia are practically confined to New South Wales and New Zealand, the quantity sent away from the latter being comparatively small. In the following table will be found the quantity and value of the exports at decennial intervals since 1881 and during the last five years, the figures for New South Wales being given on the authority of the Mines Department of that State:—

EXPORTS OF AUSTRALIAN COAL, 1881 to 1907.

| Year. | Exports from New South Wales. | | Exports from New Zealand. | |
|----------|-------------------------------|-----------|---------------------------|---------|
| | Quantity. | Value. | Quantity. | Value. |
| | Tons. | £ | Tons. | £ |
| 1881 ... | 1,029,844 | 417,530 | 6,621 | 5,610 |
| 1891 ... | 2,514,368 | 1,306,630 | 91,664 | 91,173 |
| 1901 ... | 3,470,985 | 1,681,824 | 159,643 | 142,176 |
| 1902 ... | 3,261,459 | 1,625,380 | 188,677 | 154,747 |
| 1903 ... | 3,716,194 | 1,704,993 | 152,332 | 128,927 |
| 1904 ... | 3,172,867 | 1,380,839 | 165,220 | 139,898 |
| 1905 ... | 3,718,053 | 1,483,978 | 122,817 | 107,062 |
| 1906 ... | 4,961,540 | 2,080,600 | 141,641 | 122,614 |
| 1907 ... | 5,743,507 | 2,662,218 | 128,950 | 114,737 |

The principal countries to which coal was exported from New South Wales during the year 1907 were as shown hereunder:—

DESTINATION OF NEW SOUTH WALES COAL, 1907.

| Country. | Quantity. | Value. | Country. | Quantity. | Value. |
|-----------------------|-----------|---------|-------------------|-----------|---------|
| | Tons. | £ | | Tons. | £ |
| Victoria ... | 882,365 | 488,925 | New Zealand ... | 221,094 | 103,704 |
| South Australia ... | 599,226 | 342,549 | Peru ... | 101,131 | 48,681 |
| Chile ... | 878,062 | 446,095 | Hawaii... .. | 98,530 | 46,628 |
| Philippine Islands... | 314,235 | 155,430 | United States ... | 539,876 | 265,990 |
| Straits Settlements | 142,795 | 66,940 | China | 41,058 | 18,474 |

The quantity of bunker coal taken by oversea vessels was about 1,080,000 tons, valued at £531,000.

The distribution of the total output from New South Wales collieries during the last five years was as follows:—

DISTRIBUTION OF TOTAL OUTPUT OF NEW SOUTH WALES COAL.

| Year. | Exports to Australasian Ports. | Exports to other Ports. | Local Consumption. | Total. |
|-------------|--------------------------------|-------------------------|--------------------|-----------|
| | Tons. | Tons. | Tons. | Tons. |
| 1903 | 2,031,473 | 1,684,721 | 2,638,652 | 6,354,846 |
| 1904 | 1,880,545 | 1,292,322 | 2,846,942 | 6,019,809 |
| 1905 | 2,066,576 | 1,651,477 | 2,914,085 | 6,632,138 |
| 1906 | 2,260,090 | 2,701,450 | 2,664,822 | 7,626,362 |
| 1907 | 2,379,024 | 3,364,483 | 2,914,417 | 8,657,924 |

(ii.) *Queensland.* In 1907 Queensland's oversea export of coal consisted of 3019 tons, valued at £1511. of which 3000 tons, valued at £1500. were sent to Chile. In

view of the local resources, the comparatively large imports of coal and coke into the northern State are rather surprising.

(iii.) *New Zealand.* New Zealand's export consisted principally of bunker coal used on vessels trading to the United Kingdom, the amount so credited in the export returns being 76,373 tons, valued at £77,104. In addition there was an export of 22,000 tons, valued at £16,000, sent to New South Wales, the bulk of this being coal for use in British warships on the Australian station. Of the remainder the South Sea Islands took 7000 tons, valued at £4880, and Fiji 4000 tons, valued at £2700.

6. **Price of Coal.**—(i.) *New South Wales.* The price of coal in New South Wales has been subject to considerable fluctuation since the date of first production. Up to the end of 1857 the average value of the total output was 11s. 10d. per ton. Next year the value had risen to nearly 15s., declining thereafter until in 1871 the price realised was 7s. From 1872 to 1879 there was a rise in value to 12s. Between 1882 and 1891 the price ranged between 8s. and 10s. From 1891 onwards there was a steady decline until 1898, when the average was 5s. 4d. Henceforward prices rose again until 1902, when 7s. 5d. was the average. A further decline then set in until 1905, when the price stood at a little over six shillings followed by a rise of one penny in 1906. In 1907 the average was 6s. 9d. per ton. The price of New South Wales coal depends on the district from which it is obtained, the northern (Newcastle) coal always realising a much higher rate than the southern or western product. The average rate in each district during the last six years was as follows:—

PRICE OF COAL IN NEW SOUTH WALES (PER TON), 1901 to 1907.

| Year. | Northern District. | | Southern District. | | Western District. | |
|-------|--------------------|------|--------------------|------|-------------------|-------|
| | s. | d. | s. | d. | s. | d. |
| 1901 | 8 | 4.19 | 5 | 3.28 | 4 | 9.76 |
| 1902 | 8 | 4.49 | 5 | 9.33 | 5 | 0.73 |
| 1903 | 8 | 1.04 | 5 | 8.12 | 5 | 0.14 |
| 1904 | 7 | 2.10 | 5 | 7.25 | 5 | 1.91 |
| 1905 | 6 | 4.15 | 5 | 5.03 | 5 | 0.15 |
| 1906 | 6 | 5.28 | 5 | 6.60 | 4 | 10.81 |
| 1907 | 7 | 4.41 | 5 | 7.44 | 4 | 6.90 |

(ii.) *Victoria.* In Victoria the average price of coal up to the 31st December, 1890, was nineteen shillings and threepence per ton. In 1895 the price was still as high as twelve shillings and twopence, but in the following five years there was a serious decline, the value in 1900 being quoted at nine shillings and sevenpence per ton. In 1901, however, there was an astonishing rise, the figure being as high as fourteen shillings and sevenpence. Since that year, however, the price again declined, the average for 1905 being ten shillings and twopence, for 1906 ten shillings, and for 1907 eleven shillings and sixpence.

(iii.) *Queensland.* The average price of coal at the pit's mouth in Queensland during the period 1900 to 1907 ranged from five shillings and eightpence halfpenny in 1906 to seven shillings in 1901. Prices in the principal coal-producing districts during the last three years were as follows:—

PRICES OF COAL, QUEENSLAND, 1905 to 1907.

| District. | Value at Pit's Mouth. | | | | | |
|---------------------------|-----------------------|----------|----------|----------|----------|----------|
| | 1905. | | 1906. | | 1907. | |
| | Per ton. | Per ton. | Per ton. | Per ton. | Per ton. | Per ton. |
| Ipswich and Darling Downs | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. |
| Wide Bay and Maryborough | 5 4 | 5 2½ | 8 0¾ | 6 1½ | 8 4 | 11 6½ |
| Rockhampton and Central | 7 8½ | 12 0 | 11 2½ | 11 6½ | 11 6½ | 11 6½ |

(iv.) *Western Australia.* The average price of the Collie (Western Australia) coal up to the end of 1901 was nine shillings and fourpence per ton, the price in 1901 being eleven shillings and sevenpence. In 1902 the average stood at twelve shillings and threepence, but since that time there has been a steady fall, the lowest point being reached in 1906, when the price was 7s. 7½d. per ton. In 1907 the average was 7s. 8½d.

(v.) *Tasmania.* The average price per ton of coal at the pit's mouth in Tasmania was eight shillings in 1901. In 1902 it was eight shillings and sevenpence, in 1903 eight shillings and ninepence, in 1904 nine shillings and eightpence, in 1905 nine shillings and eightpence, in 1906 nine shillings and ninepence, and in 1907 eight shillings per ton.

7. **Price of Coal in other Countries.**—According to a report published by the Board of Trade the average value of coal at the pit's mouth in the five principal coal-producing countries of the world, for the three years ended 1906, was as follows:—

PRICES OF FOREIGN COAL.

| Year. | United Kingdom. | Germany. | France. | Belgium. | United States. |
|----------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | Per ton. s. d. | Per ton. s. d. | Per ton. s. d. | Per ton. s. d. | Per ton. s. d. |
| 1904 ... | 7 2½ | 8 6½ | 10 10½ | 10 8 | 5 10¾ |
| 1905 ... | 6 11½ | 8 7½ | 10 6¾ | 10 2½ | 5 8 |
| 1906 ... | 7 3½ | 8 11½ | ... | ... | 5 9½ |

The price of coal at the pit's mouth in the principal British possessions is averaged by the same authority as follows:—

PRICE OF COAL, BRITISH POSSESSIONS.

| Year. | British India. | C'wealth of Australia. | New Zealand. | Canada. | Transvaal. | Cape of Good Hope. | Natal. |
|-------|-------------------|------------------------|-------------------|-------------------|-------------------|--------------------|-------------------|
| | Per ton. s. d. | Per ton. s. d. | Per ton. s. d. | Per ton. s. d. | Per ton. s. d. | Per ton. s. d. | Per ton. s. d. |
| 1904 | 3 5 | 6 10 | 10 9 | 9 3 | 8 3 | 20 0 | 10 8 |
| 1905 | 3 4 | 6 2 | 10 7 | 9 4 | 7 3 | 18 8 | 8 3 |
| 1906 | 3 11 | 6 3 | 10 0 | 9 4 | 6 5 | 18 5 | 8 6 |

A consideration of the above and preceding figures will shew that throughout the world the price of coal has, generally speaking, undergone a considerable decline during the last few years, although the latest returns shew an upward tendency.

8. **Employment in Coal Mining.**—The number of persons employed in coal mining in each of the States and New Zealand during the year 1907 is shewn below. The table also shews the number of persons killed and injured, with the proportion per 1000 employed, while further columns are added shewing the quantity of coal raised for each person killed and injured, this being a factor which must be reckoned with in any consideration of the degree of risk attending mining operations.

Returns published by the Board of Trade, England, give the total known number of persons engaged in mining and quarrying throughout the world as about 5½ millions, more than one-half of whom were employed in coal mining, the number in Great Britain being 867,000; the United States, 641,000; Germany, 569,000; France, 178,000; Belgium, 139,000; Austria, 121,000; and India, 99,000.

The latest returns shew the death rate in the United Kingdom as 1.29, and for the British Empire 1.34 per 1000 persons employed in coal mines. For France the rate is given as 7.17, for Germany 1.88, and the United States 3.21. For foreign countries generally the rate is stated at 2.99 per 1000. The high rate in France was due to an unusual casualty list in 1906, the rate for the preceding year being 1.04.

EMPLOYMENT AND ACCIDENTS IN COAL MINING, 1907.

| State. | Persons Employed in Coal Mining. | No. of Persons. | | Proportion per 1000 Employed. | | Tons of Coal Raised for Each Person. | |
|-----------------------|----------------------------------|-----------------|----------|-------------------------------|----------|--------------------------------------|----------|
| | | Killed. | Injured. | Killed. | Injured. | Killed. | Injured. |
| New South Wales ... | 17,080 | 17 | 99 | 1.0 | 8.9 | 509,290 | 56,588 |
| Victoria ... | 599 | 1 | 3 | ... | 5.0 | 138,585 | 46,195 |
| Queensland ... | 1,505 | ... | 24 | ... | 15.9 | ... | 28,470 |
| South Australia ... | ... | ... | ... | ... | ... | ... | ... |
| Western Australia ... | 253 | 1 | 13 | 3.9 | 51.3 | 142,373 | 10,944 |
| Tasmania ... | 198 | ... | 4 | ... | 20.0 | ... | 14,723 |
| Commonwealth ... | 19,635 | 19 | 143 | 1.0 | 7.28 | 509,529 | 49,142 |
| New Zealand ... | 3,910 | 12 | 33 | 3.1 | 8.4 | 152,584 | 55,485 |

THE AVERAGE FOR THE LAST SIX YEARS AVAILABLE IS GIVEN BELOW:—

| | | | | | | | |
|---------------------|--------|------|-------|-----|------|-----------|--------|
| New South Wales ... | 14,500 | 32.0 | 94.7 | 2.2 | 6.5 | 215,000 | 73,000 |
| Victoria ... | 700 | 1.2 | 9.2 | 1.7 | 13.1 | 120,000 | 16,000 |
| Queensland ... | 1,400 | 0.5 | 18.3 | 0.4 | 13.1 | 1,113,000 | 30,000 |
| South Australia ... | ... | ... | ... | ... | ... | ... | ... |
| Western Australia* | 340 | 0.3 | 11.2 | 0.9 | 33.0 | 462,000 | 12,000 |
| Tasmania ... | 200 | ... | 1.5 | ... | ... | ... | 36,000 |
| Commonwealth ... | 17,140 | 34.0 | 134.9 | 2.0 | 7.9 | 228,000 | 57,000 |
| New Zealand ... | 3,300 | 5.7 | 19.7 | 1.7 | 6.0 | 277,000 | 80,000 |

* Two killed; one in 1903, one in 1907.

§ 11. Coke.

1. **Production of Coke.**—Notwithstanding the large deposits of excellent coal in Australia there is at the present time a fairly considerable amount of coke imported from abroad, the oversea import during the year ended 1907 amounting to 9800 tons, valued at £13,250, the bulk of which came from the United Kingdom and Germany, and was taken chiefly by South Australia and Western Australia. Various reasons were at one time adduced to account for the rejection of the local article, such as excessive friability in transport, lack of strength to sustain the weight of large ore bodies in reduction works, excessive amount of ash, etc. These disabilities have, however, largely been overcome, so that succeeding years should see continued expansion in local production. Extensive shipments of coke were obtained from Germany in 1908 for the Wallaroo and Moonta smelters, and for the Broken Hill Proprietary's works at Port Pirie. In explanation of this, it has been stated that while supplies in Australia were not sufficient to meet demands and ensure continuity in supply, there has been considerable over-production at German coke works. In New South Wales the industry is making rapid progress, as the figures hereunder will shew:—

COKE MADE IN NEW SOUTH WALES.

| Year. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------|---------|---------|---------|---------|---------|---------|---------|
| Quantity Tons | 128,882 | 126,872 | 160,592 | 171,006 | 162,961 | 186,060 | 254,609 |
| Value ... £ | 105,665 | 89,605 | 108,764 | 110,692 | 100,306 | 110,607 | 159,316 |

A small quantity of coke is made in Queensland, but the bulk of that used in ore reduction is imported, mainly from New South Wales. The coke manufactured locally amounted in 1905 to 8650, in 1906 to 8672, and in 1907 to 8280 tons, while the imports for the same years came to 9823, 22,661, and 34,013 tons respectively.

New Zealand formerly produced a fair amount of coke, the records for 1892 shewing an export of local produce amounting to over 4000 tons, valued at £5700. The production has, however, dwindled away, and from 1900 to 1907 there was a continuous rise in imports, ranging from 963 tons, valued at £2451, to 4391 tons, valued at £8854.

It must be clearly understood that the coke referred to above is the production of coke-making establishments only, and does not include the inferior article produced at gasworks.

§ 12. Oil Shale and Mineral Oils.

1. **Production of Shale.**—(i.) *New South Wales.* As pointed out by Mr. E. F. Pittman, the name kerosene shale has been rather inaptly applied to a variety of torbanite, cannel, or boghead mineral found at various geological horizons in New South Wales. The mineral does not, as a rule, split in parallel layers, the fracture being rather of a conchoidal type. Pure samples have been found to contain over 89 per cent. of volatile hydro-carbons and over 5 per cent. of fixed carbons. The discovery of the mineral in New South Wales dates probably from 1827, although the first authentic mention by a scientific observer dates from 1845, when its occurrence in the Hartley Vale district was noted by Count Strzelecki. The mineral has been found at several places in the Upper Coal Measures, and in at least two in the Lower Carboniferous. Production on anything like a large scale commenced in 1868, when about 17,000 tons, valued at £48,000, were raised. The production in 1907 amounted to 47,000 tons, valued at £32,055, the whole of it being raised in the mines controlled by the Commonwealth Oil Corporation Limited at Hartley Vale, New Hartley, and Wolgan. Up to the end of 1907 the entire production for the State amounted to 1,327,000 tons, valued at £2,167,500.

(ii.) *Victoria.* Up to the present no extensive deposit of oil shale has been located in Victoria.

(iii.) *Queensland.* Deposits of oil shale are known to exist at various localities in Queensland, and what is believed to be a payable oil bearing area has been located by a bore near Roma. At the time of compilation of this article, however, developmental work had not sufficiently progressed to enable a definite statement to be made.

(iv.) *South Australia.* In this State large areas of bituminous shale, of which the boundaries are only approximately known, occur at Leigh's Creek and Lake Phillipson. Allusion to the mineral known as Coorongite is made in Section 13.

(v.) *Western Australia.* A deposit of carbonaceous shale of considerable thickness is known to exist at Coolgardie, but the mineral has not yet been raised in any quantity.

(vi.) *Tasmania.* The deposits of oil shale (Tasmanite) in the Mersey district are not at present being worked, but operations are in progress with a view to testing their value. Kerosene shale of fine quality is found in the country between the Jessie and Flowerdale Rivers, but the extent of the beds has not been proved.

(vii.) *New Zealand.* Mineral oil has been known to exist for some years in New Zealand in the locality of New Plymouth, and also near Gisborne and the East Cape, while small quantities are at times noticeable on hot pools in the volcanic district. Up to the end of 1907 no developments of commercial value had resulted from oil-boring operations in Taranaki and at Kotuku, near Lake Brunner.

2. **Export of Shale.**—In 1907, New South Wales exported 5686 tons of shale valued at £13,546, of which 5080 tons, valued at £11,957, were sent to the Netherlands.

§ 13. Other Non-Metallic Minerals.

1. **Alunite.**—Probably the most remarkable deposit of alunite in the world occurs at Bulladelah, in the county of Gloucester, New South Wales, a large proportion of a low range of mountains in the district being composed of this mineral. The deposits are worked by quarrying, and up to the end of 1907 about 29,000 tons had been raised, valued at £87,700, the production for the year 1907 being 2087 tons, valued at £5115.

2. **Asbestos.**—This substance has been found in various parts of Australia, but up to the present has not been produced in sufficient quantity to warrant special notice. In Western Australia what may prove to be a valuable deposit of the fibrous chrysotile variety has been located at Tambourah, on the West Pilbara goldfield. In 1899 Tasmania raised 200 tons, valued at £363, but there has been no production during the last seven years.

3. **Clays.**—Valuable deposits of clays of various sorts are found throughout the Commonwealth. There is a considerable local production of earthenware, bricks, and tiles, but the finer clays have not as yet been extensively used. On Kangaroo Island, South Australia, where, it is stated, the first pottery mill in the Commonwealth was erected, there are vast deposits of felspar, china stone, silica, and firebrick clay.

4. **Coorongite.**—This peculiar indiarubber-like material was first noted many years ago near Salt Creek and in the vicinity of Coorong Inlet, in South Australia. It was thought that the substance owed its origin to subterranean oil-bearing strata, but so far the search for petroleum has not been attended with success.

5. **Graphite.**—Graphite is found in New South Wales near Undercliff Station, in the county of Buller, but the deposit is not sufficiently pure to prove remunerative. In Victoria the mineral occurs in Ordovician slates in several of the goldfields, but is not worked. In Queensland the mineral is raised by the Graphite Plumbago Company at Mt. Bopple, near Netherby, on the Maryborough-Gympie line. The quantity produced in 1907 was sixty-five tons, valued at £200. There is an extensive deposit of the mineral at Mt. Bopple, but the quality is rather inferior.

6. **Gypsum.**—This mineral is found at various places in the Commonwealth. In South Australia deposits are being worked at Lake Fowler and near Marion Bay, Yorke Peninsula. At Boort, in Victoria, 1036 tons, valued at £259, were raised in 1907.

7. **Tripolite, or Diatomaceous Earth.**—Although tripolite has been found at Barraba, Cooma, Wyrallah, and in the Warrumbungle Mountains in New South Wales, the deposits have not yet been worked commercially. In Victoria there is a remarkably pure deposit at Lillieur, near Talbot, while beds of the mineral are also met with at Clunes and Portland. From the deposit at Talbot, 155 tons valued at £930 were obtained in 1907.

8. **Salt.**—Salt is obtained from salt lakes in the western and north-western districts of Victoria, and from salterns in the neighbourhood of Geelong. In Western Australia supplies are obtained from dried-up shallow lakes and consumed locally or exported. The chief centres of production are Rottnest Island, near Fremantle, and Middle Island, near Esperance, the product from the former being a remarkably pure chloride. Large quantities are also obtained from the shallow salt lakes of South Australia, chiefly on Yorke Peninsula. Lake Hart, about sixty square miles in area, situated about 120 miles N.W. from Port Augusta, contains immense supplies of salt of good quality which at present, however, owing to distance from market possess no economic value. The salt is simply scraped from the beds of the lakes in summer time and carted to the refinery. It is stated that care must be taken not to leave too thin a crust of salt over the under-

lying mud, as the resultant "crop" after the winter rains will in that case be smaller than usual. The production of crude salt in South Australia during 1906 was 55,000 tons, valued at £27,500.

9. **Natural Manures.**—In Victoria large quantities of "copi," an impure hydrous sulphate of lime, are obtained in the North-western district. South Australia possesses deposits of rock phosphate near Port Clinton and Ardrossan on Yorke Peninsula, at Belvedere near Kapunda, and at Kooringa. The production in 1907 was 8000 tons. Although it can hardly be considered a mineral product, mention may be made here of the large accumulations of guano on the Arolhos Islands, off the coast of Western Australia, in the neighbourhood of Geraldton. The deposits vary in thickness from four to twenty-seven inches. During the years 1876-80 over 36,000 tons were raised, no figures being available shewing the production of recent years.

In New Zealand, fairly extensive deposits of phosphates have been located at Clarendon in the Otago district, but the production has not up to the present reached any magnitude.

§ 14. Gems and Gemstones.

1. **Diamonds.**—Diamonds were first noted in New South Wales by E. J. Hargraves in 1851, and in October of the same year by Geological Surveyor Stutchbury. The Cudgong field was discovered in 1867, and shortly afterwards the Bingara diamantiferous deposits were located. None of the diamonds so far discovered have proved of any considerable size, the largest weighing about $6\frac{1}{2}$ carats. Stones of small size are also found at Cope's Creek and other places in the Inverell district. The chief production in 1907 was from Copeton in the Tingha Division. It is difficult to obtain accurate returns in connection with the production of precious stones, but the yield of diamonds in 1907 was estimated at 2539 carats, valued at £2056, while the total production to the end of 1907 is given as 159,675 carats, valued at £106,145. Small quantities of diamonds are found in Victoria in the gravels of streams running through granite country in the Beechworth district; at Kongbool in the Western District; and near Benalla. The stones are generally small, and the production up to date has been trifling. A few small diamonds have been found in the Pilbara district in Western Australia. In South Australia diamonds have been found on the Echunga goldfield, the most notable gem being Glover's diamond, which was sold for £70.

2. **Sapphires.**—These gems were discovered in New South Wales in 1851, near Burrandong. The gems have also been found in small quantities near Inverell, and at a few other localities in the State. There is no record of production. Specimens of sapphire have been found in Victoria, but the stones of commercial size are generally of little value owing to flaws.

In Queensland sapphires are found in the gravel of creek beds, between Withersfield and Anakie on the Rockhampton-Winton railway line. The gems show excellent fire and lustre, but the colour is darker blue than the Oriental sapphire. Hyacinths are occasionally found in association with the gems. The production of all gems in Queensland last year was valued at £40,500, and up to the end of 1907 the total was £103,000.

3. **Precious Opal.**—This stone was first discovered in New South Wales at Rocky Bridge Creek on the Abercrombie River, in the year 1877, and later a most important discovery was made at White Cliffs in the Wilcannia district, which is now the centre of production. The total value of opal raised last year was estimated at £79,000, of which £66,000 worth was raised in the White Cliffs district, and the balance at the Wallangulla field in the Walgett division. Beautiful specimens of "black" opal, realising over £40 an ounce, have been obtained at the last-mentioned field. Since the year 1890 the total value of opal won is estimated at £1,068,000.

Small quantities of precious opal are also found in the Beechworth district in Victoria. In Queensland, the first recorded discovery of the gem dates from about 1875.

The opaliferous district stretches over a considerable area of the western interior of the State, from Kynuna and Opalton as far down as Cunnamulla. The yield in 1907 was estimated at £3000, and up to the end of that year at £159,000. These figures are, however, merely approximations, as large quantities of opal are disposed of privately to buyers on the fields, no record of which is obtained.

4. **Other Gems.**—Emeralds were found in New South Wales in the year 1890, near the township of Emmaville, the largest specimen found in the district weighing twenty-three carats in the rough. Altogether 2225 carats were sent to London during that year, some of the gems bringing £4 a carat, but the production has since dwindled, there being no record of any yield in 1906. Amongst other gems found in New South Wales at various times may be mentioned *turquoises*, discovered in 1894, near Bodalla, *topazes*, fine specimens of which have been obtained in the New England district, and *zircons* and *garnets*. Turquoises are also found in thin veins in Victoria, but the deposit is not rich enough to pay for expenses of working. Fine *agates* are found in many places in Victoria, but have not been made use of to any extent. Garnets are found in Western Australia, and beautiful specimens of *crocidolite* have been obtained at Yarra Creek in the Murchison district. *Rubies* have been found at various places in New South Wales and Queensland, and in the Westland district of Middle Island, New Zealand. In South Australia *tourmaline* has been found on Kangaroo Island and *beryls* near Williamstown.

§ 15. The Mineral Wealth of Australasia.

1. **Total Production.**—(i.) *Australia.* The value of the production from all minerals raised in Australia during 1907 is given in the following table:—

MINERAL PRODUCTION IN 1907.

| Minerals. | N.S.W. | Victoria. | Q'land. | S.A. | W.A. | Tas. | Cwth. |
|---------------------|-------------------|------------------|------------------|----------------|------------------|------------------|-------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Alunite | 5,115 | ... | ... | ... | ... | ... | 5,115 |
| Antimony | 46,278 | 13,290 | 7,863 | ... | 630 | ... | 68,061 |
| Bismuth | 5,268 | ... | 1,806 | ... | ... | 27 | 7,101 |
| Chrome | 105 | ... | ... | ... | ... | ... | 105 |
| Coal | 2,922,419 | 79,706 | 222,135 | ... | 55,158 | 23,556 | 3,392,974 |
| Coke | 159,316 | ... | ... | ... | ... | ... | 159,316 |
| Copper | 727,774 | 2,356 | 1,028,179 | 705,031 | 180,387 | 869,666 | 3,513,393 |
| Diamonds | 2,056 | ... | ... | ... | ... | ... | 2,056 |
| Diatomaceous earth | 50 | 930 | ... | ... | ... | ... | 980 |
| Gems (unspecified) | ... | ... | 40,500 | ... | ... | ... | 40,500 |
| Gold | 1,050,730 | 2,954,617 | 1,978,938 | 42,468 | 7,210,749 | 277,607 | 13,515,109 |
| Graphite | ... | ... | 200 | ... | ... | ... | 200 |
| Gypsum | ... | 259 | ... | ... | ... | ... | 259 |
| Iron | 60,550 | ... | ... | ... | ... | ... | 60,550 |
| Iron oxide | 1,961 | ... | ... | ... | ... | 1,150 | 3,111 |
| Ironstone flux ... | 7,707 | ... | 24,327 | 38,100 | 438 | ... | 70,572 |
| Kaolin | 740 | 772 | ... | ... | ... | ... | 1,512 |
| Lead | 374,182 | ... | 75,330 | ... | 1,292 | ... | 460,804 |
| Limestone flux ... | 16,162 | ... | 35,808 | 5,800 | 1,382 | ... | 59,152 |
| Manganese | ... | ... | 4,464 | ... | ... | ... | 4,464 |
| Molybdenite | 3,564 | ... | 8,442 | ... | ... | ... | 12,006 |
| Opal | 79,000 | ... | 3,000 | ... | ... | ... | 82,000 |
| Platinum | 1,014 | ... | ... | ... | ... | ... | 1,014 |
| Salt | ... | 19,996 | ... | 37,500 | ... | ... | 57,496 |
| Scheelite | 23,781 | ... | 320 | ... | ... | ... | 24,101 |
| Shale | 32,055 | ... | ... | ... | ... | ... | 32,055 |
| Silver | 257,314 | 4,355 | 112,540 | 780 | 25,382 | ... | 400,371 |
| Silver-lead bullion | 3,658,632 | ... | ... | ... | ... | 572,560 | 4,244,285 |
| Silver-lead ore ... | ... | 10,531 | 496,766 | 13,093 | 158,648 | 501,631 | 1,502,296 |
| Tin | 293,305 | ... | 496,766 | 41,365 | ... | 4,411 | 133,082 |
| Wolfram | 26,235 | ... | 90,985 | 11,451 | ... | ... | 536,620 |
| Zinc | 536,620 | ... | ... | 10,500 | ... | ... | 10,668 |
| Uncenumerated ... | 186 | ... | ... | ... | ... | ... | ... |
| Total | 10,292,119 | 3,086,812 | 4,131,603 | 906,088 | 7,634,066 | 2,250,658 | 28,301,346 |

In the next table will be found the estimated value of the total mineral production in each State up to the end of 1907. The figures do not in all cases coincide with those published by the Mines Departments, as they are exclusive of certain items such as building stones, clay, cement, and lime, which appear in some of the mining returns. The New South Wales Mining report gives the production of building stone up to the end of 1907 as £17,801 (this figure, however, representing exports alone), while the production in Victoria during the period 1866-1906 is given in the Victorian Mines Report as £3,413,937. For comparative purposes the figures are therefore valueless, the utility of export figures for such a commodity as building stone being more or less dubious.

COMMONWEALTH MINERAL PRODUCTION TO END OF 1907.

| Minerals. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Gold ... | 55,364,882 | 279,471,596 | 66,313,841 | 2,749,609 | 78,004,408 | 6,523,821 | 488,428,157 |
| Silver and lead | 47,526,887 | 212,139 | 1,540,186 | 401,777 | 572,470 | 4,827,825 | 55,081,285 |
| Copper... | 9,200,403 | 125,810 | 5,430,182 | 26,280,877 | 658,516 | 7,623,227 | 49,319,015 |
| Tin ... | 8,037,814 | 452,061 | 6,607,965 | 179,267 | 755,821 | 9,676,861 | 25,709,789 |
| Coal ... | 53,279,161 | 1,556,981 | 3,876,503 | ... | 542,066 | 422,681 | 59,677,392 |
| Other ... | 7,669,625 | 292,432 | 1,091,543 | 1,040,001 | 56,310 | 126,402 | 10,276,313 |
| Total ... | 181,078,772 | 282,111,019 | 84,860,220 | 30,651,531 | 80,589,591 | 29,200,818 | 688,491,951 |

The "other" minerals in New South Wales include antimony, £299,557; bismuth, £119,882; chrome, £101,108; diamonds, £106,145; opal, £1,068,099; oil shale, £2,167,500; and zinc, £1,426,894. In the Victorian returns antimony ore was responsible for £194,101, and salt £54,206. Included in "other" in the Queensland production were opal, £158,695; gems, other, £102,277; bismuth, £79,695; wolfram, £447,523; antimony ore, £50,412; and manganese, £48,632. The chief item in South Australian "other" minerals was salt, £644,500. In the Tasmanian returns limestone flux was responsible for nearly £100,000.

(ii.) *New Zealand.* The production of minerals in New Zealand during 1907 and up to the end of that year is given below:—

MINERAL PRODUCTION OF NEW ZEALAND, 1907, and Total to 1907.

| Minerals. | During 1907. | To end of 1907. | Minerals. | During 1907. | To end of 1907. |
|---------------|--------------|-----------------|------------------|------------------|--------------------|
| | £ | £ | | £ | £ |
| Gold ... | 2,027,490 | 71,528,978 | Coal ... | 965,766 | 13,492,470 |
| Silver ... | 169,484 | 1,090,751 | Kauri Gum ... | 579,888 | 14,022,905 |
| Copper ... | 595 | 18,823 | Other ... | 30,468 | 214,584 |
| Chrome ... | ... | 38,002 | | | |
| Antimony ... | 2,118 | 54,716 | | | |
| Manganese ... | 26 | 61,857 | Total ... | 3,775,835 | 100,523,086 |

The so-called kauri gum—which is really a resin—has contributed about 14 per cent. of the total mineral production of New Zealand. The substance is the solidified turpentine of the kauri pine, and is used as the base of the best oil varnishes. It is obtained chiefly in the Auckland provincial district of the North Island, being found alike in the driest fern banks and the deepest swamps. A certain amount is also got from the forks of standing trees.

2. *Total Employment in Mining.*—The number of persons engaged in the mining industry in each State and New Zealand is an index of the significance of the mineral wealth. During the year 1907 this was as follows:—

EMPLOYMENT IN MINING, 1907.

| State. | Number of Persons Engaged in Mining for | | | | | | Total. |
|-----------------------|---|-------------------------------|---------|-------|-----------------------|--------|---------|
| | Gold. | Silver, Lead, and Zinc. | Copper. | Tin. | Coal and Shale. | Other. | |
| New South Wales ... | 7,468 | 10,021 | 3,764 | 3,173 | 17,356 | 1,976 | 43,758 |
| Victoria ... | 23,291 | 10 | 10 | 87 | 599 | 128 | 24,125 |
| Queensland ... | 8,883 | 785 | 3,941 | 2,582 | 1,573 | 1,434 | 19,198 |
| South Australia ... | 914 | 86 | 5,254 | 554 | ... | 1,033 | 7,841 |
| Western Australia ... | 17,237 | 8 | 611 | 1,003 | 253 | 1 | 19,113 |
| Tasmania ... | 953 | 1,908 | 2,614 | 1,828 | 198 | 15 | 7,516 |
| Commonwealth ... | 58,746 | 12,818 | 16,194 | 9,227 | 19,979 | 4,587 | 121,551 |
| New Zealand ... | 9,138 | ... | 112 | 2 | 3,692 | 137 | 13,081 |

The following table shews the number of persons engaged in mining in the Commonwealth and New Zealand during each of the years 1891, 1901, and 1907, together with the proportion of the total population so engaged:—

PROPORTION OF PERSONS ENGAGED IN MINING, AUSTRALASIA,

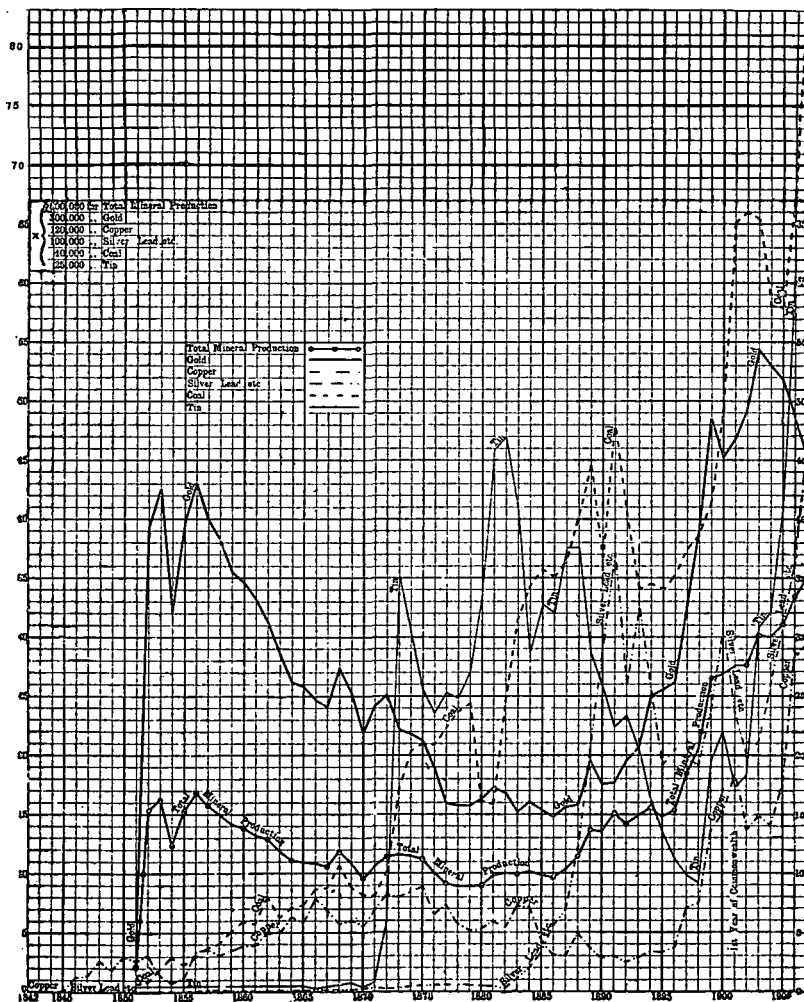
1891, 1901, 1907.

| State. | 1891. | | 1901. | | 1907. | |
|-----------------------|---------------------|---|---------------------|---|---------------------|---|
| | Miners Employed. | No. per 100,000 of Popu- lation. | Miners Employed. | No. per 100,000 of Popu- lation. | Miners Employed. | No. per 100,000 of Popu- lation. |
| New South Wales ... | 30,604 | 2,700 | 36,615 | 2,685 | 43,758 | 2,822 |
| Victoria ... | 24,649 | 2,151 | 28,670 | 2,381 | 24,125 | 1,947 |
| Queensland ... | 11,627 | 2,934 | 13,352 | 2,664 | 19,198 | 3,562 |
| South Australia ... | 2,683 | 834 | 7,007 | 1,931 | 7,841 | 2,033 |
| Western Australia ... | 1,269 | 2,496 | 20,895 | 11,087 | 19,113 | 7,286 |
| Tasmania ... | 3,988 | 2,695 | 6,923 | 4,017 | 7,516 | 4,190 |
| Commonwealth ... | 74,820 | 2,341 | 113,462 | 2,992 | 121,551 | 2,925 |
| New Zealand ... | 16,929 | 2,688 | 12,732 | 1,637 | 13,081 | 1,423 |

3. Wages Paid in Mining.—In the next table will be found a statement of the average wages earned by employes in the chief branches of the mining industry in Australia. The value of the figures is rather prejudiced by the wide diversity of conditions, not only in the several States but in different districts of the same State.

The figures quoted for New South Wales in gold mining refer to the Hillgrove and Mount Boppy districts. For copper the figures refer to the Cobar district, and represent rates as awarded by the Arbitration Court. The maximum is paid when copper is £115 per ton or over, and the minimum when the metal is £70 per ton and under, a graduated rate prevailing between the extremes. The rates for silver miners are those ruling at Broken Hill. As regards Queensland the rates for hewing in coal mines are for miners not doing their own wheeling. Where own wheeling is done the rate varies from 2s. 3d. to 5s. 6d. No distinction was made as to class of mining in the returns received from South Australia, and the figures have, therefore, been placed with copper mining. Generally speaking, the classification of the labour in the various States does not permit of very satisfactory comparisons.

GRAPHS SHEWING VALUES OF PRINCIPAL MINERALS PRODUCED IN THE COMMONWEALTH, 1842 to 1907.



EXPLANATION OF GRAPHS—The values shown in the above diagrams are those of the total Commonwealth production of the most important minerals in successive years from 1842 to 1907.

The base of each small square represents an interval of one year, and the vertical height represents, in the case of gold £300,000; copper, £120,000; silver, lead, etc., £100,000; coal, £40,000; tin, £25,000; and total mineral production, £800,000.

The names of the various minerals are written on the graphs which respectively represent them, and the distinctive types of line used are exhibited in detail in the upper portion of the diagram.

WAGES PAID IN MINING INDUSTRY IN THE COMMONWEALTH.

| Class of Mine. | New South Wales. | Victoria. | Queensland. | South Australia. | Western Australia. | Tasmania. |
|----------------------|---------------------|-----------------------------|--|------------------|------------------------|--|
| GOLD— | | | | | | |
| Labourers | per day. 7/- to 8/2 | per week. £1 13/- to £2 2/- | per day. 6/9 to 11/2 | per day. 6/8 | per day. 10/- to 11/10 | per day. 6/- to 7/- |
| Bracemen | 7/- to 8/- | £2 to £2 5/- | 7/1 to 11/1 | 8/- | 11/8 to 13/6 | 7/- to 8/8 |
| Platmen | 7/- to 8/- | £1 19/- to £2 2/- | 7/9 to 9/6 | 7/- | 11/8 to 13/6 | 7/6 |
| Miners | 8/4 to 9/3 | £2 5/- to £2 10/- | 8/2 to 12/- | 8/9 | | 7/6 to 8/- |
| Wet | 10/2 | £2.10/- | ... | 11/- | } 11/8 to 16/3 { | 8/4 to 9/2 |
| Shaft-sinking | 9/- to 10/6 | { £2 8/- for 6 hr. shifts } | ... | 10/- | | 8/4 |
| Wet | 10/- to 12/- | £2 8/- | 9/9 to 12/9 | 8/9 | 13/4 to 15/4 | 8/4 to 9/- |
| Blacksmiths | 10/- to 11/- | £2 8/- | 9/1 to 12/10 | 9/3 | 15/- | 8/- to 8/4 |
| Carpenters | | | | | | |
| Engine-drivers— | | | | | | |
| Stationary | } 8/- to 10/- { | £2 10/- | } 9/10 to 13/3 { | 8/3 | } 13/4 to 15/- { | 8/- to 8/4 |
| Winding | | £2 10/- | | 9/- | | 8/4 to 9/6 |
| Battery feeders | ... | ... | 6/6 to 11/4 | 6/8 | 10/- to 11/10 | 8/4 to 9/6 |
| Shift bosses | 10/- to 12/- | £2 10/- | 10/7 to 13/10 | 12/- | 16/8 | 9/2 to 10/- |
| Machine miners | 9/- to 10/6 | £2 5/- | 8/4 to 11/9 | 10/- | 13/4 to 15/6 | 8 4 |
| Timbermen | 9/- to 9/2 | £2 5/- | 9/2 to 11/8 | 9/3 | 13/4 to 15/- | 8/4 |
| | | | (Note.—The above figures refer to averages per shift in all metalliferous mines in Q'nsland) | | | |
| SILVER-LEAD* | | | | | | |
| Labourers | 7/6 | } Not mined. { | ... | 6/8 | } Same as gold. { | 7/6 to 8/6 |
| Bracemen | 8/4 | | ... | 8/- | | 7/9 to 9/- |
| Miners | 9/- | | ... | 8/9 | | 8/4 to 10/- |
| Blacksmiths | 9/- to 10/6 | | ... | 8/9 | | 8/4 to 12/2 |
| Carpenters | 9/- to 10/6 | | ... | 9/3 | | 9/6 to 13/4 |
| Engine-drivers | | | ... | | | |
| Winding | 10/- | | ... | 9/- | | 9/4 to 10/- |
| Shift bosses | 14/- | | ... | 12/- | | 10/- to 12/- & at salary of £4 pr. wk. |
| Truckers | 7/6 | | ... | 7/6 | | 7/6 to 8/6 |
| Timbermen | 10/- | | ... | 9/3 | | 8/4 to 10/- |
| COPPER— | | per shift. | | | | \$ |
| Labourers | 7/6 to 8/4 | 6/- | ... | 6/8 | | 8/- to 10/6 |
| Miners | 8/4 to 10/2 | 7/6 | ... | 8/9 | | 9/6 to 10/6 |
| Blacksmiths | 10/- to 13/4 | 8/4 | ... | 8/9 | | 10/6 to 13/- |
| Carpenters | ... | 8/4 | ... | 9/3 | | 10/6 to 12/6 |
| Engine-drivers— | | | | | | |
| Winding | ... | 8/4 | (see above) | 9/- | Do. | 11/- |
| Bracemen | 8/- to 9/3 | 6/6 | ... | 8/- | | 9/- to 9/6 |
| Drill sharpeners | 9/- to 13/- | 7/6 | ... | 9/- | | 9/- to 9/6 |
| Timbermen | 9/2 to 10/8 | 7/6 | ... | 9/3 | | 10/- to 12/6 |
| Machine miners | 9/2 to 10/6 | ... | ... | 9/8 | | 9/6 to 10/6 |
| Miners in wet ground | 9/4 to 11/- | ... | ... | 11/- | | ... |
| TIN— | | per day. | | | | |
| Labourers | 7/6 to 8/- | 6/- to 7/- | ... | 6/8 | | 7/- to 8/- |
| Miners | ... | 7/6 | ... | 8/9 | | 8/- to 8/6 |
| Blacksmiths | ... | 8/4 to 10/- | ... | 8/9 | | 9/- to 12/- |
| Carpenters | ... | 8/4 to 10/- | ... | 9/3 | | 9/- to 10/6 |
| Engine-drivers— | | | | | | |
| Stationary | ... | 8/4 | (see above) | 8/3 | Do. | 9/6 to 11/- |
| Shift bosses | ... | 8/- to 10/- | ... | 12/- | | 8/6 to 10/- |
| Nozzlemen | } Boxmen 8/4 { | 7/- to 8/- | ... | 10/- | | 7/6 to 8/6 |
| Racemen | | } Sluicemen 7/- { | 7/- | ... | 9/- |  | 7/- to 9/6 |
| Face bosses | 7/6 | | ... | ... | ... | |
| COAL— | | per shift. | | | † | |
| Deputies | 10/- to 11/- | 9/- to 12/- | ... | ... | 13/4 | 8/- |
| Shot firers | 9/- | ... | ... | ... | 13/2 | ... |
| Shiftmen | 6/- to 12/4 | ... | ... | ... | 13/2 | 7/6 |
| Wheelers | 5/- to 9/1 | 5/6 to 7/- | ... | ... | 11/2 to 12/4 | 5/- to 6/- |
| Overmen | £3 to £5 week | ... | ... | ... | On salary. | 10/- to 11/- |
| Miners | 10/- to 15/- | 7/6 to 9/- | ... | ... | 13/2 | 8/- to 10/- |
| Machinemmen | 11/- to 14/- | ... | ... | ... | 12/10 to 14/8 | ... |
| Enginemmen— | | | | | | |
| Winding | 10/- to 11/- | 8/4 | ... | Not mined. | 12/4 | 8/4 |
| Hauling | 8/- to 9/- | ... | ... | ... | ... | 10/- |
| Other | 8/- to 10/- | ... | ... | ... | ... | 8/4 |
| Labourers | 6/- to 7/- | 6/- | ... | ... | 9/4 | 6/- to 7/6 |
| Blacksmiths | 8/- to 10/- | 8/4 | ... | ... | 12/2 | 7/6 |
| Carpenters | 9/- to 10/- | 8/- | ... | ... | 11/4 | 6/6 to 7/6 |
| Safety lampmen | 8/- to 10/- | 6/- to 6/6 | ... | ... | ... | ... |
| Platmen or banksmen | 8/- to 9/- | 5/6 to 7/6 | ... | ... | ... | ... |

* To these rates the following bonus applies for two years from 1st January, 1907. From 7/6 to 8/4, 15 per cent.; over 8/4 to 9/-, 14 per cent.; over 9/-, 1/- per shift. † Also turners, 13/2; fillers, 11/4; set riders, 13/4; firemen, 11/4. § Also navvies, 8/6; winchmen, 10/6; platmen, 9/- to 9/6; punnpnen, 12/-; truckers, 8/- to 8/6; shift bosses, 12/- to 13/4; firemen, 8/6; brakemen, 9/6; fitters, 10/- to 13/4; plumbers, 10/6; electricians, 9/- to 10/6; gangers, 12/6; powder monkeys, 8/6 to 10/-; boys, 4/6 to 6/6.

SECTION XIII.

MANUFACTURING INDUSTRIES.

§ 1. General.

1. **Industrial Progress.**—The statistics of manufactures in the Commonwealth during recent years shew that many industries have now been permanently established on a secure basis, and also indicate a fairly rapid, though in some cases a somewhat irregular, progress both in regard to the extension of existing industries and the establishment of new ones. The scale on which many manufactories are established in Australia, however, appears small in comparison with those established in older countries of the world; but it should be remembered that owing to the sparseness of its population Australia cannot at present maintain industries on a very extensive scale, and also that until the inauguration of the Commonwealth in 1901 the field was still further limited by intercolonial tariffs.

(i.) *The Gold Discoveries, 1851.* During the period anterior to the gold discoveries (1851) little was done in regard to manufacturing industries in Australia. Such industries as had then been established were chiefly connected with the preparation of food-stuffs, and were to a large extent called into being by the isolated position of the country. It was found that, owing to the comparatively high prices which could be obtained for the products of the pastoral industry, those engaged in such pursuits in Australia could compete successfully in the world's markets. Owing to the sparseness of its population and to the distance of Australia from the world's centres of distribution, there was but little incentive towards any decided progress in agriculture, which was accordingly for many years almost entirely subsidiary to sheep and cattle raising. With the adoption of improved methods of agriculture, however, there were signs of an early extension in the cultivation of wheat, when the discovery of gold in 1851 completely changed the economic aspect in Australia and effected a revolution in all industrial relations. The large towns were practically depleted of their male able-bodied population, and the first effect of the gold rush upon manufacturing industries was disastrous. The supply of labour in many occupations was exhausted, and most branches of industry came to a standstill. There was, however, a rapid change. A decline in the activity of the gold-fields threw many immigrants, whose early lives had been passed in English cities, out of employment. The surplus of labour thus engendered accumulated in Melbourne and a few other large towns, establishing incipient artisan communities. This no doubt intensified the early impulses towards industrial employment. In the State of Victoria, in particular, it was sought to encourage the investment of capital in manufacturing enterprises by the establishment of protective Customs duties. Manufacturing industries were revived on a larger scale than formerly, and the population attracted by the discovery of gold remained in Australia and furnished the labour necessary to operate the factories thus established.

(ii.) *Later Progress.* Soon after the discovery of gold the construction of the first railways (1854) and the re-establishment of regular steamship communication with

Europe (1856) helped to encourage the industrial activity, which commenced to appear. The States of New South Wales and Victoria, which had recently (1855) received the benefits of responsible government, soon turned their attention to the settlement of an agricultural population on the land. The Acts which were passed (see Section VI., § 2) had a beneficial effect on the working classes, giving them opportunities for employment not previously open to them, and fostering the manufacturing industries by increasing the measure of primary production. During the following years the various manufacturing industries prospered. The statistics of the States are not sufficiently complete or uniform to enable a statement of the progress of these industries to be given. The following table, however, shewing, so far as returns are available, the number of factories and the number of employees in each State at decennial periods since 1861 and in 1907, will serve to indicate generally the progress which has been made:—

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 to 1907.

| Year. | N.S.W. | Victoria. | Queensland. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|-------|--------|-----------|-------------|----------|----------|-----------|-----------|
|-------|--------|-----------|-------------|----------|----------|-----------|-----------|

NUMBER OF FACTORIES.

| | | | | | | | |
|------|-------|-------|--------|--------|-----|------|--------|
| 1861 | 601 | 531 | ... | ... | ... | ... | ... |
| 1871 | 1,813 | 1,740 | ... | ... | ... | ... | ... |
| 1881 | 2,961 | 2,488 | 571† | 823† | ... | ... | ... |
| 1891 | 3,056 | 3,141 | 1,328† | 996† | 175 | ... | ... |
| 1901 | 3,367 | 4,003 | 2,110† | 1,335† | 662 | 420* | 11,897 |
| 1907 | 4,432 | 4,530 | 1,359 | 1,086 | 643 | 505 | 12,555 |

NUMBER OF EMPLOYEES.

| | | | | | | | |
|------|--------|--------|--------|--------|--------|--------|---------|
| 1861 | ... | 4,395 | ... | ... | ... | ... | ... |
| 1871 | 13,583 | 19,569 | ... | 5,629 | ... | ... | ... |
| 1881 | 31,191 | 43,209 | ... | 10,995 | ... | ... | ... |
| 1891 | 50,879 | 53,525 | ... | 14,099 | ... | ... | ... |
| 1901 | 66,135 | 73,063 | 26,172 | 19,283 | 12,198 | 7,466* | 204,317 |
| 1907 | 86,467 | 90,903 | 27,954 | 22,701 | 12,607 | 8,209 | 248,841 |

* For 1902. † Not on same basis as other States.

Since the inauguration of the Commonwealth, the throwing open of the whole of the Australian markets to the industrial products of each State has facilitated the internal distribution of the products of Australian industry.

2. Defects in Industrial Statistics.—A complete statistical account of the growth of the manufacturing industries in Australia unfortunately cannot be given for any lengthy period, owing to the fact that the necessary statistics have not been collected in past years by the several States upon a definite and identical basis. Even in respect of either the definition of a "factory" or (so far as they might be included in related returns) the statistics of persons employed therein, there was formerly no common agreement. The relatively minor place that manufacturing industry held in relation to the total activity of Australia was, perhaps, responsible for the fact that the necessity for uniform method was not earlier recognised.

In 1896 it was agreed, as between Victoria and New South Wales, to adopt a common definition of the term "factory," viz., "any factory, workshop, or mill where four or more persons are employed or power is used." This agreement was adopted for the States generally at the Conference of State Statisticians in 1902, when it was decided,

however, that the term "factory" should include also "all establishments, whether making for the trade, wholesale or retail, or for export." It was further agreed that industries should be arranged, as far as possible, under a uniform classification. As a result of the conference of 1902 a higher degree of uniformity in the collection and presentation of industrial statistics was attained in the several States, so that returns upon which anything like a proper comparative study of the development and progress of various manufacturing industries in the Commonwealth may be based date back only as far as the year 1903, when the resolutions of the conference first came to be put into force. All the States did not, however, fall completely into line, and, as may be seen in the succeeding parts of this section, the comparisons afforded by the returns for the years 1903 to 1906, inclusive, are in some cases subject to various limitations. At the conference of statisticians held in Melbourne in 1906 special consideration was given to the methods to be adopted for the collection of statistical information regarding primary and secondary production and industry. A definite classification of industries was adopted, and a set of forms for the collection and compilation of industrial statistics on a definite and uniform basis in each State was agreed upon. The States have not, even yet, fallen entirely into line in collecting and classifying the returns. The particulars for the year 1907 are, however, in more complete co-ordination than those for previous years, and it is hoped that it will be possible to give particulars for future years for the several States in greater detail and on a perfectly uniform basis throughout.

3. **Classification of Manufacturing Industries.**—Under the classification adopted at the Conference of Statisticians held in 1906, factories were placed under nineteen different categories, according to the nature of the industry carried on therein; many of the categories were also subdivided. Where two or more industries are carried on by one proprietor in one building, each industry is, when possible, treated as a separate establishment. The statement given below shews the classification which has been adopted; it must be understood, however, that this classification does not pretend to be exhaustive, but merely serves as a guide for the collection and presentation of statistics in the several States on a definite and uniform basis:—

CLASSIFICATION OF MANUFACTURING INDUSTRIES.

| | | |
|--|--|--|
| <p>CLASS I.—TREATING RAW MATERIALS, ETC.</p> <p>Boiling-down, Tallow Refining, etc.</p> <p>Tanneries</p> <p>Woolscouring & Fellmong'ring</p> <p>Chaff-cutting, etc.</p> <p>CLASS II.—OILS AND FAT, ETC.</p> <p>Oil and Grease</p> <p>Soap and Candles</p> <p>CLASS III.—STONE, CLAY, GLASS, ETC.</p> <p>Bricks and Tiles</p> <p>Glass (including Bottles)</p> <p>Glass (Ornamental)</p> <p>Lime, Plaster, Cement and Asphalt</p> <p>Marble, Slate, etc.</p> <p>Modelling, etc.</p> <p>Pottery and Earthenware</p> <p>CLASS IV.—WORKING IN WOOD.</p> <p>Boxes and Cases</p> <p>Cooperage</p> <p>Joinery</p> <p>Saw Mills</p> <p>Wood-turning, etc.</p> <p>CLASS V.—METAL WORKS, MACHINERY, ETC.</p> <p>Agricultural Implements</p> <p>Brass and Copper</p> | <p>Cutlery</p> <p>Engineering</p> <p>Galvanised Iron-working</p> <p>Ironworks and Foundries</p> <p>Lead Mills</p> <p>Railway Carriages</p> <p>Railway and Tramway Work-shops</p> <p>Smelting</p> <p>Stoves and Ovens</p> <p>Tinsmithing</p> <p>Wireworking</p> <p>Other Metal Works</p> <p>CLASS VI.—FOOD AND DRINK, ETC.</p> <p>Bacon Curing</p> <p>Butter Factories</p> <p>Jam and Fruit Canning</p> <p>Pickles, Sauces, and Vinegar</p> <p>Sugar Mills</p> <p>Sugar Refining</p> <p>Aerated Waters, Cordials, etc.</p> <p>Breweries</p> <p>Condiments, Coffee, Spices, etc.</p> <p>Distilleries</p> <p>Ice and Refrigerating</p> <p>Malting</p> <p>Tobacco, Cigars, etc.</p> | <p>CLASS VII.—CLOTHING AND TEXTILE FABRICS.</p> <p>Woolen and Tweed Mills</p> <p>Boots and Shoes</p> <p>Slop Clothing</p> <p>Clothing (Tailoring)</p> <p>Dressmaking and Millinery—</p> <p>Makers' material</p> <p>Customers' material</p> <p>Dyeworks and Cleaning</p> <p>Furriers</p> <p>Hats and Caps</p> <p>Waterproof and Oilskin</p> <p>Shirts, Ties, and Scarfs</p> <p>Rope and Cordage</p> <p>Tents and Tarpaulins</p> <p>CLASS VIII.—BOOKS, PAPER, PRINTING, ETC.</p> <p>Electrotyping & Stereotyping</p> <p>Paper-making, Paper Boxes, Bags, etc.</p> <p>Photo-engraving</p> <p>Printing and Binding</p> <p>CLASS IX.—MUSICAL INSTRUMENTS, ETC.</p> <p>Musical Instruments and Sewing Machines</p> <p>CLASS X.—ARMS & EXPLOSIVES</p> <p>Explosives</p> |
|--|--|--|

CLASSIFICATION OF MANUFACTURING INDUSTRIES.—Continued.

| | | |
|---|---|---|
| <p>CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC. Coach and Wagon Building Cycles Perambulators Saddlery, Harness, etc. Spokes, etc.</p> <p>CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING. Docks and Slips Sailmaking Ship and Boat Building and Repairing</p> <p>CLASS XIII.—FURNITURE, BEDDING, ETC. Bedding, Flock, & Upholstery Billiard Tables Furniture and Cabinet Making Picture Frames Window Blinds</p> | <p>CLASS XIV.—DRUGS AND CHEMICALS, ETC. Chemicals, Drugs, and Medicines Fertilisers Paints, Varnishes, and By-products</p> <p>CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS. Surgical, Optical, and other Scientific Instruments</p> <p>CLASS XVI.—TIMEPIECES, JEWELLERY, & PLATED WARE. Electro-plating Manufacturing Jewellery, etc.</p> | <p>CLASS XVII.—HEAT, LIGHT, AND POWER. Coke Works Electric Apparatus Electric Light and Power Gas Works and Kerosene Lamps and Fittings, etc. Hydraulic Power</p> <p>CLASS XVIII.—LEATHERWARE (N.E.I.) Leather Belting, Fancy Leather, Portmanteaux & Bags</p> <p>CLASS XIX.—MINOR WARES. Basket and Wickerware, Matting, etc. Brooms and Brushware Rubber Goods Toys Umbrellas Other Industries</p> |
|---|---|---|

§ 2. Number of Manufactories.

1. **General.**—In stating the number of factories in the States of the Commonwealth it is to be remembered that in the collection of statistics, for years prior to 1907, the same basis has not been adopted in each State. In 1906 in Queensland, for example, 689 factories would have been added under the system previously adopted in that State. This would bring the total up to 1993 on the former basis. The factories excluded, however, are those employing only two hands and no power, and the difference in other respects is not material.

In the following table shewing the total number of manufactories in the Commonwealth between the years 1903 and 1907, it should be noted that not only are the results affected by differences of classification, but also that the number of factories from year to year does not unequivocally indicate a change in the position of the industry, since amalgamations may account for part of the reduction of the numbers. Thus in Melbourne a number of breweries have been combined under a single company, and, of the number thus amalgamated, it is intended to keep only three breweries active.

MANUFACTORIES OF THE COMMONWEALTH, 1903 to 1907.

| Year. | N.S.W. | Victoria. | Queensland. | South Aust. | West. Aust. | Tasmania. | C'wealth. |
|----------|--------|-----------|-------------|-------------|-------------|-----------|-----------|
| 1903 ... | 3,476 | 4,151 | 2,001* | 906*† | 586 | 431 | 11,551 |
| 1904 ... | 3,632 | 4,208 | 1,909* | 906* | 672 | 444 | 11,771 |
| 1905 ... | 3,700 | 4,264 | 1,911* | 985 | 649 | 436 | 11,945 |
| 1906 ... | 3,861 | 4,360 | 1,304 | 1,012 | 665 | 373 | 11,575 |
| 1907 ... | 4,432 | 4,530 | 1,359 | 1,086 | 643 | 505 | 12,555 |

* Not on same basis as other States. † 1904 results repeated.

(i.) *Classification of Factories in Commonwealth, 1903 to 1907.* The following table shews the total number of factories in the Commonwealth at the end of each year from 1903 to 1907, classified on the basis indicated in § 1, 3, hereof :—

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1903 to 1907.

| Class of Industry. | 1903.* | 1904. | 1905. | 1906. | 1907. |
|---|--------|--------|--------|--------|--------|
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 756 | 751 | 751 | 742 | 807 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 119 | 121 | 112 | 99 | 92 |
| III. Processes in stone, clay, glass, etc. ... | 617 | 615 | 625 | 610 | 626 |
| IV. Working in wood ... | 1,110 | 1,122 | 1,126 | 1,119 | 1,215 |
| V. Metal works, machinery, etc. ... | 1,414 | 1,484 | 1,528 | 1,394 | 1,504 |
| VI. Connected with food and drink, etc. ... | 2,196 | 2,222 | 2,253 | 2,177 | 2,250 |
| VII. Clothing and textile fabrics, etc. ... | 2,176 | 2,236 | 2,315 | 2,335 | 2,661 |
| VIII. Books, paper, printing and engraving ... | 867 | 910 | 907 | 919 | 964 |
| IX. Musical instruments, etc. ... | 9 | 9 | 10 | 10 | 16 |
| X. Arms and explosives ... | 10 | 10 | 8 | 8 | 8 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 1,036 | 1,060 | 1,087 | 941 | 1,071 |
| XII. Ship and boat building and repairing ... | 87 | 90 | 95 | 83 | 70 |
| XIII. Furniture, bedding, and upholstery ... | 453 | 454 | 441 | 418 | 470 |
| XIV. Drugs, chemicals, and by-products ... | 154 | 163 | 150 | 156 | 144 |
| XV. Surgical and other scientific instruments ... | 20 | 23 | 23 | 26 | 26 |
| XVI. Jewellery, timepieces, and platedware ... | 100 | 114 | 110 | 121 | 142 |
| XVII. Heat, light, and power ... | 297 | 251 | 263 | 272 | 309 |
| XVIII. Leatherware, n.e.i. ... | 36 | 36 | 33 | 41 | 45 |
| XIX. Minor wares, n.e.i. ... | 94 | 100 | 108 | 104 | 135 |
| Total ... | 11,551 | 11,771 | 11,945 | 11,575 | 12,555 |

* South Australian figures for 1904.

For the purpose of the returns in the above table the definition of a factory adopted at the Conference of Statisticians in 1902 (see § 1, 2,) is used, viz., "Any factory, workshop or mill where four or more persons are employed or power is used." The total increase in the number of factories according to this table from 1903 to 1907 was 1004, or an average of 251 a year. The state of the manufacturing industries throughout Australia cannot, however, be gauged from a mere enumeration of the number of factories. Some of the factories concerned were practically in their infancy, employing but few hands, while others were developed on a large scale. Also amalgamations may account for a reduction in the numbers.

(ii.) *Classification of Factories in each State, 1907.* The following table shows the number of factories in each State of the Commonwealth at the end of the year 1907, classified according to the nature of the industry. (See classification given in § 1, 3, hereof):—

CLASSIFICATION OF FACTORIES IN EACH STATE, 1907.

| Class of Industry. | N.S.W. | Vic. | Qld. | S. Aus. | W. Aus. | Tas. | Cwth. |
|---|--------|-------|-------|---------|---------|------|--------|
| I. Treating raw material, product of agricul. and pastoral pursuits, etc. ... | 295 | 323 | 44 | 111 | 18 | 16 | 807 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 40 | 21 | 15 | 11 | 3 | 2 | 92 |
| III. Processes in stone, clay, glass, etc. ... | 258 | 203 | 36 | 57 | 42 | 30 | 626 |
| IV. Working in wood ... | 522 | 290 | 212 | 56 | 59 | 76 | 1,215 |
| V. Metal works, machinery, etc. ... | 428 | 619 | 199 | 142 | 68 | 48 | 1,504 |
| VI. Connected with food and drink, etc. ... | 756 | 656 | 357 | 249 | 149 | 83 | 2,250 |
| VII. Clothing and textile fabrics, etc. ... | 890 | 1,220 | 109 | 192 | 121 | 131 | 2,661 |
| VIII. Books, paper, printing & engraving ... | 365 | 341 | 122 | 62 | 58 | 16 | 964 |
| IX. Musical instruments, etc. ... | 12 | 3 | ... | 1 | ... | ... | 16 |
| X. Arms and explosives ... | 3 | 5 | ... | ... | ... | ... | 8 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 345 | 377 | 133 | 111 | 50 | 55 | 1,071 |
| XII. Ship and boat building & repairing ... | 31 | 12 | 17 | 6 | 4 | 6 | 70 |
| XIII. Furniture, bedding, and upholstery ... | 144 | 194 | 59 | 33 | 26 | 14 | 470 |
| XIV. Drugs, chemicals, and by-products ... | 58 | 64 | 5 | 9 | 7 | 1 | 144 |
| XV. Surgical and other scientific instruments ... | 8 | 11 | 5 | 1 | 1 | ... | 26 |
| XVI. Jewellery, timepieces, & platedware ... | 46 | 57 | 12 | 12 | 3 | 12 | 142 |
| XVII. Heat, light, and power ... | 166 | 70 | 25 | 14 | 25 | 9 | 309 |
| XVIII. Leatherware, n.e.i. ... | 14 | 24 | 2 | 3 | 2 | ... | 45 |
| XIX. Minor wares, n.e.i. ... | 51 | 40 | 7 | 16 | 7 | 6 | 135 |
| Total ... | 4,432 | 4,530 | 1,350 | 1,086 | 643 | 505 | 12,555 |

2. **Use of Mechanical Power.**—The principal motive power is steam, but the chief towns possess electric power stations owned either by the Government, or by public bodies or private companies. From these many manufactories find it convenient to derive their motive power. The distinction between factories employing steam, gas, oil, or electric machinery, and those employing either other power or none at all, affords an opportunity of ascertaining how many factories there are in the ordinary sense of the word, that is, establishments which are not merely workshops. For instance, in the Victorian clothing trade, out of 337 factories only 53 employ mechanical power, the balance may consequently be regarded merely as workshops.

The following table shews the number of factories in which machinery is worked by steam, gas, oil, or electricity, and the horse-power of engines or motors used, in each State and in the Commonwealth during the year 1907 :—

UTILISATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1907.

| State. | Number of Establishments. | | | Actual Horse-power of Engines Used. | | | | |
|---------------------|--|---------|--------|-------------------------------------|--------|-------|---------------|---------|
| | Using Machinery worked by Steam Gas, Oil, or Electricity | Others. | Total. | Steam. | Gas. | Oil. | Elec-tricity. | Total. |
| | No. | No. | No. | H.P. | H.P. | H.P. | H.P. | H.P. |
| New South Wales | 2,761 | 1,671 | 4,432 | 75,862 | 4,901 | 429 | 10,072 | 91,264 |
| Victoria ... | 2,717 | 1,812 | 4,530 | 42,945 | 4,516 | 1,060 | 4,182 | 52,703 |
| Queensland ... | 953 | 406 | 1,359 | 26,628 | 1,127 | 317 | 2,357 | 30,329 |
| South Australia ... | 728 | 358 | 1,086 | 11,121 | 1,917 | 1,287 | 1,240 | 15,565 |
| Western Australia | 432 | 211 | 643 | 17,558 | 197 | 716 | 2,705 | 21,178 |
| Tasmania | 252 | 253 | 505 | 6,168 | 145 | 304 | 2,987 | 9,604 |
| Commonwealth | 7,843 | 4,712 | 12,555 | 180,182 | 12,803 | 4,113 | 23,543 | 220,641 |

The percentage for the Commonwealth of the number of establishments using machinery worked by steam, gas, oil, or electricity on the total number of establishments is 62.42. The total average horse-power in use was 221,641, of which engines in which the motive power was steam formed 81.29 per cent. ; gas, 5.77 per cent. ; oil, 1.97 per cent. ; and electricity, 10.97 per cent.

§ 3. Number Employed in Australian Factories.

1. **Total Number Employed.**—Each person employed in and about a factory, in whatever capacity, is now included as a factory employé, consequently every proprietor who works in his business is counted as an employé, and all “outworkers” (see paragraph 6 hereinafter) are also included. The individuals embraced may be classed under the following heads, viz. :—(i.) Working proprietors; (ii.) managers and overseers; (iii.) accountants and clerks; (iv.) engine-drivers and firemen; (v.) skilled and unskilled workers in the factories, mills, or workshops; (vi.) carters and messengers; and (vii.) others.

(i.) *Average Numbers Employed, 1903 to 1907.* The following table shews, for each year from 1903 to 1907, inclusive, (a) the average numbers of persons (including both sexes and all ages) employed in manufacturing industries in each State; (b) the percentage of the numbers employed in each State on the total numbers employed in the Commonwealth; and (c) the numbers employed per ten thousand of the mean population in each State and the Commonwealth :—

**NUMBER OF PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES,
1903 TO 1907.**

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|----------------------------------|--------|-----------|---------|----------|----------|-----------|-----------|
| AVERAGE NUMBERS EMPLOYED. | | | | | | | |
| 1903 ... | 65,633 | 73,229 | 19,286 | 18,049† | 11,828 | 7,785 | 195,810 |
| 1904 ... | 68,036 | 76,287 | 20,058 | 18,049 | 12,685 | 8,224 | 203,339 |
| 1905 ... | 72,175 | 80,235 | 21,705 | 19,273 | 12,733 | 8,468 | 214,589 |
| 1906 ... | 77,822 | 85,229 | 23,961 | 20,153 | 12,897 | 8,498 | 228,560 |
| 1907 ... | 86,467 | 90,903 | 27,954 | 22,701 | 12,607 | 8,209 | 248,841 |

PERCENTAGE OF AVERAGE NUMBERS ON TOTAL EMPLOYED.

| | % | % | % | % | % | % | % |
|----------|-------|-------|-------|-------|------|------|--------|
| 1903 ... | 33.50 | 37.37 | 9.84 | 9.28† | 6.04 | 3.97 | 100.00 |
| 1904 ... | 33.44 | 37.49 | 9.86 | 8.94 | 6.23 | 4.04 | 100.00 |
| 1905 ... | 33.62 | 37.37 | 10.11 | 9.03 | 5.93 | 3.94 | 100.00 |
| 1906 ... | 34.03 | 37.26 | 10.47 | 8.88 | 5.64 | 3.72 | 100.00 |
| 1907 ... | 34.75 | 36.53 | 11.23 | 9.12 | 5.07 | 3.30 | 100.00 |

AVERAGE NUMBERS EMPLOYED PER 10,000 OF MEAN POPULATION.

| | | | | | | | |
|----------|-----|-----|------|-----|-----|-----|-----|
| 1903 ... | 463 | 606 | 376* | ... | 534 | 439 | 502 |
| 1904 ... | 472 | 632 | 386* | 492 | 536 | 460 | 515 |
| 1905 ... | 489 | 662 | 413* | 518 | 509 | 472 | 534 |
| 1906 ... | 515 | 696 | 450 | 534 | 496 | 475 | 560 |
| 1907 ... | 558 | 734 | 519 | 589 | 481 | 458 | 599 |

* Inclusive of factories with two persons. † Figures for 1904.

(ii.) *Rates of Increase, 1903 to 1907.* From the preceding table it may be seen that there has been a general and steady increase in the average number of persons employed in manufacturing industries in each State during the period referred to. The following table shews the percentage of increase during each year on the average number for the preceding year:—

PERCENTAGES OF INCREASE IN AVERAGE NUMBER EMPLOYED, 1903 to 1907.

| Years. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|------------|--------|-----------|---------|----------|----------|-----------|-----------|
| 1903-4 ... | 3.66 | 4.18 | 4.15 | ... | 7.24 | 5.64 | 3.84 |
| 1904-5 ... | 6.08 | 5.18 | 8.21 | 6.67 | 0.38 | 3.61 | 5.52 |
| 1905-6 ... | 7.82 | 6.22 | 10.38 | 4.70 | 1.29 | 0.45 | 6.52 |
| 1906-7 ... | 11.11 | 6.66 | 16.67 | 11.80 | — 2.25 | — 3.49 | 8.80 |

2. Classification of Numbers Employed in Factories in the Commonwealth, 1903 to 1907.—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1903 to 1907, inclusive:—

AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN COMMONWEALTH, 1903 to 1907.

| Class of Industry. | 1903.* | 1904. | 1905. | 1906.† | 1907. |
|---|----------------|----------------|----------------|----------------|----------------|
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. | 7,547 | 7,182 | 7,460 | 7,809 | 8,956 |
| II. Treating oils and fats, animal, vegetable, etc. | 1,649 | 1,601 | 1,717 | 1,760 | 1,727 |
| III. Processes in stone, clay, glass, etc. | 7,900 | 7,907 | 8,285 | 8,779 | 8,909 |
| IV. Working in wood | 16,498 | 16,285 | 16,938 | 18,347 | 19,457 |
| V. Metal works, machinery, etc. | 35,586 | 37,164 | 40,061 | 43,431 | 47,060 |
| VI. Connected with food and drink, etc. | 31,761 | 33,033 | 35,026 | 36,720 | 40,228 |
| VII. Clothing and textile fabrics, etc. | 53,041 | 56,269 | 59,025 | 62,594 | 68,373 |
| VIII. Books, paper, printing and engraving | 17,187 | 18,167 | 18,441 | 19,565 | 20,733 |
| IX. Musical instruments, etc. | 254 | 282 | 384 | 386 | 430 |
| X. Arms and explosives | 361 | 302 | 280 | 347 | 323 |
| XI. Vehicles and fittings, saddlery and harness, etc. | 7,753 | 8,161 | 8,780 | 9,027 | 10,288 |
| XII. Ship and boat building and repairing | 1,978 | 1,853 | 1,964 | 2,124 | 2,049 |
| XIII. Furniture, bedding and upholstery | 5,297 | 5,214 | 5,422 | 5,890 | 6,819 |
| XIV. Drugs, chemicals and by-products | 2,048 | 2,153 | 2,373 | 2,600 | 2,895 |
| XV. Surgical and other scientific instruments | 125 | 142 | 146 | 178 | 170 |
| XVI. Jewellery, timepieces, and platedware | 1,064 | 1,239 | 1,237 | 1,397 | 1,700 |
| XVII. Heat, light, and power | 3,636 | 3,992 | 4,443 | 4,834 | 5,372 |
| XVIII. Leatherware, n.e.i. | 463 | 557 | 592 | 731 | 788 |
| XIX. Minor wares, n.e.i. | 1,642 | 1,836 | 1,945 | 2,041 | 2,564 |
| Total | 195,810 | 203,339 | 214,589 | 228,560 | 248,841 |

* South Australian figures for 1904. † Excluding Queensland Government Railways. For preceding years the Queensland statistics include all establishments where two or more hands were employed except Government Railway workshops.

The total increase in the average number of hands employed from 1903 to 1907 was 53,031, or an annual average of 13,258. The increase was general throughout all the various classes of industry except Class X., in which there was the small decrease of thirty-eight hands. The greatest development took place in Classes VII. and V., the increases being 15,332 and 11,474 respectively.

3. Classification of Numbers Employed in each State, according to Class of Industry, 1907.—The following table shews a similar classification of employes in manufacturing industries in each State for the year 1907:—

AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN EACH STATE, 1907.

| Class of Industry. | N.S.W. | Vic. | Qld. | S. Aus. | W. Aus. | Tas. | C'wth. |
|---|---------------|---------------|---------------|---------------|---------------|--------------|----------------|
| I. Treating raw material, product of agricul. and pastoral pursuits, etc. | 3,727 | 3,101 | 646 | 1,096 | 167 | 129 | 8,956 |
| II. Treating oils and fats, animal, vegetable, etc. | 639 | 563 | 142 | 291 | 57 | 35 | 1,727 |
| III. Processes in stone, clay, glass, etc. | 3,675 | 3,383 | 451 | 655 | 515 | 230 | 8,909 |
| IV. Working in wood | 5,896 | 4,647 | 3,077 | 1,071 | 3,345 | 1,421 | 19,457 |
| V. Metal works, machinery, etc. | 18,093 | 13,469 | 4,111 | 6,826 | 2,489 | 2,072 | 47,060 |
| VI. Connected with food and drink, etc. | 12,064 | 12,894 | 9,897 | 3,159 | 1,411 | 1,303 | 40,228 |
| VII. Clothing and textile fabrics, etc. | 21,922 | 33,118 | 5,130 | 4,791 | 2,202 | 1,507 | 68,373 |
| VIII. Books, paper, printing & engraving | 7,593 | 7,701 | 2,182 | 1,652 | 1,074 | 531 | 20,733 |
| IX. Musical instruments, etc. | 380 | 34 | ... | 16 | ... | ... | 430 |
| X. Arms and explosives | 16 | 307 | ... | ... | ... | ... | 323 |
| XI. Vehicles and fittings, saddlery, and harness, etc. | 3,464 | 3,633 | 1,154 | 1,234 | 512 | 291 | 10,288 |
| XII. Ship and boat building & repairing | 1,680 | 144 | 71 | 97 | 19 | 38 | 2,049 |
| XIII. Furniture, bedding, and upholstery | 2,481 | 2,370 | 796 | 642 | 275 | 255 | 6,819 |
| XIV. Drugs, chemicals, and by-products | 1,106 | 1,323 | 61 | 348 | 45 | 12 | 2,895 |
| XV. Surgical and other scientific instruments | 84 | 50 | 21 | 5 | 10 | ... | 170 |
| XVI. Jewellery, timepieces, & platedware | 626 | 737 | 117 | 146 | 28 | 56 | 1,700 |
| XVII. Heat, light, and power | 2,040 | 1,864 | 421 | 421 | 350 | 276 | 5,372 |
| XVIII. Leatherware, n.e.i. | 272 | 422 | 52 | 24 | 18 | ... | 788 |
| XIX. Minor wares, n.e.i. | 709 | 1,063 | 125 | 227 | 90 | 53 | 2,564 |
| Total | 86,467 | 90,903 | 27,954 | 22,701 | 12,607 | 8,209 | 248,841 |

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 68,373 employés, or 27.48 per cent. on the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 170 hands, or 0.07 per cent. on the total number of employés. Classes VI., VII., and VIII. comprise those industries in which female labour is largely employed. (See § 4 hereof.)

4. Classification of Numbers Employed in each State according to Nature of Employment, 1907.—In the following table the average numbers of persons employed in each State during the year 1907 are classified according to the nature of their employment:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED
ACCORDING TO NATURE OF EMPLOYMENT, 1907.**

| State. | Average Number of Persons Employed. | | | | | | Total. |
|-----------------------|-------------------------------------|------------------------|-------------------------|-----------------------------|---|---------------------------------|---------|
| | Working Proprietors. | Managers and Overseers | Accountants and Clerks. | Engine-drivers and Firemen. | Workers, Skilled & Unskilled in Factory Mill or Workshop. | Carters, Messengers and Others. | |
| New South Wales ... | 3,983 | 2,792 | 2,857 | 2,308 | 71,979 | 2,548 | 86,467 |
| Victoria ... | 4,604 | 2,713 | 2,746 | 1,544 | 75,148 | 4,148 | 90,903 |
| Queensland ... | 1,270 | 994 | 1,116 | 1,103 | 21,228 | 2,243 | 27,954 |
| South Australia ... | 1,021 | 666 | 795 | 499 | 18,865 | 855 | 22,701 |
| Western Australia ... | 525 | 426 | 515 | 346 | 9,799 | 996 | 12,607 |
| Tasmania ... | ...* | 772 | 310 | 314 | 6,545 | 268 | 8,209 |
| Commonwealth ... | 11,403 | 8,363 | 8,339 | 6,114 | 203,564 | 11,058 | 248,841 |

* Included in Managers and Overseers.

5. Classification of Factories according to Number of Hands Employed, 1907.—The number of factories in each State classified according to the numbers of hands employed, and the total numbers of hands employed in each class of factory, are shewn in the following table:—

**CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF HANDS EMPLOYED,
1907.**

| No. of Persons Employed in each Factory. | N.S.W. | Victoria. | Q'sland. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|--|--------|-----------|----------|----------|----------|------|-----------|
| NUMBER OF FACTORIES. | | | | | | | |
| Under 4 ... | 647 | 617 | 182 | 120 | 87 | 165 | 1,818 |
| 4 ... | 508 | 597 | 169 | 126 | 63 | 48 | 1,511 |
| 5 to 10 ... | 1,636 | 1,624 | 463 | 407 | 229 | 137 | 4,496 |
| 11 to 20 ... | 803 | 811 | 232 | 210 | 147 | 67 | 2,270 |
| 21 to 50 ... | 505 | 550 | 180 | 143 | 71 | 60 | 1,509 |
| 51 to 100 ... | 190 | 179 | 82 | 51 | 30 | 13 | 545 |
| Over 100 ... | 143 | 152 | 51 | 29 | 16 | 15 | 406 |
| Total ... | 4,432 | 4,530 | 1,359 | 1,086 | 643 | 505 | 12,555 |

| No. of Persons Employed in each Factory. | N.S.W. | Victoria. | Q'sland. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|--|---------------|---------------|---------------|---------------|---------------|--------------|----------------|
| TOTAL AVERAGE NUMBER OF HANDS EMPLOYED. | | | | | | | |
| Under 4 ... | 1,507 | 1,503 | 414 | 282 | 204 | 345 | 4,255 |
| 4 ... | 2,032 | 2,388 | 676 | 504 | 252 | 192 | 6,044 |
| 5 to 10 ... | 11,357 | 11,483 | 3,202 | 2,902 | 1,556 | 974 | 31,474 |
| 11 to 20 ... | 11,673 | 11,801 | 3,415 | 3,044 | 2,123 | 972 | 33,028 |
| 21 to 50 ... | 15,728 | 17,049 | 5,721 | 4,506 | 2,256 | 1,879 | 47,139 |
| 51 to 100 ... | 13,346 | 12,332 | 5,927 | 3,570 | 1,929 | 871 | 37,975 |
| Over 100 ... | 30,824 | 34,347 | 8,599 | 7,893 | 4,287 | 2,976 | 88,926 |
| Total ... | 86,467 | 90,903 | 27,954 | 22,701 | 12,607 | 8,209 | 248,841 |

6. Outworkers.—The term "outworker" or "homeworker" has acquired a special meaning in connection with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in their own homes. Individuals working for themselves are not included. The following table gives particulars, so far as available, of the average number of outworkers connected with factories in each State during each year from 1903 to 1907, inclusive :—

NUMBER OF OUTWORKERS CONNECTED WITH FACTORIES, 1903 to 1907.

| Year. | N.S.W. | Victoria. | Q'sland. | Sth. Aus. | West Aus. | Tas. | C'wealth. |
|----------|--------|-----------|----------|-----------|-----------|------|-----------|
| 1903 ... | 308 | 955 | * | * | * | 71 | * |
| 1904 ... | 439 | 991 | * | * | * | 42 | * |
| 1905 ... | 374 | 1,186 | * | * | * | 86 | * |
| 1906 ... | 501 | 1,431 | * | * | * | 57 | * |
| 1907 ... | 592 | 1,429 | 264 | 66 | 18 | 60 | 2,429 |

* Not available.

Although the figures from 1903 to 1907, for the States of New South Wales and Victoria, show generally a fairly steady and rapid increase in the number of outworkers, they are considerably smaller than the figures for early years. For example, in 1897 there were 2382 outworkers registered in Victoria in the clothing trades, while the number of employés in factories for those trades was 14,293. The corresponding figures for the same year in New South Wales were 546 outworkers and 8602 factory employés. Thus it will be seen that the number of employés in factories has largely increased, while the increase in the number of outworkers has been relatively small.

The Factories Acts in each State contain provisions regulating the employment of outworkers. Generally records of out-work must be kept by factory proprietors, specifying the names and remuneration of workers, and stating the places where the work is done. Further particulars are given in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*)

§ 4. Sex Distribution in Factories.

1. Employment of Females in Factories.—In all the States the employment of female labour in factories is now regulated by Act of Parliament. In Victoria the first Act dealing with the subject was passed in the year 1873, and provided that no female should be employed for more than eight hours a day without the permission of the Chief Secretary. The number of working hours for women is now limited to forty-eight per week in all the States except Tasmania, where the maximum number of working hours is ten per day. The maximum periods of continuous labour, and the intervals of cessation

therefrom, are also prescribed by the several Acts. Further reference is made to the restrictions regarding the employment of females in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*)

2. **Distribution of Employes according to Sex, 1903 to 1907.**—In Victoria the ratio of the average number of females to the average number of males employed in factories during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is about one to two. The employment of women is, however, largely confined to a few trades.

In New South Wales the male workers were about seven times the number of females in 1886; in 1891 the proportion had become six to one; in 1903 about four to one; and is now rather higher than three to one. The great prosperity in clothing and textile industries is one of the main causes of increase in female employment. Large numbers are occupied in tailoring and dress making, in wholesale manufactories, in tobacco factories, and preserving works. Certain trades are specifically known as women's trades, such for example as clothing and textile trades, preparation of food, book-binding, and lighter work connected with the drug trade, such for example as wrapping. In common with commercial establishments, a considerable number of women are also employed as clerks and typewriters in factories.

(i.) *Average Numbers of Males and Females Employed, 1903 to 1907.* The following table shews the average numbers of male and female employes, so far as available, in factories in each State from 1903 to 1907:—

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1903 to 1907.

| State. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------------|---------|---------|---------|---------|---------|
| MALES. | | | | | |
| New South Wales | 52,453 | 53,457 | 56,111 | 59,979 | 65,953 |
| Victoria | 49,434 | 50,554 | 52,925 | 56,339 | 59,691 |
| Queensland | *16,086 | *16,758 | *18,105 | *19,961 | 23,191 |
| South Anstralia | †14,408 | 14,408 | 15,832 | 16,451 | 18,423 |
| Western Australia | 10,420 | 11,078 | 11,091 | 11,015 | 10,667 |
| Tasmania | 6,445 | 6,880 | 7,105 | 7,220 | 6,972 |
| Commonwealth | 149,246 | 153,135 | 161,169 | 170,965 | 184,897 |
| FEMALES. | | | | | |
| New South Wales | 13,180 | 14,579 | 16,064 | 17,843 | 20,514 |
| Victoria | 23,795 | 25,733 | 27,310 | 28,890 | 31,212 |
| Queensland | *3,200 | *3,300 | *3,600 | *4,000 | 4,763 |
| South Australia | †3,641 | 3,641 | 3,441 | 3,702 | 4,278 |
| Western Australia | 1,408 | 1,607 | 1,642 | 1,882 | 1,940 |
| Tasmania | 1,340 | 1,344 | 1,363 | 1,278 | 1,237 |
| Commonwealth | 46,564 | 50,204 | 53,420 | 57,595 | 63,944 |

* Estimated. † 1904 figures.

It may be seen that during the years specified there has been for the whole Commonwealth a total increase in the number of male employes of 35,641, or an annual average of 8910, and in the number of female employes a total increase of 17,380, or an annual average of 4345.

(ii.) *Average Numbers of Males and Females Employed per 10,000 of Mean Population, 1903 to 1907.* The following table shows the average numbers of male and female employes per 10,000 of the mean male and female population respectively in each State from 1903 to 1907 :—

**AVERAGE NUMBERS OF MALE AND FEMALE EMPLOYES PER 10,000 OF MEAN
MALE AND FEMALE POPULATION RESPECTIVELY, 1903 to 1907**

| State. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|-------|-------|-------|-------|-------|
| MALES. | | | | | |
| New South Wales ... | 704 | 701 | 717 | 746 | 796 |
| Victoria ... | 814 | 835 | 871 | 919 | 963 |
| Queensland ... | *563 | *532 | *624 | *682 | 789 |
| South Australia ... | †762 | 762 | 815 | 821 | 902 |
| Western Australia ... | 772 | 789 | 752 | 724 | 696 |
| Tasmania ... | 696 | 739 | 762 | 775 | 753 |
| Commonwealth ... | 725 | 732 | 755 | 787 | 844 |
| FEMALES. | | | | | |
| New South Wales ... | 197 | 214 | 232 | 253 | 284 |
| Victoria ... | 394 | 426 | 450 | 471 | 503 |
| Queensland ... | *138 | *141 | *151 | *165 | 194 |
| South Australia ... | †207 | 207 | 210 | 213 | 235 |
| Western Australia ... | 171 | 161 | 162 | 177 | 178 |
| Tasmania ... | 156 | 155 | 158 | 146 | 143 |
| Commonwealth ... | 249 | 265 | 278 | 296 | 325 |

* Estimated. † 1904 figures.

3. **Rate of Increase for each Sex.**—The percentages of annual increase in the average numbers of males and females employed in manufacturing industries, based upon the figures for the preceding year, are shewn below for the whole Commonwealth, for the years 1903 to 1907 :—

**PERCENTAGES OF ANNUAL INCREASE IN AVERAGE NUMBERS OF MALE AND
FEMALE EMPLOYES, 1903 to 1907.**

| Particulars. | 1903-4. | 1904-5. | 1905-6 | 1906-7. |
|------------------|---------|---------|--------|---------|
| Males % | 2.60 | 5.25 | 6.08 | 8.15 |
| Females % | 7.82 | 6.40 | 7.81 | 11.02 |

The above table shews that there has been relatively a larger increase in the number of female than in the number of male employes. This matter is referred to further in the following paragraph hereof. The subjoined statement shews the percentages of annual increase in each State during the last year (1906-7) :—

PERCENTAGES OF INCREASE IN AVERAGE NUMBERS OF MALE AND FEMALE EMPLOYEES, 1906-7.*

| Particulars. | | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|--------------|---|--------|-----------|---------|----------|----------|-------|-----------|
| Males ... | % | 9.96 | 5.95 | 16.18 | 11.98 | -3.16 | -3.43 | 8.15 |
| Females ... | % | 14.97 | 7.69 | 19.07 | 15.55 | 3.08 | -3.21 | 11.02 |

* The negative sign indicates a decrease.

4. Increasing Ratio of Female Employment in Factories.—The increasing extent to which females are employed in the factories of the Commonwealth may perhaps be best shown by giving the number of females to every 100 male employes for each year and for each State:—

NUMBER OF FEMALES PER 100 MALES IN AUSTRALIAN FACTORIES, 1903 to 1907.

| Year. | N.S.W. | Victoria. | Queensland. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|-------|--------|-----------|-------------|----------|----------|-------|-----------|
| 1903 | 25.13 | 48.14 | *19.89 | +26.07 | 13.51 | 20.79 | 31.20 |
| 1904 | 27.27 | 50.90 | *19.89 | 26.07 | 14.51 | 19.53 | 32.78 |
| 1905 | 28.63 | 51.60 | *19.89 | 22.35 | 14.80 | 19.46 | 33.15 |
| 1906 | 29.75 | 51.28 | *20.04 | 23.31 | 17.09 | 17.68 | 33.69 |
| 1907 | 31.10 | 52.29 | 20.53 | 23.22 | 18.19 | 17.74 | 34.58 |

* Estimated. † 1904 figures.

Although this table shows that from 1903 to 1907 there has been an increase in the percentage specified from 31.20 to 34.58, the tables given in the next succeeding paragraph show that this increase has not been due so much to the incursion of female labour into what may be termed men's trades, as to the activity in those trades in which women are ordinarily engaged, more especially in dressmaking, millinery, etc.

5. Employment of Females in Particular Industries, 1907.—The employment of women in manufacturing industries in Australia is largely confined to a few trades, of which the more important are comprised in Classes VI., VII., and VIII. (see § 1, 3. above), viz., in connection with food, drink, etc., clothing and textile fabrics, and books, paper, printing, etc. The following table shows the average number of females employed in each of these classes during the year 1907 in each State, and also shows the percentages of the average numbers so employed on the total average numbers of females employed in all classes of factories:—

AVERAGE NUMBERS OF FEMALES EMPLOYED IN PARTICULAR INDUSTRIES AND PERCENTAGES ON AVERAGE TOTAL EMPLOYED, 1907.

| Class. | N.S.W. | Vict. | Qld. | S. Aust. | W.Aust. | Tas. | Cw'ith. |
|---|--------|--------|-------|----------|---------|-------|---------|
| AVERAGE NUMBERS. | | | | | | | |
| VI. Food, drink, etc. ... | 2,546 | 3,203 | 589 | 892 | 113 | 195 | 7,038 |
| VII. Clothing and textile fabrics ... | 14,955 | 24,397 | 3,847 | 3,507 | 1,631 | 920 | 48,857 |
| VIII. Books, paper, printing, etc. ... | 1,692 | 1,079 | 344 | 454 | 142 | 59 | 4,670 |
| Total ... | 19,193 | 29,579 | 4,580 | 4,153 | 1,886 | 1,174 | 60,565 |
| PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES. | | | | | | | |
| VI. Food, drink, etc. ... | 12.41 | 10.26 | 12.36 | 9.16 | 5.82 | 15.76 | 11.00 |
| VII. Clothing and textile fabrics ... | 72.90 | 78.16 | 76.57 | 77.30 | 84.07 | 74.37 | 76.41 |
| VIII. Books, paper, printing, etc. ... | 8.25 | 6.34 | 7.22 | 10.62 | 7.32 | 4.77 | 7.30 |
| Total ... | 93.56 | 94.76 | 96.15 | 97.08 | 97.21 | 94.90 | 94.71 |

It will be seen that by far the greater part of the total number of females employed in factories work in one or other of the three classes of industry indicated. Class VII. being the most important.

The classification of the employment of women in Class VII. in the two States of largest population is of interest. The following table shews, also, for the sake of comparison, the number of males employed:—

EMPLOYMENT IN CLASS VII., 1907.

| Class VII. | New South Wales. | | Victoria. | |
|----------------------------------|------------------|----------|-----------|----------|
| | Males. | Females. | Males. | Females. |
| Woolen and tweed mills | 179 | 216 | 742 | 847 |
| Boots and shoes | 3,163 | 1,623 | 4,185 | 2,118 |
| Slop clothing | 2,722 | 6,273 | 1,912 | 6,271 |
| Clothing (tailoring) | | | | |
| Dressmaking and millinery | 56 | 4,421 | 170 | 8,595 |
| Dyeworks and cleaning | 38 | 29 | 42 | 81 |
| Furriers | 19 | 16 | 29 | 55 |
| Hats and caps | 335 | 759 | 576 | 828 |
| Waterproof and oilskin | 28 | 131 | 47 | 143 |
| Shirts, ties, and scarves | 113 | 1,341 | 249 | 5,047 |
| Rope and cordage | 183 | 4 | 404 | 277 |
| Tents and tarpaulins | 136 | 142 | 61 | 23 |
| Other | ... | ... | 7 | 112 |
| Total | 6,967 | 14,955 | 8,424 | 24,397 |

§ 5. Child Labour in Factories.

1. **Conditions of Child Labour.**—The employment of young persons in factories in each State of the Commonwealth is regulated by Acts of Parliament in a similar manner to the employment of female labour. Excepting under special circumstances, children under a certain age may not be employed at all in factories. The minimum age in New South Wales, Queensland, and Western Australia is fourteen, and in the other States is thirteen years. Other restrictions on the employment of young persons in factories are more particularly referred to in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*) The general object of the restrictions imposed is to assure that a proper period shall be devoted to primary education, and that the early years of toil shall not exhaust the worker before the attainment of full growth.

2. **Average Number of Children Employed in Factories, 1903 to 1907.**—In the statistical compilations of the various States the term "child" may be taken to denote any person under sixteen years of age, excepting in New South Wales, where it denoted, for years prior to 1907, any person under fifteen. The following table shews the average number of children of each sex employed in manufacturing industries in each State during the year 1907. It will be seen that the Commonwealth figures for years prior to 1907 are incomplete. There have been increases in the average number employed in all the States for which returns are available, except South Australia, where there has been a small decrease. The largest increase was in New South Wales, where the numbers rose from 1194 in 1903 to 4286 in 1907, a total increase of 3092, or an annual average of 773. These figures are, however, subject to the disability mentioned on the next page.

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1903 to 1907.

| State. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|--------|--------|--------|--------|--------|
| MALES. | | | | | |
| New South Wales ... | 774 | 748 | 668 | 881 | 2,406 |
| Victoria ... | 2,696 | 3,058 | 3,261 | 3,213 | 3,253 |
| Queensland ... | * | * | * | * | 1,119 |
| South Australia ... | * | 1,245 | 1,362 | 1,166 | 1,127 |
| Western Australia ... | 179 | 217 | 197 | 203 | 216 |
| Tasmania ... | 125 | 168 | 284 | 251 | 214 |
| Commonwealth ... | †3,774 | †5,436 | †5,772 | †5,714 | 8,335 |
| FEMALES. | | | | | |
| New South Wales ... | 420 | 452 | 473 | 579 | 1,880 |
| Victoria ... | 2,332 | 2,952 | 3,034 | 2,997 | 3,095 |
| Queensland ... | * | * | * | * | 576 |
| South Australia ... | * | 395 | 324 | 400 | 480 |
| Western Australia ... | 47 | 94 | 81 | 126 | 159 |
| Tasmania ... | 47 | 75 | 128 | 99 | 97 |
| Commonwealth ... | †2,846 | †3,968 | †4,040 | †4,201 | 6,287 |
| TOTAL. | | | | | |
| New South Wales ... | 1,194 | 1,200 | 1,141 | 1,460 | 4,286 |
| Victoria ... | 5,028 | 6,010 | 6,295 | 6,210 | 6,348 |
| Queensland ... | * | * | * | * | 1,695 |
| South Australia ... | * | 1,640 | 1,686 | 1,566 | 1,607 |
| Western Australia ... | 226 | 311 | 278 | 329 | 375 |
| Tasmania ... | 172 | 243 | 412 | 350 | 311 |
| Commonwealth ... | †6,620 | †9,404 | †9,812 | †9,915 | 14,622 |

* Not available. † Incomplete.

The relatively large increase in the figures for the Commonwealth for the last year is accounted for largely by the fact that in New South Wales, during years prior to 1907, the term "child" denoted any person under the age of fifteen years of age, which, in 1907, was raised to sixteen years in order to come into line with the other States of the Commonwealth. It should be noted also that the Commonwealth figures for the years 1903 to 1906 are exclusive of returns for Queensland, and for the year 1903 are also exclusive of South Australia.

3. **Industries Employing Child Labour, 1907.**—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the table below, which shows the average number of children of each sex, employed in the several industries indicated, in each State during the year 1907:—

NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1907.

| Class. | Industry. | N.S.W. | | Victoria. | | Q'ld. | | S. Aust. | | W. Aust. | | Tas. | | Cwlth. | |
|--------|--|--------|-----|-----------|-----|-------|-----|----------|-----|----------|-----|------|-----|--------|-------|
| | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| V. | Engin'ring, ironworks, foundries, etc. ... | 151 | ... | 268 | ... | 87 | ... | 106 | ... | 31 | ... | 19 | ... | 662 | ... |
| VI. | Biscuits, cakes, etc. ... | 123 | 107 | 59 | 25 | 12 | 15 | 3 | 1 | ... | ... | 9 | ... | 206 | 148 |
| .. | Jams, pickles, sauces, etc. ... | 63 | 33 | 67 | 37 | 21 | 1 | 40 | 49 | 2 | ... | 80 | 36 | 273 | 156 |
| .. | Aerated waters, cordials, etc. ... | 64 | 4 | 73 | ... | 47 | 3 | 18 | ... | 11 | ... | ... | ... | 213 | 7 |
| .. | Tobacco, cigars, etc. ... | 10 | 40 | 60 | 98 | 3 | ... | 3 | 18 | ... | ... | ... | ... | 76 | 156 |
| VII. | Boots and shoes ... | 242 | 250 | 358 | 401 | 61 | 50 | 89 | 70 | 9 | 4 | 11 | 4 | 770 | 779 |
| .. | Clothing ... | 115 | 431 | 78 | 442 | 30 | 199 | 31 | 116 | 18 | 68 | 2 | 7 | 274 | 1,263 |
| .. | Dressmaking and millinery ... | ... | 124 | 5 | 833 | 2 | 81 | ... | 63 | ... | 42 | ... | 43 | 7 | 1,186 |
| .. | Hats and caps... .. | 20 | 92 | 51 | 71 | 1 | 8 | 4 | 4 | ... | ... | ... | ... | 76 | 175 |
| .. | Shirts, ties, scarfs, etc. | 6 | 138 | 14 | 520 | 10 | 95 | 3 | 34 | ... | 23 | ... | ... | 33 | 810 |

4. **Apprenticeship.**—The apprenticeship systems of the several States may be summarised as follows :—

In New South Wales, no child may be apprenticed until the attainment of the age of fourteen years, in Victoria and Queensland, twelve years. There is no limitation in the case of the other States, nor any regulating Acts except as applying to charity apprentices. The statutes limiting the age at which children may begin to work may be regarded as applicable by way of preventing too early apprenticeship, so also may those directing that education be continued up to a certain age or standard.

Indentures must be entered into specifying the conditions of the employment. Apprenticeships may not exceed seven years in duration, and become inoperative at twenty-one years of age, or in the case of women, on marriage.

The Arbitration Courts and Wages Boards have power to limit the number of apprentices which may be taken into a factory. No general statistics of the number of apprentices in Australia have been collected up to the present time. Other enactments relating to child labour are referred to elsewhere.

§ 6. Amount of Wages Paid and Value of Production.

1. **Introduction.**—The importance of the manufacturing industries of the Commonwealth is indicated by the fact that the total value of the output for 1907 exclusive of the States of Western Australia and Tasmania, for which particulars are not available, was £86,972,413, of which amount the sum of £52,542,012 represents the value of the raw materials used. The difference between these two amounts, viz., £34,430,401, represents the amount by which the value of the raw materials was enhanced in the process of manufacture. The total amount of salaries and wages paid in factories in all the States during 1907 was £18,323,977; the corresponding amount, exclusive of the States of Western Australia and Tasmania, being £16,291,425.

2. **Amounts of Salaries and Wages Paid, 1907.**—The total amounts of salaries and wages paid during the year 1907 in various classes of factories in the Commonwealth (excluding all sums drawn by working proprietors) are shewn in the following table.

It has been found that it is not practicable to shew satisfactorily in this book the rates of wages paid to employes in various classes of manufacturing industries in Australia, owing to the fact that the rates in many industries vary very considerably in different parts of the country.

**AMOUNTS OF SALARIES AND WAGES PAID IN FACTORIES IN COMMONWEALTH,
1907.***

| Class of Industry. | N.S.W. | Vict. | Q'land. | S. Aust. | W. Aust. | Tas. | Cwltth. |
|--|-----------|-----------|-----------|-----------|-----------|---------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. | 242,761 | 206,642 | 51,109 | 72,717 | 15,723 | 10,681 | 599,638 |
| II. Treating oils and fats, animal, vegetable, etc. | 45,658 | 47,193 | 11,614 | 18,824 | 5,053 | 3,400 | 131,742 |
| III. Processes in stone, clay, glass, etc. | 306,927 | 270,016 | 29,850 | 52,943 | 47,843 | 15,533 | 732,112 |
| IV. Working in wood | 466,832 | 358,522 | 243,476 | 94,278 | 384,965 | 106,202 | 1,654,275 |
| V. Metal works, machinery, etc. | 1,884,144 | 1,226,616 | 363,530 | 642,100 | 301,795 | 228,975 | 4,647,160 |
| VI. Connected with food and drink, etc. | 898,637 | 905,224 | 590,293 | 246,070 | 173,884 | 74,750 | 2,888,858 |
| VII. Clothing and textile fabrics, etc. | 1,051,153 | 1,397,053 | 223,710 | 226,572 | 145,672 | 79,183 | 3,128,343 |
| VIII. Books, paper, printing and engraving | 637,883 | 645,205 | 203,707 | 133,127 | 146,362 | 54,291 | 1,820,575 |
| IX. Musical instruments, etc. | 35,298 | 2,299 | ... | 1,306 | ... | ... | 38,903 |
| X. Arms and explosives | 1,220 | 18,337 | ... | ... | ... | ... | 19,557 |
| XI. Vehicles and fittings, saddlery and harness, etc. | 243,910 | 232,408 | 77,443 | 84,696 | 50,939 | 20,996 | 710,392 |
| XII. Ship and boat building and repairing | 214,018 | 9,547 | 7,367 | 13,558 | 1,939 | 3,788 | 250,217 |
| XIII. Furniture, bedding and upholstery | 190,091 | 172,941 | 51,131 | 54,596 | 30,924 | 15,860 | 515,543 |
| XIV. Drugs, chemicals, and by-products | 76,382 | 94,395 | 3,737 | 22,587 | 5,531 | 640 | 203,272 |
| XV. Surgical and other scientific instruments | 6,348 | 3,036 | 1,689 | 691 | 1,084 | ... | 12,848 |
| XVI. Jewellery, timepieces, and platedware | 48,548 | 62,142 | 7,773 | 12,464 | 3,087 | 4,517 | 138,531 |
| XVII. Heat, light, and power | 243,231 | 215,508 | 43,904 | 45,984 | 58,888 | 31,992 | 639,557 |
| XVIII. Leatherware, n.e.i. | 16,805 | 25,151 | 2,122 | 1,342 | 1,306 | ... | 46,726 |
| XIX. Minor wares, n.e.i. | 40,810 | 81,442 | 6,184 | 10,539 | 5,708 | 1,036 | 145,728 |
| Total | 6,650,715 | 5,982,677 | 1,923,639 | 1,734,394 | 1,380,708 | 651,844 | 18,323,977 |

* Excluding all amounts drawn by working proprietors.

The maximum amount of salaries and wages paid in any particular class was in Class V., the amount being £4,647,160, or 25.36 per cent. on the total amount; the minimum amount was in Class XV., £12,848, or 0.07 per cent. on the total amount. The State in which the largest amount was paid was New South Wales, where the amount paid was over ten times as much as was paid in Tasmania. The following statement shews the average amount paid per employé in each State respectively; the figures are exclusive of working proprietors:—

AVERAGE AMOUNT OF SALARIES AND WAGES PAID PER EMPLOYE, 1907.

| Particulars. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|-------------------|--------|-------|---------|----------|----------|-------|-----------|
| Amount paid ... £ | 80.63 | 69.33 | 71.82 | 80.00 | 114.23 | 79.40 | 77.17 |

In comparing the figures in the above table regard should be paid to the nature of certain industries which are carried on to a greater extent in some States than in others (see § 2 hereof). In Victoria, for instance, where the average is lowest there are a large number of factories and hands employed in Class VII., and in that class wages are low, a great many women and children being employed. The position occupied by Western Australia is no doubt partly due to the increased cost of living in that State.

3. Value of Raw Materials used in Factories, 1907.—The total value of raw materials worked up (i.e., exclusive of fuel, lubricants, etc.) in factories in the Common-

wealth, exclusive of the States of Western Australia and Tasmania, for which particulars are not available, during 1907, was £52,542,012, which represents 61.46 per cent. of the total value of the finished products. (See next paragraph hereof.) The following table shows the value of the raw materials worked up in various factories in each State except Western Australia and Tasmania, during the year 1907:—

**VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH,
1907.**

| Class of Industry. | N.S.W. | Vic. | Qld. | S.A. | W.A.* | Tas.† | Cwth.‡ |
|---|-------------------|-------------------|------------------|------------------|-------|-------|-------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 3,925,883 | 1,896,987 | 1,058,399 | 479,646 | ... | ... | 7,860,865 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 487,451 | 299,713 | 53,674 | 107,112 | ... | ... | 947,950 |
| III. Processes in stone, clay, glass, etc. ... | 187,982 | 141,939 | 8,842 | 17,902 | ... | ... | 336,066 |
| IV. Working in wood ... | 1,271,115 | 565,784 | 374,411 | 230,335 | ... | ... | 2,491,645 |
| V. Metal wks., machinery, etc. ... | 5,219,699 | 1,870,542 | 531,062 | 1,867,506 | ... | ... | 9,488,809 |
| VI. Connected with food and drink, etc. ... | 7,422,925 | 7,781,422 | 3,772,353 | 1,656,039 | ... | ... | 20,632,739 |
| VII. Clothing and textile fabrics, etc. ... | 2,079,141 | 2,838,249 | 470,985 | 443,009 | ... | ... | 5,831,384 |
| VIII. Books, paper, printing, and engraving ... | 536,055 | 649,470 | 36,412 | 126,973 | ... | ... | 1,348,910 |
| IX. Musical instruments, etc. ... | 52,910 | 1,066 | ... | 1,251 | ... | ... | 55,227 |
| X. Arms and explosives ... | 3,634 | 73,438 | ... | ... | ... | ... | 77,072 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 290,931 | 281,114 | 76,891 | 123,129 | ... | ... | 772,065 |
| XII. Ship and boat building and repairing ... | 105,877 | 6,906 | 3,070 | 6,551 | ... | ... | 121,904 |
| XIII. Furniture, bedding, and upholstery ... | 264,832 | 326,570 | 49,690 | 53,260 | ... | ... | 724,352 |
| XIV. Drugs, chemicals, and by-products ... | 320,817 | 443,436 | 8,168 | 144,761 | ... | ... | 917,232 |
| XV. Surgical and other scientific instruments ... | 5,689 | 2,147 | 1,378 | 3,000 | ... | ... | 12,214 |
| XVI. Jewellery, timepieces, and plated ware ... | 65,652 | 119,858 | 15,847 | 15,650 | ... | ... | 217,002 |
| XVII. Heat, light, and power ... | 299,995 | 193,153 | 20,050 | 33,484 | ... | ... | 546,682 |
| XVIII. Leatherware, n.e.i. ... | 75,214 | 114,691 | 3,039 | 3,689 | ... | ... | 196,633 |
| XIX. Minor wares, n.e.i. ... | 120,910 | 319,598 | 5,765 | 16,939 | ... | ... | 463,212 |
| Total ... | 22,746,162 | 17,926,128 | 6,490,086 | 5,879,636 | ... | ... | 52,542,012 |

* Details too incomplete for publication. † Figures not available. ‡ Exclusive of Western Australia and Tasmania.

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £20,632,739, or more than twice the value in any other class. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £9,488,809 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being £12,214.

4. **Total Value of Output of Manufacturing Industries, 1907.**—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State, except Western Australia and Tasmania, during the year 1907 is shown in the following table. The figures given represent not only the increased value due to the process of manufacture, but also include the value of the raw materials used. The difference between the value of the materials used and the total output (see paragraph 5 hereof) is the real value of production from manufactories.

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH, 1907.

| Class of Industry. | N.S.W. | Victoria. | Q'land. | S.A. | W.A.* | Tas.* | Cwth.† |
|---|------------|------------|------------|-----------|-------|-------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural & pastoral pursuits, etc. | 4,507,210 | 2,336,399 | 1,241,370 | 602,325 | ... | ... | 8,637,304 |
| II. Treating oils and fats, animal, vegetable, etc. | 686,894 | 433,603 | 96,279 | 155,559 | ... | ... | 1,377,335 |
| III. Processes in stone, clay, glass, etc. | 827,680 | 684,519 | 60,633 | 115,091 | ... | ... | 1,687,978 |
| IV. Working in wood | 2,082,130 | 1,171,610 | 783,541 | 443,068 | ... | ... | 4,460,349 |
| V. Metal works, machinery, etc. | 9,160,693 | 3,815,558 | 1,330,247 | 3,301,965 | ... | ... | 17,608,468 |
| VI. Connected with food and drink, etc. | 10,283,497 | 10,517,884 | 5,757,093 | 2,372,849 | ... | ... | 28,931,328 |
| VII. Clothing and textile fabrics, etc. | 3,817,637 | 4,935,774 | 858,796 | 790,505 | ... | ... | 10,402,762 |
| VIII. Books, paper, printing, and engraving... | 1,627,440 | 1,910,979 | 468,935 | 225,092 | ... | ... | 4,232,495 |
| IX. Musical instruments, etc. | 118,951 | 5,653 | ... | 3,465 | ... | ... | 128,069 |
| X. Arms and explosives | 5,264 | 115,481 | ... | ... | ... | ... | 120,745 |
| XI. Vehicles and fittings, saddlery and harness, etc. | 690,084 | 656,545 | 215,269 | 251,450 | ... | ... | 1,813,348 |
| XII. Ship and boat building and repairing... | 387,314 | 24,368 | 15,099 | 24,530 | ... | ... | 451,811 |
| XIII. Furniture, bedding, and upholstery | 598,412 | 598,875 | 125,564 | 140,325 | ... | ... | 1,463,176 |
| XIV. Drugs, chemicals, and by-products | 595,073 | 760,008 | 17,933 | 192,931 | ... | ... | 1,565,950 |
| XV. Surgical and other scientific instruments | 19,675 | 8,518 | 5,838 | 4,200 | ... | ... | 33,231 |
| XVI. Jewellery, timepieces, and platedware | 146,043 | 240,327 | 26,425 | 37,225 | ... | ... | 450,020 |
| XVII. Heat, light, and power | 1,373,709 | 830,088 | 202,352 | 137,812 | ... | ... | 2,543,961 |
| XVIII. Leatherware, n.e.i. | 107,947 | 162,153 | 9,306 | 6,343 | ... | ... | 285,748 |
| XIX. Minor wares, n.e.i. | 194,750 | 480,292 | 14,776 | 33,617 | ... | ... | 723,335 |
| Total | 37,231,012 | 29,693,634 | 11,209,515 | 8,838,252 | ... | ... | 86,972,418 |

* Not available. † Exclusive of Western Australia and Tasmania.

It may be seen that the State of New South Wales far outstrips the other States in the total value of the output of her factories, the value being £37,231,012, or 42.88 per cent. on the total value for the four States. The next State in order of value is Victoria, which produces 34.14 per cent.; the value of the output of Queensland is 12.88 per cent. and of South Australia 10.10 per cent. on the total value for the four States. The two most important classes in order of value of output (Classes VI. and V.) are the same as in order of value of raw materials used; the next class is, however, Class VII., as regards output, but is Class I. as regards raw materials used. The following statement shews the value of output per head of mean population during 1907. The population of the Commonwealth is taken exclusive of the two States for which particulars are not available:—

VALUE OF OUTPUT OF FACTORIES PER HEAD OF MEAN POPULATION, 1907.

| Particulars. | N.S.W. | Victoria. | Q'land. | S.A. | W.A.* | Tas.* | Cwth.† |
|-----------------------|--------|-----------|---------|-------|-------|-------|--------|
| Amount per head ... £ | 24.06 | 23.95 | 20.82 | 22.70 | ... | ... | 23.41 |

* Not available. † Exclusive of Western Australia and Tasmania.

5. Value of Production of Manufacturing Industries, 1907.—The difference between the figures given in paragraph 4 and the corresponding figures in paragraph 3 hereof represents the amount added to the value of the raw materials by the process of manufacture. This is the real measure of the value of production from manufacturing industries. The following table shews the value added in this manner in each State, for which figures are available, during the year 1907 for various classes of factories:—

VALUE OF PRODUCTION FROM MANUFACTURING INDUSTRIES IN COMMON-WEALTH, 1907.

| Class of Industry. | N S.W. | Victoria. | Q'land. | S.A. | W.A.* | Tas.* | Cwlth.† |
|---|------------|------------|-----------|-----------|-------|-------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 581,377 | 439,412 | 182,971 | 122,670 | ... | ... | 1,325,439 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 199,443 | 138,890 | 42,605 | 48,447 | ... | ... | 429,385 |
| III. Processes in stone, clay, glass, etc. ... | 659,698 | 542,580 | 51,846 | 97,789 | ... | ... | 1,351,913 |
| IV. Working in wood... .. | 811,015 | 605,826 | 389,130 | 162,733 | ... | ... | 1,968,704 |
| V. Metal works, machinery, etc. ... | 3,940,999 | 1,945,016 | 799,185 | 1,434,459 | ... | ... | 8,119,659 |
| VI. Connected with food and drink, etc. ... | 2,860,572 | 2,736,462 | 1,984,745 | 716,810 | ... | ... | 8,298,589 |
| VII. Clothing and textile fabrics, etc. ... | 1,738,546 | 2,097,525 | 387,811 | 347,496 | ... | ... | 4,571,378 |
| VIII. Books, paper, printing, and engraving ... | 1,091,434 | 1,261,509 | 432,523 | 98,119 | ... | ... | 2,883,585 |
| IX. Musical instruments, etc. ... | 66,041 | 4,587 | ... | 2,214 | ... | ... | 72,842 |
| X. Arms and explosives ... | 1,630 | 42,043 | ... | ... | ... | ... | 43,673 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 399,153 | 375,431 | 158,378 | 128,321 | ... | ... | 1,041,283 |
| XII. Ship and boat building and repairing ... | 222,437 | 17,462 | 12,029 | 17,979 | ... | ... | 329,907 |
| XIII. Furniture, bedding, and upholstery ... | 303,580 | 272,905 | 75,874 | 87,065 | ... | ... | 738,824 |
| XIV. Drugs, chemicals, and bi-products ... | 274,281 | 316,522 | 9,765 | 48,170 | ... | ... | 648,718 |
| XV. Surgical and other scientific instruments ... | 13,988 | 6,371 | 4,460 | 1,200 | ... | ... | 26,017 |
| XVI. Jewellery, timepieces, and plated ware ... | 80,391 | 120,474 | 10,578 | 21,575 | ... | ... | 233,016 |
| XVII. Heat, light, and power ... | 1,073,714 | 636,935 | 182,302 | 104,328 | ... | ... | 1,997,279 |
| XVIII. Leatherware, n.e.i. ... | 32,733 | 47,482 | 6,216 | 2,654 | ... | ... | 89,065 |
| XIX. Minor wares, n.e.i. ... | 73,840 | 160,694 | 9,011 | 16,578 | ... | ... | 260,123 |
| Total | 14,484,850 | 11,767,506 | 4,719,429 | 3,458,616 | ... | ... | 34,430,401 |

* Not available. † Exclusive of Western Australia and Tasmania.

It may be seen that as regards the amount of the value added the classes are approximately in the same order as in the case of value of production. The value added to raw material by process of manufacture per head of mean population is shewn in the following statement :—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES PER HEAD OF MEAN POPULATION, 1907.

| Particulars. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust.° | Tas.* | Cwlth.† |
|--------------|--------|-----------|---------|----------|-----------|-------|---------|
| Value | £ 9.36 | 9.49 | 8.76 | 8.88 | ... | ... | 9.27 |

* Not available. † Exclusive of Western Australia and Tasmania.

Thus it may be seen that the position of the two leading States, New South Wales and Victoria, in regard to total value of output of factories per head of mean population is reversed in regard to value added per head, though the difference in either case is very small. The other two States for which particulars are available retain their relative positions in both cases.

As the total value of the output for the four States for which particulars are available was estimated at £86,972,413, there remained, after payment of £52,542,012, the value of the raw materials used, of £16,291,425 for salaries and wages, and of £1,832,447 for fuel, the sum of £16,306,529 to provide for all other expenditure and profits. The

following table gives corresponding particulars for each State for which particulars are available, expressed absolutely and as percentages of the total value of the output:—

VALUE OF OUTPUT AND COST OF PRODUCTION, 1907.

| State. | Raw Materials Used. | Fuel. | Salaries and Wages. | All other Expenditure and Profits. | Total Value of Output. |
|------------------------|---------------------|-----------|---------------------|------------------------------------|------------------------|
| VALUE AND COST, ETC. | | | | | |
| | £ | £ | £ | £ | £ |
| New South Wales ... | 22,746,162 | 843,686 | 6,650,715 | 6,990,449 | 37,231,012 |
| Victoria ... | 17,926,128 | 498,454 | 5,982,677 | 5,286,375 | 29,693,634 |
| Queensland ... | 6,490,086 | 208,775 | 1,923,639 | 2,587,015 | 11,209,515 |
| South Australia ... | 5,379,636 | 281,532 | 1,734,394 | 1,442,690 | 8,838,252 |
| Western Australia* ... | ... | ... | ... | ... | ... |
| Tasmania* ... | ... | ... | ... | ... | ... |
| Commonwealth† ... | 52,542,012 | 1,832,447 | 16,291,425 | 16,306,529 | 86,972,413 |

PERCENTAGE OF COST, ETC., ON TOTAL VALUE.

| | % | % | % | % | % |
|------------------------|-------|------|-------|-------|-----|
| New South Wales ... | 61.10 | 2.26 | 17.86 | 18.78 | 100 |
| Victoria ... | 60.37 | 1.68 | 20.15 | 17.80 | 100 |
| Queensland ... | 57.90 | 1.86 | 17.16 | 23.08 | 100 |
| South Australia ... | 60.87 | 3.19 | 19.62 | 16.32 | 100 |
| Western Australia* ... | ... | ... | ... | ... | ... |
| Tasmania* ... | ... | ... | ... | ... | ... |
| Commonwealth† ... | 60.42 | 2.10 | 18.73 | 18.75 | 100 |

* Not available. † Exclusive of Western Australia and Tasmania.

For every hundred pounds worth of goods manufactured in each State and in the Commonwealth the percentages given in the above table represent the proportions of the various elements included in the price of the goods as they left the factories.

§ 7. Investment of Capital in Manufacturing Industries.

1. **General.**—The amount of capital invested in manufacturing industries may be estimated approximately by taking the sum of the value of land and buildings occupied as manufactories and the value of the plant and machinery used in connection therewith. As an indication of the permanent character and stability of the industries which have been established in the Commonwealth, it may be noted that the values of both land and buildings and of machinery and plant used in the factories are rapidly increasing. Thus, for the whole Commonwealth the total value of land and buildings and plant and machinery has increased from 1903 to 1907, by £5,735,961, from £43,596,921 to £49,332,882, that is, at the rate of £1,433,990 per annum.

The following statement shews for the year 1907 the values of land and buildings and of machinery and plant used in connection with manufacturing industries in each State:—

CAPITAL INVESTED IN MANUFACTURING INDUSTRIES, 1907.

| Value of— | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | Cwltth. |
|-------------------------|-------------------|-------------------|------------------|------------------|------------------|------------------|-------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Land and buildings ... | 9,508,259 | 8,376,642 | 2,261,539 | 2,487,606 | 1,637,307 | 834,611 | 25,105,864 |
| Machinery and plant ... | 9,043,772 | 6,771,458 | 3,989,679 | 1,553,654 | 1,893,351 | 975,104 | 24,227,018 |
| Total ... | 18,552,031 | 15,148,100 | 6,251,218 | 4,041,260 | 3,530,558 | 1,809,715 | 49,332,882 |

It may be seen from the above table that the total capital invested in the manufacturing industry in the Commonwealth during the year 1907 was approximately £49,332,882, or £11.87 per head of mean population; of that sum £25,105,864 was invested in land and buildings occupied as manufactories, the remaining £24,227,018 being the value of the plant and machinery used in connection therewith.

2. *Value of Land and Buildings.*—The value of the land and buildings occupied in connection with manufacturing industries may be conveniently classified according to the nature of the industry conducted therein.

(i.) *Total Value in Commonwealth, 1903 to 1907.* The following table shews for the whole Commonwealth the approximate values of land and buildings occupied in connection with manufacturing industries of various classes during each year from 1903 to 1907, inclusive:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH, 1903 TO 1907.

| Class of Industry. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 814,684 | 788,816 | 791,535 | 777,371 | 781,733 |
| II. Treating oils & fats, animal, vegetable, etc. ... | 380,038 | 374,000 | 375,097 | 363,622 | 343,424 |
| III. Processes in stone, clay, glass, etc. ... | 739,904 | 734,873 | 741,110 | 728,995 | 820,332 |
| IV. Working in wood ... | 1,181,236 | 1,172,010 | 1,132,615 | 1,219,155 | 1,090,551 |
| V. Metal works, machinery, etc. ... | 2,975,650 | 3,341,310 | 3,231,594 | 3,313,200 | 3,709,314 |
| VI. Connected with food and drink, etc. ... | 6,750,689 | 6,787,809 | 6,956,539 | 6,638,474 | 6,708,611 |
| VII. Clothing and textile fabrics, etc. ... | 2,892,181 | 2,875,560 | 2,931,080 | 2,919,301 | 3,396,599 |
| VIII. Books, paper, printing, and engraving ... | 2,156,872 | 2,174,697 | 2,155,476 | 2,134,021 | 2,357,799 |
| XI. Musical instruments, etc. ... | 26,041 | 26,141 | 26,041 | 27,741 | 27,405 |
| X. Arms and explosives ... | 35,461 | 28,832 | 29,233 | 30,314 | 31,152 |
| XI. Vehicles & fittings, saddlery & harness, etc. ... | 1,012,603 | 1,011,668 | 980,989 | 951,288 | 1,079,859 |
| XII. Ship and boat building and repairing ... | 1,079,068 | 1,105,053 | 1,102,918 | 1,111,752 | 991,907 |
| XIII. Furniture, bedding, and upholstery ... | 657,729 | 629,304 | 652,976 | 618,422 | 633,237 |
| XIV. Drugs, chemicals, and by-products ... | 319,858 | 291,506 | 307,593 | 335,393 | 444,060 |
| XV. Surgical and other scientific instruments ... | 39,029 | 53,217 | 32,736 | 37,197 | 31,779 |
| XVI. Jewellery, timepieces, and platedware ... | 143,450 | 161,604 | 140,535 | 159,356 | 204,734 |
| XVII. Heat, light, and power ... | 1,994,379 | 1,831,126 | 1,858,594 | 1,857,610 | 2,202,528 |
| XVIII. Leatherware, n.e.i. ... | 64,010 | 63,897 | 61,472 | 60,365 | 57,043 |
| XIX. Minor wares, n.e.i. ... | 140,587 | 138,029 | 139,666 | 143,204 | 193,797 |
| Total ... | 23,403,489 | 23,589,452 | 23,647,799 | 23,427,281 | 25,105,864 |

The figures in the above table for the years 1903 to 1906, inclusive, are subject to the limitations that the actual returns for these years for the States of New South Wales and South Australia are not available. In order to present an approximate total for the Commonwealth, however, 1901 figures for New South Wales, and 1907 figures for South Australia are included for the years specified. It may be seen that the total net increase was £1,702,375, or an annual average of £425,594. In eight classes, viz., Classes I., II., IV., VI., X., XII., XIII., and XVIII., there were comparatively small decreases. The largest decreases were in Classes IV. and XII., amounting to £90,685 and £87,181 respectively. The largest increases were in Classes V. and VII., and amounted to £735,664 and £504,418 respectively.

(ii.) *Value in each State, 1907.* The following table gives similar information for each State up to the 31st December, 1907:—

VALUES OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1907.

| Class of Industry. | N.S.W. | Victoria. | Q'land. | S.A. | W.A. | Tas. | Cwlth. |
|--|-----------|-----------|-----------|-----------|-----------|---------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. | 294,209 | 325,629 | 49,620 | 70,934 | 25,315 | 16,026 | 781,733 |
| II. Treating oils and fats, animal, vegetable, etc. | 152,077 | 107,290 | 22,201 | 51,533 | 6,323 | 4,000 | 343,424 |
| III. Processes in stone, clay, glass, etc. | 394,886 | 288,579 | 35,170 | 48,076 | 41,829 | 11,792 | 820,332 |
| IV. Working in wood ... | 390,705 | 237,958 | 139,155 | 86,397 | 184,255 | 52,081 | 1,090,551 |
| V. Metal works, machinery, etc. | 1,651,096 | 957,781 | 230,623 | 391,234 | 421,165 | 57,415 | 3,709,314 |
| VI. Connected with food and drink, etc. | 2,030,840 | 2,288,112 | 886,199 | 611,015 | 397,583 | 494,862 | 6,708,611 |
| VII. Clothing and textile fabrics, etc. | 1,367,641 | 1,303,321 | 187,581 | 314,771 | 144,430 | 78,855 | 3,396,599 |
| VIII. Books, paper, printing and engraving ... | 813,389 | 781,501 | 361,347 | 204,667 | 173,220 | 23,675 | 2,357,799 |
| IX. Musical instruments, etc. | 20,440 | 5,240 | ... | 1,725 | ... | ... | 27,405 |
| X. Arms and explosives ... | 2,954 | 28,198 | ... | ... | ... | ... | 31,152 |
| XI. Vehicles and fittings, saddlery and harness, etc. | 377,164 | 336,408 | 122,346 | 151,416 | 65,155 | 27,370 | 1,079,859 |
| XII. Ship and boat building and repairing ... | 560,938 | 401,585 | 10,821 | 12,123 | 1,640 | 4,800 | 991,907 |
| XIII. Furniture, bedding and upholstery ... | 229,158 | 233,067 | 64,239 | 48,781 | 37,790 | 20,202 | 633,237 |
| XIV. Drugs, chemicals, and by-products ... | 142,497 | 225,428 | 6,560 | 53,715 | 15,810 | 50 | 444,060 |
| XV. Surgical and other scientific instruments ... | 13,088 | 8,151 | 5,850 | 1,050 | 3,640 | ... | 31,779 |
| XVI. Jewellery, timepieces, and platedware ... | 67,944 | 92,030 | 12,300 | 20,180 | 3,120 | 9,160 | 204,734 |
| XVII. Heat, light, and power ... | 911,519 | 647,927 | 119,317 | 387,214 | 106,528 | 30,023 | 2,202,528 |
| XVIII. Leatherware, n.e.i. | 17,900 | 27,463 | 3,600 | 5,740 | 2,340 | ... | 57,043 |
| XIX. Minor wares, n.e.i. | 69,314 | 80,974 | 4,610 | 27,035 | 7,064 | 4,300 | 193,797 |
| Total ... | 9,508,259 | 8,376,642 | 2,261,539 | 2,487,606 | 1,637,207 | 834,611 | 25,105,864 |

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £6,708,611, or 26.72 per cent. on the total value. The next classes in importance were Classes V., VII., VIII., and XVII., in which the values were £3,709,314, £3,396,599, £2,357,799, and £2,202,528 respectively. The sum of the values for the five classes mentioned amounted to £18,374,851, or 73.19 per cent. on the total value for all classes.

(iii.) *Total Values in each State, 1903 to 1907.* The following table shows the total values, so far as returns are available, of land and buildings occupied as manufactories in each State at the end of each year from 1903 to 1907, inclusive:—

TOTAL VALUES OF LANDS AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1903 to 1907.

| Year. | N.S.W. | Victoria. | Queensland. | S. Aust.† | W. Aust. | Tasmania. | C'wealth. |
|-------|------------|-----------|-------------|-----------|-----------|-----------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1903 | *8,029,890 | 7,967,945 | 2,631,039 | 2,487,606 | 1,291,115 | 995,894 | 23,403,489 |
| 1904 | *8,029,890 | 7,641,051 | 2,699,191 | 2,487,606 | 1,731,233 | 1,000,481 | 23,589,452 |
| 1905 | *8,029,890 | 7,771,238 | 2,709,951 | 2,487,606 | 1,685,597 | 963,517 | 23,647,799 |
| 1906 | *8,029,890 | 8,062,110 | 2,405,559 | 2,487,606 | 1,775,279 | 666,837 | 23,427,281 |
| 1907 | 9,508,259 | 8,376,642 | 2,261,539 | 2,487,606 | 1,637,207 | 834,611 | 25,105,864 |

* According to Census 1901. † 1907 figures throughout, those for previous years not being available.

It may be seen that, so far as returns are available, there has been a general though irregular increase in the States of Victoria and Western Australia, as well as for the

whole Commonwealth. There have been irregular decreases in Queensland and Tasmania. The irregularities, however, are probably due partly to the returns having been made on different bases for the succeeding years in carrying into effect the resolutions passed at the Conferences of Statisticians (see § 1, 2, hereof).

3. *Value of Plant and Machinery.*—The following table shows for the whole Commonwealth the approximate value of plant and machinery used in connection with factories at the end of each year from 1903 to 1907, inclusive. The figures, however, are subject to certain limitations, inasmuch as returns for South Australia for the years 1903 to 1906, inclusive, are not available; South Australia figures for 1907 have therefore been taken throughout:—

**VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH,
1903 to 1907.**

| Class of Industry. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 534,784 | 568,476 | 578,382 | 618,891 | 644,597 |
| II. Treating oils & fats, animal, vegetable, etc. ... | 306,945 | 312,539 | 327,182 | 328,484 | 331,595 |
| III. Processes in stone, clay, glass, etc. ... | 670,644 | 691,881 | 734,285 | 745,504 | 752,084 |
| IV. Working in wood... .. | 1,583,895 | 1,491,195 | 1,490,402 | 1,422,545 | 1,506,933 |
| V. Metal works, machinery, etc. ... | 3,410,662 | 3,580,494 | 3,657,936 | 3,749,781 | 4,237,810 |
| VI. Connected with food and drink, etc. ... | 6,786,451 | 7,267,717 | 7,177,535 | 7,436,991 | 7,340,941 |
| VII. Clothing and textile fabrics, etc. ... | 863,075 | 903,216 | 962,164 | 1,177,456 | 1,133,083 |
| VIII. Books, paper, printing, and engraving ... | 1,748,719 | 1,795,758 | 1,824,315 | 1,889,705 | 1,993,135 |
| IX. Musical instruments, etc. ... | 5,070 | 6,030 | 6,730 | 6,327 | 7,829 |
| X. Arms and explosives | 52,766 | 45,017 | 44,037 | 44,476 | 45,613 |
| XI. Vehicles & fittings, saddlery & harness, etc. ... | 160,741 | 157,743 | 161,479 | 194,136 | 195,271 |
| XII. Ship and boat building, and repairing ... | 268,697 | 243,770 | 256,340 | 241,371 | 240,486 |
| XIII. Furniture, bedding, and upholstery ... | 101,223 | 92,631 | 94,768 | 97,392 | 106,613 |
| XIV. Drugs, chemicals, and by-products ... | 252,850 | 278,244 | 282,293 | 306,285 | 332,349 |
| XV. Surgical and other scientific instruments ... | 4,543 | 4,885 | 5,013 | 7,329 | 6,340 |
| XVI. Jewellery, timepieces, and platedware ... | 29,920 | 31,831 | 32,972 | 38,796 | 45,927 |
| XVII. Heat, light, and power | 3,336,066 | 4,299,529 | 4,524,472 | 4,895,419 | 5,208,454 |
| XVIII. Leatherware, n.e.i. | 12,188 | 12,230 | 11,867 | 15,489 | 16,523 |
| XIX. Minor wares, n.e.i. | 64,173 | 65,816 | 65,407 | 68,831 | 82,435 |
| Total | 20,193,432 | 21,848,442 | 22,237,599 | 23,285,208 | 24,227,018 |

It may be seen that during the period in question there has been a steady and substantial net increase amounting in all to £4,033,586, or an annual average of £1,008,397. The increase has occurred in all classes of industry except in Classes IV., X., and XII., in all of which there have been comparatively small decreases amounting to £76,962, £7153, and £28,211 respectively. The largest increase was in Class XVII., "Heat, Light, and Power," and amounted to £1,872,368; the next largest was in Class V., "Metal Works, Machinery, etc." and amounted to £827,148.

(i.) *Total Value in each State 1903 to 1907.* The classified figures in the preceding table for the whole Commonwealth are shown below for each State. It will be seen that the increase in value referred to is general throughout the States, with the exception of Queensland, where there is apparently a small decrease. This apparent decrease may, however, be really due to the reclassification of factories, so as to come into line with the other States:—

VALUE OF PLANT AND MACHINERY IN FACTORIES, 1903 to 1907.

| Year. | N.S.W. | Victoria. | Queensland. | S. Aust.* | W. Aust. | Tasmania. | C'wealth. |
|-------|-----------|-----------|-------------|-----------|-----------|-----------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1903 | 7,009,806 | 5,010,896 | 4,052,584 | 1,553,654 | 1,644,331 | 922,161 | 20,193,432 |
| 1904 | 7,536,903 | 6,027,134 | 4,200,303 | 1,553,654 | 1,776,481 | 753,967 | 21,848,442 |
| 1905 | 7,919,948 | 6,187,919 | 3,988,056 | 1,553,654 | 1,834,098 | 753,924 | 22,237,599 |
| 1906 | 8,295,337 | 6,450,355 | 4,282,502 | 1,553,654 | 1,861,477 | 841,883 | 23,285,208 |
| 1907 | 9,043,772 | 6,771,458 | 3,989,679 | 1,553,654 | 1,893,351 | 975,104 | 24,227,018 |

* Figures for 1907 throughout, previous years not available.

(ii.) *Classified Value in each State, 1907.* The following table shows the value of plant and machinery used in factories in each State during the year 1907, classified according to the nature of the industry in which used:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1907.

| Class of Industry. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|---|------------------|------------------|------------------|------------------|------------------|----------------|-------------------|
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | £ 261,074 | £ 225,496 | £ 87,583 | £ 48,764 | £ 10,480 | £ 11,300 | £ 644,597 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 158,923 | 112,176 | 35,562 | 14,396 | 6,938 | 3,600 | 331,595 |
| III. Processes in stone, clay, glass, etc. ... | 426,840 | 202,403 | 44,163 | 26,898 | 44,412 | 7,368 | 752,084 |
| IV. Working in wood ... | 436,816 | 228,263 | 290,121 | 37,686 | 417,087 | 96,960 | 1,506,933 |
| V. Metal wks., machinery, etc. ... | 1,850,946 | 947,315 | 418,993 | 395,774 | 369,097 | 255,685 | 4,237,810 |
| VI. Connected with food and drink, etc. ... | 2,553,063 | 1,542,293 | 2,343,705 | 507,686 | 286,040 | 108,154 | 7,340,941 |
| VII. Clothing and textile fabrics, etc. ... | 313,624 | 595,712 | 80,696 | 67,320 | 21,072 | 54,179 | 1,132,063 |
| VIII. Books, paper, printing, and engraving ... | 767,271 | 711,205 | 187,860 | 143,449 | 131,127 | 53,223 | 1,993,135 |
| IX. Musical instruments, etc. ... | 6,292 | 1,337 | ... | 200 | ... | ... | 7,829 |
| X. Arms and explosives ... | 200 | 45,413 | ... | ... | ... | ... | 45,613 |
| XI. Vehicles and fittings, saddlery, and harness, etc. ... | 61,922 | 63,007 | 22,651 | 26,317 | 15,943 | 5,431 | 195,271 |
| XII. Ship and boat building and repairing ... | 163,098 | 54,875 | 14,403 | 5,250 | 1,155 | 2,515 | 240,486 |
| XIII. Furniture, bedding, and upholstery ... | 33,696 | 39,364 | 13,294 | 10,944 | 5,780 | 3,535 | 106,613 |
| XIV. Drugs, chemicals, and by-products ... | 124,208 | 126,623 | 6,070 | 65,088 | 9,850 | 500 | 332,349 |
| XV. Surgical and other scientific instruments ... | 2,760 | 1,500 | 1,180 | 500 | 400 | ... | 6,340 |
| XVI. Jewellery, timepieces, and platedware ... | 20,193 | 17,396 | 3,506 | 3,217 | 1,100 | 515 | 45,927 |
| XVII. Heat, light, and power ... | 1,835,803 | 1,792,948 | 438,488 | 197,221 | 571,335 | 372,659 | 5,208,454 |
| XVIII. Leatherware, n.e.i. ... | 5,999 | 9,745 | 384 | 145 | 250 | ... | 16,523 |
| XIX. Minor wares, n.e.i. ... | 21,044 | 54,387 | 1,020 | 2,789 | 1,285 | 580 | 82,435 |
| Total ... | 9,043,772 | 6,771,458 | 3,989,679 | 1,553,654 | 1,893,351 | 975,104 | 24,237,018 |

The greatest value for any particular class of industry is for Class VI. "Connected with Food and Drink, etc.," and amounts to £7,340,941, or 30.30 per cent. on the total value for all classes. The next greatest value is for Class XVII. "Heat, Light, and Power," and amounts to £5,208,454, or 21.50 per cent. on the total. The next greatest is for Class V., "Metal Works, Machinery, etc.," amounting to £4,237,810, or 17.49 per cent. on the total value. The total for the three classes just specified amounts to £16,787,205, or 69.29 per cent. on the total value for all classes.

§ 8. Particular Industries.

1. **General.**—The preceding remarks and tables, together with the summary of manufacturing industries given at the end of this section, furnish a general view of the recent development of particular classes of industries in Australia treated under the nineteen categories referred to in § 1.3 hereof. In order to make the information complete, it must necessarily be supplemented by details exhibiting the development of individual industries. This alone will furnish adequate information as to the channels into which the main efforts of Australian manufacture flow. It is therefore proposed to deal herein with such particular industries as are of special importance in the Commonwealth by reason either of the number of persons employed, the number of factories, the amount of capital invested therein, the value of the production, or other features of special interest. In cases where there are only either one or two establishments of a particular class in any State, returns are not published, in order to avoid disclosing information as to the operations of individual factories.

2. **Tanning, Fellmongery, and Wool-scouring Industries.**—In Class I. (see § 1. 3 hereof) the most important industry is tanning, the returns for which, however, are grouped with the fellmongering and wool-scouring industries. Until recent years tanning in Australia was confined to the production of the coarser class of leathers, but lately the tanning of the finer leathers has been undertaken with satisfactory results. The position of these industries in the several States in 1907 was as follows:—

TANNING, FELLMONGERY AND WOOL-SCOURING, 1907.

| Item. | N.S.W. | Vic. | Qld. | S.A. | W.A. | Tas. | Cwth. |
|--|-----------|---------|--------|--------|--------|--------|---------|
| Number of factories | 152 | 90 | 37 | 12 | 3 | 6 | 300 |
| .. employés | 2,507 | 1,893 | 615 | 294 | 64 | 67 | 5,440 |
| .. male employés | 2,500 | 1,888 | 614 | 294 | 63 | 67 | 5,426 |
| .. female | 7 | 5 | 1 | ... | 1 | ... | 14 |
| Actual horse-power of engines employed ... | 2,051 | 1,223 | 706 | 201 | 60 | 46 | 4,287 |
| Average time in operation during year mths | 10.2 | 10.3 | ... | 11.2 | 12 | 12.0 | ... |
| Approx. value of lands and buildings | £ 177,790 | 174,318 | 44,370 | 24,704 | 10,950 | 11,126 | 443,258 |
| Approx. value of plant and machinery | £ 159,850 | 124,064 | 81,225 | 9,197 | 5,500 | 6,550 | 386,386 |
| Total amount of wages paid during year | £ 168,373 | 140,436 | 49,648 | 27,393 | 6,983 | 6,573 | 399,406 |

* Not available.

(i.) *Progress of Tanning, etc., Industries, 1904 to 1907.* The development of tanning, fellmongering, and wool-scouring industries during the period 1904 to 1907 is shewn in the following table, from which it will be seen that the decrease in the number of factories, due to the closing of a number of small establishments, was not accompanied by a corresponding decrease in the number of employés:—

DEVELOPMENT OF TANNING, ETC., INDUSTRIES, 1904 to 1907.

| State. | Number of Factories. | | | | Number of Employés. | | | | Approximate Value of Plant and Machinery. | | | |
|-----------------------|----------------------|-------|-------|-------|---------------------|-------|-------|-------|---|----------|----------|---------|
| | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. |
| | | | | | | | | | £ | £ | £ | £ |
| New South Wales | 160 | 166 | 154 | 152 | 2,187 | 2,228 | 2,427 | 2,507 | 152,673 | 156,830 | 172,553 | 159,850 |
| Victoria ... | 86 | 88 | 84 | 90 | 1,439 | 1,614 | 1,657 | 1,893 | 109,095 | 114,863 | 114,951 | 124,064 |
| Queensland ... | 50 | 48 | 40 | 37 | 459 | 477 | 513 | 615 | 70,738 | 70,246 | 84,750 | 61,225 |
| South Australia ... | 14 | 14 | 14 | 12 | 355 | 335 | 344 | 294 | ... | ... | ... | 9,197 |
| Western Australia ... | 3 | 2 | 2 | 3 | 65 | 55 | 61 | 64 | 4,000 | 4,500 | 5,500 | 5,500 |
| Tasmania ... | 8 | 3 | 3 | 6 | 96 | 56 | 56 | 67 | 8,715 | 4,550 | 6,600 | 6,550 |
| Commonwealth ... | 321 | 321 | 297 | 300 | 4,601 | 4,765 | 5,058 | 5,440 | 345,221† | 350,989† | 384,354† | 386,386 |

* No information available. † Exclusive of South Australia.

(ii.) *Production of Tanneries, 1907.* The quantity of raw materials used and the quantity and value of leather produced in tanneries in each State during the year 1907 are shewn in the following table:—

RAW MATERIALS USED AND LEATHER PRODUCED IN TANNERIES, 1907.

| Particulars. | N.S.W. | Vic. | Qld. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|----------------------------|-----------------|------------|-----------|-----------|----------|---------|------------|
| RAW MATERIALS USED. | | | | | | | |
| Hides | No. 445,271 | 490,318 | 93,955 | 90,643 | 22,830 | 20,300 | 1,163,317 |
| Pelts treated | No. 3,297,331 | 322,982 | 278,946 | * | * | * | 13,899,259 |
| Bark | Tons 10,451 | 10,049 | 2,131 | 1,843 | 629 | 573 | 25,676 |
| LEATHER PRODUCED. | | | | | | | |
| Quantity | lbs. 13,752,311 | 18,000,000 | 3,050,000 | 2,714,188 | 850,159 | 719,000 | 39,076,658 |
| Value | £ 703,003 | 900,000 | 152,872 | 159,181 | 41,470 | 33,000 | 1,994,526 |

* Not available. † Incomplete

3. **Soap and Candle Factories.**—In Class II. (See § 1. 3 hereof) the manufactures of soap and candles are the most important industries. These two manufactures are frequently carried on in the same establishments, so that separate returns cannot be obtained; it may, however, be said generally that the manufacture of soap is the more important of the two. The following table gives particulars of soap and candle factories in each State during the year 1907:—

SOAP AND CANDLE FACTORIES, 1907.

| Item. | N.S.W. | Vic. | Q'ld. | S.A. | W.A. | Tas.* | Cwltb.† |
|--|-----------|---------|--------|--------|-------|-------|---------|
| Number of factories | 34 | 15 | 15 | 7 | 3 | ... | 74 |
| " employés | 553 | 510 | 142 | 166 | 57 | ... | 1,428 |
| " male employés | 445 | 497 | 141 | 165 | 55 | ... | 1,303 |
| " female " | 108 | 13 | 1 | 1 | 2 | ... | 125 |
| Actual horse-power of engines employed | 334 | 225 | 140 | 88 | 39 | ... | 826 |
| Average No. of months in operation during year | 11.7 | 11.9 | † | 12 | 12 | ... | ... |
| Approximate value of land and buildings | £ 108,770 | 96,160 | 22,201 | 41,680 | 6,323 | ... | 275,134 |
| " plant and machinery | £ 127,311 | 106,326 | 35,562 | 11,896 | 6,938 | ... | 288,033 |
| Total amount of wages paid during year | £ 36,857 | 43,429 | 11,614 | 16,736 | 5,053 | ... | 113,689 |

* As there are only two soap and candle factories in this State, returns are not disclosed.
† Exclusive of Tasmania. ‡ Not available.

(i.) *Development of Soap and Candle Factories, 1904 to 1907.* The following table gives particulars for the last four years regarding the numbers of factories and employés and the value of plant and machinery in these industries in each State:—

DEVELOPMENT OF SOAP AND CANDLE FACTORIES, 1904 to 1907.

| State. | Number of Factories. | | | | Average Number of Employés. | | | | Approximate Value of Plant and Machinery. | | | |
|--------------------|----------------------|-------|-------|-------|-----------------------------|-------|-------|-------|---|---------|---------|---------|
| | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. |
| | | | | | | | | | £ | £ | £ | £ |
| New South Wales | 46 | 40 | 41 | 34 | 508 | 574 | 602 | 553 | 114,755 | 119,717 | 121,313 | 127,311 |
| Victoria | 19 | 20 | 15 | 15 | 492 | 500 | 523 | 510 | 101,486 | 105,529 | 104,244 | 106,326 |
| Queensland | 25 | 21 | 14 | 15 | 151 | 142 | 142 | 142 | 34,929 | 34,303 | 33,599 | 35,562 |
| South Australia... | 7 | 9 | 8 | 7 | 180 | 222 | 207 | 166 | * | * | * | 11,896 |
| Western Australia | 4 | 4 | 3 | 3 | 74 | 68 | 61 | 57 | 10,021 | 9,771 | 8,216 | 6,938 |
| Tasmania | 4 | 3 | 2 | † | 47 | 39 | 35 | † | 8,200 | 5,600 | 4,300 | † |
| Commonwealth | 105 | 97 | 83 | 74 | 1,452 | 1,545 | 1,570 | 1,428 | 269,391 | 274,920 | 271,672 | 288,033 |

* Information not available. Totals exclusive. † See note * to preceding table.

(ii.) *Production of Soap and Candles, 1904 to 1907.* The subjoined statement shews that there has been a considerable increase in the production of both these industries. As regards the production of soap, exclusive of South Australia, there was an increase of 11,868 cwt., or an annual average of 3,956 cwt. The returns as to the production of candles are incomplete; it may be seen, however, that there have been considerable increases in both New South Wales and Victoria.

PRODUCTION OF SOAP AND CANDLES, 1904 to 1907.

| State. | Soap. | | | | Candles. | | | |
|--------------------|---------|---------|---------|---------|------------|------------|------------|------------|
| | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. |
| | cwt. | cwt. | cwt. | cwt. | lbs. | lbs. | lbs. | lbs. |
| New South Wales | 206,677 | 212,658 | 221,834 | 225,217 | 3,984,035 | 4,226,062 | 4,799,898 | 5,656,354 |
| Victoria | 162,126 | 150,261 | 154,570 | 153,478 | 4,650,352 | 4,709,488 | 4,826,528 | 5,341,056 |
| Queensland | 58,033 | 55,167 | 64,130 | 59,900 | * | * | * | * |
| South Australia... | ... | ... | ... | 56,745 | * | * | * | 1,975,075 |
| Western Australia | 27,584 | 28,005 | 26,960 | 31,774 | 1,989,610 | 1,626,000 | 1,567,768 | † |
| Tasmania | 11,760 | 8,360 | 7,360 | † | 620,480 | 479,360 | 703,360 | † |
| Commonwealth | 468,180 | 454,451 | 474,854 | 527,114 | 11,244,477 | 11,040,930 | 11,897,554 | 12,972,485 |

* Not available. Totals exclusive of these States. † See note * to second table above. ‡ Not available for publication.

(iii.) *Raw Material Used, 1907.* The following statement shews the quantity of raw materials used in soap and candle factories in each State during the year 1907 :—

RAW MATERIAL USED IN SOAP AND CANDLE FACTORIES, 1907.

| Particulars. | N.S.W. | Vic. | Qld. | S. Aust. | W. Aust. | Tas.* | Cwth.† |
|-----------------|-----------|---------|-----------|----------|----------|-------|-----------|
| Tallow ... cwt. | 111,756 | 139,536 | 42,251 | 41,890 | 11,042 | ... | 346,475 |
| Copra ... cwt. | 55 | † | † | 848 | † | ... | 903 |
| Alkali ... lbs. | 5,255,843 | † | 1,601,713 | 767,200 | 564,780 | ... | 8,189,536 |

* As there are only two soap and candle factories in this State, particulars are not disclosed. † Not available. ‡ Incomplete.

4. **Saw Mills.**—The most important industry in Class IV. is the saw-milling industry, of which particulars are given below. To compare this class of industry in the several States all saw mills, including both forest and other mills are combined; joinery, moulding, and box works, etc., are excluded :—

SAW MILLS, FOREST AND OTHER, 1907.

| Items. | N.S.W. | Vic. | Qld. | S.A. | W.A. | Tas. | Cwth. |
|--|-----------|---------|---------|--------|--------|--------|---------|
| Number of factories ... | 377 | 119 | 155 | 24 | 30 | 60 | 765 |
| " employes ... | 3,983 | 1,681 | 2,507 | 679 | 586 | 1,171 | 10,607 |
| " male employes ... | 3,867 | 1,681 | 2,491 | 678 | 584 | 1,159 | 10,560 |
| " female ... | 16 | ... | 16 | 1 | 2 | 12 | 47 |
| Actual horse-power of engines employed... | 6,610 | 1,732 | 4,036 | 560 | 625 | 1,746 | 15,309 |
| Average No. of mths. in operation during yr. | 10.3 | 8.0 | ... | 9.2 | 11.7 | 9.0 | ... |
| Approx. value of land and buildings | £ 210,052 | 12,620 | 84,605 | 64,849 | 80,855 | 41,821 | 494,802 |
| " plant and machinery | £ 332,239 | 99,723 | 243,292 | 25,773 | 51,614 | 94,760 | 847,401 |
| Total amount of wages paid during year | £ 308,845 | 118,258 | 202,206 | 63,540 | 82,998 | 87,208 | 863,055 |

* Not available.

5. **Agricultural Implement Factories.**—The manufacture of agricultural implements is an important industry in Australia, and is of particular interest owing to the fact that it is one of the first industries to which what has been called the "New Protection" system is sought to be applied (see Section XXVII. hereof). The nature of the machines manufactured may be gathered from the machines scheduled in the Customs tariff, 1906-7, which includes stripper harvesters, strippers, stump-jump ploughs, disc cultivators, winnowers, corn-shellers and baggers, drills, and other implements usually employed in agriculture. The stripper-harvester, which combines the stripper with a mechanism for winnowing and bagging grain, is an Australian invention, and is exported to many countries.

No information is available concerning the actual production or the number and value of the machines and implements of local production used in Australia.

The following table gives particulars of the agricultural implement works of Australia :—

AGRICULTURAL IMPLEMENT WORKS, 1907.

| Items. | N.S.W. | Victoria | Q'land. | S.Aust. | W.A.* | Tas. | Cwth.† |
|---|----------|----------|---------|---------|-------|-------|---------|
| Number of factories ... | 21 | 55 | 4 | 49 | ... | 13 | 142 |
| " employes ... | 499 | 1,618 | 142 | 827 | ... | 45 | 3,131 |
| " male employes ... | 496 | 1,612 | 141 | 825 | ... | 45 | 3,119 |
| " female ... | 3 | 6 | 1 | 2 | ... | ... | 12 |
| Actual horse-power of engines employed | 140 | 581 | 64 | 499 | ... | ... | 1,284 |
| Average number of months in operation during year ... | 11.6 | 11.5 | ... | 11.5 | ... | 12 | ... |
| Approx. value of land and buildings | £ 45,104 | 75,038 | 4,379 | 28,460 | ... | 2,150 | 155,131 |
| " plant and machinery | £ 16,426 | 66,492 | 9,444 | 34,034 | ... | 796 | 127,192 |
| Total amount of wages paid during year | £ 39,431 | 147,675 | 8,224 | 61,238 | ... | 1,950 | 258,518 |

* As there are only two factories of this class in Western Australia particulars are not disclosed. † Exclusive of Western Australia. ‡ Not available.

(i.) *Development of Agricultural Implement Works.* The following table shews the progress of this industry during the years 1904 to 1907 :—

AGRICULTURAL IMPLEMENT WORKS, 1904 to 1907.

| State. | Number of Factories. | | | | Number of Employés. | | | | Approximate Value of Plant and Machinery. | | | |
|---------------------|----------------------|-------|-------|-------|---------------------|-------|-------|-------|---|--------|--------|---------|
| | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. |
| | | | | | | | | | £ | £ | £ | £ |
| New South Wales | 11 | 17 | 17 | 21 | 114 | 386 | 440 | 499 | 4,670 | 11,524 | 12,850 | 16,426 |
| Victoria ... | 50 | 53 | 53 | 55 | 1,496 | 1,624 | 1,747 | 1,618 | 62,163 | 65,203 | 62,808 | 66,492 |
| Queensland ... | ... | ... | 8 | 4 | ... | ... | 117 | 142 | ... | ... | 11,470 | 9,444 |
| South Australia ... | 30 | 45 | 49 | 49 | 504 | 750 | 874 | 827 | ... | ... | ... | 34,034 |
| Western Australia | 4 | 4 | 6 | * | 39 | 37 | 56 | * | 2,150 | 2,710 | 2,470 | * |
| Tasmania ... | ... | ... | ... | 13 | ... | ... | ... | 45 | ... | ... | ... | 796 |
| Commonwealth | 95 | 119 | 133 | 142 | 2,153 | 2,797 | 3,234 | 3,131 | 68,983 | 79,437 | 89,598 | 127,192 |

* See note ^o to preceding table.

6. **Engineering, Ironfoundry Works and Metal Trades.**—The classification in these industries is not very satisfactory. Generally, engineering shops, ironworks, and foundries are included, as also are factories for making nails, safes, patterns, meters, and springs. Railway workshops, agricultural implement factories, smelting and metallurgical works, and ordinary blacksmiths' shops are not included. The combination of industries is rendered necessary by the limited classification still adopted by some of the States:—

ENGINEERING, IRONFOUNDRY WORKS AND METAL TRADES, 1907.

| Items. | N.S.W. | Vic. | Q'ld. | S.A. | W.A. | Tas. | Cwlth. |
|---|-----------|---------|---------|---------|---------|--------|-----------|
| Number of factories ... | 179 | 290 | 92 | 43 | 57 | 18 | 679* |
| " employés ... | 6,001 | 6,284 | 1,818 | 1,798 | 1,132 | 355 | 17,388 |
| " male employés ... | 5,983 | 6,256 | 1,812 | 1,796 | 1,124 | 353 | 17,324 |
| " female ... | 18 | 28 | 6 | 2 | 8 | 2 | 64 |
| Actual horse-power of engines employed | 3,989 | 3,355 | 707 | 966 | 581 | 250 | 9,848 |
| Average number of months in operation during year ... | 11.8 | 11.4 | * | 11.7 | 11.9 | 12 | ... |
| Approx. value of land and buildings | £ 420,977 | 390,225 | 194,815 | 83,520 | 85,303 | 18,465 | 1,139,305 |
| " plant and machinery | £ 517,643 | 536,262 | 170,716 | 131,758 | 88,621 | 40,859 | 1,455,070 |
| Total amount of wages paid during year | £ 534,907 | 563,857 | 159,129 | 155,493 | 122,978 | 35,984 | 1,571,758 |

* Information not available.

In addition to engineering works which supply local domestic requirements, there are now a number of large and important establishments which engage in the manufacture of special classes of machinery and implements. The manufacture of mining and smelting machinery and apparatus forms an important section of this industry, and many Australian mines have been locally equipped.

7. **Railway Carriages and Rolling Stock, Railway and Tramway Workshops.**—The railway workshops of Australia form an important item in the metal and machinery class, and are chiefly State Institutions. The following table gives the details concerning them, but includes also private establishments manufacturing rolling stock:—

RAILWAY CARRIAGES AND ROLLING STOCK, RAILWAY AND TRAMWAY WORKSHOPS, 1907.

| Items. | N.S.W. | Victoria | Q'Ind. | S. Aust. | W. Aust. | Tas. | Cwlth. |
|---|-----------|----------|--------|----------|----------|--------|------------|
| Number of factories ... | 25 | 15 | 7 | 8 | 6 | 6 | 67 |
| " employés ... | 4,640 | 2,462 | 110 | 1,241 | 1,183 | 487 | 10,123 |
| " male employés ... | 4,626 | 2,457 | 110 | 1,241 | 1,181 | 486 | 10,101 |
| " female ... | 14 | 5 | ... | ... | 2 | 1 | 22 |
| Actual h.p. of engines employed | 1,713 | 436 | 65 | 306 | 1,752 | 109 | 4,381 |
| Average number of months in operation during year ... | 12 | 12 | * | 12 | 12 | 12 | ... |
| Approx. value of land and buildings | £ 678,145 | 264,765 | 800 | 198,605 | 330,032 | 25,000 | 1,497,347 |
| Approx. value of plant and mach'ny | £ 408,436 | 177,198 | 4,140 | 140,423 | 226,426 | 56,634 | 1,013,257 |
| Total amt. of wages paid during year | £ 558,163 | 298,854 | 10,873 | 138,819 | 165,480 | 60,090 | 1,232,279* |

* Information not available.

8. **Smelting Works.**—The subjoined table gives particulars of metal smelting works. There are only two works of this description in each of the States of Victoria and South Australia, and there is only one in Western Australia. Particulars for these States are, therefore, not given separately, but are included in the total for the Commonwealth :—

SMELTING WORKS, 1907.

| Items. | N. S. W. | *Vic. | Qld. | *S.A. | *W.A. | Tas. | Cwth. |
|--|-----------|-------|---------|-------|-------|---------|-----------|
| Number of factories | 50 | | 14 | | | 5 | 74 |
| .. employés | 4,216 | | 1,120 | | | 1,079 | 8,631 |
| .. male employés | 4,215 | | 1,119 | | | 1,079 | 8,629 |
| .. female | 1 | ... | 1 | ... | ... | ... | 2 |
| Actual horse-power of engines employed | 7,942 | | 1,925 | | | 2,339 | 15,018 |
| Average No. of months in operation during year | 11.3 | | ... | | | 12 | ... |
| Approximate value of land and buildings | £ 214,340 | | 24,800 | | | 7,000 | 270,058 |
| .. plant and machinery | £ 778,694 | | 200,337 | | | 156,430 | 1,246,399 |
| Total amount of wages paid during year | £ 547,839 | | 132,659 | | | 123,492 | 1,039,026 |

* As there are only two smelting works in each of the States of Victoria and South Australia, and only one in Western Australia, particulars are not disclosed, but are included in the total for the Commonwealth.

Blast furnaces for the smelting of iron ores have been established in Australia. (See Section XII. hereof, p 512). The blast-furnace plant at the works of William Sandford Limited, Lithgow, in New South Wales, was brought into commission on the 8th May, 1907. The ore which has been used was obtained from the deposit at Coombing Park, near Carcoar. The quantity raised amounted to 34,731 tons. The following materials were received at the blast furnace:—Iron-ore, 34,500 tons; slag, 2831 tons; coke, 20,873 tons; and limestone, 13,433 tons. The output of this furnace was 18,631 tons, valued at £60,550. The number of hands employed at the works and the mine averaged 871, and the wages paid amounted to £79,944.

9. **Bacon-curing Factories.**—The following table gives particulars of factories engaged in bacon curing in each State during the year 1907 :—

BACON-CURING FACTORIES, 1907.

| Items. | N.S.W. | Vic. | Qld. | S.A. | W.A. | Tas. | Cwth. |
|--|----------|--------|--------|-------|--------|-------|--------|
| Number of factories | 16 | 27 | 4 | 10 | 3 | 6 | 66 |
| .. persons employed | 130 | 348 | 170 | 50 | 19 | 24 | 741 |
| .. males | 130 | 336 | 168 | 50 | 19 | 23 | 726 |
| .. females | ... | 12 | 2 | ... | ... | 1 | 15 |
| Actual horse-power of engines employed | 82 | 213 | 97 | 33 | 36 | 40 | 501 |
| Average No. of mths. in operation during yr. | 10.9 | 11.6 | † | 10.2 | 9.1 | 12 | ... |
| Approximate value of land and buildings | £ 32,600 | 31,820 | 8,966 | 6,450 | 11,310 | 2,000 | 93,146 |
| .. plant and machinery | £ 9,946 | 25,530 | 45,847 | 3,294 | 3,650 | 1,625 | 89,892 |
| Total amount of salaries and wages paid | £ 14,822 | 27,472 | 16,604 | 2,862 | 2,548 | 1,843 | 66,151 |

† Information not available.

Further information regarding the bacon-curing industry may be found in Section IX., *Farmyard and Dairy Production*.

(i.) *Quantity and Value of Production, 1907.* The following table shews the number of pigs killed and the quantity and value of the production of bacon-curing factories in each State during the year 1907 :—

PRODUCTION OF BACON-CURING FACTORIES, 1907.

| Particulars. | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust.* | Tasmania. | C'wealth.† |
|------------------|-----------|------------|-----------|----------|-----------|-----------|------------|
| QUANTITY. | | | | | | | |
| Bacon ... lbs. | 7,012,404 | 13,609,144 | 8,888,662 | 966,939 | ... | 279,504 | 31,243,616 |
| Ham ... lbs. | 228,281 | * | 425,635 | 258,684 | ... | * | 719,418 |
| Lard ... lbs. | 237,098 | * | 425,635 | 56,685 | ... | * | 719,418 |
| VALUE. | | | | | | | |
| Bacon ... £ | 230,671 | 428,000 | 296,942 | 29,065 | ... | 8,000 | 1,011,232 |
| Ham ... £ | 8,966 | * | 8,692 | 9,588 | ... | * | 14,702 |
| Lard ... £ | 4,580 | * | 12,110 | 1,430 | ... | * | 27,140 |
| Other products £ | 6,137 | * | 12,110 | 8,893 | ... | * | 27,140 |
| PIGS KILLED. | | | | | | | |
| Number ... | 90,450 | 145,513 | 89,751 | 16,972 | ... | 3,525 | 346,211 |

* Not available. † Exclusive of Western Australia.

10. **Butter and Cheese Factories.**—The subjoined table gives particulars of butter and cheese factories in each State during the year 1907. The returns include factories for making condensed or concentrated milk, but are exclusive of creameries :—

BUTTER AND CHEESE FACTORIES, 1907.

| Items. | N. S. W. | Vic. | Qld. | S. A. | W. A. | Tas. | Cw'wth. † |
|--|-----------|---------|---------|--------|-------|--------|--------------|
| Number of factories ... | 190 | 224 | 83 | 57 | ... | 23 | 577 |
| " employés ... | 1,047 | 1,248 | 1,351 | 213 | ... | 78 | 3,932 |
| " males ... | 1,032 | 1,212 | 1,156 | 198 | ... | 67 | 3,665 |
| " females ... | 15 | 36 | 195 | 15 | ... | 6 | 267 |
| Actual horse-power of engines employed ... | 2,082 | 2,047 | 1,341 | 291 | ... | 135 | 5,896 |
| Average No. of months in operation during year ... | 11.6 | 11.8 | † | 11.1 | ... | 9 | ... |
| Approximate value of land and buildings ... | £ 177,168 | 250,444 | 97,200 | 14,873 | ... | 12,111 | 551,794 |
| " " plant and machinery ... | £ 244,438 | 311,241 | 133,861 | 25,224 | ... | 8,199 | 722,963 |
| Total amount of wages paid ... | £ 92,296 | 120,534 | 72,074 | 12,539 | ... | 4,307 | 301,750 |

* As there are only two factories in this State particulars are not disclosed. † Exclusive of Western Australia. ‡ Not available.

(i.) *Development of Factories, 1904 to 1907.* The following table shews the progress of the factories in this industry from 1904 to 1907, and illustrates the recovery of the principal States from the effects of the drought.

DEVELOPMENT OF BUTTER, etc., FACTORIES, 1904 to 1907.

| State. | Number of Factories. | | | | Number of Persons Employed. | | | | Approximate Value of Plant and Machinery. | | | |
|-----------------------|----------------------|-------|-------|-------|-----------------------------|-------|-------|-------|---|---------|---------|---------|
| | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. |
| | | | | | | | | | £ | £ | £ | £ |
| New South Wales | 145 | 164 | 178 | 190 | 913 | 937 | 1,018 | 1,047 | 193,066 | 210,772 | 218,566 | 244,438 |
| Victoria ... | 214 | 215 | 222 | 224 | 1,400 | 1,381 | 1,490 | 1,248 | 301,423 | 306,559 | 307,635 | 311,241 |
| Queensland ... | 51 | 59 | 70 | 83 | 386 | 407 | 1,249 | 1,351 | 53,521 | 77,392 | 104,157 | 133,861 |
| South Australia ... | 50 | 53 | 55 | 57 | 155 | 158 | 141 | 213 | § | § | § | 25,224 |
| Western Australia ... | 1 | 2 | 2 | 2 | 8 | 13 | 32 | * | 1,150 | 2,600 | 5,650 | * |
| Tasmania ... | 17 | 26 | 20 | 23 | 102 | 123 | 76 | 73 | 10,722 | 13,686 | 13,351 | 8,199 |
| Commonwealth | 478 | 519 | 547 | 579 | 2,964 | 3,019 | 4,006 | 3,932 | 559,382 | 611,009 | 649,359 | 722,963 |

* See note * to preceding table, § Not available.

(ii.) *Quantity and Value of Production, 1907.* The following table shews the quantity and value of butter and cheese produced, and the quantity of milk used in butter and cheese factories in each State during 1907 :—

PRODUCTION OF BUTTER AND CHEESE FACTORIES, 1907.

| Particulars. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust.* | Tas. | Cwlth.† |
|---------------------------|-------------|-------------|------------|------------|-----------|-----------|-------------|
| QUANTITY. | | | | | | | |
| Butter lbs. | 55,749,140 | 59,050,231 | 20,828,080 | 4,631,773 | ... | 847,860 | 141,107,084 |
| Cheese " | 2,725,930 | 2,691,957 | 2,681,024 | 1,381,947 | ... | 381,939 | 9,862,797 |
| VALUE. | | | | | | | |
| Butter £ | 2,364,311 | 2,675,531 | 846,724 | 195,601 | ... | 36,000 | 6,118,167 |
| Cheese £ | 70,381 | 66,850 | 80,802 | 32,537 | ... | 10,000 | 260,570 |
| MILK USED. | | | | | | | |
| Butter factories ...gals. | 139,942,036 | 133,798,100 | 47,447,300 | 11,323,912 | ... | 2,119,650 | 334,630,998 |
| Cheese " | 2,941,881 | 2,744,415 | 2,659,707 | 1,416,281 | ... | 327,839 | 10,090,123 |

* See note † to preceding table. † Exclusive of Western Australia.

11. Meat and Fish Preserving, Ice and Refrigerating Works.—These industries are now of considerable importance in Australia. The freezing of various kinds of produce for export has long been an established industry. Large freezing works have now been installed at many ports in the Commonwealth for the purpose of freezing produce chiefly for export, and insulated space for the carriage of frozen produce is provided by a number of steamship companies trading between Australia and other parts of the world. Particulars regarding the export of frozen beef and mutton may be found on pages 364 and 368 hereof, respectively. Special terms have been made by the Commonwealth Government in its new English mail contract for the provision by the contractors of increased cold-storage facilities. The export of frozen produce is stated to be capable of considerable expansion. The particulars given in the subjoined table include ice-making and freezing works, and also meat-canning factories, separate particulars for all the States not being available :—

MEAT AND FISH-PRESERVING, ICE AND REFRIGERATING WORKS, 1907.

| Items. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas.* | Cwlth.† |
|---|-----------|---------|---------|--------|--------|-------|---------|
| Number of factories | 73 | 28 | 29 | 13 | 6 | ... | 149 |
| " employés | 1,383 | 684 | 1,209 | 202 | 106 | ... | 3,584 |
| " male employés | 1,296 | 676 | 1,179 | 202 | 105 | ... | 3,458 |
| " female employés | 87 | 8 | 30 | ... | 1 | ... | 126 |
| Actual horse-power of engines employed... | 2,547 | 2,196 | 2,475 | 401 | 338 | ... | 7,957 |
| Average number of months in operation during year | 8.5 | 9.6 | ; | 7.9 | 10.5 | ... | ... |
| Approx. value of land and buildings | £ 419,030 | 227,506 | 215,502 | 45,530 | 47,095 | ... | 954,683 |
| " plant and machinery | £ 400,813 | 121,783 | 223,992 | 6,870 | 48,019 | ... | 801,474 |
| Total amount of wages paid during year | £ 98,966 | 49,144 | 94,376 | 4,300 | 13,562 | ... | 280,348 |

* As there is only one factory in this State, particulars are not disclosed (see para. 1 hereof).
† Exclusive of Tasmania. ‡ Not available.

The following table gives particulars, so far as available, of various classes of meat preserved during the year 1907 :—

MEAT PRESERVING WORKS—PARTICULARS OF ANIMALS TREATED, 1907.

| Particulars. | N.S.W. | Vict.‡ | Q'land. | S. Aust.† | W. Aust.† | Tas.‡ | Cwth.‡ |
|-----------------------|---------|---------|---------|-----------|-----------|-------|-----------|
| Sheep treated ... No. | 554,072 | 866,498 | 255,635 | ... | ... | ... | 1,676,205 |
| Cattle " ... No. | 20,788* | 10,760* | 74,232 | ... | ... | ... | 105,780 |
| Pigs " ... No. | 362 | 2,196 | 33,826 | ... | ... | ... | 36,384 |

* Quarters, exclusive of calves. † Not available. ‡ See note * to preceding table. § Freezing works only. ¶ Exclusive of South Australia, Western Australia, and Tasmania.

In Victoria 6,413,560 rabbits, 55,196 hares, and 56,275 head of poultry were treated in freezing works. Corresponding particulars for other States are not available.

12. **Biscuit Manufactories.**—The following table gives particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the year 1907:—

BISCUIT MANUFACTORIES, 1907.

| Items. | N.S.W. | Vic. | Q'ld. | S.A.* | W.A.* | Tas. | Cwth. |
|--|----------|--------|--------|-------|-------|--------|---------|
| Number of factories | 6 | 4 | 10 | ... | ... | 7 | 31 |
| .. employés | 1,123 | 1,110 | 298 | ... | ... | 125 | 2,832 |
| .. male employés | 580 | 737 | 223 | ... | ... | 107 | 1,782 |
| .. female " " " " " " | 543 | 373 | 75 | ... | ... | 18 | 1,050 |
| Actual horse-power of engines employed | 205 | 141 | 80 | ... | ... | 39 | 528 |
| Average number of months in operation during year | 11.4 | 12 | † | ... | ... | 12 | ... |
| Approx. value of land and buildings ... | £ 87,875 | 51,300 | 19,880 | ... | ... | 15,950 | 190,834 |
| .. plant and machinery | 65,076 | 44,592 | 14,968 | ... | ... | 6,405 | 143,803 |
| Total amount of wages paid during year ... | £ 62,897 | 53,954 | 17,284 | ... | ... | 7,389 | 155,060 |

* As there are only two factories in this State particulars are not given separately, but are included in the total for the Commonwealth. † Not available.

(i.) *Quantity and Value of Production, 1907.* The following table gives particulars regarding the quantity and value of biscuits, cakes, etc., made and the quantity of flour used in factories in each State during the year 1907:—

PRODUCTION OF BISCUIT AND CAKE FACTORIES, 1907.

| Particulars. | N.S.W. | Victoria.* | Q'ld. | S. Aust.* | W. Aust.* | Tas.* | Cwth.† |
|------------------------|------------|------------|-----------|-----------|-----------|-------|------------|
| Biscuits, cakes, etc.— | | | | | | | |
| Quantity ... lbs. | 28,017,225 | ... | 6,414,578 | ... | ... | ... | 34,431,803 |
| Value ... £ | 428,691 | ... | 87,553 | ... | ... | ... | 516,244 |
| Flour used ... Tons | 9,800 | ... | 2,220 | ... | ... | ... | 12,020 |

* Not available. † New South Wales and Queensland only.

13. **Jam and Fruit Preserving, Pickles, Sauces, and Vinegar Manufactories.**—The jam and fruit-preserving industry has increased in importance of late years with the extension of orcharding and fruit-growing. As an exporting industry it is comparatively young, but is of increasing value, and is stated to be capable of considerable expansion. The subjoined table gives particulars of factories at which these industries were carried on in each State during the year 1907. Separate returns for the individual industries are not available for most of the States:—

JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR MANUFACTORIES, 1907.

| Items. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | Cwth. |
|--|----------|--------|---------|-------|-------|--------|---------|
| Number of factories | 34 | 27 | 9 | 23 | 4 | 9 | 106 |
| .. employés | 1,125 | 1,342 | 186 | 464 | 43 | 716* | 3,876 |
| .. male employés | 601 | 843 | 144 | 349 | 23 | 554 | 2,414 |
| .. female " | 524 | 499 | 42 | 215 | 20 | 162 | 1,462 |
| Actual horse-power of engines employed ... | 196 | 353 | 50 | 126 | 17 | 251 | 993 |
| Average number of months in operation during year | 11.8 | 11.3 | * | 11.6 | 9.2 | 12 | ... |
| Approx. value of land and buildings ... | £ 67,439 | 90,897 | 7,819 | 5,217 | 5,779 | 21,900 | 199,050 |
| .. " plant and machinery ... | £ 24,835 | 41,654 | 5,610 | 2,817 | 1,453 | 13,670 | 90,039 |
| Total amount of wages paid during year ... | £ 49,955 | 67,065 | 8,556 | 5,280 | 2,434 | 27,999 | 161,289 |

* Not available.

(i.) *Quantity and Value of Production, 1907.* The following table shows the quantity and value of jams, pickles, and sauces manufactured in each State during the year 1907:—

QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCES MANUFACTURED, 1907.

| Particulars. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|----------------------|------------|------------|-----------|-----------|----------|------------|------------|
| QUANTITY. | | | | | | | |
| Jam lbs. | 24,479,960 | 21,303,632 | 2,918,124 | 4,706,500 | 118,462 | 15,471,571 | 68,996,349 |
| Pickles pints | 2,104,861 | 1,253,280 | 280,000 | 297,300 | 122,824 | ... | 4,058,165 |
| Sauce pints | 844,600 | 3,257,471 | 167,268 | 1,162,848 | 244,733 | ... | 5,676,920 |
| VALUE. | | | | | | | |
| Jam £ | 326,829 | 289,622 | 32,668 | 54,463 | 2,028 | 210,000 | 915,610 |
| Pickles £ | 34,788 | 16,284 | 4,664 | 5,950 | 2,983 | ... | 64,669 |
| Sauce £ | 22,708 | 69,900 | 3,075 | 18,807 | 4,552 | ... | 119,142 |

14. **Confectionery.**—The following table shows the position of the confectionery industry in 1907, and it will be seen how it has expanded in ten years when it is stated that in 1896 there were in New South Wales 17 establishments, with 475 employés; and in Victoria 13 establishments, employing 512 persons and using plant and machinery valued at £16,570. In Tasmania there are no factories of this class.

CONFECTIONERY FACTORIES, 1907.

| Items. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | Cwth. |
|--|-----------|--------|---------|--------|--------|------|---------|
| Number of factories | 34 | 24 | 9 | 6 | 5 | ... | 78 |
| .. employés | 1,219 | 1,339 | 294 | 249 | 110 | ... | 3,211 |
| .. male employés | 741 | 591 | 179 | 170 | 62 | ... | 1,743 |
| .. female " | 478 | 748 | 115 | 79 | 48 | ... | 1,468 |
| Actual horse-power of engines employed ... | 250 | 200 | 43 | 93 | 35 | ... | 621 |
| Average number of months in operation during year | 11.9 | 11.5 | ... | 12 | 12 | ... | ... |
| Approx. value of land and buildings ... | £ 141,682 | 50,488 | 16,370 | 20,401 | 10,550 | ... | 239,691 |
| .. " plant and machinery ... | £ 52,403 | 38,123 | 12,943 | 23,316 | 6,550 | ... | 133,335 |
| Total amount of wages paid during year ... | £ 60,153 | 74,357 | 13,611 | 15,344 | 7,901 | ... | 171,366 |

* Not available.

15. **Flour Mills.**—The following table describes the position of the flour-milling industry in the year 1907 :—

FLOUR MILLS, 1907.

| Items. | N.S.W. | Vic. | Q'ld. | S.A.* | W.A. | Tas. | Cwth. |
|--|-----------|---------|--------|---------|--------|--------|---------|
| Number of factories | 71 | 68 | 17 | 54 | 19 | 13 | 245 |
| " employés | 858 | 837 | 200 | 549 | 162 | 120 | 2,725 |
| " male employés | 856 | 833 | 172 | 547 | 160 | 118 | 2,686 |
| " female | 2 | 4 | 28 | 2 | 2 | 2 | 40 |
| Actual horse-power of engines employed ... | 3,664 | 4,164 | 781 | 2,651 | 605 | 637 | 12,502 |
| Average number of months in operation during year | 10.7 | 9.9 | † | 8.3 | 9.6 | 12 | ... |
| Approx. value of land and buildings ... | £ 283,198 | 237,307 | 64,754 | 129,801 | 66,357 | 38,300 | 819,717 |
| " plant and machinery ... | £ 273,459 | 264,566 | 78,796 | 148,297 | 49,537 | 28,010 | 842,665 |
| Total amount of wages paid during year ... | 92,095 | 85,544 | 21,181 | 61,900 | 18,520 | 10,278 | 289,518 |

* Including oatmeal factories. † Not available.

(i.) *Production of Flour Mills, 1903 to 1907.* The production of flour by the mills in each State of the Commonwealth in the years 1903 to 1907 was as follows :—

FLOUR MILLS—PRODUCTION 1903 to 1907.*

| Year. | N.S.W. | Victoria. | Q'nsland. | Sth. Aust. | West. Aust. | Tasmania. | C'wealth.† |
|-------|---------|-----------|-----------|------------|-------------|-----------|------------|
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| 1903 | 121,074 | 115,368 | 23,839 | † | 13,711 | 20,656 | 294,648† |
| 1904 | 210,137 | 202,314 | 34,211 | † | 20,185 | 19,822 | 486,669† |
| 1905 | 205,805 | 209,058 | 37,505 | † | 26,420 | 18,325 | 497,113† |
| 1906 | 225,995 | 219,166 | 24,219 | † | 26,977 | 17,692 | 514,049† |
| 1907 | 237,442 | 235,185 | 28,532 | 105,395 | 28,353 | 17,056 | 651,963 |

* Tons of 2000 lbs. † Exclusive of South Australia. ‡ Not available.

The increase for the whole Commonwealth during the last year is partly due to the inclusion of South Australia, for which State returns for previous years were not available. There has, however, been a satisfactory increase in all the other States, except Tasmania, in which there was a slight decrease.

16. **Sugar Mills.**—The following table shews the position of the cane-crushing branch of the sugar-making industry in 1907. This industry is carried on in Queensland and New South Wales, the only States of the Commonwealth in which the sugar-cane is grown. Reference to the other States is therefore omitted from the table :—

SUGAR MILLS, 1907.

| Items. | N.S.W. | Queensland. | Total. |
|--|-----------|-------------|-----------|
| Number of factories | 5 | 52 | 57 |
| " employés | 610 | 4,155 | 4,765 |
| " male employés | 608 | 4,147 | 4,755 |
| " female | 2 | 8 | 10 |
| Actual horse-power of engines employed ... | 3,118 | 10,225 | 13,343 |
| Average No. of months in operation during year | 6.3 | * | ... |
| Approximate value of land and buildings ... | £ 13,567 | 148,115 | 161,682 |
| " plant and machinery ... | £ 507,324 | 1,482,989 | 1,990,313 |
| Total amount of wages paid during year ... | £ 46,844 | 229,636 | 276,480 |

* Information not available.

The first crushing of sugar for commercial use is said to have taken place in New South Wales about 1850 on the plantation of Mr. Thomas Scott; the planting-out of cane was not, however, taken up by settlers, notwithstanding Mr. Scott's earnest advocacy of the industry, until 1862, when a small growth resulted in the establishment

of a mill in Queensland; the appliances were rude, but the result satisfactory. In April, 1864, a mill with a modern crushing and boiling plant was opened at Cleveland (Q.) by Hon. Lionel Hope, but his success was only partial, and he closed down his works till 1867. In 1866 the Pampania Company opened a small factory in Queensland, and in the following year two other mills started work. Two factories were erected, in the Maryborough district, and in 1868 others were working in the Mackay, Bowen and other districts. The industry was by the end of 1870 firmly established.

The Sugar Works Guarantee Act of 1893 empowered the Queensland Government to guarantee the issue of debentures by companies intending to embark in this industry to raise money for the erection of mills and purchasing plant; and an amending Act of 1895 empowered the Government to take up such debentures, but provided that the total amount so expended should not exceed £500,000, and that when that amount was reached the power of guarantee should also cease. Twelve mills have received advances, which now amount to £417,347. There have been some special temporary advances, which are outside the Acts. The total amount repaid from 1893 to June, 1908, was £286,975.

An unfortunate feature of the industry is that large quantities of molasses have been and still are allowed to run to waste. Part of the molasses produced is used in distillation, part is turned into food cake for cattle, and part is used for manuring land, but the greatest part produced is put to no use whatever.

The product of the sugar mill is raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. The following tables shew the progress of this industry from the dates at which information is first obtainable:—

SUGAR MILLS, NEW SOUTH WALES, 1870 to 1907.

| Items. | 1870. | 1877. | 1886. | 1891. | 1896. | 1901. | 1906. | 1907. |
|-----------------------------|-------|---------|---------|-----------|-----------|-----------|-----------|-----------|
| Number of factories ... | 27 | 50 | 64 | 33 | 23 | 12 | 5 | 5 |
| " employés ... | ... | 1,065 | 2,259 | 1,621 | 1,475 | 695 | 622 | 610 |
| Sugar produced ... Tons | 677 | 7,537 | 13,750 | 16,033 | 28,557 | 19,519 | 23,909 | 29,172 |
| Molasses produced ... gals. | ... | 345,543 | 507,000 | 1,074,080 | 2,520,580 | 1,300,909 | 1,305,466 | 1,211,000 |

During the year 1907, 277,386 tons of cane were crushed in sugar mills in New South Wales. The reduction in the number of New South Wales mills is due chiefly to a tendency, noticeable also in many other branches of industry, to concentrate the cane-crushing in mills fitted with modern machinery, and the consequent closing of the small home mill. On the north coast of New South Wales some land formerly devoted to sugar-growing has been turned into pastures in connection with the dairying industry.

SUGAR MILLS, QUEENSLAND, 1868 to 1907.

| Items. | 1868. | 1876. | 1886. | 1891. | 1896. | 1901. | 1906. | 1907. |
|-----------------------------|--------|---------|-----------|------------------------|-----------|-----------|-----------|------------------------|
| Number of factories ... | 10 | 70 | 118 | 68 | 63 | 52 | 52 | 52 |
| " employés ... | ... | ... | ... | ... | 3,796 | ... | 2,876 | 4,155 |
| " acres crushed ... | ... | 7,245 | 40,756 | 36,821 | 66,640 | 78,160 | 93,194 | 1,665,028 ² |
| Sugar produced ... Tons | ... | 8,214 | 59,225 | 51,219 | 100,774 | 120,558 | 184,377 | 188,307 |
| Molasses produced ... gals. | 68,622 | 416,415 | 1,784,266 | 1,640,662 ¹ | 2,195,470 | 3,679,952 | 8,373,518 | 7,272,905 |

1. 1890. 2. Tons of cane crushed.

Information regarding the cultivation of sugar-cane may be found in the section of this book dealing with *Agricultural Production*. (See pages 410 to 413.)

17. **Sugar Refineries.**—The establishment of the sugar-refining industry considerably antedates the establishment of the sugar-milling industry, the raw material operated upon being originally brought chiefly from Mauritius and the East. In 1907 there were two sugar refineries in each of the States of Victoria and Queensland; there was one in

each of the States of New South Wales and South Australia; and there were none in either of the other States. The returns for the individual States cannot be disclosed.

In the six refineries in the Commonwealth an average number of 1387 hands were employed during the year 1907. The actual horse-power of engines used was 2815. The approximate value of land and buildings was £258,891; of plant and machinery, £740,774; and the total amount of wages paid during the year was £131,546.

As regards production, the amount of crude sugar used was 3,168,298 cwt., and of refined sugar produced 3,061,175 cwt., both these amounts being exclusive of the two refineries in Queensland, for which returns are not available.

18. **Breweries.**—Established at an early date in Australia, the main feature of the history of the brewing industry has been the change from the small local brewery in every township of moderate size to the large centralised city brewery. A recent amalgamation in Melbourne resulted in the closing of several large breweries. A workmen's co-operative brewery has been opened in Sydney and a co-operative brewery has been opened in Melbourne by a number of "free" hotelkeepers.

The following table gives particulars of breweries in each State during the year 1907:—

BREWERIES, 1907.

| Particulars. | N.S.W. | Victoria. | Q'sland. | S. Aust. | W. Aust. | Tas. | Cwltth. |
|--|---------|-----------|----------|----------|----------|---------|-----------|
| Number of factories ... | 38 | 37 | 13 | 16 | 28 | 6 | 138 |
| .. employes ... | 854 | 1,037 | 431 | 301 | 478 | 140 | 3,241 |
| .. male employes | 851 | 1,036 | 431 | 299 | 478 | 140 | 3,235 |
| .. female " | 3 | 1 | ... | 2 | ... | ... | 6 |
| Actual horse-power of engines employed ... | 702 | 853 | 213 | 192 | 779 | 89 | 2,828 |
| Average No. of months in operation during year | 12 | 11.8 | * | 11.8 | 11.7 | 12 | ... |
| Approx. value of land and buildings ... £ | 289,852 | 529,047 | 105,784 | 100,861 | 186,029 | 389,818 | 1,601,391 |
| Approx. value of plant and machinery ... £ | 252,414 | 249,579 | 75,729 | 66,542 | 104,724 | 42,384 | 791,372 |
| Total amount of wages paid during year ... £ | 110,963 | 118,015 | 46,439 | 35,354 | 83,329 | 17,074 | 411,164 |

* Not available.

(i.) *Production and Materials Used, 1907.* The following table shews the quantity and value of ale and stout brewed and the quantity of raw materials used in each State during the year 1907:—

PRODUCTION AND MATERIALS USED IN BREWERIES, 1907.

| Particulars. | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tasmania. | C'wealth. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|------------|------------|-----------|-----------|-----------|-----------|------------|---------|---------|---------------------|--|--|--|--|--|--|--|----------------|---------|---------|---------|---------|---------|--------|-----------|---------------|---------|---------|---------|---------------------|---------|---------|-----------|----------------|--------|---------|--------|----------------|---------|---------|---------|--------|---------|--------|-----------|---------------|---------|---------|---------|---------|---------|---------|-----------|----------------|--------|
| QUANTITY. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ale ... gals. | 14,369,834 | 16,900,336 | 4,964,443 | 3,237,629 | 4,433,135 | 1,930,815 | 46,857,134 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stout ... gals. | 624,703 | | | | | | | 177,717 | 218,522 | VALUE. | | | | | | | | Ale ... £ | 691,644 | 800,000 | 312,730 | 207,694 | 420,129 | 94,000 | 2,596,858 | Stout ... £ | 38,170 | 12,451 | 20,040 | RAW MATERIALS USED. | | | | | | | | Malt ... bush. | 533,825 | 542,806 | 171,753 | 98,131 | 153,768 | 82,455 | 1,582,738 | Hops ... lbs. | 636,650 | 665,236 | 240,458 | 133,270 | 253,151 | 116,985 | 2,045,750 | Sugar ... cwt. | 73,020 |
| VALUE. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ale ... £ | 691,644 | 800,000 | 312,730 | 207,694 | 420,129 | 94,000 | 2,596,858 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stout ... £ | 38,170 | | | | | | | 12,451 | 20,040 | RAW MATERIALS USED. | | | | | | | | Malt ... bush. | 533,825 | 542,806 | 171,753 | 98,131 | 153,768 | 82,455 | 1,582,738 | Hops ... lbs. | 636,650 | 665,236 | 240,458 | 133,270 | 253,151 | 116,985 | 2,045,750 | Sugar ... cwt. | 73,020 | 106,004 | 43,503 | 16,256 | 28,821 | 7,435 | 275,039 | | | | | | | | | | | | | | |
| RAW MATERIALS USED. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Malt ... bush. | 533,825 | 542,806 | 171,753 | 98,131 | 153,768 | 82,455 | 1,582,738 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hops ... lbs. | 636,650 | 665,236 | 240,458 | 133,270 | 253,151 | 116,985 | 2,045,750 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sugar ... cwt. | 73,020 | 106,004 | 43,503 | 16,256 | 28,821 | 7,435 | 275,039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

19. **Distilleries.**—The subjoined table gives particulars of distilleries in each State during the year 1907. There are only two distilleries in New South Wales; particulars are therefore not disclosed. There are no distilleries in either of the States of Western Australia or Tasmania :—

DISTILLERIES, 1907.

| Particulars. | N.S.W.* | Vic. | Qld. | S.A. | W.A. | Tas. | Cwth.† |
|---|---------|--------|-------|--------|------|------|---------|
| Number of factories | ... | 7 | 3 | 19 | ... | ... | 29 |
| .. employes | ... | 106 | 19 | 57 | ... | ... | 182 |
| .. male employes | ... | 105 | 19 | 57 | ... | ... | 181 |
| .. female | ... | 1 | ... | ... | ... | ... | 1 |
| Actual horse-power of engines employed | ... | 171 | 23 | 131 | ... | ... | 325 |
| Average time in operation during yr. mths. | ... | 7.2 | † | 8.28 | ... | ... | ... |
| Approximate value of land and buildings £ | ... | 71,580 | 5,400 | 26,714 | ... | ... | 103,694 |
| Approx. value of plant and machinery £ | ... | 57,005 | 4,500 | 21,211 | ... | ... | 82,716 |
| Total amount of wages paid during year £ | ... | 11,569 | 2,491 | 5,824 | ... | ... | 19,884 |

* There are only two distilleries in New South Wales, particulars are therefore not disclosed.
† Not available. ‡ Exclusive of two distilleries in New South Wales.

(i.) *Production of Spirits and Materials Used, 1907.* The following table gives particulars of the quantity and value of spirits distilled and the raw materials used in the distillation thereof in each State during the year 1907 :—

QUANTITY AND VALUE OF SPIRITS DISTILLED AND MATERIALS USED, 1907.

| Particulars. | N.S.W.* | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | Cwth.† |
|-------------------------------|---------|-----------|---------|-----------|----------|------|-----------|
| QUANTITY. | | | | | | | |
| Rum ... proof gals. | ... | 3,287 | 117,876 | ... | ... | ... | 121,163 |
| Brandy | ... | 8,927 | ... | 155,367 | ... | ... | 164,294 |
| Whisky | ... | 281,600 | ... | 1,097 | ... | ... | 282,697 |
| Other spirits | ... | 78,058 | 105,697 | 241,835 | ... | ... | 425,590 |
| VALUE. | | | | | | | |
| Rum £ | ... | 164 | 5,894 | ... | ... | ... | 6,058 |
| Brandy £ | ... | 1,530 | ... | 26,621 | ... | ... | 28,151 |
| Whisky £ | ... | 63,400 | ... | 247 | ... | ... | 63,647 |
| Other spirits £ | ... | 707 | 957 | 49,581 | ... | ... | 51,245 |
| MATERIALS USED. | | | | | | | |
| Molasses cwt. | ... | 440 | 68,800 | 4,859 | ... | ... | 74,099 |
| Wine gals. | ... | 413,242 | ... | 1,965,434 | ... | ... | 2,378,676 |

* See note * to preceding table. † Exclusive of New South Wales.

20. **Tobacco, Cigars and Cigarettes.**—During the year 1907 there were thirty-two establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. In Queensland there were only two such establishments, and particulars are therefore not disclosed. In Tasmania there were no factories engaged in this industry.

TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1907.

| Items. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | Cwth.† |
|--|---------|---------|---------|--------|-------|------|---------|
| Number of factories | 11 | 13 | ... | 3 | 3 | ... | 30 |
| .. employes | 1,103 | 2,019 | ... | 174 | 23 | ... | 3,319 |
| .. male employes | 612 | 845 | ... | 131 | 14 | ... | 1,602 |
| .. female | 491 | 1,174 | ... | 43 | 9 | ... | 1,717 |
| Actual horse-power of engines employed | 329 | 394 | ... | 44 | ... | ... | 767 |
| Average number of months in operation during year | 11.3 | 11.2 | ... | 12 | 12 | ... | ... |
| Approx. value of land and buildings £ | 100,583 | 163,023 | ... | 10,400 | 2,840 | ... | 336,846 |
| .. plant and machinery £ | 111,296 | 88,341 | ... | 12,716 | 265 | ... | 212,618 |
| Total amount of wages paid during year £ | 80,798 | 118,594 | ... | 12,121 | 1,650 | ... | 213,163 |

* As there are only two factories in this State, particulars are not disclosed. † Exclusive of Queensland.

(i.) *Development of Industry.* This industry was early established in Australia, and the figures given in the subjoined table shew its progress during recent years. In 1896 there were in New South Wales eight establishments employing 641 persons, of whom 471 were males and 170 females. The plant and machinery employed were valued at £55,700. In Victoria, in this same year, there were twelve establishments employing 650 persons, of whom 424 were males and 226 were females. The value of the plant and machinery employed was £42,410. The Australian market is now largely supplied with local manufactures.

DEVELOPMENT OF TOBACCO, CIGAR AND CIGARETTE FACTORIES, 1904 to 1907.

| State. | Number of Factories. | | | | Number of Persons Employed. | | | | Approximate Value of Plant and Machinery. | | | |
|---------------------|----------------------|-----------|-----------|-----------|-----------------------------|--------------|--------------|--------------|---|----------------|----------------|----------------|
| | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. |
| | | | | | | | | | £ | £ | £ | £ |
| N.S. Wales ... | 7 | 13 | 13 | 11 | 977 | 952 | 1,016 | 1,103 | 105,308 | 104,466 | 104,051 | 111,296 |
| Victoria ... | 9 | 10 | 12 | 13 | 1,324 | 1,638 | 1,846 | 2,019 | 82,386 | 72,772 | 78,522 | 88,341 |
| Queensland ... | 3 | 1 | 2 | ... | 110 | 61 | 63 | * | 12,583 | 4,000 | 4,684 | * |
| South Australia ... | 3 | 3 | 2 | 3 | 248 | 171 | 135 | 174 | ... | ... | ... | 12,716 |
| West Australia ... | 2 | 2 | 3 | 3 | 18 | 16 | 30 | 23 | 70 | 80 | 235 | 265 |
| Tasmania ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Commonwealth | 24 | 29 | 32 | 30 | 2,677 | 2,838 | 3,090 | 3,319 | 200,347 | 181,318 | 187,492 | 212,618 |

* See note * to preceding table.

(ii.) *Quantity and Value of Production and Tobacco Leaf Used, 1907.* The following table shews the quantity and value of the production of tobacco factories in each State, and the quantities of imported and Australian-grown leaf used during the year 1907:—

PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1907.

| Particulars. | N.S.W. | Victoria. | Q'sld.* | S. Aust. | W. Aust. | Tas. | Cwth.† |
|---------------------------|-----------------|-------------|---------|-----------|----------|------|-------------|
| QUANTITY. | | | | | | | |
| Manufactured tobacco lbs. | 3,899,196 | 4,781,888 | ... | 348,168 | 2,005 | ... | 9,031,257 |
| lbs. | 54,048 | 176,704 | ... | 10,956 | 6,373 | ... | 248,081 |
| Cigars ... | No. 4,324,000 | 15,392,000 | ... | 1,000,480 | 464,650 | ... | 21,181,130 |
| lbs. | 972,875 | 328,448 | ... | 1,146 | 340 | ... | 1,302,809 |
| Cigarettes ... | No. 430,742,400 | 144,569,500 | ... | 539,000 | 127,000 | ... | 575,977,900 |
| lbs. | ... | 993 | ... | ... | ... | ... | 993 |

TOBACCO LEAF USED.

| | | | | | | | |
|-------------------------|-----------|-----------|-----|---------|--------|-----|-----------|
| Australian leaf... lbs. | 1,050,107 | 328,389 | ... | 94,060 | ... | ... | 1,472,556 |
| Imported leaf ... lbs. | 3,254,656 | 4,442,132 | ... | 246,959 | 10,607 | ... | 7,954,354 |

* See note * to preceding table. † Exclusive of Queensland.

21. **Woolen and Tweed Mills.**—The manufacture of woollens and tweeds was established in Australia at a comparatively early period in its industrial history, the first record in Victoria dating back to 1867. The following table, which gives particulars of the mills in each State during the year 1907, shews that the industry is now well established:—

WOOLLEN AND TWEED MILLS, 1907.

| Items. | N.S.W. | Vic. | Q'ld.* | S.A.* | W.A. | Tas. | Cwltth. |
|---|----------|---------|--------|-------|------|--------|---------|
| Number of factories | 5 | 9 | ... | ... | ... | 4 | 21 |
| „ employés | 395 | 1,589 | ... | ... | ... | 257 | 2,509 |
| „ male employés | 179 | 742 | ... | ... | ... | 85 | 1,116 |
| „ female | 216 | 847 | ... | ... | ... | 172 | 1,393 |
| Actual horse-power of engines employed | 307 | 2,187 | ... | ... | ... | 136 | 2,765 |
| Average number of months in operation during year | 11.7 | 11.9 | ... | ... | ... | 12 | ... |
| Approx. value of land and buildings | £ 28,250 | 116,330 | ... | ... | ... | 22,020 | 180,419 |
| „ „ plant and machinery | £ 39,433 | 259,740 | ... | ... | ... | 45,413 | 377,800 |
| Total amount of wages paid during year | £ 17,588 | 86,007 | ... | ... | ... | 11,381 | 127,221 |

* As there is only one woollen mill in Queensland and as there are only two in South Australia, particulars are not disclosed, but are added in with the total for the Commonwealth.

(i.) *Progress of Industry, 1904 to 1907.* The progress of the woollen and tweed cloths manufacturing industry during the last four years is shewn in the following table for each State in which mills were in operation:—

DEVELOPMENT OF WOOLLEN MILLS IN AUSTRALIA, 1904 to 1907.

| State. | Number of Factories. | | | | Number of Persons Employed. | | | | Approximate Value of Plant and Machinery. | | | |
|--------------|----------------------|-------|-------|-------|-----------------------------|-------|-------|-------|---|----------|----------|----------|
| | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. |
| N.S.W. ... | 3 | 3 | 5 | 5 | 245 | 262 | 338 | 395 | £ 31,439 | £ 31,540 | £ 36,400 | £ 39,433 |
| Victoria ... | 10 | 11 | 9 | 9 | 1,231 | 1,315 | 1,434 | 1,589 | 212,286 | 234,532 | 236,988 | 259,740 |
| Q'land * | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| S. Aust. * | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| W. Aust. ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Tasmania ... | 3 | 4 | 4 | 4 | 223 | 236 | 274 | 257 | 29,600 | 29,940 | 42,200 | 45,413 |
| C'wealth | 19 | 21 | 21 | 21 | 1,963 | 2,055 | 2,318 | 2,509 | ... | ... | ... | 377,800 |

* See note to preceding table.

(ii.) *Quantity and Value of Production, 1907.* The production of the woollen mills of Australia consists chiefly of tweed cloths, flannels, and blankets, all of which have acquired a reputation for purity and durability. Detailed particulars for the several States are not generally available. The total value of the production of woollen mills in the Commonwealth during the year 1907 was approximately £410,000. The total length of tweed and cloth manufactured was about 1,500,000 yards, valued at about £160,000. In New South Wales 526,340 yards of tweed and cloth, in Victoria 867,789 yards, and in Tasmania 38,091 yards were manufactured. In Victoria, also, 4,088,383 yards of flannel, 199,743 pairs of blankets, and 12,089 shawls were manufactured; while in Tasmania the quantity of these items produced amounted to 258,098 yards of flannel, 25,737 pairs of blankets, and 1695 rugs and shawls.

No cotton spinning or weaving or linen weaving is carried on in Australia. Cotton ginning has been carried on at periods far apart in the northern States, and a mill was lately reopened at Ipswich in Queensland.

22. *Boots and Shoes.*—Among the specialised secondary industries of Australia the boot and shoe industry stands pre-eminent in respect of the number of factories engaged in it, the employment afforded by it, and the range of its output. The following table shews particulars of this industry for each State during the year 1907:—

BOOT AND SHOE FACTORIES, 1907.

| Items. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | Cwth. |
|--|-----------|---------|---------|--------|--------|--------|---------|
| Number of factories | 102 | 139 | 32 | 21 | 12 | 23 | 329 |
| " " employing power | 58 | 85 | 16 | 13 | 5 | 6 | 183 |
| " employés | 4,786 | 6,303 | 1,134 | 1,163 | 249 | 281 | 13,916 |
| " male employés | 3,163 | 4,185 | 780 | 733 | 191 | 250 | 9,302 |
| " female " | 1,623 | 2,118 | 354 | 430 | 58 | 31 | 4,614 |
| Actual horse-power of engines employed | 719 | 671 | 113 | 164 | 32 | 13 | 1,712 |
| Average number of months in operation during year | 11.8 | 10.9 | * | 11.8 | 11.2 | 12 | ... |
| Approx. value of land and buildings | £ 191,412 | 170,127 | 34,825 | 60,124 | 15,420 | 8,826 | 480,734 |
| " " plant and machinery | £ 131,884 | 122,347 | 22,078 | 28,352 | 7,232 | 4,859 | 316,752 |
| Total amount of wages paid during year | £ 299,613 | 368,503 | 66,066 | 78,398 | 19,707 | 16,770 | 849,057 |

* Not available.

(i.) *Progress of Industry, 1904 to 1907.* The progress of the industry in the last four years is shewn in the following table:—

DEVELOPMENT OF BOOT AND SHOE FACTORIES, 1904 to 1907.

| State. | No. of Factories. | | | | No. of Persons Employed. | | | | Approximate Value of Plant and Machinery. | | | |
|--------------|-------------------|-------|-------|-------|--------------------------|--------|--------|--------|---|---------|---------|---------|
| | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. |
| | | | | | | | | | £ | £ | £ | £ |
| N.S.W. ... | 92 | 98 | 102 | 102 | 4,317 | 4,465 | 4,767 | 4,786 | 105,931 | 122,429 | 122,580 | 131,884 |
| Victoria ... | 131 | 136 | 134 | 139 | 5,628 | 5,873 | 5,703 | 6,303 | 94,334 | 98,136 | 99,042 | 122,347 |
| Q'land. ... | 43 | 39 | 29 | 32 | 1,038 | 1,047 | 1,015 | 1,134 | 10,920 | 17,728 | 20,592 | 22,078 |
| S. Aust. ... | 23 | 19 | 17 | 21 | 1,292 | 1,270 | 1,212 | 1,162 | | | | 28,352 |
| W. Aust. ... | 18 | 14 | 12 | 12 | 304 | 257 | 236 | 249 | 8,729 | 9,200 | 6,628 | 7,232 |
| Tasmania ... | 13 | 15 | 15 | 23 | 333 | 332 | 323 | 281 | 6,040 | 6,915 | 6,713 | 4,859 |
| C'wealth | 320 | 321 | 309 | 329 | 12,912 | 13,244 | 13,256 | 13,915 | 234,954 | 254,406 | 255,558 | 316,752 |

* Information not available.

(ii.) *Value and Quantity of Production, 1907.* The number and value of boots and shoes, and slippers made at factories in each State during the year 1907. are shewn in the following table:—

PRODUCTION OF BOOT AND SHOE FACTORIES, 1907.

| Particulars. | N.S.W. | Vic. | Qld. | S. Aust. | W. Aust. | Tas. | Cwth. |
|---------------------------|-----------|-----------|---------|-----------|----------|---------|-----------|
| QUANTITY. | | | | | | | |
| Boots and shoes ... Pairs | 3,634,831 | 4,290,122 | 732,872 | 1,027,434 | 194,362 | 105,551 | 9,085,173 |
| Slippers ... Pairs | 510,132 | *182,039 | 60,876 | 41,165 | 238 | † | 794,450 |
| Uppers ... Pairs | 67,691 | 120,000 | 69,885 | 7,950 | 4,625 | 67,320 | 337,471 |
| VALUE. | | | | | | | |
| Boots and shoes ... £ | 998,040 | 1,235,000 | 202,659 | 259,412 | 57,111 | 27,000 | 2,769,222 |
| Slippers ... £ | 59,705 | *30,000 | 5,436 | 5,220 | 37 | † | 100,445 |
| Uppers ... £ | 15,208 | 31,000 | 16,641 | 1,422 | 1,612 | 15,000 | 80,883 |

* Including canvas shoes and house boots. † Not available.

23. **Hats and Caps.**—The manufacture of hats and caps is now well established in several of the States of the Commonwealth. In South Australia there is only one factory of this description, while there are not any either in Western Australia or in Tasmania. The total value of hats and caps manufactured in the Commonwealth during

1907 was estimated at £416,591. The position of the industry in 1907 is shewn in the following table :—

HAT AND CAP FACTORIES, 1907.

| Items. | N.S.W. | Vic. | Q'land. | S.A.* | W.A. | Tas. | Cwlth. |
|--|----------|--------|---------|-------|------|------|---------|
| Number of factories | 22 | 33 | 3 | ... | ... | ... | 58 |
| " employés | 1,094 | 1,404 | 140 | ... | ... | ... | 2,638 |
| " male employés | 335 | 576 | 36 | ... | ... | ... | 947 |
| " female | 759 | 828 | 104 | ... | ... | ... | 1,691 |
| Actual horse-power of engines employed | 148 | 247 | 10 | ... | ... | ... | 405 |
| Average number of months in operation during year | 12 | 11.0 | † | ... | ... | ... | ... |
| Approx. value of land and buildings | £ 60,961 | 59,152 | 9,470 | ... | ... | ... | 129,583 |
| " plant and machinery | £ 35,653 | 28,452 | 7,142 | ... | ... | ... | 71,247 |
| Total amount of wages paid during year | £ 46,567 | 83,694 | 6,102 | ... | ... | ... | 136,363 |

* As there is only one factory in this State, particulars are not disclosed. † Not available.

(i.) *Progress of Industry, 1904 to 1907.* As appears from the following table, which shows the progress of this industry in the States in which it was carried on during the years 1904 to 1907, there has been a considerable investment of capital in this industry in New South Wales and Victoria during recent years, and the industry is now in a flourishing condition in both these States:—

DEVELOPMENT OF HAT AND CAP FACTORIES, 1904 to 1907.

| State. | Number of Factories. | | | | No. of Persons employed | | | | Approximate Value of Plant and Machinery. | | | |
|---------------------|----------------------|-------|-------|-------|-------------------------|-------|-------|-------|---|----------|----------|----------|
| | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. |
| New South Wales | 18 | 21 | 23 | 22 | 729 | 904 | 1,396 | 1,094 | £ 26,117 | £ 29,650 | £ 32,750 | £ 35,653 |
| Victoria | 29 | 32 | 32 | 33 | 1,165 | 1,208 | 1,319 | 1,404 | 20,045 | 21,903 | 24,588 | 28,452 |
| Queensland | 6 | 8 | 4 | 3 | 128 | 144 | 122 | 140 | 7,311 | 7,161 | 6,063 | 7,142 |
| South Australia ... | 2 | 2 | 2 | 1 | 57 | 56 | 50 | * | † | † | † | * |
| Commonwealth | 55 | 63 | 61 | 59 | 2,079 | 2,312 | 2,527 | 2,638 | 53,473 | 58,714 | 63,421 | 71,247 |

* See note * to preceding table. † No information available.

(ii.) *Quantity and Value of Production, 1907.* Particulars regarding the quantity and value of the production of hat and cap factories in each State are incomplete.

In New South Wales, Queensland, and South Australia together 1,928,760 hats and caps, valued at £186,591, were manufactured during the year 1907. No particulars are available for the State of Victoria.

24. Coach and Wagon Building Works.—This industry (including wheelwrights, etc., forms the principal branch of manufacture in Class XI. (see § 1, 3, above). The subjoined table gives particulars of factories in this branch of industry in each State during the year 1907. The returns include cycle factories and also establishments for the manufacture of wheels, spokes, etc. :—

COACH AND WAGON BUILDING WORKS, 1907.

| Items. | N.S.W. | Vic. | Q'ld. | S.A. | W.A. | Tas. | Cwlth. |
|---|-----------|---------|--------|--------|--------|--------|---------|
| Number of factories | 240 | 284 | 72 | 71 | 39 | 29 | 715 |
| " employés | 2,263 | 2,808 | 630 | 740 | 328 | 159 | 8,728 |
| " male employés | 2,255 | 2,597 | 626 | 730 | 328 | 159 | 6,695 |
| " female | 8 | 11 | 4 | 10 | ... | ... | 33 |
| Actual horse-power of engines employed ... | 296 | 278 | 109 | 113 | 98 | 21 | 910 |
| Aver. time in operation during year (mths.) | 11.7 | 11.8 | * | 11.9 | 11.6 | 12 | ... |
| Approx. value of land and buildings | £ 209,433 | 208,809 | 52,071 | 40,591 | 32,955 | 15,020 | 550,879 |
| " plant and machinery | £ 47,870 | 49,366 | 18,553 | 15,862 | 13,118 | 2,545 | 144,809 |
| Total amount of wages paid during year | £ 159,305 | 167,501 | 43,600 | 50,339 | 33,484 | 13,291 | 467,518 |

* Not available.

Particulars regarding production are not available.

25. **Furniture and Cabinet Making and Billiard Table Making.**—These industries constitute the principal manufactures in Class XIII. (see § 1, 4, above). The following table gives particulars for 1907:—

FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE MAKING, 1907.

| Items. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | Cwth. |
|--|-----------|---------|---------|--------|--------|--------|---------|
| Number of factories | 103 | 127 | 46 | 19 | 16 | 10 | 321 |
| " employés | 1,902 | 1,491 | 557 | 431 | 204 | 212 | 4,797 |
| " male employés | 1,881 | 1,455 | 534 | 430 | 202 | 204 | 4,706 |
| " female | 21 | 36 | 23 | 1 | 2 | 8 | 91 |
| Actual horse-power of engines employed ... | 334 | 251 | 123 | 167 | 57 | 60 | 992 |
| Average time in operation during year ... | 11.7 | 11.6 | " | 12 | 12 | 12 | " |
| Approx. value of land and buildings ... | £ 151,708 | 153,653 | 45,749 | 11,556 | 26,970 | 17,782 | 407,418 |
| " " plant and machinery ... | £ 23,370 | 21,487 | 9,688 | 8,867 | 3,595 | 2,375 | 69,382 |
| Total amount of wages paid during year ... | £ 147,944 | 120,379 | 32,739 | 37,561 | 24,237 | 13,981 | 376,841 |

* Not available.

Particulars as to the quantity or value of furniture manufactured in Australia are not available.

26. **Electric Light and Power Works.**—Particulars of the electric light and power works of the Commonwealth in the year 1907 are given in the subjoined table. In South Australia there is only one electric light and power station, and in Tasmania there are only two. Particulars for these States are therefore not disclosed, but are included in the total for the Commonwealth:—

ELECTRIC LIGHT AND POWER WORKS, 1907.

| Items. | N.S.W. | Vic. | Q'land. | S.A.* | W.A. | Tas.* | Cwth. |
|--|-------------|---------|---------|-------|---------|-------|-----------|
| Number of factories | 91 | 11 | 6 | ... | 17 | ... | 123 |
| " employés | 634 | 398 | 93 | ... | 221 | ... | 1,509 |
| Actual horse-power of engines employed ... | 34,508 | 9,948 | 3,496 | ... | 11,975 | ... | 61,595 |
| Average time in operation during year ... | 11.8 | 12 | † | ... | 11.7 | ... | " |
| Approx. value of land and buildings ... | £ 353,978 | 140,844 | 10,265 | ... | 70,608 | ... | 631,736 |
| " " plant and machinery ... | £ 1,109,535 | 496,314 | 69,056 | ... | 492,325 | ... | 3,176,431 |
| Total amount of wages paid during year ... | £ 79,985 | 44,489 | 8,856 | ... | 41,063 | ... | 202,490 |

* As there is only one electric light and power station in South Australia, and only two in Tasmania, particulars are not disclosed, but are included in the total for the Commonwealth.
† Not available.

Further reference to electric light and power stations in each State may be found in the sections of this book dealing with *Tramways* and *Local Government*.

27. **Gas and Coke Works.**—There are gas works in operation in nearly all the chief towns in the Commonwealth. The subjoined table gives particulars of gas and coke works in each State. Further reference to gas works in the capital towns of each State is made in the section of this book dealing with the subject of *Local Government*.

GAS AND COKE WORKS, 1907.

| Items. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | Cwth. |
|---|-----------|-----------|---------|---------|--------|---------|-----------|
| Number of factories | 57 | 48 | 18 | 8 | 4 | 7 | 142 |
| " employés | 1,161 | 1,272 | 322 | 248 | 90 | 149 | 3,242 |
| " male employés | 1,161 | 1,272 | 319 | 248 | 90 | 149 | 3,239 |
| " female | ... | ... | 3 | ... | ... | ... | 3 |
| Actual horse-power of engines employed ... | 1,685 | 695 | 94 | 44 | 36 | 2,725 | 5,279 |
| Average number of months in operation during year ... | 12 | 12 | " | 12 | 12 | 12 | " |
| Approx. value of land and buildings ... | £ 499,979 | 463,932 | 106,302 | 355,104 | 26,600 | 4,023 | 1,457,940 |
| " " plant and machinery ... | £ 694,737 | 1,246,374 | 369,059 | 11,096 | 78,240 | 148,458 | 3,547,964 |
| Total amount of wages paid during year ... | £ 145,380 | 157,525 | 34,402 | 29,833 | 13,645 | 15,615 | 396,400 |

* Not available.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1907 :—

PRODUCTION OF GAS AND COKE WORKS, 1907.

| Particulars. | N.S.W. | Vic. | Qld. | S. Aust. | W. Aust. | Tas. | Cwlth. |
|--------------|--------|------|------|----------|----------|------|--------|
|--------------|--------|------|------|----------|----------|------|--------|

QUANTITY.

| | | | | | | | |
|----------------------------|-----------|-----------|---------|---------|--------|--------|-----------|
| Gas made ... 1000 cub. ft. | 3,033,659 | 1,975,892 | 391,069 | 305,665 | 80,751 | 90,167 | 5,877,203 |
| Coke ... Tons | 396,139 | 112,050 | 29,015 | 17,517 | 4,432 | 5,018 | 564,171 |

VALUE.

| | | | | | | | |
|---------------|---------|---------|---------|--------|--------|--------|-----------|
| Gas £ | 505,982 | 490,000 | 118,304 | 84,446 | 27,626 | 30,000 | 1,256,358 |
| Coke £ | 244,788 | 67,000 | 13,317 | 11,775 | 8,360 | 3,500 | 350,740 |

COAL USED.

| | | | | | | | |
|------------------|---------|---------|--------|--------|-------|-------|---------|
| Coal Tons | 621,468 | 189,190 | 53,568 | 29,161 | 8,649 | 7,721 | 909,957 |
|------------------|---------|---------|--------|--------|-------|-------|---------|

§ 9. General Summary of Manufacturing Industries.

1. **Introduction.**—It has not been possible, within the limits of this article, to give anything like a detailed account of the individual manufacturing industries of the Commonwealth. In the last sub-section hereof an attempt was made to give a brief statistical account of certain of the most important individual industries, but otherwise limits of space have necessitated the subject being dealt with under the classification specified in § 1. 3, hereof. It is proposed to give herein a summary of each of the nineteen classes in that classification for each State and the Commonwealth, so as to furnish a comprehensive and comparative view of the totality of the manufacturing industry in Australia.

2. **Comparative Summary of the Manufacturing Industries of Australia.**—In the statement given on pages 578 to 581 hereof a summary will be found specifying certain particulars for each class of industry (see § 1. 3, hereof) and for each State. Particulars regarding the total value of the work turned out and the value of the raw materials (exclusive of fuel, oil, etc.) used or worked up, given in the last two columns of such summary are not available for either of the States of Western Australia or Tasmania; totals are given for the Commonwealth exclusive of these States.

In connection with the paucity of detailed information in regard to certain aspects of the manufacturing industry, allowance must be made for the fact that the information has been collected for the first time in some of the States, while in others, the alteration of the form in which they were asked to supply the information doubtless caused some delay.

SUMMARY OF MANUFACTURING INDUSTRIES, 1907.

| State. | Number of Establishments. | Average Number of Persons Employed. | | | Actual Horse-power of Engines Used. | Approximate Value of— | | Total Amount of Salaries and Wages Paid. | Total Value of Work Turned Out. | Value of Material Used or Worked Up. |
|--------|---------------------------|-------------------------------------|------|--------|-------------------------------------|-----------------------|--------------------|--|---------------------------------|--------------------------------------|
| | | Male. | Fem. | Total. | | Land and B'ld'gs. | Plant and Mach'ry. | | | |

CLASS I.—TREATING RAW MATERIAL, PRODUCT OF AGRICULTURAL AND PASTORAL PURSUITS, ETC.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|------------------|-----|-------|-----|-------|-------|---------|---------|---------|------------|------------|
| N.S.W. | 295 | 3,702 | 25 | 3,727 | 3,153 | 294,209 | 261,074 | 242,761 | 4,507,210 | 3,925,533 |
| Victoria | 323 | 3,170 | 21 | 3,191 | 3,192 | 325,629 | 225,496 | 206,642 | 2,336,399 | 1,896,987 |
| Queensland ... | 44 | 645 | 1 | 646 | 859 | 49,620 | 87,583 | 51,109 | 1,241,370 | 1,058,399 |
| S. Australia ... | 111 | 1,094 | 2 | 1,096 | 1,473 | 70,934 | 48,764 | 72,717 | 602,325 | 479,646 |
| W. Australia ... | 18 | 166 | 1 | 167 | 189 | 25,315 | 10,480 | 15,728 | * | * |
| Tasmania ... | 16 | 129 | ... | 129 | 141 | 16,026 | 11,200 | 10,681 | * | * |
| C'wealth ... | 807 | 8,906 | 50 | 8,956 | 9,007 | 781,733 | 644,597 | 599,638 | †8,687,304 | †7,360,865 |

CLASS II.—TREATING OILS AND FATS, ANIMAL, VEGETABLE, ETC.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|------------------|-----|-------|-----|-------|-------|---------|---------|---------|------------|----------|
| N.S.W. | 40 | 531 | 108 | 639 | 508 | 152,077 | 158,923 | 45,658 | 686,894 | 487,451 |
| Victoria | 21 | 550 | 13 | 563 | 287 | 107,290 | 112,176 | 47,193 | 438,603 | 299,713 |
| Queensland ... | 15 | 141 | 1 | 142 | 140 | 22,201 | 35,562 | 11,614 | 96,279 | 53,674 |
| S. Australia ... | 11 | 288 | 3 | 291 | 117 | 51,533 | 14,396 | 18,824 | 155,559 | 107,113 |
| W. Australia ... | 3 | 55 | 2 | 57 | 98 | 6,323 | 6,938 | 5,053 | * | * |
| Tasmania ... | 2 | 35 | ... | 35 | 13 | 4,000 | 3,600 | 3,400 | * | * |
| C'wealth ... | 92 | 1,600 | 127 | 1,727 | 1,103 | 343,424 | 331,595 | 131,742 | †1,377,335 | †947,950 |

CLASS III.—PROCESSES IN STONE, CLAY, GLASS, ETC.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|------------------|-----|-------|-----|-------|-------|---------|---------|---------|------------|----------|
| N.S.W. | 258 | 3,591 | 84 | 3,675 | 4,789 | 394,886 | 426,840 | 306,927 | 827,680 | 167,982 |
| Victoria | 203 | 3,341 | 42 | 3,383 | 2,487 | 288,579 | 202,403 | 279,016 | 684,519 | 141,939 |
| Queensland ... | 36 | 451 | ... | 451 | 300 | 35,170 | 44,163 | 29,850 | 60,688 | 8,842 |
| S. Australia ... | 57 | 650 | 5 | 655 | 381 | 48,076 | 26,898 | 52,943 | 115,091 | 17,302 |
| W. Australia ... | 42 | 515 | ... | 515 | 455 | 41,829 | 44,412 | 47,843 | * | * |
| Tasmania ... | 30 | 230 | ... | 230 | 128 | 11,792 | 7,368 | 15,533 | * | * |
| C'wealth ... | 626 | 8,778 | 131 | 8,909 | 8,540 | 820,332 | 752,084 | 732,112 | †1,687,978 | †336,065 |

CLASS IV.—WORKING IN WOOD.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|------------------|-------|--------|-----|--------|--------|-----------|-----------|-----------|------------|------------|
| N.S.W. | 522 | 5,872 | 24 | 5,896 | 7,636 | 390,705 | 436,816 | 466,832 | 2,082,130 | 1,271,115 |
| Victoria | 290 | 4,635 | 12 | 4,647 | 4,574 | 237,958 | 228,263 | 358,522 | 1,171,610 | 565,784 |
| Queensland ... | 212 | 3,055 | 22 | 3,077 | 4,636 | 139,155 | 290,121 | 243,476 | 763,541 | 374,411 |
| S. Australia ... | 56 | 1,069 | 2 | 1,071 | 785 | 86,397 | 37,686 | 94,278 | 443,068 | 280,335 |
| W. Australia ... | 59 | 3,343 | 2 | 3,345 | 2,769 | 184,255 | 417,087 | 384,965 | * | * |
| Tasmania ... | 76 | 1,408 | 13 | 1,421 | 1,832 | 52,081 | 96,960 | 106,202 | * | * |
| C'wealth ... | 1,215 | 19,382 | 75 | 19,457 | 22,232 | 1,090,551 | 1,506,933 | 1,654,275 | †4,460,345 | †2,491,645 |

CLASS V.—METAL WORKS, MACHINERY, ETC.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|------------------|-------|--------|-----|--------|--------|-----------|-----------|-----------|-------------|------------|
| N.S.W. | 428 | 18,025 | 68 | 18,093 | 14,694 | 1,651,096 | 1,850,946 | 1,884,144 | 9,160,698 | 5,219,699 |
| Victoria | 619 | 13,399 | 70 | 13,469 | 5,678 | 957,781 | 947,315 | 1,226,616 | 3,815,558 | 1,870,542 |
| Queensland ... | 199 | 4,091 | 20 | 4,111 | 2,920 | 230,623 | 418,993 | 363,530 | 1,330,247 | 531,062 |
| S. Australia ... | 142 | 6,819 | 7 | 6,826 | 4,650 | 391,234 | 395,774 | 642,100 | 3,301,955 | 1,867,506 |
| W. Australia ... | 68 | 2,479 | 10 | 2,489 | 2,690 | 421,165 | 369,097 | 301,795 | * | * |
| Tasmania ... | 48 | 2,067 | 5 | 2,072 | 2,698 | 57,415 | 255,885 | 228,975 | * | * |
| C'wealth ... | 1,504 | 46,880 | 180 | 47,060 | 33,330 | 3,709,314 | 4,237,810 | 4,647,160 | †17,608,468 | †9,488,809 |

* Not available. † Exclusive of Western Australia and Tasmania.

GENERAL SUMMARY OF MANUFACTURING INDUSTRIES.

579

| State. | Number of Establishments. | Average Number of Persons Employed. | | | Actual Horse-power of Engines Used. | Approximate Value of— | | Total Amount of Salaries and Wages Paid. | Total Value of Work Turned Out. | Value of Material Used or Worked Up. |
|--------|---------------------------|-------------------------------------|------|--------|-------------------------------------|-----------------------|--------------------|--|---------------------------------|--------------------------------------|
| | | Male. | Fem. | Total. | | Land and B'ld'gs. | Plant and Mach'ry. | | | |

CLASS VI.—CONNECTED WITH FOOD AND DRINK, ETC.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|------------------|-------|--------|-------|--------|--------|-----------|-----------|-----------|------------|-------------|
| N.S.W. | 756 | 9,518 | 2,546 | 12,064 | 15,222 | 2,030,840 | 2,553,063 | 898,637 | 10,283,497 | 7,492,925 |
| Victoria | 656 | 9,421 | 3,203 | 12,894 | 14,161 | 2,268,112 | 1,542,235 | 905,224 | 10,517,884 | 7,781,422 |
| Queensland ... | 357 | 8,808 | 589 | 9,397 | 16,548 | 886,199 | 2,343,705 | 590,223 | 5,757,098 | 3,772,353 |
| S. Australia ... | 249 | 2,707 | 392 | 3,159 | 4,882 | 611,015 | 507,686 | 246,070 | 2,372,849 | 1,656,039 |
| W. Australia ... | 149 | 1,298 | 113 | 1,411 | 2,190 | 397,583 | 285,040 | 173,884 | • | • |
| Tasmania ... | 83 | 1,108 | 195 | 1,303 | 1,262 | 494,862 | 108,154 | 74,750 | • | • |
| C'wealth... | 2,250 | 33,190 | 7,038 | 40,228 | 54,285 | 6,708,611 | 7,340,941 | 2,888,858 | † | 20,632,739† |

CLASS VII.—CLOTHING AND TEXTILE FABRICS, ETC.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|------------------|-------|--------|--------|--------|-------|-----------|-----------|-----------|-----------|------------|
| N.S.W. | 890 | 6,967 | 14,955 | 21,922 | 1,791 | 1,367,641 | 313,624 | 1,051,153 | 3,817,687 | 2,079,141 |
| Victoria | 1,212 | 8,424 | 24,397 | 32,821 | 4,521 | 1,303,321 | 594,382 | 1,397,053 | 4,935,774 | 2,836,249 |
| Queensland ... | 115 | 1,433 | 3,647 | 5,130 | 348 | 187,581 | 81,506 | 238,710 | 858,796 | 470,965 |
| S. Australia ... | 192 | 1,484 | 3,307 | 4,791 | 467 | 314,771 | 67,320 | 226,572 | 790,505 | 443,009 |
| W. Australia ... | 121 | 571 | 1,631 | 2,202 | 88 | 144,430 | 21,072 | 145,672 | • | • |
| Tasmania ... | 131 | 587 | 920 | 1,507 | 150 | 78,855 | 54,179 | 79,183 | • | • |
| C'wealth... | 2,661 | 19,516 | 48,857 | 68,373 | 7,365 | 3,396,599 | 1,132,063 | 3,128,343 | † | †5,831,384 |

CLASS VIII.—BOOKS, PAPER, PRINTING, AND ENGRAVING.

| | No. | No. | No. | No. | No. | £ | £ | £ | £ | £ |
|------------------|-----|--------|-------|--------|-------|-----------|-----------|-----------|------------|------------|
| N.S.W. | 365 | 5,901 | 1,692 | 7,593 | 2,499 | 813,389 | 767,271 | 637,883 | 1,627,489 | 536,055 |
| Victoria | 341 | 5,722 | 1,979 | 7,701 | 2,524 | 781,501 | 711,205 | 645,205 | 1,910,979 | 649,470 |
| Queensland ... | 122 | 1,838 | 344 | 2,182 | 374 | 361,347 | 187,860 | 203,707 | 468,935 | 36,412 |
| S. Australia ... | 62 | 1,198 | 454 | 1,652 | 464 | 204,667 | 143,449 | 133,127 | 225,092 | 126,973 |
| W. Australia ... | 58 | 932 | 142 | 1,074 | 451 | 173,220 | 131,127 | 146,362 | • | • |
| Tasmania ... | 16 | 472 | 59 | 531 | 108 | 23,675 | 52,223 | 54,291 | • | • |
| C'wealth... | 964 | 16,063 | 4,670 | 20,733 | 6,620 | 2,357,799 | 1,993,135 | 1,820,575 | †4,232,495 | †1,348,910 |

CLASS IX.—MUSICAL INSTRUMENTS, ETC.

| | No. | No. | No. | No. | No. | £ | £ | £ | £ | £ |
|------------------|-----|-----|-----|-----|-----|--------|-------|--------|----------|---------|
| N.S.W. | 12 | 343 | 37 | 380 | 49 | 20,440 | 6,292 | 35,298 | 118,951 | 52,910 |
| Victoria | 3 | 34 | ... | 34 | 8 | 5,240 | 1,337 | 2,299 | 5,653 | 1,066 |
| Queensland ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| S. Australia ... | 1 | 16 | ... | 16 | ... | 1,725 | 200 | 1,306 | 3,465 | 1,251 |
| W. Australia ... | ... | ... | ... | ... | ... | ... | ... | ... | • | • |
| Tasmania ... | ... | ... | ... | ... | ... | ... | ... | ... | • | • |
| C'wealth... | 16 | 393 | 37 | 430 | 57 | 27,405 | 7,829 | 38,903 | †128,069 | †55,227 |

CLASS X.—ARMS AND EXPLOSIVES.

| | No. | No. | No. | No. | No. | £ | £ | £ | £ | £ |
|------------------|-----|-----|-----|-----|-----|--------|--------|--------|----------|---------|
| N.S.W. | 3 | 14 | 2 | 16 | 4 | 2,954 | 200 | 1,220 | 5,264 | 3,634 |
| Victoria | 5 | 103 | 204 | 307 | 128 | 28,198 | 45,413 | 18,337 | 115,481 | 73,438 |
| Queensland ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| S. Australia ... | ... | ... | ... | ... | ... | ... | ... | ... | • | • |
| W. Australia ... | ... | ... | ... | ... | ... | ... | ... | ... | • | • |
| Tasmania ... | ... | ... | ... | ... | ... | ... | ... | ... | • | • |
| C'wealth... | 8 | 117 | 206 | 323 | 132 | 31,152 | 45,613 | 19,557 | †120,745 | †77,072 |

* Not available. † Exclusive of Western Australia and Tasmania.

| State. | Number of Establishments. | Average Number of Persons Employed. | | | Actual Horse-power of Engines Used. | Approximate Value of— | | Total Amount of Salaries and Wages Paid. | Total Value of Work Turned Out. | Value of Material Used or Worked Up. |
|--|---------------------------|-------------------------------------|------|--------|-------------------------------------|-----------------------|--------------------|--|---------------------------------|--------------------------------------|
| | | Male. | Fem. | Total. | | Land and B'ld'gs. | Plant and Mach'ry. | | | |
| CLASS XI.—VEHICLES AND FITTINGS, SADDLERY AND HARNESS, ETC. | | | | | | | | | | |
| N.S.W. ... | 345 | 3,402 | 62 | 3,464 | 356 | 377,164 | 61,922 | 243,910 | 690,084 | 290,931 |
| Victoria ... | 377 | 3,574 | 59 | 3,633 | 390 | 336,408 | 63,007 | 232,408 | 656,545 | 281,114 |
| Queensland ... | 133 | 1,136 | 18 | 1,154 | 121 | 122,346 | 22,651 | 77,443 | 215,269 | 76,891 |
| S. Australia ... | 111 | 1,209 | 25 | 1,234 | 184 | 151,416 | 26,317 | 84,696 | 251,450 | 123,129 |
| W. Australia ... | 50 | 510 | 2 | 512 | 106 | 65,155 | 15,943 | 50,939 | * | * |
| Tasmania ... | 55 | 289 | 2 | 291 | 41 | 27,370 | 5,431 | 20,996 | * | * |
| C'wealth ... | 1,071 | 10,120 | 168 | 10,288 | 1,198 | 1,079,850 | 195,271 | 710,392 | †1,813,348 | †772,065 |

CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING.

| | | | | | | | | | | |
|------------------|----|-------|-----|-------|-------|---------|---------|---------|----------|----------|
| N.S.W. ... | 31 | 1,679 | 1 | 1,680 | 2,436 | 560,938 | 163,098 | 214,018 | 387,814 | 105,377 |
| Victoria ... | 12 | 144 | ... | 144 | 957 | 401,585 | 54,375 | 9,547 | 24,368 | 6,906 |
| Queensland ... | 11 | 70 | 1 | 71 | 75 | 10,821 | 13,598 | 7,367 | 15,099 | 3,070 |
| S. Australia ... | 6 | 97 | ... | 97 | 68 | 19,123 | 5,250 | 13,558 | 24,530 | 6,551 |
| W. Australia ... | 4 | 19 | ... | 19 | 20 | 1,640 | 1,155 | 1,939 | * | * |
| Tasmania ... | 6 | 38 | ... | 38 | 47 | 4,600 | 2,515 | 3,768 | * | * |
| C'wealth ... | 70 | 2,047 | 2 | 2,049 | 3,603 | 991,907 | 240,486 | 250,217 | †451,811 | †121,904 |

CLASS XIII.—FURNITURE, BEDDING, AND UPHOLSTERY.

| | | | | | | | | | | |
|------------------|-----|-------|-----|-------|-------|---------|---------|---------|------------|----------|
| N.S.W. ... | 144 | 2,309 | 172 | 2,481 | 502 | 223,158 | 33,636 | 190,091 | 598,412 | 294,632 |
| Victoria ... | 194 | 2,148 | 222 | 2,370 | 492 | 233,067 | 39,364 | 172,941 | 596,875 | 326,670 |
| Queensland ... | 59 | 753 | 43 | 796 | 179 | 64,239 | 13,294 | 51,131 | 125,564 | 49,630 |
| S. Australia ... | 33 | 635 | 7 | 642 | 188 | 48,771 | 10,944 | 54,596 | 140,325 | 53,260 |
| W. Australia ... | 26 | 262 | 13 | 275 | 95 | 37,790 | 5,780 | 30,924 | * | * |
| Tasmania ... | 14 | 233 | 22 | 255 | 76 | 20,202 | 3,535 | 15,860 | * | * |
| C'wealth ... | 470 | 6,340 | 479 | 6,819 | 1,532 | 633,237 | 106,613 | 515,543 | †1,463,176 | †724,352 |

CLASS XIV.—DRUGS, CHEMICALS, AND BY-PRODUCTS.

| | | | | | | | | | | |
|------------------|-----|-------|-----|-------|-------|---------|---------|---------|------------|----------|
| N.S.W. ... | 58 | 722 | 384 | 1,106 | 599 | 142,497 | 124,208 | 76,382 | 595,078 | 320,817 |
| Victoria ... | 64 | 1,052 | 271 | 1,323 | 1,063 | 225,428 | 126,623 | 94,395 | 760,008 | 443,486 |
| Queensland ... | 5 | 37 | 24 | 61 | 20 | 6,560 | 6,070 | 3,737 | 17,933 | 8,168 |
| S. Australia ... | 9 | 318 | 30 | 348 | 505 | 53,715 | 65,098 | 22,587 | 192,931 | 144,761 |
| W. Australia ... | 7 | 39 | 6 | 45 | 56 | 15,810 | 9,850 | 5,531 | * | * |
| Tasmania ... | 1 | 12 | ... | 12 | 2 | 50 | 500 | 640 | * | * |
| C'wealth ... | 144 | 2,180 | 715 | 2,895 | 2,245 | 444,060 | 332,349 | 203,272 | †1,565,950 | †917,232 |

CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS.

| | | | | | | | | | | |
|------------------|-----|-----|-----|-----|-----|--------|-------|--------|---------|---------|
| N.S.W. ... | 8 | 66 | 18 | 84 | 8 | 13,088 | 2,760 | 6,348 | 19,675 | 5,689 |
| Victoria ... | 11 | 45 | 5 | 50 | 9 | 8,151 | 1,500 | 3,036 | 8,518 | 2,147 |
| Queensland ... | 5 | 19 | 2 | 21 | 5 | 5,850 | 1,180 | 1,689 | 5,838 | 1,378 |
| S. Australia ... | 1 | 4 | 1 | 5 | 1 | 1,050 | 500 | 691 | 4,200 | 3,000 |
| W. Australia ... | 1 | 10 | ... | 10 | 1 | 3,640 | 400 | 1,084 | * | * |
| Tasmania ... | ... | ... | ... | ... | ... | ... | ... | ... | * | * |
| C'wealth ... | 26 | 144 | 26 | 170 | 24 | 31,779 | 6,340 | 12,848 | †38,231 | †12,214 |

* Not available. † Exclusive of Western Australia and Tasmania.

| State. | Number of Establishments. | Average Number of Persons Employed. | | | Actual Horse-power of Engines Used. | Approximate Value of— | | Total Amount of Salaries and Wages Paid. | Total Value of Work Turned Out. | Value of Material Used or Worked Up. |
|--------|---------------------------|-------------------------------------|------|--------|-------------------------------------|-----------------------|--------------------|--|---------------------------------|--------------------------------------|
| | | Male. | Fem. | Total. | | Land and B'ld'gs. | Plant and Mach'ry. | | | |

CLASS XVI.—JEWELLERY, TIMEPIECES, AND PLATEDWARE.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|-----------------|-----|-------|-----|-------|------|---------|--------|---------|----------|----------|
| N.S.W. | 46 | 566 | 60 | 626 | 105 | 67,944 | 20,193 | 48,548 | 146,043 | 65,652 |
| Victoria | 57 | 685 | 42 | 727 | 105. | 92,030 | 17,396 | 62,142 | 240,327 | 119,853 |
| Queensland .. | 12 | 109 | 8 | 117 | 11 | 12,300 | 3,506 | 7,773 | 26,425 | 15,847 |
| S. Australia .. | 12 | 146 | ... | 146 | 27 | 20,180 | 3,217 | 12,464 | 37,225 | 15,650 |
| W. Australia .. | 3 | 28 | ... | 28 | 3 | 3,120 | 1,100 | 3,087 | * | * |
| Tasmania ... | 12 | 55 | 1 | 56 | ... | 9,160 | 515 | 4,517 | * | * |
| C'wealth... | 142 | 1,589 | 111 | 1,700 | 251 | 204,734 | 45,927 | 138,531 | †450,020 | †217,002 |

CLASS XVII.—HEAT, LIGHT, AND POWER.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|-----------------|-----|-------|-----|-------|--------|-----------|-----------|---------|------------|----------|
| N.S.W. | 166 | 1,977 | 63 | 2,040 | 36,731 | 911,519 | 1,835,803 | 243,281 | 1,373,709 | 299,995 |
| Victoria | 70 | 1,785 | 79 | 1,864 | 11,629 | 647,927 | 1,792,948 | 215,508 | 890,088 | 193,153 |
| Queensland .. | 25 | 418 | 3 | 421 | 3,582 | 119,317 | 438,488 | 43,904 | 202,352 | 20,050 |
| S. Australia .. | 14 | 419 | 2 | 421 | 1,348 | 387,214 | 197,221 | 45,984 | 137,812 | 33,484 |
| W. Australia .. | 25 | 346 | 4 | 350 | 12,020 | 106,528 | 571,335 | 58,888 | * | * |
| Tasmania ... | 9 | 276 | ... | 276 | 3,103 | 30,023 | 372,639 | 31,932 | * | * |
| C'wealth... | 309 | 5,221 | 151 | 5,372 | 68,413 | 2,202,528 | 5,208,454 | 639,557 | †2,543,961 | †546,682 |

CLASS XVIII.—LEATHERWARE, N.E.I.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|-----------------|-----|-----|-----|-----|------|--------|--------|--------|----------|----------|
| N.S.W. | 14 | 241 | 31 | 272 | 64 | 17,900 | 5,999 | 16,805 | 107,947 | 75,214 |
| Victoria | 24 | 320 | 102 | 422 | 110 | 27,463 | 9,745 | 25,151 | 162,153 | 114,691 |
| Queensland .. | 2 | 34 | 18 | 52 | 2 | 3,600 | 384 | 2,122 | 9,805 | 3,089 |
| S. Australia .. | 3 | 21 | 3 | 24 | ... | 5,740 | 145 | 1,342 | 6,343 | 3,689 |
| W. Australia .. | 2 | 13 | 5 | 18 | ... | 2,340 | 250 | 1,306 | * | * |
| Tasmania ... | ... | ... | ... | ... | ... | ... | ... | ... | * | * |
| C'wealth... | 45 | 629 | 159 | 788 | 176 | 57,043 | 16,523 | 46,726 | †285,748 | †196,683 |

CLASS XIX.—MINOR WARES, N.E.I.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|-----------------|-----|-------|-----|-------|------|---------|--------|---------|----------|----------|
| N.S.W. | 51 | 527 | 182 | 709 | 118 | 69,614 | 21,044 | 40,819 | 194,750 | 120,910 |
| Victoria | 48 | 869 | 491 | 1,360 | 368 | 80,974 | 55,717 | 81,442 | 480,292 | 319,598 |
| Queensland .. | 7 | 103 | 22 | 125 | 9 | 4,610 | 1,020 | 6,184 | 14,776 | 5,765 |
| S. Australia .. | 16 | 189 | 38 | 227 | 25 | 27,085 | 2,789 | 10,539 | 33,517 | 16,939 |
| W. Australia .. | 7 | 81 | 9 | 90 | 5 | 7,064 | 1,285 | 5,708 | * | * |
| Tasmania ... | 6 | 33 | 20 | 53 | 3 | 4,300 | 590 | 1,036 | * | * |
| C'wealth... | 135 | 1,802 | 762 | 2,564 | 528 | 193,797 | 82,435 | 145,728 | †723,335 | †463,212 |

TOTAL ALL CLASSES.

| | No. | No. | No. | No. | H.P. | £ | £ | £ | £ | £ |
|-----------------|--------|---------|--------|---------|---------|------------|------------|------------|-------------|-------------|
| N.S.W. | 4,432 | 65,953 | 20,514 | 66,467 | 91,264 | 9,508,259 | 9,043,772 | 6,650,715 | 37,231,012 | 22,746,162 |
| Victoria | 4,530 | 59,691 | 31,212 | 90,903 | 52,703 | 8,376,642 | 6,771,458 | 5,982,677 | 29,693,634 | 17,926,128 |
| Queensland .. | 1,359 | 23,191 | 4,763 | 27,954 | 30,329 | 2,261,539 | 3,989,679 | 1,923,639 | 11,209,515 | 6,490,086 |
| S. Australia .. | 1,086 | 18,423 | 4,278 | 22,701 | 15,565 | 2,487,606 | 1,553,654 | 1,734,394 | 8,838,252 | 5,379,636 |
| W. Australia .. | 643 | 10,667 | 1,940 | 12,607 | 21,176 | 1,637,207 | 1,893,351 | 1,380,708 | * | * |
| Tasmania ... | 505 | 6,972 | 1,237 | 8,209 | 9,604 | 834,611 | 975,104 | 651,844 | * | * |
| C'wealth... | 12,555 | 184,897 | 63,944 | 248,841 | 220,641 | 25,105,864 | 24,227,018 | 18,323,977 | †86,972,413 | †52,542,012 |

* Not available. † Exclusive of Western Australia and Tasmania.

SECTION XIV.

WATER CONSERVATION AND IRRIGATION.

§ 1. Water Supply Works.

1. **General.**—In every country in which droughts are recurrent, there are few problems of greater importance to be solved than that of an adequate system of water conservation. Much has been done so far as the supply of water to centres of population is concerned, and a description of several of the metropolitan water works will be found herein, viz., in the section dealing with "Local Government."

2. **The Goldfields Water Supply of Western Australia.**—The scheme by which the Government of Western Australia undertook to provide a permanent supply of water for the population on the eastern goldfields of that State comes properly under the heading of "Water Supply Works," but owing to its magnitude and special character it could not be included in the section "Local Government."

The Act under which the works were constructed was introduced in Parliament by Sir John Forrest, G.C.M.G., then Premier of Western Australia, in September, 1896, and provided for an expenditure of £2,500,000 and a daily supply of 5,000,000 gallons. The works, designed by the late Mr. C. Y. O'Connor, Engineer-in-Chief of the State, were originally known as the "Coolgardie Water Scheme," but are now officially called the "Goldfields Water Supply." So soon as the Act was passed through Parliament the works were energetically undertaken, so that, apart from reticulation works, the whole scheme was completed early in 1903, viz., in about six years. The scheme is unique in more than one way. The weir across the Helena River, near Mundaring, at a point where the width between the banks is 760 feet, is the highest overflow weir in existence. The surplus water flows directly over the weir crest and down the solid concrete face of the wall to the river 100 feet below. The capacity of the Mundaring reservoir is 4,600,000,000 gallons, and its daily output capacity 5,000,000 gallons. The main service reservoir from which the goldfields towns are supplied, is situated at Bulla Bulling, 351 miles from Mundaring, and at an altitude 1200 feet above that of the last-named locality. It becomes, therefore, necessary to pump a daily quantity of 5,000,000 gallons of water, weighing approximately 22,300 tons, over a distance of 351 miles, and to raise it 1200 feet. This is done by means of eight pumping stations along the principal main, the diameter of which is 2 feet 6 inches. The area to which the trading operations of the scheme are confined extends from Guildford, in the west, to Kanowna, in the east, and there are twelve smaller reservoirs and tanks, with a total capacity of 31,500,000 gallons, in the neighbourhood of the towns which are supplied with water from the scheme. The total cost was £3,078,500, and the price of water ranges from two shillings and sixpence in the western area to eight shillings and fourpence at Kanowna, with an average of about five shillings and sixpence. During the financial year 1907-8 the total consumption amounted to 837,296,000 gallons, while the number of services was 12,400. The gross revenue was £172,550, and the working expenses £74,883, leaving a gross profit of

£97,667. Of this amount interest at $3\frac{1}{2}$ per cent. and payment of 2 per cent. to sinking of the supplementary debenture capital of £353,000 absorbed £16,885, thus leaving £80,802 available for payment into the general revenue of the State. As interest on the main capital amounts to £91,700, and payments to the sinking fund to £80,000, or a total of £171,700, there was therefore a deficiency of £90,898 on the year's transactions to be made good from general revenue.

3. The Mines Water Supply Branch.—Prior to the commencement of the Goldfields Water Supply Scheme works of different kinds were carried out by Government in order to afford temporary relief to the population on the goldfields. These works comprised shallow and artesian boring, conservation and protection of water in natural and artificial reservoirs, sinking of wells, erection of condensers, etc. Administratively the goldfields area is divided into three water supply districts—Coolgardie, Murchison, and Pilbara. It has been the policy of the department charged with the supervision of water supply works, viz., the Mines Department, to lease watering stations wherever that could be done to advantage, and from twenty to thirty leases are generally executed in the course of a year. The tanks which have been constructed by the department vary in size from 200,000 gallons to 37,500,000 gallons (at Niagara).

§ 2. Artesian Wells

1. General. (i.) *The Great Australian Artesian Basin.* Although there are some artesian wells outside this area, yet, in speaking of the "Great Australian Artesian Basin," the area is understood which includes (a) considerably more than one-half of Queensland, taking in practically all that State lying west of the Great Dividing Range, with the exception of an area in the north-west contiguous to the Northern Territory; (b) a considerable strip of New South Wales along its northern boundary and west of the Great Dividing Range; and (c) the north-eastern part of South Australia proper, together with the extreme south-eastern corner of the Northern Territory. This basin (shewn approximately by map in Section XXVI., Local Government), is said to be the largest yet discovered, and is about 569,000 square miles, of which 376,000 square miles are in Queensland, 110,000 square miles in South Australia, and 83,000 square miles in New South Wales. The area of the intake beds is estimated at 68,000 square miles, viz., 50,000 square miles in Queensland and 18,000 square miles in New South Wales. The basin is what is technically known as a one-sided or half-basin, the intake beds outcropping along its eastern and north-eastern sides only, while the remainder of the water-bearing formation is hidden under the superficial deposits forming the plains of the interior of the States. Although it has not been definitely decided whether the basin has outlets towards the Gulf of Carpentaria in the north, and towards the Great Australian Bight or towards Lake Eyre in the south, there is a preponderance of opinion and strong evidence in favour of the existence of such outlets, an opinion which receives strong support from the maps published by the Geological Department of Queensland, which shew an apparent dip in the water-bearing strata towards the Gulf of Carpentaria in the north and towards Lake Eyre and the Great Australian Bight in the south. It is estimated that at present there are about 1650 bores tapping the basin in the three States.

(ii.) *The Western Australian Basin.* The Recent and Tertiary strata which enter Western Australia at its eastern border, and which have a prevailing dip towards the Great Australian Bight, form an artesian water area. But where boring operations have been undertaken the water has been found to be salt or brackish, and there are other conditions affecting the supply, such as local variations in the thickness of the beds, their relative porosity, and the unevenness of the floor upon which they rest, which so far have not been examined with sufficient thoroughness to enable many particulars to be given in regard to this basin.

In the coastal area to the west of the Darling Range artesian boring has, on the other hand, been carried on successfully for many years.

(iii.) *Plutonic or Meteoric Water.* While it has long been held that the Australian artesian basin is a typically-formed one, and that its intake beds are as described above, a theory has been recently advanced (viz., by Professor Gregory,¹ formerly of Melbourne, but now of Glasgow University), that the water, although called artesian, is not impounded rain-water, or *meteoric* water at all, but is derived from the older rocks, *i.e.*, that it is *plutonic* in character. If this were so, and if the water contained in the basin were merely such as occurs in the molten lava from volcanoes or imprisoned in the solidified quartz of granites, we should, of course, be rapidly exhausting our supply. He founds his main arguments on (a) the amount of friction caused by the flow of water through the minute interstices between the sand grains, *i.e.*, on the loss of its hydrostatic head before the bores are reached; (b) on anomalies in temperature and pressure; (c) on the chemical analysis of some of the waters; and (d) on evaporation measurements in Central Australia. He suggests the pressure of overlying rock, and gas pressure caused by the internal heat of the earth, as causes of the flow from the bores.

This new theory has recently been replied to at length by the Government Geologist of New South Wales.² While this Year Book is hardly the place to enter at length upon arguments of a purely scientific nature, it may be said that Mr. Pittman avers that "many of Professor Gregory's statements appear to be in opposition to observed facts." In regard to the loss of hydrostatic head, he quotes the opinion of the United States Geological Survey in regard to bores in Kentucky, and the experience in connection with the Grenelle bore in Paris. So far as temperature is concerned, he shews that it would be illogical to contend that, because some Australian bores give higher rates of increase than the average results of a number of ascertained bores and tunnels in other parts of the world, the water must be plutonic and not meteoric. In regard to pressure, stress is laid on the more accurate results obtained with the dumpy level than with the aneroid, and it is shewn how accurately the height to which the water would rise has been predicted in many localities. It is also pointed out that the isopotential lines as laid down are tentative, as information in regard to many private wells is unreliable. The question of the chemical constituents of artesian water is dealt with at length, and it appears that instead of decreasing from east to west, as stated by Professor Gregory, the salinity of the water actually increases, and that some of the wells in the eastern district mentioned by the latter as being particularly rich in saline matter are actually outside the artesian basin altogether.

In regard to evaporation measurements in Central Australia, Mr. Pittman shews also that these do not affect the question at issue at all, as the water does not enter the porous beds in Central Australia, but on the flanks of the Dividing Range, where the rainfall is copious. The theories of the pressure of overlying rock and of gas pressure are also utterly repudiated.

The strength of the argument seems to be unquestionably in favour of the older theory of meteoric water, as upheld by Mr. Pittman, and in his reply he appears to have disposed of every feature in Professor Gregory's argument to which weight might have been attached.

2. Queensland.—The publication of the valuable reports issued annually by the Hydraulic Engineer of Queensland has been suspended during the last six years, and complete statistics are only available to 30th June, 1902. At that date the following bores were in existence :—

1. See *J. W. Gregory, F.R.S., D.Sc.*: "The Dead Heart of Australia"; London, John Murray, 1906.

2. *E. F. Pittman, A.R.S.M., Government Geologist of New South Wales*: "Problems of the Artesian Water Supply of Australia, with special reference to Professor Gregory's Theory." (Clarke Memorial Lecture, delivered before the Royal Society of New South Wales, 31st October, 1907).

QUEENSLAND ARTESIAN BORES ON 30th JUNE, 1902.

| Sunk by— | Artesian Flows. | Sub-Artesian Flows. | Pumped Supplies. | In Progress; Abandoned; Uncertain. | Total. |
|---|-----------------|---------------------|------------------|------------------------------------|--------|
| Water Supply Department (trial borings) | 22 | ... | 3 | 24 | 49 |
| Railway Department | 2 | ... | 2 | 13 | 17 |
| Local governing authorities | 10 | ... | 15 | 5 | 30 |
| Private owners | 530 | 9 | 131 | 168 | 838 |
| Total | 564 | 9 | 151 | 210 | 934 |

The depth of 850 of these wells is given, and it appears that there were 229 less than 500 feet deep, 200 from 500 to 1000 feet, 231 from 1000 to 2000 feet, 124 from 2000 to 3000 feet, and 66 over 3000 feet. The deepest well was one known as Bimerah Run No. 3, Whitewood, lying between the Barcoo and Thomson Rivers; this had a depth of 5045 feet, and was stated to yield 70,000 gallons daily. This flow is, of course, a comparatively small one, many wells yielding, when uncontrolled, from one to three million gallons a day. A well at Cunnamulla is stated to have a daily flow, when uncontrolled, of no less than 4,500,000 gallons. The waters of many of the wells have been analysed, and some found suitable for wool-scouring only, others are suitable for watering stock but not for irrigation, owing to the presence of alkali; others again serve for both stock and irrigation, while some, such as those containing sulphuretted hydrogen, are not of any use. Water fit for stock may generally be said to be "safe" for domestic purposes in spite of its slightly mineral taste. The wells yielding the mineral water known as "Helidon Spa," which is much in use in Queensland and New South Wales, are shallow wells from 60 to 200 feet in depth.

It is stated that the total number of artesian wells in Queensland at the end of 1907 was 1081, of which 174 were Government wells. The maximum depth for Government wells is given as 4010 feet, and of private wells as 5045 feet, while the minimum depths were 250 feet and 60 feet respectively. The maximum and minimum temperatures of Government wells were 174° and 70° Fahrenheit, and of private wells 202° and 60° Fahrenheit.

3. **New South Wales.**¹—Artesian boring in New South Wales dates from 1879, when a private bore was put down on the Kallara pastoral holding, between Bourke and Wilcannia. The first Government bore was that at Goonery, on the Bourke-Wanaaring road, completed in 1884. At the middle of 1908, out of 449 known wells in New South Wales, nearly 200 were Government wells, a very much larger proportion than in Queensland.

The distribution of these wells was as follows:—

NEW SOUTH WALES ARTESIAN BORES ON 30th JUNE, 1908.

| Purpose of Bore. | Flowing. | Pumping. | Failure. | Total. |
|--|----------|----------|----------|--------|
| Private | 198 | 34 | 21 | 253 |
| Artesian wells district | 25 | ... | 1 | 26 |
| Water and Drainage Trust district | 11 | ... | ... | 11 |
| Country towns water supply | 2 | ... | ... | 2 |
| Public watering place | 58 | 28 | 17 | 103 |
| Improvement lease | 48 | 2 | 4 | 54 |
| Total | 342 | 64 | 43 | 449 |

1. See Percy Allan, *M. Inst. C.E., M. Am. Soc. C.E., Principal Assistant Engineer for Water Conservation in New South Wales*, in "The Drought Antidote for the North-West." (Lecture delivered before the Sydney University Engineering Society, October 10th, 1906.)

The total depth of these 449 wells is given as 675,495 feet.

Of the wells at the end of 1906, the depth is stated in 390 cases, and it appears that only 18 wells were less than 500 feet deep; while 76 ranged from 500 to 1000 feet; 215 from 1000 to 2000 feet; 64 from 2000 to 3000 feet; and 17 over 3000 feet. As in Queensland, there is a preponderance of wells from 1000 to 2000 feet in depth, but neither the shallow wells under 500 feet, nor the very deep wells over 3000 feet are so numerous in proportion as in the northern State. The two deepest wells in New South Wales are those at Boomi, in County Benarba, with a depth of 4008 feet and a daily outflow of 1,428,640 gallons; and at Dolgelly, in the Parish of Careunga, in County Stapylton, with a depth of 4086 feet, and an outflow of 682,200 gallons per day. The largest outflow is stated to be that at the Munna Munna well, in County Leichhardt, which yields 1,657,230 gallons a day, and has a depth of 2197 feet. The total flow of the bores cannot be given, as many of the private bores have not been gauged, and in other cases the gaugings are not regarded as reliable. Accurate meter-gaugings are, however, being extended throughout the State, and the Department of Water Conservation hopes, therefore, soon to be in a position to give fairly reliable information on this point.

The water of a large number of wells has been analysed by Mr. J. C. H. Mingaye, F.C.S., etc., of the New South Wales Mines Department, and it may be of interest to give a list of those containing, among all the wells examined, the maximum quantities of particular salts in solution:—

NEW SOUTH WALES ARTESIAN BORES—CHEMICAL ANALYSIS.

| Name of Bore. | County. | Salt found in greater quantity than in any other bore. ¹ | Grains per Imperial Gallon. |
|----------------------------|---------------------------|--|-----------------------------|
| Tunderbrine No. 1 | Gowen | Sodium carbonate (Na ₂ CO ₃) | 124.7 |
| Fort Bourke | Gunderbooka | Potassium carbonate (K ₂ CO ₃) | 12.3 |
| Gaffney's | Barrona | Calcium carbonate (Ca CO ₃) | 10.5 |
| Bancanya | Mootwingee | Magnesium carbonate (Mg CO ₃) | 10.7 |
| Cuttaburra | Irrara & Barrona | Sodium chloride (Na Cl) | 349.0 |
| Warratta | Evelyn | Potassium chloride (K Cl) | 22.1 |
| Momba | Fitzgerald and Yungnulgra | Magnesium chloride (Mg Cl ₂) | 28.0 |
| Sandy Creek | Mootwingee | Sodium sulphate (Na ₂ SO ₄) | 28.1 |
| Gilgandra | Ewenmar | Potassium sulphate (K ₂ SO ₄) | 19.3 |
| Wingadee No. 1 | Leichhardt | Iron oxide (Fe ₂ O ₃) and alumina (Al ₂ O ₃) | 1.4 |
| Coonamoona | | Silica (Si O ₂) | 4.5 |
| Momba | Fitzgerald and Yungnulgra | Calcium chloride (Ca Cl ₂) and calcium sulphate (Ca SO ₄) | 22.2 & 12.0 |
| Burrawang No. 2, I.L. 1211 | Cunningham | Total solid matter | 1802.0 |

1. This is, of course, not necessarily the salt found in greatest quantity.

The Zetz Spa, much used as a mineral water in New South Wales, comes from Ballimore, near Dubbo.

It may be said that the cost of artesian wells works out at an average of about 17s. 6d. per lineal foot; it depends, of course, upon the depth to which boring operations have to be extended, and on the accessibility of the bore to a railway station. Contracts have recently been let for boring and the use of six-inch casing at the following rates:—To 1000 feet, 11s. per foot; 1000 to 1500 feet, 12s. 6d.; 1500 to 2000 feet, 13s.; 2000 to 2500 feet, 14s.; 2500 to 3000 feet, 16s.; 3000 to 3500 feet, 19s.; 3500 to 4000 feet, 24s. To these prices must be added the cost of cartage and of finishing off the work.

4. **South Australia.**—The information about artesian wells is very defective. Early in 1908 a list of twenty-five of the principal Government bores was published, of which four were under 1000 feet in depth, twelve from 1000 to 2000 feet, two from 2000 to 3000 feet, and seven over 3000 feet. The deepest flowing well was at Goyder's Lagoon, measuring 4580 feet, and yielding 600,000 gallons per day. The maximum flows, viz., 1,250,000 gallons and 1,000,000 gallons daily, occurred at Coward Springs and Dulkaninna respectively.

Artesian water has also been found outside the basin at Tintinara, on the Adelaide to Melbourne railway, where a well, 253 feet deep, yields 4300 gallons daily, and at Booloonda, where a well, 687 feet in depth, gives 19,200 gallons daily.

5. **Victoria.**—Victoria lies altogether outside the artesian basin, and as water is obtainable in most parts of the State at shallow depths, there has not been much occasion for artesian boring. As early as 1884, however, an artesian well was bored at Sale, which for a number of years gave a supply of about 100,000 gallons per day until, either through corrosion of the casing or by choking up with sand from below, the flow ceased. In 1905 a new bore was, therefore, put down, which at a depth of 277 feet yielded sufficient water to fill Lake Guthridge, a local depression. But as the water was impure and contained too much sulphuretted hydrogen boring operations were continued to 520 feet, when the lowering of the casing shut off the supply of water. A second bore was then put down at some distance from the first, and this, at a depth of 238 feet, yielded fresh and clear water. The supply at present is stated to be about 145,000 gallons per day.

In 1906 eight bores were put down on the Overnewton Estate, Maribyrnong, to depths varying from 147 to 272 feet; small supplies of good and medium water for stock purposes were obtained, but only one of the wells yielded water fit for drinking purposes.

6. **Western Australia.**—Out of twenty-four artesian bores put down by the Mines Department Water Supply Branch to the end of 1906 in the artesian basin east of the Darling Range, fifteen were less than 500 feet in depth; five between 500 and 1000 feet; three between 1000 and 2000 feet; and one only, at Davyhurst, over 2000 feet, viz., 3624 feet.

The number of wells between the Darling Range and the coast in 1906 was stated at forty-two, of which fourteen were less than 500 feet; nine from 500 to 1000 feet; sixteen from 1000 to 2000 feet; two from 2000 to 3000 feet; and one over 3000 feet. The last-named bore, situated at Carnarvon, is 3011 feet in depth, and yields a daily supply of 515,000 gallons. The maximum outflow, 1,167,000 gallons per day, is said to be obtained from a well at Guildford.

At the end of 1907 the total number of bores was 71, of which 40 were Government bores. The total depth bored is given as 44,625 feet in Government and 26,315 feet in private bores. The total cost of State bores was about £52,000, of which amount £7000 was spent in 1907. The total daily flow is stated as 20,929,000 gallons. The maximum and minimum depths of State bores were 3011 feet and 56 feet respectively, and the maximum and minimum temperatures 140° and 60° Fahrenheit.

§ 3. Irrigation Plants.

1. **General.**—Various causes have combined to keep proposals for irrigation works on a large scale before the Parliaments of several of the States for a number of years without any very tangible results, except in the case of Victoria and South Australia. The absence of the example of any country which has constructed such works under similar climatic and labour conditions, the very partial success of some of the smaller works undertaken in Australia, and the abundant supply of artesian water obtained during the last twenty years in parts of the continent most liable to droughts, have all tended to delay the undertaking of any large works.

2. **Victoria.**—(i.) *Classification of Works.* The Water Conservation Works in Victoria naturally divide themselves into those providing mainly a domestic supply, such as the Yan Yean works, controlled by the Melbourne and Metropolitan Board of Works; the Coliban, Broken River, Kerang Lakes, and Mallee Supply works, which, although now administered by the State Rivers and Water Supply Commission, are properly local government works; other works for domestic supply controlled by Water Works Trusts or Municipal Corporations, and irrigation works proper. With the exception of the last named class particulars as to these works will be found in the section "Local Government" of this book.

(ii.) *Works Controlled by the Commission.* With the exception of the First Mildura Irrigation and Water Supply Trust, these works are now all under the control of the

State Rivers and Water Supply Commission, which was created by the Water Act 1905, in force since 1st May, 1906. The works comprise the following:—

- (a) The Goulburn River works (including the Waranga Basin, with a storage capacity of 9500 million cubic feet, and constructed at a cost of £716,003;
- (b) The Loddon River works, with a storage capacity of 610 million cubic feet, constructed at a cost of £156,408;
- (c) The Kow Swamp works, with a storage capacity of 1780 million cubic feet, constructed at a cost of £187,779; and
- (d) Nineteen other irrigation and water supply districts, the capital expenditure on which has been £806,932.

Many of the original irrigation trusts had been badly managed and were in financial difficulties when they were taken over by the Commission, and it became necessary for Government to write off considerable amounts both of capital debt and of arrears of interest, so that the capital cost of the works taken over by the Commission, including works for domestic supply, on 30th June, 1907, stood as follows:—

| | |
|---|----------------|
| (a) Free head works, in respect of which no charge for interest is to be made against any district served by these works... | £1,172,027 |
| (b) Other State works | 1,749,892 |
| (c) Branch distributory channels connected with Long Lake free head works | 10,370 |
| (d) Irrigation and water supply works— | |
| Total advances... | £791,528 |
| Less repaid, £5591; and written-off, £540,404 | 545,995 |
| | <u>245,533</u> |
| Total | £3,177,822 |

In the above statement the amount shewn under (b) is exclusive of £456,700, the cost of the Geelong Water Supply works, which have been placed under the control of the Geelong Municipal Waterworks Trust.

The Commission is charged with the duty of assessing the values of properties served by the various water supply works, and of imposing thereon certain rates. In 1906-7 the gross revenue amounted to £88,847, and the expenditure to £62,329. Deducting from the latter amount £8869 expenditure charged to capital account, the working expenses may be stated as £53,460, and the net revenue as £35,387.

(iii.) *Mildura.* The first settlement of Mildura dates from 1884. After being managed until 1887 by Chaffey Bros., and then until 1895 by Chaffey Bros. Company Limited, it was in that year taken over by the First Mildura Irrigation Trust, and has since then made great progress. Its population, which at the Census of 1891 was 2321, had by September, 1907, increased to 4355. The exports of dried and canned fruit from Victoria, nearly all of which came from Mildura, amounted in 1907 to £190,654, viz.:—Canned fruits, £48,718; dried fruits—raisins, £123,679; other, £18,257. Of these exports £128,762 worth were sent to the other States of the Commonwealth, chiefly New South Wales, Queensland, and Western Australia, while the balance of £61,892, of which raisins accounted for £47,513, was exported oversea.

No precise figures are available as to the capital cost of the works at Mildura, probably the sum was not less than £180,000. The amount due to Government is £58,700, exclusive of £17,729 for accumulations of interest.

(iv.) *Area Irrigated.* The total area of districts served by irrigation plants in 1906-7 is given as 2,702,180 acres, of which 103,070 acres were irrigated. Of the area watered, viz., 160,574 acres, 12,069 acres were under cereals, 41,373 acres under lucerne and other permanent fodder crops, 10,183 acres under sorghum and other annual fodder crops, 59,008 acres under pasture, 35,941 acres (of which 28,640 acres at Mildura) were vineyards, orchards, and gardens, while the balance of 2000 acres was in fallow, etc. The total

waterings at Mildura were 31,970 acres over an actual area of 7,189 acres, giving an average of 4.4 waterings per annum.

(v.) *The Trawool Scheme.* A project has been mentioned of constructing a weir across the Upper Goulburn river at the Trawool Gorge, in the neighbourhood of Seymour. If this scheme should ever be carried out, the weir would have to be about 1700 feet long, and at the deepest part of the river 140 feet high. It is expected that the weir would impound water for about twenty miles upstream, and that it would provide a reservoir of a capacity of 60,000 million cubic feet. About 28,000 acres of gullies and river flats would be permanently submerged. The estimated cost is about £1,500,000. This would make it by far the largest reservoir in existence, the Assouan dam only holding 35,840 million cubic feet, while the capacity of the Waranga basin amounts to 8811 million cubic feet. The Barren Jack reservoir, now in course of construction, in New South Wales, will, with water of a maximum depth of 224 feet, hold 33,613 million cubic feet, but as it is now being built, providing for a depth of 120 feet only, is limited to 7000 million cubic feet.

3. **South Australia.**—(i.) *The Renmark Irrigation Trust.* The Renmark Irrigation Trust was established on similar lines to Mildura, but on a considerably smaller scale. At present the land assessed for the purposes of the trust measures about 3600 acres, and maintains a population of about 1000. The export of Renmark products averages about £35,000 per annum. It is claimed that without irrigation the land would barely feed 500 sheep.

(ii.) *Other Waterworks.* The Bundaleer reservoir consists in a large earth and clay embankment which impounds water in a natural basin away from the main water-courses. Its capacity is stated as 1,319,000 gallons.

The Barossa waterworks have a reservoir wall of concrete seventy-five feet in height. The reservoir has a holding capacity of 993,340,000 gallons.

The largest of the South Australian undertakings is the Beetaloo waterworks, which command the towns of Port Pirie, Moonta, Wallaroo, Kadina, and fifteen others, besides one million acres of country lands. The cast-iron reticulation pipes in connection with Beetaloo are 637 miles in length, and the capital cost of the works was £989,950.

None of the South Australian works, Renmark excepted, are, however, irrigation works properly so called, although they are to some extent used for irrigation purposes.

4. **New South Wales.**—(i.) *Irrigation Trusts.* The first attempts at irrigation, apart from artesian wells, were made by the establishment of the three Irrigation Trusts of Wentworth in 1890, Hay in 1892, and Balranald in 1893. The Wentworth Trust controlled an area of 10,600 acres, but has been dissolved and its powers assumed by Government. The original area under the Hay Trust was 12,847 acres, but in 1896 this was reduced to 3000 acres. The trust was at the same time remodelled through having three Government officials appointed as members. The Balranald Trust controls 1000 acres; it has petitioned Government for dissolution and for the administration of its works to be handed over to the Western Land Board.

(ii.) *Private Irrigation Works.* The most extensive private irrigation works in the State are those at North Yanko, which take their water from Cudgell Creek, a tributary of the Murrumbidgee.

(iii.) *The Barren Jack Scheme.* The weir which will impound the waters at Barren Jack is situated about three miles below the confluence of the Murrumbidgee and Goodradigbee Rivers. The catchment area will be fully 5000 square miles, and it is estimated that if the dam is constructed to a sufficient height to allow of a maximum depth of 120 feet of water the capacity of the basin will be about 7000 million cubic feet. If, however, a larger supply be required it will be possible to raise the weir, so as to allow of a depth of 224 feet of water. The length along the crest of the weir in its ultimate shape will be 784 feet, the thickness at the crest 18 feet, and the maximum thickness at

the base 169½ feet, with a maximum height from the foundation of 240 feet. This would give a depth of water at the face of the dam of 224 feet, equivalent to a holding capacity of the reservoir of 33,613 million gallons, or only 10.8 per cent. less than that of the Assouan dam. The dam itself will contain about 581,000 tons of materials. The distributing channels in connection with this work, as it is at present being carried out, will command an area of about 358,000 acres, of which 195,000 acres is first-class land, but eventually 1,500,000 acres could be irrigated. The dam has been in course of construction for less than two years, but the progress made has been so satisfactory that it is expected that the land will be ready for settlement in 1910. It should be possible, when the complete scheme has been carried out, to settle from 50,000 to 100,000 people on the land to be made available. As the scheme is purely a gravitation scheme, the working expenses are expected to be small, and the water should therefore cost the settlers much less than in places where expensive pumping operations have to be resorted to.

(iv.) *Other Schemes.* Of other projects, the execution of which is probably only a matter of time, may be mentioned :—

- (a) The Wyangala scheme, which would tap the Lachlan below its junction with the Abercrombie River ;
- (b) The Terramungamine scheme, which would draw its water from the Macquarie River, in the neighbourhood of Narromine ; and
- (c) The Bungowannah scheme, which would be connected with the Murray not far from Albury.

5. Conflicting Interests.—The relative rights of the States of New South Wales, Victoria, and South Australia to the waters of the Murray River appeared to be indeterminate. Territorially the south bank of the Murray was the boundary between the two former States, *i.e.*, the region of the river itself, up to the point where it enters South Australia, was wholly within New South Wales.

At the Federal conventions which preceded the establishment of the Commonwealth the South Australian representatives expressed their fear lest too much irrigation on the Murray and Darling might impair the navigability of the latter river, and the result was the insertion of a provision in the Commonwealth Constitution which reads as follows:—

“ *Section 100.*—The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or the residents therein to the reasonable use of the waters of rivers for conservation and irrigation.”

Under this section negotiations have for several years been in progress between the three interested States, and an arrangement was some time ago come to under which, subject to Parliamentary sanction being given to the arrangement in the three States concerned, the navigability of the Darling will be maintained, while at the same time New South Wales and Victoria will be able to construct large irrigation works. This sanction has, however, not been obtained in any of the three States, and there does not appear to be any immediate prospect of a satisfactory settlement.

SECTION XV.

COMMERCE.

§ 1. Introductory.

1. **General.**—The development of the commerce of Australia might be considered from several standpoints—for example, the historical, the legal, or the purely financial—all of which are important.

The importance of the subject demands a reference to the constitutional power of the Commonwealth in respect to commerce and to the various Acts which have been passed in the exercise of that power, since these profoundly affect its trade and commerce.

In setting out the statistics of commerce regard will be had to the significant features of its development, both from the historical and financial point of view.

2. **Constitutional Powers of Commonwealth in regard to Commerce.**—Under the provisions of the Commonwealth Constitution Act [*vide* pp. 47 to 54 of this volume] power to make laws with respect to “trade and commerce with other countries and among the States” is vested in the Commonwealth Parliament. [Chap. I., Part V., sec. 51. (i.), *vide* p. 48.]

The Constitution Act further provides in relation to trade that:—

“On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth.” [Section 86.]

“Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth.” [Section 88.]

“On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive.

“On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise.” [Section 90.]

“Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods.” [Section 91.]

“On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free.” [Section 92. 1st paragraph.]

"The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State." [Section 98.]

"The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof." [Section 99.]

"The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation." [Section 100.]

"There shall be an Interstate Commission, with such powers of adjudication and administration as the Parliament deems necessary, for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder." [Section 101.]

"The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable or unjust to any State; due regard being had to the financial responsibilities incurred by any State in connection with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Interstate Commission." [Section 102.]

"The members of the Interstate Commission—

- (i.) Shall be appointed by the Governor-General in Council;
 - (ii.) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of the Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity;
 - (iii.) Shall receive such remuneration as the Parliament may fix; but such remuneration shall not be diminished during their continuance in office."
- [Section 103.]

"Nothing in this Constitution shall render unlawful any rate for the carriage of goods upon a railway, the property of a State, if such rate is deemed by the Interstate Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States." [Section 104.]

Provisions of a temporary nature and which have now ceased to operate were also made as follows:—

"But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation." [Section 92.]

"Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth; and such duties shall be collected by the Commonwealth.

"But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such

latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties.

"If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth." [Section 95.]

§ 2. Commonwealth Commercial Legislation.

1. **Customs Act 1901 (No. 6 of 1901).**—"An Act relating to the Customs," assented to on the 3rd October, 1901, came into operation by proclamation on the 4th October, 1901. This provided for the establishment of the necessary administrative machinery for all matters pertaining to the customs, and prescribed, *inter alia*, the manner in which customs duties shall be computed and paid. It does not however determine the rates thereof.

During the interval between the inception of the Commonwealth, viz., on 1st January, 1901, and the coming into operation of the Customs Act 1901, the Customs Acts of the several States were administered by the Executive Government of the Commonwealth, under section 86 of the Constitution.

2. **Customs Tariff Act 1902 (No. 14 of 1902).**—The first Commonwealth Customs Tariff imposing uniform rates of customs duty in all the States was introduced in the House of Representatives on the 8th October, 1901. "An Act relating to Duties of Customs," assented to on the 16th September, 1902, made provision that uniform duties of customs specified in the tariff schedule should be imposed from the 8th October, 1901, at four o'clock in the afternoon, reckoned according to the standard time in force in the State of Victoria. From this time onwards trade between the States became free, with, however, the exception, under section 95 of the Constitution Act, of the right of Western Australia to levy duty on the goods from other States. [Repealed by the Customs Tariff Act 1908 (No. 7 of 1908).]

3. **Sea Carriage of Goods Act (No. 14 of 1904).**—"An Act relating to the Sea Carriage of Goods," assented to on the 15th December, 1904, to commence on the 1st January, 1905, provides that—"Where any bill of lading or document contains any clause, covenant or agreement whereby (a) the owner, charterer, master, or agent of any ship or the ship itself, is relieved from the liability for loss or damage to goods arising from the harmful or improper condition of the ship's hold, or any other part of the ship in which goods are carried, or arising from negligence, fault, or failure in the proper loading, stowage, custody, care, or delivery of goods received by them or any of them to be carried in or by the ship; or (b) any obligations of the owner or charterer of any ship to exercise due diligence and to properly man, equip, and supply the ship, to make and keep the ship seaworthy, and to make and keep the ship's hold, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage, and preservation, are in any wise lessened, weakened, or avoided; or (c) the obligations of the master, officers, agents, or servants of any ship to carefully handle and stow goods, and to care for, preserve, and properly deliver them, are in any wise lessened, weakened, or avoided; that clause, covenant, or agreement shall be illegal, null and void, and of no effect."

"In every bill of lading with respect to goods a warranty shall be implied that the ship shall be, at the beginning of the voyage, seaworthy in all respects and properly manned, equipped, and supplied."

"In every bill of lading with respect to goods, unless the contrary intention appears, a clause shall be implied whereby, if the ship is at the beginning of the voyage seaworthy

in all respects and properly manned, equipped, and supplied, neither the ship nor her owner, master, agent, or charterer shall be responsible for damage to or loss of the goods resulting from (a) faults or errors in navigation; or (b) perils of the sea or navigable waters; or (c) acts of God or the King's enemies; or (d) the inherent defect, quality, or vice of the goods; or (e) the insufficiency of package of the goods; or (f) the seizure of the goods under legal process; or (g) any act of omission of the shipper or owner of the goods, his agent, or representative; or (h) saving or attempting to save life or property at sea; or (i) any deviation in saving or attempting to save life or property at sea."

4. Secret Commission Act 1905 (No. 10 of 1905).—"An Act relating to Secret Commissions, Rebates, and Profits," assented to on the 16th November, 1905, provides that—"Any person who, without the full knowledge and consent of the principals directly or indirectly, (a) being an agent of the principal, accepts or obtains, or agrees or offers to accept or obtain, for any person, for himself, or for any person other than the principal; or (b) gives or agrees to give or offers to the agent of a principal, or to any person at the request of an agent of the principal, any gift or consideration as an inducement or reward for any act done or to be done, or any forbearance observed or to be observed, or any favour or disfavour shewn or to be shewn in relation to the principal's affairs or business, or on the principal's behalf, or for obtaining or having obtained, or aiding or having aided to obtain for any person an agency or contract for or with the principal, shall be guilty of an indictable offence."

"Any person who (a) gives to an agent; or (b) being an agent receives or uses, with intent to deceive the principal, any receipt, account, or document in respect of which the principal is interested, or in relation to a dealing, transaction, or matter in which the principal is interested, the receipt, account, or document being false, erroneous, or defective in any material particular, or likely in any way to mislead the principal, shall be guilty of an indictable offence."

"Any agent who, without the full knowledge and consent of the principal, buys from or sells to himself, or any firm of which he is a partner, or any company of which he is a director, manager, officer, or employé, or in which he or any person for him or on his behalf is a shareholder, any goods for or on behalf of his principal, shall be guilty of an indictable offence."

"Whoever aids, abets, counsels, or procures, or is in any way directly or indirectly knowingly concerned in or privy to (a) the commission of any offence against this Act; or (b) the commission outside Australia of any act, in relation to the affairs or business or on behalf of a principal residing in Australia, which, if committed in Australia, would be an offence against this Act, shall be deemed to have committed the offence and be punishable accordingly."

"This Act applies to trade and commerce with other countries and among the States, and to agencies of and contracts with the Commonwealth or any department or officer thereof."

5. Commerce (Trade Descriptions) Act 1905 (No. 16 of 1905).—"An Act relating to Commerce with other Countries," assented to on the 8th December, 1905, and brought into operation by proclamation on the 8th June, 1906, gives power to compel the placing of a proper description on certain prescribed goods, or on packages containing the same, being imports or exports of the Commonwealth. In this Act, unless the contrary intention appears, "trade description" in relation to any goods, means any description, statement, indication, or suggestion, direct or indirect, (a) as to the nature, number, quantity, quality, purity, class, grade, measure, gauge, size, or weight of the goods; or (b) as to the country or place in or at which the goods were made or produced; or (c) as to the manufacturer or producer of the goods or the person by whom they were selected, packed, or in any way prepared for the market; or (d) as to the mode of manufacturing, producing, selecting, packing, or otherwise preparing the goods; or (e) as to the material or ingredients of which the goods are composed, or from which they are derived; or (f)

as to the goods being the subject of an existing patent privilege, or copyright, and includes a customs entry relating to goods; and any mark which, according to the custom of the trade or common repute, is commonly taken to be an indication of any of the above matters, shall be deemed to be a trade description within the meaning of this Act."

" 'False trade description' means a trade description which, by reason of anything contained therein or omitted therefrom, is false or likely to mislead in a material respect as regards the goods to which it is applied, and includes every alteration of a trade description, whether by way of addition, effacement, or otherwise, which makes the description false or likely to mislead in a material respect."

The goods prescribed are:—(a) Articles used for food or drink by man, or used in the manufacture or preparation of articles used for food or drink by man; or (b) medicines or medicinal preparations for internal or external use; or (c) manures; or (d) apparel (including boots and shoes), and the materials from which such apparel is manufactured; or (e) jewellery; or (f) seeds and plants.

6. Australian Industries Preservation Act 1906 (No. 9 of 1906).—"An Act for the Preservation of Australian Industries and for the Repression of Destructive Monopolies," assented to 24th September, 1906, provides that any person or any corporation making or engaging or continuing in any combination "with intent to restrain trade or commerce to the detriment of the public or with intent to destroy or injure by means of unfair competition any Australian industry the preservation of which is advantageous to the Commonwealth, having due regard to the interests of the producers, workers, or consumers," or any person or corporation monopolising or attempting or conspiring to monopolise any part of the trade of the Commonwealth with intent to control, to the detriment of the public, the supply or price of any service, merchandise, or commodity, is guilty of an offence. (Amended, see Act No. 5 of 1908.)

7. Customs Tariff 1906 (No. 14 of 1906).—"An Act relating to Duties of Customs" amends the Customs Tariff of 1902 in relation to the duties on harvesters and agricultural implements and machinery and prescribes the prices to be the maximum prices of Australian harvesters and drills delivered to the purchaser at the railway station or port nearest to the factory where they are made. [Repealed by Customs Tariff Act 1908 (No. 7 of 1908.)]

8. Customs Tariff (South African Preference) 1906 (No. 17 of 1906).—"An Act relating to Preferential Duties of Customs on certain goods the produce or manufacture of the British Colonies or Protectorates in South Africa which are included within the South African Customs Union," assented to 12th October, 1906, to operate from 1st October, 1906, provides for special preferential rates of duty on certain goods imported from and being the produce of any of the Colonies or Protectorates included within the South African Customs Union.

9. Australian Industries Preservation Act 1907 (No. 5 of 1908).—"An Act to amend the Australian Industries Preservation Act 1907," assented to 14th April, 1908, provides additional machinery for procuring evidence of offences against the principal Act.

10. Customs Tariff 1908 (No. 7 of 1908).—"An Act relating to Duties of Customs," assented to 3rd June, 1908, repeals Section 5 of the Customs Tariff 1902 (No. 14 of 1902) and the schedule of that Act and the whole of the Customs Tariff 1906 (No. 14 of 1906) as from 8th August, 1907, at 4 o'clock in the afternoon, reckoned according to the standard time in the State of Victoria,¹ and imposes new rates of Customs Duties from that time. This Act provides preference rates of customs duties on certain "goods the produce or manufacture of the United Kingdom which are shipped in the United Kingdom to Australia and not transhipped, or if transhipped then only if it is proved to the satisfaction of the Collector (of customs) that the goods have not, since they were shipped in the United Kingdom, been subjected to any process of manufacture."

1. "Standard time" is identical in the States of New South Wales, Victoria, Queensland, and Tasmania.

11. **Customs Tariff Amendment 1908 (No. 13 of 1908).**—"An Act to amend the Tariff Act of 1908," assented to 10th June, 1908, provides that where the rate of duty to be paid on goods the produce or manufacture of the United Kingdom is not set out in the Customs Tariff 1908, and where such goods are not expressly declared to be free, the "General Tariff" rates shall apply. This Act also provides that no higher duty shall be payable under the South African Preference Act 1906, than the duty under the General Tariff of the Customs Tariff 1908, and that no duty shall be payable under that Act on any goods which are free of or exempt from duty under the General Tariff of the Customs Tariff 1908. The purpose of this Act is merely to remove possible doubt as to the intention of the original Acts.

§ 3. Method of Recording Imports and Exports.

1. **Value of Imports.**—The recorded value of goods imported from countries beyond the Commonwealth represents the amount on which duty is payable or would be payable if the duty were charged *ad valorem*. The value of goods subject to duty is taken to be 10 per cent. in advance of the fair market value in the principal markets of the country whence the goods were exported, the increase being roughly intended to represent the cost plus insurance, freight, and other charges to the place of landing.

2. **Value of Exports.**—The recorded value of goods exported is taken to represent the value in the principal markets of the Commonwealth in the ordinary commercial acceptance of the term.

3. **Records of Past Years.**—In the years preceding federation each State independently recorded its trade, and in so doing did not distinguish other Australian States from foreign countries. As the aggregation of the records of the several States is, necessarily, the only available means of ascertaining the trade of Australia for comparison with later years, it is unfortunate that past records of values and the direction of imports were not on uniform lines admitting of the preparation of a record for Australia as a whole. On the introduction of the Customs Act 1901, the methods of recording values were made uniform throughout the States, but it was not until September, 1903, that a fundamental defect in the system of recording transhipped goods was remedied. Up to this date goods arriving in any Australian port for transshipment to a port in another Australian State were recorded at the latter port only, where they were ordinarily recorded as from the transshipping State, and not as an import from the oversea country.

In recording exports an analogous defect also existed in most of the States, since goods despatched from one Australian State for transshipment in another State to an oversea country were simply recorded in the former as an export to the transshipping State; thus no proper record of the export as oversea was made. Owing to this defect the oversea trade prior to September, 1903, is understated by an amount which it is impossible to accurately estimate, since it varies with the development of the shipping facilities of the States concerned. To discover the direction of the transhipped trade is not possible. The figures presented in the tables hereinafter are therefore the values as recorded, and must be taken as subject to the defects explained.

4. **Vessels (Ships) Imported and Exported.**—The imports or exports of vessels were not recorded prior to the year 1905. The value of vessels imported during the years 1905, 1906, and 1907 was, respectively, £265,957, £366,300, and £680,700, while the exports for the same years were respectively £79,975, £51,365, and £90,201.

5. **Ships' Stores.**—Prior to 1906 goods shipped in Australian ports on board oversea ships as ships' stores were included in the general exports. From 1906 ships' stores have been specially recorded as such, and omitted from the return of exports. The value of ships' stores during 1906 amounted to £875,966, of which bunker coal represented £575,471, or 65.7 per cent., and during 1907 to £998,897, bunker coal representing £663,724, or 66.45 per cent.

§ 4. Oversea Trade.

1. **Total Oversea Trade.**—The following table shews the total trade of the Commonwealth with oversea countries from the earliest date for which records are available. In consequence of the defects of record, referred to in the preceding section, the results can be only an approximate to the actual figures. The very marked rise and sudden fall in the value of imports during the period 1837 to 1842 were contemporaneous with heavy land speculation and a subsequent severe financial crisis. The great increase of trade in the early fifties is due to the discovery of gold. In the State of Victoria the value of imports from oversea countries increased from £500,000 in 1851 to nearly £11,000,000 in 1853, and to £13,000,000 in 1854; while in New South Wales similar imports rose from £1,390,000 in 1851 to £5,500,000 in 1854, when the total imports into the Commonwealth reached the sum of £34 13s. 10d. per head, and the total trade £56 3s. 10d. per head of the population. The rapid influx of persons anxious to share the good fortunes of these times, however, soon reduced the value of the trade per head, till, in 1858, it had declined to £31 19s. 6d. per head. The period 1867-1872 shews a marked reduction in the value of trade per head. For some years prior to this period New South Wales had experienced a succession of indifferent seasons, and Victoria was suffering from a congested labour market consequent on the decline of alluvial gold-mining in that State. This congestion of the labour market during the years 1862 to 1866 gave rise to the agitation for a protective tariff to provide employment in manufacture, and in April, 1866, the Tariff Act, which expressed the protective policy since adhered to in Victoria, was assented to.

OVERSEA TRADE OF COMMONWEALTH, 1826 to 1907.

| Year. | Recorded Value. | | | Value per Inhabitant.* | | | Percentage of Exports on Imports. |
|-------|-----------------|----------|---------|------------------------|----------|---------|-----------------------------------|
| | Imports. | Exports. | Total. | Imports. | Exports. | Total. | |
| | £1,000. | £1,000. | £1,000. | £ s. d. | £ s. d. | £ s. d. | % |
| 1826 | 435 | 131 | 566 | 8 3 10 | 2 9 4 | 10 13 2 | 30.1 |
| 1827 | 478 | 98 | 576 | 8 13 10 | 1 15 8 | 10 9 6 | 20.5 |
| 1828 | 735 | 122 | 857 | 12 17 0 | 2 2 8 | 14 19 8 | 16.6 |
| 1829 | 846 | 218 | 1,064 | 14 2 0 | 3 12 8 | 17 14 8 | 25.8 |
| 1830 | 697 | 194 | 891 | 10 11 6 | 2 18 11 | 13 10 5 | 27.8 |
| 1831 | 753 | 412 | 1,165 | 10 6 8 | 5 13 0 | 15 19 8 | 54.7 |
| 1832 | 956 | 495 | 1,451 | 11 19 4 | 6 3 11 | 18 3 3 | 51.8 |
| 1833 | 1,036 | 500 | 1,536 | 11 7 8 | 5 9 11 | 16 17 7 | 48.3 |
| 1834 | 1,373 | 756 | 2,129 | 13 9 10 | 7 8 6 | 20 18 4 | 55.1 |
| 1835 | 1,600 | 903 | 2,503 | 14 12 6 | 8 5 1 | 22 17 7 | 56.4 |
| 1836 | 1,659 | 985 | 2,644 | 13 18 4 | 8 5 3 | 22 3 7 | 59.4 |
| 1837 | 1,510 | 967 | 2,477 | 11 12 10 | 7 9 1 | 19 1 11 | 64.0 |
| 1838 | 2,055 | 1,054 | 3,109 | 14 7 3 | 7 7 4 | 21 14 7 | 51.3 |
| 1839 | 2,578 | 1,044 | 3,622 | 16 0 8 | 6 9 11 | 22 10 7 | 40.5 |
| 1840 | 3,615 | 1,513 | 5,128 | 20 1 6 | 8 8 1 | 28 9 7 | 41.9 |
| 1841 | 3,145 | 1,335 | 4,480 | 15 6 0 | 6 10 0 | 21 16 0 | 42.4 |
| 1842 | 1,742 | 1,264 | 3,006 | 7 10 11 | 5 9 7 | 13 0 6 | 72.6 |
| 1843 | 1,926 | 1,281 | 3,207 | 7 16 7 | 5 4 2 | 13 0 9 | 66.5 |
| 1844 | 1,201 | 1,291 | 2,492 | 4 13 4 | 5 0 4 | 9 13 8 | 107.5 |
| 1845 | 1,518 | 1,721 | 3,239 | 5 11 9 | 6 6 8 | 11 18 5 | 113.4 |
| 1846 | 1,995 | 1,794 | 3,789 | 6 19 5 | 6 5 5 | 13 4 10 | 89.9 |
| 1847 | 2,441 | 2,200 | 4,641 | 8 2 3 | 7 6 3 | 15 8 6 | 90.1 |
| 1848 | 2,000 | 2,278 | 4,278 | 6 4 10 | 7 2 2 | 13 7 0 | 113.9 |
| 1849 | 2,451 | 2,359 | 4,810 | 6 18 11 | 6 13 9 | 13 12 8 | 96.2 |
| 1850 | 3,009 | 2,688 | 5,697 | 7 14 8 | 6 18 1 | 14 12 9 | 89.3 |
| 1851 | 2,962 | 2,708 | 5,670 | 7 0 7 | 6 8 7 | 13 9 2 | 91.4 |

1. Reckoned on mean population of the year.

OVERSEA TRADE OF COMMONWEALTH, 1826 TO 1907.—Continued.

| Year. | Recorded Value. | | | Value per Inhabitant. ¹ | | | Percentage of Exports on Imports. |
|-------|-----------------|----------|---------|------------------------------------|----------|----------|-----------------------------------|
| | Imports. | Exports. | Total. | Imports. | Exports. | Total. | |
| | £1,000. | £2,000. | £1,000. | £ s. d. | £ s. d. | £ s. d. | % |
| 1852 | 4,798 | 10,896 | 15,694 | 10 1 9 | 22 18 3 | 33 0 0 | 227.0 |
| 1853 | 14,990 | 14,403 | 29,393 | 26 17 11 | 25 16 10 | 52 14 9 | 96.1 |
| 1854 | 22,478 | 13,928 | 36,406 | 34 13 10 | 21 10 0 | 56 3 10 | 62.0 |
| 1855 | 14,428 | 15,134 | 29,562 | 19 7 11 | 20 6 11 | 39 14 10 | 105.0 |
| 1856 | 16,631 | 16,234 | 32,865 | 19 18 4 | 19 8 9 | 39 7 1 | 97.6 |
| 1857 | 18,872 | 16,127 | 34,999 | 20 9 0 | 17 9 5 | 37 18 5 | 85.5 |
| 1858 | 17,668 | 14,625 | 32,293 | 17 9 11 | 14 9 7 | 31 19 6 | 82.8 |
| 1859 | 20,376 | 17,027 | 37,403 | 18 19 6 | 15 17 1 | 34 16 7 | 83.6 |
| 1860 | 20,536 | 16,081 | 36,617 | 18 6 5 | 14 6 11 | 32 13 4 | 78.3 |
| 1861 | 17,651 | 17,413 | 35,064 | 15 5 2 | 15 1 1 | 30 6 3 | 98.7 |
| 1862 | 20,599 | 18,065 | 38,664 | 17 7 1 | 15 4 5 | 32 11 6 | 87.7 |
| 1863 | 21,248 | 19,336 | 40,584 | 17 4 7 | 15 13 7 | 32 18 2 | 91.0 |
| 1864 | 20,503 | 18,977 | 39,480 | 15 17 4 | 14 13 6 | 30 10 10 | 92.6 |
| 1865 | 20,660 | 19,706 | 40,366 | 15 4 4 | 14 10 4 | 29 14 8 | 95.4 |
| 1866 | 21,311 | 18,972 | 40,283 | 15 0 10 | 13 7 10 | 28 8 8 | 89.0 |
| 1867 | 15,964 | 18,384 | 34,348 | 10 18 1 | 12 11 2 | 23 9 3 | 115.2 |
| 1868 | 18,436 | 21,650 | 40,086 | 12 3 11 | 14 6 6 | 26 10 5 | 117.4 |
| 1869 | 19,910 | 20,066 | 39,976 | 12 14 4 | 12 16 4 | 25 10 8 | 103.8 |
| 1870 | 17,833 | 18,012 | 35,845 | 11 0 2 | 11 2 5 | 22 2 7 | 101.0 |
| 1871 | 17,017 | 21,725 | 38,742 | 10 3 3 | 12 19 6 | 23 2 9 | 127.7 |
| 1872 | 18,833 | 22,518 | 41,351 | 10 18 9 | 13 1 7 | 24 0 4 | 119.6 |
| 1873 | 24,567 | 26,370 | 50,937 | 13 17 10 | 14 18 2 | 28 16 0 | 107.4 |
| 1874 | 24,554 | 25,646 | 50,200 | 13 9 9 | 14 1 8 | 27 11 5 | 104.5 |
| 1875 | 24,939 | 24,978 | 49,917 | 13 6 2 | 13 6 7 | 26 12 9 | 100.1 |
| 1876 | 23,963 | 23,540 | 47,503 | 12 8 7 | 12 4 2 | 24 12 9 | 98.2 |
| 1877 | 25,797 | 23,107 | 48,904 | 12 18 8 | 11 11 8 | 24 10 4 | 89.6 |
| 1878 | 26,181 | 23,773 | 49,954 | 12 14 0 | 11 10 8 | 24 4 8 | 90.8 |
| 1879 | 24,233 | 21,184 | 45,417 | 11 7 10 | 9 19 2 | 21 7 0 | 87.4 |
| 1880 | 22,939 | 27,255 | 50,194 | 10 8 10 | 12 8 1 | 22 16 11 | 118.8 |
| 1881 | 29,067 | 27,528 | 56,595 | 12 16 2 | 12 2 8 | 24 18 10 | 94.7 |
| 1882 | 36,103 | 27,313 | 63,416 | 15 7 7 | 11 12 9 | 27 0 4 | 75.6 |
| 1883 | 35,454 | 30,058 | 65,512 | 14 9 9 | 12 5 8 | 26 15 5 | 84.8 |
| 1884 | 36,988 | 28,708 | 65,696 | 14 9 6 | 11 4 8 | 25 14 2 | 77.6 |
| 1885 | 36,862 | 26,667 | 63,529 | 13 18 2 | 10 1 3 | 23 19 5 | 72.3 |
| 1886 | 34,179 | 21,700 | 55,879 | 12 9 4 | 7 18 4 | 20 7 8 | 63.5 |
| 1887 | 29,572 | 23,421 | 52,993 | 10 8 8 | 8 5 3 | 18 13 11 | 79.2 |
| 1888 | 36,881 | 28,900 | 65,781 | 12 11 7 | 9 17 2 | 22 8 9 | 78.4 |
| 1889 | 37,577 | 29,553 | 67,130 | 12 8 8 | 9 15 7 | 22 4 3 | 78.6 |
| 1890 | 35,168 | 29,321 | 64,489 | 11 6 4 | 9 8 9 | 20 15 1 | 83.4 |
| 1891 | 37,711 | 36,043 | 73,754 | 11 16 0 | 11 5 6 | 23 1 6 | 95.6 |
| 1892 | 30,107 | 33,370 | 63,477 | 9 4 0 | 10 3 10 | 19 7 10 | 110.8 |
| 1893 | 23,765 | 33,225 | 56,990 | 7 2 7 | 9 19 4 | 17 1 11 | 139.8 |
| 1894 | 21,897 | 32,131 | 54,028 | 6 9 0 | 9 9 4 | 15 18 4 | 146.7 |
| 1895 | 23,195 | 33,644 | 56,839 | 6 14 1 | 9 14 6 | 16 8 7 | 145.0 |
| 1896 | 29,658 | 32,964 | 62,622 | 8 8 5 | 9 7 2 | 17 15 7 | 111.1 |
| 1897 | 31,958 | 37,783 | 69,741 | 8 18 3 | 10 10 9 | 19 9 0 | 118.2 |
| 1898 | 31,481 | 40,165 | 71,646 | 8 12 11 | 11 0 7 | 19 13 6 | 127.6 |
| 1899 | 34,330 | 48,599 | 82,929 | 9 6 0 | 13 3 5 | 22 9 5 | 141.6 |
| 1900 | 41,388 | 45,957 | 87,345 | 11 1 3 | 12 5 9 | 23 7 0 | 111.0 |
| 1901 | 42,434 | 49,696 | 92,130 | 11 3 9 | 13 2 1 | 24 5 10 | 117.1 |
| 1902 | 40,676 | 43,915 | 84,591 | 10 10 11 | 11 7 10 | 21 18 9 | 108.0 |
| 1903 | 37,811 | 48,250 | 86,061 | 9 13 10 | 12 7 4 | 22 1 2 | 127.6 |
| 1904 | 37,021 | 57,486 | 94,507 | 9 7 3 | 14 10 9 | 23 18 0 | 155.3 |
| 1905 | 38,347 | 56,841 | 95,188 | 9 10 11 | 14 3 0 | 23 13 11 | 148.2 |
| 1906 | 44,745 | 69,738 | 114,483 | 10 19 0 | 17 1 5 | 28 0 5 | 155.9 |
| 1907 | 51,809 | 72,824 | 124,633 | 12 9 4 | 17 10 6 | 29 19 10 | 140.6 |

1. Reckoned on mean population of the year.

The graphs illustrating the movement of the oversea trade of Australia (See pages 609, 610) shew that periods of depressed trade have been recurrent at more or less regular intervals of from seven to nine years, and measured by population, each succeeding depression since 1855 has carried the trade per head lower than the preceding one, until the lowest point was reached in 1894.

The year 1892 marked the beginning of a period of acute financial stress, culminating in the commercial crisis of 1893. The collapse of these years, by no means confined to Australia, but affecting in varying degree many countries, is plainly reflected in the records of the trade of that period, for the trade for 1894 had fallen to £54,028,227, a decline of no less than 26.75 per cent. in three years. In 1895 there was slight recovery, and a continuous upward movement until 1901, when the trade reached £92,130,183, or £24 5s. 10d. per head. A decline, due to drought, in the exports of agricultural, pastoral, and dairy produce, reduced the trade of 1902 to £84,591,037, but although in the next year there was a further shrinkage in the exports of agricultural produce, the increase in the value of the exports of metals, specie, butter, and wool was so large as to effect an increase in the total trade. From 1902 the increase has been continuous, reaching in 1907 the amount of £124,633,280, equal to £29 19s. 10d. per inhabitant.

2. Ratio between Exports and Imports.—The foregoing table shows the percentage of exports on imports for each year. From this it will be seen that, with few exceptions due to temporary dislocations of trade, prior to 1892 the balance of trade has been on the side of imports, but from 1892 the reverse has been the case, the value of exports having increased by 118.44 per cent. and the imports by 72.07 per cent. The excess of imports in the earlier years represents the introduction of capital in the form of Government loans and for investment in private undertakings, and the excess of exports in the later years represents mainly the interest and profit on the earlier investments, repayment of loans to foreign bondholders, and also freight on trade which is carried mainly by ships of the United Kingdom and foreign countries.

§ 5. Direction of Trade.

1. Countries of Origin of Imports.—In April 1908 the British Board of Trade appointed a Departmental Committee "to consider and report how far any change is desirable in the form in which the Trade Accounts of the United Kingdom are published as regards the countries from which imports are received and to which exports are sent."

In addition to the returns shewing the trade of the United Kingdom with foreign countries according to the country of shipment the Board of Trade have, since 1904, published supplementary returns shewing the trade according to the country of consignment. This action has been endorsed by the committee from whose report the following extracts are taken:—"The evidence generally is undoubtedly to the effect that the imports are best shewn by countries from which they are consigned, and the exports by countries to which they are consigned. Some witnesses have expressed the opinion that it would be useful if the trade returns could be made to indicate the countries in which imported goods were actually produced or manufactured. In the majority of cases the country from which goods are consigned to the United Kingdom is probably the country of their origin or manufacture. It may frequently happen, however, that goods procured by purchase in a particular country from which they are consigned to the United Kingdom have originally been produced or manufactured in some other country, and in these cases, the real interchange of trade is properly shewn in our trade statistics by treating the goods as consigned from the country from which they were procured by the British importer, and not from the country in which they were produced or manufactured. The importer of such goods would indeed, as a rule have no definite knowledge as to their primary origin, since it would not be in the interest of the foreign seller to divulge that information."

From the 1st January, 1905, the Trade and Customs Department, in addition to the usual record of the countries whence goods directly arrived in Australia, has kept a record of the countries of their origin. The following table shews, for the years 1906 and 1907, the value of imports recorded as direct from the principal countries, and also the disposition of the value of imports against the countries where they were produced or manufactured. A similar comparison for the year 1905 will be found in the previous issue of this work.

IMPORTS FROM COUNTRIES OF SHIPMENT AND COUNTRIES OF ORIGIN, 1906-7.

| Country. | Imports according to | | | | | | | |
|--|----------------------|--------------|-------------------|--------------|--------------------|--------------|-------------------|--------------|
| | Country of Shipment. | | | | Country of Origin. | | | |
| | 1906. | | 1907. | | 1906. | | 1907. | |
| | Value. | Per cent. | Value. | Per cent. | Value. | Per cent. | Value. | Per cent. |
| | £ | | £ | £ | | £ | | |
| United Kingdom | 26,575,833 | 59.59 | 31,906,447 | 61.59 | 22,904,344 | 51.19 | 26,843,610 | 51.81 |
| BRITISH POSSESSIONS— | | | | | | | | |
| Canada | 303,751 | 0.68 | 386,170 | 0.75 | 305,497 | 0.68 | 464,283 | 0.90 |
| Ceylon | 643,906 | 1.44 | 725,444 | 1.40 | 620,524 | 1.39 | 729,300 | 1.41 |
| Hong Kong | 230,311 | 0.51 | 280,792 | 0.50 | 6,209 | 0.01 | 5,186 | 0.01 |
| India | 1,703,606 | 3.81 | 1,948,566 | 3.76 | 1,720,343 | 3.85 | 1,976,195 | 3.81 |
| New Zealand | 3,156,489 | 7.06 | 2,585,284 | 4.99 | 2,988,776 | 6.68 | 2,494,662 | 4.81 |
| Straits Settlements | 269,013 | 0.60 | 307,111 | 0.59 | 136,849 | 0.31 | 176,550 | 0.34 |
| Other British Possessions | 444,194 | 0.99 | 488,023 | 0.94 | 691,211 | 1.54 | 660,696 | 1.28 |
| Total British Possessions | 6,751,270 | 15.09 | 6,701,430 | 12.93 | 6,469,409 | 14.46 | 6,506,862 | 12.56 |
| Total British Countries | 33,327,103 | 74.48 | 38,607,877 | 74.52 | 29,373,753 | 65.65 | 33,350,462 | 64.37 |
| FOREIGN COUNTRIES— | | | | | | | | |
| Austria-Hungary | 8,823 | 0.02 | 13,923 | 0.03 | 109,014 | 0.24 | 227,609 | 0.44 |
| Belgium | 909,620 | 2.03 | 1,000,377 | 1.93 | 446,251 | 0.99 | 632,486 | 1.22 |
| China | 58,338 | 0.13 | 81,278 | 0.16 | 271,285 | 0.61 | 355,455 | 0.69 |
| France | 462,622 | 1.03 | 486,550 | 0.94 | 1,473,367 | 3.23 | 1,742,623 | 3.36 |
| Germany | 3,204,844 | 7.16 | 3,551,255 | 6.85 | 3,929,116 | 8.78 | 4,623,136 | 8.92 |
| Japan | 422,552 | 0.94 | 541,286 | 1.05 | 450,893 | 1.01 | 575,045 | 1.11 |
| Netherlands | 151,638 | 0.34 | 131,252 | 0.25 | 228,896 | 0.51 | 277,894 | 0.54 |
| Norway | 307,282 | 0.69 | 333,804 | 0.64 | 407,514 | 0.91 | 524,544 | 1.01 |
| Spain | 21,568 | 0.05 | 14,296 | 0.03 | 104,827 | 0.23 | 116,259 | 0.22 |
| Sweden | 52,306 | 0.12 | 148,968 | 0.29 | 212,229 | 0.45 | 379,041 | 0.73 |
| Switzerland | 27,085 | 0.06 | 38,542 | 0.07 | 474,804 | 1.06 | 631,905 | 1.22 |
| United States | 4,633,553 | 10.36 | 5,869,099 | 11.33 | 5,606,612 | 12.53 | 6,765,182 | 13.06 |
| Other Foreign Countries | 1,157,573 | 2.59 | 990,521 | 1.91 | 1,657,841 | 3.71 | 1,557,892 | 3.01 |
| Total Foreign Countries | 11,417,809 | 25.52 | 13,201,156 | 25.43 | 15,371,159 | 34.35 | 18,458,571 | 35.63 |
| Total Imports from all Countries | 44,744,912 | 100 | 51,809,033 | 100 | 44,744,912 | 100 | 51,809,033 | 100 |

The only country from which the value of direct imports exceeds by any large amount the value of the imports of goods which were manufactured or produced therein, that is to say, the only country which shews a balance of any magnitude as a distributor of the goods of other countries to Australia, is the United Kingdom. The records of our imports therefrom during the year 1907 shew that while the total direct imports from that country amounted to £31,906,447, the value of the manufactures or produce of the United Kingdom itself, imported from all countries whatsoever during the same year, was £26,843,610. From the foregoing figures it appears that goods to the value of at least £5,062,837 were received from other countries through the United Kingdom.

Other countries which shew balances as distributors to Australia, though absolutely of much less amount, are Belgium, Hong Kong, New Zealand, and Straits Settlements. The countries mentioned are, of course, not the only countries through which goods are indirectly imported into Australia, for the direct imports from other countries, notably France and Germany, include considerable values which are not of the produce of those countries. These values, however, are more than balanced by value of French and German goods received through the United Kingdom and other countries.

2. **Direct Imports according to Country of Shipment.**—The following table, shewing the average yearly value of imports from each of the principal countries during each succeeding quinquennial period from 1887 to 1906, and for the year 1907, shews considerable change in direction of imports during the past twenty years. The countries mentioned in this table are those where the goods were shipped or whence they were directly consigned to Australia:—

TRADE WITH VARIOUS COUNTRIES, 1887 to 1907.

IMPORTS (INCLUDING BULLION AND SPECIE).

| Country. | Yearly Average of Quinquennial Periods. | | | | Year 1907. |
|--|---|-------------------|-------------------|-------------------|-------------------|
| | 1887-91. | 1892-6. | 1897-1901. | 1902-6. | |
| | £ | £ | £ | £ | £ |
| United Kingdom ... | 24,818,787 | 18,241,366 | 22,794,700 | 23,163,660 | 31,906,447 |
| British Possessions— | | | | | |
| Canada ... | 95,592 | 89,861 | 230,459 | 291,253 | 386,170 |
| Cape Colony ... | 3,090 | 11,364 | 3,858 | 7,105 | 15,602 |
| Ceylon ... | 124,057 | 239,774 | 410,057 | 603,660 | 725,444 |
| Fiji ... | 170,100 | 92,125 | 104,459 | 79,820 | 98,002 |
| Hong Kong ... | 769,699 | 460,883 | 313,578 | 303,322 | 260,792 |
| India ... | 745,070 | 606,181 | 914,859 | 1,148,895 | 1,948,566 |
| Mauritius ... | 483,283 | 178,074 | 175,966 | 104,911 | 43,677 |
| Natal ... | 10,893 | 4,655 | 114 | 2,429 | 7,304 |
| New Zealand ... | 1,826,537 | 1,100,533 | 1,541,128 | 2,479,298 | 2,585,264 |
| Papua ... | 12,166 | 16,623 | 52,416 | 67,987 | 64,899 |
| Straits Settlements ... | 126,691 | 138,055 | 281,022 | 178,658 | 307,111 |
| Other British Possessions | 22,605 | 15,718 | 34,247 | 136,443 | 258,599 |
| Total British Possessions ... | 4,389,783 | 2,953,846 | 4,062,163 | 5,403,781 | 6,701,430 |
| Total British Countries ... | 29,208,570 | 21,195,212 | 26,856,863 | 28,567,441 | 38,607,877 |
| Foreign Countries— | | | | | |
| Argentine Republic ... | 336 | 101 | 3,264 | 229,872 | 30 |
| Belgium ... | 227,995 | 274,559 | 394,094 | 559,880 | 1,000,377 |
| Chile and Peru ... | 19,419 | 2,511 | 32,128 | 16,112 | 20,768 |
| China ... | 800,454 | 327,120 | 262,195 | 135,219 | 81,278 |
| France ... | 360,000 | 201,284 | 476,756 | 465,330 | 486,550 |
| Germany ... | 1,286,054 | 1,107,496 | 2,254,746 | 2,703,806 | 3,551,255 |
| Hawaiian Islands, New Britain, New Caledonia, New Hebrides, and South Sea Islands ... | 109,862 | 78,286 | 150,510 | 140,294 | 221,172 |
| Italy ... | 31,650 | 67,672 | 137,852 | 168,221 | 245,340 |
| Japan ... | 39,787 | 63,195 | 225,086 | 330,388 | 541,286 |
| Java ... | 424,173 | 464,351 | 461,748 | 510,689 | 222,230 |
| Netherlands ... | 19,940 | 12,125 | 36,919 | 101,531 | 131,252 |
| Norway ... | 354,924 | 154,277 | 234,024 | 303,446 | 333,804 |
| Philippine Islands ... | 13,350 | 15,869 | 69,385 | 70,669 | 95,582 |
| Sweden ... | 167,178 | 21,872 | 97,189 | 69,828 | 148,968 |
| United States of America | 2,268,620 | 1,682,092 | 4,355,724 | 5,014,408 | 5,869,099 |
| Other Foreign Countries | 49,669 | 56,545 | 219,717 | 232,847 | 252,165 |
| Total Foreign Countries ... | 6,173,411 | 4,529,355 | 9,461,337 | 11,152,540 | 13,201,156 |
| Total ... | 35,381,981 | 25,724,567 | 36,318,200 | 39,719,981 | 51,809,033 |

Expressing each item as percentage on the total of the imports, the following results are obtained, viz.:—

**IMPORTS.—PERCENTAGES OF THE IMPORTS FROM EACH COUNTRY ON THE
TOTAL IMPORTS, 1887 to 1907.**

| Country. | 1887-91. | 1892-6. | 1897-1901. | 1902-6. | 1907. |
|---|-----------|-----------|------------|-----------|-----------|
| | per cent. | per cent. | per cent. | per cent. | per cent. |
| United Kingdom | 70.14 | 70.92 | 62.77 | 58.30 | 61.59 |
| BRITISH POSSESSIONS— | | | | | |
| Canada | 0.27 | 0.35 | 0.64 | 0.73 | 0.75 |
| Cape Colony | 0.01 | 0.04 | 0.01 | 0.02 | 0.03 |
| Ceylon | 0.35 | 0.93 | 1.13 | 1.52 | 1.40 |
| Fiji | 0.48 | 0.36 | 0.29 | 0.20 | 0.19 |
| Hong Kong | 2.18 | 1.79 | 0.86 | 0.76 | 0.50 |
| India | 2.11 | 2.36 | 2.52 | 2.89 | 3.76 |
| Mauritius | 1.37 | 0.69 | 0.49 | 0.27 | 0.08 |
| Natal | 0.03 | 0.02 | ... | 0.01 | 0.01 |
| New Zealand | 5.16 | 4.28 | 4.24 | 6.24 | 4.99 |
| Papua | 0.03 | 0.06 | 0.14 | 0.17 | 0.13 |
| Straits Settlements... .. | 0.36 | 0.54 | 0.77 | 0.45 | 0.59 |
| Other British Possessions | 0.06 | 0.06 | 0.09 | 0.34 | 0.50 |
| Total British Possessions | 12.41 | 11.48 | 11.18 | 13.60 | 12.93 |
| Total British Countries | 82.55 | 82.40 | 73.95 | 71.90 | 74.52 |
| FOREIGN COUNTRIES— | | | | | |
| Argentine Republic... .. | ... | ... | 0.01 | 0.58 | ... |
| Belgium | 0.64 | 1.07 | 1.09 | 1.41 | 1.93 |
| Chile and Peru | 0.06 | 0.01 | 0.09 | 0.04 | 0.04 |
| China | 2.26 | 1.27 | 0.72 | 0.34 | 0.16 |
| France | 1.02 | 0.78 | 1.31 | 1.17 | 0.94 |
| Germany | 3.63 | 4.31 | 6.21 | 6.81 | 6.85 |
| Hawaiian Islands, New Britain, New Caledonia, New Hebrides and South Sea Islands | 0.31 | 0.30 | 0.41 | 0.36 | 0.43 |
| Italy | 0.09 | 0.26 | 0.38 | 0.42 | 0.47 |
| Japan | 0.11 | 0.25 | 0.62 | 0.96 | 1.05 |
| Java | 1.20 | 1.80 | 1.27 | 1.29 | 0.43 |
| Netherlands | 0.06 | 0.05 | 0.10 | 0.26 | 0.25 |
| Norway | 1.01 | 0.60 | 0.78 | 0.76 | 0.64 |
| Philippine Islands | 0.04 | 0.06 | 0.19 | 0.18 | 0.18 |
| Sweden | 0.47 | 0.08 | 0.27 | 0.18 | 0.29 |
| United States of America | 6.41 | 6.54 | 12.00 | 12.62 | 11.33 |
| Other Foreign Countries | 0.14 | 0.22 | 0.60 | 0.72 | 0.49 |
| Total Foreign Countries... .. | 17.45 | 17.60 | 26.05 | 28.10 | 25.48 |
| Total | 100 | 100 | 100 | 100 | 100 |

3. Imports Shipped from the United Kingdom.—The foregoing table shews that while the value of direct imports from the United Kingdom during 1907 is above the yearly average of the period under review, the proportion to total imports has diminished, having fallen from 70.14 per cent. during the years 1887-91 to 61.59 per cent. in 1907. It will be observed, however, that the percentage proportion for 1907 is an advance on that of the immediately preceding quinquennium. The apparent diversion of Australian trade from Great Britain is more fully dealt with hereinafter, viz., in Section 11 of

this chapter. The values of the principal imports from the United Kingdom during the year 1907 are as follows:—

Ale and beer, £361,368. Apparel and textiles:—apparel, £3,533,300; textiles, £8,868,575; arms, ammunition and explosives, £489,675; books and periodicals, £431,884; brushware, £118,589; earthenware, etc., £173,604; clocks and watches, £128,926; cocoa and chocolate, £213,078; confectionery, £122,373; cordage, metal, £95,277; cordage, other, £122,811; cutlery, £137,800; drugs and chemicals:—alkalies (soda), £81,591; fertilisers, £100,393; medicines, £161,893; other drugs and chemicals, £555,506; electrical materials, £246,455; fancy goods, £199,070; fish, fresh and preserved, £169,808; furniture, £78,379; glass and glassware, £128,438; indiarubber manufactures, £317,041; instruments, musical, £87,160; instruments, scientific, etc., £232,364; iron and steel:—pig, £155,803; bar, hoop, ingot, etc., £529,291; scrap, £44,883; girders, beams, etc., £64,675; plate and sheet, galvanised, £1,279,278; not galvanised, £179,113; pipes and tubes, £374,905; rails, fishplates, etc., £563,468; tinned plates, plain, £247,290; wire, £61,739; wire netting, £400,112; jewellery and precious stones, £427,788; leather and leather manufactures, £305,386; machines and machinery, £1,741,527; metals, manufactures of, £1,613,725; milk, preserved, £103,769; oils (not essential), £174,341; paints and colours, £301,070; paper, £649,442; pickles, sauces, etc., £105,669; plated-ware, £189,127; soap, £61,457; specie, £396,655; spirits, £810,989; stationery, £261,097; tobacco, £185,398; tools of trade, £234,341; varnishes, £66,701; vehicles:—bicycles, etc., £177,724; motors, £190,442; other vehicles, £122,058; vessels (ships), £665,760; yarns, £137,507.

4. Imports Shipped from British Possessions.—The growth of the value of imports from other British possessions during the past twenty years has been such as to increase the proportion to total imports from 12.41 per cent. in the years 1887-91 to 12.93 per cent. in 1907, the actual values being respectively £4,389,783 and £6,701,430. Of the total imports from British possessions during 1907, 38.58 per cent. were from New Zealand, 29.07 per cent. from India, and 10.83 per cent. from Ceylon.

5. Principal Imports from British Possessions, 1907.—These are as follows:—

(i.) *Canada.* Apparel and textiles, £26,433; boots and shoes, £7773; drugs and chemicals, £21,071; fish, £36,517; agricultural implements and machinery, £91,096; other machines and machinery, £47,647; paper, £41,787; timber, £28,722; bicycles and other vehicles, £13,632.

The imports from Canada include manufactures of the United States to the value of about £95,000, the largest items being machinery and medicines, while on the other hand Canadian produce—paper, £60,000, and implements and machinery, £60,000—is received into Australia from other countries, mainly from the United Kingdom and from the United States.

(ii.) *Ceylon.* Coffee and chicory, £4030; nuts, £18,220; tea, £672,801. The large increase in the imports from Ceylon—from £124,057 during the years 1887-91, to £725,444 in 1907—is due to the displacement of China teas in the Australian markets by those of India and Ceylon. Of the total imports of tea during the year 1907, 58.76 per cent. was the produce of Ceylon.

(iii.) *Fiji.* Bananas, £51,402; copra, £8081; sugar, £30,310.

(iv.) *Hong Kong.* Apparel and textiles, £22,150; fish, preserved, £9736; rice, £62,417; oils, £24,379; tea, £52,508. The imports from Hong Kong are mainly the produce of China.

(v.) *India.* Bags and sacks, £1,089,433; canvas, £206,969; carpets, mats, etc., £11,410; coffee and chicory, £15,650; cotton, raw, £20,173; rice, £22,464; shellac, £19,324; manures, £24,041; oils, £56,980; skins and hides, £23,934; spices, £6416; tea, £323,475; wax, paraffin, £7757.

(vi.) *Mauritius.* Sugar, £43,660.

(vii.) *Natal.* Coal, £3180; maize, £2162.

(viii.) *New Zealand.* Apparel and textiles, £18,102; horses, £22,953; sheep, £39,259; military stores, £21,445; coal, £4590; copra, £13,719; fibre, £109,004; fish, £33,292; gold, bullion and ore, £1,406,516; grain—barley, £17,798; hops, £11,930; implements and machinery (agricultural) £5164; machines and machinery, £21,098; meats, £24,900; seeds, £18,635; ships, £20,000; skins and hides, £237,702; timber, £397,699; wool, £28,187.

(ix.) *Straits Settlements.* Rice, £44,828. Oils, fats, and waxes:—Kerosene, £33,407; paraffin wax, £9779; other oils, etc., £15,982—spices, £38,803; tapioca, £58,053; wood and wicker manufactures, £11,248. The rice imported from the Straits Settlements is largely the produce of Burma, and the oils of Sumatra.

6. Imports from Foreign Countries.—The imports from foreign countries during the year 1907 represented 25.48 per cent. of the total imports as compared with 17.45 per cent. during the years 1887-91. Compared, however, with the average of the past ten years, the proportion during the year 1907 shews a slight decline.

7. Principal Imports from Foreign Countries.—The details are as follows:—

(i.) *Argentine Republic.* The imports from the Argentine Republic are almost entirely of grain and fodder, and were abnormally large in the years 1902 and 1903 in consequence of the failure of crops in Australia in these years.

(ii.) *Belgium.* Apparel, £35,098; textiles, £51,820; candles, £10,119; drugs, chemicals, and fertilisers, £46,540; glass and glassware, £114,391—iron and steel:—Partly manufactured, £80,998; girders, beams, etc., £11,604; plate and sheet, £49,199; railway iron, £28,990; wire, £39,526; wire netting, £55,253—jewellery, £35,169; leather, £10,820; machines and machinery, £45,575; matches and vestas, £36,711; metal manufactures, £52,985; motors, £22,734; paper, £46,944; wine, £41,180; zinc manufactures, £27,191.

A large proportion of the iron, steel and metal manufactures, and of the manures from Belgium, is of German origin. The motors are almost entirely of French manufacture.

(iii.) *Chile.* Soda nitrate, £20,768.

(iv.) *China.* Apparel and textiles, £10,457; rice, £5589; tea, £54,336.

The decline of the value of imports from China during the past twenty years is due to the loss of the tea trade, which now draws its supplies mainly from India and Ceylon.

(v.) *France.* Apparel and textiles, £70,072; corks, £22,435; drugs and chemicals, £162,486; fruits, £8097; leather, £9399; spirits, £45,875; tiles, £14,892; cigars and cigarettes, £9064; wine, £23,105.

The value of the direct imports recorded from France is much below the value of imports of goods of French origin. The most important imports of French origin are—apparel and textiles, £889,545; cream of tartar, £113,085; leather, £24,177; pipes, smoking, £62,759; spirits, £176,748; wines, £94,430; vehicles, motors, £59,945.

(vi.) *Germany.* Ale and beer, £43,133; apparel and textiles, £455,962; arms, ammunition, and explosives, £54,346; brushware, £23,633; cement, £23,208; chinaware, etc., £101,874; cocoa and chocolate, £23,361; drugs and chemicals: calcium carbide, £79,574; fertilisers, £21,971; other drugs, etc., £121,327; furniture, £66,510; glass and glassware, £100,337; hops, £12,416; indiarubber manufactures, £42,711; metals and manufactures of metals:—metals unmanufactured, £23,563; iron and steel—bar, ingot, etc., £50,596; plate and sheet, £39,800; pipes and tubes, £30,702; railway iron, £25,192; tools of trade, £19,867; wire, £320,238; wire netting, £122,355; machines and machinery, £214,908; lamps and lampware, £43,049; other manufactures of metals, £231,009—musical instruments, £281,904; jewellery, £42,933; leather and leather manufactures (excluding boots and shoes), £37,735; matches and vestas, £27,549; milk, preserved, £30,011; paper, £240,951; spirits, £59,709; stationery, £55,222; tobacco, £33,173.

The imports from Germany, as stated in the foregoing list, include considerable amounts of the produce and manufacture of other countries, but on the other hand still

larger amounts of German goods are received into the Commonwealth from other countries.

(vii.) *Italy.* Apparel and textiles, £52,342; fruits, £35,502; matches and vestas, £33,472; marble, £18,158; nuts, £14,349; sulphur, £10,407.

(viii.) *Japan.* Apparel and textiles, £275,995; bags, baskets, etc., £19,659; china-ware and earthenware, £11,264; fancy goods, £9688; fertilisers (superphosphates), £11,123; furniture, £13,212; perfumery, £10,630; rice, £25,597; oils and waxes, £26,536; sulphur, £51,418; timber, £33,971.

(ix.) *Java.* Cotton, raw, £9828; hats and caps, £10,208; rice, £59,694; kapok, £80,498; tea, £43,696.

(x.) *Netherlands.* Apparel and textiles, £12,938; cocoa and chocolate, £21,567; cameos and precious stones, £7774; spirits, £43,212. The value of the imports of Netherlands manufacture from all countries of cocoa and chocolate amounted to £55,306, and of spirits to £96,536.

(xi.) *Norway.* Fish, preserved, £5173; milk, preserved, £13,642; timber, £292,938. The value of the total imports from all countries of preserved milk of Norwegian origin amounted to £133,054, and of preserved fish, to £23,172.

(xii.) *Philippine Islands.* Flax and hemp, £65,796; cigars, £27,502.

(xiii.) *Sweden.* Calcium carbide, £20,788; machines and machinery, £15,196; matches and vestas, £8526; paper, £12,463; timber, £84,071. The foregoing figures relate to direct imports, which represent only 39.30 per cent. of the total value of imports of the produce of that country imported during 1907. The principal articles of Swedish production, imported directly and indirectly, were:—Calcium carbide, £58,833; cream separators, £82,902; electrical machinery and appliances, £54,527; matches and vestas, £29,530; lamps and lampware, £8443; paper, £32,319; timber, £87,427.

(xiv.) *Switzerland.* Apparel and textiles, £23,471; milk, £2444; watches, £10,197. The value of imports recorded as direct from Switzerland amounts to only 5.70 per cent. of the value of the total imports of the produce of that country. The principal articles of Swiss production imported were:—Apparel and textiles, £538,748; cocoa and chocolate, £27,969; milk, £20,796; cigars, £12,827; watches, £60,082.

(xv.) *United States of America.* Apparel and textiles:—Boots and shoes, £44,542; other apparel, £94,477; textiles, £166,685—ammunition and explosives, £63,969; barley, £27,267; cameras, magic lanterns, phonographs, etc., £77,704; clocks and watches, £64,119; fish, £96,083; furniture, £78,590; glass and glassware, £46,633; glucose, £28,903; indiarubber manufactures, £31,454; leather, £90,706; meats, £41,031; medicines, £49,136; metal manufactures:—iron and steel: bars, ingots, etc., £42,236; girders, beams, etc., £12,884; pipes and tubes, £66,225; plate and sheet, £88,047; tools of trade, £216,335; wire, £172,500; machines and machinery, agricultural, £239,941; other machines and machinery, £725,450; other metal manufactures, £322,437; musical instruments, £40,005; oils, fats and waxes:—kerosene, £422,437; lubricating oils and greases, £123,461; naphtha, £25,165; paraffin wax, £40,524; turpentine, £81,628; paper, £222,277; resin, £72,340; soap, £37,144; stationery, £46,217; timber, £719,619; tobacco, cigars, etc., £461,799; wood manufactures, £87,025; vehicles, bicycles and motors, £113,373.

In addition to the direct imports from the United States, which include Canadian goods to the value of £74,000, United States goods to the value of nearly £1,000,000 were received through other countries. The greater part of this indirect trade from the United States is received through the United Kingdom, and the principal articles thus received are apparel and textiles, boots and shoes, leather, machines and machinery, timber, and tobacco.

8. *Direction of Exports.*—The following table shows the average yearly value of exports to principal countries during each quinquennial period from 1887 to 1906 and for the year 1907. As in the case of the import trade, considerable alteration in the direction of exports is evident. The largest increases in exports to British possessions are shewn to the various South African colonies, due to exports of agricultural and pastoral

produce and timber, and to India and Ceylon, mainly due to exports of gold, and in some recent years also of timber, chiefly railway sleepers. The large increases in the case of Belgium, Germany, and France are more apparent than real, and are mainly due to the increase in local sales of wool, skins, etc., and the resulting direct export to the countries mentioned, while formerly a much larger proportion of wool, etc., was sent to the United Kingdom for sale, and ultimately found its way from there to the Continent:—

TRADE WITH VARIOUS COUNTRIES, 1887 to 1907.

EXPORTS (INCLUDING BULLION AND SPECIE).

| Country. | Yearly Average of Quinquennial Periods. | | | | Year. |
|--|---|-------------------|-------------------|-------------------|-------------------|
| | 1887-91. | 1892-6. | 1897-1901. | 1902-6. | 1907. |
| | £ | £ | £ | £ | £ |
| United Kingdom ... | 22,003,741 | 23,030,779 | 25,337,456 | 25,461,689 | 33,975,579 |
| British Possessions— | | | | | |
| Canada ... | 503 | 12,793 | 77,627 | 172,757 | 124,698 |
| Cape Colony ... | 84,786 | 80,515 | 1,840,961 | 2,116,733 | 1,293,846 |
| Ceylon ... | 87,404 | 434,081 | 1,188,136 | 4,249,831 | 3,962,420 |
| Fiji ... | 105,267 | 121,771 | 173,080 | 246,671 | 318,787 |
| Hong Kong ... | 415,885 | 489,987 | 375,559 | 579,829 | 859,946 |
| India ... | 735,701 | 404,986 | 1,220,179 | 3,336,387 | 2,494,414 |
| Mauritius ... | 105,764 | 54,890 | 36,992 | 52,075 | 23,678 |
| Natal ... | 81,498 | 100,756 | 672,114 | 1,062,293 | 779,224 |
| New Zealand ... | 748,444 | 987,718 | 1,131,067 | 1,725,234 | 2,565,021 |
| Papua ... | 12,677 | 17,682 | 46,150 | 46,744 | 53,202 |
| Straits Settlements ... | 107,523 | 105,040 | 103,742 | 209,612 | 559,402 |
| Other British Possessions ... | 6,770 | 10,128 | 30,438 | 77,961 | 88,035 |
| Total British Possessions | 2,492,222 | 2,820,347 | 6,896,045 | 13,876,127 | 13,122,673 |
| Total British Countries ... | 24,495,963 | 25,851,126 | 32,233,501 | 39,337,816 | 47,098,252 |
| Foreign Countries— | | | | | |
| Argentine Republic ... | ... | 195 | 20,938 | 30,485 | 17,479 |
| Belgium ... | 1,341,908 | 1,422,378 | 1,488,785 | 2,695,512 | 5,716,069 |
| Chile and Peru ... | 116,931 | 155,666 | 239,390 | 473,649 | 816,998 |
| China ... | 43,884 | 23,778 | 208,601 | 242,580 | 416,441 |
| France ... | 663,672 | 2,064,639 | 2,641,244 | 4,190,591 | 8,148,980 |
| Germany ... | 559,697 | 1,580,692 | 2,128,596 | 3,406,633 | 5,140,380 |
| Hawaiian Is., New Britain, New Caledonia, New He- brides and South Sea Is. | 275,892 | 227,754 | 349,922 | 350,796 | 400,235 |
| Italy ... | 16,136 | 44,954 | 177,742 | 156,913 | 187,621 |
| Japan ... | 8,950 | 48,232 | 138,686 | 580,670 | 706,279 |
| Java ... | 57,921 | 70,582 | 125,285 | 157,559 | 274,910 |
| Netherlands ... | 18,013 | 45,008 | 69,634 | 226,958 | 332,276 |
| Norway ... | 6 | 971 | 105 | 14 | 22,009 |
| Philippine Islands ... | 117,471 | 24,664 | 150,999 | 331,047 | 570,528 |
| Spain ... | 10,692 | 7,047 | 12,835 | 61,300 | 2,510 |
| Sweden ... | 4 | 1,433 | 1,485 | 3,915 | 1,286 |
| United States of America ... | 1,642,587 | 1,263,128 | 3,941,509 | 2,591,428 | 2,405,401 |
| Other Foreign Countries ... | 77,826 | 234,656 | 510,600 | 408,116 | 565,593 |
| Total Foreign Countries | 4,951,590 | 7,215,777 | 12,206,356 | 15,908,166 | 25,725,995 |
| Total ... | 29,447,553 | 33,066,903 | 44,439,857 | 55,245,982 | 72,824,247 |

If each item be expressed as a percentage on the total export, the results will be as follows:—

EXPORTS.—PERCENTAGES OF THE EXPORT TO EACH COUNTRY ON THE TOTAL EXPORTS, 1887 to 1907.

| Country. | 1887-91. | 1892-6. | 1897-1901. | 1902-6. | 1907. |
|--|-----------|-----------|------------|-----------|-----------|
| | per cent. | per cent. | per cent. | per cent. | per cent. |
| United Kingdom ... | 74.74 | 69.65 | 57.01 | 46.09 | 46.65 |
| British Possessions— | | | | | |
| Canada ... | ... | 0.04 | 0.18 | 0.32 | 0.17 |
| Cape Colony ... | 0.29 | 0.24 | 4.14 | 3.83 | 1.78 |
| Ceylon ... | 0.30 | 1.31 | 2.67 | 7.69 | 5.44 |
| Fiji ... | 0.36 | 0.37 | 0.39 | 0.45 | 0.44 |
| Hong Kong ... | 1.41 | 1.48 | 0.85 | 1.05 | 1.18 |
| India ... | 2.50 | 1.23 | 2.75 | 6.04 | 3.43 |
| Mauritius ... | 0.36 | 0.17 | 0.08 | 0.09 | 0.03 |
| Natal ... | 0.28 | 0.30 | 1.51 | 1.92 | 1.07 |
| New Zealand ... | 2.54 | 2.99 | 2.55 | 3.12 | 3.52 |
| Papua ... | 0.04 | 0.05 | 0.10 | 0.08 | 0.07 |
| Straits Settlements ... | 0.36 | 0.32 | 0.23 | 0.38 | 0.77 |
| Other British Possessions ... | 0.02 | 0.03 | 0.07 | 0.14 | 0.12 |
| Total British Possessions | 8.46 | 8.53 | 15.52 | 25.11 | 18.02 |
| Total British Countries ... | 83.20 | 78.18 | 72.53 | 71.20 | 64.67 |
| Foreign Countries— | | | | | |
| Argentine Republic ... | ... | ... | 0.05 | 0.06 | 0.02 |
| Belgium ... | 4.58 | 4.30 | 3.35 | 4.88 | 7.85 |
| Chile and Peru ... | 0.39 | 0.47 | 0.54 | 0.86 | 1.12 |
| China ... | 0.15 | 0.07 | 0.47 | 0.44 | 0.57 |
| France ... | 2.25 | 6.24 | 5.94 | 7.59 | 11.19 |
| Germany ... | 1.90 | 4.78 | 4.79 | 6.17 | 7.06 |
| Hawaiian Is., New Britain, New Caledonia, New He- brides and South Sea Is. | 0.93 | 0.69 | 0.79 | 0.63 | 0.55 |
| Italy ... | 0.05 | 0.14 | 0.40 | 0.28 | 0.26 |
| Japan ... | 0.03 | 0.15 | 0.31 | 1.05 | 0.97 |
| Java ... | 0.19 | 0.21 | 0.28 | 0.28 | 0.38 |
| Netherlands ... | 0.06 | 0.14 | 0.16 | 0.41 | 0.46 |
| Norway ... | ... | ... | ... | ... | 0.03 |
| Philippine Islands ... | 0.40 | 0.07 | 0.34 | 0.60 | 0.79 |
| Spain ... | 0.03 | 0.02 | 0.03 | 0.11 | ... |
| Sweden ... | ... | 0.01 | ... | 0.01 | ... |
| United States of America ... | 5.58 | 3.82 | 8.87 | 4.69 | 3.30 |
| Other Foreign Countries ... | 0.26 | 0.71 | 1.15 | 0.74 | 0.78 |
| Total Foreign Countries... | 16.80 | 21.82 | 27.47 | 28.80 | 35.33 |
| Total ... | 100 | 100 | 100 | 100 | 100 |

9. Exports to the United Kingdom.—Notwithstanding an increase of over 50 per cent. (54.41) in the actual value of exports to the United Kingdom during the year 1907 as compared with the yearly average of the period 1887-91, the proportion of the total exports despatched to the United Kingdom has fallen from 74.74 per cent. in the earlier period to 46.65 per cent. in the year 1907. This decrease is, to some extent, undoubtedly due to the fact that wool and other commodities which were formerly despatched to the

United Kingdom, and distributed from that centre, are now shipped direct to continental ports.

The principal exports to the United Kingdom during the year 1907 were as follows:—Butter, £2,538,656; fruit, including pulp, £223,374; grain:—wheat, £3,521,827; flour, £62,952; hair, £23,558; jewellery and precious stones, £135,938; leather, £381,245; meats, frozen—beef, £37,903; mutton and lamb, £1,141,718; rabbits and hares, £470,136; other frozen meat, £19,416; potted meat, £38,181; preserved meat, £92,958. minerals and metals—copper, ingots, £775,202; in matte, £1,137,197; ore, £132,061; gold—bullion, £865,268; in matte, £1,841,326; silver—bullion, £70,705; in matte, £530,018; ore, £18,744; lead—pig, £259,645; in matte, £646,245; ores, n.e.i., £163,374; spelter and concentrates, £75,443; tin, ingots and ore, £1,011,131; oil, cocoanut, £141,081; pearlshell, £253,770; skins, hides, £72,693; rabbit and hare, £281,938; sheep, £304,802; other skins, £183,980; specie, gold, £1,476,669; tallow, £923,382; timber, £92,806; wine, £91,744; wool—greasy, £9,853,520; scoured, £3,080,280.

10. Exports to British Possessions.—The largest relative increase in the value of exports during the period under review has been in the direction of British Possessions. The increase of the value of exports to these countries, 426 per cent., has raised the proportion of total exports to British Possessions from 8.46 per cent., during 1887-91 to 18.02 per cent. in 1907. The countries mostly concerned in this great increase—which is in a large measure due to heavy shipments of gold—are Cape Colony, Ceylon, India, and New Zealand.

11. Principal Exports to British Possessions, 1907.—These are as follows:—

(i.) *Canada.* Butter, £13,377; meats, £31,317; oil, cocoanut, £4100; skins, £9108; timber, £4398; tin, £16,156; wool, £11,903.

(ii.) *Cape Colony.* Butter, £79,617; grain, wheat, £651,617; flour, £59,009; leather, £63,072; meats—frozen beef, £125,204; mutton and lamb, £39,631; other meats, £5835; specie, £50,000; sugar, £158,328; timber, £25,759.

(iii.) *Ceylon.* Butter, £5402; coal, £6545; horses, £4886; gold, bullion, £166,000; specie, £3,205,075; grain—flour, £17,711; lead, pig, £43,292; silver, bullion, £469,200; sugar, £7795.

(iv.) *Fiji.* Apparel and textiles:—apparel, including boots and shoes, £14,534; textiles, £16,997; bags, sacks, and cordage, £7663; biscuits, £11,908; coal, £14,685; drugs and chemicals, £8023; grain, prepared—bran, pollard, and sharps, £15,922; flour, £12,039; machines and machinery, £7872; metal manufactures, £36,758; oils, £14,896; specie, £52,000; timber, £12,293.

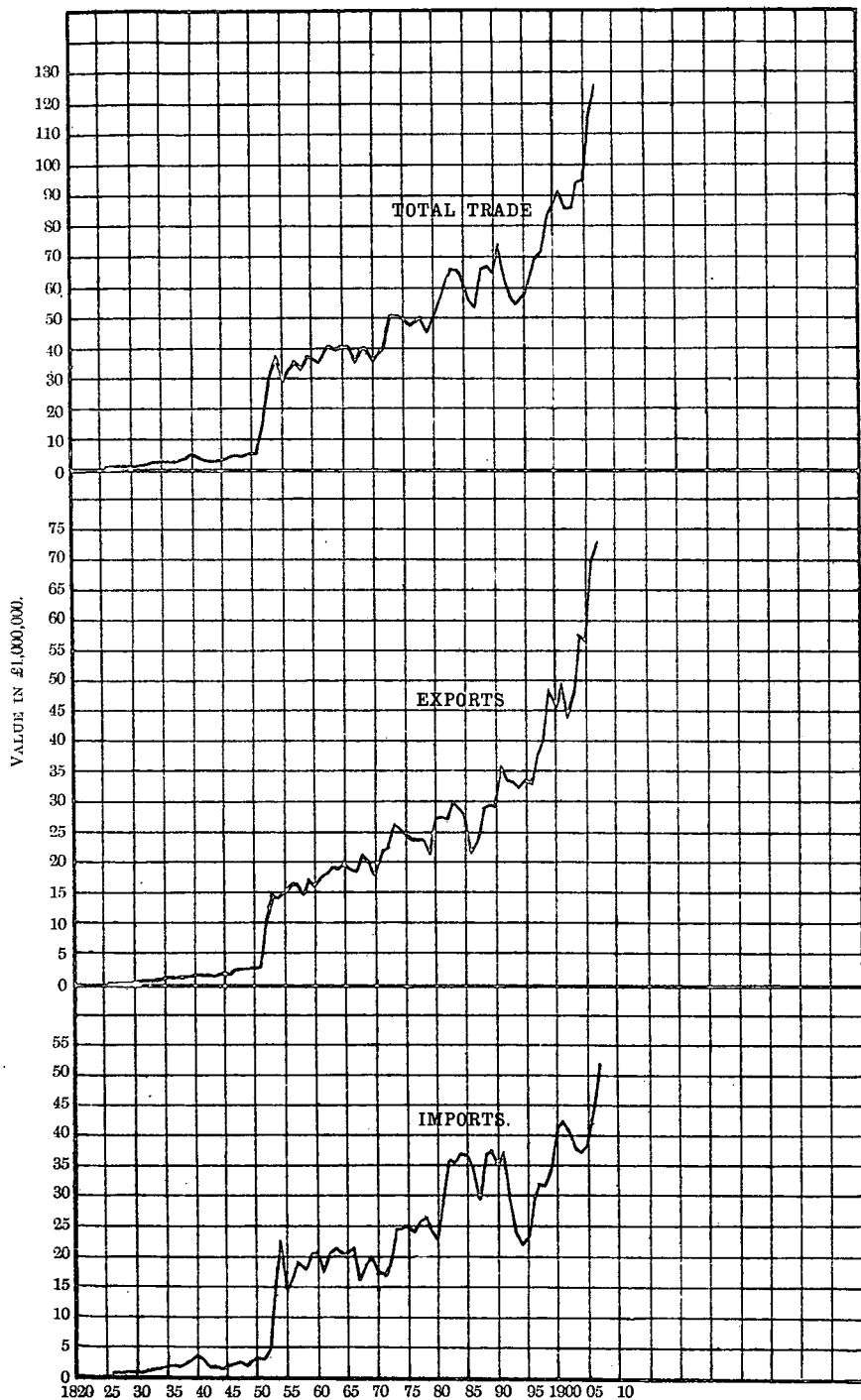
(v.) *Hong Kong.* Butter, £15,443; coal, £26,572; copper, ingots, £15,401; fish, £39,887; flour, £194,223; lead, pig, £74,493; sandalwood, £51,078; specie, gold, £397,522; wheat, £12,225.

(vi.) *India.* Coal, £23,788; copper, ingots, £85,096; gold, bullion, £919,256; specie, £805,353; horses, £224,341; grain, wheat, £5696; hay and chaff, £8211; lead, pig, £18,530; meats, £7510; silver, bullion, £72,460; tallow, £8754; timber, £266,865; wool, £20,115.

(vii.) *Natal.* Animals, living—horses, £4026; sheep, £23,187. Butter, £97,626; fodder, £2195; fruit, £7473; grain—wheat, £80,768; flour, £158,165; jams and jellies, £7109; leather, £7024; meats, frozen—beef, £90,884; mutton, £119,667; pork, £5416; poultry, £4486; meats, other, £6479; plants and trees, £5887; specie, gold, £100,000; tallow, £10,459; timber, £11,064.

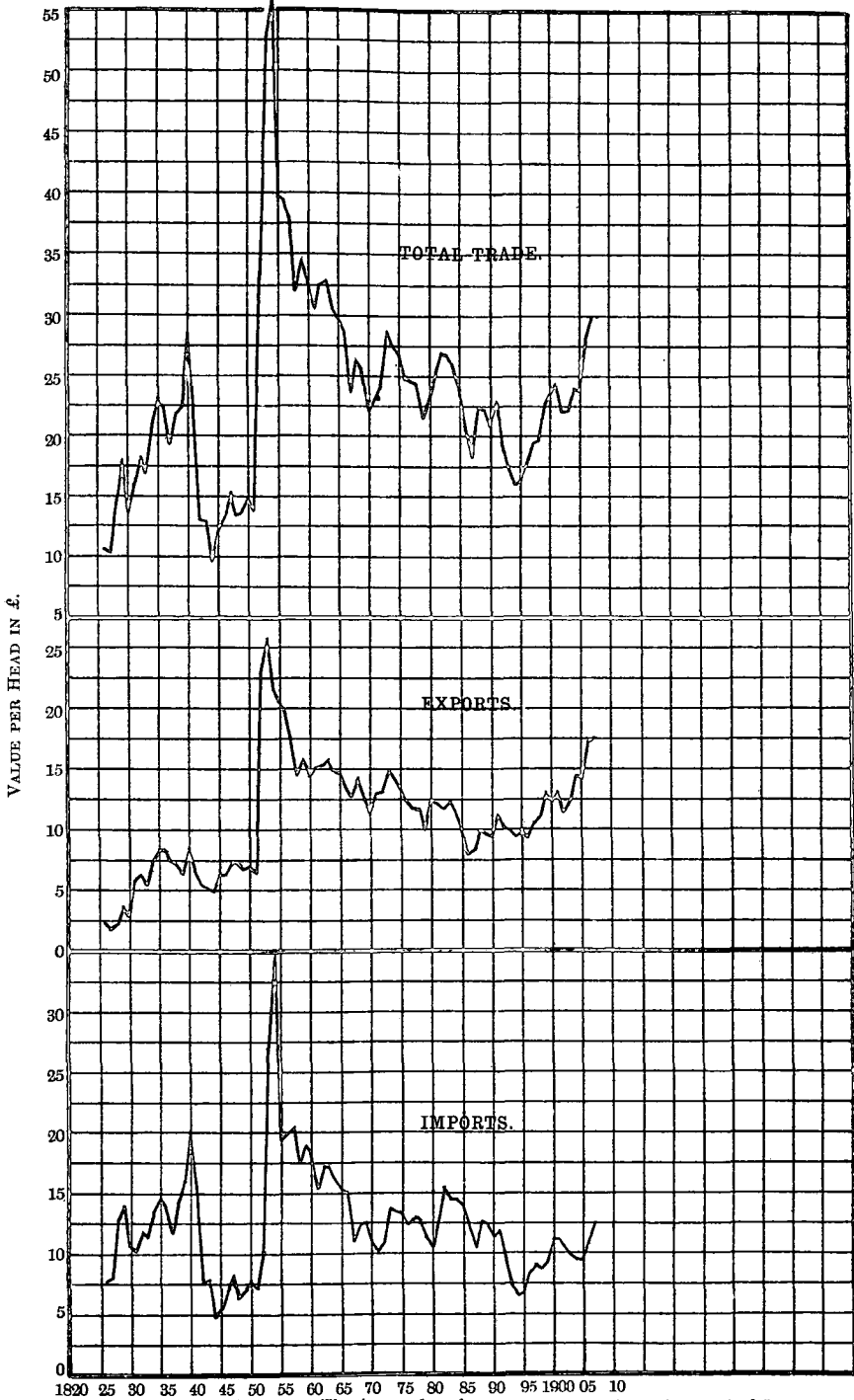
(viii.) *New Zealand.* Apparel, textiles, etc.:—apparel, boots and shoes, £22,597; other apparel, £28,421; textiles, £59,106; bags and sacks, £16,595. Books and periodicals, £39,101; coal, £103,705; drugs and chemicals—fertilisers, £65,573; medicines, £36,375; other drugs, etc., £38,946. Electrical materials, £20,930; fruit, fresh, £56,419; dried, £22,983; glass and glassware, £28,469; grain—oats, £35,298;

GRAPHS SHEWING VALUES OF IMPORTS, EXPORTS, AND TOTAL TRADE OF
COMMONWEALTH, 1826 TO 1907.



EXPLANATION OF GRAPHS.—The base of each square represents an interval of five years, and the vertical height five million pounds sterling for Imports and Exports, and ten million pounds sterling for Total Trade.

GRAPHS SHEWING THE VALUES PER HEAD OF POPULATION OF IMPORTS, EXPORTS AND TOTAL TRADE OF COMMONWEALTH, 1826 TO 1907.



EXPLANATION OF GRAPHS.—The base of each square represents an interval of five years, and the vertical height fifty shillings per head of the population. The basic lines of Imports and Exports are *nil* per head, and that of Total Trade is five pounds per head.

flour, £55,006; rice, £29,107; indiarubber manufactures, £45,116; jewellery and precious stones, £14,101; lead, pig, £14,809; leather and leather manufactures, £39,673; metals, manufactures of:—agricultural implements and machinery, £29,062; other machines and machinery, £66,605; other manufactures of metals, £86,955; onions, £10,530; potatoes, £38,854; salt, £16,081; seeds, £6125; soap, £22,960; specie:—gold, £757,000, silver, £2600, bronze, £2290; spirits, £22,410; stationery, £15,064; sugar, £19,092; tea, £61,471; timber, £180,243; tin, ingots, £26,571; tobacco, £73,621; vessels, £9900, wine, £26,359.

(ix.) *Papua*. Apparel and textiles, etc., £6447; flour, £1244; meats, £8537; tobacco, £4743.

(x.) *Straits Settlements*. Animals, living, horses, £26,952; butter, £25,648; coal, £66,940; gold, specie, £10,000; grain, flour, £145,401; machines and machinery, £7131; meats, £22,703; tin ore, £187,702.

12. **Exports to Foreign Countries.**—The foregoing table shews a very great increase in the value of exports to foreign countries, both in actual amounts and in relation to total exports. The value of exports to foreign countries during 1907 shews an increase of 420 per cent. over similar figures for the years 1887-91, thus increasing the porportion per cent. of all exports from 16.80 per cent. in the earlier years to 35.33 per cent. in 1907. This increase is chiefly due to the growing demand among foreign nations for Australian wool, large consignments of which are now made direct to Belgium, France, Germany, and the United States.

13. **Principal Exports to Foreign Countries.**—These are as follows:—

(i.) *Argentine Republic*. Agricultural implements and machinery, £7976; timber, £8308.

(ii.) *Belgium*. Bark, tanning, £10,241; copper, £302,276; grain, wheat, £9029; lead, £235,138; leather, £32,796; silver ore, £316,057; hides and skins, £318,161; spelter, £961,065; tallow, £13,787; tin, £56,168; wool, £3,417,193.

(iii.) *Chile*. Coal, £447,595; wheat, £95,260.

(iv.) *China*. Horses, £3299; butter, £13,338; coal, £18,474; copper, £148,979; flour, £47,037; lead, £23,348; sandalwood, £10,886; specie, gold, £11,940; timber, undressed, £19,497.

(v.) *France*. Copper, £114,449; hides and skins, £768,267; lead, £31,172; spelter, £188,444; tin, £18,805; wool, £7,004,581.

(vi.) *Germany*. Bark, tanning, £78,352; copper, £133,620; fruit, fresh, £19,642; grain—bran, pollard, and sharps, £6846; wheat, £6230; hides and skins, £46,025; lead, £92,570; linseed cake and oilcake, £6715; meats, £76,561; oil, cocoanut, £24,743; ores:—antimony, £16,100; copper, £15,992; scheelite, £25,387; silver and silver lead, £101,510; tin, £76,042; wolfram, £130,037; spelter, concentrates, etc., other than gold, £55,411; other ores, £14,002; tallow, £3527; timber, £20,184; wool, £4,117,394.

(vii.) *Italy*. Copper, £24,476; skins, £51,829; wool, £77,413.

(viii.) *Japan*. Grain, wheat, £50,881; horses, £11,715; lead, £21,685; manures, £19,580; oils, £18,328; tallow, £32,065; wool, £481,771.

(ix.) *Java*. Butter, £45,600; coal, £18,893; drugs and chemicals, £5791; flour, £144,091; horses, £25,502.

(x.) *Netherlands*. Lead, £81,330; shale, kerosene, £11,957; silver ore, £56,641; spelter, £157,479; tallow, £7643; wool, £6654.

(xi.) *Peru*. Coal, £48,681; wheat, £214,400.

(xii.) *Philippine Islands*. Butter, £23,040; coal, £155,430; flour, £139,958; fodder, £16,102; meats, £133,412; timber, £65,046.

(xiii.) *United States of America*. Coal, £265,993; cocoanut oil, £20,030; copper, £700,509; gold, bullion, £239,714; hides and skins, £219,551; silver in matte, £39,134; tin, £32,609; wool, £815,254.

§ 6. Development of Export Trade to Eastern Countries.

1. **Trade with Eastern Countries.**—During recent years attention has been given by Australian exporters to the possibilities of the markets of eastern countries. Commissioners have been sent by the States to eastern trade centres to investigate and advise as to the requirements of these markets in regard to such commodities as Australia is prepared to supply, and a survey of the export returns of the past five years discloses a very material increase in the value of the export trade in the direction indicated.

The principal countries concerned in this trade are China, India, Ceylon and Burmah, Japan, Java, Philippine Islands, Straits Settlements, and Hong Kong, and the particulars given in the following tables apply to these countries only:—

VALUE OF PRINCIPAL ITEMS OF MERCHANDISE EXPORTED FROM THE COMMONWEALTH TO EASTERN COUNTRIES, 1903 to 1907.

| Article. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|------------|------------|-----------|------------|-----------|
| | £ | £ | £ | £ | £ |
| Butter | 68,591 | 84,569 | 93,707 | 109,792 | 136,299 |
| Coal | 223,204 | 167,588 | 260,343 | 336,550 | 319,292 |
| Copper | 89,412 | 330,324 | 426,937 | 176,835 | 250,051 |
| Grain and pulse— | | | | | |
| Wheat | 1,705 | 54,315 | 99,628 | 109,212 | 173,528 |
| Flour | 30,280 | 97,868 | 298,606 | 538,177 | 692,879 |
| Other (prepared or unprepared) | 4,565 | 74,645 | 58,858 | 8,874 | 17,614 |
| Hay and chaff and compressed fodder | 12,427 | 87,864 | 44,353 | 21,075 | 34,549 |
| Horses | 109,215 | 181,146 | 329,515 | 232,102 | 302,809 |
| Lead | 66,870 | 138,397 | 131,223 | 177,166 | 179,346 |
| Meats | 128,666 | 132,499 | 213,567 | 184,975 | 188,197 |
| Sandalwood | 37,908 | 25,417 | 38,793 | 70,579 | 66,306 |
| Skins, hoofs, sinews, etc., and tallow | 12,818 | 26,467 | 55,675 | 72,284 | 71,758 |
| Tin ore | 27,352 | 79,345 | 38,466 | 91,743 | 187,702 |
| Timber, undressed | 87,441 | 238,318 | 387,408 | 490,600 | 362,999 |
| Wool | 85,253 | 356,390 | 156,372 | 292,079 | 501,886 |
| Other merchandise | 157,635 | 163,811 | 337,182 | 209,135 | 304,934 |
| Total merchandise | 1,143,342 | 2,298,963 | 2,970,633 | 3,121,178 | 3,790,152 |
| Specie and gold and silver bullion | 9,537,575 | 10,268,946 | 6,466,356 | 7,339,865 | 6,059,735 |
| Total exports | 10,680,917 | 12,567,909 | 9,436,991 | 10,461,043 | 9,849,887 |

The following tables shew the value of the principal articles exported to each of the undermentioned eastern countries during each of the years 1903 to 1907:—

BUTTER.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------------|--------|--------|--------|---------|---------|
| | £ | £ | £ | £ | £ |
| China | 3,908 | 10,854 | 9,966 | 14,518 | 13,338 |
| Hong Kong | 13,412 | 10,994 | 17,073 | 17,007 | 15,443 |
| India, Ceylon, and Burma | 5,679 | 4,897 | 5,615 | 7,152 | 6,766 |
| Japan | 1,872 | 3,014 | 2,233 | 4,475 | 6,464 |
| Java | 20,648 | 23,542 | 26,533 | 29,886 | 45,600 |
| Philippine Islands | 13,952 | 23,426 | 21,984 | 25,431 | 23,040 |
| Straits Settlements... | 9,120 | 7,842 | 10,303 | 11,323 | 25,648 |
| Total | 68,591 | 84,569 | 93,707 | 109,792 | 136,299 |

The exports of butter given above for the year 1907 were supplied by the several States as follows:—New South Wales, £28,616; Victoria, £93,281; Queensland, £13,123; South Australia, £1279.

COAL.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|----------------|----------------|----------------|----------------|----------------|
| | £ | £ | £ | £ | £ |
| China | 7,078 | 5,805 | 16,643 | 31,652 | 18,474 |
| Hong Kong | 15,095 | 7,672 | 38,231 | 26,237 | 26,572 |
| India, Ceylon, and Burma ... | 28,340 | 24,927 | 31,129 | 18,610 | 30,333 |
| Japan | ... | 263 | 7,019 | ... | 2,650 |
| Java | 27,214 | 14,313 | 20,881 | 30,848 | 18,893 |
| Philippine Islands | 113,508 | 100,647 | 111,665 | 133,032 | 155,430 |
| Straits Settlements... .. | 31,969 | 13,961 | 34,775 | 96,171 | 66,940 |
| Total | 223,204 | 167,588 | 260,343 | 336,550 | 319,292 |

The increase in the exports of coal during 1906 and 1907 is really greater than appears from the above figures, as prior to 1906 "bunker" coal was treated as an export to the country for which the ship cleared. These exports of coal are all from New South Wales.

COPPER.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|---------------|----------------|----------------|----------------|----------------|
| | £ | £ | £ | £ | £ |
| China | 16,171 | 263,046 | 257,800 | 34,297 | 148,979 |
| Hong Kong | 1,174 | 23,512 | 33,942 | 4,400 | 15,401 |
| India, Ceylon, and Burma ... | 72,067 | 103,165 | 133,231 | 117,322 | 85,096 |
| Japan | ... | ... | ... | 19,550 | 60 |
| Java | ... | 601 | 1,964 | 1,266 | 515 |
| Total | 89,412 | 390,324 | 426,937 | 176,835 | 250,051 |

The fall in value of copper exported from Australia to China in 1906, as compared with 1905, is explained by Mr. J. B. Suttor, Commissioner for New South Wales in the East, as due to "there having been over-importations in 1905 for minting purposes. This was really overdone, large stocks being held over and re-exported in 1906 owing to higher prices ruling elsewhere." The copper exported to the East during 1907 was from New South Wales and South Australia, the amounts being respectively £59,741 and £190,310.

GRAIN AND PULSE—WHEAT.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|--------------|---------------|---------------|----------------|----------------|
| | £ | £ | £ | £ | £ |
| China | ... | ... | ... | 1,662 | 103,593 |
| Hong Kong | ... | 7,789 | 4,530 | 519 | 12,225 |
| India, Ceylon, and Burma ... | ... | 7 | 45 | 100,211 | 6,828 |
| Japan | 1,699 | 46,509 | 95,046 | 6,623 | 50,881 |
| Java | 6 | 10 | 6 | 16 | 1 |
| Philippine Islands | ... | ... | 1 | 181 | ... |
| Total | 1,705 | 54,315 | 99,628 | 109,212 | 173,528 |

The exports of wheat given above for the year 1907 were supplied by the following States:—New South Wales, £25,609; Victoria, £63,121; South Australia, £84,798.

GRAIN AND PULSE—FLOUR.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------|--------|--------|---------|---------|---------|
| | £ | £ | £ | £ | £ |
| China | 84 | 247 | 3,129 | 4,539 | 47,087 |
| Hong Kong | 201 | 3,779 | 77,181 | 146,257 | 194,223 |
| India, Ceylon, and Burma | 1,348 | 7,323 | 15,865 | 18,479 | 18,349 |
| Japan | 2,460 | 5,092 | 11,897 | 35,325 | 3,820 |
| Java | 25,009 | 65,309 | 93,444 | 107,319 | 144,091 |
| Philippine Islands | 260 | 9,348 | 49,887 | 95,569 | 139,958 |
| Straits Settlements... .. | 918 | 6,770 | 47,203 | 130,689 | 145,401 |
| Total | 30,280 | 97,868 | 298,606 | 538,177 | 692,879 |

The flour exported during 1907, as above, was supplied by the several States as follows:—New South Wales, £196,520; Victoria, £253,845; Queensland, £2342; South Australia, £218,629; Western Australia, £21,543.

GRAIN AND PULSE, OTHER THAN WHEAT AND FLOUR.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------|-------|--------|--------|-------|--------|
| | £ | £ | £ | £ | £ |
| China | 79 | 2,255 | 635 | 452 | 3,423 |
| Hong Kong | 46 | 113 | 18,586 | 257 | 1,015 |
| India, Ceylon, and Burma | 1,255 | 3,677 | 3,216 | 3,199 | 6,880 |
| Japan | 26 | 66,569 | 33,233 | 21 | 88 |
| Java | 144 | 599 | 395 | 890 | 1,563 |
| Philippine Islands | 2,327 | 877 | 2,265 | 3,614 | 3,675 |
| Straits Settlements... .. | 688 | 555 | 478 | 441 | 970 |
| Total | 4,565 | 74,645 | 58,858 | 8,874 | 17,614 |

The large export to Japan in 1904 was barley, and in 1905 barley and oats. The exports given above for 1907 were supplied by the following States:—New South Wales, £3622; Victoria, £12,040; Queensland, £17; South Australia, £556; Western Australia, £14; Tasmania, £1365.

HAY AND CHAFF AND COMPRESSED FODDERS.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------|--------|--------|--------|--------|--------|
| | £ | £ | £ | £ | £ |
| China | 987 | 196 | 467 | 145 | 989 |
| Hong Kong | 72 | 42,934 | 21,050 | 61 | 1,023 |
| India, Ceylon, and Burma | 2,499 | 4,256 | 6,083 | 7,840 | 12,065 |
| Japan | 6 | 23,773 | 123 | 294 | 302 |
| Java | 154 | 197 | 410 | 481 | 957 |
| Philippine Islands | 6,773 | 13,803 | 14,392 | 10,138 | 16,300 |
| Straits Settlements... .. | 1,936 | 2,705 | 1,828 | 2,116 | 3,513 |
| Total | 12,427 | 87,864 | 44,353 | 21,075 | 34,549 |

The exports given above for the year 1907 were supplied by the several States as follows:—New South Wales, £2916; Victoria, £30,362; Queensland, £591; South Australia, £608; Western Australia, £72.

HORSES.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ |
| China | 440 | 851 | 2,671 | 5,942 | 3,299 |
| Hong Kong | 14 | 1,023 | 119,504 | 160 | 205 |
| India, Ceylon, and Burma ... | 85,011 | 144,782 | 147,427 | 191,089 | 230,187 |
| Japan | 715 | 8,095 | 30,215 | 1,990 | 11,715 |
| Java | 6,330 | 11,373 | 4,440 | 12,296 | 25,502 |
| Philippine Islands | 8,087 | 3,827 | 10,151 | 2,603 | 4,949 |
| Straits Settlements... .. | 8,618 | 11,195 | 15,107 | 18,022 | 26,952 |
| Total | 109,215 | 181,146 | 329,515 | 232,102 | 302,809 |

The horses exported to the above countries during 1907 were from the following States:—New South Wales, £57,000; Victoria, £153,037; Queensland, £77,928; South Australia, £14,844. In addition to the value of horses given above, £4000 worth were exported from New South Wales to Cochin China in 1907.

LEAD, PIG.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|--------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ |
| China | 11,188 | 18,595 | 29,734 | 18,880 | 20,529 |
| Hong Kong | 25,837 | 79,881 | 35,694 | 68,544 | 74,493 |
| India, Ceylon, and Burma ... | 21,301 | 14,534 | 34,811 | 44,772 | 61,822 |
| Japan | 7,777 | 24,367 | 29,757 | 44,002 | 20,815 |
| Java | ... | 105 | ... | 41 | ... |
| Philippine Islands | 594 | 233 | 127 | 927 | 330 |
| Straits Settlements... .. | 173 | 682 | 1,100 | ... | 1,857 |
| Total | 66,870 | 138,397 | 131,223 | 177,166 | 179,346 |

The above lead is almost entirely from the Broken Hill mines of New South Wales.

EXPORTS OF MEATS.—PRESERVED BY COLD PROCESS.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ |
| China | ... | 18 | 99 | ... | ... |
| Hong Kong | 4,465 | 3,265 | 7,819 | 4,379 | 7,051 |
| India, Ceylon, and Burma ... | 293 | 2,546 | 2,887 | 4,137 | 4,455 |
| Japan | ... | 12 | 423 | 2,426 | 435 |
| Java | ... | ... | ... | 3 | 884 |
| Philippine Islands | 106,066 | 99,558 | 153,825 | 127,621 | 126,498 |
| Straits Settlements... .. | 6 | 6 | 14,062 | 12,679 | 20,746 |
| Total | 110,830 | 105,405 | 179,115 | 151,245 | 160,069 |

The exports to the above-mentioned eastern countries during 1907 of meats preserved by cold process were supplied by the following States:—New South Wales, £24,245; Victoria, £1035; and Queensland, £134,789. In addition to the meat included in the above table, meat preserved by cold process to the value of £112,025 in 1906 and £115,000 in 1907 was exported to Asiatic Russia.

EXPORTS OF MEATS OTHER THAN MEATS PRESERVED BY COLD PROCESS.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|--------|--------|--------|--------|--------|
| | £ | £ | £ | £ | £ |
| China | 92 | 461 | 1,275 | 4,804 | 4,107 |
| Hong Kong | 1,308 | 5,156 | 4,279 | 815 | 890 |
| India, Ceylon, and Burma ... | 12,645 | 14,250 | 13,520 | 15,859 | 8,211 |
| Japan | 557 | 2,471 | 7,410 | 1,284 | 1,376 |
| Java | 841 | 1,666 | 2,678 | 3,516 | 4,501 |
| Philippine Islands | 1,578 | 2,372 | 3,702 | 4,581 | 6,943 |
| Straits Settlements | 815 | 718 | 1,588 | 2,871 | 2,100 |
| Total | 17,836 | 27,094 | 34,452 | 33,730 | 28,128 |

The exports given above for the year 1907 were supplied by the following States:—New South Wales, £4571; Victoria, £1659; Queensland, £21,876; South Australia, £22.

SANDALWOOD.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|--------|--------|--------|--------|--------|
| | £ | £ | £ | £ | £ |
| China | 21,399 | 5,719 | 7,008 | 9,299 | 10,886 |
| Hong Kong | 9,782 | 17,369 | 27,306 | 55,970 | 51,078 |
| India, Ceylon, and Burma ... | ... | 65 | ... | 1,589 | 1,803 |
| Straits Settlements... .. | 6,727 | 2,264 | 4,479 | 3,721 | 2,542 |
| Total | 37,908 | 25,417 | 38,793 | 70,579 | 66,309 |

These exports of sandalwood were:—From Queensland, £413; and Western Australia, £65,896.

SKINS, HOOFS, HORNS, (INCLUDING BONES, SINEWS, AND TALLOW.)

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|--------|--------|--------|--------|--------|
| | £ | £ | £ | £ | £ |
| China | 5 | 19 | ... | 15 | 77 |
| Hong Kong | 777 | 277 | 1,421 | 1,260 | 838 |
| India, Ceylon, and Burma ... | 90 | 2,303 | 5,334 | 11,847 | 8,754 |
| Japan | 11,551 | 23,432 | 48,244 | 56,164 | 60,285 |
| Java | ... | ... | 63 | 1,495 | 41 |
| Philippine Islands | 105 | 266 | 369 | 1,211 | 1,012 |
| Straits Settlements... .. | 290 | 170 | 244 | 292 | 751 |
| Total | 12,818 | 26,467 | 55,675 | 72,284 | 71,758 |

The above exports of skins, etc., were from the several States as follows:—New South Wales, £31,333; Victoria, £14,889; Queensland, £25,463; South Australia, £73.

TIN ORE.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------|--------|--------|--------|--------|---------|
| | £ | £ | £ | £ | £ |
| Straits Settlements... | 27,352 | 79,345 | 38,466 | 91,743 | 187,702 |

The export of tin ore to the Straits Settlements—the centre of the world's tin production—is for the purpose of treatment, and was sent from the several States as follows:—New South Wales, £66,738; Victoria, £10,113; Queensland, £11,285; South Australia, £9681; West Australia, £89,885.

TIMBER, UNDRESSED.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|--------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ |
| China | 211 | 413 | 54,817 | 81,756 | 19,397 |
| Hong Kong | 53 | 6,029 | 958 | 6 | 2,739 |
| India, Ceylon, and Burma ... | 73,900 | 200,232 | 306,405 | 386,611 | 267,376 |
| Japan | 124 | 450 | 1,042 | 3,090 | 6,202 |
| Java | ... | ... | 82 | 70 | 330 |
| Philippine Islands | 11,553 | 23,898 | 22,152 | 12,556 | 65,046 |
| Straits Settlements... | 1,600 | 7,296 | 1,952 | 6,511 | 1,909 |
| Total | 87,441 | 238,318 | 387,408 | 490,606 | 362,999 |

The above exports of timber were from the several States as follows:—New South Wales, £138,887; Victoria, £390; Queensland, £8836; Western Australia, £203,933; Tasmania, £10,953.

WOOL.

| Country. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|--------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ |
| China | ... | 8 | ... | ... | ... |
| Hong Kong | ... | 13,262 | 7,740 | ... | ... |
| India, Ceylon, and Burma ... | 13,671 | 10,518 | 7,928 | 12,084 | 20,115 |
| Japan | 71,582 | 332,602 | 140,704 | 279,860 | 481,771 |
| Philippine Islands | ... | ... | ... | 135 | ... |
| Total | 85,253 | 356,390 | 156,372 | 292,079 | 501,886 |

The wool exported to the East by the several States during 1907 was as follows:—New South Wales, £354,433; Victoria, £101,273; Queensland, £46,180.

§ 7. Trade of Commonwealth since Federation.

1. **Classified Summary of Australian Trade.**—The tables hereunder present the trade of the Commonwealth during each of the years 1901 and 1903 to 1907, arranged in classes according to the nature of the goods.

It was long ago pointed out¹ that the statistical presentation of imports and exports would be increased in value by being properly arranged under categories (classes and orders). The following arrangement has been adopted, viz. :—

STATISTICAL CLASSIFICATION OF IMPORTS AND EXPORTS.

| Class. | Articles. |
|--------|--|
| I. | FOODSTUFFS of animal origin, excluding, however, living animals. |
| II. | FOODSTUFFS of vegetable origin, and common salt. |
| III. | BEVERAGES, non-alcoholic only, and the substances used in making them. |
| IV. | SPIRITS AND ALCOHOLIC LIQUORS, including spirits for industrial purposes, and such pharmaceutical preparations as are dutiable as spirits. |
| V. | TOBACCO, and all preparations thereof. |
| VI. | LIVE ANIMALS. |
| VII. | ANIMAL SUBSTANCES, mainly unmanufactured, which are not foodstuffs. |
| VIII. | VEGETABLE SUBSTANCES and non-manufactured fibres. |
| IX. | APPAREL, TEXTILES, and various manufactured fibres. |
| X. | OILS, FATS, AND WAXES. |
| XI. | PAINTS AND VARNISHES. |
| XII. | STONES AND MINERALS, used industrially. |
| XIII. | SPECIE, gold, silver, and bronze. |
| XIV. | METALS, UNMANUFACTURED, and ores. |
| XV. | METALS, PARTLY MANUFACTURED. |
| XVI. | METALS, MANUFACTURED, including machinery. |
| XVII. | LEATHER AND MANUFACTURES of leather, together with all substitutes thereof, and also INDIARUBBER AND INDIARUBBER MANUFACTURES. |
| XVIII. | WOOD AND WICKER, both raw and manufactured. |
| XIX. | EARTHENWARE, CEMENTS, CHINA, GLASS AND STONWARE. |
| XX. | PAPER AND STATIONERY. |
| XXI. | JEWELLERY, TIMEPIECES, AND FANCY GOODS. |
| XXII. | OPTICAL, SURGICAL, AND SCIENTIFIC INSTRUMENTS. |
| XXIII. | DRUGS, CHEMICALS, AND FERTILISERS. |
| XXIV. | MISCELLANEOUS. |

IMPORTS ARRANGED IN CLASSES, 1901 and 1903 to 1907.

| Classes. | 1901. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|------------|------------|------------|------------|------------|------------|
| | £ | £ | £ | £ | £ | £ |
| I. Animal foodstuffs, etc. ... | 793,365 | 941,890 | 654,509 | 686,031 | 697,830 | 688,642 |
| II. Vegetable " " " " ... | 2,925,985 | 5,346,836 | 1,570,320 | 1,493,196 | 1,798,913 | 1,574,933 |
| III. Beverages (non-alcoholic), etc. ... | 1,054,324 | 941,975 | 1,122,567 | 1,134,653 | 1,206,216 | 1,549,785 |
| IV. Alcoholic liquors, etc. ... | 1,845,438 | 1,290,878 | 1,236,829 | 1,346,419 | 1,388,071 | 1,556,224 |
| V. Tobacco, etc. ... | 717,915 | 570,776 | 542,182 | 535,133 | 620,812 | 753,869 |
| VI. Live animals ... | 40,306 | 40,694 | 67,765 | 86,128 | 118,907 | 114,787 |
| VII. Animal substances, etc. ... | 124,017 | 240,302 | 272,754 | 310,339 | 456,071 | 576,054 |
| VIII. Vegetable " " " " ... | 459,861 | 552,745 | 540,519 | 578,561 | 717,715 | 863,693 |
| IX. Apparel, etc. " " " " ... | 12,065,367 | 9,589,790 | 11,540,766 | 12,017,230 | 13,508,344 | 15,367,604 |
| X. Oils, etc. ... | 1,290,252 | 963,145 | 921,184 | 903,638 | 1,023,410 | 1,192,177 |
| XI. Paints, etc. ... | 385,049 | 270,588 | 327,435 | 348,833 | 352,356 | 445,769 |
| XII. Stones, etc. ... | 131,095 | 82,628 | 89,821 | 77,115 | 91,676 | 127,372 |
| XIII. Specie ... | 172,395 | 40,026 | 35,553 | 84,320 | 230,957 | 406,875 |
| XIV. Metals, unmanufd., ores, etc. ... | 984,327 | 1,444,158 | 1,400,819 | 1,668,072 | 2,381,566 | 1,763,202 |
| XV. Metals, part manufactured ... | 1,062,309 | 407,718 | 438,771 | 479,414 | 646,179 | 797,354 |
| XVI. Metals, manufactured ... | 7,491,636 | 6,476,913 | 6,341,901 | 6,550,189 | 7,932,675 | 10,531,166 |
| XVII. Leather, etc. ... | 523,565 | 532,350 | 663,759 | 673,118 | 924,968 | 1,004,822 |
| XVIII. Wood, etc. ... | 1,814,382 | 1,233,745 | 1,679,348 | 1,423,862 | 1,698,766 | 2,100,305 |
| XIX. Earthenware, etc. ... | 925,101 | 576,805 | 614,913 | 597,787 | 688,510 | 863,849 |
| XX. Paper, etc. ... | 1,731,330 | 1,498,259 | 1,724,195 | 1,721,174 | 1,838,474 | 2,071,344 |
| XXI. Jewellery, etc. ... | 1,065,348 | 845,591 | 945,759 | 888,391 | 1,045,164 | 1,261,046 |
| XXII. Instruments, etc. ... | 218,437 | 171,201 | 169,725 | 210,134 | 285,771 | 379,300 |
| XXIII. Drugs, etc. ... | 1,472,162 | 1,341,711 | 1,431,578 | 1,587,613 | 1,732,543 | 1,840,933 |
| XXIV. Miscellaneous ... | 3,140,845 | 2,410,747 | 2,682,850 | 2,945,331 | 3,337,916 | 3,978,018 |
| Grand total ... | 42,433,811 | 37,811,471 | 37,020,842 | 38,346,731 | 44,744,912 | 51,809,033 |

1. By R. M. Johnston, I.S.O., the Statistician of the State of Tasmania.

The exports are shewn according to the same classification, and the usual distinction is made between exports of Australian produce and re-exports. It will be seen what a small proportion of the total exports is made up by re-exports, and that more than one-half of the latter consists of specie:—

**EXPORTS ARRANGED IN CLASSES, AND DISTRIBUTING AUSTRALIAN PRODUCE
AND THE PRODUCE OF OTHER COUNTRIES, 1901 and 1903 to 1907.**

| Classes. | 1901. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|------------|------------|------------|------------|------------|------------|
| AUSTRALIAN PRODUCE. | | | | | | |
| | £ | £ | £ | £ | £ | £ |
| I. Animal foodstuffs, etc. ... | 4,104,196 | 3,057,675 | 4,141,652 | 4,714,942 | 5,648,049 | 5,726,153 |
| II. Vegetable foodstuffs, etc. ... | 4,633,926 | 840,336 | 6,930,685 | 5,979,362 | 6,663,267 | 6,866,279 |
| III. Beverages (non-alcoholic), etc. ... | 2,598 | 3,011 | 3,331 | 2,067 | 3,750 | 2,810 |
| IV. Alcoholic liquors, etc. ... | 134,830 | 115,278 | 114,428 | 125,975 | 107,599 | 154,011 |
| V. Tobacco, etc. ... | 5,030 | 11,141 | 26,622 | 40,021 | 40,444 | 67,612 |
| VI. Live animals ... | 473,801 | 199,257 | 250,334 | 405,337 | 315,043 | 369,417 |
| VII. Animal substances, etc. ... | 16,754,006 | 16,124,240 | 18,755,010 | 22,294,516 | 25,696,491 | 32,011,364 |
| VIII. Vegetable substances, etc. ... | 142,060 | 122,699 | 149,034 | 265,390 | 281,121 | 235,191 |
| IX. Apparel, etc. ... | 42,142 | 34,373 | 44,012 | 42,459 | 61,888 | 75,562 |
| X. Oils, etc. ... | 843,755 | 539,364 | 737,398 | 956,109 | 1,071,842 | 1,259,021 |
| XI. Paints, etc. ... | 620 | 2,709 | 1,782 | 2,038 | 3,237 | 5,433 |
| XII. Stones, etc. ... | 1,041,974 | 1,109,897 | 811,717 | 897,354 | 927,560 | 1,343,791 |
| XIII. Specie ... | 8,884,816 | 11,022,324 | 10,128,408 | 4,255,703 | 9,851,558 | 5,411,572 |
| XIV. Metals, unmanufact., ores, etc. ... | 3,916,269 | 10,603,042 | 11,277,343 | 11,936,696 | 13,327,210 | 14,163,540 |
| XV. Metals, part manufactured ... | 3,802 | 7,240 | 4,630 | 9,971 | 22,239 | 11,049 |
| XVI. Metals, manufactured ... | 117,662 | 129,317 | 106,217 | 138,632 | 149,952 | 156,540 |
| XVII. Leather, etc. ... | 660,692 | 546,009 | 424,806 | 554,857 | 591,208 | 569,556 |
| XVIII. Wood, etc. ... | 666,024 | 856,816 | 840,238 | 1,031,716 | 1,009,607 | 802,194 |
| XIX. Earthenware, etc. ... | 6,690 | 14,739 | 12,713 | 16,727 | 26,708 | 33,053 |
| XX. Paper, etc. ... | 22,171 | 32,402 | 35,400 | 38,911 | 46,734 | 49,730 |
| XXI. Jewellery, etc. ... | 67,973 | 76,439 | 78,089 | 156,712 | 148,668 | 149,315 |
| XXII. Instruments, etc. ... | 507 | 1,758 | 1,511 | 2,100 | 1,832 | 2,766 |
| XXIII. Drugs, etc. ... | 86,299 | 112,089 | 127,753 | 140,363 | 163,972 | 209,297 |
| XXIV. Miscellaneous ... | 130,418 | 95,718 | 95,804 | 121,730 | 134,594 | 141,244 |
| Total ... | 47,741,776 | 45,658,883 | 55,100,167 | 54,127,758 | 66,299,374 | 69,816,500 |

OTHER PRODUCE.

| | £ | £ | £ | £ | £ | £ |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
| I. Animal foodstuffs, etc. ... | 35,291 | 92,287 | 29,079 | 47,734 | 21,032 | 20,750 |
| II. Vegetable foodstuffs, etc. ... | 80,371 | 141,397 | 139,718 | 193,766 | 200,710 | 307,707 |
| III. Beverages (non-alcoholic), etc. ... | 43,308 | 73,325 | 64,932 | 54,238 | 63,419 | 72,647 |
| IV. Alcoholic liquors, etc. ... | 55,732 | 38,461 | 41,285 | 37,972 | 32,980 | 36,889 |
| V. Tobacco, etc. ... | 61,753 | 47,344 | 46,316 | 39,238 | 34,588 | 32,752 |
| VI. Live animals ... | 105 | 3,476 | 2,224 | 6,991 | 3,713 | 5,615 |
| VII. Animal substances, etc. ... | 10,070 | 25,560 | 21,743 | 4,359 | 12,790 | 9,565 |
| VIII. Vegetable substances, etc. ... | 17,625 | 17,199 | 16,729 | 9,568 | 14,709 | 18,688 |
| IX. Apparel, etc. ... | 171,014 | 220,873 | 196,491 | 170,308 | 198,098 | 203,950 |
| X. Oils, etc. ... | 42,292 | 52,684 | 48,060 | 46,777 | 44,783 | 42,546 |
| XI. Paints, etc. ... | 15,186 | 8,913 | 9,761 | 11,142 | 7,003 | 6,330 |
| XII. Stones, etc. ... | 2,043 | 2,183 | 2,775 | 2,000 | 1,883 | 2,179 |
| XIII. Specie ... | 846,921 | 1,241,082 | 862,330 | 1,421,660 | 2,087,901 | 1,474,225 |
| XIV. Metals, ores, etc. ... | 9,744 | 55,615 | 374,474 | 50,791 | 52,278 | 27,036 |
| XV. Metals, part manufactured ... | 13,806 | 12,105 | 15,345 | 26,404 | 58,991 | 54,841 |
| XVI. Metals, manufactured ... | 106,334 | 202,676 | 181,675 | 193,947 | 200,876 | 222,313 |
| XVII. Leather, etc. ... | 13,074 | 18,138 | 20,514 | 23,046 | 28,955 | 32,692 |
| XVIII. Wood, etc. ... | 32,135 | 24,749 | 19,994 | 26,149 | 34,438 | 47,791 |
| XIX. Earthenware, etc. ... | 23,337 | 15,864 | 16,184 | 18,526 | 22,756 | 26,037 |
| XX. Paper, etc. ... | 52,171 | 55,090 | 55,400 | 49,471 | 61,655 | 52,454 |
| XXI. Jewellery, etc. ... | 54,491 | 77,332 | 59,478 | 66,147 | 39,328 | 49,051 |
| XXII. Instruments, etc. ... | 13,555 | 11,683 | 13,244 | 9,329 | 21,660 | 32,108 |
| XXIII. Drugs, etc. ... | 42,976 | 45,923 | 36,879 | 35,595 | 45,735 | 47,511 |
| XXIV. Miscellaneous ... | 121,122 | 107,305 | 111,118 | 168,059 | 147,612 | 182,070 |
| Total ... | 1,954,396 | 2,591,229 | 2,335,748 | 2,713,277 | 3,437,889 | 3,007,747 |

EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE
AND THE PRODUCE OF OTHER COUNTRIES, 1901 and 1903 to 1907.—Continued.

| Classes. | 1901. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------------|------------|------------|------------|------------|------------|------------|
| TOTAL EXPORTS. | | | | | | |
| | £ | £ | £ | £ | £ | £ |
| I. Animal foodstuffs, etc ... | 4,139,487 | 3,149,982 | 4,170,731 | 4,764,876 | 5,669,081 | 5,746,903 |
| II. Vegetable foodstuffs, etc. | 4,714,297 | 931,733 | 7,070,403 | 6,173,128 | 6,863,977 | 7,173,986 |
| III. Beverages (non-alcoholic), etc. | 45,906 | 76,336 | 68,263 | 56,355 | 67,169 | 75,457 |
| IV. Alcoholic liquors, etc. ... | 190,362 | 153,739 | 155,713 | 161,947 | 140,879 | 170,900 |
| V. Tobacco, etc. ... | 66,783 | 58,485 | 72,938 | 79,259 | 75,030 | 100,364 |
| VI. Live animals ... | 473,706 | 202,733 | 252,558 | 410,328 | 318,756 | 375,032 |
| VII. Animal substances, etc. | 16,764,076 | 16,149,800 | 18,777,353 | 22,298,875 | 25,709,281 | 32,020,929 |
| VIII. Vegetable substances, etc. | 159,685 | 139,898 | 166,413 | 274,958 | 295,830 | 273,879 |
| IX. Apparel, etc. ... | 213,156 | 255,746 | 240,503 | 212,767 | 259,987 | 279,512 |
| X. Oils, etc. ... | 886,047 | 592,048 | 785,458 | 1,002,886 | 1,116,625 | 1,301,567 |
| XI. Paints, etc. ... | 15,806 | 11,627 | 11,543 | 13,181 | 10,240 | 11,763 |
| XII. Stones, etc. ... | 1,044,017 | 1,111,945 | 814,492 | 899,354 | 929,443 | 1,345,970 |
| XIII. Specie ... | 9,731,737 | 12,263,406 | 10,990,738 | 5,677,363 | 11,939,459 | 6,885,797 |
| XIV. Metals, unmanufactd., ores, etc. | 8,926,013 | 10,653,657 | 11,651,517 | 11,987,487 | 13,379,438 | 14,190,576 |
| XV. Metals, part manufactured | 17,608 | 2,345 | 19,975 | 36,375 | 81,230 | 65,890 |
| XVI. Metals, manufactured ... | 313,996 | 331,993 | 287,892 | 332,629 | 350,828 | 378,853 |
| XVII. Leather, etc. ... | 673,766 | 564,747 | 445,320 | 577,903 | 620,163 | 602,248 |
| XVIII. Wood, etc. ... | 698,159 | 881,565 | 860,232 | 1,057,865 | 1,044,043 | 849,985 |
| XIX. Earthenware, etc. ... | 29,937 | 30,693 | 28,897 | 35,263 | 49,464 | 59,090 |
| XX. Paper, etc. ... | 74,342 | 87,492 | 90,800 | 88,382 | 108,389 | 102,184 |
| XXI. Jewellery, etc. ... | 122,409 | 153,771 | 187,507 | 222,859 | 187,996 | 198,366 |
| XXII. Instruments, etc. ... | 14,062 | 13,441 | 14,755 | 11,429 | 23,492 | 34,874 |
| XXIII. Drugs, etc. ... | 129,275 | 158,017 | 164,632 | 175,978 | 214,707 | 256,808 |
| XXIV. Miscellaneous... | 251,540 | 203,023 | 206,922 | 239,789 | 282,206 | 323,314 |
| Total ... | 49,696,172 | 48,250,112 | 57,485,915 | 56,841,035 | 69,737,763 | 72,824,247 |

§ 8. Movements of Specie and Bullion.

1. **Specie and Bullion.**—The following tables shew the value of gold and silver bullion and specie, including bronze specie, imported and exported during the years 1901 and 1903 to 1907 :—

AUSTRALIAN IMPORTS AND EXPORTS OF SPECIE AND BULLION, 1901 AND 1903 TO 1907.

| Items. | 1901. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------|---------|-----------|-----------|-----------|-----------|-----------|
| IMPORTS. | | | | | | |
| | £ | £ | £ | £ | £ | £ |
| Gold—Specie ... | 3,710 | 1,342 | 1,294 | 25,098 | 81,790 | 9,967 |
| Bullion ... | 762,415 | 1,219,852 | 1,168,139 | 1,452,432 | 2,066,063 | 1,426,827 |
| Total ... | 766,125 | 1,221,194 | 1,169,433 | 1,477,530 | 2,147,853 | 1,436,794 |
| Silver—Specie ... | 158,656 | 32,904 | 31,758 | 53,719 | 140,764 | 375,937 |
| Bullion ... | 54 | 51 | 156 | 13,543 | 33,897 | 498 |
| Total ... | 158,710 | 32,955 | 31,914 | 67,262 | 174,661 | 376,435 |
| Bronze—Specie ... | 10,029 | 5,780 | 2,501 | 5,503 | 8,403 | 20,971 |
| Grand total ... | 934,864 | 1,259,929 | 1,203,848 | 1,550,295 | 2,330,917 | 1,834,200 |

AUSTRALIAN IMPORTS AND EXPORTS OF SPECIE AND BULLION.—Continued.

| Items. | 1901. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------|-------------|--------------|--------------|-------------|--------------|-------------|
| EXPORTS. | | | | | | |
| Gold—Specie | £ 9,708,037 | £ 12,251,274 | £ 10,961,650 | £ 6,656,245 | £ 11,915,685 | £ 6,857,838 |
| Bullion | 4,616,039 | 6,145,296 | 5,923,953 | 5,299,748 | 4,955,600 | 4,036,067 |
| Total | 14,324,076 | 18,396,570 | 16,885,603 | 10,955,993 | 16,871,285 | 10,893,905 |
| Silver—Specie | 23,370 | 11,478 | 28,063 | 14,413 | 23,521 | 25,667 |
| Bullion | 922,443 | 715,256 | 852,378 | 818,403 | 814,371 | 1,193,156 |
| Total | 945,813 | 726,734 | 881,041 | 832,816 | 838,395 | 1,218,823 |
| Bronze—Specie | 330 | 654 | 425 | 6,705 | 253 | 2,292 |
| Total | | | | | | |
| Australian produce | 14,423,298 | 17,835,214 | 16,540,000 | 10,332,512 | 15,584,836 | 10,639,546 |
| Other produce | 846,921 | 1,288,744 | 1,227,069 | 1,463,002 | 2,125,097 | 1,475,474 |
| Grand total | 15,270,219 | 19,123,958 | 17,767,069 | 11,795,514 | 17,709,933 | 12,115,020 |

IMPORTS AND EXPORTS OF SPECIE AND GOLD AND SILVER BULLION FROM AND TO PRINCIPAL COUNTRIES, 1907.

| Country. | Imports. | | | Exports. | | |
|----------------------------|----------|-----------|-----------|-----------|-----------|------------|
| | Specie. | Bullion. | Total. | Specie. | Bullion. | Total. |
| | £ | £ | £ | £ | £ | £ |
| United Kingdom | 396,655 | 941 | 397,596 | 1,476,669 | 3,307,317 | 4,783,986 |
| Canada | 350 | ... | 350 | ... | ... | ... |
| Cape Colony | ... | ... | ... | 50,000 | ... | 50,000 |
| Ceylon | ... | ... | ... | 3,205,075 | 635,200 | 3,840,275 |
| Fanning Island | ... | ... | ... | 600 | ... | 600 |
| Fiji | ... | ... | ... | 52,000 | ... | 52,000 |
| Hong Kong | ... | ... | ... | 397,522 | 2,684 | 400,206 |
| India... .. | ... | ... | ... | 805,353 | 991,716 | 1,797,069 |
| Natal | ... | ... | ... | 100,000 | ... | 100,000 |
| New Zealand | 4,316 | 1,380,124 | 1,384,440 | 761,890 | 1,386 | 763,276 |
| Norfolk Island | ... | ... | ... | 300 | ... | 300 |
| Papua | ... | 46,029 | 46,029 | ... | ... | ... |
| Straits Settlements | ... | ... | ... | 10,000 | ... | 10,000 |
| Total British Countries | 401,321 | 1,427,094 | 1,828,415 | 6,859,409 | 4,938,303 | 11,797,712 |
| United States of America | ... | 169 | 169 | ... | 278,848 | 278,848 |
| Other Countries | 5,554 | 62 | 5,616 | 26,388 | 12,072 | 38,460 |
| Total Foreign Countries | 5,554 | 231 | 5,785 | 26,388 | 290,920 | 317,308 |
| Grand total | 406,875 | 1,427,325 | 1,834,200 | 6,885,797 | 5,229,223 | 12,115,020 |

2. **Imports of Bullion and Specie.**—Of the total imports of bullion and specie into the Commonwealth during 1907, 77.78 per cent. was in the form of gold bullion, and was received almost entirely from New Zealand for the purpose of minting.

3. **Exports of Bullion and Specie.**—Of the total exports of bullion and specie during 1907 gold represented 89.92 per cent., 56.60 per cent. being in the form of specie, and 33.32 per cent. bullion.

The countries which appear as the largest recipients of gold from Australia are the United Kingdom, Ceylon, India, and the United States of America, in the order named, but as large amounts of gold, recorded as exported to Ceylon, are shipped *under option*, and may be despatched thence to any country needing gold, the actual amount sent to each country cannot be stated.

§ 9. Effects of Prices on the Values of Exports.

1. **Significance of Price in Totals.**—In comparing the value of exports from, and also imports into, any country for a series of years the question naturally arises as to how much any variation in the aggregate value is due to fluctuations in prices, and how much to increase or decrease of actual quantities, for, in aggregates expressed only in value—the only possible method when the commodities differ—the two sources of variation are confused.

The scheme of comparison followed hereinafter is that of the British Board of Trade. This is to select all such articles of export as are recorded by units of quantity, and to apply to the quantities exported during each year the average price per unit ruling in some year, arbitrarily taken for the purposes of comparison as the basic year. The ratio which the total actually recorded for the year under review bears to the total obtained by applying to the quantities of the year under review, the average prices ruling during the basic year, may be called the "price-level" of the latter—as compared with the former—for the group of commodities considered, and may be taken (so it is assumed in the method of the British Board of Trade) as a measure of the effect of the change of price in the intervening period. Since the value of the articles used in the calculations represents as much as 85.6 per cent. of all exports during 1907—after excluding specie and gold bullion, which are not subject to price changes—a fairly extended basis, on which an estimate of the effect of prices over the full range of exports can be founded, is afforded.¹

2. **Effect of Prices.**—The following table shews the values of exports as actually recorded in each year, together with the values computed on the assumption that the prices of 1901 were maintained.² The table also shews the yearly "price-levels," based upon the results so ascertained.

This table obviously furnishes a measure of the influence of prices on the value of exports of each year since 1901. Column IV., viz., values computed on 1901 prices, represents the volume of exports (less specie and gold bullion), expressed in the common denominator, viz., the currency unit, and from the figures therein it will be seen that, had the prices of 1901 remained constant, the value of the exports during the year 1907, for example, would have been £47,289,306 only, instead of £61,902,383, viz., the value actually recorded. The difference between these amounts, viz., £14,613,077, results from rise of prices,¹ viz., from the group advance of 30.9 per cent. in the price of commodities in the period intervening between 1901 and 1907.

EFFECT OF PRICES AND PRICE-LEVELS FOR THE PERIOD 1901 to 1907

(BASIC YEAR, 1901).

| Year. | Exports of Specie and Gold Bullion. | Other Exports. | | Total Exports (including Specie and Bullion). | | Price Levels, ³ Year 1901 = 100. |
|----------|-------------------------------------|---------------------|---------------------------------|---|---------------------------------|---|
| | | Values as Recorded. | Values Computed on 1901 Prices. | Values as Recorded. | Values Computed on 1901 Prices. | |
| I. | II. £ | III. £ | IV. £ | V. £ | VI. £ | VII. |
| 1901 ... | 14,338,434 | 35,357,738 | 35,357,738 | 49,696,172 | 49,696,172 | 1000 |
| 1902 ... | 14,567,500 | 29,347,587 | 27,375,976 | 43,915,087 | 41,943,476 | 1072 |
| 1903 ... | 18,408,702 | 29,841,410 | 26,697,120 | 48,250,112 | 45,105,822 | 1118 |
| 1904 ... | 16,914,691 | 40,571,224 | 36,139,840 | 57,485,915 | 53,054,531 | 1123 |
| 1905 ... | 10,977,111 | 45,863,924 | 38,465,210 | 56,841,035 | 49,442,321 | 1192 |
| 1906 ... | 16,895,059 | 52,842,704 | 42,295,310 | 69,737,763 | 59,190,369 | 1249 |
| 1907 ... | 10,921,864 | 61,902,383 | 47,289,306 | 72,824,247 | 58,211,170 | 1309 |

1. This basis is thus subject only to the limitations of the fundamental assumption and to its limitation to 85.6 per cent. of the total.
2. The method of the British Board of Trade is clearly valid for certain purposes, and is adopted because it widens the field of comparison. It is not, however, universally valid.
3. These are index numbers for the total group of exports, excluding specie and gold bullion.

3. **Influence of Quantity and Price on Total Increased Value of Exports.**—The estimated actual and relative effects of the influence of—(i.) increase or decrease in the exports of specie and gold bullion, (ii.) increase or decrease of *quantities* of other exports, (iii.) variation of prices on the value of the exports, of each year compared with 1901 is shown below :—

ANALYSIS OF INFLUENCE OF QUANTITY AND PRICE ON INCREASE OR DECREASE IN EXPORTS, 1902 to 1907, COMPARED WITH 1901.

| Year. | Particulars. | Variation above (+) or below (−) 1901 Exports due to change in :— | | | Total Variation above (+) or below (−) Value of 1901 Exports. |
|-------|--|---|---|--|---|
| | | Export of Specie and Gold Bullion. | Quantity of Export other than Specie and Gold Bullion | Prices of Export other than Specie and Gold Bullion. | |
| 1902. | Variation, actual £ | +229,066 | −7,981,762 | +1,971,611 | −5,781,085 |
| | Relative magnitude of variation. Total | +4 | −138 | +34 | −100 |
| | variation taken as 100 | +1.60 | −22.57 | +7.20 | −11.63 |
| | Variation, per cent. | | | | |
| 1903. | Variation, actual £ | +4,070,268 | −8,660,618 | +3,144,290 | −1,446,060 |
| | Relative magnitude of variation. Total | +281 | −597 | +216 | −100 |
| | variation taken as 100 | +28.38 | −24.49 | +11.78 | −2.91 |
| | Variation, per cent. | | | | |
| 1904. | Variation, actual £ | +2,576,257 | +782,102 | +4,431,384 | +7,789,743 |
| | Relative magnitude of variation. Total | +33 | +10 | +57 | +100 |
| | variation taken as 100 | +17.96 | +2.2 | +12.26 | +15.67 |
| | Variation, per cent. | | | | |
| 1905. | Variation, actual £ | −3,361,323 | +3,107,472 | +7,398,714 | +7,144,863 |
| | Relative magnitude of variation. Total | −47 | +43 | +104 | +100 |
| | variation taken as 100 | −23.44 | +8.79 | +19.24 | +14.37 |
| | Variation, per cent. | | | | |
| 1906. | Variation, actual £ | +2,556,625 | +6,937,572 | +10,547,394 | +20,041,591 |
| | Relative magnitude of variation. Total | +13 | +35 | +52 | +100 |
| | variation taken as 100 | +17.83 | +19.62 | +24.94 | +40.32 |
| | Variation, per cent. | | | | |
| 1907. | Variation, actual £ | −3,416,570 | +11,931,568 | +14,618,077 | +23,128,075 |
| | Relative magnitude of variation. Total | −15 | +52 | +63 | +100 |
| | variation taken as 100 | −23.83 | +33.75 | +30.90 | +46.56 |
| | Variation, per cent. | | | | |

1. On the fundamental assumption.

From the above figures it will be seen that the exports of 1907, for example, as compared with 1901, shew a decrease of 23.83 per cent. in specie and gold bullion, an increase of 33.75 per cent. in the quantities of other exports, and an increase of 30.90 per cent. in the group-prices for all exports, excluding specie and gold bullion. These aggregate to 46.56 per cent., or absolutely £23,128,075. Thus, of this total increase, £11,931,568, or 52 per cent., was due to increased quantities of other exports, and £14,613,077, or 63 per cent., was due to increased prices, while the exports of specie and gold bullion decreased by £3,416,570.

§ 10. External Trade of Australia and other Countries.

1. Essentials of Comparisons.—Direct comparisons of the external trade of any two countries are possible only when the general conditions prevailing therein, and the scheme of recording, are sensibly identical. For example, in regard to the mere matter of record, it may be observed that in one country the value of imports may be the value at the port of shipment, while in another the cost of freight, insurance, and charges may be added thereto. Or again, the values of imports and exports in the one may be declared by merchants, whereas in the other they may be the official prices, fixed from time to time by a commission constituted for the purpose. The figures relating to the external trade of any country are also affected in varying degree by the extent to which they include transit or re-export trade. Including bullion and specie, the transit trade of Belgium, for example, represents 41.93 per cent. of the gross trade recorded: of Switzerland, 32.97 per cent.; of France, 20.29 per cent., and of the United Kingdom, 24.56 per cent., whereas in Australia the same element represents only 6 per cent., and in New Zealand even less.

2. "Special Trade" of Various Countries.—Special trade may be defined, agreeably to the practice of the British Board of Trade, as (a) imports entered for consumption in the country (as distinguished from imports for transshipment or re-export), and (b) exports of domestic products.

In the following table the figures relate, as nearly as is possible, to imports entered for consumption in the various countries quoted, and to exports of their domestic products. It is to be noted, however, that these figures do not unequivocally denote the same thing throughout, since, in the United Kingdom and other manufacturing countries, raw or partly manufactured materials are imported as for home consumption, and, after undergoing some process of manufacture or further modification, are re-exported as domestic production, and further, the statistical records of many countries do not distinguish between bullion and specie imported for the use of the particular country (*home consumption*) and the amount in transit, nor between the exports of that produced within the country and that re-exported. Nevertheless a comparison of this character reveals approximately the extent of the external trade which otherwise would not be manifest

From the following table it may be seen that, for the particular years indicated, the value of the total trade per inhabitant was greatest in New Zealand (£40 Os. 9d. per head); the next country in order of value per inhabitant was Belgium (£30 13s. 3d. per head), followed closely by Switzerland (£30 12s. 2d. per head). Australia comes fourth (£28 10s. 10d. per head), and is some way in advance of the next country, viz., the United Kingdom (£22 6s. 5d. per head):—

TRADE OF VARIOUS COUNTRIES (IMPORTS FOR HOME CONSUMPTION AND EXPORTS OF DOMESTIC PRODUCTS, INCLUDING BULLION AND SPECIE), FOR LATEST AVAILABLE YEAR.

| Country. | Year ended. | Trade. | | | Trade per Inhabitant. | | |
|---------------------------|-------------|-------------|-------------|-------------|-----------------------|-----------|----------|
| | | Imports. | Exports. | Total. | Im-ports. | Ex-ports. | Total. |
| | | £ | £ | £ | £ s. d. | £ s. d. | £ s. d. |
| COMMONWEALTH OF AUSTRALIA | 31/12/07 | 48,801,000 | 69,817,000 | 118,618,000 | 11 14 10 | 16 16 0 | 28 10 10 |
| United Kingdom | ... | 558,151,000 | 426,035,000 | 984,186,000 | 12 13 2 | 9 13 3 | 22 6 5 |
| Canada | 30/9/07 | 76,375,000 | 50,190,000 | 126,565,000 | 12 14 7 | 8 7 4 | 21 1 11 |
| New Zealand | ... | 17,017,000 | 19,783,000 | 36,800,000 | 18 10 3 | 21 10 6 | 40 0 9 |
| United States of America | 31/12/07 | 324,374,000 | 405,436,000 | 729,810,000 | 3 16 4 | 4 15 5 | 8 11 9 |
| Argentina Republic | 31/12/05 | 47,543,000 | 64,733,000 | 112,276,000 | 9 6 3 | 12 13 7 | 21 19 10 |
| Austria-Hungary | ... | 91,755,000 | 95,971,000 | 187,726,000 | 1 18 7 | 2 0 5 | 3 19 0 |
| Belgium | ... | 124,938,000 | 94,168,000 | 218,266,000 | 17 8 8 | 13 4 7 | 30 13 3 |
| Denmark | ... | 23,224,000 | 21,829,000 | 45,053,000 | 8 19 7 | 8 8 9 | 17 8 4 |
| France | ... | 226,545,000 | 203,967,000 | 430,512,000 | 5 15 4 | 5 4 1 | 10 19 7 |
| German Empire | ... | 368,613,000 | 287,222,000 | 655,835,000 | 6 0 2 | 4 14 4 | 10 14 6 |
| Italy | ... | 59,366,000 | 69,567,000 | 128,933,000 | 2 13 6 | 2 1 8 | 4 15 2 |
| Japan | ... | 51,163,000 | 35,373,000 | 86,536,000 | 1 2 10 | 0 14 11 | 1 17 9 |
| Norway | ... | 15,994,000 | 10,544,000 | 26,538,000 | 6 18 3 | 4 11 1 | 11 9 4 |
| Portugal | ... | 18,787,000 | 6,684,000 | 25,471,000 | 2 13 3 | 1 6 5 | 3 19 8 |
| Spain | ... | 42,764,000 | 38,661,000 | 81,445,000 | 2 5 1 | 2 0 9 | 4 5 10 |
| Sweden | ... | 32,338,000 | 25,062,000 | 57,400,000 | 6 1 11 | 4 14 6 | 10 16 5 |
| Switzerland | ... | 63,070,000 | 42,236,000 | 105,306,000 | 18 6 8 | 12 5 6 | 30 12 2 |
| Uruguay | ... | 7,630,000 | 7,559,000 | 15,189,000 | 7 4 8 | 7 3 4 | 14 8 0 |

* Official values are said to be 25 per cent. below real values.

3. External Trade as a Measure of Prosperity.—External trade as a measure of prosperity is by no means unequivocal. Comparisons can be accepted as furnishing satisfactory indications of the relative progress or welfare of different countries, only when taken together with all other facts that should be considered in this connection. It is, for example, obvious that the external trade of a community depends not only upon the aggregate of its requirements, but also upon the extent to which it fails to supply requirements from its own resources. A community largely self-contained, for example, may have but a small external trade per head, and yet, by virtue of its capacity to produce and manufacture its own raw material, may actually enjoy greater prosperity and a higher standard of living than another country whose external trade per head is much greater. The same observation applies equally to comparisons of the trade of the same country at different periods. A young country, the industries and export trade of which are mainly connected with raw or natural products, may, for example, through internal development, find the growth of its external trade diminishing per head of population without necessarily suffering any real diminution in the well-being of its people. And it is further obvious that circumstances may arise when enlargement of both imports and exports is actually a consequence of economic difficulties. For example, in 1903, owing to shortage in the local supply, it became necessary to *import* wheat and flour into Australia to the value of £2,556,968, and to meet the charges for this by equivalent *exports*, the effect, considered *per se*, being to enlarge both. In this case, however, the increase is not an evidence of economic progress.

4. Australian Trade Evidence of Prosperity.—Despite the above suggestions regarding the necessity of caution, so as to avoid hasty inferences based upon aggregate trade, a consideration of its general characteristics over a number of years, and of its marked development will suffice to show that Australian affairs are progressing rapidly and most favourably, especially when it is taken into account that there are no counterbalancing elements of disadvantage.

§ 11. Trade of the United Kingdom with Australia. Has it been Diverted?

1. **General.**—The question has been raised at times whether there be a diversion of the trade of the United Kingdom with Australia, and this question has naturally become during recent years one of more than ordinary interest with publicists in both countries. The Advisory Committee on Commercial Intelligence of the British Board of Trade considered the matter of such importance that in June, 1905, Mr. R. J. Jeffray was sent to Australia as a Commissioner to investigate the conditions and prospects of British trade therewith, and with a view to improving the trade between the Commonwealth and the United Kingdom, Mr. C. H. Wickes, Commissioner of the British Board of Trade, arrived in Australia in December, 1908, for the purpose of advising British manufacturers of the particular requirements of the Australian markets. To thoroughly treat the various changes in the character and volume of the import trade from Great Britain, and from her more important competitors, viz., the United States of America and Germany, would require more space than can be spared in this volume, so that attention must perforce be restricted to the most important features of the question at issue.

2. **Proportion of Trade from United Kingdom.**—The percentages given in the following table shew the proportions of the imports into Australia from the United Kingdom, and from the other countries mentioned, during each of the years 1886 to 1907:—

PROPORTION OF IMPORT TRADE FROM THE UNDERMENTIONED COUNTRIES,
1886 TO 1907.

| Year. | Percentage Proportions from— | | | | | Year. | Percentage Proportions from— | | | | |
|-------|------------------------------|------------------|---------|----------------|------------------------|-------|------------------------------|------------------|---------|----------------|------------------------|
| | United K'dom. | British Poss'ns. | Germ'y. | United States. | Total Foreign C'tries. | | United K'dom. | British Poss'ns. | Germ'y. | United States. | Total Foreign C'tries. |
| 1886 | 73.37 | 11.23 | 2.05 | 6.11 | 15.40 | 1897 | 66.22 | 10.72 | 5.75 | 10.10 | 23.06 |
| 1887 | 72.26 | 12.50 | 2.23 | 5.37 | 15.24 | 1898 | 66.62 | 10.88 | 5.86 | 10.16 | 22.50 |
| 1888 | 71.62 | 12.03 | 2.71 | 6.48 | 16.35 | 1899 | 61.85 | 11.75 | 6.07 | 13.00 | 26.40 |
| 1889 | 68.98 | 13.45 | 3.65 | 6.67 | 17.57 | 1900 | 61.28 | 11.28 | 6.54 | 12.16 | 27.44 |
| 1890 | 68.08 | 12.66 | 4.77 | 6.54 | 19.26 | 1901 | 59.47 | 11.22 | 6.59 | 13.80 | 29.31 |
| 1891 | 70.15 | 11.40 | 4.53 | 6.79 | 18.45 | 1902 | 58.64 | 13.22 | 6.53 | 12.27 | 28.14 |
| 1892 | 70.74 | 11.37 | 4.32 | 6.04 | 17.89 | 1903 | 52.51 | 13.17 | 6.24 | 16.84 | 34.32 |
| 1893 | 72.78 | 12.14 | 3.40 | 4.98 | 15.08 | 1904 | 60.63 | 12.22 | 7.17 | 12.40 | 27.10 |
| 1894 | 71.92 | 11.96 | 3.78 | 5.39 | 16.12 | 1905 | 60.17 | 14.04 | 6.42 | 11.70 | 25.79 |
| 1895 | 71.62 | 11.46 | 4.42 | 5.95 | 16.92 | 1906 | 59.39 | 15.09 | 7.16 | 10.36 | 25.52 |
| 1896 | 68.28 | 10.74 | 5.31 | 8.59 | 20.98 | 1907 | 61.59 | 12.93 | 6.85 | 11.33 | 25.48 |

In order to draw accurate conclusions from the above table, however, special attention must be given to the nature of imports from the United States, since the imports from that country have in some years been increased by imports of breadstuffs, a trade in which the United Kingdom could not participate. The years affected by the imports of breadstuffs were 1886, 1889, 1896, 1897, and 1903. Increased imports of such items as kerosene oil and timber also tend to increase the proportion of imports from the United States without any prejudicial effect on the trade of the United Kingdom. Similar modification is not necessary in regard to Germany, as the nature of the imports from that country is substantially the same as from the United Kingdom.

It has already been pointed out in this chapter that, prior to the year 1905, imports into the Commonwealth were recorded only against the country whence they were directly imported. Although the values of direct imports do not afford satisfactory data, it is necessary for any comparison extending further back than 1905 to use such figures. These figures are unsatisfactory on account of the varying proportions of indirect trade.

In order to furnish a comparison free from the influence of such trade, as from its nature is not open to the United Kingdom, the following table shewing the direct imports during the years 1886, 1906, and 1907 of the principal classes of goods which enter largely into the trade of the countries named has been prepared. It may be mentioned that the imports for the year 1886 were extracted from the "Statistical Registers" of the several States for a comparison—published in a previous issue—with the year 1906, and as their compilation involved a large amount of labour they are again utilised for comparison with the year 1907:—

PRINCIPAL DIRECT IMPORTS FROM THE UNITED KINGDOM, GERMANY AND THE UNITED STATES. 1886, 1906 and 1907.

| Nature of Imports. | Year. | United Kingdom. | Germany. | United States. | All Countries. |
|--|-------|-----------------|-----------|----------------|----------------|
| | | £ | £ | £ | £ |
| Animal foods... .. | 1886 | 348,950 | 5,603 | 70,959 | 674,296 |
| | 1906 | 293,950 | 24,319 | 146,781 | 697,830 |
| | 1907 | 312,893 | 48,397 | 137,876 | 688,642 |
| Alcoholic liquors | 1886 | 1,801,200 | 82,185 | 82,730 | 2,126,877 |
| | 1906 | 1,053,154 | 109,426 | 24,367 | 1,388,671 |
| | 1907 | 1,216,167 | 111,252 | 23,256 | 1,556,224 |
| Apparel, textiles, etc. (incl. boots) | 1886 | 9,845,182 | 54,350 | 15,336 | 10,316,989 |
| | 1906 | 11,066,201 | 418,776 | 221,362 | 13,508,844 |
| | 1907 | 12,639,986 | 455,962 | 305,704 | 15,367,604 |
| Manufactures of metal... .. | 1886 | 4,616,924 | 94,832 | 311,342 | 5,190,901 |
| | 1906 | 5,144,912 | 926,314 | 1,379,662 | 7,932,675 |
| | 1907 | 7,087,100 | 1,047,120 | 1,843,819 | 10,531,166 |
| Paper and stationery | 1886 | 1,260,531 | 21,038 | 39,700 | 1,340,627 |
| | 1906 | 1,207,729 | 261,684 | 288,509 | 1,838,474 |
| | 1907 | 1,360,760 | 296,173 | 268,494 | 2,071,344 |
| Jewellery, timepieces, fancy goods | 1886 | 659,833 | 24,206 | 57,477 | 789,127 |
| | 1906 | 740,850 | 140,950 | 59,151 | 1,045,164 |
| | 1907 | 850,584 | 164,919 | 97,693 | 1,261,046 |
| Earthenware, cements, etc. ... | 1886 | 755,907 | 78,762 | 24,711 | 938,476 |
| | 1906 | 316,252 | 227,390 | 37,344 | 688,510 |
| | 1907 | 416,467 | 225,419 | 64,437 | 863,849 |
| Drugs, chemicals, fertilisers, etc. | 1886 | 511,216 | 8,660 | 33,382 | 766,243 |
| | 1906 | 887,325 | 193,615 | 82,789 | 1,732,543 |
| | 1907 | 899,383 | 222,872 | 108,130 | 1,840,933 |
| Leather, and mfs. thereof and substitutes thereof, incl. indiarubber | 1886 | 285,601 | 6,357 | 53,588 | 363,332 |
| | 1906 | 682,238 | 70,028 | 116,356 | 924,968 |
| | 1907 | 740,053 | 80,446 | 125,176 | 1,004,822 |
| Total above-mentioned imports ... | 1886 | 20,085,344 | 375,993 | 689,225 | 22,506,868 |
| | 1906 | 21,392,611 | 2,372,502 | 2,356,321 | 29,757,679 |
| | 1907 | 25,523,393 | 2,652,560 | 2,974,585 | 35,185,630 |
| Increase— | | | | | |
| 1906 over 1886 | ... | 1,307,267 | 1,996,509 | 1,667,096 | 7,250,811 |
| 1907 over 1886 | ... | 5,438,049 | 2,276,567 | 2,285,360 | 12,678,762 |
| 1907 over 1906 | ... | 4,130,782 | 280,058 | 618,264 | 5,427,951 |
| Total imports | 1886 | 25,077,166 | 699,075 | 2,087,213 | 34,178,743 |
| | 1906 | 26,575,833 | 3,204,844 | 4,633,553 | 44,744,912 |
| | 1907 | 31,906,447 | 3,551,255 | 5,869,099 | 51,809,033 |
| Increase— | | | | | |
| 1906 over 1886 | ... | 1,498,667 | 2,505,769 | 2,546,340 | 10,566,169 |
| 1907 over 1886 | ... | 6,829,281 | 2,852,180 | 3,781,886 | 17,630,290 |
| 1907 over 1906 | ... | 5,330,614 | 346,411 | 1,235,546 | 7,064,121 |

PERCENTAGE ON IMPORTS FROM ALL COUNTRIES, OF PRINCIPAL DIRECT IMPORTS FROM UNITED KINGDOM, GERMANY, AND UNITED STATES, 1886, 1906 and 1907.

| Nature of Imports. | Year. | United Kingdom. | Germany. | United States. | All Countries |
|--|-------|-----------------|----------|----------------|---------------|
| Animal foods | 1886 | 51.75 | .83 | 10.52 | 100 |
| | 1906 | 42.12 | 3.48 | 21.02 | 100 |
| | 1907 | 45.43 | 7.02 | 20.00 | 100 |
| Alcoholic liquors | 1886 | 84.69 | 3.86 | 3.89 | 100 |
| | 1906 | 75.94 | 7.88 | 1.75 | 100 |
| | 1907 | 78.14 | 7.15 | 1.49 | 100 |
| Apparel, textiles, etc. (including boots) | 1886 | 95.44 | .53 | .15 | 100 |
| | 1906 | 81.93 | 3.10 | 1.64 | 100 |
| | 1907 | 82.25 | 2.97 | 1.99 | 100 |
| Manufactures of metal | 1886 | 88.93 | 1.83 | 6.00 | 100 |
| | 1906 | 64.85 | 11.68 | 17.39 | 100 |
| | 1907 | 67.30 | 9.94 | 17.51 | 100 |
| Paper and stationery | 1886 | 94.03 | 1.57 | 2.96 | 100 |
| | 1906 | 65.69 | 14.23 | 15.69 | 100 |
| | 1907 | 65.69 | 14.30 | 12.96 | 100 |
| Jewellery, timepieces, and fancy goods | 1886 | 83.62 | 3.07 | 7.28 | 100 |
| | 1906 | 70.89 | 13.48 | 5.66 | 100 |
| | 1907 | 67.44 | 13.08 | 7.75 | 100 |
| Earthenware, cement, etc. | 1886 | 80.55 | 8.39 | 2.63 | 100 |
| | 1906 | 45.93 | 33.03 | 5.42 | 100 |
| | 1907 | 48.21 | 26.09 | 7.46 | 100 |
| Drugs, chemicals, fertilisers, etc. ... | 1886 | 66.71 | 1.13 | 4.36 | 100 |
| | 1906 | 51.22 | 11.18 | 4.78 | 100 |
| | 1907 | 48.86 | 12.11 | 5.87 | 100 |
| Leather and mfs. thereof, and substitutes thereof, including indiarubber | 1886 | 78.60 | 1.75 | 15.30 | 100 |
| | 1906 | 73.75 | 7.60 | 12.58 | 100 |
| | 1907 | 73.66 | 8.01 | 12.46 | 100 |
| Total above-mentioned imports | 1886 | 89.24 | 1.67 | 3.06 | 100 |
| | 1906 | 71.89 | 7.97 | 7.92 | 100 |
| | 1907 | 72.52 | 7.54 | 8.45 | 100 |
| Increase— | | | | | |
| 1906 over 1886 | ... | 18.03 | 27.53 | 22.99 | 100 |
| 1907 over 1886 | ... | 42.90 | 17.96 | 18.03 | 100 |
| 1907 over 1906 | ... | 76.11 | 5.16 | 11.37 | 100 |
| Total imports | 1886 | 73.37 | 2.05 | 6.11 | 100 |
| | 1906 | 59.39 | 7.16 | 10.36 | 100 |
| | 1907 | 61.59 | 6.85 | 11.33 | 100 |
| Increase— | | | | | |
| 1906 over 1886 | ... | 14.18 | 23.71 | 24.10 | 100 |
| 1907 over 1886 | ... | 38.74 | 16.18 | 21.45 | 100 |
| 1907 over 1906 | ... | 75.46 | 4.94 | 17.49 | 100 |

The foregoing table might have appeared to justify the inference that, of the total increase (£7,250,811) in the value of imports of the particular classes named in 1906, as compared with 1886, the sum of £1,307,267, or 18.03 per cent., belonged to the United Kingdom; £1,996,509, or 27.53 per cent., to Germany; and £1,667,096, or 22.99 per cent., to the United States. Similarly of the increase (£5,427,951) in the same trade in 1907 over 1906, it would appear that the United Kingdom has secured £4,130,782, or 76.11 per cent.; Germany, £280,058, or 5.16 per cent.; and the United States £618,264, or 11.37 per cent.

Turning, however, to the following table, in which the imports are related to the particular country of manufacture or production, it is shewn that any conclusion drawn

from the records of direct imports would be misleading in regard to the distribution of the increased trade last referred to.

In the next table it is shewn that, of the increase in 1907 over 1906 above referred to, viz., £5,427,951, the United Kingdom secured only £2,843,095, or 52.38 per cent., while Germany's share is increased to £615,533, or 11.34 per cent., and that of the United States is £612,513, or 11.28 per cent.

From the foregoing it is evident that no reliable conclusion in regard to any diversion of trade can be drawn from the records of direct imports; consequently attention must be confined to recent years if a just conclusion is to be reached, and for this reason the following table has been prepared:—

IMPORTS INTO THE COMMONWEALTH OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, GERMANY, AND THE UNITED STATES OF AMERICA IMPORTED DURING THE YEARS 1905, 1906, and 1907.

| Nature of Imports. | Year. | United Kingdom. | Germany. | United States. | All Countries. |
|---|-------|-----------------|-----------|----------------|----------------|
| | | £ | £ | £ | £ |
| Animal foods ... | 1905 | 153,305 | 6,951 | 154,007 | 686,031 |
| | 1906 | 175,077 | 9,224 | 164,734 | 697,830 |
| | 1907 | 177,767 | 7,859 | 153,599 | 688,642 |
| Alcoholic liquors ... | 1905 | 889,568 | 51,013 | 28,202 | 1,346,419 |
| | 1906 | 889,157 | 67,774 | 25,187 | 1,388,671 |
| | 1907 | 1,015,026 | 71,921 | 26,043 | 1,556,224 |
| Apparel, textiles, etc. (incl. boots) | 1905 | 8,510,753 | 799,435 | 333,857 | 12,017,280 |
| | 1906 | 9,306,334 | 933,867 | 373,599 | 13,608,844 |
| | 1907 | 9,900,952 | 1,344,415 | 444,594 | 15,367,604 |
| Manufactures of metals | 1905 | 3,992,057 | 686,849 | 1,522,701 | 6,550,189 |
| | 1906 | 4,870,096 | 1,040,682 | 1,588,483 | 7,932,675 |
| | 1907 | 6,767,768 | 1,184,232 | 2,022,584 | 10,531,166 |
| Paper and stationery ... | 1905 | 1,025,828 | 219,930 | 339,704 | 1,721,174 |
| | 1906 | 1,101,636 | 282,175 | 326,561 | 1,838,474 |
| | 1907 | 1,199,123 | 317,544 | 326,779 | 2,071,344 |
| Jewellery, timepieces, fancy goods | 1905 | 519,698 | 146,657 | 68,874 | 888,391 |
| | 1906 | 525,184 | 193,108 | 82,852 | 1,045,164 |
| | 1907 | 516,552 | 239,363 | 131,750 | 1,261,046 |
| Earthenware, cements, etc. ... | 1905 | 297,736 | 174,633 | 46,438 | 597,787 |
| | 1906 | 303,478 | 227,922 | 41,860 | 688,510 |
| | 1907 | 399,074 | 206,705 | 68,036 | 863,849 |
| Drugs, chemicals, fertilisers, etc. | 1905 | 773,658 | 148,193 | 107,692 | 1,587,613 |
| | 1906 | 832,309 | 210,864 | 122,754 | 1,732,543 |
| | 1907 | 838,227 | 200,269 | 146,825 | 1,840,933 |
| Leather and mfs. thereof and substitutes therefor incl. indiarubber | 1905 | 320,335 | 71,530 | 170,195 | 673,118 |
| | 1906 | 382,425 | 108,992 | 256,902 | 924,968 |
| | 1907 | 414,302 | 117,833 | 275,235 | 1,004,822 |
| Total above-mentioned imports... | 1905 | 16,482,938 | 2,305,191 | 2,771,670 | 26,068,002 |
| | 1906 | 18,385,696 | 3,074,608 | 2,982,932 | 29,757,679 |
| | 1907 | 21,228,791 | 3,690,141 | 3,595,445 | 35,185,630 |
| Increase— | | | | | |
| 1907 over 1905 | ... | 4,745,853 | 1,384,950 | 823,775 | 9,117,628 |
| 1907 over 1906 | ... | 2,843,095 | 615,533 | 612,513 | 5,427,951 |
| Total imports... | 1905 | 20,319,815 | 3,026,850 | 5,005,387 | 38,346,731 |
| | 1906 | 22,904,344 | 3,929,116 | 5,603,703 | 44,744,912 |
| | 1907 | 26,843,610 | 4,623,136 | 6,765,182 | 51,809,033 |
| Increase— | | | | | |
| 1907 over 1905 | ... | 6,523,795 | 1,596,286 | 1,759,795 | 13,462,302 |
| 1907 over 1906 | ... | 3,939,266 | 694,020 | 1,161,479 | 7,064,121 |

**PERCENTAGE ON TOTAL IMPORTS OF IMPORTS OF PRODUCTS OR MANUFACTURES
OF THE UNITED KINGDOM, GERMANY, AND UNITED STATES OF AMERICA INTO
THE COMMONWEALTH DURING THE YEARS 1905, 1906 and 1907.**

| Nature of Imports. | Year. | United Kingdom. | Germany. | United States. | All Countries |
|---|-------|-----------------|----------|----------------|---------------|
| Animal foods | 1905 | 22.34 | 1.01 | 22.45 | 100 |
| | 1906 | 25.08 | 1.32 | 23.61 | 100 |
| | 1907 | 25.81 | 1.14 | 22.30 | 100 |
| Alcoholic liquors | 1905 | 66.06 | 3.79 | 2.95 | 100 |
| | 1906 | 64.06 | 4.88 | 1.81 | 100 |
| | 1907 | 65.21 | 4.62 | 1.67 | 100 |
| Apparel, textiles, etc. (including boots) | 1905 | 70.82 | 6.65 | 2.78 | 100 |
| | 1906 | 68.91 | 6.91 | 2.77 | 100 |
| | 1907 | 64.44 | 8.75 | 2.89 | 100 |
| Manufactures of metals | 1905 | 60.95 | 10.49 | 23.24 | 100 |
| | 1906 | 61.39 | 13.12 | 20.02 | 100 |
| | 1907 | 64.27 | 11.25 | 19.21 | 100 |
| Paper and stationery | 1905 | 59.62 | 12.78 | 19.75 | 100 |
| | 1906 | 59.92 | 15.35 | 17.76 | 100 |
| | 1907 | 57.89 | 15.33 | 15.77 | 100 |
| Jewellery, timepieces, and fancy goods | 1905 | 58.50 | 16.51 | 7.75 | 100 |
| | 1906 | 50.25 | 19.31 | 7.93 | 100 |
| | 1907 | 40.97 | 18.98 | 10.42 | 100 |
| Earthenware, cements, etc. ... | 1905 | 49.80 | 29.21 | 7.77 | 100 |
| | 1906 | 44.07 | 33.10 | 6.08 | 100 |
| | 1907 | 46.19 | 23.93 | 7.87 | 100 |
| Drugs, chemicals, fertilisers, etc. ... | 1905 | 48.74 | 9.33 | 6.78 | 100 |
| | 1906 | 48.04 | 12.17 | 7.10 | 100 |
| | 1907 | 45.54 | 10.88 | 7.98 | 100 |
| Leather and mfs. thereof, and substitutes therefor, including indiarubber | 1905 | 47.59 | 10.63 | 25.28 | 100 |
| | 1906 | 41.35 | 11.78 | 27.78 | 100 |
| | 1907 | 41.24 | 11.73 | 27.40 | 100 |
| Total abovementioned imports ... | 1905 | 63.23 | 8.84 | 10.63 | 100 |
| | 1906 | 61.78 | 10.33 | 10.03 | 100 |
| | 1907 | 60.32 | 10.49 | 10.22 | 100 |
| Increase— | | | | | |
| 1907 over 1905 | ... | 52.05 | 15.19 | 9.03 | 100 |
| 1907 over 1906 | ... | 52.38 | 11.34 | 11.28 | 100 |
| Total imports | 1905 | 52.99 | 7.89 | 13.05 | 100 |
| | 1906 | 51.18 | 8.78 | 12.52 | 100 |
| | 1907 | 51.81 | 8.92 | 13.06 | 100 |
| Increase— | | | | | |
| 1907 over 1905 | ... | 48.46 | 11.86 | 13.07 | 100 |
| 1907 over 1906 | ... | 55.76 | 9.82 | 16.44 | 100 |

3. Significance of Increase of Trade with other Countries.—It has been suggested that the larger proportion of imports now received from foreign countries is due to the establishment and increase of direct shipping with the countries concerned, and that trade formerly received through English ports is now received direct. From the Australian records it is impossible to ascertain the value of the indirect trade with foreign countries through the United Kingdom prior to 1905. The returns of the British Board of Trade, however, shew the exports from the United Kingdom to Australia of foreign and colonial products distinct from the domestic exports, and from this source the table hereunder has been compiled.

It is proper here to mention that, taken in quinquennial periods, the values of the total exports from the United Kingdom to Australia—after making allowance for freight and charges—are in very close agreement with the corresponding import values recorded in this country. The figures for the period 1903 to 1907 are almost identical.

VALUE OF MERCHANDISE AND BULLION AND SPECIE DESPATCHED FROM THE UNITED KINGDOM TO AUSTRALIA, 1888 to 1907.

| Years. | Merchandise. | | | Bullion and Specie. | Total. | Percentage Proportion of Foreign and Colonial Produce. |
|---------------|-------------------------|-------------------------------|-------------------------|---------------------|------------|--|
| | United Kingdom Produce. | Foreign and Colonial Produce. | | | | |
| | | Re-exported. | Transhipped under Bond. | | | |
| £ | £ | £ | £ | £ | | |
| 1888-1892 ... | 19,943,394 | 2,281,589 | 802,802 | 70,317 | 23,098,102 | 13.35 |
| 1893-1897 ... | 14,822,762 | 1,710,129 | 547,784 | 414,403 | 17,495,078 | 12.91 |
| 1898-1902 ... | 19,500,929 | 1,966,731 | 442,279 | 153,347 | 22,063,286 | 10.92 |
| 1903-1907 ... | 18,959,481 | 2,515,548 | 998,098 | 133,330 | 22,606,457 | 15.54 |

From the above table it will be seen that the value and the proportion of foreign goods despatched to Australia through the United Kingdom during the last quinquennium is greater than in the period 1888-92. During the quinquennium 1888-92 the value of foreign and colonial produce despatched from the United Kingdom to Australia was £3,084,391, equal to 13.35 per cent. of all goods so despatched, while during the period 1903-7 the corresponding amount was £3,513,646, or 15.54 per cent. It is therefore apparent that the increase of direct imports from foreign countries has not been, in the aggregate, at the expense of the indirect trade via Great Britain.

§ 12. Customs Tariff 1908.

The primary object of the introduction of a new tariff was to afford increased protection to Australian industries. The Act also provides a tariff of preferential rates as against the general tariff rates on certain goods "the produce or manufacture of the United Kingdom, which are shipped in the United Kingdom to Australia and not transhipped, or if transhipped, then only if it is proved to the satisfaction of the Collector (of Customs) that the goods have not, since they were shipped in the United Kingdom, been subjected to any process of manufacture."

The following tables shew as nearly as possible the results which would be obtained by applying to the imports of 1907 the rates of duty imposed under the tariffs of 1902 and 1908 respectively. Some items which were, under the 1902 tariff, subject to a certain rate of duty, have, under the 1908 tariff, been subdivided and made subject to various rates of duty. It has therefore been necessary to estimate the value of these several subdivisions before applying the new rates, but as the value of these items is relatively small the effect of any error in the estimates in relation to classes of goods would be negligible.

The passage of the Tariff Act of 1908 is too recent to admit of any assured estimate of its effects, or of the consequences of the preference in favour of the United Kingdom. The following table, however, while it must furnish results necessarily differing from the actual results for 1908 when to hand, will afford the best comparative indication possible of the magnitude of the tariff changes. The basis chosen for making the comparison is that furnished by the latest trade returns available (1907):—

TOTAL IMPORTS.—COMPARISONS OF TARIFFS FOR 1902 AND 1908 APPLIED TO TOTAL IMPORTS DURING 1907.

| Class.* | Value of Imports, 1907. | Under Tariff of 1902. | | | | | Under Tariff of 1908. | | | |
|---------|-------------------------|-----------------------|-----------------------------|---|---------------|------------|-----------------------|-----------------------------|---|---------------|
| | | Dutiable Imports. | | Equivalent <i>ad val.</i> rate of Duty. | | | Dutiable Imports. | | Equivalent <i>ad val.</i> rate of Duty. | |
| | | Value. | Per cent. on Total Imports. | On Dutiable Goods. | On all Goods. | | Value. | Per cent. on Total Imports. | On Dutiable Goods. | On all Goods. |
| I. | £ 688,642 | £ 629,647 | 91.42 | 20.33 | 18.59 | £ 637,335 | 92.53 | 26.55 | 24.57 | |
| II. | 1,574,933 | 1,509,052 | 95.82 | 36.58 | 35.06 | 1,444,144 | 91.70 | 42.38 | 38.86 | |
| III. | 1,549,785 | 349,738 | 22.57 | 15.24 | 3.44 | 370,615 | 23.92 | 20.07 | 4.80 | |
| IV. | 1,556,224 | 1,556,224 | 100.00 | 157.34 | 152.34 | 1,556,224 | 100.00 | 152.34 | 152.34 | |
| V. | 753,869 | 753,869 | 100.00 | 169.75 | 169.75 | 753,869 | 100.00 | 180.50 | 180.50 | |
| VI. | 114,787 | ... | ... | ... | ... | 15,404 | ... | 2.47 | 0.33 | |
| VII. | 576,054 | 148,787 | 25.82 | 10.29 | 2.66 | 171,450 | 29.76 | 12.01 | 3.58 | |
| VIII. | 863,603 | 30,016 | 3.48 | 46.15 | 1.60 | 106,792 | 12.36 | 36.54 | 4.52 | |
| IX. | 15,367,604 | 13,848,669 | 89.60 | 14.09 | 11.78 | 9,360,766 | 60.94 | 22.88 | 13.93 | |
| X. | 1,192,177 | 535,256 | 44.90 | 18.71 | 8.40 | 568,571 | 47.70 | 24.92 | 11.89 | |
| XI. | 445,769 | 419,196 | 94.03 | 10.91 | 10.26 | 429,296 | 96.30 | 16.82 | 16.20 | |
| XII. | 127,372 | 103,995 | 81.65 | 16.47 | 13.45 | 108,621 | 85.28 | 21.35 | 18.21 | |
| XIII. | 406,875 | ... | ... | ... | ... | ... | ... | ... | ... | |
| XIV. | 1,763,202 | ... | ... | ... | ... | ... | ... | ... | ... | |
| XV. | 797,354 | ... | ... | ... | ... | ... | ... | ... | ... | |
| XVI. | 10,531,166 | 5,807,274 | 55.15 | 12.71 | 7.01 | 6,083,025 | 57.76 | 16.72 | 9.66 | |
| XVII. | 1,004,822 | 739,488 | 73.60 | 15.50 | 11.40 | 739,488 | 73.60 | 20.99 | 15.45 | |
| XVIII. | 2,100,305 | 1,545,150 | 73.58 | 16.63 | 12.23 | 1,989,056 | 94.70 | 17.41 | 16.48 | |
| XIX. | 863,849 | 845,606 | 97.89 | 19.44 | 19.03 | 827,917 | 95.84 | 22.92 | 21.96 | |
| XX. | 2,071,344 | 794,954 | 35.48 | 21.55 | 7.65 | 807,302 | 38.98 | 25.22 | 9.83 | |
| XXI. | 1,261,046 | 1,037,210 | 81.98 | 21.73 | 17.87 | 1,037,210 | 81.98 | 25.46 | 20.94 | |
| XXII. | 379,300 | 259,551 | 68.43 | 19.00 | 13.00 | 73,467 | 19.37 | 17.91 | 3.47 | |
| XXIII. | 1,840,933 | 373,186 | 20.22 | 19.15 | 3.87 | 384,239 | 20.88 | 21.20 | 4.42 | |
| XXIV. | 3,978,018 | 1,867,076 | 46.93 | 19.69 | 9.24 | 2,189,039 | 55.03 | 23.54 | 12.91 | |
| Total | 51,809,033 | 32,092,944 | 61.94 | 26.59 | 16.47 | 29,653,830 | 57.24 | 33.09 | 18.94 | |
| Total† | 49,974,833 | 32,092,944 | 64.22 | 26.59 | 17.07 | 29,653,830 | 59.34 | 33.09 | 19.63 | |

* For description of the classes of imports see page 616. † Less bullion and specie.

COMPARISONS OF TARIFFS OF 1902 AND 1908 APPLIED TO IMPORTS OF UNITED KINGDOM ORIGIN DURING 1907.

| Class.* | Total Imports of U.K. Origin. | Under Tariff of 1902. | | | | | Under Tariff of 1908. | | | | | |
|---------|-------------------------------|-----------------------|-----------------------------|--------------------------------------|---------------|-----------|-----------------------|--------------------------|--------|---|--------------------------------------|---------------|
| | | Dutiable Imports. | | Equivalent <i>a.v.</i> Rate of Duty. | | | Dutiable Imports. | | | Per cent. of Dutiable Imports on Total Imports. | Equivalent <i>a.v.</i> Rate of Duty. | |
| | | Value. | Per cent. on Total Imports. | On Dutiable Goods. | On all Goods. | | Under General Tariff. | Under Preference Tariff. | Total. | | On Dutiable Goods. | On all Goods. |
| I. | £ 177,767 | £ 175,496 | 98.72 | 23.54 | 23.24 | £ 161,963 | £ 13,727 | £ 175,690 | 98.83 | 25.20 | 24.90 | |
| II. | 493,382 | 437,619 | 88.69 | 22.61 | 20.26 | 203,319 | 237,897 | 441,216 | 89.42 | 27.84 | 24.89 | |
| III. | 186,059 | 178,418 | 95.90 | 10.19 | 9.77 | 27,445 | 150,973 | 178,418 | 95.90 | 16.41 | 15.74 | |
| IV. | 1,015,026 | 1,015,026 | 100.00 | 152.92 | 152.92 | 1,015,026 | ... | 1,015,026 | 100.00 | 152.92 | 152.92 | |
| V. | 35,238 | 35,238 | 100.00 | 143.64 | 143.64 | 35,238 | ... | 35,238 | 100.00 | 167.52 | 167.52 | |
| VI. | 41,329 | ... | ... | ... | ... | 169 | ... | 169 | ... | 1.78 | .01 | |
| VII. | 155,881 | 86,740 | 55.65 | 5.71 | 4.85 | 14,486 | 94,091 | 98,527 | 63.21 | 9.68 | 6.12 | |
| VIII. | 12,978 | 12,977 | 14.08 | 72.67 | 10.23 | 7,631 | 11,134 | 18,765 | 20.36 | 60.17 | 12.25 | |
| IX. | 9,900,952 | 8,962,797 | 90.52 | 13.16 | 11.91 | 191,583 | 5,280,127 | 5,471,710 | 55.26 | 23.82 | 13.16 | |
| X. | 164,060 | 156,180 | 95.18 | 22.40 | 21.33 | 182,049 | 95,226 | 157,275 | 95.86 | 23.37 | 22.40 | |
| XI. | 364,288 | 347,400 | 95.38 | 11.15 | 10.63 | 235,632 | 112,183 | 347,815 | 95.49 | 17.22 | 16.45 | |
| XII. | 59,535 | 52,654 | 88.40 | 16.84 | 14.89 | 28,101 | 26,615 | 54,716 | 91.90 | 21.10 | 19.39 | |
| XIII. | 401,441 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| XIV. | 217,683 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| XV. | 605,576 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| XVI. | 6,767,768 | 4,157,333 | 61.43 | 11.63 | 7.14 | 482,115 | 3,781,324 | 4,263,439 | 62.99 | 14.76 | 9.30 | |
| XVII. | 414,302 | 305,800 | 73.80 | 15.84 | 11.69 | 101,443 | 204,366 | 305,800 | 73.80 | 21.17 | 15.63 | |
| XVIII. | 149,006 | 109,536 | 73.54 | 19.69 | 14.48 | 4,478 | 107,610 | 112,088 | 75.19 | 28.36 | 21.33 | |
| XIX. | 399,074 | 390,748 | 97.90 | 30.09 | 19.67 | 42,067 | 346,379 | 390,466 | 97.84 | 20.60 | 20.16 | |
| XX. | 1,159,123 | 371,543 | 30.99 | 22.65 | 7.02 | 32,825 | 334,411 | 367,239 | 30.63 | 26.75 | 8.19 | |
| XXI. | 516,562 | 483,120 | 93.51 | 22.55 | 21.09 | ... | 483,120 | 483,120 | 93.51 | 22.81 | 21.33 | |
| XXII. | 152,189 | 95,119 | 62.51 | 17.73 | 11.08 | ... | 43,420 | 43,420 | 28.54 | 19.68 | 5.62 | |
| XXIII. | 838,227 | 206,119 | 24.59 | 18.26 | 4.49 | 154,747 | 48,010 | 202,757 | 24.19 | 19.74 | 4.78 | |
| XXIV. | 2,496,994 | 843,327 | 33.80 | 19.11 | 6.46 | 79,900 | 821,041 | 900,941 | 36.08 | 21.60 | 7.79 | |
| Total | 26,843,610 | 18,423,699 | 68.62 | 22.15 | 15.21 | 2,950,187 | 12,113,657 | 15,063,844 | 56.11 | 29.85 | 16.75 | |
| Total† | 26,441,942 | 18,423,699 | 69.68 | 22.15 | 15.43 | ... | ... | 15,063,844 | 56.97 | 29.85 | 17.01 | |

* For description of the classes of imports see page 616. † Less bullion and specie.

COMPARISON OF TARIFFS OF 1902 AND 1908 APPLIED TO IMPORTS OF THE PRODUCE OR MANUFACTURE OF COUNTRIES OTHER THAN THE UNITED KINGDOM.

| Class. † | Imports of Foreign Origin. † | Under 1902 Tariff. | | | | | Under 1908 Tariff. | | | | | |
|-----------|------------------------------|--------------------|-----------------------------|------------------------|---------------|---------------|--------------------------------|-----------------|--------|-----------------------------|------------------------|-----------------|
| | | Dutiable Imports. | | Equivalent a. v. Rate. | | | Dutiable Imports. | | | | Equivalent a. v. Rate. | |
| | | Value. | Per cent. on Total Imports. | On Dutiable Goods. | On all Goods. | On all Goods. | Opposed by Preference Rates. ‡ | Common Rates. § | Total. | Per cent. on Total Imports. | On Dutiable Imports. | On all Imports. |
| £ | % | % | % | % | £ | £ | £ | % | % | % | | |
| I. | 510,875 | 454,151 | 89.09 | 19.09 | 16.97 | 156,786 | 304,859 | 461,645 | 90.36 | 27.06 | 24.45 | |
| II. | 1,081,551 | 1,071,433 | 99.05 | 42.30 | 41.90 | 49,041 | 953,887 | 1,002,928 | 92.71 | 48.78 | 45.23 | |
| III. | 1,363,726 | 171,320 | 12.56 | 20.51 | 2.58 | 103,380 | 88,817 | 192,197 | 14.10 | 23.46 | 3.31 | |
| IV. | 541,198 | 541,198 | 100.00 | 151.24 | 151.24 | ... | 541,198 | 541,198 | 100.00 | 151.24 | 151.24 | |
| V. | 718,631 | 718,631 | 100.00 | 171.03 | 171.03 | ... | 718,631 | 718,631 | 100.00 | 181.14 | 181.14 | |
| VI. | 73,458 | ... | ... | ... | ... | ... | 15,235 | 15,235 | ... | 2.47 | 0.51 | |
| VII. | 420,173 | 62,047 | 14.77 | 12.49 | 1.84 | 69,842 | 3,081 | 73,923 | 17.36 | 15.16 | 2.63 | |
| VIII. | 771,445 | 17,039 | 2.21 | 25.94 | 0.57 | 1,830 | 86,197 | 88,027 | 11.41 | 31.50 | 3.59 | |
| IX. | 5,466,652 | 3,885,872 | 71.07 | 16.24 | 11.55 | 3,834,164 | 54,892 | 3,889,056 | 71.13 | 21.55 | 15.33 | |
| X. | 1,028,117 | 379,076 | 36.87 | 17.18 | 6.34 | 190,663 | 320,633 | 411,396 | 40.00 | 25.52 | 10.21 | |
| XI. | 81,481 | 71,796 | 88.10 | 9.73 | 8.58 | 48,218 | 33,263 | 81,481 | 100.00 | 15.10 | 15.10 | |
| XII. | 67,837 | 51,341 | 75.68 | 16.09 | 12.18 | 15,870 | 38,035 | 53,905 | 79.46 | 21.61 | 17.17 | |
| XIII. | 5,434 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| XIV. | 1,545,519 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| XV. | 191,778 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| XVI. | 3,763,398 | 1,649,941 | 43.83 | 15.44 | 6.77 | 1,343,031 | 476,555 | 1,819,586 | 48.34 | 21.33 | 10.31 | |
| XVII. | 590,520 | 433,679 | 73.43 | 15.26 | 11.20 | 116,361 | 317,318 | 433,679 | 73.43 | 20.87 | 15.32 | |
| XVIII. | 1,951,299 | 1,435,614 | 73.57 | 16.40 | 12.06 | 261,946 | 1,615,022 | 1,876,968 | 96.16 | 16.75 | 16.11 | |
| XIX. | 464,775 | 454,858 | 97.87 | 18.89 | 18.49 | 428,674 | 8,777 | 437,451 | 94.14 | 24.98 | 23.51 | |
| XX. | 872,221 | 363,411 | 41.67 | 20.43 | 8.51 | 404,974 | 35,089 | 440,063 | 50.45 | 23.93 | 12.08 | |
| XXI. | 744,494 | 554,090 | 74.41 | 21.01 | 15.64 | 554,090 | ... | 554,090 | 74.41 | 27.77 | 20.67 | |
| XXII. | 227,111 | 164,432 | 72.40 | 19.73 | 14.29 | 30,047 | ... | 30,047 | 13.23 | 15.35 | 2.03 | |
| XXIII. | 1,002,706 | 166,067 | 16.56 | 20.25 | 3.36 | 84,006 | 97,476 | 181,482 | 18.10 | 22.83 | 4.13 | |
| XXIV. | 1,481,024 | 1,023,249 | 69.08 | 20.18 | 13.94 | 1,160,593 | 127,505 | 1,288,098 | 86.96 | 24.86 | 21.65 | |
| Total ... | 24,965,423 | 13,669,245 | 54.74 | 32.57 | 17.83 | 8,853,516 | 5,736,470 | 14,589,986 | 58.43 | 36.42 | 21.29 | |
| Total* | 23,538,325 | 13,669,245 | 58.07 | 32.57 | 18.91 | 8,853,516 | 5,736,470 | 14,589,986 | 61.98 | 36.42 | 22.58 | |

* Less bullion and specie. † Imports other than produce of U.K. ‡ Similar imports of the United Kingdom origin are admitted free under preference tariff, or at a rate of duty lower than the general rate. § Dutiable at rates similar to those on goods of U.K. origin. ¶ For description of classes see page 616.

In order to facilitate the interpretation of the foregoing tables the following synopsis of the changes made in the rates of duty on the various classes of goods is appended:—

SYNOPSIS OF THE PRINCIPAL DIFFERENCES BETWEEN THE TARIFF OF 1908 AND THE TARIFF OF 1902 AND AMENDMENTS AS APPLIED TO THE CLASSIFIED DIVISIONS OF COMMODITIES IMPORTED INTO THE COMMONWEALTH DURING 1907.

CLASS I.—FOODSTUFFS OF ANIMAL ORIGIN.

General Comparisons. Under Class I. the total value of imports during 1907 was £688,642. Under the 1902 tariff £58,995 (8.58 per cent.) of this total would have been free, but under the tariff of 1908 the value of free goods would fall to £51,307 (7.47 per cent.) The average rate of duty on dutiable goods has been raised from an equivalent *ad valorem* rate of 20.33 per cent. to 26.55 per cent., thus increasing the average rate of duty on the total imports of the class from 18.59 to 24.57 per cent.

Preference to United Kingdom. The value of foodstuffs of animal origin, the produce of the United Kingdom imported during 1907, amounted to £177,767. Preference equal to 25 per cent. of the duty against other countries is given to the United Kingdom

on preserved and concentrated milk, though the preference rate under the 1908 tariff is 50 per cent. higher than the tariff of 1902, viz., 1½d. per lb. as against 1d. per lb. Preserved and concentrated milk of United Kingdom origin amounting to 718,521 lbs., valued at £13,727, was imported during 1907. The advantage of the preference tariff on such a consignment as against the duty on a similar consignment from foreign countries would amount to £1497. On all *dutiable* goods within this class, being the produce of the United Kingdom, the average equivalent *ad valorem* rate has been raised from 23.54 to 25.20 per cent., thus raising the duty on all goods (*dutiable* and free) of United Kingdom origin within the class from 23.24 per cent. to 24.90 per cent.

CLASS II.—FOODSTUFFS OF VEGETABLE ORIGIN AND SALT.

General Comparisons. During 1907, imports of this class amounted to £1,574,933. Under the 1902 tariff £65,881 (4.18 per cent.) of this would have been free, while, by the addition of sago and tapioca to the free list, under the 1908 tariff, free goods would amount to £130,789 (8.30 per cent.). The average rate of duty on *dutiable* goods in this class has been raised from an equivalent average *ad valorem* rate of 36.58 per cent. to 42.38 per cent., the rates on all goods within the class rising from 35.06 per cent. to 38.86 per cent.

Preference to United Kingdom. The value of the imports of the produce of the United Kingdom within this class during 1907 was £493,382, of which £244,539 is favoured by preference equal to a reduction of the general tariff rates by 27.8 per cent., so affording relief of duty to the amount of £19,667 as compared with similar imports from foreign countries. The average *ad valorem* rates on these goods are respectively:—General tariff, 28.92 per cent.; preference tariff 20.88 per cent. Notwithstanding this preference the rates of duty against the United Kingdom have been raised from an equivalent average *ad valorem* rate of 22.61 per cent. to 27.84 per cent. on *dutiable* goods, and from 20.26 per cent. to 24.89 per cent. on all goods within the class.

CLASS III.—BEVERAGES (NON-ALCOHOLIC) AND SUBSTANCES USED IN MAKING.

General Comparisons. The value of the imports in this class in 1907 was £1,549,785. The most important item of the class is tea, which represented £1,152,727. Under the 1902 tariff tea was entirely free, whereas under the 1908 tariff a duty of 1d. per lb. is imposed on tea imported in packets not exceeding 20 lbs. in weight. The value of free goods within the class was, under the 1902 tariff, £1,200,047 (77.43 per cent.), and under the 1908 tariff £1,179,170 (76.08 per cent.). The equivalent average *ad valorem* rate on *dutiable* goods has been raised from 15.24 per cent. to 20.07 per cent., and on the total of the class from 3.44 per cent. to 4.80 per cent.

Preference to United Kingdom. This class contains a small proportion only of the produce of the United Kingdom, the amount, during 1907, being £186,059, of which £150,973 was cocoa and chocolate. A preference of ½d. per lb. is given to the United Kingdom on cocoa shells, nibs, etc., under the 1908 tariff, though these preference rates are much higher than the general rates previously existing.

CLASS IV.—SPIRITS AND ALCOHOLIC LIQUORS, INCLUDING INDUSTRIAL SPIRITS AND PHARMACEUTICAL PREPARATIONS, DUTIABLE AS SPIRITS.

Previous tariff remains unchanged. There are no free goods or preference rates in this class.

CLASS V.—TOBACCO AND PREPARATIONS THEREOF.

General Comparisons. The following changes have been made in the rates of duty on tobacco:—Tobacco manufactured, from 3s. 3d. per lb. to 3s. 6d. per lb. and to 3s. 9d. when cut; tobacco unmanufactured, from a general rate of 1s. 6d. per lb. to 1s. 6d. per

lb. on unstemmed and 2s. per lb. on stemmed or partly stemmed or in strips when cleared to be locally manufactured into tobacco or cigarettes, and 2s. 6d. on unstemmed and 3s. on stemmed or partly stemmed or in strips when cleared to be manufactured into cigars. The duty on cigars has also been increased by 1s. 3d. per lb. The general effect of these increases is to raise the average equivalent *ad valorem* rate of duty from 169.75 per cent. to 180.50 per cent.

There are neither free goods nor preference rates in this class.

CLASS VI.—ANIMALS, LIVING.

General Comparisons. Under the tariff of 1902 living animals were all free. Under the tariff of 1908 the following duties were imposed:—Horses and cattle, not for stud purposes, 10s. each; pigs, 5s. each, and sheep, not for breeding purposes, 2s. each.

CLASS VII.—ANIMAL SUBSTANCES MAINLY UNMANUFACTURED WHICH ARE NOT FOODSTUFFS.

General Comparisons. The value of the goods of this class imported during 1907 amounted to £576,054. Under the 1902 tariff £427,267 (74.18 per cent.) would have been free but, by the imposition of duty on certain yarns, formerly free, the free goods under the 1908 tariff would fall to £401,604 (70.24 per cent.) The dutiable articles in this class are:—Feathers, undressed; gelatine, sheet; glue, gelatine and cements; hair, curled; and yarns; and the average equivalent *ad valorem* rate of duty on these goods has been increased from 10.29 per cent. to 12.01 per cent., the duty on the total of the class being similarly raised from 2.66 per cent. to 3.58 per cent.

Preference to United Kingdom. The value of the produce of the United Kingdom of this class of goods imported during 1907 amounted to £155,881, of which £113,917 was favoured by preference, £29,826 worth of yarn being free as against a 5 per cent. duty on similar goods from other countries, while the remaining £84,091 enjoys a preference equal to 35.20 per cent. of the general tariff, the average rates being respectively:—General rate, 14.19 per cent.; preference rate, 9.19 per cent. The value of the preference to the United Kingdom in this class of goods amounts to £5689, as compared with the duty on similar goods from other countries. The average *ad valorem* rate of duty on *dutiable* goods of the United Kingdom in this class has been raised from 8.71 per cent. under the 1902 tariff to 9.68 per cent. under the tariff of 1908, and the corresponding rate on all goods of the United Kingdom in the class from 4.85 per cent. to 6.12 per cent.

CLASS VIII.—VEGETABLE SUBSTANCES AND NON-MANUFACTURED FIBRES.

General Comparisons. The value of imports in this class during 1907 amounted to £863,603. Under the 1902 tariff £833,587 (96.52 per cent.) would have been free, but under the 1908 tariff the value of free goods would be reduced to £756,811 (87.64 per cent.). The reduction of the value of free goods is due to the imposition of a duty of 1s. per lb. on small corks (up to 8-oz. bottles, bungs and rings; and 6d. per lb. on other corks.

The high average *ad valorem* rate of duty on the dutiable goods of this class is due to the duty on starch, which, under the 1902 tariff, was 2d. per lb., equivalent to an *ad valorem* rate of 85 per cent. Under the general tariff of 1908 the duty on foreign starch has been raised to 2½d. per lb. The very marked difference between the average *ad valorem* rates of duty on dutiable goods of the United Kingdom—60.17 per cent.—and dutiable goods from other countries—31.50 per cent.—is due to the fact that 83 per cent. of the starch imported during 1907 was the produce of the United Kingdom. The average equivalent *ad valorem* rate on all *dutiable* goods in this class has been reduced from 46.15 per cent. under the 1902 tariff to 36.54 per cent. under the tariff of 1908. This result is not due to any reduction of duties, but to the introduction of corks, which were free under the 1902 tariff, into the dutiable class, under

the 1908 tariff, at an *ad valorem* rate below the previous average. The average rate on imports of this class has been raised from 1.60 per cent. to 4.52 per cent.

Preference to United Kingdom. The value of vegetable substances of United Kingdom origin imported during 1907 amounted to £92,158. Preference of $\frac{1}{2}$ d. per lb., equal to 20 per cent. of the general tariff rate, is given on starch manufactured in the United Kingdom. On the 1,097,546 lbs. of this starch, valued at £11,134, the value of the preference would amount to £2287. The average *ad valorem* rates of duty on the produce of the United Kingdom which are subject to duty has been reduced from 72.67 per cent. under the tariff of 1902 to 60.17 per cent. under the tariff of 1908 (see explanation in previous paragraph), while the rates on all produce of the United Kingdom within the class have been raised from 10.23 per cent. to 12.25 per cent.

CLASS IX.—APPAREL, TEXTILES, AND MANUFACTURED FIBRES.

General Comparisons. The imports under this class during 1907 amounted to £15,367,604. Of this total the value of free goods under the 1902 tariff would have been £2,518,935 (16.40 per cent.), and although duty has been imposed on a small amount of goods which were formerly free, the total value of free goods under the 1908 tariff has been increased to £6,006,838, or 39.06 per cent. of the total class. This increase of free goods is due to the removal of duties under the preference provisions referred to below. The rate of duty on dutiable goods has been increased from an average equivalent *ad valorem* rate of 14.09 per cent. under the 1902 tariff to 22.88 per cent. under the tariff of 1908. The rate on all goods in the class has increased from 11.78 per cent. to 13.93 per cent.

Preference to United Kingdom. The produce of the United Kingdom within this class imported during 1907 amounted to £9,900,952. Of these goods £929,072 would be free under the general tariff, and £3,500,170 would be free under preference conditions, while similar goods from other countries—amounting to £417,529 in 1907—would pay a duty of 5 per cent. Further preference equal to $17\frac{1}{2}$ per cent. of the average general tariff rate is granted to the United Kingdom on goods to the value of £5,280,127. The value of similar goods of foreign countries imported during 1907 was £3,404,696. The average rates on these goods are respectively:—General rate, 28.91 per cent.; preference rate, 23.82 per cent. Thus in this class the United Kingdom is favoured by preference on trade already secured by her to the value of £8,780,297, representing an advantage of £443,518 in duty, as compared with similar goods of other countries, and is further favoured by the foregoing preference rate in her competition for that portion of the same trade, amounting to £3,822,225 in 1907, which was supplied by foreign countries. The average rate of duty on *dutiable* goods the produce of the United Kingdom, in this class, has been raised from an average equivalent of 13.16 per cent. to 23.82 per cent., while the rates on all goods of the United Kingdom within the class have been raised from 11.91 per cent. to 13.16 per cent.

CLASS X.—OILS, FATS, AND WAXES.

General Comparisons. The imports of this class during 1907 amounted to £1,192,177. Under the 1902 tariff £656,921 (55.10 per cent.) would have been free, and under the tariff of 1908 £623,606 (52.30 per cent.) would be free. The equivalent *ad valorem* rate of duty on dutiable goods in the class has been raised from 18.71 per cent. to 24.92 per cent., the rates on all goods within the class increasing from 8.40 to 11.89 per cent. The high rate of duty on oils of the United Kingdom as compared with those of foreign countries, viz., 22.40 per cent., as against 10.21 per cent. under the tariff of 1908, is due to kerosene—which is from foreign countries—being free. The value of kerosene imported during 1907 amounted to £499,951, equal to 41.93 per cent. of the total of the class.

Preference to United Kingdom. The imports during 1907 of oils, etc., the produce of the United Kingdom amounted to £164,060. Of this total £25,226 is favoured by

preference rates 22.11 per cent. below the general tariff rates. The average of these rates is respectively:—General tariff, 31.09 per cent.; preference tariff, 24.22 per cent. The value of the preference to the United Kingdom in this class amounts to £1734. The average equivalent *ad valorem* rate of duty against the oils, etc., of the United Kingdom have been raised from 22.40 per cent. to 23.37 on *dutiable* oils, and from 21.33 per cent. to 22.40 on all oils, etc., from the same country.

CLASS XI.—PAINTS AND VARNISHES.

General Comparisons. The value of paints and varnishes imported during 1907 amounted to £445,769. Under the 1902 tariff £26,573 (5.97 per cent.) would have been free, but under the tariff of 1908 the free portion is reduced to £16,473 (3.70 per cent.), all of which is from the United Kingdom and free under preference rates. All foreign goods within this class are subject to duty under the 1908 tariff. The average equivalent *ad valorem* rate on *dutiable* goods of this class has been raised from 10.91 per cent. to 16.32 per cent., and the rates on the total imports of the class from 10.26 to 16.20 per cent.

Preference to United Kingdom. The total imports during 1907 of paints, etc., manufactured in the United Kingdom amounted to £364,288. Under the preference tariff £16,473 of this would be free, while similar paints from foreign countries would pay a duty of 5 per cent. A further preference, equal to 20.24 per cent. of the average general tariff rate, is given on goods to the value of £112,183. These average rates are respectively:—General tariff, 24.07 per cent.; preference tariff, 19.20 per cent. The total value of the preference given in this class to manufactures of the United Kingdom amounts to £6289. The average *ad valorem* rates on paints and varnishes of United Kingdom manufacture subject to duty have been raised from 11.15 per cent. to 17.22 per cent., and the rates on the total imports of the class from 10.63 to 16.45 per cent.

CLASS XII.—STONES AND MINERALS USED INDUSTRIALLY.

General Comparisons. The value of the goods in this class imported during 1907 amounted to £127,372. Under the 1902 tariff £23,377 (18.35 per cent.) of this total would have been free, but by an imposition of 20 per cent. duty on plumbago and 10 per cent. on stone, sawn or in the rough, n.e.i., the free goods have been reduced under the 1908 tariff to £18,751, or 14.72 per cent. of the total. The average equivalent *ad valorem* rate of duty on *dutiable* goods of this class has been raised from 16.47 per cent. to 21.35 per cent., and the rate on all goods within the class from 13.45 per cent. to 18.21 per cent.

Preference to United Kingdom. The total value of the produce of the United Kingdom in this class in 1907 amounted to £59,535. Roofing slates account for £26,615, or 44.70 per cent. of this total, and on this item a preference is given equal to 20 per cent. of the general rate, the respective rates being:—Preference rate, 20 per cent.; general rate, 25 per cent. The value of the preference to the United Kingdom on roofing slates would thus amount to £1331. The duty on roofing slates under the 1902 tariff was 15 per cent. The average equivalent *ad valorem* rate of duty on *dutiable* goods of this class, being the produce of the United Kingdom, has been increased from 16.84 per cent. to 21.10 per cent., and the rate on all United Kingdom goods in the class from 14.89 per cent. to 19.39 per cent.

CLASS XIII.—SPECIE.

CLASS XIV.—METALS (UNMANUFACTURED) AND ORES.

Of the total imports in this class, viz., £1,763,202, gold bullion represents £1,426,827, or 80.92 per cent. This gold is mainly for minting purposes, and is re-exported in the form of specie.

CLASS XV.—METALS (PARTLY MANUFACTURED).

These metals are all free.

NOTE.—In regard to the last-mentioned Classes XIV. and XV., the Tariff Act 1908 makes special provision, inasmuch as it provides (Division VI.A) that duties prescribed in the tariff on certain forms of iron and steel included in the classes mentioned are “to come into operation (and any then existing bonus to cease) on dates to be fixed by proclamation and exempt from duty in the meantime.” The items referred to are:—Iron and Steel.—Scrap iron and steel and pig iron, ingots, blooms, slabs, billets, puddled bars and loops, or like crude manufactures less finished than iron or steel bars, but more advanced than pig iron (except castings); bar, rod, angle, tee, sheet and plate (plain), wire and hoop; iron and steel tubes and pipes, not dutiable in another division of the tariff—duty, 12½ per cent. *ad valorem*. Machinery, machines and parts, mowers, reapers and reapers and binders—duty, 17½ per cent. *ad valorem*.

An Act entitled the Manufactures Encouragement Act, assented to on the 14th December, 1908, provides for the payment, subject to prescribed conditions, of bounties on the manufacture of certain forms of iron and steel as follows:—

| Description of Goods. | Rate of Bounty. | Total Amount which may be authorised. | Date of Expiry of Bounty. |
|---|------------------------|---------------------------------------|---------------------------|
| CLASS I. | | | |
| Pig iron, made from Australian ore... .. | 12s. per ton | £150,000 | 30th June, 1914 |
| Puddled bar iron, made from Australian pig iron | | | |
| Steel, made from Australian pig iron | | | |
| CLASS II. | | | |
| Galvanised sheet or plate iron or steel, made from Australian ore | 10 per cent. on value. | £30,000 | 30th June, 1912 |
| Wire netting, not being prison made and being made from Australian ore or from wire manufactured in the United Kingdom | | | |
| Wire made from Australian ore | | | |
| Iron and steel tubes or pipes (except rivetted or cast) not more than 6 inches internal diameter, made from Australian pig iron or steel | | | |
| ... | | | |

CLASS XVI.—METALS MANUFACTURED, INCLUDING MACHINERY.

General Comparisons. The total imports of manufactured metals during 1907 amounted to £10,531,166. Under the 1902 tariff £4,723,892 (44.85 per cent.) of this total would have been free, while, under the tariff of 1908, the free goods would be £4,448,141, or 42.24 per cent. of the whole. The average equivalent *ad valorem* rate of duty on *dutiable* goods in this class has been raised from 12.71 per cent. under the 1902 tariff to 16.72 per cent. under the tariff of 1908, and the rate on all goods within the class from 7.01 per cent. to 9.66 per cent. These relatively low rates of duty are due to the inclusion of galvanised iron and steel, plate and sheet, which represents 12.87 of the whole class and which is subject to a low *ad valorem* rate of duty. The actual rates imposed on this commodity under the 1908 tariff are:—Corrugated galvanised, preference rate, 20s. per ton; general rate, 30s. per ton; galvanised, not corrugated, preference rate, 10s. per ton; general rate, 20s. per ton.

Preference to United Kingdom. The imports of United Kingdom manufactures of metals during 1907 amounted to £6,767,768. Under the 1908 tariff, preference representing a sum of £196,309 is given to the United Kingdom on goods to the value of £4,462,278, and further favour is given by reduced rate of duty mentioned below in her competition for the balance of the same trade supplied by other countries, which, during 1907, amounted to £1,343,031. The amount of this preference is made up by allowing £680,954 of United Kingdom manufactures to be free, against a 5 per cent. duty on

similar foreign goods, amounting in 1907 to £155,086, and by imposing on United Kingdom goods amounting to £3,781,924 an average equivalent *ad valorem* rate of 14.22 per cent. against a rate equal to 18.51 per cent. on similar goods of other countries to the value of £1,187,995. The average equivalent *ad valorem* rate of duty on *dutiable* goods of the United Kingdom in this class has been raised from 11.63 per cent. under the 1902 tariff to 14.76 per cent. under the 1908 tariff. The rates of duty on all goods of the United Kingdom in the class have been raised from 7.14 per cent. to 9.90 per cent.

CLASS XVII.—LEATHER AND MANUFACTURES OF LEATHER AND SUBSTITUTES THEREFOR, ALSO INDIARUBBER AND INDIARUBBER MANUFACTURES.

(Boots and Shoes are included in Class IX.)

General Comparisons. The value of the imports of goods in this class during 1907 was £1,004,822. The free goods (£265,334) are identical under the tariffs of 1902 and 1908. The average equivalent *ad valorem* rate of duty on *dutiable* goods in this class has been raised from 15.50 per cent. under the 1902 tariff to 20.99 per cent. under the tariff of 1908, thus raising the duty on all goods in the class from 11.40 per cent. to 15.45 per cent.

Preference to United Kingdom. The value of the manufactures of the United Kingdom, in this class, imported during 1907 amounted to £414,302. Of this total, goods to the value of £204,366 are favoured by an average rate 19.58 per cent. below the average rate of duty on similar goods from other countries, the average equivalent *ad valorem* rates being respectively:—General tariff, 25.53 per cent.; and preference tariff, 20.53 per cent. The value of the preference to the United Kingdom in this class represents £10,218. The average equivalent *ad valorem* rate on *dutiable* manufactures of the United Kingdom in this class has been raised from 15.84 per cent. under the 1902 tariff to 21.17 per cent. under the tariff of 1908, thus increasing the rates of all goods in the class of United Kingdom manufacture from 11.69 per cent. to 15.63 per cent.

CLASS XVIII.—WOOD AND WICKER, RAW AND MANUFACTURED.

General Comparisons. The value of the imports of this class during 1907 amounted to £2,100,305. Of this total £555,155 (26.42 per cent.) would have been free under the 1902 tariff, but under the tariff of 1908 the value of free goods would be reduced to £111,249 (5.30 per cent.). This reduction in the value of free goods is very largely due to the imposition of a duty of 6d. per 100 sup. feet on New Zealand pine, undressed. The value of this item imported during 1907 was £388,665. The average rate of duty on *dutiable* imports in this class has been raised from an equivalent *ad valorem* rate of 16.63 per cent. under the 1902 tariff to 17.41 per cent. under the tariff of 1908, the corresponding rates on all imports in the class rising from 12.23 per cent. to 16.48 per cent.

Preference to United Kingdom. The imports of United Kingdom produce is relatively small in this class, amounting to only £149,006, or 7.1 per cent. of the total for 1907. These imports from the United Kingdom are principally furniture and manufactured articles of wood, and to this fact is due the higher average rate of duty compared with the rate on foreign goods in this class. The foreign imports are largely of timber undressed or partially dressed bearing a relatively low *ad valorem* duty. Preference equal to a reduction of 14.66 per cent. of the average general tariff rates, and representing a sum of £5429, is given to the United Kingdom on goods to the value of £107,835 in this class. The average rates on these goods are respectively:—General tariff, 34.33 per cent.; preference tariff, 29.30 per cent. The rates of duty on *dutiable* imports of the United Kingdom of this class have been raised from an equivalent of 19.69 per cent. under the 1902 tariff to 28.36 per cent. under the tariff of 1908, the rates on all imports of United Kingdom produce within the class rising from 14.48 to 21.33 per cent.

CLASS XIX.—EARTHENWARE, CEMENTS, CHINA, GLASS AND STONEWARE.

General Comparisons. The total value of imports under this class during 1907 was £863,849. The value of free goods under the 1908 tariff would be £35,932 (4.16 per cent.), as against £18,243 (2.11 per cent.) under the tariff of 1902. The rates of duty on *dutiable* goods have been raised from an average equivalent *ad valorem* rate of 19.44 per cent. to 22.92 per cent., thus raising the average rates of duty on the total imports of the class from 19.03 per cent. to 21.96 per cent.

Preference to United Kingdom. The value of earthenware, etc., the produce of the United Kingdom imported during 1907 amounted to £399,074, of which under the 1908 tariff £348,379 is favoured by an average preference reduction of 20.3 per cent. on the general rates, representing £18,925 of duty. Notwithstanding this preference, however, the rates of duty have been slightly increased in comparison with the 1902 tariff, the average duty on *dutiable* goods having increased from 20.09 per cent. to 20.60 per cent., and on all imports of the United Kingdom within the class from 19.67 per cent. to 20.16 per cent.

CLASS XX.—PAPER AND STATIONERY.

General Comparisons. The total imports of paper and stationery during 1907 amounted to £2,071,344. Of this total £1,336,390 (64.52 per cent.) would have been free under the 1902 tariff, and under the tariff of 1908 the value of free goods would be £1,264,042 (61.02 per cent.). The average rate of duty on *dutiable* goods of this class has been raised from an equivalent *ad valorem* rate of 21.55 per cent. under the 1902 tariff to 25.22 per cent. under the tariff of 1908, the rates on all imports of the class rising from 7.65 per cent. to 9.83 per cent.

Preference to United Kingdom. The value of paper and stationery manufactured in the United Kingdom imported during 1907 amounted to £1,199,123. Of this total £184,560 would be free under the preference tariff of 1908, while similar foreign goods would pay a duty of 5 per cent., and goods to the value of £334,414 would be favoured by an average preference rate of 18.18 per cent. below the general tariff rate. The average rates on these goods are respectively:—General tariff, 26.50 per cent.; preference tariff, 21.68 per cent. Thus, on goods amounting to £518,974 a preference representing £25,340 would be given to the United Kingdom on paper and stationery. The average rate of duty on *dutiable* paper and stationery manufactured in the United Kingdom has been raised from an equivalent *ad valorem* rate of 22.65 per cent. under the 1902 tariff to 26.75 per cent. under the tariff of 1908, the corresponding rates of all imports of United Kingdom manufacture within the class rising from 7.02 per cent. to 8.19 per cent.

CLASS XXI.—JEWELLERY, TIMEPIECES, AND FANCY GOODS.

General Comparisons. The value of imports of this class during 1907 amounted to £1,261,046. The value of free goods, viz., £223,836, would be the same under both tariffs. These free goods are principally cameos and precious stones unset. The average rate of duty on *dutiable* goods in this class has been raised from 21.73 per cent. under the 1902 tariff to 25.46 per cent. under the tariff of 1908, and the average rate on all goods within the class from 17.87 per cent. to 20.94 per cent.

Preference to United Kingdom. The imports of this class being the produce of the United Kingdom were £516,552. Of this total £33,432 would be free under the general tariff and the remaining £483,120 would, under the 1908 tariff be favoured by an average

rate 19.46 per cent. below the average general tariff rate, which is 28.31 per cent. on the same goods. The value of the preference in this class amounts to £26,614. The rate of duty on *dutiable* goods of the United Kingdom in this class has been raised very slightly from 22.55 per cent. to 22.81 per cent., the rate on all imports of the United Kingdom produce in this class being raised from 21.09 per cent. to 21.33 per cent.

CLASS XXII.—OPTICAL, SURGICAL, AND SCIENTIFIC INSTRUMENTS.

General Comparisons.—The value of these instruments imported during 1907 amounted to £379,300. Under the 1902 tariff £119,749 (31.57 per cent.) would have been free, but under the tariff of 1908 the free goods have been increased to £305,833 (80.63 per cent.). The average rate of duty on *dutiable* goods in this class has been reduced from 19 per cent. under the 1902 tariff to 17.91 per cent. under the tariff of 1908, thus, with the extension of the free list, reducing the rate on all imports of the class from 13 per cent. to 3.47 per cent.

Preference to United Kingdom. The value of the manufactures of the United Kingdom of this class during 1907 amounted to £152,189. Of this total, goods to the value of £69,467 are favoured by preference representing £3790, £26,047 of these goods being free, compared with a duty of 5 per cent., and the remaining £43,420 being favoured by an average rate equal to a reduction of 22.55 per cent. on the average general tariff rates. The rates of duty on *dutiable* imports of United Kingdom manufacture in this class have been raised from 17.73 per cent. under the 1902 tariff to 19.68 per cent. under the tariff of 1908, though by the extension of the free list the average rate on the imports of all goods of the United Kingdom in the class has been reduced from 11.08 per cent. to 5.62 per cent. The higher rate of duty on *dutiable* goods from the United Kingdom, as compared with *dutiable* goods from foreign countries, in this class is due to a low rate of duty (5 per cent.) on certain goods, which, when of United Kingdom manufacture, are not in the *dutiable* class, but are free under the preference tariff. The higher rate on all imports from the United Kingdom, as compared with other countries, is due to phonographs, which represent 46 per cent. of the total of the class, and which are almost entirely of foreign manufacture, being free.

CLASS XXIII.—DRUGS, CHEMICALS AND FERTILISERS.

General Comparisons. The total value of imports in this class during 1907 amounted to £1,840,933. The value of goods which would be free differs very little between the two tariffs, being respectively £1,468,747 (79.78 per cent.) under the 1902 tariff and £1,456,694 (79.12 per cent.) under the tariff of 1908. Fertilisers represent £389,169, or 26.72 per cent. of the free goods under the 1908 tariff. The average rate of duty on *dutiable* goods in this class has been increased from an equivalent *ad valorem* rate of 19.15 per cent. under the 1902 tariff to 21.20 per cent. under the tariff of 1908, and the rates on all imports of the class have been increased from 3.87 per cent. to 4.42 per cent.

Preference to United Kingdom.—The imports of United Kingdom produce in this class in 1907 amounted to £338,227. Of this total £615,075 would be free under the general tariff of 1908, and other goods to the value of £20,395 would be free under the preference tariff, while similar goods from other countries would bear a duty of 5 per cent. *ad valorem*. Preference equal to a reduction of 17.48 per cent. on the general tariff rates is also given to the United Kingdom on goods amounting to £48,010. The value of the preference of the United Kingdom in this class represents £3422. The average rate of duty on *dutiable* imports of produce of the United Kingdom in this class has been raised from 18.26 per cent. to 19.74 per cent., and the rate on all produce of the United Kingdom within the class has been raised from 4.49 per cent. to 4.78 per cent.

CLASS XXIV.—MISCELLANEOUS.

General Comparisons. The total value of imports in this division during 1907 amounted to £3,978,018, of which the following are the more important items:—Arms, ammunition and explosives, £661,254; musical instruments and parts, £418,156; matches and vestas, £156,069; vehicles and parts, including bicycles, etc., £694,590; vessels transferred from abroad, £680,700. Under the 1902 tariff the free goods in this class would have been £2,110,942 (53.07 per cent.), but under the 1908 tariff the value of free goods would fall to £1,788,979 (44.97 per cent.). The average rate of duty on *dutiable* goods in this division has been raised from an equivalent *ad valorem* rate of 19.69 per cent. under the 1902 tariff to 23.54 per cent. under the tariff of 1908, and the rate on all goods in the class has been raised from 9.24 per cent. to 12.91 per cent.

Preference to United Kingdom. The value of the imports of United Kingdom produce in this class during 1907 amounted to £2,496,994. Of this total £983,080 would be free under the general tariff of 1908, and £612,973 would be free under the preference tariff, while similar goods of foreign manufacture would pay a duty of 5 per cent. Preference equal to a reduction of 22.50 per cent. on the average general tariff rate is also given on goods to the value of £821,041. The total value of the preference to the United Kingdom in this class amounts to £81,578.

TOTAL IMPORTS.

General Comparisons. The value of total imports during 1907 was £51,809,033. Of this total the value of free imports under the 1902 tariff would have been £19,716,089, or 38.06 per cent., and under the 1908 tariff the free goods would be increased to £22,155,203, or 42.76 per cent. The total before mentioned, however, includes £406,875 of specie, £1,426,827 of gold bullion, and £498 of silver bullion. Excluding this bullion and specie the imports of *merchandise* during the year represent a value of £49,974,833, of which £17,881,889, or 35.78 per cent., would have been free under the 1902 tariff, and £20,321,003, or 40.66 per cent., would be free under the tariff of 1908. This increase of free goods is almost entirely due to the removal of duties from produce or manufactures of the United Kingdom under the preferential tariff. The total value of merchandise which would be free under the tariff of 1908 (£20,321,003) is made up as follows:—Produce or manufactures of the United Kingdom £11,378,098 (£6,299,833 being free under the general tariff, and £5,078,265 under the preferential tariff), and produce of other countries £8,942,905. The average rate of duty on *dutiable* merchandise has been increased from an average equivalent *ad valorem* rate of 26.59 per cent. under the 1902 tariff to 33.09 per cent. under the tariff of 1908, and the average rate on all imports of merchandise—both dutiable and free, but excluding bullion and specie—has been increased from 17.07 per cent. to 19.63 per cent. The foregoing rates are largely influenced by the high *ad valorem* rates of duty levied, for revenue purposes, on alcoholic liquors and tobacco. Excluding these classes, the imports of merchandise during 1907 represent £47,664,740. The average equivalent *ad valorem* rate on the whole of this reduced total of both dutiable and free imports would, under the 1902 tariff, have been 10.24 per cent., and under the tariff of 1908 it would be 12.76 per cent. Under the 1902 tariff £29,782,851 would have been dutiable at an average *ad valorem* rate of 16.39 per cent., while under the 1908 tariff the value of dutiable goods would be reduced to £27,343,737, but the average *ad valorem* rate would be raised to 22.24 per cent.

From a consideration of these latter figures it may be stated that the total imports of dutiable articles, apart from alcoholic liquors and tobacco, may—provided the reduction be in like ratio throughout all classes—be reduced to £22,000,000 before the Customs revenue will be less than would have been yielded by similar imports under the tariff of 1902. The following table presents a summarised statement of the results obtained by applying to the imports of 1907 the rates of duty provided in the tariff of 1902 and amendments and the tariff of 1908:—

SUMMARISED COMPARISONS OF THE TARIFF OF 1902 AND AMENDMENTS AND THE TARIFF OF 1908 APPLIED TO THE IMPORTS INTO THE COMMONWEALTH DURING 1907.

| | Tariff of 1902 and Amendments. | Tariff of 1908. |
|--|--------------------------------|-----------------|
| Free Imports— | | |
| Under general tariff | £19,716,089 | £17,076,938 |
| „ preferential tariff to United Kingdom | ... | 5,078,265 |
| Total free imports (including bullion and specie) | £19,716,089 | £22,155,203 |
| „ „ of merchandise (excluding bullion & specie) | £17,881,889 | £20,321,003 |
| Percentage of free imports on total imports | 38.06 | 42.76 |
| „ „ merchandise on total merchandise (excluding bullion and specie) | 35.78 | 40.66 |
| Dutiable Imports— | | |
| Under general tariff | £32,092,944 | £17,540,173 |
| „ preferential tariff to United Kingdom | ... | 12,113,657 |
| Total dutiable imports | £32,092,944 | £29,653,830 |
| Total imports (free and dutiable) | £51,809,033 | £51,809,033 |
| Equivalent <i>ad valorem</i> rates of duty— | | |
| On total imports | Per cent. 16.47 | Per cent. 18.94 |
| „ all merchandise (bullion and specie omitted) | 17.07 | 19.63 |
| „ „ less alcoholic liquors and tobacco | 10.24 | 12.76 |
| „ <i>dutiable</i> merchandise | 26.59 | 33.09 |
| „ „ „ less alcoholic liquors and tobacco | 16.39 | 22.24 |

Preference to United Kingdom. The total value of imports of produce or manufacture of the United Kingdom during 1907 was £26,843,610. Under the 1902 tariff £8,419,911 (31.36 per cent.) of this total would have been free. Under the 1908 tariff the value of free imports would be increased to £11,779,766 (43.88 per cent.), of which £6,701,501 would be free under the general tariff, and £5,078,265 would be free under the preferential tariff. On all *dutiable* imports of United Kingdom produce the average equivalent *ad valorem* rate of duty has been raised from 22.15 per cent. under the tariff of 1902 to 29.85 per cent. under the tariff of 1908, and the average rate on all imports of United Kingdom origin has been raised from 15.21 per cent. to 16.75 per cent. Thus it will be seen that the imports of United Kingdom origin during 1907 would, under the 1902 tariff, have been required to pay duty amounting to £4,080,000, whereas under the tariff of 1908 the sum of £4,500,000 would be required of the same imports.

On the basis of the 1907 imports, preference would be given to the United Kingdom on goods to the value of £17,191,922. Of this total £5,078,265 would be free, while similar goods to the value of £960,431 from other countries would pay an average equivalent *ad valorem* rate of 5.15 per cent., and other goods to the value of £12,113,657 are given preference equal to a reduction of 19.55 per cent. on the average rate of duty on similar goods of foreign countries of a total value of £7,893,085. These equivalent *ad valorem* rates are respectively:—General tariff rate, 25.10 per cent.; preferential tariff rate, 20.20 per cent. The value of the preference to the United Kingdom on the total

imports of 1907 is represented, firstly, by a reduction of duty—in the trade already secured—amounting to £856,122 on the duty which would be leviable on similar goods from other countries, and, secondly, by the advantage to be obtained by the favour of the foregoing preference rate, in her competition for the balance of the same trade supplied by other countries, which in 1907 amounted to £8,853,516.

The following table presents a summarised statement of the comparative results obtained by applying to the imports during 1907 of goods of United Kingdom origin the rates of duty imposed under the tariff of 1902 and amendments and the tariff of 1908 :—

SUMMARISED COMPARISON OF THE TARIFF OF 1902 AND AMENDMENTS AND THE TARIFF OF 1908 APPLIED TO THE PRODUCE OF MANUFACTURE OF THE UNITED KINGDOM IMPORTED INTO THE COMMONWEALTH DURING 1907.

| | Tariff of 1902 and Amendments. | Tariff of 1908. |
|---|--------------------------------------|--------------------|
| Free Imports— | | |
| Under general tariff | £8,419,911 | £6,701,501 |
| „ preferential tariff | ... | 5,078,265 |
| Total free imports | £8,419,911 | £11,779,766 |
| Total imports of free merchandise (bullion and specie omitted) | £8,018,243 | £11,378,098 |
| Percentage of free imports on total imports Per cent. | 31.36 | 43.88 |
| „ „ merchandise on total imports of merchandise Per cent. | 30.32 | 43.03 |
| Dutiable Imports— | | |
| Under general tariff | £18,423,699 | £2,950,187 |
| „ preference tariff | ... | 12,113,657 |
| Total dutiable imports | £18,423,699 | £15,063,844 |
| Total imports (free and dutiable) | £26,843,610 | £26,843,610 |
| Equivalent <i>ad valorem</i> rates of duty— | | |
| On total imports Per cent. | 15.21 | 16.75 |
| On all merchandise (bullion & specie omitted) Per cent. | 15.43 | 17.01 |
| On all merchandise, less alcoholic liquors and tobacco, etc. Per cent. | 9.76 | 11.37 |
| On all <i>dutiable</i> imports Per cent. | 22.15 | 29.85 |
| On <i>dutiable</i> imports, less alcoholic liquors and tobacco, etc. Per cent. | 14.26 | 20.60 |

13. South African Preference.—Under the Customs Tariff (South African Preference) Act, No. 17 of 1906, preferential rates of duty were prescribed for certain goods “when those goods are imported from and are the manufacture of any of the British South African Colonies or Protectorates which are included within the South African Customs Union.”

Preference to South African States was further confirmed by the Customs Tariff Amendment Act 1908 (No. 13 of 1908).

The imports into the Commonwealth from South African States during 1907 amounted only to £22,906, of which £15,602 was from Cape Colony, and £7304 from Natal.

The principal articles of South African origin to which preference is given are :— Butter and cheese, confectionery, fodder, grains—oats, wheat, maize, bran, and flour ; jams and jellies, leather, machinery—agricultural and mining ; meats—fish, poultry, and game ; timber, feathers, fruits and vegetables, spirits, tobacco, sugar, and wine.

§ 13. Imports of Dutiable and Free Goods.

In the previous edition of this work—"Year Book No. 1"—a statement was given of the imports during 1906, distinguishing between dutiable and free imports and shewing the equivalent *ad valorem* rates of duty paid on each class of goods. Owing to the introduction of a new tariff on the 8th August, 1907, and consequent frequent changes made during the passage of the Act through Parliament, no satisfactory analysis of a similar nature of the imports of 1907 can possibly be made. In the preceding section, however, a comparative analysis is given of the results of the application to the imports of the year 1907 of the rates of duty imposed under the tariff of 1902 and amendments, and under the tariff of 1908 respectively. This table will furnish the best available substitute for the one above referred to.

§ 14. Trade of the Individual States of the Commonwealth.

1. **Character of Data.**—The following tables shew the trade of each State of the Commonwealth for the quinquennium immediately preceding Federation and for the years 1901 and 1903 to 1907.

Owing to the many differences existing between the statements of trade hitherto published by the various States and by the Commonwealth, and to the frequent alteration of the figures in succeeding editions of the several publications, it is not possible to furnish an exact statement of the trade of the several States. The figures here given, therefore, should be regarded as merely approximate.

2. **Record of Transhipments.**—In order to ensure a correct detailed record of the export trade of the Commonwealth, it has been the practice of the Department of Trade and Customs, since the 1st September, 1903, to record goods transferred by sea from one State to another State of the Commonwealth, for transhipment abroad from the latter State, in the following manner :—

- (i.) As an outward interstate transfer from the State from which the goods are originally moved.
- (ii.) As an inward interstate transfer to the State in which the goods are transhipped.
- (iii.) As an export (oversea) from the State in which the goods are transhipped abroad.

The record thus obtained in each of the several States does not indicate the proportion of the export trade of the Commonwealth actually contributed by each State, nor does it correctly indicate the amount of interstate trade.

In order to obtain a proper record of the trade of each State with oversea countries, and with other States of the Commonwealth, it is necessary to take into account the goods transhipped, not only in, but also from each State. The exact practice may be understood by giving an example. Five thousand tons of copper are, let us suppose, to be exported from Tasmania to Germany, the available oversea ship starting from a New South Wales port. The following records would then be made, viz.:—

- (i.) An "outward interstate transfer" of 5000 tons of copper from Tasmania to New South Wales.
- (ii.) An "inward interstate transfer" to New South Wales from Tasmania of 5000 tons of copper.
- (iii.) An "oversea export" of 5000 tons of copper from New South Wales to Germany.

In this supposed case the trade is virtually, so far as Tasmanian trade is concerned, a direct export from Tasmania to Germany, and forms no essential element of the trade of New South Wales, either interstate or oversea.

3. Adjustment of Data.—In the tables hereinafter the necessary adjustments have been made, so far as sea-traffic is concerned. But goods transferred overland from one State to another, and subsequently exported to oversea countries, are at present necessarily included in the exports from the State in which the goods are shipped oversea. In such cases no adjustment is possible, because the necessary data are not available. Moreover, the demands for the supply of information, which would become essential if it were decided to obtain the data, would place a serious additional burden on the mercantile community, while the question whether the magnitude of the general advantage would compensate for the trouble is at least very problematical.

The following summary table shews the progress of the trade of the Commonwealth with oversea countries and of the trade between the several States. The periods selected for comparison are the quinquennium immediately preceding Federation (1896-1900), the quinquennium immediately following (1901-5) and the latest year (1907). The results show that the total oversea trade of the Commonwealth has increased by 66.50 per cent., viz., from £74,856,000 per annum in the earlier period to £124,633,280 in 1907, while the interstate trade has risen from £27,484,000 to £42,280,980, equal to 53.83 per cent.

TRADE DEVELOPMENT, COMMONWEALTH, 1896 to 1907.

| Development in period | 1896-1900. | 1901-5. | 1907. | 1896-1900. | 1901-5. | 1907. |
|-----------------------|------------|------------|-------------|------------------------|---------|----------|
| | | | | Result per Inhabitant. | | |
| Mean population | 3,636,000 | 3,904,000 | 4,155,673 | | | |
| | £ | £ | £ | | | |
| Oversea imports | 33,763,000 | 39,258,000 | 51,809,033 | £9 5 8 | £10 1 1 | £12 9 4 |
| Exports | 41,093,000 | 51,238,000 | 72,824,247 | 11 6 1 | 13 2 6 | 17 10 6 |
| Interstate imports | 27,484,000 | 28,744,000 | 42,280,980 | 7 11 2 | 7 7 3 | 10 3 6 |
| .. exports | 26,381,000 | 28,703,000 | 42,280,980 | 7 5 1 | 7 7 0 | 10 3 6 |
| Total imports | 61,247,000 | 68,002,000 | 94,090,031 | 16 16 10 | 17 8 4 | 22 12 10 |
| .. exports | 67,474,000 | 79,941,000 | 115,105,227 | 18 11 2 | 20 9 6 | 27 14 0 |

IMPORT TRADE OF EACH STATE AND COMMONWEALTH, 1896 to 1907.

| State. | 1896-1900. | 1901. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------|------------|--------|--------|--------|--------|--------|--------|
| FROM OVERSEA COUNTRIES. | | | | | | | |
| | £000. | £000. | £000. | £000. | £000. | £000. | £000. |
| New South Wales ... | 13,866 | 17,560 | 13,978 | 13,134 | 14,485 | 17,604 | 20,860 |
| Victoria ... | 9,824 | 12,687 | 12,340 | 12,740 | 12,958 | 14,870 | 17,101 |
| Queensland ... | 3,488 | 3,516 | 3,250 | 3,030 | 3,164 | 3,748 | 4,618 |
| S.A. (including N.T.) ... | 3,328 | 3,965 | 3,224 | 3,289 | 3,232 | 3,983 | 4,815 |
| Western Australia ... | 2,707 | 3,895 | 4,228 | 4,022 | 3,769 | 3,780 | 3,588 |
| Tasmania ... | 550 | 811 | 791 | 806 | 738 | 759 | 827 |
| Commonwealth (Total) | 33,763 | 42,434 | 37,811 | 37,021 | 38,346 | 44,744 | 51,809 |

| | | | | | | | |
|--|--------|--------|--------|--------|--------|--------|--------|
| FROM OTHER COMMONWEALTH STATES (INTERSTATE). | | | | | | | |
| New South Wales ... | 10,116 | 9,368 | 11,949 | 11,500 | 11,848 | 13,703 | 15,058 |
| Victoria ... | 6,782 | 6,240 | 5,254 | 6,382 | 8,202 | 8,926 | 9,765 |
| Queensland ... | 2,676 | 2,861 | 3,481 | 2,992 | 3,532 | 4,560 | 4,810 |
| S.A. (including N.T.) ... | 3,839 | 3,453 | 3,494 | 4,160 | 5,204 | 5,714 | 7,292 |
| Western Australia ... | 3,011 | 2,559 | 2,541 | 2,651 | 2,712 | 3,040 | 2,935 |
| Tasmania ... | 1,060 | 1,154 | 1,803 | 1,759 | 1,914 | 2,271 | 2,421 |
| Total ... | 27,484 | 25,635 | 28,522 | 29,444 | 33,412 | 38,214 | 42,281 |

| | | | | | | | |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|
| TOTAL (OVERSEA AND INTERSTATE). | | | | | | | |
| New South Wales ... | 23,982 | 26,928 | 25,927 | 24,634 | 26,333 | 31,307 | 35,918 |
| Victoria ... | 16,606 | 18,927 | 17,594 | 19,122 | 21,160 | 23,796 | 26,866 |
| Queensland ... | 6,164 | 6,377 | 6,731 | 6,022 | 6,696 | 8,308 | 9,428 |
| S.A. (including N.T.) ... | 7,167 | 7,418 | 6,718 | 7,449 | 8,436 | 9,697 | 12,107 |
| Western Australia ... | 5,718 | 6,454 | 6,769 | 6,673 | 6,481 | 6,820 | 6,523 |
| Tasmania ... | 1,610 | 1,965 | 2,594 | 2,565 | 2,652 | 3,030 | 3,248 |
| Total ... | 61,247 | 68,069 | 66,333 | 66,465 | 71,758 | 82,958 | 94,090 |

IMPORTS PER INHABITANT, 1896 to 1907.

| | | | | | | | | | | | | |
|---------------------------|---------|----------|---------|---------|---------|----------|---------|---------|---------|---------|---------|---------|
| FROM OVERSEA COUNTRIES. | | | | | | | | | | | | |
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| New South Wales ... | 10 12 3 | 12 7 7 | 9 17 6 | 9 2 1 | 9 16 6 | 11 13 2 | 13 9 1 | | | | | |
| Victoria ... | 8 5 10 | 10 10 10 | 10 4 2 | 10 11 0 | 10 13 9 | 12 3 0 | 13 16 1 | | | | | |
| Queensland ... | 7 8 9 | 7 0 4 | 6 6 10 | 5 16 9 | 6 0 4 | 7 0 9 | 8 11 5 | | | | | |
| S.A. (including N.T.) ... | 9 7 5 | 10 18 7 | 8 16 3 | 8 18 0 | 8 12 7 | 10 9 8 | 12 9 8 | | | | | |
| Western Australia ... | 17 9 6 | 20 13 4 | 19 2 0 | 17 0 0 | 15 1 2 | 14 10 11 | 13 13 7 | | | | | |
| Tasmania ... | 3 6 5 | 4 14 2 | 4 9 2 | 4 10 2 | 4 2 5 | 4 4 11 | 4 12 3 | | | | | |
| Commonwealth (Total) | 9 5 8 | 11 3 9 | 9 13 10 | 9 7 3 | 9 10 11 | 10 19 1 | 12 9 4 | | | | | |

| | | | | | | | | | | | | |
|---------------------------------|---------|---------|---------|---------|----------|---------|---------|--|--|--|--|--|
| FROM OTHER STATES (INTERSTATE). | | | | | | | | | | | | |
| New South Wales ... | 7 14 10 | 6 17 5 | 8 8 10 | 7 19 6 | 8 0 9 | 9 1 6 | 9 14 3 | | | | | |
| Victoria ... | 5 14 6 | 5 3 8 | 4 6 11 | 5 5 9 | 6 15 4 | 7 5 11 | 7 17 7 | | | | | |
| Queensland ... | 5 14 1 | 5 14 2 | 6 15 10 | 5 15 3 | 6 14 9 | 8 11 2 | 8 18 6 | | | | | |
| S.A. (including N.T.) ... | 10 16 3 | 9 10 4 | 9 11 0 | 11 5 1 | 13 17 10 | 15 0 10 | 18 18 2 | | | | | |
| Western Australia ... | 19 8 8 | 13 11 7 | 11 9 7 | 11 4 1 | 10 16 8 | 11 14 0 | 11 3 9 | | | | | |
| Tasmania ... | 6 8 1 | 6 13 10 | 10 3 2 | 9 16 10 | 10 13 7 | 12 14 0 | 13 10 0 | | | | | |
| Total ... | 7 11 2 | 6 15 2 | 7 6 3 | 7 8 11 | 8 6 5 | 9 7 1 | 10 3 6 | | | | | |

| | | | | | | | | | | | | |
|---------------------------------|----------|----------|---------|---------|----------|----------|----------|--|--|--|--|--|
| TOTAL (OVERSEA AND INTERSTATE). | | | | | | | | | | | | |
| New South Wales ... | 18 7 1 | 19 15 0 | 18 7 1 | 17 1 7 | 17 17 3 | 20 14 8 | 23 3 4 | | | | | |
| Victoria ... | 14 0 4 | 15 14 6 | 14 11 1 | 15 16 9 | 17 9 1 | 19 8 11 | 21 13 8 | | | | | |
| Queensland ... | 13 2 10 | 12 14 6 | 13 2 8 | 11 12 0 | 12 14 9 | 15 11 11 | 17 9 11 | | | | | |
| S.A. (including N.T.) ... | 20 3 8 | 20 8 11 | 18 7 3 | 20 3 1 | 22 10 5 | 25 10 6 | 31 7 10 | | | | | |
| Western Australia ... | 36 18 2 | 34 4 11 | 30 11 7 | 28 4 1 | 25 17 10 | 26 4 11 | 24 17 4 | | | | | |
| Tasmania ... | 9 14 6 | 11 8 0 | 14 12 4 | 14 7 0 | 14 16 0 | 16 18 11 | 18 2 3 | | | | | |
| Total ... | 16 16 10 | 17 18 11 | 17 0 1 | 16 16 2 | 17 17 4 | 20 6 2 | 22 12 10 | | | | | |

EXPORT TRADE OF EACH STATE OF THE COMMONWEALTH, 1896 to 1907.

| State. | 1896-1900. | 1901. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|------------|---------|----------|----------|----------|----------|---------|
| TO OVERSEA COUNTRIES. | | | | | | | |
| | £000. | £000. | £000. | £000. | £000. | £000. | £000. |
| New South Wales ... | 17,656 | 18,210 | 18,103 | 20,482 | 21,440 | 27,641 | 29,364 |
| Victoria ... | 11,303 | 13,075 | 10,959 | 15,308 | 12,992 | 16,838 | 15,924 |
| Queensland ... | 4,237 | 4,334 | 4,203 | 4,391 | 4,992 | 5,759 | 7,118 |
| S.A. (including N.T.) ... | 4,130 | 4,462 | 3,898 | 5,619 | 6,428 | 8,043 | 9,270 |
| Western Australia ... | 2,984 | 7,941 | 9,402 | 9,916 | 9,070 | 9,012 | 8,592 |
| Tasmania ... | 783 | 1,674 | 1,625 | 1,770 | 1,919 | 2,445 | 2,556 |
| Commonwealth (Total) | 41,093 | 49,696 | 48,250 | 57,486 | 56,841 | 69,738 | 72,824 |
| TO OTHER COMMONWEALTH STATES (INTERSTATE). | | | | | | | |
| New South Wales ... | 8,548 | 9,140 | 7,872 | 9,870 | 12,225 | 14,639 | 15,874 |
| Victoria ... | 5,257 | 5,571 | 8,483 | 8,097 | 8,588 | 10,626 | 11,478 |
| Queensland ... | 5,890 | 4,916 | 5,312 | 6,839 | 6,945 | 6,992 | 7,563 |
| S.A. (including N.T.) ... | 3,530 | 3,725 | 4,545 | 3,044 | 3,060 | 3,884 | 4,617 |
| Western Australia ... | 1,893 | 575 | 863 | 355 | 801 | 765 | 1,236 |
| Tasmania ... | 1,263 | 1,272 | 1,218 | 1,238 | 1,793 | 1,308 | 1,513 |
| Total ... | 26,381 | 25,199 | 28,293 | 29,443 | 33,412 | 38,214 | 42,281 |
| TOTAL (OVERSEA AND INTERSTATE). | | | | | | | |
| New South Wales ... | 26,204 | 27,350 | 25,975 | 30,352 | 33,665 | 42,280 | 45,238 |
| Victoria ... | 16,560 | 18,646 | 19,442 | 23,405 | 21,580 | 27,464 | 27,402 |
| Queensland ... | 10,127 | 9,250 | 9,515 | 11,230 | 11,937 | 12,751 | 14,681 |
| S.A. (including N.T.) ... | 7,660 | 8,187 | 8,443 | 8,663 | 9,488 | 11,927 | 13,887 |
| Western Australia ... | 4,877 | 8,516 | 10,325 | 10,271 | 9,871 | 9,777 | 9,828 |
| Tasmania ... | 2,046 | 2,946 | 2,843 | 3,008 | 3,712 | 3,753 | 4,060 |
| Total ... | 67,474 | 74,895 | 76,543 | 86,929 | 90,253 | 107,952 | 115,105 |
| EXPORTS PER INHABITANT, 1896 to 1907. | | | | | | | |
| TO OVERSEA COUNTRIES. | | | | | | | |
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| New South Wales ... | 13 10 3 | 13 7 1 | 12 15 10 | 14 4 1 | 14 10 11 | 18 6 0 | 18 18 9 |
| Victoria ... | 9 10 10 | 10 17 3 | 9 1 4 | 12 13 7 | 10 14 4 | 13 15 2 | 12 17 1 |
| Queensland ... | 9 0 8 | 8 12 11 | 8 4 0 | 8 9 2 | 9 9 11 | 10 16 2 | 13 4 2 |
| S.A. (including N.T.) ... | 11 12 7 | 12 5 11 | 10 13 1 | 15 4 1 | 17 3 1 | 21 3 5 | 24 0 8 |
| Western Australia ... | 19 5 3 | 42 2 10 | 42 15 0 | 41 18 5 | 36 4 8 | 34 13 6 | 32 15 1 |
| Tasmania ... | 4 14 7 | 9 14 3 | 9 3 2 | 9 18 0 | 10 14 1 | 13 13 5 | 14 5 0 |
| Commonwealth (Total) | 11 6 1 | 13 2 1 | 12 7 4 | 14 10 10 | 14 3 0 | 17 1 4 | 17 10 6 |
| TO OTHER STATES (INTERSTATE). | | | | | | | |
| New South Wales ... | 6 10 10 | 6 14 1 | 5 11 3 | 6 16 11 | 8 5 10 | 9 13 10 | 10 4 9 |
| Victoria ... | 4 8 9 | 4 12 6 | 7 0 6 | 6 14 2 | 7 1 8 | 8 13 8 | 9 5 3 |
| Queensland ... | 12 11 1 | 9 16 2 | 10 7 3 | 13 3 6 | 13 4 2 | 13 2 7 | 14 0 8 |
| S.A. (including N.T.) ... | 9 18 10 | 10 5 4 | 12 8 5 | 8 4 9 | 8 3 4 | 10 4 6 | 11 19 5 |
| Western Australia ... | 12 4 4 | 3 1 0 | 3 18 0 | 1 10 0 | 3 3 11 | 2 18 10 | 4 14 3 |
| Tasmania ... | 7 12 7 | 7 7 7 | 6 17 3 | 6 18 5 | 10 0 1 | 7 6 3 | 8 8 8 |
| Total ... | 7 5 1 | 6 12 11 | 7 5 0 | 7 8 11 | 8 6 5 | 9 7 1 | 10 3 6 |
| TOTAL (OVERSEA AND INTERSTATE). | | | | | | | |
| New South Wales ... | 20 1 2 | 20 1 2 | 18 5 11 | 21 1 0 | 22 16 9 | 27 19 10 | 29 3 6 |
| Victoria ... | 13 19 7 | 15 9 9 | 16 1 10 | 19 7 9 | 17 16 0 | 22 8 10 | 22 2 4 |
| Queensland ... | 21 11 9 | 18 9 1 | 18 11 3 | 21 12 8 | 22 14 1 | 23 18 9 | 27 4 10 |
| S.A. (including N.T.) ... | 21 11 5 | 22 11 3 | 23 1 6 | 23 8 10 | 25 6 5 | 31 7 11 | 36 0 1 |
| Western Australia ... | 31 9 7 | 45 3 10 | 46 13 0 | 43 8 5 | 39 8 7 | 37 12 4 | 37 9 4 |
| Tasmania ... | 12 7 2 | 17 1 10 | 16 0 5 | 16 16 5 | 20 14 2 | 20 19 8 | 22 13 8 |
| Total ... | 18 11 2 | 19 15 0 | 19 12 4 | 21 19 9 | 22 9 5 | 26 8 5 | 27 14 0 |

SECTION XVI.



SHIPPING.

§ 1. General.

1. **Legislation.**—The shipping of the Commonwealth has hitherto been conducted partly under Imperial Acts, consolidated in the Merchants Shipping Act of 1894, and amendments of these, and partly under Acts of the several States of the Commonwealth. Since the scope of the local enactments differs materially in the different States, to define the proper limits of the jurisdiction of the Imperial and State laws cannot here be attempted.

By section 98, Part IV., of the Commonwealth Constitution Act, the power to make laws with respect to trade and commerce was extended to navigation and shipping, and in pursuance of this power a Bill for an Act relating to Navigation and Shipping was introduced into the Senate on the 17th March, 1904, but was not proceeded with.

On the 29th June, 1904, a Royal Commission was appointed to inquire into the Bill and report upon its provisions and any matter incidental thereto. In March and April, 1907, a conference between representatives of the United Kingdom, the Commonwealth of Australia, and New Zealand was held in London on the subject of merchant shipping legislation. The result of the deliberations was that an amended Bill was introduced into the Senate on the 12th September, 1907. Owing to pressure of Parliamentary business, however, the consideration of the Bill was held over. It was reintroduced into the Senate on the 17th September, 1908, but had not been passed into law when the session of Parliament was closed. The Bill was drawn largely on the Merchants Shipping Acts and the Acts of New Zealand and New South Wales, and, as introduced, contains 417 sections divided into eleven parts, as follows:—I. Introductory. II. Masters and Seamen. III. Foreign Seamen. IV. Ships and Shipping. V. Passengers. VI. The Coasting Trade. VII. Wrecks and Salvage. VIII. Pilots and Pilotage. IX. Courts of Marine Inquiry. X. Legal Proceedings. XI. Miscellaneous.

2. **Record of Shipping before Federation.**—Prior to Federation it was customary for each State to regard the matter of shipping purely from the State standpoint, and vessels arriving from or departing to countries beyond Australia, via other Australian States, were recorded as if direct to the oversea country. Thus a mail steamer from the United Kingdom, which made Fremantle her first port of call in Australia, would be recorded not only there, but also again in Adelaide, Melbourne and Sydney, as an arrival from the United Kingdom. Consequently any aggregation, especially of the recent shipping records of the different States, would repeatedly include a large proportion of the shipping visiting Australia. In earlier years, when many vessels sailed from the various State ports direct for their destination, the error of repeated inclusion was less serious, but as the commerce of Australia developed, more and more ports of call were

included in the voyage of each vessel, and this made the mere aggregation of State records correspondingly misleading. It has, as a matter of fact, led to some erroneous publications of statistical results and deductions.

3. Shipping since Federation.—With the inauguration of the Commonwealth, the statistics of its shipping, especially of its oversea shipping, became of greater intrinsic importance. As an index of the position of Australia among the trading countries of the world, such statistics had a constitutional importance commensurate with Commonwealth interests, and correspondingly greater than those of individual States. And the nationality of the shipping trading with Australia became also a matter of greater moment.

4. Difficulties of Comparisons of Total Shipping.—From what was said in paragraph 2 above, it is obviously impossible now to obtain results for Australia not subject to the defect of repeated inclusions of the same vessels. Unfortunately the statistical records of the first three years of federal history are subject to the same defect, and do not admit of direct comparison with those now kept. A careful estimate of the extent and effect of repeated inclusion has been made and applied to the records of the earlier years, so as to extend the comparative results to those years. The error of such estimation will be negligible for comparative purposes.

5. Present System of Record.—The present system of record treats Australia as a unit, and counts, therefore, only one entry and one clearance for each visit to the Commonwealth. Repeated voyages of any vessel are of course included.

On arrival of every vessel at a port in the Commonwealth, whether from an oversea country or from another port within the Commonwealth, the master is required to deliver to the Customs officer a form giving all particulars, necessary for statistical purposes, in regard to the ship and crew, and also the port of embarkation and nationality of any passengers carried. Similarly on departure from a port a form containing corresponding information is lodged. These forms, which provide a complete record of the movements of every vessel in Commonwealth waters, are at the end of each month forwarded by the Customs officer at each port to this Bureau, and furnish the material for the compilation of the Shipping and Migration Returns.

Under the system previously in force it was found that the estimates of population, in so far as they were based on seaward movement, were rather unsatisfactory, and it is believed that the method referred to above will give a result as nearly correct as is possible.

§ 2. Oversea Shipping.

1. Total Oversea Shipping.—In order to extend, as indicated, the comparison of the oversea shipping to the earliest years for which any records are available, an estimate of its probable amount has been made. This estimate is based on a comparison of the results obtained by merely aggregating State statistics with the defect of multiple records, and the results obtained under the present system, which avoids the multiple record. From the nature of the case, it is obvious that the ratio of repeated inclusion to the total traffic has been continually advancing, and this fact has been duly taken into account in deducing the results in the following table:—

**TOTAL OVERSEA SHIPPING ENTERED AND CLEARED THE COMMONWEALTH, 1822
to 1907. (MULTIPLE RECORD EXCLUDED BY ESTIMATION PRIOR TO 1904.)**

| Year. | Vessels. | Tons. | Year. | Vessels. | Tons. | Year. | Vessels. | Tons. |
|-------|----------|---------|-------|----------|-----------|-------|----------|-----------|
| 1822 | 73 | 30,683 | 1851 | 1,576 | 515,061 | 1880 | 3,078 | 2,177,877 |
| 1823 | 76 | 30,543 | 1852 | 1,896 | 844,243 | 1881 | 3,284 | 2,549,364 |
| 1824 | 71 | 29,029 | 1853 | 3,364 | 1,490,422 | 1882 | 3,652 | 3,010,944 |
| 1825 | 80 | 30,786 | 1854 | 3,781 | 1,744,251 | 1883 | 3,857 | 3,433,102 |
| 1826 | 65 | 23,587 | 1855 | 3,239 | 1,449,657 | 1884 | 4,315 | 4,064,947 |
| 1827 | 95 | 29,301 | 1856 | 2,669 | 1,195,794 | 1885 | 4,052 | 3,999,917 |
| 1828 | 124 | 38,367 | 1857 | 2,842 | 1,530,202 | 1886 | 3,793 | 3,853,246 |
| 1829 | 185 | 56,735 | 1858 | 2,607 | 1,378,050 | 1887 | 3,454 | 3,764,430 |
| 1830 | 195 | 56,185 | 1859 | 2,759 | 1,403,210 | 1888 | 3,933 | 4,464,895 |
| 1831 | 185 | 52,414 | 1860 | 2,464 | 1,288,518 | 1889 | 3,897 | 4,460,426 |
| 1832 | 206 | 59,628 | 1861 | 2,466 | 1,149,476 | 1890 | 3,363 | 4,150,027 |
| 1833 | 241 | 72,647 | 1862 | 2,917 | 1,389,231 | 1891 | 3,778 | 4,726,307 |
| 1834 | 249 | 77,066 | 1863 | 3,378 | 1,564,369 | 1892 | 3,432 | 4,239,500 |
| 1835 | 310 | 96,928 | 1864 | 3,344 | 1,537,433 | 1893 | 3,046 | 4,150,433 |
| 1836 | 310 | 93,974 | 1865 | 3,005 | 1,317,934 | 1894 | 3,397 | 4,487,546 |
| 1837 | 442 | 113,432 | 1866 | 3,378 | 1,470,728 | 1895 | 3,331 | 4,567,883 |
| 1838 | 471 | 132,038 | 1867 | 2,927 | 1,277,679 | 1896 | 3,309 | 4,631,266 |
| 1839 | 652 | 191,507 | 1868 | 3,080 | 1,350,573 | 1897 | 3,279 | 4,709,697 |
| 1840 | 915 | 277,335 | 1869 | 3,107 | 1,472,837 | 1898 | 3,222 | 4,681,398 |
| 1841 | 900 | 278,738 | 1870 | 2,877 | 1,381,878 | 1899 | 3,356 | 5,244,197 |
| 1842 | 862 | 232,827 | 1871 | 2,748 | 1,312,642 | 1900 | 3,719 | 5,894,173 |
| 1843 | 736 | 183,427 | 1872 | 2,788 | 1,380,466 | 1901 | 4,028 | 6,541,991 |
| 1844 | 629 | 155,654 | 1873 | 3,159 | 1,609,067 | 1902 | 3,608 | 6,234,460 |
| 1845 | 735 | 164,221 | 1874 | 3,153 | 1,728,269 | 1903 | 3,441 | 6,027,843 |
| 1846 | 888 | 211,193 | 1875 | 3,437 | 1,914,462 | 1904 | 3,700 | 6,682,011 |
| 1847 | 1,033 | 245,358 | 1876 | 3,295 | 1,863,343 | 1905 | 4,088 | 7,444,417 |
| 1848 | 1,132 | 305,840 | 1877 | 3,157 | 1,930,434 | 1906 | 4,155 | 7,966,657 |
| 1849 | 1,137 | 355,886 | 1878 | 3,372 | 2,127,518 | 1907 | 4,394 | 8,822,866 |
| 1850 | 1,300 | 425,206 | 1879 | 3,344 | 2,151,338 | | | |

It will be borne in mind that while the above figures in themselves have no absolute significance, nevertheless, on the assumption that the element of duplication has been in fairly constant ratio, they furnish the best available indication of the growth of Australian oversea shipping.

2. **Comparison with other Countries.**—The place of Australia among various countries in regard to oversea shipping is indicated in the following table, both absolutely and in respect of tonnage per head of population:—

OVERSEA SHIPPING OF VARIOUS COUNTRIES.

| Country. | Year. | Tonnage Entered and Cleared. | | Country. | Year. | Tonnage Entered and Cleared. | |
|---------------------|-------|------------------------------|-----------------|---------------|-------|------------------------------|-----------------|
| | | Total. | Per Inhabitant. | | | Total. | Per Inhabitant. |
| Argentine Rep. | 1904 | 19,648,389 | 4.0 | Japan | 1905 | 28,568,908 | 0.6 |
| Belgium | 1905 | 23,170,224 | 3.3 | Natal | 1906 | 4,405,379 | 3.8 |
| Canada | 1906 | 16,843,429 | 2.8 | New Zealand | 1906 | 2,481,866 | 2.8 |
| Cape Colony | 1906 | 8,504,590* | 3.4 | Norway | 1905 | 8,165,688 | 3.5 |
| Commonwealth | 1907 | 8,822,866 | 2.1 | Spain | 1905 | 33,037,622 | 1.7 |
| Denmark | 1905 | 13,839,942 | 5.4 | Sweden | 1905 | 18,183,459 | 3.4 |
| France | 1905 | 44,116,004 | 1.1 | United K'dom | 1906 | 120,790,310 | 2.8 |
| Germany | 1905 | 38,325,260 | 0.6 | United States | 1906 | 54,371,320 | 0.7 |
| Italy | 1905 | 39,849,276 | 1.1 | | | | |

* These figures, as far as they relate to steam vessels, represent gross tonnage.

3. **Shipping Communication with various Countries.**—Particulars of the number and tonnage of vessels recorded between Australia and various countries, distinguishing British from foreign countries, are given in the following tables, the table below shewing the tonnage of vessels which were recorded as having entered the Commonwealth from the particular countries mentioned, that on page 653 shews the tonnage of vessels which were recorded as having cleared the Commonwealth for the particular countries, while on page 654 is shown the total number and tonnage of vessels recorded as entered and cleared from and to the countries named.

SHIPPING TONNAGE ENTERED AND CLEARED FROM AND TO VARIOUS COUNTRIES.

ENTERED.

| Country. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------------|------------------|------------------|------------------|------------------|
| United Kingdom | 965,420 | 1,003,226 | 997,344 | 1,093,866 |
| Canada | 48,128 | 57,499 | 64,506 | 87,686 |
| Cape Colony | 215,647 | 218,257 | 165,691 | 128,498 |
| Fiji | 34,146 | 43,625 | 48,760 | 56,861 |
| Hong Kong | 45,329 | 94,268 | 128,480 | 104,959 |
| India and Ceylon | 67,193 | 75,973 | 89,199 | 69,705 |
| Mauritius | 13,027 | 24,889 | 23,461 | 8,005 |
| Natal | 70,552 | 111,971 | 89,360 | 68,541 |
| New Guinea | 26,629 | 7,220 | 12,046 | 16,438 |
| New Zealand | 584,204 | 637,094 | 647,862 | 702,373 |
| South Sea Islands | 15,285 | 25,305 | 48,765 | 34,049 |
| Straits Settlements | 99,036 | 81,791 | 118,049 | 72,407 |
| Other British Countries | 699 | 6,894 | 9,801 | 18,909 |
| Total British Countries | 2,185,295 | 2,388,012 | 2,443,324 | 2,462,297 |
| Africa, Portuguese East | 68,865 | 58,774 | 81,389 | 29,350 |
| Belgium... .. | 5,334 | 3,327 | 11,062 | ... |
| Chile | 54,268 | 45,196 | 147,761 | 414,804 |
| Dutch East Indies | 21,207 | 31,420 | 63,258 | 20,364 |
| France | 45,354 | 82,054 | 76,217 | 101,439 |
| Germany | 200,911 | 198,363 | 275,676 | 287,850 |
| Hawaiian Islands | 8,966 | 18,569 | 20,787 | 53,584 |
| Japan | 86,416 | 156,697 | 180,314 | 189,747 |
| Mexico | 27,077 | 17,026 | 18,201 | 50,208 |
| New Caledonia | 55,309 | 73,359 | 64,296 | 64,401 |
| Norway | 43,912 | 37,322 | 44,894 | 29,000 |
| Peru | 9,965 | 19,123 | 25,573 | 75,850 |
| Philippine Islands | 41,272 | 91,699 | 114,897 | 113,904 |
| South Sea Islands (foreign)... .. | 32,156 | 19,427 | 15,656 | 19,661 |
| Sweden | 9,983 | 4,004 | 16,108 | 25,193 |
| United States | 399,416 | 391,731 | 332,516 | 411,636 |
| Other Foreign Countries | 33,993 | 88,983 | 74,216 | 122,778 |
| Total Foreign Countries... .. | 1,144,404 | 1,337,074 | 1,562,821 | 2,009,769 |
| Total all Countries | 3,329,699 | 3,725,086 | 4,006,145 | 4,472,066 |

SHIPPING TONNAGE ENTERED AND CLEARED, ETC.—Continued.

CLEARED.

| Country. | 1904. | 1905. | 1906. | 1907. |
|------------------------------------|------------------|------------------|------------------|------------------|
| United Kingdom ... | 1,155,731 | 967,499 | 1,024,906 | 1,077,830 |
| Canada ... | 30,961 | 31,490 | 36,483 | 43,423 |
| Cape Colony ... | 104,253 | 120,341 | 68,714 | 53,073 |
| Fiji ... | 52,108 | 53,613 | 54,167 | 67,750 |
| Hong Kong ... | 46,096 | 117,561 | 113,787 | 100,056 |
| India and Ceylon ... | 113,503 | 145,479 | 143,451 | 129,064 |
| Mauritius ... | 21,973 | 13,469 | 23,483 | 1,992 |
| Natal ... | 36,579 | 50,984 | 35,048 | 18,384 |
| New Guinea ... | 21,056 | 7,269 | 14,400 | 18,313 |
| New Zealand ... | 595,203 | 751,280 | 757,414 | 821,719 |
| South Sea Islands ... | 18,054 | 29,404 | 38,425 | 22,886 |
| Straits Settlements ... | 80,320 | 79,065 | 155,004 | 101,750 |
| Other British Countries ... | 4,390 | 2,167 | ... | 4,452 |
| Total British Countries ... | 2,280,227 | 2,369,621 | 2,465,282 | 2,460,692 |
| Africa, Portuguese East ... | 22,869 | 24,935 | 14,511 | 25,103 |
| Belgium... .. | 25,838 | 37,264 | 33,500 | 65,890 |
| Chile | 291,240 | 290,491 | 403,900 | 556,005 |
| Dutch East Indies ... | 19,658 | 23,177 | 34,608 | 24,099 |
| France | 44,954 | 113,034 | 66,756 | 85,710 |
| Germany | 170,860 | 186,537 | 234,325 | 236,617 |
| Hawaiian Islands... .. | 42,706 | 79,499 | 48,097 | 42,245 |
| Japan | 46,265 | 40,004 | 54,822 | 56,243 |
| Mexico | 16,191 | 28,993 | 46,650 | 21,166 |
| New Caledonia | 57,737 | 76,191 | 80,606 | 59,805 |
| Peru | 37,480 | 81,270 | 87,641 | 78,664 |
| Philippine Islands ... | 76,583 | 116,274 | 155,214 | 151,202 |
| South Sea Islands (foreign)... | 18,162 | 16,846 | 13,698 | 32,769 |
| Sweden | ... | ... | 1,411 | ... |
| United States | 166,375 | 160,733 | 120,454 | 395,192 |
| Other Foreign Countries ... | 35,367 | 74,462 | 99,038 | 59,398 |
| Total Foreign Countries... | 1,072,085 | 1,349,710 | 1,495,231 | 1,890,108 |
| Total all Countries ... | 3,352,312 | 3,719,331 | 3,960,513 | 4,350,800 |

The figures in the above table represent the tonnage of shipping recorded as having cleared the Commonwealth from the particular countries named. For the purpose of comment, however, countries have been grouped according to larger geographical divisions in the following section.

SHIPPING ENTERED AND CLEARED FROM AND TO VARIOUS COUNTRIES.

1904 TO 1907.

| Country. | 1904. | | 1905. | | 1906. | | 1907. | |
|-----------------------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|
| | Vessels. | | Vessels. | | Vessels. | | Vessels. | |
| | No. | Tonnage. | No. | Tonnage. | No. | Tonnage. | No. | Tonnage. |
| United Kingdom ... | 786 | 2,121,151 | 690 | 1,970,725 | 673 | 2,022,250 | 708 | 2,171,696 |
| Canada ... | 36 | 79,089 | 42 | 83,989 | 47 | 100,989 | 59 | 131,109 |
| Cape Colony ... | 224 | 319,900 | 225 | 338,598 | 167 | 284,408 | 115 | 181,571 |
| Fiji ... | 80 | 86,254 | 83 | 97,239 | 68 | 102,627 | 100 | 134,611 |
| Hong Kong ... | 48 | 91,425 | 101 | 211,829 | 114 | 242,297 | 98 | 205,011 |
| India and Ceylon ... | 71 | 180,696 | 85 | 221,452 | 66 | 232,650 | 72 | 198,769 |
| Mauritius ... | 26 | 35,000 | 31 | 38,358 | 40 | 46,944 | 10 | 9,997 |
| Natal ... | 69 | 107,131 | 84 | 162,955 | 66 | 124,468 | 47 | 86,925 |
| New Guinea ... | 201 | 47,685 | 178 | 14,489 | 157 | 26,448 | 166 | 34,751 |
| New Zealand ... | 806 | 1,179,407 | 922 | 1,368,374 | 885 | 1,405,276 | 896 | 1,524,092 |
| South Sea Islands ... | 31 | 38,339 | 60 | 54,709 | 111 | 87,190 | 56 | 56,935 |
| Straits Settlements ... | 105 | 179,356 | 93 | 160,856 | 141 | 273,053 | 99 | 174,157 |
| Other British Countries ... | 3 | 5,069 | 5 | 9,061 | 7 | 9,801 | 10 | 23,361 |
| Total British Countries... | 2,486 | 4,465,522 | 2,599 | 4,757,633 | 2,582 | 4,908,606 | 2,439 | 4,922,989 |
| Africa, Portuguese East ... | 60 | 91,734 | 50 | 83,709 | 64 | 95,900 | 31 | 54,453 |
| Belgium ... | 15 | 30,972 | 16 | 40,591 | 17 | 44,562 | 24 | 65,890 |
| Chile ... | 196 | 345,508 | 191 | 338,687 | 308 | 551,661 | 530 | 970,809 |
| Dutch East Indies ... | 28 | 40,865 | 163 | 54,597 | 86 | 97,866 | 54 | 44,463 |
| France ... | 40 | 90,308 | 80 | 195,088 | 56 | 142,973 | 74 | 187,149 |
| Germany ... | 115 | 371,771 | 118 | 384,900 | 165 | 510,001 | 172 | 524,467 |
| Hawaiian Islands ... | 45 | 51,672 | 62 | 98,068 | 38 | 68,884 | 44 | 95,829 |
| Japan ... | 63 | 132,681 | 82 | 196,701 | 90 | 235,136 | 93 | 524,990 |
| Mexico ... | 23 | 43,268 | 26 | 46,019 | 32 | 64,851 | 31 | 71,374 |
| New Caledonia ... | 84 | 113,046 | 95 | 149,550 | 93 | 144,902 | 75 | 124,206 |
| Norway ... | 29 | 43,912 | 26 | 37,322 | 27 | 44,894 | 21 | 29,000 |
| Peru ... | 35 | 47,445 | 65 | 100,393 | 74 | 113,214 | 102 | 154,514 |
| Philippine Islands ... | 55 | 117,855 | 87 | 207,973 | 113 | 270,111 | 107 | 265,106 |
| South Sea Islands (foreign) ... | 81 | 50,318 | 76 | 36,273 | 60 | 29,354 | 105 | 52,430 |
| Sweden ... | 10 | 9,983 | 4 | 4,004 | 10 | 17,519 | 13 | 25,193 |
| United States ... | 280 | 565,791 | 249 | 552,464 | 195 | 452,970 | 358 | 806,828 |
| Other Foreign Countries ... | 55 | 69,360 | 99 | 163,445 | 105 | 173,254 | 121 | 182,176 |
| Total Foreign Countries | 1,214 | 2,216,489 | 1,489 | 2,688,784 | 1,533 | 3,058,052 | 1,955 | 3,899,877 |
| Total all Countries | 3,700 | 6,682,011 | 4,088 | 7,444,417 | 4,115 | 7,966,658 | 4,394 | 8,822,866 |

In respect of these tables it may be pointed out that the statistics for any country do not fully disclose the extent of its shipping communication with particular countries. The reason of this is that vessels are recorded as arriving from, or departing to, a particular country, whereas, as a matter of fact, many regular lines of steamers call and transact business at the ports of several countries in the course of a single voyage. The lines of steamers trading between Australia and Japan, for example, often call at New Guinea, the Philippine Islands, China, etc., but, being intermediate ports, these countries are not referred to in the statistical records. Similarly in the case of the large mail steamers passing through the Suez Canal. A steamer may call at Colombo, Aden, Port Said, Genoa, Marseilles, London, Antwerp, and Bremerhaven, yet obviously can only be credited as cleared for one of these ports to the consequent exclusion of all the other ports from the records. Further reference is made in the following paragraphs to the more important of those countries with which the shipping of the Commonwealth is not fully represented in the foregoing tables.

4. **General Trend of Shipping.**—(i.) *General.* A grouping of countries into larger geographical divisions, as in the following tables, shews more readily the general direction of Australian shipping, and, to some extent, avoids the limitations of the records in relation to particular countries, by covering more closely the main trade routes.

It has already been shewn in the opening section of this chapter, that direct comparisons of the annual oversea shipping of the Commonwealth are possible only since the beginning of 1904.

A comparison of the total tonnage of shipping which entered and cleared the Commonwealth during 1907 with similar records for 1904 shews an increase of 2,140,855, or 32.04 per cent., vessels with cargo having increased by 1,155,059 tons, or 19.82 per cent., and vessels in ballast by 985,796, or 115.5 per cent. This increase has been general in all directions except that of Africa, the largest increase during the period being with South America.

(ii.) *Shipping with the United Kingdom and European Countries.* The shipping between the Commonwealth and the United Kingdom and European countries during the past four years shews that steady increase which indicates the consistent development of a well established trade. The shipping in this direction during 1907 amounted to 3,029,032 tons, or 34.3 per cent. of the total oversea shipping of the Commonwealth, and was recorded against the several countries as follows:—United Kingdom, 2,171,696 tons (71.7 per cent.); Germany, 524,467 tons (17.3 per cent.); France, 187,149 tons (6.2 per cent.); Belgium, 65,890 tons (2.2 per cent.); other European countries, 79,830 tons (2.6 per cent.)

The increases of tonnage during 1907 and the relative increases per cent., compared with 1904, for the same countries were respectively:—United Kingdom, 50,545 tons, or 2.4 per cent.; Germany, 152,696, or 41.1 per cent.; France, 96,841, or 107.2 per cent.; Belgium, 34,918, or 112.7 per cent.

The failure of the statistical records to present, in all cases, the full measure of the shipping communication between particular countries is illustrated by the case of Italy. Although the mail steamers which pass through the Suez Canal call at Naples and Genoa, and during 1907 embarked or landed at those ports 3503 passengers for or from Australia, and also carried a direct trade valued at £432,961 between Italy and the Commonwealth, the records for the year shew only one vessel of 1095 tons (a sailing vessel in ballast) as passing between the two countries. Italian merchants complain that the space at their disposal in the mail boats is frequently insufficient, and a direct line of subsidised steamers was recently spoken of.

(iii.) *Shipping with New Zealand.* The tonnage of shipping between the Commonwealth and New Zealand shews a very satisfactory expansion from 1,179,407 tons in 1904 to 1,524,092 tons in 1907, an increase of 344,685 tons, or 29.2 per cent., during the three years, while the figures for the later year are 118,816 tons, or 8.5 per cent., greater than in 1906. The shipping with New Zealand represented 17.3 per cent. of the total shipping of the Commonwealth during 1907.

(iv.) *Shipping with Asiatic Countries and Islands in the Pacific.* The total tonnage between the Commonwealth and Eastern countries during 1907 amounted to 1,685,227 tons, or 19.1 per cent. of the whole, which, although nearly 200,000 tons less than in 1906, represents an increase of 543,189 tons, or 47.6 per cent., as compared with 1904. The principal countries responsible for this increase and the amount of the same due to each, were:—Philippine Islands, 147,251 tons; Hong Kong, 113,590 tons; Japan, 113,309 tons; Hawaiian Islands, 44,157 tons; and Fiji, 38,357 tons. Owing to the

limitation of the records, already alluded to, the figures given in the tables do not represent the full volume of the shipping between the Commonwealth and the Philippines. In addition to the shipping recorded to the Philippine Islands the regular steam lines between the Commonwealth and Japan make Manila a regular port of call, and it is by these vessels that the general trade—apart from the coal trade—is chiefly carried. The whole of the shipping which was recorded as entered the Commonwealth during 1907 from the Philippines (113,904 tons) was in ballast, and of the 151,202 tons which was recorded as cleared for that country, 120,124 tons cleared from Newcastle with coal.

(v.) *Shipping with Africa.* The shipping tonnage recorded between the Commonwealth and African countries during 1907 amounted to only 350,581 tons, a decrease as compared with 1904 of 215,178 tons. Much of the trade between South Africa and Australia, however, is carried by steamers calling at ports in the former country on their voyages between the Commonwealth and the United Kingdom; and which are not shewn in relation to African ports in the shipping returns. Shipping tonnage with African countries—mainly confined to Cape Colony, Natal, and Portuguese East Africa—rose from 565,759 tons in 1904, to 649,802 tons in 1905, but fell to 527,574 tons in 1906, and to 350,581 tons in 1907.

Of the 243,738 tons of shipping which entered the Commonwealth from Africa during 1907, 220,908 tons, or 90.6 per cent.—equal to 63.0 per cent. of the total tonnage recorded between the two countries—was in ballast.

(vi.) *Shipping with North and Central America.* The shipping of the Commonwealth with these countries during 1907 amounted to 1,019,348 tons (11.55 per cent. of the whole) representing an increase of 323,187 tons, or 46.4 per cent., as compared with 1904. Compared with 1906 the increase is even greater, amounting to 391,728 tons, or 62.4 per cent. The shipping between the Commonwealth and the United States during 1906, however, was unusually small, mainly in consequence of the smaller number of vessels arriving in Australia from the latter country in ballast during that year. The 1,019,348 tons of shipping with North and Central America during 1907 were recorded against the several countries as follows:—United States, 806,828 tons (79.2 per cent.); Canada, 131,109 tons (12.9 per cent.); Mexico, 71,374 tons (7.0 per cent.), the balance of 10,037 tons being distributed against the Central American States and the Island of St. Vincent.

(vii.) *Shipping with South America.*—The greatest increase in the shipping of the Commonwealth during the past three years has been in the direction of South America. The shipping in this direction, which during 1907 was engaged almost exclusively in the carriage of coal from the State of New South Wales to Chile and Peru, has been nearly trebled within the past three years, having increased from 420,346 tons in 1904 to 1,214,586 tons in 1907, an increase of 189 per cent. Of the total shipping tonnage between the Commonwealth and South America during 1907, 825,409 tons, or 68.0 per cent., is credited to the coal port of Newcastle, 334,381 tons having entered and 491,028 tons having cleared at that port, while of the same total 186,380 tons entered and 103,541 tons cleared at the port of Sydney. Of the South American countries, Chile is responsible for 970,809 tons (79.9 per cent.); Peru, 154,514 tons (12.7 per cent.); Argentine Republic, 38,445 tons (3.2 per cent.); Uruguay, 30,822 tons (2.5 per cent.); Ecuador, 11,231 tons; and Brazil, 8765 tons.

An important fact, from its bearing on freight rates and its consequent possible effect on the coal trade of New South Wales with South America, is the absence of back freights from that country. Of the 564,221 tons of shipping which entered the Commonwealth from South America during 1907, only two vessels, totalling 3754 tons, carried cargo.

GENERAL DIRECTION OF THE SHIPPING OF THE COMMONWEALTH.

TONNAGE ENTERED.

| Countries. | — | 1904. | 1905. | 1906. | 1907. |
|--|---------------------|---|--------------------|-----------|-----------|
| | | United Kingdom and European Countries ... | Cargo... 1,243,845 | 1,263,010 | 1,350,946 | 1,418,211 |
| | Ballast ... 33,415 | 84,364 | 76,946 | 124,681 | |
| New Zealand ... | Cargo... 464,404 | 505,898 | 529,494 | 547,065 | |
| | Ballast ... 119,800 | 131,196 | 118,366 | 155,308 | |
| Asiatic Countries and Islands in the Pacific ... | Cargo... 388,850 | 390,154 | 479,032 | 485,703 | |
| | Ballast ... 158,493 | 355,994 | 466,893 | 381,509 | |
| Africa ... | Cargo... 44,241 | 45,335 | 33,348 | 22,830 | |
| | Ballast ... 323,850 | 380,424 | 341,761 | 229,908 | |
| North and Central America ... | Cargo... 392,612 | 355,221 | 372,306 | 351,223 | |
| | Ballast ... 83,319 | 121,402 | 42,917 | 200,407 | |
| South America ... | Cargo... 2,118 | 1,714 | 2,154 | 3,754 | |
| | Ballast ... 74,752 | 89,774 | 191,980 | 560,467 | |
| | Cargo... 2,536,070 | 2,561,032 | 2,767,280 | 2,828,786 | |
| | Ballast ... 793,629 | 1,163,154 | 1,238,865 | 1,643,280 | |
| Total ... | ... | 3,329,699 | 3,725,086 | 4,006,145 | 4,472,066 |

TONNAGE CLEARED.

| | | | | | |
|--|--------------------|-----------|-----------|-----------|-----------|
| United Kingdom and European Countries ... | Cargo... 1,396,385 | 1,315,543 | 1,382,949 | 1,479,952 | |
| | Ballast ... 4,655 | — | 74 | 6,188 | |
| New Zealand ... | Cargo... 576,448 | 664,411 | 712,153 | 742,257 | |
| | Ballast ... 18,755 | 86,869 | 45,261 | 79,482 | |
| Asiatic Countries and Islands in the Pacific ... | Cargo... 565,748 | 777,016 | 906,065 | 794,069 | |
| | Ballast ... 28,947 | 33,721 | 32,998 | 23,946 | |
| Africa ... | Cargo... 191,881 | 220,560 | 152,465 | 196,848 | |
| | Ballast ... 5,787 | 3,483 | — | — | |
| North and Central America ... | Cargo... 218,502 | 202,523 | 192,590 | 392,118 | |
| | Ballast ... 1,728 | 29,425 | 19,807 | 75,600 | |
| South America ... | Cargo... 343,476 | 376,654 | 508,972 | 639,544 | |
| | Ballast ... — | 9,126 | 7,180 | 10,821 | |
| | Cargo... 3,292,440 | 3,556,707 | 3,855,193 | 4,154,783 | |
| | Ballast ... 59,872 | 162,624 | 105,320 | 196,017 | |
| Total ... | ... | 3,352,312 | 3,719,331 | 3,960,513 | 4,350,800 |

TONNAGE ENTERED AND CLEARED.

| Countries. | 1904. | 1905. | 1906. | 1907. | 1907 Compared with— | |
|--|-----------|-----------|-----------|-----------|---------------------|-----------|
| | | | | | 1904. | 1906. |
| United Kingdom & European Countries ... | 2,678,300 | 2,662,017 | 2,810,914 | 3,029,032 | + 350,782 | + 218,118 |
| New Zealand ... | 1,179,407 | 1,368,374 | 1,405,276 | 1,524,092 | + 344,656 | + 118,816 |
| Asiatic Countries and Islands in the Pacific ... | 1,142,038 | 1,556,885 | 1,884,988 | 1,685,227 | + 543,189 | — 199,761 |
| Africa ... | 565,759 | 649,802 | 527,574 | 350,531 | — 215,178 | — 176,983 |
| North and Central America ... | 696,161 | 709,171 | 627,620 | 1,019,348 | + 323,187 | + 391,728 |
| South America ... | 420,346 | 477,268 | 710,286 | 1,214,586 | + 794,240 | + 504,300 |
| Cargo ... | 5,828,510 | 6,118,639 | 6,622,473 | 6,983,569 | + 1,155,059 | + 361,096 |
| Ballast ... | 853,501 | 1,325,778 | 1,344,185 | 1,839,297 | + 985,796 | + 495,112 |
| Total ... | 6,682,011 | 7,444,417 | 7,966,658 | 8,822,866 | + 2,140,855 | + 856,208 |

5. **Nationality of Oversea Shipping.**—The greater part of the shipping visiting the Commonwealth is of British nationality, though, as will be seen from the following table, the proportion has gradually diminished during the period under review from 75.35 per cent. in 1904 to 72.54 per cent. in 1907. Of the increase in tonnage in 1907 as compared with 1904, viz., 2,140,855 tons, 1,365,362 tons (63.77 per cent.) was British and 775,493 tons (36.23 per cent.) was foreign. Compared with 1906 British vessels accounted for 69.78 per cent. of the increase.

NATIONALITY OF ALL VESSELS WHICH ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO OVERSEA COUNTRIES, 1904 to 1907.

| Nationality. | Tonnage. | | | | Percentage. | | | |
|--------------------|-----------|-----------|-----------|-----------|-------------|-------|-------|-------|
| | 1904. | 1905. | 1906. | 1907. | 1904. | 1905. | 1906. | 1907. |
| BRITISH— | | | | | | | | |
| Australian ... | 548,039 | 569,210 | 642,422 | 624,658 | 8.20 | 7.65 | 8.06 | 7.08 |
| United Kingdom ... | 3,827,883 | 4,201,185 | 4,341,502 | 4,944,495 | 57.28 | 56.43 | 54.50 | 56.04 |
| New Zealand ... | 646,287 | 752,325 | 800,402 | 817,389 | 9.67 | 10.11 | 10.05 | 9.26 |
| Other British ... | 12,813 | 22,642 | 18,626 | 13,842 | 0.20 | 0.30 | 0.23 | 0.16 |
| | | | | | | | | |
| Cargo | 4,472,216 | 4,670,049 | 4,929,499 | 5,250,818 | 66.93 | 62.73 | 61.87 | 59.51 |
| Ballast | 562,806 | 875,313 | 873,453 | 1,149,566 | 8.42 | 11.76 | 10.97 | 13.03 |
| | | | | | | | | |
| Total British | 5,035,022 | 5,545,362 | 5,802,952 | 6,400,384 | 75.35 | 74.49 | 72.84 | 72.54 |
| FOREIGN— | | | | | | | | |
| Austrian ... | 9,103 | — | 9,982 | 6,121 | 0.14 | — | 0.12 | 0.07 |
| Danish ... | 11,052 | 20,310 | 11,758 | 15,656 | 0.17 | 0.27 | 0.15 | 0.18 |
| Dutch ... | 15,085 | 19,989 | 20,392 | 29,118 | 0.23 | 0.27 | 0.26 | 0.33 |
| French ... | 296,179 | 517,154 | 475,839 | 561,151 | 4.43 | 6.95 | 5.97 | 6.36 |
| German ... | 597,795 | 633,197 | 836,793 | 851,237 | 8.95 | 8.51 | 10.50 | 9.65 |
| Italian ... | 128,575 | 106,017 | 81,195 | 130,569 | 1.92 | 1.42 | 1.02 | 1.48 |
| Japanese ... | 14,981 | — | 61,054 | 78,157 | 0.22 | — | 0.77 | 0.88 |
| Norwegian ... | 224,391 | 263,103 | 366,978 | 479,932 | 3.36 | 3.54 | 4.61 | 5.44 |
| Russian ... | 44,581 | 41,033 | 55,138 | 50,721 | 0.67 | 0.55 | 0.69 | 0.57 |
| Swedish ... | 17,351 | 29,963 | 31,085 | 35,141 | 0.26 | 0.40 | 0.39 | 0.40 |
| United States ... | 280,198 | 268,289 | 208,228 | 173,588 | 4.19 | 3.60 | 2.61 | 1.97 |
| Other Foreign ... | 7,668 | — | 5,264 | 11,091 | 0.11 | — | 0.07 | 0.13 |
| | | | | | | | | |
| Cargo | 1,356,294 | 1,448,590 | 1,692,974 | 1,732,751 | 20.30 | 19.46 | 21.25 | 19.64 |
| Ballast | 290,695 | 450,465 | 470,732 | 689,731 | 4.35 | 6.05 | 5.91 | 7.82 |
| | | | | | | | | |
| Total Foreign | 1,646,989 | 1,899,055 | 2,163,706 | 2,422,482 | 24.65 | 25.51 | 27.16 | 27.46 |
| | | | | | | | | |
| Cargo | 5,828,510 | 6,118,639 | 6,622,473 | 6,983,569 | 87.23 | 82.19 | 83.12 | 79.15 |
| Ballast | 853,501 | 1,325,778 | 1,344,185 | 1,839,297 | 12.77 | 17.81 | 16.88 | 20.85 |
| | | | | | | | | |
| Grand Total | 6,682,011 | 7,444,417 | 7,966,658 | 8,822,866 | 100 | 100 | 100 | 100 |

The tonnage of Australian-owned vessels engaged in the oversea trade represents about 7 per cent. of the total, and the tonnage of New Zealand vessels about 9 per cent. Both are engaged mainly in the trade with New Zealand and eastern countries. An examination of the figures in the above table shews that, of the increase in tonnage in 1907 as compared with 1904, viz., 2,140,855 tons, 1,365,362 tons (*i.e.*, 63.77 per cent.) was British and 775,493 tons (*i.e.*, 36.23 per cent.) was foreign, and that of the increase of 1907 over 1906 only 69.78 per cent. was for British vessels. But to sustain the proportion of British tonnage as in 1904 it was necessary that 75.35 per cent. of the increase should be British.

If, however, the tonnage of ships carrying cargo only is considered as indicating more closely the proportion of the actual carrying trade done, the proportion of British vessels is higher and the fall between the years 1904 and 1907 is slightly less marked. The relative proportion of British and foreign tonnage which entered and cleared the Commonwealth with cargo during the past four years was as follows:—

**PROPORTION OF TONNAGE ENTERED AND CLEARED THE COMMONWEALTH WITH
CARGO OF BRITISH AND FOREIGN NATIONALITY, 1904 to 1907.**

| Nationality. | 1904. | 1905. | 1906. | 1907. |
|----------------|--------|--------|--------|--------|
| British | 76.73 | 76.30 | 74.42 | 75.19 |
| Foreign | 23.27 | 23.70 | 25.58 | 24.81 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 |

That the proportion of foreign tonnage should increase is the natural corollary of the extension of the trade of the Commonwealth with foreign countries. This is particularly patent in regard to Germany and France. Both of the countries desire to increase their mercantile marine, and it is therefore natural that the increased direct trade between those countries and Australia should be carried by their own vessels rather than by the vessels of a third country. During the last year, too, the Royal Dutch Packet Company has established a line of steamers between Java and other islands of the East Indies and Australia.

The more important competitors for the Australian shipping trade among the foreign nations are Germany, France, and Norway, and it is therefore of interest to consider the general direction of their activity. It is well to bear in mind, when comparing the figures in the table on the next page, that the French shipping from and to France and to New Caledonia is practically identical with the steamers of the Messageries Maritimes, which maintain a regular service between France and New Caledonia via Australian ports, and that the German shipping from and to Germany consists mainly of the vessels of two lines, the Norddeutscher Lloyd, and the German-Australian Steamship Company, which have had regular and frequent services to Australian ports for the past twenty-five years:—

SHIPPING OF PRINCIPAL FOREIGN NATIONS BETWEEN AUSTRALIA AND OTHER COUNTRIES DURING 1907.

| Countries. | Nationality. | | | | | |
|--|----------------|----------------|----------------|----------------|----------------|----------------|
| | French. | | German. | | Norwegian. | |
| | Entered. | Cleared. | Entered. | Cleared. | Entered. | Cleared. |
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| EUROPEAN COUNTRIES— | | | | | | |
| United Kingdom | 42,222 | 58,311 | 3,252 | 23,272 | 4,493 | 24,442 |
| Belgium | ... | 3,520 | ... | 14,768 | ... | ... |
| France | 92,589 | 43,927 | ... | 2,704 | ... | ... |
| Germany | 4,285 | ... | 263,321 | 235,070 | ... | 1,547 |
| Norway | ... | ... | ... | ... | 19,130 | ... |
| Sweden | ... | ... | 8,532 | ... | 6,107 | ... |
| Other European Countries ... | 1,972 | ... | ... | ... | 1,030 | 1,395 |
| NEW ZEALAND | 3,074 | 3,074 | 5,723 | 711 | 8,027 | 8,724 |
| ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC— | | | | | | |
| Japan | 5,299 | ... | 19,872 | 17,021 | 12,556 | ... |
| New Caledonia | 62,678 | 55,434 | ... | ... | ... | 2,129 |
| Philippine Islands | ... | ... | ... | 7,348 | 2,191 | 6,739 |
| South Sea Islands | 540 | 12,172 | 1,617 | 1,229 | 12,916 | 10,214 |
| Straits Settlements | ... | ... | ... | ... | ... | 2,276 |
| Other Asiatic Countries | 4,768 | ... | 10,765 | 3,578 | 16,477 | 7,573 |
| AFRICAN COUNTRIES— | | | | | | |
| Africa, Portuguese East | ... | ... | 1,428 | ... | 4,254 | ... |
| Cape Colony | ... | ... | 4,045 | ... | 32,329 | 30,547 |
| Natal | ... | ... | ... | ... | 8,467 | 1,853 |
| Other African Countries | 1,906 | ... | 2,733 | ... | ... | ... |
| NTH. AMERICAN COUNTRIES— | | | | | | |
| United States | 25,103 | 86,362 | 26,909 | 11,210 | 12,117 | 44,911 |
| Other Nth. Amer. Countries... .. | 1,858 | ... | 23,004 | 7,652 | 14,909 | 4,015 |
| STH. AMERICAN COUNTRIES— | | | | | | |
| Chile | 26,475 | 23,886 | 59,363 | 80,684 | 52,376 | 53,658 |
| Peru | ... | ... | 5,089 | 3,834 | 20,559 | 26,604 |
| Other Sth. Amer. Countries ... | 1,696 | ... | 6,503 | ... | 18,548 | 6,819 |
| With Cargo | 116,674 | 209,643 | 320,506 | 407,006 | 71,276 | 227,377 |
| In Ballast | 157,791 | 77,043 | 121,650 | 2,075 | 175,210 | 6,069 |
| Total | 274,465 | 286,686 | 442,156 | 409,081 | 246,486 | 233,446 |

A further analysis is appended, distinguishing between steam and sailing vessels of British and foreign nationality, which entered and cleared the Commonwealth during the years 1904-7. Steam tonnage during 1907 was 1,945,923 greater than in 1904, 1,548,488 tons (*i.e.*, 90.9 per cent.) of the increase being British, and 397,435 tons (*i.e.*, 9.1 per cent.) being foreign. The tonnage of sailing vessels shews an increase during the same period of 194,932 tons, for while British tonnage fell by 183,126 tons, that of foreign nations increased by 378,058 tons.

The following table shews also the proportion of steam and sailing vessels engaged in the Australian trade. As might be expected, the proportion of sailing vessels is shewn to be a decreasing one, falling during the period under review from 33 per cent. to 27 per cent. of the total tonnage, and it is in this branch of shipping that the foreign element is stronger than the British.

STEAM AND SAILING VESSELS ENTERED AND CLEARED, 1904 to 1907.

| Description and Nationality of Vessels. | 1904. | | 1905. | | 1906. | | 1907. | |
|---|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|
| | Tonnage. | Percentages. | Tonnage. | Percentages. | Tonnage. | Percentages. | Tonnage. | Percentages. |
| Steam— | | | | | | | | |
| British | 3,742,498 | 83 | 4,368,183 | 83 | 4,743,416 | 80 | 5,290,986 | 82 |
| Foreign | 764,978 | 17 | 901,202 | 17 | 1,186,767 | 20 | 1,162,413 | 18 |
| Total steam | 4,507,476 | 100 (87) | 5,269,385 | 100 (71) | 5,930,183 | 100 (74) | 6,453,399 | 100 (79) |
| Sailing— | | | | | | | | |
| British | 1,292,524 | 59 | 1,177,179 | 54 | 1,059,536 | 52 | 1,109,398 | 47 |
| Foreign | 882,011 | 41 | 997,853 | 46 | 976,939 | 48 | 1,260,069 | 53 |
| Total sailing | 2,174,535 | 100 (83) | 2,175,032 | 100 (29) | 2,036,475 | 100 (26) | 2,369,467 | 100 (27) |
| Steam and Sailing— | | | | | | | | |
| British | 5,035,022 | 75 | 5,545,362 | 74 | 5,802,952 | 78 | 6,400,384 | 73 |
| Foreign | 1,646,989 | 25 | 1,899,055 | 26 | 2,163,706 | 27 | 2,422,432 | 27 |
| Total | 6,682,011 | 100 | 7,444,417 | 100 | 7,966,658 | 100 | 8,822,866 | 100 |

6. **Tonnage in Ballast.**—The following table shews the tonnage of oversea vessels which entered and cleared the Commonwealth in ballast during the years 1904-7. Of the total British tonnage which entered during 1907, 32.23 per cent. was in ballast, and of foreign tonnage 48.60 per cent. was in similar condition. Of the total tonnage which entered the Commonwealth during 1907, 36.75 per cent. was in ballast, while of the tonnage cleared 4.51 per cent. only was without cargo:—

TONNAGE ENTERED AND CLEARED IN BALLAST, 1904 to 1907.

| Year. | Entered. | | | Cleared. | | |
|-------------|-----------|----------|-----------|----------|----------|---------|
| | British. | Foreign. | Total. | British. | Foreign. | Total. |
| 1904 | 508,237 | 285,392 | 793,629 | 54,569 | 5,303 | 59,872 |
| 1905 | 772,423 | 390,731 | 1,163,154 | 102,890 | 59,734 | 162,624 |
| 1906 | 808,190 | 430,675 | 1,238,865 | 65,263 | 40,057 | 105,320 |
| 1907 | 1,043,383 | 599,897 | 1,643,280 | 106,183 | 89,834 | 196,017 |

PROPORTION OF TOTAL BRITISH AND FOREIGN TONNAGE WHICH ENTERED AND CLEARED IN BALLAST, 1904 to 1907.

| Year. | Entered. | | | Cleared. | | |
|-------------|-----------------------|-----------------------|---------------------|-----------------------|-----------------------|---------------------|
| | British. per cent. | Foreign. per cent. | Total. per cent. | British. per cent. | Foreign. per cent. | Total. per cent. |
| 1904 | 20.15 | 35.35 | 23.84 | 2.17 | 0.63 | 1.79 |
| 1905 | 27.84 | 41.08 | 31.22 | 3.71 | 6.30 | 4.37 |
| 1906 | 27.28 | 39.88 | 30.92 | 2.30 | 3.70 | 2.66 |
| 1907 | 32.23 | 48.60 | 36.75 | 3.36 | 7.56 | 4.51 |

Vessels in search of freights arrive in Australia from all parts of the world. The tonnage which entered each State of the Commonwealth, in ballast, during 1907 was as follows:—

TONNAGE OF OVERSEA VESSELS IN BALLAST WHICH ENTERED EACH STATE OF THE COMMONWEALTH DURING THE YEAR 1907.

| State | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|-------------------------|-----------|-----------|---------|----------|----------|--------|-----------|
| Tonnage | 1,258,900 | 36,342 | 37,942 | 135,287 | 75,436 | 99,373 | 1,643,280 |
| Percentage of total ... | 76.61 | 2.21 | 2.31 | 8.23 | 4.59 | 6.05 | 100 |

The large exports of coal from New South Wales afford special inducements to vessels in search of freights. During 1907, 1,258,900 tons, or 76.61 per cent. of all ballast tonnage arriving in Australia, entered in New South Wales, 935,886 tons having entered at the coal port of Newcastle. The heavy exports during 1907 of wheat and wool have also furnished freights for vessels arriving in ballast in various parts of the Commonwealth. The relatively large tonnage in ballast recorded in Tasmania is mainly due to French vessels—sailing under the bounty system—calling at Hobart for orders.

§ 3. Shipping of Ports.

1. Shipping at Ports.—Appended is an abstract of the total shipping tonnage—over-sea and coastwise—which entered the more important ports of Australia during the year 1907, together with similar information in regard to some of the ports of New Zealand and of the United Kingdom. The figures for the United Kingdom ports are for the year 1906, the latest available:—

SHIPPING OF PORTS, AUSTRALIA AND VARIOUS COUNTRIES.

| Port. | Tonnage Entered. | Port. | Tonnage Entered. |
|----------------------|------------------|-----------------------------------|------------------|
| AUSTRALIA— | | ENGLAND AND WALES— | |
| Sydney | 5,963,016 | London | 17,596,315 |
| Melbourne | 4,654,356 | Liverpool (inc. Birkenhead) ... | 11,395,620 |
| Port Adelaide | 2,320,871* | Cardiff | 9,952,109 |
| Newcastle | 2,046,253 | Newcastle and N. & S. Shields ... | 8,732,342 |
| Brisbane | 1,837,099 | Southampton | 3,631,513 |
| Fremantle | 1,591,675 | Hull | 3,924,294 |
| Townsville | 941,958 | Dover | 2,752,387 |
| Albany | 858,072 | Newport | 2,857,864 |
| Hobart | 766,583 | Sunderland | 2,700,185 |
| Mackay | 631,491 | Middlesbrough | 2,353,537 |
| Rockhampton | 581,620 | Blyth | 2,080,938 |
| Cairns | 522,197 | Bristol | 1,939,963 |
| Port Pirie | 440,222 | Swansea | 1,978,805 |
| Geelong | 429,021 | Manchester | 1,767,017 |
| Bowen | 347,981 | SCOTLAND— | |
| Bunbury | 206,621 | Glasgow | 4,266,925 |
| Launceston | 245,789 | Leith | 1,994,573 |
| NEW ZEALAND— | | IRELAND— | |
| Wellington | 2,687,741 | Belfast | 2,846,212 |
| Lyttelton | 1,913,488 | Dublin | 2,525,867 |
| Auckland | 1,469,203 | | |
| Dunedin | 939,027 | | |

* Exclusive of coastwise shipping confined to the State of South Australia.

From the figures above it may be seen that the shipping business of the ports of Sydney and Melbourne is only exceeded by that of four ports in the United Kingdom, viz., London, Liverpool, Cardiff, and Newcastle.

§ 4. Vessels Built and Registered.

1. **Vessels Registered.**—The number and net tonnage of steam and sailing vessels on the registers at the various ports of the Commonwealth at the end of each of the years 1901 to 1907 are as follows:—

VESSELS ON THE REGISTER, 1901 to 1907.*

| Year. | Steam. | | Sailing. | | Total. | |
|-------------|---------|--------------|----------|--------------|---------|--------------|
| | Number. | Net Tonnage. | Number. | Net Tonnage. | Number. | Net Tonnage. |
| 1901 | 943 | 203,541 | 1,433 | 141,722 | 2,376 | 345,263 |
| 1902 | 965 | 208,043 | 1,483 | 141,125 | 2,448 | 349,168 |
| 1903 | 1,004 | 219,985 | 1,578 | 136,888 | 2,582 | 356,873 |
| 1904 | 1,011 | 223,558 | 1,700 | 129,801 | 2,711 | 353,359 |
| 1905 | 1,052 | 222,551 | 1,690 | 129,291 | 2,742 | 351,842 |
| 1906 | 1,082 | 238,742 | 1,644 | 128,288 | 2,726 | 367,030 |
| 1907 | 1,108 | 249,600 | 1,555 | 126,402 | 2,663 | 376,002 |

* Prior to 1904 vessels registered in the Northern Territory of South Australia are not included.

2. **Vessels Built.**—The following table shews the number and net tonnage of steam and sailing vessels built and registered in Australia during the years 1901 to 1907:—

VESSELS BUILT AND REGISTERED, 1901 to 1907.

| Year. | Steam. | | Sailing. | | Total. | |
|-------------|---------|--------------|----------|--------------|---------|--------------|
| | Number. | Net Tonnage. | Number. | Net Tonnage. | Number. | Net Tonnage. |
| 1901 | 16 | 1,533 | 35 | 960 | 51 | 2,493 |
| 1902 | 21 | 1,195 | 58 | 1,574 | 79 | 2,769 |
| 1903 | 35 | 1,536 | 51 | 1,160 | 86 | 2,696 |
| 1904 | 16 | 730 | 54 | 1,079 | 70 | 1,809 |
| 1905 | 29 | 1,375 | 12 | 417 | 41 | 1,792 |
| 1906 | 28 | 874 | 17 | 1,109 | 45 | 1,983 |
| 1907 | 26 | 1,108 | 19 | 593 | 45 | 1,701 |

§ 5. Interstate Shipping.

1. **Total Vessels and Tonnage.**—In the following table are shewn the number and tonnage of vessels recorded as having entered each State of the Commonwealth from any other State therein, and similarly the number and tonnage clearing from each State to other Commonwealth States. The table gives results for the quinquennial intervals since 1886. The shipping on the Murray River, between the States of New South Wales, Victoria and South Australia, is not included:—

INTERSTATE SHIPPING, 1886 to 1907.—NUMBER OF VESSELS.

ENTERED.

| State. | 1886. | 1891. | 1896. | 1901. | 1906. | 1907. |
|---|-------|-------|-------|-------|-------|-------|
| New South Wales | 1,603 | 1,692 | 1,470 | 1,611 | 1,575 | 1,698 |
| Victoria | 1,433 | 1,525 | 1,280 | 1,502 | 1,561 | 1,634 |
| Queensland | 615 | 376 | 439 | 430 | 478 | 517 |
| South Australia and Northern Territory | 671 | 761 | 1,000 | 719 | 838 | 810 |
| Western Australia | 187. | 149 | 520 | 446 | 335 | 343 |
| Tasmania | 576 | 680 | 567 | 713 | 840 | 871 |
| Commonwealth | 5,085 | 5,183 | 5,276 | 5,421 | 5,627 | 5,873 |

CLEARED.

| | | | | | | |
|---|-------|-------|-------|-------|-------|-------|
| New South Wales | 1,402 | 1,415 | 1,275 | 1,473 | 1,417 | 1,550 |
| Victoria | 1,615 | 1,733 | 1,380 | 1,569 | 1,610 | 1,691 |
| Queensland | 712 | 389 | 455 | 395 | 431 | 481 |
| South Australia and N. Territory | 743 | 865 | 1,083 | 826 | 890 | 883 |
| Western Australia | 156 | 158 | 496 | 456 | 363 | 361 |
| Tasmania | 615 | 679 | 573 | 694 | 809 | 834 |
| Commonwealth | 5,243 | 5,239 | 5,262 | 5,413 | 5,520 | 5,800 |

TOTAL.

| | | | | | | |
|---|--------|--------|--------|--------|--------|--------|
| New South Wales | 3,005 | 3,107 | 2,745 | 3,084 | 2,992 | 3,248 |
| Victoria | 3,048 | 3,258 | 2,660 | 3,071 | 3,171 | 3,325 |
| Queensland | 1,327 | 765 | 894 | 825 | 909 | 998 |
| South Australia and N. Territory | 1,414 | 1,626 | 2,083 | 1,545 | 1,728 | 1,693 |
| Western Australia | 343 | 307 | 1,016 | 902 | 698 | 704 |
| Tasmania | 1,191 | 1,359 | 1,140 | 1,407 | 1,649 | 1,705 |
| Commonwealth | 10,328 | 10,422 | 10,538 | 10,834 | 11,147 | 11,673 |

TONNAGE.—ENTERED.

| State. | 1886. | 1891. | 1896. | 1901. | 1906. | 1907. |
|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| New South Wales | 1,181,495 | 1,617,559 | 1,589,753 | 2,031,089 | 2,456,269 | 2,758,367 |
| Victoria | 1,072,381 | 1,392,818 | 1,486,624 | 1,956,900 | 2,473,771 | 2,592,742 |
| Queensland | 355,930 | 267,753 | 343,026 | 545,469 | 692,354 | 715,454 |
| S. Aust. and N. Ter. | 455,596 | 683,095 | 1,083,632 | 1,135,714 | 1,596,957 | 1,611,416 |
| Western Australia | 127,098 | 237,708 | 683,918 | 973,474 | 968,664 | 990,664 |
| Tasmania | 221,061 | 371,205 | 281,029 | 485,023 | 721,240 | 760,192 |
| Commonwealth | 3,413,561 | 4,570,138 | 5,467,982 | 7,127,669 | 8,909,255 | 9,428,835 |

INTERSTATE SHIPPING, 1886 TO 1907.—TONNAGE.—Continued.

| State. | 1886. | 1891. | 1896. | 1901. | 1906. | 1907. |
|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| CLEARED. | | | | | | |
| New South Wales | 1,014,900 | 1,314,339 | 1,341,635 | 1,856,501 | 2,177,496 | 2,419,481 |
| Victoria ... | 1,257,967 | 1,692,189 | 1,599,065 | 2,038,424 | 2,617,966 | 2,726,400 |
| Queensland ... | 411,275 | 302,723 | 359,046 | 440,659 | 578,561 | 660,830 |
| S. Aust. and N. Ter. | 503,393 | 854,236 | 1,231,927 | 1,377,399 | 1,787,009 | 1,809,521 |
| Western Australia | 116,101 | 269,256 | 687,632 | 977,846 | 1,051,629 | 1,008,024 |
| Tasmania ... | 251,620 | 352,406 | 250,557 | 433,735 | 636,944 | 652,237 |
| Commonwealth ... | 3,555,256 | 4,785,149 | 5,469,862 | 7,124,564 | 8,649,605 | 9,276,493 |

TOTAL.

| | | | | | | |
|----------------------|-----------|-----------|------------|------------|------------|------------|
| New South Wales | 2,196,395 | 2,931,898 | 2,931,388 | 3,887,590 | 4,633,765 | 5,177,848 |
| Victoria ... | 2,330,348 | 3,085,007 | 3,085,689 | 3,995,324 | 5,091,737 | 5,319,142 |
| Queensland ... | 767,205 | 570,476 | 702,072 | 986,128 | 1,270,915 | 1,376,284 |
| S. Aust. and N. Ter. | 958,989 | 1,537,331 | 2,315,559 | 2,513,113 | 3,383,966 | 3,420,937 |
| Western Australia | 243,199 | 506,964 | 1,371,550 | 1,951,320 | 2,020,293 | 1,998,688 |
| Tasmania ... | 472,681 | 723,611 | 531,586 | 918,758 | 1,358,184 | 1,412,429 |
| Commonwealth ... | 6,968,817 | 9,355,287 | 10,937,844 | 14,252,233 | 17,758,860 | 18,705,328 |

The figures presented in the above table include oversea vessels—largely mail boats—passing from one State to another. This renders them somewhat unsatisfactory.

In the earlier part of this section attention was drawn to the custom in vogue prior to Federation of recording vessels from or to "oversea countries via other Commonwealth States" as *direct* from or to the oversea country. At each port in Australia these vessels were, on the inward voyage (to Australia), entered as from the oversea country, and cleared to the next Australian port as "interstate"; on the return journey—the outward voyage—they were entered as "interstate," and cleared as for the oversea country. In order to preserve the continuity of the records of the shipping communication of the several States with oversea countries this method has been followed by the Department of Trade and Customs in continuation of the pre-existing practice, excepting that vessels arriving or departing via other Commonwealth States are now so recorded instead of as "direct."

From the above it will be seen that while certain movements of the vessels referred to are included in the interstate shipping, other movements of the same vessels, between the same ports, are not so included.

To ascertain the aggregate movement of shipping between the States during the year 1907, including the total interstate movements of oversea vessels, the figures in the following table must be added to those of the preceding one:—

**SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES VIA
OTHER COMMONWEALTH STATES, 1907.**

| State. | Entered. | | Cleared. | | Total. | | |
|-----------------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Vessels. | Tonnage. | Vessels. | Tonnage. | Vessels. | Tonnage. | |
| New South Wales ... | 431 | 1,367,490 | 469 | 1,502,675 | 900 | 2,870,165 | |
| Victoria ... | 341 | 1,092,124 | 369 | 1,177,430 | 710 | 2,269,554 | |
| Queensland ... | 152 | 452,264 | 156 | 490,991 | 308 | 943,255 | |
| South Australia ... | 223 | 767,502 | 156 | 550,486 | 379 | 1,317,988 | |
| Western Australia ... | ... | ... | ... | ... | ... | ... | |
| Tasmania ... | 1 | 2,304 | 26 | 110,823 | 27 | 113,127 | |
| Commonwealth | (1907) | 1,148 | 3,681,684 | 1,176 | 3,832,405 | 2,324 | 7,514,089 |
| | (1906) | 1,045 | 3,349,036 | 1,107 | 3,442,747 | 2,152 | 6,791,783 |

2. **Total Interstate Movement of Shipping.**—The table hereunder shows the total interstate shipping, including all interstate movements of vessels from and to oversea countries, via other Commonwealth States, for the year 1907:—

TOTAL INTERSTATE MOVEMENT OF SHIPPING, 1907.

| State. | Entered. | | Cleared. | | Total. | | |
|-----------------------|----------|-----------|------------|-----------|------------|-----------|------------|
| | Vessels. | Tonnage. | Vessels. | Tonnage. | Vessels. | Tonnage. | |
| New South Wales ... | 2,129 | 4,125,857 | 2,019 | 3,922,156 | 4,148 | 8,048,013 | |
| Victoria ... | 1,975 | 3,684,866 | 2,060 | 3,903,830 | 4,035 | 7,588,696 | |
| Queensland ... | 669 | 1,167,718 | 637 | 1,151,821 | 1,306 | 2,319,539 | |
| South Australia ... | 1,033 | 2,378,918 | 1,039 | 2,360,007 | 2,072 | 4,738,925 | |
| Western Australia ... | 343 | 990,664 | 361 | 1,008,024 | 704 | 1,998,688 | |
| Tasmania ... | 872 | 762,496 | 860 | 763,060 | 1,732 | 1,525,556 | |
| Commonwealth ... | 1907 | 7,021 | 13,110,519 | 6,976 | 13,108,898 | 13,997 | 26,219,417 |
| | 1906 | 6,672 | 12,258,291 | 6,627 | 12,292,352 | 13,299 | 24,550,643 |

The necessary data are not available to enable a similar adjustment to be made for earlier years.

3. **Vessels Engaged Solely in Interstate Trade.**—The elimination of the element of oversea vessels, included in the interstate shipping returns, cannot be accurately effected; nevertheless a close approximation is furnished if it be assumed that vessels entered in the several States as from "oversea countries via other Commonwealth States" have really been cleared from other States as "interstate," and further, that the vessels cleared to "oversea countries via other Commonwealth States" have likewise been entered elsewhere as "interstate." Applying this suggestion, and also eliminating all interstate movements of oversea vessels, the number and tonnage of vessels engaged solely in the interstate trade during the years 1906 and 1907 will be found to be:—

**NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE.
1906 and 1907.**

| Year. | Entered. | | Cleared. | | Total. | |
|-------------|----------|-----------|----------|-----------|--------|------------|
| | No. | Tons. | No. | Tons. | No. | Tons. |
| 1906 | 4,520 | 5,466,508 | 4,475 | 5,500,569 | 8,995 | 10,967,077 |
| 1907 | 4,697 | 5,596,430 | 4,652 | 5,594,809 | 9,349 | 11,191,239 |

This treatment cannot be extended to the individual States, as the records do not disclose the particular relationship of the States concerned.

4. Interstate and Coastal Services.—The foundation of the coastal steamship services in Australia dates back to the year 1851, when a regular trade was established between Melbourne and Geelong by the small screw steamer "Express." Early in the fifties a company was formed in Tasmania with a capital of £40,000 for the purpose of purchasing steamboats, and employing them in the carriage of passengers and goods between Hobart and Melbourne. This service was commenced in 1852, and was thus the first regular interstate service in Australia. About this time the great influx of population and the increase in commerce, caused chiefly by the gold discoveries, emphasised the desirability of establishing more regular and quicker means of communication between the principal ports of Australia, and in 1862 the regular interstate service between New South Wales and Victoria was inaugurated by the s.s. *You Yangs*, which was put into commission in regular service between Melbourne, Sydney, and Newcastle. In 1875 a company was formed in Adelaide for the purpose of supplying suitable steamers for the requirements of the trade between Adelaide and Melbourne. The first two steamers of the company were named the *South Australian* and the *Victorian*, and were small vessels of only 400 tons burthen. From the start success attended these enterprises, and the services thus initiated were rapidly extended and their operations broadened. Numerous other companies were formed to cope with the increasing trade between ports in the Commonwealth, and the companies engaged from time to time added to their fleets of steamers by the acquisition of more modern and rapid vessels, until at the end of the year 1907 the total net tonnage owned by the eleven companies from whom returns have been received amounted to 125,560 tons. A summary of the various mail services carried on during the year 1908 is given in Section XVIII. of this work.

The subjoined table gives particulars, so far as they are available, of all steamships engaged in regular interstate or coastal services at the end of each year from 1901 to 1907, inclusive:—

**PARTICULARS OF STEAMSHIPS ENGAGED IN REGULAR INTERSTATE AND
COASTAL SERVICES IN THE COMMONWEALTH, 1901 to 1907.**

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|---------|---------|---------|---------|---------|---------|---------|
| Number of companies making returns | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Number of steamships | 113 | 113 | 114 | 113 | 117 | 122 | 131 |
| Tonnage { Gross | 184,574 | 184,858 | 193,262 | 195,057 | 198,338 | 207,320 | 227,605 |
| { Net | 114,080 | 113,726 | 118,514 | 118,612 | 120,470 | 125,560 | 137,573 |
| Horse-power { Nominal | 18,237 | 18,377 | 18,828 | 19,031 | 19,180 | 20,258 | 21,735 |
| { Indicated | 122,519 | 126,012 | 133,125 | 138,422 | 141,054 | 149,345 | 163,166 |
| Number of passengers { 1st class | 4,617 | 4,953 | 5,314 | 5,536 | 5,764 | 6,077 | 6,309 |
| for which licensed to { 2nd class and carry Steerage | 4,490 | 4,750 | 5,494 | 5,645 | 5,745 | 5,906 | 6,026 |
| Complement { Masters and Officers | 403 | 403 | 408 | 404 | 410 | 431 | 458 |
| { Engineers | 332 | 334 | 342 | 343 | 343 | 360 | 388 |
| of Crew { Crew | 2,875 | 2,958 | 3,106 | 3,153 | 3,181 | 3,351 | 3,625 |

§ 6. Lighthouses and Lights.

The following summary gives particulars of lighthouses and lights on the coast of each State :—

LIGHTHOUSES AND LIGHTS ON THE COASTS OF THE COMMONWEALTH, 1907.

| Position of Light. | Description. | Colour of Light. | Distance Visible (Nautical Miles). |
|--|---|----------------------------------|------------------------------------|
| QUEENSLAND. | | | |
| 6 small lights at entrance to the Norman River | | | |
| Booby Island | 2nd order dioptric; revolving flash; circular tower | White | 16 |
| Goode Island | 4th order dioptric; fixed; circular tower | Red and white sectors | 24 |
| Piper Island... .. | 4th order dioptric; fixed; lightship | White, with red sect'rs | 10 |
| 1 jetty light at Thursday Is. | | | |
| Claremont Island | 4th order dioptric; fixed; lightship | White, with red sect'rs | 10 |
| Pipon Island | 4th order dioptric; fixed; iron skeleton tower | White, with red sect'rs | 13 |
| Grassy Hill | 4th order dioptric; fixed; circular tower | White | ... |
| 2 small lights in Cook Harb. | | | |
| Rocky Islet | 4th ord. holophote; circular tower | White | 14 |
| Archer Point | 4th ord. holophotal; circular tower | Condensing; white, red and green | 20 |
| Low Island | 3rd order dioptric; revolving every minute; circular tower | White | 14 |
| Island Point (Port Douglas)... | 5th order dioptric; fixed; circular tower | Red | 8 |
| 2 small lights Dickson Inlet (Magazine Island) | | | |
| North Barnard Island | 6th order dioptric; fixed; circular lantern on concrete base | White | 14 |
| Bay Rock | 4th order dioptric; fixed; circular tower | Red and white | 15 |
| 14 smaller lights in Hinchinbrook Channel and Cairns Harbour | | | |
| Cape Cleveland | 4th order dioptric; revolving every 20 seconds; iron tower | Red and white | 20 |
| Cape Bowling Green | 3rd order dioptric; revolving every minute; iron tower | White | 14 |
| North Head, Bowen... .. | 5th order dioptric; fixed; hexagonal wooden tower | Red and white | 11 |
| 6 smaller lights in Bowen Harbour | | | |
| Dent Island | 4th order dioptric; revolving every 30 seconds; iron tower | White | 16 |
| Flat-top Islet | 4th order dioptric; fixed; iron tower | Red and white sectors | 19 |
| 13 smaller lights in the Pioneer River | | | |
| Pine Islet | 2nd order dioptric; fixed and flash; iron tower | Red and white | 20 |
| North Reef | 2nd order dioptric; fixed and flash; iron tower | White | 13 |
| Balaclava | 4th order dioptric lights in each tower; 2 square skeleton towers | White | 15 and 10 |
| 23 smaller lights on beacons in Fitzroy River | | | |
| Sea Hill | 4th order dioptric; circular tower | White and red sectors | 17 |
| Entrance to Middle Channel, Broadmount, 7 lights | | | |
| Pilot station, Keppel Bay ... | 6th order catoptric; fixed | White | 7 |
| Gas buoy at Timandra Bank | Occulting | White light | ... |
| Gas buoy (ent. to Fitzroy R.) | Occulting | White light | ... |
| Cape Capricorn | 3rd order dioptric; revolving every minute; iron tower | White | 23 |
| " " (2) | One reflector and one 4th order holophote; light-rooms | White | ... |
| South Channel, Port Curtis... (entrance leading lights) | Two 4th and two 6th order holophotes | White | ... |
| Gatcombe Head | 5th order dioptric; fixed; hexagonal wooden tower | Red and white | ... |
| 3 small lights in Port Curtis | | | |
| Bustard Head | 2nd order dioptric; fixed and flash; iron tower | White and red | 24 |
| " " | 5th order dioptric; fixed; sq. tower | White | ... |
| " " | Catoptric; fixed; mast | White | ... |
| Burnett Heads (South Head) | 5th order dioptric; fixed; hexagonal wooden tower | White | 10 |
| 14 smaller lights on beacons in the Burnett River | | | |
| Lady Elliot Island | 4th order dioptric; flash every 30 seconds; iron tower | White | 12 |
| Sandy Cape | 1st order dioptric; revolving every 1½ minutes; iron tower | White | 27 |

| Position of Light. | Description. | Colour of Light. | Distance Visible (Nautical Miles). |
|--|--|--------------------------------|------------------------------------|
| Woody Island (middle) ... | 4th order dioptric; fixed; hexagonal wooden tower | Red and white sectors | 19 |
| 51 smaller lights in Wide Bay, Sandy St., & Mary R. | 4th order dioptric; fixed; hexagonal wooden tower | Red and white sectors | 16 |
| Double Island Point ... | 3rd order dioptric; revolving every 30 seconds; circular tower | White | 24 |
| Fisherman's Island (front) ... | 5th order holophote; iron tower | Red | ... |
| 30 smaller lights on beacons in the Brisbane River and Moreton Bay | 5th order dioptric; iron tower | Red and white sectors | ... |
| Pile lighthouse ... | 4th order dioptric; occulting; hexagonal, on screw piles | Red and white sectors | ... |
| Cleveland Point ... | 6th order dioptric; fixed; hexagonal wooden tower | White | 8 |
| North-west Channel, Moreton Bay (gas buoys) | Steel buoys; 2 black, 1 red; 2 fixed, 1 occulting | White | ... |
| Bribie Island— Front leading light ... | 4th order dioptric, condensing; lantern and storeroom on skeleton wood tower | White | 12 |
| Back leading light ... | 4th order holophote; skeleton wood tower | White | 15 |
| Caloundra Head ... | 4th order dioptric, condensing; circular wood and iron tower | White, with red sectors | 16 |
| Howard Range ... | 4th order holophote; square wooden light-room | White | ... |
| Tangaluma ... | Biform (2 holophotes, 4th order); square wooden light-room | White | 23 |
| Cowan Cowan ... | 4th order dioptric; fixed; wooden tower | Red and white sectors | 12 |
| Comboyuro ... | 4th order dioptric; fixed; wooden tower | Red and white sectors | 9 |
| Yellow Patch ... | 4th order dioptric; fixed; square wooden light-room | Red and white sectors | 11 |
| North Point ... | 6th order dioptric; fixed; square wooden light-room | White sector | 7 |
| Cape Moreton 1 small secondary light | 1st order catoptric; revolving every minute; circular stone tower | White | 26 |
| NEW SOUTH WALES. | | | |
| Tweed River (Fingal Head) ... | 4th order catadioptric; fixed | White | 12 |
| Cape Byron ... | 1st order dioptric; flashing—flash $\frac{1}{2}$ sec. dura., eclipse $4\frac{1}{2}$ secs. dura. | White | 26 |
| .. (same tower) ... | 4th order dioptric; fixed | Red | ... |
| Richmond River (2) ... | 4th order catadioptric; fixed | White | 12 |
| Clarence River * | 4th order catadioptric; fixed | White | 10 |
| South Solitary Is. (summit) ... | 1st order dioptric; revolving—flash every half minute | White (incandescent petroleum) | 20 |
| Lagger's Point (Trial Bay) ... | Catoptric; fixed | White | 5 |
| Smoky Cape ... | 1st order dioptric; group flashing | White | 28 |
| Tacking Point ... | 4th order catadioptric; fixed | White | 12 |
| Crowdy Head (summit) ... | 4th order catadioptric; fixed | White and red | 12 |
| Sugarloaf Point (Seal Rocks) | 1st order dioptric; revolving—flash every half minute | White | 23 |
| .. (same tower) | 4th order catadioptric; fixed | Green | ... |
| Nelson Head (summit) ... | Catoptric; fixed | White and red | 8 |
| Port Stephens (Stephens' Pt.) | 2nd order catoptric; revolving—red and white light alternately, short eclipse between the 2 colors | Red and white alternately | W. 17 R. 12 |
| Port Hunter, Newcastle— | | | |
| Nobby's Head (summit) ... | 2nd order dioptric; fixed | White | 17 |
| Leadg. lights (2) off Stockton | Dioptric; fixed | Green | ... |
| Stony Point, S. breakwater | Dioptric; fixed | Red | ... |
| Fairway leading lights (2) ... | Fixed | White and red | ... |
| Beacon north of lifeboat station and fog bell | Fixed | Red | ... |
| Leading lights (2) for north harbour | Fixed | White and red | ... |
| Outer breakwater light and fog bell | Fixed | Red | ... |
| Norah Head ... | 2nd order dioptric; flashing—flash $\frac{1}{2}$ sec. duration, eclipse $4\frac{1}{2}$ sec. | White | 18 |
| Broken Bay (Barrenjoey) ... | 2nd order dioptric; fixed | Red | 15 |
| Port Jackson, Sydney— Macquarie (Outer S. Head) | 1st order dioptric; revolving—flash every minute | White | 26 |
| Hornby (Inner Sth. Head) | Catoptric; fixed | White | 15 |
| Leading lights (2) East chnl. | Oil lamps; fixed | Red | ... |

* Leading lights are exhibited at Maclean, Lawrence, Elizabeth Island, and Ulmarra for navigating the river.

| Position of Light. | Description. | Colour of Light. | Distance Visible (Nautical Miles). |
|------------------------------------|--|---|------------------------------------|
| Sow and Pigs lightship (2)... | Clustered oil lamps and reflectors; fixed | White | 6 |
| South-east Edge of Shoal... | Oil lamp; fixed | Orange | 5 |
| Bradley's Head | Cluster; fixed | White | 5 |
| Shark Island | Dioptric; fixed | White | 5 |
| Fort Denison... .. | Cluster; fixed | Red | 5 |
| Dawes' Point | Single; fixed | Red | 5 |
| " " (inner light)... | Single; fixed in cage beacon | Red | ... |
| Miller's Point | Single arc; fixed | Red and white | 5 |
| Goar Island (leading lights) | Two arc; fixed | Green | 5 |
| Cook River (Botany Bay) ... | Fixed | White | ... |
| Wollongong | 4th order dioptric; fixed | White | 10 |
| " leading lights (2) | Fixed | Red | ... |
| Kiama | 4th order dioptric; fixed | Green | 9 |
| " Breakwater | Fixed | Green | ... |
| " Crookhaven River | 4th order dioptric; fixed | Red | 7 |
| Jervis Bay (Pt. Perpendicular) | 1st order dioptric; group flashing | White | 24 |
| Ulladulla (Warden Head) ... | 4th order dioptric; fixed | White | 12 |
| " Harbour Idg. lights (2) | Fixed | 1 red, 1 white | ... |
| Montagu Island—summit ... | 1st order dioptric; fixed & flashing | White | 22 |
| Twofold Bay (Eden) Look-out Point | 4th order catoptric; fixed | Red | 7 |
| Green Cape | 1st order dioptric; revolving—flash 50 sec. | White | 19 |
| VICTORIA. | | | |
| Gabo Island... .. | Catadioptric; fixed | White | 20 |
| " auxiliary | Fixed | Red | 3 |
| Cape Everard | Holophotal; double flashing | White | 21 |
| " auxiliary | Fixed | Red | 2 |
| Cliffy Island | Dioptric; flashing | White | 15 |
| Wilson's Promontory | Catoptric; fixed | White | 24 |
| Cape Schanck | Catadioptric; fixed and flashing | White | 23 |
| " auxiliary | Fixed | Red | 3 |
| Port Phillip— | | | |
| Point Lonsdale | Dioptric; occulting | White and red | 17 |
| Queenscliff (high) | Catadioptric; fixed | White | 17 |
| " (low) | Dioptric; fixed | Red and white | 10 and 14 |
| West Channel Pile Light ... | Dioptric; fixed | Red and white | 11 |
| South Channel (east. light) | Dioptric; fixed | Red and white | 13 |
| " (pile light) | Dioptric; fixed | Red and white | 10 |
| Schnapper Point | Dioptric; fixed | White | 10 |
| Gellibrand Point (pile light) | Dioptric; occulting | Red and white | 12 |
| Split Point | Dioptric; fixed | Red | 18 |
| " auxiliary | Fixed | White | 3 |
| Cape Otway | Dioptric; triple flashing | White | 24 |
| " auxiliary | Fixed | Red | 4 to 8 |
| Warrnambool (upper light)... | Dioptric; fixed | White | 14 |
| " (lower light)... | Dioptric; fixed | Red | 5 |
| Port Fairy (Griffith Island)... | Dioptric; fixed and flashing | Red | 9 |
| Portland | Dioptric; fixed | Green | 12 |
| Cape Nelson... .. | Dioptric; fixed | White | 19 |
| " auxiliary | Fixed | Red | 3 |
| SOUTH AUSTRALIA. | | | |
| Cape Northumberland | Revolving—every minute | White | 20 |
| Cape Banks, near Carpenter Rocks | Revolving—every 20 secs. | Two white, one red | R 8, W 10 |
| Penguin I., N. end Rivoli Bay | Revolving—every 10 secs. stone tower | White | 12 |
| Beachport, end of jetty | Fixed | Red | 7 |
| Robe Jetty, Rocky Point | Fixed | Red and white | 5 |
| Cape Jaffa | 1st order dioptric; revolving—every 30 secs. | White | 18 |
| Kingston Jetty, Lacepede B. | Fixed; iron tower | White | 10 |
| Pt. Malcolm, L. Alexandrina | Fixed | White | 10 |
| Milang Jetty " " " | Fixed | White | 5 |
| Port Victor, E. end Granite I. | Fixed | White | 10 |
| Cape Willoughby, Kangaroo Island | 1st order catoptric; revolving—every 1½ min.; circular stone tower | White | 24 |
| Cape Borda, W. end Kangaroo Island | 1st order catoptric; revolving—alternate red and white every minute; square tower of stone | Red and white | White 30 Red 15 |
| Kingscote Jetty, Kangaroo I. | Fixed | White at shore end of jetty, red at seaward end | 8 |

| Position of Light. | Description. | Colour of Light. | Distance Visible (Nautical Miles). |
|---|--|--|------------------------------------|
| Gulf of St. Vincent— | | | |
| Cape Jervis, Backstairs Pas. | Fixed; circular tower of stone ... | White | 10 |
| Gleneig Jetty ... | Fixed | Red | 8 |
| Semaphore, end jetty, Le Fevre Peninsula | Fixed | Green | 5 |
| Semaphore, leading lights, Semaphore timeball twr. and water tower... | Fixed | Red | ... |
| Port Adelaide— | | | |
| On Wonga Shoal ... | 1st order dioptric; revolving—flash every 30 secs.; iron tower | White | 17 |
| Entrance to river ... | Fixed | White | 10 |
| Beacons in Port Adelaide River | Occulting buoy light | White | 5 |
| | Fixed | 5 pairs leading lights (red and white); 1 pair leading lights (red); 7 single lights (white); 10 lights (green). | 8 |
| Port Wakefield, on Railway Wharf | Fixed; leading lights | White and red | 6 |
| Ardrossan, end of jetty ... | Fixed | White | 5 |
| Edithburgh, end of jetty ... | Fixed | White | 5 |
| Troubridge, on Trounbridge Shoal | 2nd order catoptric; revolving—bright every 24 secs., dark 36 secs.; circular iron tower | White | 16 |
| Troubridge, on platform | Fixed | Red | 5 |
| Troubridge Lighthouse | Revolving—flash every 15 secs.; circular stone tower | White, red sector over | W 25, R 17 |
| Althorpe I., Investigator St. | Fixed | Times Reef & S.W. Rock | |
| Spencer Gulf— | | | |
| Corny Point ... | Fixed; circular stone tower | White, red sector over Webb Rock | 14 |
| Port Victoria, end of jetty | Fixed | White | 4 |
| Moonta, end jetty... | Fixed | Red | 4 |
| Tipara, Tipara Reef ... | Revolving—every 30 secs.; iron tower on piles | White | 20 |
| Wallaroo, end of jetty ... | Fixed | Red | 4 |
| Middle Bank Lightship, Spencer Gulf | Fixed | White | 10 |
| Port Pirie Beacons, in Port Pirie Channel | Fixed | 10 Beacon lights, Nos. 1, 6, & 10 red; remainder white | ... |
| Eastern Shoal ... | Occulting; beacon | White | 6 |
| Port Germein, end of jetty | Fixed; iron tower | Red & white sectors | 10 |
| Cockle Spit Illuminated Tide Gauge | Fixed | White | ... |
| Lowly Point ... | Revolving—flash every 10 secs.; circular stone tower | White | 13 |
| Tumby Bay, end of jetty... | Fixed | White | 5 |
| Port Lincoln, end of jetty | Fixed | Red | 5 |
| Cape Donnington, entrance to Port Lincoln ... | Fixed | White & red sectors | 14 |
| Neptune I., Sth. Neptune I. | Revolving—every 50 secs.; iron structure | White | 20 |
| Streaky Bay, end of jetty ... | Fixed | White | 6 |
| Fowler Bay (Port Eyre), end of jetty | Fixed | White | 5 |
| WESTERN AUSTRALIA. | | | |
| Esperance, end of jetty ... | Ordinary lantern; fixed; wooden platform | Red | 4 |
| King George's Sound— | | | |
| Breaksea Island ... | 1st order dioptric; fixed; cylindrical tower, stone | White | 24 |
| Princess Royal Harbour, King Point | 5th order dioptric; fixed; wooden tower, square | White | 12 |
| Albany Town Pier (2) ... | Ordinary lanterns; fixed; wooden mast, leading lights | Red | 3 |
| Albany Deep Water Jetty Light | Ordinary lantern; fixed; wooden mast | Red | 3 |
| Channel Beacon Lights (4), entrance Princess Royal Harbour ... | 6th order dioptric; port lights; fixed; wood pile beacons | 2 red 2 white | 3 4 |

| Position of Light. | Description. | Colour of Light. | Distance Visible (Nautical Miles). |
|--|---|------------------------|------------------------------------|
| Cape Leeuwin | 1st order lens light; flash 5 sec.; stone cylindrical tower | White | 20 |
| Busselton (Vasse), 50 yards within inner end of pier | 5th order dioptric; fixed; square wooden tower on piles | White | 12 |
| Busselton (Vasse), jetty head | Fixed; wooden gallows | Red | 4 |
| Cape Naturaliste | 1st order dioptric; group flash, 10 secs.; stone tower | White | 29 |
| Bunbury (Koombanah Bay)—Casuarina Point, mole end | 5th order dioptric; fixed; tower, square wood | Green | 7 |
| Bunbury Jetty (2) | Lanterns; fixed; wooden gallows; leading lights | Red | 4 |
| About 400 yards south of Casuarina Point | 3rd order dioptric; fixed; square wooden tower | White | 17 |
| Woodman Point (Gage-road) | 1st order dioptric; occulting every 30 secs.; circular stone tower | White, red, and green | 17 |
| Fremantle Harbour—North Breakwater... .. | 4th order; fixed; temporary frame tower | Red | 11 |
| South Breakwater... .. | 4th order dioptric; fixed; steel skeleton | Green | 7 |
| Ocean Jetty | 6th order dioptric; fixed; iron framework | Red | 5 |
| Beacon lights (5), entrance to river harbour | 5th order dioptric; wooden pile beacons | Three red Two white | 3 4 |
| Rottnest Island—On centre, 2½ miles from east end | 1st order dioptric; revolving—flash every 20 secs.; masonry cylindrical tower | White | 23 |
| Near centre | Fog explosive | ... | ... |
| Bathurst Point | 2nd ord. dioptric; fixed; stone tower | White | 15 |
| Port Dongara or Denison—150 yards from beach | Lantern; fixed; wooden gallows | White | 5 |
| End of pier | Lantern; fixed; wooden platform | Red | 4 |
| Geraldton, Champion Bay—North Jetty, outer end | 5th ord. dioptric; fixed; iron mast | Red | 5 |
| North Jetty, inner end | 7th order; fixed; wooden mast; leading lights | Red | 5 |
| Champion Bay—Moore Point, on point | 2nd order dioptric; revolving every 40 secs.; conical tower, iron | White | 18 |
| (in same tower) | 4th order dioptric; fixed | Red in two sectors | 12 |
| No. 1 Bluff, upper | Dioptric holophote; fixed; square tower, stone | White | 8 |
| No. 2 Bluff, lower | 4th order dioptric; fixed; stone octagonal tower; leading lights | White | 8 |
| Denham, Lagoon Pt., Shark Bay, Peron Peninsula | Fixed } Leading lights | White Red | 5 3 |
| Gascoyne—1¼ miles from beacon at S. end of Babbage Island | 4th order; fixed; square frame tower, wood | White and red | 15 |
| End of Babbage Island Jetty | Lantern; fixed; wooden platform | Red | 4 |
| Onslow, jetty end | 5th order dioptric; fixed; wooden platform | White | 10 |
| Jarman Is., centre of island, E. side of ent. to Pt. Walcott | 3rd order dioptric; fixed; circular tower, iron | White | 15 |
| Port Hedland, tidal signal staff | 5th order dioptric; fixed; flagstaff | White | 12 |
| Roebuck Bay—End of Broome Jetty | Lantern; fixed; wooden platform | Red | 5 |
| In town, near Custom-house | 5th order dioptric; fixed; steel skeleton frames | White | 15 |
| Gantheaume Point | 4th order dioptric; occulting every 15 secs.; steel tripod | White | 13 |
| Derby (King's Sound) Jetty | 6th order dioptric; fixed; wooden gallows | White | 4 |
| Wyndham (Cambridge Gulf), jetty end | Lantern; fixed; wooden gallows | Red | 4 |
| NORTHERN TERRITORY. | | | |
| Port Darwin—Point Charles | 1st order; revolving every ½ min.; iron structure, red & white bands | White, red, and green | 18 |
| Emery Point | Fixed | White | 6 |
| Jetty | Fixed | White | 4 |
| TASMANIA. | | | |
| Kent's Group, Deal Island | 1st order catoptric; revolving every 100 secs.; white circular tower | White | 36 |

| Position of Light. | Description. | Colour of Light. | Distance Visible (Nautical Miles). |
|--|--|------------------|------------------------------------|
| Banks' Strait, Goose Island... | 1st order catadioptric; fixed; circular stone tower | White | 14 |
| Swan Island | 1st order dioptric; fixed; flashing 1 min.; circular stone white t'wr. | White | 15 |
| Fiddystone Point— Near extreme | 1st order dioptric; group, flash every 30 secs.; circular granite tower | White and red | 18 |
| 20 yards eastward of light-house | Fixed; circular, iron, red | Red | 2½ |
| Tasman Island | 1st order; flash every 5 secs. | White | 36 |
| Hobart— Derwent River—Iron Pot Island | 4th order dioptric; fixed; square white tower | White | 12 |
| Derwent River—One Tree Point | Occulting; square white tower | White | 8 |
| Long Bay | Occulting; pile beacon | White | 8 |
| Butts Rock—entrance Huon River | 6th order dioptric; fixed; skeleton iron tower | White | 8 |
| Bruni Island (S.W. point of Island) | 2nd order dioptric; flash every 22½ secs.; circular white stone tower | White | 22 |
| Maatsuyker Island | 1st order dioptric; group, flashing every 30 secs.; white circular brick tower | White | 25 |
| Cape Sorell | 2nd order dioptric; flash every 45 secs.; white cylindrical tower | Red and white | W.20;R.12 |
| Macquarie Harbour— Entrance Islet | 4th order dioptric; fixed; hexagonal; white wooden tower | White and red | 10 |
| Bonnet Islet | 5th order dioptric; fixed; hexagonal; white wooden tower | Green | 10 |
| Stanley | 6th order dioptric; fixed | White and red | 7 |
| Table Cape | 2nd order dioptric; fixed; white brick circular tower | White | 27 |
| Wynyard leading lights | Two pile lights | Red | ... |
| Emu Bay | 6th order dioptric; fixed; skeleton iron tower on end of breakwater | White and red | 12 |
| Ulverstone leading lights | Two lights; square skeleton tower | Red | ... |
| Devonport— Near extreme of Mersey Bluff | 4th order dioptric; fixed; circular white brick tower | White and red | 16 |
| On west bank of Mersey R. —Front | 6th order dioptric; fixed; leading light; square red wood tower | Red | ... |
| On west bank of Mersey R. —Rear | 6th order dioptric; fixed; leading light; circular white brick tower | Red | ... |
| On W. pier, near Mussel Rk. | Fixed | White | 4 |
| Port Dalrymple— Low Head, east side on entrance of Tamar R. | 2nd order catoptric; revolving, every 100 sec.; circular white brick tower | White | 15 |
| 2 cables northward of pilot station | Same building; fixed | Red | 7 |
| Pilot station point | Fixed | White | ... |
| Sheoak Pt. (Tamar leading lights) | 4th order dioptric; fixed; circular white stone tower | White and red | 9 |
| | 4th order dioptric; fixed; circular white stone tower | Red | 9 |
| Garrow Rock | Fixed | White | 9 |
| Ilfracombe Jetty | Fixed | White and green | ... |
| King Island—Cape Wickham | 1st order dioptric; fixed; circular granite tower | White and red | ... |
| —Currie harbour | 1st order dioptric; flash every 12 sec.; iron tower on 6 columns | White | 24 |
| | | White | 17 |

§ 7. Shipwrecks.

Statement of the number and tonnage of vessels wrecked, or otherwise lost,* on the coast of the Commonwealth, or under the jurisdiction of the several States, during the years 1901 to 1907.

NUMBER AND TONNAGE OF VESSELS WRECKED, 1901 to 1907.

| Year. | Class of Vessel. | Number and Tonnage of Vessels. | | | | | | | | | Passengers and Crew. | Lives Lost. | |
|-------|------------------|--------------------------------|-------|-----------------|-------|-------------------|--------|-----------------|-------|--------|----------------------|-------------|-------|
| | | Under 50 tons. | | 50 to 500 tons. | | 500 to 2000 tons. | | Over 2000 tons. | | Total. | | | |
| | | No. | Tons. | No. | Tons. | No. | Tons. | No. | Tons. | No. | | | Tons. |
| 1901 | Steam ... | 7 | 189 | 5 | 949 | 2 | 2,811 | ... | ... | 14 | 3,949 | 250 | 40 |
| | Sailing ... | 11 | 217 | 6 | 785 | 5 | 5,800 | ... | ... | 22 | 6,802 | 172 | 10 |
| | Total ... | 18 | 406 | 11 | 1,734 | 7 | 8,611 | ... | ... | 36 | 10,751 | 422 | 50 |
| 1902 | Steam ... | 2 | 83 | 1 | 340 | 4 | 3,173 | ... | ... | 7 | 3,596 | 157 | 25 |
| | Sailing ... | 12 | 221 | 4 | 369 | 3 | 3,142 | 1 | 2,103 | 20 | 5,835 | 161 | 4 |
| | Total ... | 14 | 304 | 5 | 709 | 7 | 6,315 | 1 | 2,103 | 27 | 9,431 | 318 | 29 |
| 1903 | Steam ... | 2 | 61 | 5 | 1,753 | 2 | 2,377 | ... | ... | 9 | 4,191 | 200 | 11 |
| | Sailing ... | 18 | 306 | 4 | 551 | 2 | 1,924 | ... | ... | 24 | 2,781 | 217 | 10 |
| | Total ... | 20 | 367 | 9 | 2,304 | 4 | 4,301 | ... | ... | 33 | 6,972 | 417 | 21 |
| 1904 | Steam ... | 1 | 35 | 2 | 204 | 1 | 886 | 1 | 3,702 | 5 | 4,827 | 363 | 31 |
| | Sailing ... | 14 | 238 | 6 | 765 | 5 | 4,646 | 1 | 2,413 | 26 | 8,062 | 227 | 59 |
| | Total ... | 15 | 273 | 8 | 969 | 6 | 5,532 | 2 | 6,115 | 31 | 12,889 | 590 | 90 |
| 1905 | Steam ... | 3 | 49 | 2 | 594 | ... | ... | 1 | 3,325 | 6 | 3,968 | 417 | ... |
| | Sailing ... | 10 | 160 | 5 | 775 | 3 | 3,678 | 1 | 2,176 | 19 | 6,789 | 160 | 57 |
| | Total ... | 13 | 209 | 7 | 1,369 | 3 | 3,678 | 2 | 5,501 | 25 | 10,757 | 577 | 57 |
| 1906 | Steam ... | 4 | 89 | 2 | 154 | ... | ... | 1 | 2,415 | 7 | 2,658 | 60 | 12 |
| | Sailing ... | 5 | 77 | 3 | 276 | 1 | 1,725 | 2 | 5,022 | 11 | 7,100 | 105 | 1 |
| | Total ... | 9 | 166 | 5 | 430 | 1 | 1,725 | 3 | 7,437 | 18 | 9,758 | 165 | 13 |
| 1907 | Steam ... | 3 | 71 | 4 | 916 | 3 | 3,572 | ... | ... | 10 | 4,559 | 204 | 16 |
| | Sailing ... | 8 | 162 | 6 | 421 | 5 | 6,895 | ... | ... | 19 | 7,478 | 170 | 29 |
| | Total ... | 11 | 233 | 10 | 1,337 | 8 | 10,467 | ... | ... | 29 | 12,037 | 374 | 45 |

* In some cases the vessels included in the above return were subsequently recovered.

SECTION XVII.

ROADS AND RAILWAYS.

§ 1. Roads and Bridges.

1. **Introduction.**—At the present time but few of the main roads in Australia have the importance which they at one time possessed, for originally they were the main arteries of traffic between the chief towns and ports and the interior, a function which has been greatly modified by the development of railways. Owing to the very limited opportunity for inland water carriage, and the great extent of the Commonwealth, roads are still the sole means by which traffic can be conducted throughout a large part of the interior. They moreover serve as feeders to the railways.

In the early days of colonisation main roads were constructed by convict labour, connecting the settled districts, such as Penrith, Parramatta, and Windsor, with the metropolis of Sydney, but the interior of the country was not open to access until the year 1815, when a track as far as Bathurst was completed under the direction of Governor Macquarie. The construction of this road greatly increased the area available for agricultural and pastoral pursuits by rendering accessible the rich and fertile plains in the vicinity of Bathurst. In the following years settlement spread to such an extent that it was impossible to keep pace in the matter of road-making with the demands of the settlers. For many years the authorities chiefly confined their attention to the maintenance and improvement of the main roads already constructed, and to extending them to the principal centres of settlement, and it was not until the period subsequent to the discovery of gold, when many new routes were opened and the amount of traffic largely increased, that the matter received serious attention at the hands of the State Governments. Most of the early bridges were constructed of stone, and many of them are still in existence. In later years, during the period immediately following the progress of settlement in the interior, bridges were usually constructed of wood, and these have since been replaced, after a life of about twenty-five years. Nearly all the bridges of recent date are of iron or steel. Some of the larger and more modern bridges are notable, being fine examples of engineering skill.

During the latter half of the nineteenth century great progress was made in all the States in the construction of roads and bridges, so that at the present time there is a considerable network of roads spreading over the occupied regions of the Commonwealth. There are still, however, in the less settled parts, especially in Queensland and Western Australia, vast areas of territory inaccessible by roads, and even in the more thickly populated parts of the Commonwealth new roads and deviations, many of an important character, are required in order to facilitate settlement on the land. At the present time the general policy adopted in the States is to construct necessary roads and bridges, often to serve as feeders to the railway systems by conveying the traffic from country districts to convenient stations along the line. Throughout the Commonwealth there are a number of stock routes provided with wells and places for watering stock. Particulars as to these routes in the several States are not generally available, except in the case of Western Australia. It is hoped in a future issue to afford fuller information, together with a map shewing these routes. In all the States the control, construction, and maintenance of roads and bridges have been, to a large extent, decentralised and placed in the hands of suitable local bodies.

2. **Expenditure on Roads and Bridges.**—Figures shewing the total expenditure on roads and bridges in the States are not available. The subjoined statement, however, gives the amounts of total loan expenditures by the State Governments up to the 30th June, 1908.

ROADS AND BRIDGES.—TOTAL LOAN EXPENDITURE IN EACH STATE AND IN THE COMMONWEALTH UP TO THE 30th JUNE, 1908.

| State, etc. ... | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|-----------------|------------|-----------|----------|------------|----------|------------|------------|
| Expenditure | £1,801,943 | £176,006 | £972,608 | £1,464,736 | £166,818 | £2,525,283 | £7,107,394 |

The following table shows the annual expenditure from loans on roads and bridges by the central Governments in each State and in the Commonwealth during each financial year since 1901:—

ROADS AND BRIDGES.—LOAN EXPENDITURE BY STATE GOVERNMENTS, 1902 TO 1908.

| State. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|------------------|---------------------|---------------------|---------------------|---------------------|----------|----------|---------|
| N.S.W. ... | £ 150,777 | £ 73,471 | £ 47,812 | £ 59,019 | £ 28,666 | £ 11,162 | £ 1,690 |
| Victoria ... | 47,104 | 44,770 | 17,267 | 14,945 | 1,919 | 444 | 23 |
| Queensland ... | ... | 1,333 | ... | ... | ... | ... | ... |
| S. Australia ... | 185 | 200 | 78 | ... | ... | ... | ... |
| W. Australia ... | 740 | ... | ... | ... | 712 | 15,613 | 7,956 |
| Tasmania ... | 77,536 ¹ | 55,687 ¹ | 39,037 ¹ | 55,303 ² | 57,536 | 75,399 | 94,443 |
| C'wealth ... | 276,342 | 175,461 | 104,194 | 129,267 | 88,833 | 102,618 | 104,112 |

1. For the calendar years 1901, 1902, and 1903 respectively.

2. For the eighteen months ended 30th June, 1905.

The two tables given above shew only a small proportion of the actual expenditure upon roads and bridges in the different States, for the reason that (a) there have been large expenditures from revenue, both by the central Governments and by local authorities, and (b) the State Governments have in many cases voted grants and subsidies on the amount of rates collected, and have issued loans to local authorities either for the express purpose of the construction of roads and bridges or for the general purpose of public works construction. Returns of expenditure, where available, are given below for each State. Although no revenue is now derived directly from roads and bridges, they are indirectly of great value to the community, forming, next to railways and public lands, the most considerable item of national property.

3. **New South Wales.**—The first Act dealing generally with the subject of roads in New South Wales was passed in 1833, and provided for the construction and improvement of roads and streets throughout the colony. The Governor was authorised to open up new roads, for the purpose of which land could be compulsorily acquired. Main roads were distinguished from parish roads; the former, which were specified in a schedule, were to be maintained and repaired at the public expense, while the latter, which were situated mainly in the County of Cumberland, were to be maintained at the expense of the parishes. The Governor was also authorised to appoint Commissioners to report periodically upon the state of repair of the roads. In 1855 an Act was passed by the New South Wales Government requiring the footways in George and Pitt Streets in Sydney to be paved by the owners of the properties abutting on to those streets. Two years later the Roads Department was created to take over the control, construction, and mainten-

ance of roads and bridges in New South Wales. In the few years immediately following an improved system of road-making was adopted, and great progress is said to have been made in the repair of old roads and in the construction of new ones. The striking reduction in both the time of transit and cost of carriage is apparent in the following statement,¹ which indicates on the whole a saving of about 57 per cent. in time and 54 per cent. in cost.

NEW SOUTH WALES.—COMPARATIVE STATEMENT OF COST OF CARRIAGE OF GOODS BY ROAD AND TIME OF TRANSIT, 1857 TO 1864.

| Main Road. | Distance. | 1857. | | 1864. | |
|-----------------------------|-----------|------------------|---------------|------------------|---------------|
| | | Time of Transit. | Cost per Ton. | Time of Transit. | Cost per Ton. |
| | Miles. | Days. | £ s. d. | Days. | £ s. d. |
| Sydney to Goulburn ... | 134 | 17½ | 12 5 0 | 7½ | 3 15 0 |
| Sydney to Bathurst ... | 145 | 23½ | 15 10 0 | 11 | 6 10 0 |
| Newcastle to Murrurundi ... | 119 | 21 | 9 0 0 | 8 | 6 10 0 |

Since 1864 the cost of carriage by road, however, has not been further reduced, and the control of roads and bridges, with the exception of municipal roads and certain roads in the vicinity of Sydney, constructed by private road trusts, remained in the hands of the central Government until the year 1906.

(i.) *Administration and Control.* The control of all roads, bridges, and ferries is now regulated by the Local Government Act 1906, which came into force on the 1st January, 1907 (see Section XXVI hereinafter). Under the provisions of this Act the eastern and central divisions of the State are divided into shires and municipalities for the general purposes of local government, for the endowment of which a sum of not less than £150,000 is payable annually out of the consolidated revenue on the basis of a percentage subsidy on the proceeds of the general rates received by the District Councils. The control of all roads, bridges, and ferries (except those proclaimed "National") has been transferred from the Roads Department to the respective shire and municipal councils, who are now responsible for their construction and maintenance. Power is given to construct new roads, to widen or close existing roads, to make by-laws for the regulation of traffic, etc.; in the case of the acquisition of land for the purpose of constructing new roads or of widening existing roads, the provisions of the Roads Act 1902 are incorporated.

(ii.) *Principal Main Roads.* The four principal main roads in New South Wales run in the same direction as, and are roughly contiguous to, the four State-owned main railway lines. (a) *The Southern Road*, 385 miles in length, runs from Sydney to Albury, and before the days of railway construction formed part of the highway over which the interstate traffic between Melbourne and Sydney used to flow. (b) *The South Coast Road*, 250 miles long, runs from Campbelltown along the top of the coast range and across the Illawarra district as far as Bega, from which place it extends as a minor road to the southern limits of the State. (c) *The Western Road*, 513 miles long, runs through Bathurst, Orange and many other important townships as far as Bourke, on the Darling River. (d) *The Northern Road*, 405 miles in length, runs from Morpeth, near Newcastle, as far as Maryland, on the Queensland border.

(iii.) *Length and Classification of Roads and Bridges.* Owing to the alteration in the arrangements for the collection of statistics necessitated by the inauguration of the new system of local government, particulars as to the length of roads and streets for the year 1907 are not generally available. The following tables give the length of roads, the number of culverts, bridges, and ferries, from 1901 to 1906, inclusive:—

1. See Official Year Book, New South Wales, 1905-6, p. 156.

**NEW SOUTH WALES.—LENGTH OF ROADS, NUMBER OF CULVERTS, BRIDGES,
AND FERRIES, 1901 TO 1906.**

| Year. | Miles of Roads. | Number of Culverts under 20 ft. Span. | Number of Bridges over 20 ft. Span. | Number of Punts, Boats and Ferries. |
|-------------|-----------------|---------------------------------------|-------------------------------------|-------------------------------------|
| 1901 | 52,472 | 38,760 | 2,979 | 318 |
| 1902 | 53,908 | 39,082 | 3,251 | 331 |
| 1903 | 53,796 | 41,286 | 3,446 | 454 |
| 1904 | 53,892 | 41,286 | 3,446 | 454 |
| 1905 | 56,316 | 41,929 | 3,508 | 460 |
| 1906 | 58,326 | 43,564 | 3,548 | 457 |

NEW SOUTH WALES.—CLASSIFICATION OF ROADS ON THE 31st DECEMBER, 1906.

| Classification. | Metalled, Wood-blocked, Ballasted, Gravelled or Corduroyed. | Formed. | Cleared or Drained. | Bush or Un-touched Road. | Total |
|--|---|---------|---------------------|--------------------------|--------|
| | Miles. | Miles. | Miles. | Miles. | Miles. |
| Scheduled (outside municipalities) ... | 8,735 | 5,533 | 13,102 | 5,162 | 32,532 |
| 27 " (within ") ... | 734 | 117 | 198 | 42 | 1,091 |
| Unclassified (outside ") ... | 422 | 1,202 | 4,410 | 9,540 | 15,574 |
| " (within ") ... | 58 | 34 | 57 | 49 | 198 |
| *Roads under municipal councils ... | 3,417 | 1,767 | 1,926 | 1,821 | 8,931 |
| Total roads in New South Wales ... | 13,366 | 8,653 | 19,693 | 16,614 | 58,326 |

* Particulars given are to the end of 1907.

The more important bridges, numbering 256, have been proclaimed under the provisions of the Local Government Act as "National works," and these, together with the bridges, etc., in the Western Division, remain under the control of, and are maintained by, the Public Works Department.

(iv.) *Expenditure on Roads and Bridges.* The subjoined table shews the total expenditure up to the year 1900, and the annual expenditure for succeeding years to 1907, by the central Government and by road trusts:—

**NEW SOUTH WALES.—TOTAL AND ANNUAL EXPENDITURE BY ROADS DEPARTMENT
AND BY ROAD TRUSTS, 1901 TO 1907.**

| Year ended 30th June. | Expenditure by Roads Department. | | | Expenditure by Road Trusts. | Total Expenditure. |
|-----------------------|----------------------------------|---------|--------------|-----------------------------|--------------------|
| | Consolidated Revenue Fund. | Loans. | Total. | | |
| From 1857 to 1900 ... | £ — | £ — | £ 18,790,410 | £ 1,258,027 | £ 20,048,437 |
| 1901 ... | 696,102 | 130,499 | 826,601 | 9,074 | 835,675 |
| 1902 ... | 689,398 | 150,777 | 840,175 | 7,817 | 847,992 |
| 1903 ... | 591,265 | 73,471 | 664,736 | 6,517 | 671,253 |
| 1904 ... | 438,752 | 47,812 | 486,564 | 3,404 | 489,968 |
| 1905 ... | 386,872 | 59,019 | 445,891 | 2,132 | 448,023 |
| 1906 ... | 468,395 | 28,666 | 497,061 | 1,171 | 498,232 |
| 1907 ... | 401,169 | 11,162 | 412,331 | * | * |
| Total ... | 3,671,953 | 501,406 | 22,963,769 | †1,288,142 | †23,839,580 |

* Not available. † Incomplete.

4. **Victoria.**—In Victoria a comprehensive system of local government, under which the control of roads and bridges is vested in District Councils, has been in force for many years. In the Imperial Act of Parliament, by which the State of Victoria was constituted a separate colony, there was a provision authorising the Governor to incorporate the inhabitants of each county to form districts for the purpose of local government, and to establish elective District Councils, with power to make by-laws for, *inter alia*, the proper control, construction and maintenance of roads and bridges, which were to be paid for partly out of local tolls and rates. In 1852 a committee was appointed by the Legislative Council to inquire into the state of repair of roads and bridges, and as to how the funds for their construction and repair might be best expended. On the report of this committee was based the first Victorian Act which dealt with local government in country districts. The report contained an interesting account of the state of the country at that time; it pointed out the urgency of providing suitable roads and bridges as an aid to settlement and development; it emphasised the importance of setting aside more adequate funds for the purpose, and directed attention to the deplorable state of the lines of internal communication. The committee recommended that main lines of roads should be constructed throughout the colony by means of grants from the public revenue, and that toll-gates should be erected on the roads when completed. The following were the lines which it was advised should be first formed as main roads:—(a) From Wodonga to Melbourne *via* Kilmore. (b) From Melbourne to the Murray River *via* Mount Alexander. (c) From Melbourne to Geelong. (d) From Melbourne to Portland *via* Bacchus Marsh. (e) From Melbourne to Gippsland *via* Brighton and Dandenong. (f) From Geelong to Westward, and (g) from Geelong to Colac. The committee further recommended the appointment of a Central Road Board to have exclusive powers as to making or improving any new or existing main line of road, and that the Governor should be empowered to declare any part of the colony to be a Road District under the control of an elective District Board of from five to nine members, who were to have power to construct and maintain any new parish or existing cross-road, for which purpose they should be empowered to levy rates. With some slight alterations these recommendations were embodied in the Roads Act of 1853, which established a Central Road Board for the whole State, with an inspector-general and staff, and which also provided for the erection of local road districts under the management of local boards. In 1859 municipalities were established in Victoria, and in 1863 the Roads Districts and Shires Act and the Municipal Corporations Act were passed; these Acts were amended from time to time until they were consolidated by the Local Government Act of 1890, which was in turn amended and consolidated by the Local Government Act of 1903 (see Section XXVI hereinafter).

(i.) *Administration and Control.* Under the provisions of the last-named Act the absolute property in all land proclaimed as a road, street or highway is vested in the Crown. The control, construction, and maintenance of all roads, streets, and bridges are in the hands of District or Municipal Councils, who are empowered to open new roads, and to close, divert, or increase the width of any existing street or road, provided that no new road less than one chain in width may be opened without the consent of the Minister. Power is also given under certain conditions to reduce the width of any existing road or street to a width of not less than one chain. Where land has been alienated from the Crown, and there is no road to any part of such land from the nearest highway, if the owners of such land desire to have a private road communicating with the highway they may apply to that effect in writing to the council, who may then purchase the necessary land, and may open a road not less than thirty-three feet wide, which road will thenceforth be a private road for the use of the persons who applied for the same. The councils are further empowered to make and repair streets, lanes, or passages on private property, or forming means of back access to private property, and may compel the owners of such property to pay the cost of so doing. Footways in front of houses or grounds may be kerbed, flagged, paved, or asphalted, and the owners of such houses or grounds must bear half the cost of so doing. The revenue of the councils is derived from rates which may be either general or extra. The councils are empowered to raise loans for the purpose of

making or opening new streets and roads, and for diverting, altering, or increasing the width of streets and roads, provided that the amount of such loan must not exceed ten times the average income of the council during the three years immediately preceding.

(ii.) *General and Local Government Expenditure.* The gross amount expended by the State Government of Victoria on roads and bridges was £7,756,345 up to the end of June, 1900; figures for succeeding years are given in the table below. The annual expenditure from ordinary revenue by municipalities is not returned separately, but is included in Public Works Construction and Maintenance; the subjoined table shews the cost from general revenue of municipalities of private streets, roads, etc., and also shews the amounts of municipal loan expenditure from 1901 to 1907, inclusive.

VICTORIA.—AMOUNTS EXPENDED BY GENERAL GOVERNMENT ON ROADS AND BRIDGES, AND AMOUNTS EXPENDED BY LOCAL AUTHORITIES ON THE FORMATION OF PRIVATE STREETS, ROADS, LANES, ETC., TOGETHER WITH AMOUNTS OF MUNICIPAL LOAN EXPENDITURE ON STREETS, ROADS, AND BRIDGES, 1901 to 1907.

| Financial Year. ¹ | Annual Expenditure by State Government. | Municipal Loan Expenditure. | | Formation of Private Roads, Streets, Lanes, etc. ² | |
|------------------------------|---|------------------------------|---------|---|---------|
| | | Cities, Towns, and Boroughs. | Shires. | Cities, Towns, and Boroughs. | Shires. |
| | | £ | £ | £ | £ |
| 1901 | 72,890 | 16,844 | 12,928 | 18,829 | 4,521 |
| 1902 | 75,855 | 13,047 | 15,656 | 17,655 | 4,542 |
| 1903 | 69,200 | 13,540 | 12,696 | 15,279 | 4,028 |
| 1904 | 42,144 | 12,929 | 1,444 | 15,432 | 4,072 |
| 1905 | 30,393 | 21,515 | 2,560 | 21,593 | 2,083 |
| 1906 | 56,145 | 5,673 | 8,480 | 18,237 | 1,390 |
| 1907 | 43,119 | 21,137 | 7,495 | 25,244 | 3,052 |

1. The financial years of Melbourne and Geelong end on the 31st December and the 31st August respectively; those of all other municipalities on the 30th September.

2. Including the cost of flagging, asphaltting footpaths, etc., but exclusive of loan expenditure.

The total amount spent by the State Government on roads and bridges up to the year 1901 was £7,756,345, bringing the total expenditure to the end of 1907 up to £8,146,091.

5. Queensland.—In Queensland the construction and maintenance of public roads are controlled under a system of local self-government, for the purposes of which the whole State is divided into (a) towns and (b) shires. The City of Brisbane was constituted a municipality about three months prior to the separation of Queensland from New South Wales in 1859, and a general system of local government was inaugurated in the State in 1878. At the present time the duties, rights, and responsibilities of the local authorities with regard to roads, streets, and bridges are regulated by the Local Authorities Act of 1902. The councils are invested with full powers to open, close, divert, or widen streets, roads, and bridges, and to make by-laws for the regulation of traffic, etc. The members of the councils are elected by the ratepayers, and with the aid of executive officers they undertake the supervision and control of all necessary constructions and improvements of roads and bridges within their district. The rates which the councils are empowered to levy are supplemented by Government grants. Separate returns as to the expenditure by towns and shires on roads and bridges are not available, the amounts being included in the returns of expenditure on public works, particulars as to which expenditure may be found in the Section of this book on *Local Government*.

6. South Australia.—In South Australia the construction of an extensive main road system was initiated by Sir Henry Young, who was Governor of the colony from 1848 to 1854, and this system provided the principal means of communication between the outlying country and the capital and port before the introduction of railways. By the District Councils Acts, 1887 to 1904, and the Municipal Corporations Acts, 1890 to 1903, a system of local self-government has been extended to all the settled parts of the State, which parts are divided into districts and municipalities under the control of councils. Under the provisions of these Acts and of the Roads Act of 1884 the councils are invested with full powers as to the opening and making of new streets and roads, and the diverting, altering, or increasing the width of existing roads; as to raising, lowering, or altering the ground or soil of any street or road; and as to the construction, purchase, and management of bridges, culverts, ferries, and jetties.

(i.) *Main Roads and District Roads.* All the roads in each district are classified either as main roads or as district roads. Both classes of roads are under the direct control either of Municipal Corporations or of District Councils, but in the case of main roads the expenditure on construction and maintenance is chiefly provided for by Government grants, which are paid into a main road fund, while the expenditure on district roads is paid for out of general rates, and out of subsidies on the amount of such rates, granted by the central Government. Under the Main Roads Act 1908, a number of roads were declared to be main roads.

The total estimated length of streets and roads in South Australia up to the 30th June, 1908, was as follows:—

| Particulars. | Woodblocked. | Macadamised. | Other. | Total. |
|--------------|--------------|--------------|--------|--------|
| Miles | — | 8,615 | 23,726 | 32,341 |

(ii.) *Expenditure by Corporations on Main and District Roads.* The following table shews the expenditure by municipal corporations on both main and district roads during each year from 1901 to 1907, inclusive:—

SOUTH AUSTRALIA.—EXPENDITURE BY CORPORATIONS ON STREETS, ROADS, AND BRIDGES, 1901 TO 1907.

| Year. ¹ | District Roads. | | | Main Roads Fund. | | | |
|-----------------------|-----------------|---------------|---------------|------------------------|--------|---------------|---------------|
| | Total Receipts. | Expenditure. | | Receipts. | | Expenditure. | |
| | | Construction. | Main-tenance. | From Main Road Grants. | Total. | Construction. | Main-tenance. |
| | £ | £ | £ | £ | £ | £ | £ |
| 1901 ... | 148,872 | 4,906 | 50,628 | 7,403 | 8,738 | 159 | 7,745 |
| 1902 ... | 159,753 | 11,671 | 46,980 | 5,470 | 7,249 | 117 | 6,580 |
| 1903 ... | 155,857 | 3,005 | 52,539 | 5,458 | 6,986 | ... | 6,433 |
| 1904 ² ... | 158,540 | 10,235 | 50,769 | 5,116 | 6,559 | 85 | 6,109 |
| 1905 ... | 162,850 | 17,475 | 43,245 | 6,125 | 8,420 | 419 | 7,320 |
| 1906 ... | 166,097 | 14,521 | 48,901 | 7,028 | 8,144 | 192 | 7,291 |
| 1907 ... | 154,918 | 5,697 | 47,024 | 6,815 | 7,506 | 681 | 6,703 |

1. Up to and including the year 1903 the financial year ended on the 31st December, but after that date ends on the 30th November. 2. For eleven months ended the 30th November.

(iii.) *Expenditure of District Councils on Main and District Roads.* The following table gives similar information with respect to main and district roads under the control of District Councils:—

**SOUTH AUSTRALIA.—EXPENDITURE BY DISTRICT COUNCILS ON STREETS, ROADS,
AND BRIDGES, 1901 TO 1907.**

| Year Ended 30th June. | District Roads. | | | Main Roads Fund. | | | |
|--------------------------------|--------------------|--------------------|-------------------|------------------------------|---------|--------------------|-------------------|
| | Total Receipts. | Expenditure. | | Receipts. | | Expenditure. | |
| | | Con- struction. | Main- tenance. | From Main Road Grants. | Total. | Con- struction. | Main- tenance. |
| | £ | £ | £ | £ | £ | £ | £ |
| 1901 ... | 147,309 | 18,026 | 47,379 | 72,980 | 100,077 | 11,861 | 67,487 |
| 1902 ... | 134,780 | 22,925 | 43,430 | 62,990 | 87,070 | 6,039 | 63,084 |
| 1903 ... | 134,216 | 20,573 | 44,070 | 56,092 | 74,877 | 5,766 | 54,778 |
| 1904 ... | 140,216 | 22,682 | 47,519 | 54,645 | 69,868 | 6,280 | 49,465 |
| 1905 ... | 150,309 | 32,157 | 37,613 | 55,799 | 75,622 | 4,650 | 56,448 |
| 1906 ... | 132,085 | 24,564 | 47,502 | 60,568 | 63,723 | 5,293 | 54,027 |
| 1907 ... | 128,787 | 27,795 | 47,731 | 70,550 | 70,769 | 5,598 | 57,152 |

7. *Western Australia.*—In Western Australia the construction, maintenance, and management of roads and bridges throughout the State, except those within the boundaries of municipalities, are under the control of District Road Boards, constituted by the Roads Acts 1902 to 1904.

(i.) *District Roads and Bridges.* Under the provisions of these Acts any part of the State, not within a municipality, may be constituted by the Governor-in-Council into a Road District, under the control of a Board of seven members elected by the ratepayers. The Board is invested with full powers for controlling and managing all roads and bridges within the district, and is empowered to make by-laws for the general regulation of traffic, to control the weight of engines and machines permitted to cross any bridge or culvert, to regulate the speed limits of vehicles, lights to be carried by vehicles, the lighting of streets and roads, and the licensing of bicycles and motor cars. A District Road Board, may not, however, construct any road or street less than sixty-six feet wide without the consent of the Governor, nor any bridge or culvert at a greater cost than £100, except by the direction of the Minister. The construction of the more important bridges and culverts is generally carried out by the Government, the work, after completion, being handed over to the Road Board for maintenance. In case of land being required for the purpose of constructing a new street or road, or for widening an existing street or road, the provisions of the Public Works Act of 1902 are incorporated in the Roads Acts. A Board may levy general rates within its district not exceeding one shilling and sixpence in the £ on the annual ratable value, and, if valued on the basis of unimproved values of lands, the general rate must not exceed twopence half-penny in the £ on the capital unimproved value. Boards are also empowered to raise loans for the purpose of constructing new roads, but the amount of such loans must not be greater than ten times the average amount of general rates collected for two years. For the purpose of paying the interest on money borrowed a Board may levy a special rate not exceeding one shilling and sixpence in the £. District Road Boards may also exercise the powers of Drainage Boards under the provisions of the Land Drainage Act of 1900.

(ii.) *Municipal Streets, Roads, and Bridges.* As regards roads, streets, and bridges within municipalities, these are under the control of local authorities elected under the provisions of the Municipal Corporations Act 1906. The municipal councils are invested with full powers for making, maintaining, and managing all streets, roads, and bridges within the municipal area, and may request the Governor to declare any such land reserved, used, or by purchase or exchange acquired for a street or way, to be a public

highway, and on such request the Governor may, by notice in the *Gazette*, proclaim such highway absolutely dedicated to the public.

(iii.) *Stock Routes.* Although the road districts cover a considerable area, amounting in all to about one million square miles, there are still vast tracts of country in Western Australia inaccessible by road. For the purpose of travelling stock in the less settled parts of the State, stock-routes have been provided and placed under the control of the Public Works Department. These routes are six in number, and are as follows:—(a) *The Kimberley-De Grey Stock Route*, starting about twenty miles south of Derby, runs as far as Broome, and continues thence in a south-westerly direction to the De Grey River. The route is about 350 miles in length, and follows the sea-coast at a distance of from two to ten miles along that part known as the Ninety-mile Beach. There are forty wells, as a rule from ten to fifteen miles apart. (b) *The De Grey-Peak Hill Route* starts from Pardoo, the junction of the Kimberley-De Grey and De Grey¹ Mingenew routes, and runs alongside of the De Grey River for about 100 miles, when it turns south for another 100 miles as far as Nullagine. (c) *The De Grey-Mingenew Route* commences at Pardoo and runs in a south-westerly direction for about 250 miles to the Fortescue River, where it turns south and runs irregularly to Mingenew, on the Midland Railway. The route is over 900 miles long. There are about eighty wells, in addition to permanent pools in the river beds, no watering stations being more than about fifteen miles apart. (d) *The Fortescue-Cue Route* runs from the Fortescue River to Cue, and is about 400 miles long. (e) *The Peak Hill-Leonora Route* starts from the Murchison, at the termination of the De Grey-Peak Hill route, and runs in a south-easterly direction to Leonora; it is about 300 miles long and has about thirty wells. (f) *The Coolgardie-Eucla Route* is about 500 miles in length. In 1903 an artesian bore was put down at Madura by the Public Works Department, 2001 feet deep, with a flow of 70,000 gallons a day.

(iv.) *Length of Roads, Number of Bridges, and Expenditure on Roads and Bridges.* The following table gives particulars of the operations of the Road District Boards since the 1st January, 1903, when the Roads Act of 1902 (now amended by the Act of 1904) came into force:—

WESTERN AUSTRALIA.—PARTICULARS OF ROADS UNDER CONTROL OF DISTRICT ROAD BOARDS, 1904 to 1907.

| Year ended the 30th June. | Area. | Revenue. | | | | Expenditure. | Length of Roads. | | | | No. of Bridges and Culverts. | |
|---------------------------|---------|---------------------|----------------------------|---------------------|---------|--------------|--------------------|--------------------|------------------------------------|---------------------|------------------------------|--------------------|
| | | From General Rates. | From Grants and Subsidies. | From other Sources. | Total. | | Cleared only. | Formed only. | Metalled or otherwise Constructed. | Total. | Bridges. | Culverts. |
| | Sq. m. | £ | £ | £ | £ | £ | Miles. | Miles. | Miles. | Miles. | No. | No. |
| 1904 ¹ | 976,006 | 18,593 | 141,409 | 16,139 | 176,141 | 126,736 | 6,498 | 2,625 | 1,395 | 10,518 | 287 | 2,745 |
| 1905 | 975,802 | 23,558 | 90,475 | 11,547 | 125,580 | 132,091 | 8,268 | 2,864 | 1,813 | 12,945 | 319 | 3,272 |
| 1906 | 975,792 | 28,219 | 85,280 | 12,746 | 126,245 | 125,616 | 8,556 ² | 3,970 | 1,952 ² | 14,478 ² | 443 ³ | 3,792 ³ |
| 1907 | 975,780 | 35,088 | 60,313 | 13,796 | 109,197 | 126,716 | 9,269 ⁴ | 3,878 ⁴ | 2,088 ⁵ | 15,235 ⁵ | 491 ⁶ | 3,961 ⁶ |

1. The returns given for 1904 cover a period of eighteen months, from the 1st January, 1903, to the 30th June, 1904. 2. Exclusive of four Boards which have not supplied the information. 3. Exclusive of three Boards which have not supplied the information. 4. Exclusive of six Boards. 5. Exclusive of seven Boards. 6. Exclusive of five Boards.

The following table gives similar information with reference to roads under the control of municipalities under the Municipal Institutions Act 1900 and 1904:—

WESTERN AUSTRALIA.—PARTICULARS OF STREETS, ROADS, AND BRIDGES UNDER
THE CONTROL OF MUNICIPALITIES, 1901 to 1907.

| Year ended the 31st October. | No. of Municipalities. | Length of Streets, Roads, and Bridges. | | | | | Revenue. | | Expenditure. | |
|---------------------------------|---------------------------|--|-----------------|------------------|------------------|--------|----------------|-----------------|-----------------------------------|-------------------------------------|
| | | Paved M't'll'd or Gr'v'll'd | Form'd only. | Clear'd only. | Not Clear'd | Total. | From Rates. | From Grants. | Works and Impr'v- ments. | Street Light'g and Wat'r'g |
| | | Miles. | Miles. | Miles. | Miles. | Miles. | £ | £ | £ | £ |
| 1901 | 42 | 195 | 30 | 149 | 137 | 511 | 78,021 | 66,850 | 111,256 | 15,969 |
| 1902 | 44 | 265 | 52 | 221 | 249 | 787 | 94,894 | 81,436 | 125,721 | 19,434 |
| 1903 | 44 | 291 | 55 | 282 | 227 | 855 | 104,760 | 80,938 | 142,347 | 20,745 |
| 1904 | 43 | 325 | 64 | 252 | 260 | 901 | 119,110 | 90,868 | 187,747 | 23,361 |
| 1905 | 43 | 354 | 74 | 253 | 256 | 942 | 130,575 | 85,798 | 183,226 | 25,404 |
| 1906 | 45 | 396 | 79 | 275 | 292 ² | 1,042 | 146,206 | 95,997 | 166,421 | 31,045 |
| 1907 | 47 | 441 | 84 | 304 | 262 ³ | 1,091 | 136,868 | 85,473 | 132,103 | 34,135 |

1. Returns incomplete, not having been furnished when asked for. 2. Exclusive of three municipalities, which have not supplied the information. 3. Exclusive of four municipalities.

S. Tasmania.—In 1869 a Roads Act was passed in Tasmania empowering the Governor-in-Council to declare any portion of the colony to be a road district under the control of a Road Trust consisting of from five to seven members elected by the landowners. The trustees were invested with full control of all cross and by roads, but could not construct any road less than sixty-six feet wide without the consent of the proprietors on each side. Under the provisions of the Main Roads Act 1880 the Minister of Lands and Works for the time being was appointed Commissioner of Main Roads, and was invested with the supervision of all main roads and bridges except those situated in municipalities, which were first constituted by the Rural Municipalities Act of 1858, and also excepting those within road districts under the Act of 1869. The trustees of road districts were appointed to act as Main Road Boards. In 1884 previous enactments were repealed and their provisions were amended and consolidated by the Roads Act of that year; under this Act Main Road Boards were established. In 1906 both Road Trusts and Main Road Boards were abolished by the Local Government Act, which, however, specially provided that the councils of all municipalities constituted under the Act shall exercise all powers conferred upon, and shall be liable to all the obligations imposed upon Road District Trusts and Main Road Boards by the Roads Act of 1884. The whole State, with the exception of Hobart and Launceston, is divided into municipal districts, each of which is under the control of a warden and councillors, and each of which is deemed to be a road district and a main road district for the purposes of the Roads Act 1884.

(i.) *Cross Roads.* Under the provisions of the Roads Act of 1884 the Governor-in-Council was empowered to declare from time to time by proclamation any part of the State to be a road district for the purpose of the Act, and any such district was to be under the control of a Road Trust, the members of which were elected by the landholders in the district. The trustees were empowered to construct, maintain, and regulate all cross-roads within their district, cross-roads being defined to comprise the following roads:—(a) Any road leading from one town to another. (b) Any road leading from a town or public bridge to a main road. (c) Any road leading from a town to a navigable river. (d) Any road which may be proclaimed by the Governor as a cross-road. (e) All streets within a town, excepting those in any town in any rural municipality, which were under the control of municipal councils. The annual expenditure of Road Trusts was provided for partly by rates which they were empowered to levy, and partly by Government grants.

(ii.) *Main Roads.* Under the Act of 1884 main roads were from time to time determined by Parliament, and the Minister for Lands and Works was *ex officio* Com-

missioner of Main Roads. The powers and duties of this officer have not been altered by the Local Government Act of 1906. Municipal Councils and Road District Trusts were constituted Main Road Boards for all main roads situate in or passing through their district, with the exception of the main road from Hobart to Launceston, and for all bridges except those specified in the schedule to the Act. The Commissioner or any Main Road Board, subject to the authority of the Governor-in-Council, might, after a main road had been declared by law, take land required for such road, and might open a new road through the same. All powers, duties, and functions conferred by the Act upon any Main Road Board could be exercised by the Commissioner in respect of the main road from Hobart to Launceston, the bridges specified in the schedule to the Act, and all main roads not situated in any main road district. The expenditure on main roads was provided for by funds voted by Parliament by means of Main Roads Maintenance Acts.

(iii.) *Roads and Bridges under the Land Act 1903.* It is provided by the Lands Act of 1903 that as soon as 500 acres of first-class agricultural land have been taken up in one locality, and in not less than five lots, the Governor shall, for the purpose of making roads, bridges, or drains in the vicinity of the land so taken up, raise a sum equal to ten shillings an acre for every acre so taken up, by the issue and sale of debenture stock chargeable on the Consolidated Revenue Fund. The Governor is authorised to raise in the same manner a sum of money not exceeding five shillings for every acre of second-class land sold, and not exceeding two shillings and sixpence for every acre of third-class land sold, for similar purposes. With respect to the sale of lands within any town, not being within a mining area, of a value of not less than £250, the Governor may, for the purpose of making streets, roads, or other improvements in the vicinity of the land so sold, raise a sum equal to ten shillings for every pound of the value of such land, by the issue and sale of debenture stock as above. Provision is also made for the Commissioner of Roads, or for such other person as the Governor may appoint, to purchase and take any lands which he may deem necessary for the purpose of constructing roads or other public works.

(iv.) *Mileage of Main and Other Roads and Expenditure of Main Road Boards and Road Trusts, 1901 to 1906.* The subjoined table gives particulars as to lengths of roads open and as to the expenditure of Main Road Boards and Road Trusts, during the years 1901 to 1906, inclusive. Returns for the year 1907 from municipal councils under the Local Government Act of 1906 are too incomplete for publication.

TASMANIA.—LENGTH OF ROADS AND EXPENDITURE OF MAIN ROAD BOARDS AND ROAD TRUSTS, 1901 TO 1906.

| Year. | Main Road Boards. | | District Road Trusts. | | | |
|----------|---------------------|--------------|-----------------------|----------------------|-----------|--------------|
| | Mileage Maintained. | Expenditure. | Number of Trusts. | Miles under Control. | Receipts. | Expenditure. |
| | Miles. | £ | No. | Miles. | £ | £ |
| 1901 ... | 696 | 7,591 | 102 | 6,539 | 23,887 | 26,263 |
| 1902 ... | 765 | 7,661 | 102 | 6,732 | 29,944 | 27,579 |
| 1903 ... | 650 $\frac{3}{4}$ | 8,805 | 105 | 6,855 | 25,359 | 30,368 |
| 1904 ... | 650 | 6,954 | 104 | 7,045 | 29,638 | 29,459 |
| 1905 ... | 678 | 7,028 | 104 | 7,124 | 30,063 | 28,566 |
| 1906 ... | 678 $\frac{3}{4}$ | 8,025 | 105 | 7,272 | 31,791 | 31,633 |

§ 2. Railways.

(A) General.

1. Introduction.—Although it was early recognised that railway construction was essential to the proper development and settlement, and to the future commercial prosperity of a large country like Australia, ill supplied with navigable rivers, the progress made in opening up lines during the twenty years which followed the completion of the first line in 1855, was very slow. This was no doubt due partly to the difficulty of borrowing money at a reasonable rate of interest, owing to the depreciation of Australian securities in London, and partly to the sparseness of the population, which it was feared would not justify the necessary expenditure. In the vicinity of Sydney, also, the ranges of mountains in the districts near the coast had to be either traversed or pierced by tunnels at a considerable expenditure of time and money, thus retarding the expansion of the railway systems which have their starting point at that city. Since the year 1875, however, greater activity in the construction of railways has been manifested, and satisfactory progress has been made in all the States of the Commonwealth; the State Governments now fully recognise the great importance to the community of carrying on the work of construction, and of conducting the administration and management of the railways on businesslike principles, free from undue political influence, and yet with regard to the general development of the country.

2. Railway Communication in the Commonwealth.—In the eastern, south-eastern, and southern parts of Australia there now exists a considerable network of railway lines converging from the various agricultural, pastoral and mining districts towards the principal ports, which are themselves connected by systems of lines running roughly parallel to the coast. These are shewn on the accompanying map. In the east, lines radiating from Townsville, Rockhampton, Brisbane, and Sydney, extend inland in various directions for distances ranging up to over 600 miles; in the south-east there are numerous lines, those in Victoria converging towards Melbourne, while others in New South Wales have their terminus in Sydney; in the south there are three main lines, with numerous branches, running from Melbourne, while from Adelaide one main line, with several branches to the coastal towns, runs inland in a northerly direction for a distance of nearly 700 miles, and another line runs in a south-easterly direction to various ports and meeting the main line from Melbourne on the border of South Australia and Victoria. In addition to these main lines and their numerous branches, there are extensive suburban systems in Melbourne and some of the other cities of Australia, a considerable portion of the suburban traffic in Sydney being conducted by means of electric tramways. All these lines which have just been referred to are connected together by the main interstate line, which permits of direct communication between the four capital towns—Brisbane, Sydney, Melbourne, and Adelaide—a distance from end to end of 1790½ miles. The journey from Brisbane to Adelaide by rail occupies just over three days, including one stop of 8 hours 50 minutes at Sydney, and another of 3 hours 49 minutes at Melbourne; the distance between the capitals, and the times occupied are as follows:—

| | | | | | |
|-----------------------|-----|-----|-----------|-----|--------------------|
| Brisbane to Sydney | ... | ... | 725 miles | ... | 27 hours, 20 mins. |
| Sydney to Melbourne | ... | ... | 582½ " | ... | 16 " 51 " |
| Melbourne to Adelaide | ... | ... | 492½ " | ... | 17 " 15 " |

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Longreach in Queensland to Oodnadatta in South Australia, a total distance of 3303 miles. In Western Australia there is a connected system of main or trunk lines between the ports of the State and the agricultural, pastoral, and mining districts. From these main lines a number of branches have been constructed, opening up fresh agricultural areas to the ports and markets of the State. The majority

of such branch lines will, on being ultimately extended, form connections between main lines and thus provide short and convenient routes between principal centres. In the northern parts of Queensland and in the Northern Territory there are also a number of disconnected lines running inland from the more important ports. In Tasmania the principal towns are connected by a system of lines, and there are also, more especially in the western districts, several lines which have been constructed for the purpose of opening up mining districts.

3. Mileage Open for Traffic.—In all the States of the Commonwealth the principle that the control, construction, and maintenance of the railways should be in the hands of the Government has long been adhered to, excepting in cases presenting unusual circumstances. In various parts of the Commonwealth lines have been constructed and managed by private companies, but at the present time practically the whole of the railway traffic in the Commonwealth is in the hands of the various State Governments. A large proportion of the private lines which are at present running have been laid down for the purpose of opening up forest lands or mining districts, and are not generally used for the conveyance of passengers or the public conveyance of goods. (See *C. Private Railways*, hereinafter.)

(i.) *Mileage of Government and Private Lines, 1855 to 1908.* The subjoined table shows the mileage of both Government and private lines open for traffic (exclusive of sidings and cross-overs) in each State and also in the Commonwealth at suitable periods since the inauguration of railways in Australia in 1855 up to the year 1908. The figures from 1855 to 1881 are given as up to the end of the calendar year; later figures are as up to the end of the financial year ended on the 30th June, unless otherwise stated, excepting the mileages for private lines which are in all cases taken for the calendar year:—

GOVERNMENT AND PRIVATE RAILWAYS.—MILEAGE OPEN, 1855 to 1908.

| State. | 1855. | 1861. | 1871. | 1881. | 1890-1. | 1900-1. | 1906-7. | 1907-8. † |
|---------------------|--------|--------|--------|--------|---------|---------|---------|-----------|
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| New South Wales | 14 | 73 | 358 | 1,040 | 2,263 | 2,926 | 3,534 | 3,743½ |
| Victoria ... | 2½ | 114 | 276 | 1,247 | 2,763 | 3,238 | 3,396 | 3,443 |
| Queensland ... | * | * | 218 | 800 | 2,205 | 2,904 | 3,240 | 3,694½ |
| South Australia ... | 16½ | 56 | 133 | 845 | 1,666 | 1,736 | 1,866 | 1,937½ |
| Northern Territory | * | * | * | * | 145½ | 145½ | 145½ | 145½ |
| Western Australia | * | * | 12 | 92 | 1,656 | 1,984 | 2,457 | 2,581½ |
| Tasmania ... | * | * | 45 | 168 | 425 | 5618 | 618 | 667½ |
| Commonwealth ... | 23½ | 243 | 1,042 | 4,192 | 10,123½ | 13,551½ | 15,256½ | 16,212½ |

* No railways yet constructed. † To the 31st December. This line between Goolwa and Port Elliot was opened in 1854 as a horse tramway, but now forms part of the railway system. ‡ To the 31st December, 1891. § To the 31st December, 1901. ¶ The increase in this year's figures is largely due to the fact that more complete particulars of private railways have been procured.

It will be seen from the above table that the rate of construction up to the year 1871 was very slow, the average annual length of lines opened from 1861 to 1871 being only 80 miles for the whole Commonwealth. By the middle of the following decade, however, the principal mountain ranges had been crossed, and the work of construction could be proceeded with at a greater rate, and at a less cost per mile. The greatest period of activity was from 1881 to 1891, when the average annual length opened for traffic was 594 miles for the whole Commonwealth; the corresponding figures for the following periods from June, 1891, to June, 1901, and from June, 1901, to June, 1907, were 342 miles and 284 miles respectively. The increase shewn in the last financial year is to a great extent due to the fact that more complete particulars regarding private railways have been collected.

4. **Comparative Mileage of State-owned and Private Lines, 1908.**—The subjoined table shews for each State and for the Commonwealth (a) the length of lines owned by the respective State Governments, all of which lines are of course open for general use by the public, (b) the length of private lines available for general use by the public, and (c) the length not so available. The mileages specified in the case of State-owned lines are as up to the 30th June, 1908; those given for private lines are as up to the 31st December, 1908.

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARATIVE MILEAGE OF STATE-OWNED LINES, OF PRIVATE LINES AVAILABLE FOR GENERAL TRAFFIC, AND OF PRIVATE LINES NOT SO AVAILABLE, 1908.

| State. | State-owned Lines. | Private Lines available for General Traffic. | Total Open for General Traffic. | Private Lines used for Special Purposes only. | Total. |
|--------------------|--------------------|--|---------------------------------|---|---------|
| | Miles. | Miles. | Miles. | Miles. | |
| New South Wales | 3,472½ | 144 | 3,616½ | 127 | 3,743½ |
| Victoria... | 3,396 | 14½ | 3,410½ | 32½ | 3,443 |
| Queensland ... | 3,359 | 315 | 3,674 | 20½ | 3,694½ |
| South Australia | 1,879½ | ... | 1,879½ | 58 | 1,937½ |
| Northern Territory | 145½ | ... | 145½ | ... | 145½ |
| Western Australia | 1,943 | 277 | 2,220 | 361½ | 2,581½ |
| Tasmania ... | 463 | 165½ | 628½ | 38½ | 667½ |
| Commonwealth | 14,658½ | 915½ | 15,574 | 638½ | 16,212½ |

5. **Comparative Railway Facilities in Different States, 1908.**—The area of territory and the population per mile of line open to the public for general traffic (including both Government and private lines) on the 30th June, 1908, are shown in the subjoined statement for each State and also for the Commonwealth:—

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARISON OF RAILWAY FACILITIES IN DIFFERENT STATES, 1908.

| State. | Population. | Area. | Per Mile of Line Open. | |
|--------------------|-------------|-----------|------------------------|------------|
| | | | Population. | Area. |
| | | | Number. | Sq. miles. |
| New South Wales | 1,578,331 | 310,372 | 436 | 85.8 |
| Victoria | 1,255,757 | 87,884 | 368 | 25.7 |
| Queensland | 551,936 | 670,500 | 150 | 182.5 |
| South Australia | 394,663 | 380,070 | 210 | 202.2 |
| Northern Territory | 3,600 | 523,620 | 25 | 3,598.7 |
| Western Australia | 265,556 | 975,920 | 119 | 439.6 |
| Tasmania | 180,398 | 26,215 | 287 | 41.8 |
| Commonwealth | 4,230,241 | 2,974,581 | 271 | 191.0 |

6. **Classification of Lines according to Gauge, 1908.**—The subjoined tables shew the total mileage, exclusive of sidings and cross-overs, of (i.) Government railways;

(ii.) Private railways open to the public for general traffic; and (iii.) Private lines used for special purposes, classified according to gauge. Particulars of Government railways are up to 30th June, 1908, and of private railways to the 31st December, 1908:—

GOVERNMENT AND PRIVATE RAILWAYS.—CLASSIFICATION ACCORDING TO GAUGE,
1908.

| State. | Mileage Constructed to Different Gauges. | | | | | Total. |
|---|--|--------------|-------------|-------------|--------|---------|
| | 5 ft. 3 in. | 4 ft. 8½ in. | 3 ft. 6 in. | 2 ft. 6 in. | 2 ft. | |
| GOVERNMENT RAILWAYS. | | | | | | |
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| New South Wales ... | ... | 3,472½ | ... | ... | ... | 3,472½ |
| Victoria ... | 3,314½ | ... | ... | 81½ | ... | 3,396 |
| Queensland ... | ... | ... | 3,359 | ... | ... | 3,359 |
| South Australia ... | 599½ | ... | 1,425½ | ... | ... | 2,024½ |
| Western Australia ... | ... | ... | 1,943 | ... | ... | 1,943 |
| Tasmania ... | ... | ... | 439¾ | ... | 29½ | 463 |
| Commonwealth ... | 3,913¾ | 3,472½ | 7,167½ | 81½ | 29½ | 14,658¾ |
| PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC. | | | | | | |
| | | | | | | |
| New South Wales ... | 45 | 63 | 36 | ... | ... | 144 |
| Victoria ... | 14½ | ... | ... | ... | ... | 14½ |
| Queensland ... | ... | ... | 263 | ... | 52 | 315 |
| South Australia ... | ... | ... | ... | ... | ... | ... |
| Western Australia ... | ... | ... | 277 | ... | ... | 277 |
| Tasmania ... | ... | ... | 155½ | ... | 10 | 165½ |
| Commonwealth ... | 59½ | 63 | 731½ | ... | 62 | 915½ |
| PRIVATE RAILWAYS FOR SPECIAL PURPOSES. | | | | | | |
| | | | | | | |
| New South Wales ... | ... | 123½ | 3½ | ... | ... | 127 |
| Victoria ... | 28¾ | ... | 4 | ... | ... | 32¾ |
| Queensland ... | ... | ... | 16¾ | ... | 4 | 20¾ |
| South Australia ... | ... | ... | 58 | ... | ... | 58 |
| Western Australia ... | ... | ... | 361½ | ... | ... | 361½ |
| Tasmania ... | ... | ... | 24½ | ... | 14½ | 38¾ |
| Commonwealth ... | 28¾ | 123½ | 466½ | ... | 18½ | 638¾ |
| TOTAL. | | | | | | |
| | | | | | | |
| New South Wales ... | 45 | 3,659 | 39½ | ... | ... | 3,743½ |
| Victoria ... | 3,357½ | ... | 4 | 81½ | ... | 3,443 |
| Queensland ... | ... | ... | 3,638¾ | ... | 56 | 3,694¾ |
| South Australia ... | 599½ | ... | 1,483½ | ... | ... | 2,082¾ |
| Western Australia ... | ... | ... | 2,581½ | ... | ... | 2,581½ |
| Tasmania ... | ... | ... | 619¾ | ... | 47½ | 667½ |
| Commonwealth ... | 4,001¾ | 3,659 | 8,367 | 81½ | 103½ | 16,212¾ |

(B). Government Railways.

1. **Mileage Open, 1901 to 1908.**—The following table shows the length of Government railways open for traffic on the 30th June in each year since the inception of the Commonwealth:—

**GOVERNMENT RAILWAYS.—MILEAGE OPEN FOR TRAFFIC ON THE 30th JUNE
IN EACH YEAR FROM 1901 to 1908, INCLUSIVE.**

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. |
|------------------|---------|---------|--------|---------|---------|--------|--------|---------|
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| N.S.W. ... | 2,845½ | 3,026 | 3,138½ | 3,281 | 3,281 | 3,300 | 3,453 | 3,472½ |
| Victoria ... | 3,237 | 3,302 | 3,383 | 3,381 | 3,394 | 3,394 | 3,396 | 3,396 |
| Queensland | 2,801 | 2,801 | 2,711 | 2,928 | 3,092 | 3,137 | 3,137 | 3,359 |
| S. Australia | 1,736 | 1,736 | 1,736 | 1,736 | 1,745½ | 1,745½ | 1,832 | 1,879½ |
| N. Territory | 145½ | 145½ | 145½ | 145½ | 145½ | 145½ | 145½ | 145½ |
| W. Australia | 1,355 | 1,360 | 1,516 | 1,541 | 1,605 | 1,611½ | 1,764 | 1,943 |
| Tasmania ... | *457½ | *462 | *462 | 462 | 462½ | 462½ | 462½ | 463 |
| Commonwealth ... | 12,577½ | 12,832½ | 13,092 | 13,474½ | 13,725½ | 13,886 | 14,190 | 14,658½ |

* To the 31st December.

The following statement shows the annual average increase in mileage opened since 1901 in each State:—

| State | N.S.W. | Vic. | Qld. | S.A. | N.T. | W.A. | Tas. | Cwth. |
|-------------------------------|--------|------|------|------|------|------|------|-------|
| Average annual mileage opened | 78½ | 19½ | 69½ | 17½ | ... | 73½ | ½ | 260½ |

2. **Non-conformity of Gauge.**—With but few exceptions all the railway lines in the Commonwealth open for general traffic are now owned and managed by the respective States in whose territory they run, but, unfortunately for the purpose of interstate traffic, the construction of the various systems in different parts of Australia has proceeded without uniformity of gauge. In 1846 Mr. Gladstone, then Colonial Secretary, recommended in a despatch to the Governor of New South Wales that the 4 ft. 8½ in. gauge should be adopted. In 1850, however, the engineer to the Sydney Railroad and Tramway Company strongly advocated the adoption of the 5 ft. 3 in. gauge, and in 1852 an Act was passed making it compulsory that all railways in New South Wales should be constructed to the wider gauge, the Governors of Victoria and South Australia being duly advised of the step that had been taken. But in 1852 the company mentioned, having changed their engineer, also changed their views as to the gauge question, and in the following year they succeeded in obtaining the repeal of the Act of 1852 and in passing another, under the provisions of which the narrower gauge was made imperative. This step was taken without the concurrence of the other States concerned, and a considerable amount of ill-feeling arose, especially in Victoria, where two private companies had already placed large orders for rolling stock constructed to the broad gauge originally chosen. The result was that it was decided in Victoria to adhere to the 5 ft. 3 in. gauge as the standard gauge for that State, while the Sydney Railroad and Tramway Company proceeded with the construction of their lines to the 4 ft. 8½ in. gauge, and these two gauges have since been adhered to as the standard gauges of the respective States. The Queensland Government had at the outset adopted a gauge of 3 ft. 6 in. as being best suited to the requirements of the colony, and have since adhered to that gauge through-

out the State, so that all goods have to be discharged and reloaded at the boundary between that State and New South Wales. In South Australia the broad gauge of Victoria was at first adopted, and the part of the interstate line between Adelaide and the Victorian boundary was constructed to that gauge, so that the line from Melbourne to Adelaide is uniform. In the lines which have been constructed more recently, however, and in the Northern Territory, the South Australian Government has, with a view to economy in construction, adopted a gauge of 3 ft. 6 in. In Western Australia and Tasmania the 3 ft. 6 in. gauge was also adopted. It was recognised in both these States that the construction of railways was essential to their proper development, but as their financial resources would not bear a heavy initial expenditure in connection with the establishment of railway lines, it was decided to adopt the narrow gauge. In Victoria light railways have been constructed in recent years to a gauge of 2 ft. 6 in., whilst in Tasmania short lengths have been laid down to a 2 ft. gauge.

3. Interstate Communication.—Until the railway systems of the eastern States were connected at the common boundaries the inconvenience of non-conformity of gauge was not felt. Since then, however, the necessary transshipments of both passengers and goods have been a source of trouble, delay, and expense. On the 14th June, 1883, a railway bridge over the River Murray at Wodonga was opened for traffic, and communication was then established between Melbourne and Sydney; on the 19th January, 1887, the last section of the Victorian line to Serviceton, on the South Australian border, was completed, and a junction was thus effected with the South Australian line to Adelaide. On the 16th January, 1888, a junction was effected between the New South Wales and Queensland lines at Wallangarra, but there was still a break in the line from Sydney at the Hawkesbury River, thirty-six miles from Sydney. This last link was, however, completed on the 1st May, 1889, by the opening of the Hawkesbury River bridge, 2900 feet in length, and railway communication was thus established between the four capital cities, Brisbane, Sydney, Melbourne, and Adelaide.

4. Unification of Gauge.—The development of the railway systems of the Commonwealth has shewn that the adoption of different gauges on the main lines in the several States was a serious error. The extra cost, delay, and inconvenience incurred by the necessity of transferring through-passengers and goods at places where there are breaks of gauge, though not at present of any appreciable magnitude, are becoming more serious as the volume of business increases. As an indication of the extra cost thus involved the following junction charges payable on interstate traffic between New South Wales and Victoria and *vice-versa* are given :—

| General Merchandise. 1st to 3rd Classes. | Special and Miscellaneous Class. | Small Consignments. | Live Stock. |
|---|-------------------------------------|------------------------|----------------|
| 3s. 6d. per ton | 2s. 6d. per ton | 1s. 6d. each | 3s. per truck. |

Although the cost of alteration to a uniform gauge would be great, many propositions have from time to time been put forward with the object of securing such a gauge, and attention has been drawn to the importance of the unification of gauges before further expenditure on railway construction is incurred by the States. The problem is, however, one which is by no means easy of solution, and the difficulties are increased by the introduction of what may be called questions of local or State policy. That its solution would facilitate the development of commerce and the settlement on the land throughout the Commonwealth, is now widely recognised. The economic disadvantages of breaks of gauge, and of any artificial restrictions in regard to trade finding its proper geographical outlets, are also seen by dispassionate observers. It is obvious, too, that in the event of a foreign invasion of any part of the seaboard, the interchange and concentrations of rolling stock for the transport of men and war material would be impeded, and might result in confusion and loss. It is asserted, moreover, that unification of gauges would

tend to reduce to a negligible quantity all tendency to disorganisation and undue congestion likely to occur at times of bountiful seasons; that various trades and industries would be benefited by the concentration, at times of abnormal or periodic activity, of idle trucks from other States; in other words, that the fullest use of all rolling stock and the meeting of all exigencies would be facilitated.

As regards the unification of gauges, the question naturally arises as to which gauge, if any, should be adopted as the universal gauge of the Commonwealth. As regards Government railways only, the New South Wales gauge has a mileage of 3,472½; Victoria and South Australia have a combined mileage of 3,913½ of 5 ft. 3 in. gauge; while Queensland, South Australia, the Northern Territory, and Western Australia have together 6,727½ miles of 3 ft. 6 in. gauge. The mere question of preponderance of mileage, therefore, indicates the 3 ft. 6 in. gauge for adoption. But this question is obviously subordinate to those involving engineering and economic considerations. Thus the relative efficiency from the widest point of view, the relative costs of alterations of permanent way and rolling stock, of carrying capacity and speed, that is to say, questions of a technical nature about which figures are not available, enter into the grounds for decision. As regards the unification of the New South Wales and Victorian lines, the advantage of reducing the broad gauge to the 4 ft. 8½ in. gauge is that there would be no necessity for the alteration of tunnels, cuttings, bridges, or viaducts.

5. Average Mileage Worked, Train Miles Run, Number of Passenger Journeys, and Tonnage of Goods and Live Stock Carried on Government Railways, 1901 to 1908.—The preceding table gives the actual mileage open for traffic at the end of each financial year, but, in considering the returns relating to revenue and expenditure and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shews the average number of miles worked, the total number of train miles run, the number of passenger journeys, and the tonnage of goods and live stock carried by the Government railways of each State during each financial year from 1900-1 to 1907-8, inclusive:—

GOVERNMENT RAILWAYS.—AVERAGE MILEAGE WORKED, TRAIN MILES RUN, NUMBER OF PASSENGER JOURNEYS, AND TONNAGE OF GOODS AND LIVE STOCK CARRIED, 1901 TO 1908.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|
|--------|---------|---------|---------|---------|---------|---------|---------|---------|

AVERAGE MILEAGE WORKED.

| | | | | | | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|
| N.S.W. | 2,818 | 2,953 | 3,074 | 3,224 | 3,281 | 3,367 | 3,428 | 3,469 |
| Vic. ... | 3,228 | 3,265 | 3,335 | 3,371 | 3,384 | 3,394 | 3,395 | 3,396 |
| Q'land | 2,801 | 2,801 | 2,777 | 2,827 | 3,066 | 3,109 | 3,137 | 3,239 |
| S.A. ... | 1,736½ | 1,736½ | 1,736½ | 1,736½ | 1,744½ | 1,745½ | 1,814½ | 1,860½ |
| N.T. ... | 145½ | 145½ | 145½ | 145½ | 145½ | 145½ | 145½ | 145½ |
| W.A. | 1,355 | 1,355 | 1,434 | 1,535 | 1,565 | 1,607 | 1,676 | 1,830 |
| Tas. ... | *480 | *468 | *409 | 469 | 470 | 470 | 470 | 470 |
| Cwltb. | 12,544 | 12,725 | 12,971 | 13,303 | 13,659 | 13,838 | 14,066 | 14,410 |

TRAIN MILES RUN.

| | | | | | | | | |
|----------|------------|------------|------------|------------|------------|------------|------------|------------|
| N.S.W. | 10,763,697 | 11,649,059 | 11,548,338 | 10,400,503 | 10,467,886 | 11,863,682 | 12,949,068 | 14,251,052 |
| Vic. ... | 11,066,016 | 11,224,944 | 10,286,272 | 9,172,644 | 9,023,365 | 9,392,069 | 10,035,914 | 10,383,408 |
| Q'land | 5,815,282 | 5,668,058 | 4,947,242 | 4,646,987 | 4,917,781 | 5,281,611 | 6,126,136 | 6,657,723 |
| S.A. ... | 4,393,181 | 4,196,138 | 3,770,351 | 3,739,088 | 3,773,106 | 3,875,167 | 4,334,243 | 5,010,121 |
| N.T. ... | 30,277 | 30,275 | 30,422 | 31,545 | 30,703 | 30,461 | 30,901 | 31,007 |
| W.A. | 4,126,202 | 4,507,919 | 4,611,315 | 4,594,234 | 4,285,235 | 4,359,633 | 4,180,796 | 3,964,230 |
| Tas. ... | *895,682 | *902,918 | *931,710 | 1947,588 | 945,852 | 945,918 | 981,379 | 1,023,030 |
| Cwltb. | 37,090,387 | 38,237,311 | 36,125,656 | 33,582,589 | 33,443,928 | 35,743,541 | 38,038,437 | 41,225,571 |

GOVERNMENT RAILWAYS.—AVERAGE MILEAGE WORKED, ETC.—Continued.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| NUMBER OF PASSENGER JOURNEYS. | | | | | | | | |
| N.S.W. | 29,261,324 | 30,885,214 | 32,384,138 | 33,792,689 | 35,158,150 | 37,500,531 | 41,413,084 | 47,487,030 |
| Vic. ... | 54,704,062 | 57,465,077 | 54,798,073 | 54,282,003 | 59,702,050 | 65,088,394 | 70,170,089 | 74,907,425 |
| Q'land | 18,647,194 | 18,421,258 | 17,353,177 | 17,527,831 | 7,655,613 | 8,214,617 | 9,801,542 | 10,419,794 |
| S.A. ... | 8,863,632 | 9,643,058 | 9,061,488 | 9,747,412 | 9,866,621 | 10,715,343 | 11,497,802 | 12,839,428 |
| N.T. ... | 4,097 | 3,755 | 3,631 | 3,653 | 4,200 | 2,852 | 3,205 | 2,882 |
| W.A. | 6,823,453 | 8,158,299 | 9,106,396 | 10,225,976 | 11,845,439 | 12,816,766 | 13,190,161 | 12,945,561 |
| Tas. ... | *777,445 | *761,345 | *814,483 | †872,937 | ‡823,911 | §860,519 | ¶951,823 | \|\|1,019,668 |
| Cwltth. | 109,081,207 | 115,338,006 | 113,521,386 | 116,452,501 | 125,055,984 | 135,199,022 | 146,517,706 | 159,621,788 |

TONNAGE OF GOODS AND LIVE STOCK CARRIED.

| | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| N.S.W. | 6,398,227 | 6,467,552 | 6,596,241 | 6,656,759 | 6,724,215 | 7,629,492 | 8,793,832 | 10,175,380 |
| Vic. ... | 3,381,860 | 3,433,627 | 3,093,997 | 3,439,203 | 3,628,237 | 3,676,017 | 3,965,792 | 3,754,861 |
| Q'land§ | 1,530,440 | 1,725,520 | 1,566,960 | 1,572,226 | 1,712,243 | 1,791,675 | 2,261,299 | 2,423,529 |
| S.A. ... | 1,628,444 | 1,392,257 | 1,349,617 | 1,515,621 | 1,681,003 | 1,732,436 | 2,042,939 | 2,255,996 |
| N.T. ... | 2,081 | 2,436 | 2,455 | 6,209 | 3,790 | 4,903 | 3,243 | 3,513 |
| W.A. | 1,719,720 | 1,888,146 | 1,795,019 | 2,057,270 | 2,154,275 | 2,096,514 | 2,091,376 | 2,058,741 |
| Tas. § ... | *314,625 | *407,505 | *418,701 | †425,102 | ‡393,838 | §399,487 | ¶426,387 | \|\|465,186 |
| Cwltth. \|\| | 14,976,300 | 15,317,043 | 14,822,990 | 15,672,390 | 16,297,601 | 17,330,524 | 19,586,968 | 21,137,215 |

* For the calendar years 1901, 1902, and 1903 respectively. The average mileage worked is larger than the actual mileage open, owing to the fact that the Government Railways have running powers over certain private lines. † The returns are for a period of six months ended the 30th June, 1904; the figures here given are estimated for a full period of twelve months. ‡ These figures are partly estimated, the actual returns excluding journeys by season ticket holders. § Exclusive of live stock. || Exclusive of live stock returns for Queensland and Tasmania.

6. History of Railway Construction.—The first movement in the direction of the introduction of railways into Australia took place in 1846, when it was resolved, at a public meeting held in Sydney, that a survey should be made for a proposed line to connect the metropolis with Goulburn, a distance of 136 miles; the cost of construction was estimated at £6000 per mile, and a net profit of 8 per cent. per annum was anticipated. This survey was completed in 1848, and in the same year the Sydney Railroad and Tramway Company was formed, with a capital of £100,000, for the purpose of laying down a line between Liverpool, Parramatta, and Sydney, which it was proposed to extend later to Bathurst and Goulburn.

(i.) *New South Wales.* When the work of construction of the Sydney to Liverpool line was first commenced there was an abundant supply of labour, and rapid progress was at first made; the scheme was only well under weigh, however, when the discovery of gold caused a general exodus from the city, and the company found it impossible to secure sufficient labour to enable them to carry on their undertaking. In 1853 a movement for the construction of a line from Maitland to Newcastle took place and the Hunter River Railway Company was formed, and the work of construction was proceeded with at once. It was not long before this company shared the fate of its predecessor, and the properties and works of both companies were transferred to the Government under Act 18 Vic., No. 40, which placed the construction of the lines under the control of three Commissioners. It is interesting to note that the Government consented, in the year 1852, to allow 500 railway labourers to be brought out at the expense of the immigration fund. With the assumption of control by the Government the work of construction was vigorously pushed forward, and on the 26th September, 1855, the line from Sydney to Parramatta, 14 miles in length, was opened for traffic. For some years

after this, however, railway construction languished, the enthusiasm of its advocates being, doubtless, considerably damped by the reflection that the short line from Sydney to Parramatta cost about £700,000—or £50,000 a mile. On the 27th May, 1869, the extension to Goulburn was completed. This line now forms part of the main interstate line between Sydney and Melbourne. In the meantime—in 1857—Newcastle had been connected with East Maitland by a line 17 miles in length; the line forms the first section of what is now known as the Northern Line. From Parramatta a line was extended in a westerly direction to Blacktown in 1860, and this line has now been further extended to form the main Western Line. For the purpose of convenience of reference and administration the Government railways in New South Wales are divided into three main lines with their branches, viz.:—the Northern Line, the Western Line, and the Southern Line. (a.) *The Northern Line* forms part of the main interstate route between New South Wales and Queensland. A junction was effected at Wallangarra, on the border between the two States, on the 16th January, 1888, and on the 1st May, 1889, the bridge over the Hawkesbury River was opened for traffic. After passing through Newcastle, 104 miles from Sydney, the line throws off a long branch from Werris Creek, extending in a north-westerly direction to Narrabri, Cryon, Collarendabri, and Inverell, which is 500 miles distant from Sydney. There is another line in the extreme north-east district of the State, known as the Grafton-Tweed line, at present isolated from the other railway lines. It has been suggested that this line should be joined to the main Northern line, and also to the South-coast line from Brisbane, and thus to form an alternative route between the two States. The total length of the line is 147 miles, and the last section to Grafton was completed in 1905; from Murwillumbah, the northern terminus, a steamer now runs to Tweed Heads which is connected with Brisbane by the Queensland South-coast line. (b.) *The Western Line*, running inland in a westerly direction, was completed as far as Bourke, its present terminus, 508 miles from Sydney, in 1885. It has three important branches, the first running from Orange to Condobolin, on the River Lachlan; the second from Dubbo to Coonamble; and the third from Nyngan to Cobar, from which place it is proposed to eventually extend the line to Broken Hill, *via* Wilcannia. (c.) *The Southern Line* forms part of the main route between Sydney and Melbourne, a junction having been effected between the New South Wales and Victorian lines in 1883, as stated above. Numerous branches have been constructed from the main southern line; Goulbourn is the junction for two branches; one to Cooma, passing through the pastoral district of Monaro for a distance of 130 miles, was opened in 1889; the other to Crookwell, 36 miles in length, was completed in 1902. From Cootamundra there are also two branch lines, the last extensions of which were opened for traffic in 1903; one runs to Wyalong, a distance of 80 miles, and the other to Tumut, 65 miles in length. From Junee a branch runs parallel to the Murrumbidgee River and was opened as far as Hay in 1882, and to Finley in 1898, thus bringing the Riverina district into direct communication with Sydney. From Culcairn one branch to Corowa was opened in 1892 and another to Germanton in 1902. The southern system also includes the Illawarra line, which runs from Sydney along the south coast as far as Nowra, a distance of 92 miles.

(ii.) *Victoria*. While the Sydney Railroad and Tramway Company was struggling with financial difficulties, and endeavouring to secure a sufficient supply of labour to enable them to carry on their undertaking, the work of railway construction was commenced in the neighbouring State of Victoria. In 1853, three private companies, viz.:—the Melbourne and Hobson's Bay Railway Company; the Melbourne, Mount Alexander, and Murray River Railway Company; and the Geelong and Melbourne Railway Company—having a total capital of £1,450,000, were incorporated for the purposes of railway construction. On the 13th September, 1854, the first complete railway in Australia, from Flinders Street, Melbourne, to Port Melbourne, was opened for traffic. This line was constructed by the Melbourne and Hobson's Bay Railway Company; it had been commenced nearly three years later than the line to connect Parramatta with Sydney.

but was only $2\frac{1}{2}$ miles long. On the 13th May, 1857, the same company opened for traffic the line from Flinders Street to St. Kilda. On the 17th June, 1857, a line from Williamstown to Geelong, thirty-nine miles in length, built by the third of the companies referred to, was declared open, and during the period from 1859 to 1861 lines to Richmond, Windsor, Hawthorn, and Brighton were opened by the Melbourne and Suburban Railway Company, which had been incorporated in 1857 with a capital of £300,000. In the meantime the Government, in addition to providing substantial aid to these companies in the shape of land grants and guarantees of interest, had taken over two unfinished lines and proceeded to complete the work of construction on its own account. These lines, running from Williamstown to Footscray, and from Melbourne to Sunbury, were opened for traffic in 1859. On the 21st October, 1860, the line to Essendon, constructed by the Melbourne and Essendon Railway Company, was opened. In 1865 the Hobson's Bay Company and the Suburban Company were amalgamated under the name of the Melbourne and Hobson's Bay United Railway Company. By the end of the year 1868 the Government had acquired all the railway lines in the State, with the exception of those owned by the amalgamated companies, which lines amounted to a total length of $16\frac{1}{2}$ miles, and which were eventually purchased by the Government in 1878. At the present time the Government railways are divided into seven systems—the South-eastern, the Eastern, the North-eastern, the Northern (including the Midland district lines), the North-western, the Western and South-western, and the Suburban systems.

(a) *The South-eastern system* branches off from the suburban system at Dandenong, and was completed as far as Port Albert, its present terminus, in 1892; a branch line to Outtrim was opened in 1896. (b) *The Eastern system* also leaves the suburban system at Dandenong. The line was opened for traffic as far as Bunyip in 1877, and was extended *via* Moe and Sale, as far as Bairnsdale on the Gippsland lakes, 171 miles from Melbourne, in 1888; branches run to Neerim South, Thorpdale, North Mirboo, and Briarolong. The Eastern system also comprises two extensions to the suburban system, the first running from Croydon to Healesville, with a branch from Lilydale to Warburton, the second running to Upper Fern Tree Gully, with a narrow gauge (2 ft. 6 in.) extension to Gembrook, completed in 1900. (c) *The North-eastern system* comprises the Victorian part of the main interstate line between Melbourne and Sydney, which was opened for traffic as far as Wodonga in 1873, though it was not until ten years later that the bridge over the River Murray was completed, and railway communication between New South Wales and Victoria established. Numerous branches from the main line have been constructed, the principal being the Goulburn Valley line, which was opened to Numurkah in 1881, and to Cobram in 1888, with spur lines to Rushworth, Echuca (connecting *via* the Northern line), Katamatite, Picola, and Tocumwal—the extension to the last-named place being constructed in 1905. A branch to Bright was opened as far as Myrtleford in 1883, and was extended in 1890; a branch to Yea in 1883, with the final extension to Mansfield in 1891; to Tallangatta and to Yackandandah in 1891; and a narrow gauge (2 ft. 6 in.) branch to Whitfield in 1899. (d) *The Northern system* joins the suburban system at Digger's Rest, twenty-one miles from Melbourne. The main line was opened for traffic as far as Bendigo in 1862, and was extended to Echuca in 1864. A large number of branch lines belong to this system. From Carlsruhe a branch runs to Ballarat, *via* Daylesford and Creswick, while another line branches off from Creswick to Maryborough. Between Carlsruhe and Daylesford the line attains a height of 2469 feet above sea-level, being the greatest altitude of any line in Victoria. From Maryborough the line was extended to the north as far as St. Arnaud in 1878, to Donald in 1882, to Birchip in 1893, and to Mildura in 1903; other branches were finally extended to Swan Hill, Sea Lake and Ultima, and were opened in 1890, 1895, and 1900 respectively. Mildura is the most northerly point reached by rail in Victoria, and is situated close to the confluence of the Darling and Murray Rivers. (e) *The North-western line* connects with the suburban system at Rockbank, eighteen and a half miles from Melbourne; it was opened as far as Ballarat, *via* Geelong, in 1862, and was extended in sections *via* Ararat, Stawell, Murtoa, Horsham, and Dimboola as far as Serviceton, on

the South Australian border, on the 19th January, 1887, a junction with the main line to Adelaide being thus effected. The direct line from Melbourne to Ballarat, however, was not completed until February, 1887. Several comparatively short lines branch off from Ballarat, while other branches were opened to Hopetoun and to Goroke in 1894; to Rainbow in 1899; and from Stawell to Grampians in 1905. (f) *The Western and South-western system* was opened up to Geelong in 1857, as stated above. The line was extended to Winchelsea in 1876, to Colac in 1877, to Warrnambool and to Port Fairy in 1890, and was connected with the main line to Serviceton, *via* Hamilton and Ararat, in 1890. An extension to Portland was completed in 1877, and branch lines were opened to Casterton and Coleraine in 1884 and 1888 respectively. (g) *The Suburban system* includes a number of short lines referred to above connecting up the suburbs of Melbourne, and also comprises longer sections of lines radiating from the metropolis in various directions, and thus joining the various main systems with the terminal stations in Melbourne.

Since the year 1899 four narrow gauge (2 ft. 6 in.) lines, with a total mileage of 81½ miles, have been opened for traffic in Victoria; these lines have been built for the purpose of providing a light and cheap means of communication to districts but sparsely populated, and have, in some cases, been constructed on the principle (provided for by the Railway Lands Acquisition Acts 1893 to 1899) of "loading" the lands increased in value by the building of the lines.

(iii.) *Queensland.* Legislative sanction for the construction by the Government of the first railway line in Queensland, from Ipswich to Grandchester, was granted in the year 1863, and on the 25th February in the following year the formality of cutting the first sod was carried out with due ceremony at Ipswich. The line was opened on the 31st July, 1865, and was extended to Toowoomba, seventy-seven miles from Ipswich, in 1867. In the same year a line, thirty miles in length, was opened between Rockhampton and Westwood, extended to Emerald in 1879 and to Longreach in 1892. Branches were opened from Emerald to Clermont and from Emerald to Springsure in 1884 and 1887 respectively. In the meantime the line had been extended from Toowoomba—(a) to the south as far as Wallangarra, on the New South Wales border, in 1887; and (b) to the west, *via* Dalby, Roma, and Mitchell, as far as Charleville, in 1888. An extension from Charleville to Cunnamulla, 503 miles from Toowoomba, was opened in 1898. Communication between Brisbane and Rockhampton was opened up in 1903, and in the same year the South-coast line from Brisbane was extended to Tweed Heads. The first section of the Townsville line, as far as Reid River, a distance of thirty-five miles, was opened in 1880, and was extended to Charters Towers in 1882; to Hughenden in 1887; and to Richmond in 1904; while a further extension to Cloncurry, 173 miles from Richmond, was completed in 1908. The first section of the Mackay line was opened in 1885, and extended to Eton in 1886. The Normanton line, as far as Haydon, a distance of thirty-eight miles, was brought into use in 1889, and extended to Croydon in 1891. In 1885 a line from Cooktown to Palmer's Road, thirty miles in length, was opened for traffic, and an extension to Laura was completed in 1888. The line running from Cairns was commenced in 1887, and was completed as far as Atherton in 1903. Two further extensions to this line are now under construction, one from Atherton, through Herberton, to the Evelyn tableland, a distance of thirty-one miles, and the other from Tolga to the Johnston River, a distance of nineteen miles. The Bowen line was opened to Guthalungra in 1890, and extended to Bobawaba in 1891.

(iv.) *South Australia.* The first railway line constructed in the State of South Australia was the Adelaide City and Port Railway, opened on the 21st April, 1856, the length being seven and a half miles and the gauge 5 ft. 3 in. This line was extended to the Semaphore, a further distance of one and a half miles, in 1878, and is now called the Port line. In 1857 a line from Adelaide, nineteen miles long, reaching as far as Smithfield, was opened for traffic, and was extended to Terowie, *via* Gawler, Roseworthy, and Hamley Bridge in 1880. Terowie is the terminus of the broad gauge line, but from the

main line a narrow gauge (3 ft. 6 in.) line was run to Petersburg in 1881, connection being thus formed with the narrow gauge lines, which had been previously constructed, running from Port Wakefield, Moonata, Port Pirie, and Port Augusta, from which place it is now proposed to construct a transcontinental line by connecting it with Kalgoorlie, on the Western Australian goldfields. From Petersburg a branch to Cockburn on the New South Wales border was opened in 1887, and an extension through New South Wales territory to Broken Hill, a distance of thirty-six miles, was opened by the Silverton Tramway Company in 1888. Another branch from Quorn was opened to Oodnadatta, 688 miles from Adelaide, in 1891. (a) *The Interstate Line*.—The first section of the South Australian part of the interstate line was opened from Adelaide to Aldgate, a distance of twenty-one and three-quarter miles, in 1883, and extended until the Victorian boundary was reached on the 1st January, 1885. In the districts lying to the south of Adelaide, a horse-tramway line, constructed in 1854 between Goolwa and Port Elliott, was extended to Victor Harbour in 1864, and to Strathalbyn in 1869; railway communication was opened up between these districts and Adelaide in 1884. (b) *The Northern Territory Railway*.—In the Northern Territory a survey was made in 1878 for a line between Palmerston and Pine Creek, a distance of 145½ miles, and this line was opened for traffic in 1889; it is proposed to carry it across the continent in a southerly direction to meet the trunk line from Adelaide to the north, which at present has its terminus at Oodnadatta. (c) *Recent Extensions*. On the 14th September, 1906, a line from Tailem Bend to Pinnaroo, 86½ miles in length, was completed. Large areas in the vicinity of this line have since been thrown open for settlement. On the 18th November, 1907, the first section of the Western system from Port Lincoln to Gummins—42 miles long—was opened. In 1908 extensions of existing lines were completed from Largs Junction to Outer Harbour, and from Mitcham to Clapham.

(v.) *Western Australia*. Railway operations commenced in Western Australia with the construction of a private line from Lockeville to Yoganup, a distance of 12 miles, opened by the Western Australian Timber Company in 1871. A line from Geraldton to the copper mining district of Northampton, a length of thirty-four miles, was opened for traffic on the 26th July, 1879. In the following year no further lines were opened, but on the 1st March, 1881, the Fremantle-Guilford line, nineteen and a half miles long, was brought into use, to which line extensions were made to Chidlow's Well, opened on the 11th March, 1884, and to York and Beverley in 1885 and 1886 respectively, while branch lines to Northam and to Newcastle followed in October, 1886, and January, 1888. (a) *The South-Western Railway*.—On the 12th March, 1891, a third separate system was added by the opening of a line running sixteen miles inland from Bunbury, and this line was connected with the other systems in the State in 1893, by the opening of a line 110 miles in length from East Perth Junction to Picton Junction, near Bunbury. Further extensions and branches were opened in the next two years, and on the 30th June, 1895, 573 miles had been opened for traffic. (b) *The Eastern Goldfields Line*.—The Goldfields railway system was commenced by the construction of the line from Northam to Southern Cross, a distance of 170 miles, opened in 1894. On the 1st January, 1897, communication was established with Kalgoorlie, and the line was extended to Menzies on the 13th February, 1899, and to Laverton, 595½ miles from Perth, on the 1st February, 1905. (c) *The Northern Line*.—In the meantime the Geraldton line had been connected with Perth by the Midland Railway, constructed by a private company under a land grant concession, and on the 21st November, 1894, line from Mullewa Junction, near Geraldton, was opened, passing through pastoral country for a distance of about fifty-seven miles in the direction of the Murchison fields. In the Murchison district an extension as far as Nannine was opened for traffic on the 1st June, 1903. On the 1st July, 1889, the West Australian Land Company opened for traffic a line which had been constructed, 243 miles in length, from Albany to Beverley, the southern terminus of the eastern system, under a land grant concession of 12,000 acres per mile of line constructed. The lands and railways belonging to this company

were acquired by the Government by purchase on the 1st December, 1896, at a price of £1,100,000. This line is now known as the Great Southern line, and from it several spur lines serving agricultural areas have been recently constructed. (d) *The Water Supply Question.*—Reference may here be made to the fact that the main natural difficulty with which railway engineers have had to contend in Western Australia has been found to be the scarcity of water in practically the whole of the country traversed by their system. Excepting only the South-Western lines, the water supply for the locomotives is generally obtained from dams or reservoirs which are dependent upon the rainfall. The Railway Department on the Eastern and Eastern Goldfield Railway expended over £180,000 in dams prior to the Goldfields water scheme water being available, and a large condensing plant capable of condensing 100,000 gallons of water daily, was erected at Coolgardie in 1899. A sextuple multiple effect condensing plant for sea water was laid down at Geraldton in 1904, and a water-softening plant, capable of softening 2000 gallons of water per hour, was erected at Laverton in 1906. The Goldfields water scheme, however, now renders the whole of the lines from Midland Junction to Kanowna independent of local conservation.

(vi.) *Tasmania.* In Tasmania an agitation had long existed for the construction of a line of railway from Hobart to Launceston, and, although Parliament granted a vote of £5000 for the survey of this line as far back as the year 1863, it was not formally opened for traffic until November, 1876, from which time the line was continuously worked by the Tasmanian Main Line Railway Company up to October, 1890, when it was purchased by the Government for the sum of £1,106,500. In the meantime the construction of a line between Launceston and Deloraine, forty-five miles in length, had been commenced, and was opened on the 10th February, 1871. This line was originally projected by a private company—the Launceston and Western Railway Company—but a large part of the capital was raised by the Government, and, the company becoming involved in financial difficulties, the line was taken over by the State in 1872. In 1884 a length of forty-eight miles of line was opened for traffic by the Emu Bay Railway Company, extending from Emu Bay to Mount Bischoff and to Waratah. Branches from the main line between Hobart and Launceston were opened from Parattah to Oatlands, a distance of four and a half miles, in 1885, and from Bridgewater to Glenora, twenty-four and a half miles in length, in 1888. The line from Launceston to Scottsdale, a distance of forty-seven miles, was brought into use on the 9th August, 1889. The lines from Deloraine to Devonport and from Conara to St. Mary's were opened in 1885 and 1886 respectively. Several years elapsed before any further extensions were taken in hand. In 1892 the Government submitted several railway proposals to Parliament, and, having obtained the necessary authority, railway construction was once more resumed. The railway systems of Tasmania are now fairly well developed, and, though their construction has been slow, it must be remembered that they have had to face severe competition with sea-borne traffic, and that, owing to the limited area and population of the State, there are no large inland centres to support the traffic on the railways.

7. *Length and Gauge of Railway System in each State.*—A map shewing the State railway lines, and also the private lines open to the public for general traffic, in the different States of the Commonwealth is given at the end of this sub-section. In all the States the Government railways are grouped, for the purpose of convenience of administration and management, into several divisions or systems, some of which have already been briefly referred to above in dealing with the history of construction of the railways. The subjoined summary shews concisely the gauge and length of the main and branch lines included in each division or system of the different States of the Commonwealth for the year ended the 30th June, 1908:—

GOVERNMENT RAILWAYS, 1908.

| Particulars. | Length. | | Gauge. | |
|--|---------|-----|--------|--|
| | Miles. | ft. | in. | |
| 1. NEW SOUTH WALES. | | | | |
| (i.) The Northern line and branches— | | | | |
| (a) Main line. Strathfield-Wallangarra | 489 | 4 | 8½ | |
| (b) Branch lines | 408 | 4 | 8½ | |
| (ii.) The Grafton-Tweed line | 149 | 4 | 8½ | |
| (iii.) The Western line and branches— | | | | |
| (a) Main line. Granville-Bourke | 495 | 4 | 8½ | |
| (b) Branch lines | 672 | 4 | 8½ | |
| (iv.) The Southern line— | | | | |
| (a) Main line. Granville-Wodonga | 381 | 4 | 8½ | |
| (b) Branch lines | 701½ | 4 | 8½ | |
| (v.) The South-coast (Illawarra) line— | | | | |
| (a) Main line. Sydney to Nowra... .. | 93 | 4 | 8½ | |
| (b) Branch lines | 7 | 4 | 8½ | |
| (vi.) Suburban lines | 37 | 4 | 8½ | |
| (vii.) Broken Hill line. Broken Hill-Tarrawingee | 40 | 4 | 8½ | |
| Total | 3,472½ | | | |
| 2. VICTORIA. | | | | |
| (i.) The South-eastern system— | | | | |
| (a) Main lines. Dandenong-Port Albert, Aspendale-Stony Point | 145 | 5 | 3 | |
| (b) Branch lines | 14 | 5 | 3 | |
| (ii.) The Eastern system— | | | | |
| (a) Main lines. Dandenong-Bairnsdale, Bayswater-Gembrook, Croydon-Healesville... .. | 18 | 2 | 6 | |
| (b) Branch lines | 202 | 5 | 3 | |
| | 97 | 5 | 3 | |
| | 3 | 2 | 6 | |
| (iii.) The North-eastern system— | | | | |
| (a) Main line. Craigieburn-Wodonga | 171 | 5 | 3 | |
| (b) Branch lines | 30½ | 2 | 6 | |
| | 440½ | 5 | 3 | |
| (iv.) The Northern system— | | | | |
| (a) Main line. Digger's Rest-Echuca | 135 | 5 | 3 | |
| (b) Branch lines | 925 | 5 | 3 | |
| (v.) The North-western system— | | | | |
| (a) Main line. Rockbank-Serviceton | 266 | 5 | 3 | |
| (b) Branch lines | 195 | 5 | 3 | |
| (vi.) The Western and South-western system— | | | | |
| (a) Main line. Werribee-Portland | 272 | 5 | 3 | |
| (b) Branch lines | 30 | 2 | 6 | |
| | 264 | 5 | 3 | |
| (vii.) The Suburban system— | | | | |
| Including the lines to Aspendale, Dandenong, Bayswater, Croydon, Eltham, Craigieburn, Digger's Rest, Rockbank, and Werribee | 188 | 5 | 3 | |
| Total | 3,396 | | | |

| Particulars. | | Length. | Gauge. |
|-----------------------------------|--|---------|---------|
| | | Miles. | ft. in. |
| 3. QUEENSLAND. | | | |
| (i.) The Southern division— | | | |
| (a) | The Southern line. Brisbane-Wallangarra ... | 233 | 3 6 |
| (b) | The Western line. Gowrie Junction-Cunnamulla ... | 495 | 3 6 |
| (c) | The Nth.-coast line. Northgate Junction-235 mls. 14 chs. | 229 | 3 6 |
| (d) | The South-coast line. Yeerongpilly-Tweed Heads ... | 69 | 3 6 |
| (e) | Suburban lines ... | 76 | 3 6 |
| (f) | Branch lines ... | 607 | 3 6 |
| (ii.) The Central division— | | | |
| (a) | The Coast line. 235 miles 14 chains-Rockhampton ... | 161 | 3 6 |
| (b) | The Central line. Archer Park-Longreach ... | 429 | 3 6 |
| (c) | Branch lines ... | 233 | 3 6 |
| (iii.) The Northern division— | | | |
| (a) | Mackay line ... | 42 | 3 6 |
| (b) | Bowen line ... | 48 | 3 6 |
| (c) | The Great Nthn. Rlwy. Townsville-Winton branches | 556 | 3 6 |
| (d) | Cairns line ... | 69 | 3 6 |
| (e) | Cooktown line ... | 68 | 3 6 |
| (f) | Normanton line ... | 96 | 3 6 |
| Total ... | | *3,411 | ... |
| 4. SOUTH AUSTRALIA. | | | |
| (i.) The Midland system— | | | |
| (a) | Main line. Adelaide-Terowie ... | 140 | 5 3 |
| (b) | Branch lines ... | 101 | 5 3 |
| (ii.) The Northern system— | | | |
| (a) | Terowie-Oodnadatta ... | 548 | 3 6 |
| (b) | Other lines ... | 455 | 3 6 |
| | | 5 | 5 3 |
| (iii.) The Southern system— | | | |
| (a) | Main line. Adelaide to Serviceton ... | 194½ | 5 3 |
| (b) | Branch lines ... | 158½ | 5 3 |
| (iv.) The South-eastern system— | | | |
| (a) | Wolseley-Mount Gambier ... | 112 | 3 6 |
| (b) | Branch lines ... | 113 | 3 6 |
| (v.) | Port Broughton line ... | 10 | 3 6 |
| (vi.) The Western system— | | | |
| | Port Lincoln-Cummins ... | 42 | 3 6 |
| Total ... | | 1,879½ | ... |
| 5. NORTHERN TERRITORY. | | | |
| | Palmerston-Pine Creek ... | 145½ | 3 6 |
| 6. WESTERN AUSTRALIA. | | | |
| (i.) Eastern railway— | | | |
| (a) | Main line. Fremantle-Beverley ... | 111 | 3 6 |
| (b) | Branch lines ... | 94½ | 3 6 |
| (ii.) Eastern Goldfields railway— | | | |
| (a) | Main line. Northam-Laverton ... | 520 | 3 6 |
| (b) | Branch lines ... | 136½ | 3 6 |
| (iii.) South-western railway— | | | |
| (a) | Main line. Perth-Bunbury ... | 115 | 3 6 |
| (b) | Branch lines ... | 281½ | 3 6 |
| (iv.) Great Southern railway— | | | |
| (a) | Beverley-Albany Jetty ... | 243 | 3 6 |
| (b) | Branch lines ... | 86½ | 3 6 |
| (v.) Northern railway— | | | |
| (a) | Main line. Geraldton-Nannine ... | 310 | 3 6 |
| (b) | Branch lines ... | 45 | 3 6 |
| Total ... | | 1,943 | ... |

* This includes 52 miles from Inglewood to Goondiwindi opened on the 13th October, 1908.

| Particulars. | Length. | | Gauge. |
|---|-----------------------|---------|--------|
| | Miles. | ft. in. | |
| 7. TASMANIA. | | | |
| (i.) Main line. Hobart-Evandale Junction | 122 $\frac{3}{4}$ | 3 6 | |
| (ii.) Derwent Valley line. Bridgewater-Glenora | 24 $\frac{1}{4}$ | 3 6 | |
| (iii.) Apsley line. Brighton Junction-Apsley | 26 | 3 6 | |
| (iv.) Parattah-Oatlands line | 4 $\frac{1}{2}$ | 3 6 | |
| (v.) Fingal line. St. Mary's-Conara | 46 $\frac{3}{4}$ | 3 6 | |
| (vi.) Western line. Launceston-Burnic | 111 $\frac{1}{2}$ | 3 6 | |
| (vii.) Chudleigh line | 12 $\frac{1}{2}$ | 3 6 | |
| (viii.) Scottsdale line. Launceston-Scottsdale | 47 $\frac{1}{2}$ | 3 6 | |
| (ix.) Sorell-Bellerive line | 14 $\frac{1}{2}$ | 3 6 | |
| (x.) Zeehan line. Regatta Point-Zeehan | 29 $\frac{1}{2}$ | 3 6 | |
| (xi.) North-east Dundas tramway. Zeehan-Williamsford | 19 | 2 0 | |
| (xii.) Comstock tramway | 4 $\frac{1}{2}$ | 2 0 | |
| Total | 463 | ... | |
| Grand total of Government railways in the Commonwealth | *14,710 $\frac{1}{2}$ | ... | |

* Including 52 miles from Inglewood to Goondiwindi, Queensland, opened 13th October, 1908.

8. Administration and Control of Government Railways.—In each State of the Commonwealth the policy has now been established that the railway should be kept under the control of the Government. This policy, as has been shewn, was early actualised in Australia, and, excepting in cases presenting unusual circumstances, may be regarded as the settled policy of the country. It may here be observed that for many years past nationalisation of railways throughout Europe has been a feature of the development of railway policy, and so far there is no sign of any movement in an opposite direction. Indeed it may be said that the Governments have recognised the supreme importance of a railroad policy, not only as an element in the industrial, but even in the political life of nations, and have felt that nothing short of complete ownership and direct management of the railroads would give them the power which, for national reasons, they must exert. And in America the modern tendency is to so condition the freights by Governmental action as to give at least a quasi-national character to the railways.

(i.) *New South Wales.* Prior to the year 1833 the control of the State railways in New South Wales was vested in the Minister for Works, under the provisions of the Railways Act of 1858, the actual management being in the hands of a Commissioner. In 1888, however, the Act referred to was repealed by a new Act, the object of which was to improve the administration and to free it from political influences. Under this Act, as amended in 1901, three Commissioners were appointed for a period of seven years, but in 1906 an amending Act was passed, which provides for the appointment of a Chief Commissioner with supreme power, an Assistant Commissioner for Railways, and an Assistant Commissioner for Tramways. The Chief Commissioner is required to present an annual report to Parliament, through the Minister for Railways, setting forth an account of his proceedings, and of the revenue and expenditure during the previous year. New lines are constructed by the Railway and Tramway Construction Branch of the Public Works Department, and on completion are handed over to the control of the Chief Commissioner.

(ii.) *Victoria.* In consequence of general dissatisfaction in regard to the management of the railways by political heads, a new Railway Act was passed and came into force on the 1st November, 1883. Under its provisions the management and control of the State railways were placed in the hands of three Commissioners, who supervised the construction of new lines as well as the general management of lines already

open for traffic. On the 1st January, 1892, the duty of the construction of new lines was transferred to the Board of Land and Works, and the Minister, under the provisions of the Railways Act of 1891, was given greater powers to interfere in matters of policy. In 1895 the Government appointed a Board to inquire into and report upon the general working of the Railway Department, and as a result of their report the Railways Act of 1896 was passed. The management was again placed in the hands of one Commissioner until the year 1903, when the Victorian Railway Commissioners Act was passed, and the administration was again placed in the hands of three Commissioners.

Proposals for the construction of new lines are in every case, in which the estimated cost is in excess of £20,000, investigated by the Parliamentary Standing Committee on Railways, whose recommendation is submitted to the Legislature. Any new line authorised by Parliament is constructed under the supervision of the Chief Engineer for Railway Construction, who is responsible to the Minister of Railways for the time being, and is not subject to the control of the Commissioners. New lines are constructed under the authority of the Railway Lands Acquisition Acts 1893 to 1899.

(iii.) *Queensland.* The first Act referring to the construction of railways, passed by the Queensland Legislature in 1863, provided for the appointment of a Commissioner of Railways, who was to be the permanent head of the Railway Department, but was, however, also to be subordinate, as regards all matters of administration, to the Minister in charge of the railways for the time being. This arrangement was continued until the year 1888, when an Act was passed providing for the appointment of three Commissioners invested with full powers as to the administration, management, and construction of the railways, the control of which was thus removed from political influence. The functions of a Minister for Railways were not abolished, but they were so defined and limited that the Minister became in effect an intermediary between the Commissioners and Parliament, to which body the Commissioners were bound to make an annual report, setting forth an account of their proceedings and a financial statement for the previous year. The Railways Act Amendment Act of 1896 again provided for the appointment of one Commissioner only, for a term not exceeding three years, extended in 1902 to a maximum term of seven years. Under the Act of 1896 the Commissioner is required to prepare an annual report of the Railway Department. New lines are constructed by the Commissioner under the Railways Act of 1906. Under this Act the ratepayers in any district in which a new line is constructed are liable for the amount of any deficiency in case the earnings in any year are less than the working expenses, together with interest at the rate of 3 per cent. on the cost of construction. The separation from each other by long distances of some of the railway lines in Queensland puts difficulties in the way of their economical administration and supervision, since it is found necessary to maintain, in connection with each of the principal detached lines, a separate staff of engineering and managing officials.

(iv.) *South Australia.* The Railway Clauses Consolidation Act, passed in South Australia in March, 1847, was the first Act passed in Australia referring to the construction of railways; its provisions, however, contained many obsolete clauses of English railway legislation, and were soon modified. In 1887 an Act to make better provision for the construction, maintenance, and management of railways was passed, and came into force on the 1st June, 1888; it removed the control of the railways from political influence and provided for the appointment of three Commissioners, into whose hands the management and the supervision of the railways passed. The Act of 1887 was, however, amended by the Railway Commissioners Act of 1894, which provides for one Commissioner only, assisted by a Board of Advice. Under the Act of 1894 the Commissioner has the same powers as were vested in the three Commissioners under the Act of 1887. Further amendments were made in the years 1902 and 1906, but since the Act of 1894 was passed the management, maintenance, and construction of the railways have remained in the hands of one Commissioner, who is required to present to Parliament an annual report of his proceedings, and of the revenue and expenditure during the previous year.

(v.) *Western Australia.* From the time of the inception of railways in this State until the granting of responsible government in 1890, the construction, maintenance, and control of all railways were in the hands of an official holding the title of Commissioner of Railways, and having a seat in the Executive Council. This official was invested with very extensive powers for all purposes connected with railways, and had also to supervise the safe working and the charges made by private railway owners. On the institution of responsible government the office of Commissioner was converted into a Ministerial one; the active management was placed in the hands of an officer styled General Manager of Railways, while construction works on new lines were carried out by the Department of Public Works. In 1902 a Bill was introduced into Parliament providing for the appointment for a term of five years of a Railway Commissioner to be free from political influence. This Bill received the Vice-regal assent on the 20th December, 1902. The former Railway Acts, of which the Act in question was an amendment, continued to remain in force, with the result that certain anomalies and ambiguities arose, in consequence of which a Consolidating Government Railways Act was passed in 1904. Under its provisions the administration of all Government railways was placed in the hands of the Commissioner, who was relieved from the supervision of private railways. The construction of new railways or of extensions is left, as formerly, in the hands of the Minister controlling the Department of Public Works. The Act of 1904 was amended in certain details in 1907.

(vi.) *Tasmania.* The law relating to the control and management of the Tasmanian Government railways was amended and consolidated by the Railway Management Act of 1891, which has in turn been amended by Acts passed in 1893, 1896, and 1901. The control and construction of Government railways is vested in a responsible Minister, the active management and maintenance being in the hands of an officer styled the General Manager, who is subject to such directions as he may receive from the Minister.

9. **Lines under Construction, and Authorised and Proposed Lines.**—The following statement gives particulars up to the 30th June, 1908, of the mileage of Government railways (a) under construction, and (b) authorised for construction but not commenced:—

MILEAGE UNDER CONSTRUCTION AND AUTHORISED, 30th JUNE, 1908.

| Particulars. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | Cwth. |
|----------------------------|--------|------|---------|------|------|------|-------|
| Mileage under construction | 185½ | 28½ | 360 | 10 | 101 | ... | 685½ |
| Mileage authorised | 391½ | 66½ | 96 | 48½ | 304 | ... | 906½ |

(i.) *Lines under Construction.* In spite of the great extension of State railways which has taken place since the year 1875 throughout the Commonwealth, there are still, in some of the States, tracts of country of immense area, which are as yet practically undeveloped, and in which little in the nature of permanent settlement has been accomplished; the general policy in the States is to extend the existing lines inland, in the form of light railways, as settlement increases, and although it is true that lines which were not likely to be commercially successful in the immediate future have been constructed from time to time, for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view. (a) In *New South Wales* the lines under construction are chiefly of the "pioneer" class, and are made with a view to affording railway communication over level country to districts in which the traffic would not warrant the expenditure necessary to provide thoroughly equipped lines. As the traffic increases the permanent way is strengthened in order to allow the heavy types of engines to run over it. It is probable that railway extension in New South Wales, in the near future, will be mainly confined to lines of the "pioneer" class. One of the most important lines now under construction is that from Maitland to Dungog, a distance of 32½ miles. The extension of this line as far as Grafton, a further distance of 278 miles,

has been authorised, and, when completed, will form part of an alternative main route between Newcastle and Brisbane. Other lines under construction are as follows:—Manilla to Barraba, 32 miles; Mudgee to Gulgong, 20½ miles; Aria Park to Barellan, 41 miles; Belmore to Chapel-road, 3½ miles; Cryon to Walgett, 34 miles; and Trundle to Tullamore, 22½ miles. (b) *Victoria*. In this State the following lines were under construction by the Board of Land and Works on the 30th June, 1908:—Moe to Walhalla, a distance of 26½ miles; and an extension, 2½ miles long, across the Murray River to the township of Tocumwal in New South Wales. It is proposed to construct a line from Ouyen to Kow Plains, a distance of 55½ miles, for the purpose of opening up about 650,000 acres to settlement in the western Mallee. (c) *Queensland*. At the end of the year 1907-8 two important railways were nearing completion, viz., Inglewood to Goondiwindi, 53 miles; and Julia Creek to Cloncurry, 83 miles. In addition the following lines had been commenced on the day labour system—from Kānnangur to Blackbutt, 28 miles; from Goondiwindi to Talwood, 56 miles; from Caboolture to Woodford, 18 miles; the Boyne Valley line, 52 miles; New Zealand Gully to Yeppoon, 20 miles; Atherton to Evelyn, 31 miles; and Tolga to Johnstone River, 19 miles. (d) *South Australia*. In this State the only line under construction on the 30th June, 1908, was the Port Lincoln extension north of Cummins, 10 miles in length, the gauge being 3 feet 6 inches. (e) In *Western Australia* the following lines were in course of construction by the Public Works Department on the 30th June, 1908:—Hopetoun to Ravensthorpe, 34½ miles; Donnybrook to Preston, second section, 23 miles; Jarrahwood to Nannup, 17 miles; and Narrogin to Wickiepin, 26½ miles.

(ii.) *Lines Authorised for Construction*. (a) In *New South Wales*, in addition to the North-coast railway extension from Dungog to Grafton, a distance of 278 miles, the following lines had been authorised for construction up to the 30th June, 1908:—Narromine to Peak Hill, 36 miles; Lockhart to Clear Hills, 50½ miles; and Gulgong to Dunedoo, 26½ miles. (b) In *Victoria* the following lines were authorised during 1907:—Nyora to Wollamai, 17½ miles; Rupanyup to Marnoo, 15½ miles; and Alexandra Road to Alexandra, 4½ miles. (c) *Queensland*. In addition to the new lines upon which work has been commenced, the following extensions have been approved by Parliament:—Blackall to 115 Miles, 44 miles; and Dalby towards Tara, 52 miles. (d) In *South Australia* the construction of lines from Laura to Booleroo Centre, on the 3 feet 6 inch gauge, and from Gawler to Angaston, on the 5 foot 3 inch gauge, were authorised during 1907. (e) In *Western Australia* five lines having a total length of 304 miles were authorised for construction up to the 30th June, 1908. These lines were—from Widge-mooltha to Norseman, 57 miles; from Newcastle to Bolgart, 24 miles; from Mount Magnet to Black Range, 93 miles; from Pinjarra to Marrinup, 15 miles; and from Port Hedland to Marble Bar, 115 miles.

(iii.) *Proposed Transcontinental Lines*. (a) A proposal which has recently received considerable attention is to connect the railways of the eastern and southern districts of Australia with the Western Australian lines by the construction of a line between Port Augusta, in South Australia, and Kalgoorlie, on the Western Australian goldfields, a distance of 1100 miles. The Transcontinental Railway Bill, passed in 1907 by the Federal Houses of Parliament, provided for the expenditure of a sum of £20,000 for a preliminary survey of the proposed line, the estimated cost of construction of which amounts to £4,559,000. This survey was commenced in 1908, and was nearing completion in February, 1909. The greater part of the country which it is proposed to traverse is practically unoccupied owing to the scarcity of permanent surface water, but there are otherwise no engineering difficulties in connection with the construction of this line, which it is claimed would be of immense benefit in the expedition of the European mails to the southern and eastern parts of the continent, and, if occasion should arise, in facilitating the transport of troops. (b) Another proposal is to extend the main northern line from Adelaide, which at present terminates at Oodnadatta, as far as Pine Creek, the southern terminus of the Northern Territory line from Palmer-

ston. The distance between Oodnadatta and Pine Creek by the route followed by the telegraph wire is 1140 miles, and it is claimed that, if a railway line were constructed between these two places, it would be practicable for passengers and mails to reach London from Adelaide in seventeen days, *via* Port Darwin and the trans-Siberian railway. In the course of the year 1896 offers were made on behalf of various syndicates to construct this line, but the Government was not at that time prepared to recommend the acceptance of any offer based upon the land grant or guarantee system. In 1902, however, the Trans-continental Railway Act was passed, and the Government invited tenders for the construction of 1063 miles of 3 ft. 6 in. line on the land grant system, to be built at the rate of at least 100 miles in any one year, the grant of land offered amounting to nearly 80,000,000 acres. No tenders were accepted and subsequent offers have been refused. The country through which this line would pass presents no great engineering difficulties; for the most part it is one vast plain, with an occasional sand ridge or a watercourse.

10. **Cost of Construction and Equipment of Government Railways.**—The total cost of construction and equipment of the State railways of the Commonwealth at the 30th June, 1908, amounted to £139,988,015, or to an average of £9550 per mile open for traffic. Particulars as to the capital expenditure incurred in each State are given in the following table:—

**GOVERNMENT RAILWAYS.—COST OF CONSTRUCTION AND EQUIPMENT TO THE
30th JUNE, 1908.**

| State. | Length of Line Open. | Total Cost of Construction and Equipment. | Average Cost per Mile Open. | Cost per Head of Population. |
|---------------------------|----------------------|---|-----------------------------|------------------------------|
| | Miles. | £ | £ | £ |
| New South Wales | 3,472½ | 45,683,484 | 13,156 | 28.94 |
| Victoria | 3,396 | 41,928,567 | 12,346 | 33.39 |
| Queensland | 3,359 | 22,575,603 | 6,721 | 40.90 |
| South Australia | 1,879½ | 13,909,635 | 7,402 | 35.24 |
| Northern Territory | 145½ | 1,180,174 | 8,115 | 327.82 |
| Western Australia | 1,943 | 10,732,941 | 5,524 | 40.41 |
| Tasmania | 463 | 3,977,611 | 8,591 | 22.04 |
| Commonwealth | 14,658½ | 139,988,015 | 9,550 | 33.09 |

It will be seen that the lowest average cost per mile open is in Western Australia, and is only £5524, which is less than one-half of the highest average cost, namely, £13,156 in New South Wales, compared with an average of £9550 for the whole Commonwealth. In Western Australia there have been comparatively few engineering difficulties to contend with, and also the system has been adopted in that State of giving contractors the right to carry traffic during the period of their contracts, with the result that, at all events in all goldfields railway contracts, the cost of construction has been considerably lessened.

(1.) *Reduction of Cost per Mile in Recent Years.* The average cost per mile of the lines constructed lately in the Commonwealth is very much less than the figure given in the above table, in consequence of the construction of light "pioneer" lines, which have already been referred to, and which it was originally considered in New South Wales could be laid down at a cost of £1750 per mile (exclusive of stations and bridges). It should also be remembered that in the early days of railway construction there were considerable engineering difficulties to overcome, and that labour was scarce and dear. Since 1891 over one thousand miles of the "pioneer" lines have been opened in New South Wales, the average cost ranging from about £2000 to £7500 per mile, according to

the difficulties met in the country traversed. The lowest cost per mile for any line previously constructed had been that of the line from Nyngan to Cobar, the average cost of which was £3736. In Victoria also the cost of construction has been greatly reduced in recent years. The total cost to the 30th June, 1908, of the narrow gauge (2 ft. 6 in.) lines, having a length of eighty-one and a half miles, was only £169,987, which gives an average cost per mile of only £2035. In the other States also the cost of construction per mile has been reduced by building light railways as cheaply as possible. Fairly substantial permanent way is laid down with reduced ballast, and, as settlement progresses and traffic increases, the road is strengthened and the stations and siding accommodation enlarged. The subjoined table gives examples of some of the more expensive lines, most of which were built in the early days, while the next succeeding table gives instances of lines which have been constructed in more recent years at a comparatively small cost per mile.

GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT LARGE CAPITAL EXPENDITURE PER MILE OPEN.

| Line. | Gauge. | | Length. Miles. | Total Cost. | Average Cost per Mile. | Date of Opening. |
|--------------------------|--------|-----|-------------------|-------------|------------------------------|---------------------|
| | ft. | in. | | £ | £ | |
| NEW SOUTH WALES— | | | | | | |
| Penrith to Bathurst ... | 4 | 8½ | 112½ | 2,737,329 | 24,410 | 1876 |
| Sydney to Kiama ... | 4 | 8½ | 72½ | 2,016,003 | 27,766 | 1887 |
| Homebush to Waratah ... | 4 | 8½ | 95½ | 2,835,967 | 29,700 | 1887 |
| VICTORIA— | | | | | | |
| Melbourne to Bendigo ... | 5 | 3 | 101 | 4,832,243 | 47,896 | 1862 |
| Geelong to Ballarat ... | 5 | 3 | 45½ | 1,898,687 | 35,683 | 1862 |

GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT SMALL CAPITAL EXPENDITURE PER MILE OPEN.

| Line. | Gauge. | | Length. Miles. | Total Cost. | Average Cost per Mile. | Date of Opening. |
|----------------------------------|--------|-----|-------------------|-------------|------------------------------|---------------------|
| | ft. | in. | | £ | £ | |
| NEW SOUTH WALES— | | | | | | |
| Parkes to Condobolin ... | 4 | 8½ | 62½ | 129,796 | 2,066 | 1898 |
| Dubbo to Coonamble ... | 4 | 8½ | 95½ | 230,254 | 2,402 | 1903 |
| VICTORIA— | | | | | | |
| Wangaratta to Whitfield ... | 2 | 6 | 30½ | 38,857 | 1,274 | 1899 |
| Strathmerton to Tocumwal ... | 5 | 3 | 9½ | 17,791 | 1,806 | 1905 |
| Birchip to Woomelang ... | 5 | 3 | 26½ | 38,700 | 1,463 | 1899 |
| SOUTH AUSTRALIA— | | | | | | |
| Port Lincoln to Cummins ... | 3 | 6 | 42 | 91,587 | 2,187 | 1907 |
| Mount Gambier to Narracoorte ... | 3 | 6 | 63½ | 211,610 | 3,330 | 1887 |
| QUEENSLAND— | | | | | | |
| Dalby to Bell ... | 3 | 6 | 23½ | 28,677 | 1,220 | 1906 |
| Hughenden to Richmond ... | 3 | 6 | 70½ | 110,779 | 1,574 | 1904 |
| WESTERN AUSTRALIA— | | | | | | |
| Southern Cross to Kalgoorlie ... | 3 | 6 | 138½ | 235,718 | 1,702 | 1897 |
| Mullewa to Cue ... | 3 | 6 | 197 | 266,022 | 1,350 | 1898 |

The comparisons afforded in this table are subject to certain limitations inasmuch as the figures in each cost represent the total cost to date, and the cost is naturally greater in the case of the older lines. Further, the figures given represent the cost of construction only (i.e., are exclusive of cost of equipment), and cannot therefore be directly compared with the average cost given on page 705.

(ii.) *Proposed Adoption of Special Locomotives for Cheap Pioneer Lines.* The adaptation of the steam locomotive to the working of steep gradients and sharp curves has progressed during late years, so that very steep gradients, which were at one time considered to be only workable by a rack or grip rail with special complicated engines running at very slow speeds, are now being worked by adhesion locomotives. In view of the great importance of supplying a cheap and effective pioneer railway service to many parts where the steep and broken nature of the country would involve great expenditure on lines built to suit the standard classes of locomotives, the Standing Committee on Railways in Victoria has considered the advisability of adopting a special form of geared locomotive which would not be suitable for high speeds, but which could be worked on steep gradients and on curves of small radius. It is suggested that by the adoption of locomotives of this type considerable saving in cost could be made, due to (a) shortening of distance by use of steeper grades in places where easier grades would necessitate long detours. (b) Reduction of sub-grade works, *i.e.*, earthworks, culverts, trestles, etc., by use of steeper grades and sharper curves to keep the formation nearer to the natural surface. (c) Cheaper track by using lighter rails and less ballast than necessary for standard adhesion locomotives.

(iii.) *Capital Cost of Construction and Equipment, Total and per Mile Open, 1901-8.* The increase in the total capital cost of construction and equipment of Government railways in each State and in the Commonwealth on the 30th June in each year, from 1901 to 1908, inclusive, is shewn in the following table:—

**GOVERNMENT RAILWAYS.—CAPITAL COST OF CONSTRUCTION AND EQUIPMENT,
1901 to 1908.**

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. |
|-------------|------------------------|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|
| TOTAL COST. | | | | | | | | |
| N.S.W. | 38,932,781 | 40,565,073 | 41,654,977 | 42,288,517 | 43,062,550 | 43,626,063 | 44,700,230 | 45,683,484 |
| Vict. ... | 40,145,404 | 40,613,784 | 40,974,493 | 41,216,703 | 41,278,045 | 41,393,037 | 41,533,136 | 41,928,567 |
| Qld. ... | 19,739,495 | 20,119,143 | 20,302,177 | 20,887,585 | 21,610,980 | 21,741,226 | 21,839,081 | 22,575,603 |
| S.A. ... | 13,156,291 | 13,275,037 | 13,400,796 | 13,517,727 | 13,587,406 | 13,610,520 | 13,699,029 | 13,909,685 |
| N. Ter. | 1,170,484 | 1,160,757 | 1,175,056 | 1,180,584 | 1,179,059 | 1,180,424 | 1,180,395 | 1,180,174 |
| W.A. ... | 7,098,239 | 7,410,426 | 8,141,782 | 8,955,929 | 9,308,458 | 9,965,940 | 10,300,938 | 10,732,941 |
| Tas. ... | 3,799,098 ¹ | 3,840,747 ¹ | 3,883,729 ¹ | 3,901,414 | 3,920,508 | 3,926,713 | 3,943,359 | 3,977,611 |
| Cwth. | 124,041,792 | 126,984,967 | 129,533,010 | 131,948,459 | 134,448,006 | 135,448,923 | 137,196,168 | 139,988,015 |

COST PER MILE OPEN.

| | £ | £ | £ | £ | £ | £ | £ | £ |
|-----------|--------------------|--------------------|--------------------|--------|--------|--------|--------|--------|
| N.S.W. | 13,690 | 13,405 | 13,270 | 12,889 | 13,125 | 12,869 | 12,945 | 13,156 |
| Vict. ... | 12,402 | 12,300 | 12,112 | 12,191 | 12,162 | 12,197 | 12,235 | 12,346 |
| Qld. ... | 7,047 | 7,183 | 7,489 | 7,134 | 6,989 | 6,931 | 6,962 | 6,721 |
| S.A. ... | 7,577 | 7,646 | 7,718 | 7,785 | 7,783 | 7,797 | 7,491 | 7,402 |
| N. Ter. | 8,049 | 7,982 | 8,080 | 8,118 | 8,104 | 8,117 | 8,117 | 8,115 |
| W.A. ... | 5,239 | 5,449 | 5,371 | 5,812 | 6,111 | 6,182 | 5,840 | 5,524 |
| Tas. ... | 8,304 ¹ | 8,317 ¹ | 8,411 ¹ | 8,449 | 8,476 | 8,490 | 8,526 | 8,590 |
| Cwth. | 9,861 | 9,895 | 9,893 | 9,792 | 9,795 | 9,754 | 9,669 | 9,550 |

1. To the 31st December, 1901, 1902, and 1903 respectively.

(iv.) *Loan Expenditure on Railways and Tramways, 1901 to 1908.* The subjoined table shews the total loan expenditure on Government railways and tramways (including lines both open and unopen) in each State during each financial year from 1901 to 1908. Figures shewing loan expenditures on railways only are not available:—

GOVERNMENT RAILWAYS AND TRAMWAYS.—LOAN EXPENDITURE, 1901 to 1908.

| State. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| N. S. W. | 2,243,672 | 1,683,755 | 805,520 | 501,709 | 529,251 | 421,741 | 1,363,314 |
| Vic. ... | 483,325 | 371,330 | 258,090 | 171,837 | 77,968 | 73,843 | 249,646 |
| Qld. ... | 751,451 | 695,632 | 388,255 | 119,651 | 157,537 | 554,783 | 885,070 |
| S. A. ... | 121,907 | 143,970 | 120,152 | 101,195 | 70,451 | 47,121 | 55,510 |
| W. A. | 578,985 | 1,059,418 | 443,339 | 348,327 | 219,937 | 329,527 | 305,817 |
| Tas. ... | *80,948 | *56,731 | *37,450 | †19,655 | 6,168 | 15,153 | 38,927 |
| Cwltth. | 4,260,288 | 4,010,836 | 2,052,806 | 1,262,374 | 1,061,312 | 1,442,168 | 2,898,284 |

* For the calendar years 1901, 1903, and 1903 respectively. † For the eighteen months ended 30th June, 1905.

The following statement shews the total loan expenditure to the 30th June, 1908 :—

GOVERNMENT RAILWAYS AND TRAMWAYS.—TOTAL LOAN EXPENDITURE IN EACH STATE AND IN THE COMMONWEALTH TO THE 30th JUNE, 1908.

| State, etc. | N. S. W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|-----------------|------------|------------|------------|------------|------------|-----------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Expenditure ... | 51,356,903 | 39,144,835 | 25,183,529 | 13,996,437 | 10,254,315 | 4,182,838 | 144,118,857 |

11. Revenue and Working Expenses.—The following table shews the amounts of gross revenue, working expenses, and excess of revenue over expenditure per mile of line worked and per train mile run in each State for the year ended 30th June, 1908 :—

GOVERNMENT RAILWAYS.—GROSS REVENUE, WORKING EXPENSES, AND NET REVENUE FOR YEAR ENDED 30th JUNE, 1908.

| State. | Average Mileage work'd. | Number of Train Miles Run. | Revenue. | | | Working Expenses. | | | Excess of Revenue over Wrkg. Expenses. | | |
|---------------|-------------------------|----------------------------|------------|------------------|-----------------|-------------------|------------------|-----------------|--|------------------|-----------------|
| | | | Gross. | Per Mile w'rk'd. | Per Train Mile. | Gross. | Per Mile w'rk'd. | Per Train Mile. | Net. | Per Mile w'rk'd. | Per Train Mile. |
| | | | | | | | | | | | |
| N. S. W. ... | 3,469 | 14,251,052 | 4,944,134 | 1,425 | 83.26 | 2,714,839 | 783 | 45.72 | 2,229,295 | 643 | 37.54 |
| Victoria* ... | 3,396 | 10,393,408 | 3,873,368 | 1,141 | 89.53 | 2,436,019 | 717 | 56.31 | 1,437,349 | 423 | 33.22 |
| Queensland | 3,359 | 6,557,723 | 1,950,881 | 602 | 71.40 | 1,053,736 | 325 | 38.56 | 897,145 | 277 | 32.83 |
| South Aust. | 1,860½ | 5,010,121 | 1,741,259 | 938 | 83.41 | 969,530 | 521 | 46.44 | 771,729 | 415 | 26.97 |
| N. Territory | 145½ | 31,007 | 14,462 | 99 | 111.94 | 14,060 | 97 | 108.83 | 402 | 2 | 3.11 |
| West. Aust. | 1,830 | 3,964,230 | 1,501,925 | 821 | 90.93 | 1,007,732 | 551 | 61.01 | 494,193 | 270 | 29.82 |
| Tasmania ... | 470 | 1,028,030 | 277,606 | 591 | 64.81 | 201,817 | 429 | 47.12 | 75,789 | 161 | 17.70 |
| C'wealth ... | 14,530 | 41,225,571 | 14,303,635 | 993 | 83.27 | 8,397,733 | 533 | 48.89 | 5,905,902 | 410 | 34.33 |

* Working expenses include £47,058 for special expenditures and charges, and £103,064 for pensions and gratuities. (See paragraph 16 below).

(i.) *Traffic Receipts and Revenue from other Sources.* The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (b) receipts from the carriage of goods and live stock, and (c) rents and miscellaneous items. The following table shews the amount derived from each of these sources for the year ended the 30th June, 1908, and the respective percentages of the whole revenue :—

GOVERNMENT RAILWAYS.—AMOUNT AND PERCENTAGE OF GROSS REVENUE FROM DIFFERENT SOURCES IN EACH STATE AND IN THE COMMONWEALTH FOR THE YEAR ENDED 30th JUNE, 1908.

| State. | Total Revenue. | Coaching Traffic Revenue. | Coaching Traffic Percentage of Total. | Goods and Live Stock. | Goods, etc., Percentage of Total. | Rents and Miscellaneous Items. | Rents, etc., Percentage of Total. |
|---------------------|----------------|---------------------------|---------------------------------------|-----------------------|-----------------------------------|--------------------------------|-----------------------------------|
| | £ | £ | % | £ | % | £ | % |
| N.S.W. ... | 4,944,134 | 1,850,061 | 37.42 | 3,043,444 | 61.55 | 50,629 | 1.03 |
| Victoria ... | 3,873,368 | 1,935,261 | 49.96 | 1,868,441 | 48.24 | 69,666 | 1.80 |
| Queensland ... | 1,950,881 | 671,939 | 34.44 | 1,250,489 | 64.10 | 28,453 | 1.46 |
| South Australia ... | 1,741,259 | 511,423 | 29.37 | 1,184,867 | 68.04 | 44,969 | 2.59 |
| N. Territory ... | 14,462 | 3,663 | 25.33 | 8,463 | 58.52 | 2,336 | 16.15 |
| West. Australia ... | 1,501,925 | 483,099 | 32.16 | 973,741 | 64.84 | 45,085 | 3.00 |
| Tasmania ... | 277,606 | 137,124 | 49.39 | 131,933 | 47.53 | 8,549 | 3.08 |
| C'wealth ... | 14,303,635 | 5,592,570 | 39.10 | 8,461,378 | 59.15 | 249,687 | 1.75 |

12. **Gross Revenue, Total, per Average Mile Worked, and per Train-mile Run, 1901 to 1908.**—The following table shews the total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run in each State during each financial year from 1901 to 1908, inclusive:—

GOVERNMENT RAILWAYS.—GROSS REVENUE, TOTAL, PER AVERAGE MILE WORKED, AND PER TRAIN MILE, 1901 TO 1908.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|---|------------|------------|------------|------------|------------|------------|------------|------------|
| TOTAL GROSS REVENUE. | | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| New South Wales ... | 3,573,779 | 3,668,686 | 3,314,893 | 3,436,413 | 3,684,016 | 4,234,791 | 4,709,406 | 4,944,134 |
| Victoria ... | 3,337,797 | 3,367,843 | 3,046,858 | 3,438,141 | 3,582,266 | 3,787,619 | 4,012,641 | 3,873,368 |
| Queensland ... | 1,816,936 | 1,382,179 | 1,234,280 | 1,305,552 | 1,413,439 | 1,546,083 | 1,829,673 | 1,950,881 |
| South Australia ... | 1,236,618 | 1,085,175 | 1,076,612 | 1,160,639 | 1,273,321 | 1,349,765 | 1,575,368 | 1,741,259 |
| Northern Territory ... | 13,845 | 12,522 | 11,298 | 17,006 | 15,429 | 14,897 | 14,018 | 14,462 |
| Western Australia ... | 1,353,704 | 1,521,429 | 1,553,485 | 1,588,084 | 1,610,129 | 1,634,444 | 1,637,333 | 1,501,925 |
| Tasmania ... | *205,791 | *233,211 | *247,683 | †247,910 | 243,556 | 241,188 | 258,223 | 277,606 |
| Commonwealth | 11,038,468 | 11,271,045 | 10,485,059 | 11,193,745 | 11,822,156 | 12,808,787 | 13,936,662 | 14,303,635 |
| GROSS REVENUE PER AVERAGE MILE WORKED. | | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| New South Wales ... | 1,268 | 1,242 | 1,078 | 1,066 | 1,123 | 1,258 | 1,374 | 1,425 |
| Victoria ... | 1,034 | 1,031 | 914 | 1,020 | 1,059 | 1,116 | 1,182 | 1,141 |
| Queensland ... | 470 | 493 | 444 | 402 | 461 | 497 | 583 | 602 |
| South Australia ... | 712 | 625 | 620 | 668 | 730 | 773 | 808 | 936 |
| Northern Territory ... | 95 | 86 | 78 | 117 | 106 | 102 | 96 | 99 |
| Western Australia ... | 999 | 1,122 | 1,083 | 1,035 | 1,027 | 1,017 | 917 | 821 |
| Tasmania ... | *447 | *498 | *528 | †529 | 518 | 513 | 549 | 590 |
| Commonwealth | 880 | 886 | 808 | 841 | 866 | 926 | 991 | 993 |
| GROSS REVENUE PER TRAIN-MILE RUN. | | | | | | | | |
| | d. | d. | d. | d. | d. | d. | d. | d. |
| New South Wales ... | 79.69 | 75.58 | 68.89 | 79.30 | 84.46 | 85.67 | 87.28 | 83.26 |
| Victoria ... | 72.39 | 71.62 | 71.09 | 89.96 | 95.28 | 96.79 | 95.96 | 89.53 |
| Queensland ... | 54.35 | 58.55 | 59.87 | 67.43 | 68.98 | 70.26 | 71.63 | 71.40 |
| South Australia ... | 67.56 | 62.07 | 68.53 | 74.50 | 80.99 | 83.59 | 87.23 | 83.41 |
| Northern Territory ... | 109.75 | 99.27 | 89.13 | 129.38 | 120.61 | 117.37 | 108.87 | 111.94 |
| Western Australia ... | 78.74 | 81.00 | 80.85 | 82.96 | 90.18 | 89.98 | 88.25 | 90.93 |
| Tasmania ... | *55.14 | *61.99 | *63.80 | †62.79 | 61.80 | 61.19 | 63.15 | 64.81 |
| Commonwealth | 71.43 | 70.74 | 69.66 | 80.12 | 84.84 | 85.99 | 86.57 | 83.27 |

* For the financial years 1901, 1902, and 1903 respectively.

† For twelve months ended the 30th June, 1904.

The falling-off in the amount of the gross railway revenue in Victoria during the year 1907-8 was due to a partial failure of the grain and other crops, owing to the unfavourable season, and to reductions in rates made during the year (see paragraph 23 hereinafter). There was a decrease in Victoria in the previous year of £188,003 in the revenue derived in connection with grain and its products, and of £20,184 in dairy produce, whereas there was an increase of £49,558 in the revenue from live-stock traffic due to the unusual movement of stock which took place in consequence of the dry weather during 1908. In Western Australia, also, the falling-off is to a large extent accounted for by the reductions in rates.

13. **Coaching, Goods, and Miscellaneous Receipts, 1901 to 1908.**—The subjoined table shews the gross revenue, during the years 1901 to 1908, inclusive, classified according to the three chief sources of receipts. The total of the three items specified has already been given in the preceding paragraph hereof:—

COACHING, GOODS, AND MISCELLANEOUS RECEIPTS, 1901 to 1908.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| COACHING TRAFFIC RECEIPTS. | | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| New South Wales... | 1,336,489 | 1,367,796 | 1,370,544 | 1,405,350 | 1,428,190 | 1,563,261 | 1,736,206 | 1,850,061 |
| Victoria ... | 1,560,894 | 1,580,218 | 1,525,340 | 1,561,973 | 1,598,354 | 1,719,713 | 1,862,660 | 1,935,261 |
| Queensland ... | 445,699 | 435,434 | 430,308 | 455,957 | 477,859 | 529,139 | 613,601 | 671,939 |
| South Australia ... | 362,587 | 372,709 | 344,950 | 370,410 | 382,503 | 405,258 | 455,454 | 515,086 |
| Western Australia ... | 382,966 | 442,719 | 449,677 | 484,486 | 502,671 | 506,598 | 497,414 | 483,099 |
| Tasmania* ... | 99,393 | 110,196 | 116,470 | 119,146 | 118,273 | 121,374 | 129,009 | 137,124 |
| Commonwealth ... | 4,138,028 | 4,309,072 | 4,237,289 | 4,397,322 | 4,507,850 | 4,845,343 | 5,294,344 | 5,592,570 |
| GOODS AND LIVE STOCK TRAFFIC RECEIPTS. | | | | | | | | |
| New South Wales... | 2,203,249 | 2,263,837 | 1,907,950 | 1,989,946 | 2,213,105 | 2,628,076 | 2,922,843 | 3,043,444 |
| Victoria ... | 1,711,894 | 1,719,462 | 1,454,770 | 1,792,978 | 1,918,793 | 2,001,437 | 2,081,515 | 1,868,441 |
| Queensland ... | 772,219 | 862,234 | 766,636 | 810,177 | 899,984 | 982,320 | 1,180,862 | 1,250,489 |
| South Australia ... | 851,911 | 689,041 | 710,522 | 773,165 | 869,581 | 919,549 | 1,091,916 | 1,193,330 |
| Western Australia ... | 870,778 | 1,037,099 | 1,046,540 | 1,066,949 | 1,061,364 | 1,081,472 | 992,111 | 973,741 |
| Tasmania* ... | 98,713 | 116,061 | 121,129 | 120,080 | 116,938 | 111,042 | 119,701 | 131,933 |
| Commonwealth ... | 6,505,564 | 6,687,734 | 6,007,547 | 6,553,295 | 7,079,745 | 7,724,396 | 8,368,948 | 8,461,378 |
| MISCELLANEOUS RECEIPTS. | | | | | | | | |
| New South Wales... | 34,041 | 37,053 | 36,399 | 41,117 | 42,721 | 43,454 | 50,357 | 50,629 |
| Victoria ... | 65,009 | 6,163 | 66,748 | 83,190 | 65,119 | 66,469 | 63,466 | 69,666 |
| Queensland ... | 99,018 | 84,511 | 37,266 | 39,418 | 35,596 | 34,124 | 35,210 | 28,453 |
| South Australia ... | 35,963 | 35,947 | 32,438 | 34,070 | 36,686 | 39,555 | 42,016 | 47,305 |
| Western Australia ... | 100,160 | 41,611 | 57,268 | 36,649 | 46,094 | 46,374 | 47,898 | 45,085 |
| Tasmania* ... | 7,685 | 6,954 | 10,084 | 18,634 | 8,345 | 8,772 | 9,513 | 8,549 |
| Commonwealth ... | 341,876 | 274,239 | 240,223 | 243,128 | 234,561 | 239,048 | 253,370 | 249,687 |

* Tasmanian figures for 1901, 1902, and 1903 are for years ended the 31st December. † For twelve months ended the 30th June, 1904.

The falling-off in the amounts of revenue during the last year in the States of Victoria and Western Australia is commented upon in the preceding paragraph hereof.

14. **Coaching Traffic Receipts per Average Mile Worked, per Passenger-train Mile, and per Passenger Journey.**—The subjoined table shows the receipts from coaching traffic per average mile of line worked, per passenger-train mile, and per passenger journey in each State and in the Commonwealth for the year ended the 30th June, 1908:—

GOVERNMENT RAILWAYS.—COACHING TRAFFIC RECEIPTS PER MILE OPEN, PER PASSENGER JOURNEY, AND PER PASSENGER-TRAIN MILE, 1908.

| State. | Number of Passenger Journeys. | Number of Passenger Train Miles. | Coaching Traffic Receipts. | | | |
|-----------------------|-------------------------------|----------------------------------|----------------------------|--------------------------|---------------------------|------------------------|
| | | | Gross. | Per Average Mile Worked. | Per Passenger-Train Mile. | Per Passenger Journey. |
| | No. | No. | £ | £ | d. | d. |
| New South Wales ... | 47,487,030 | 6,504,568 | 1,850,061 | 534 | 68.26 | 9.35 |
| Victoria ... | 74,907,425 | *6,138,332 | 1,935,261 | 569 | 75.66 | 6.20 |
| Queensland ... | 10,419,794 | 2,125,160 | 671,939 | 200 | 75.88 | 15.48 |
| South Australia ... | 12,839,428 | 1,874,318 | 511,423 | 275 | 65.48 | 9.56 |
| Northern Territory... | 2,882 | 10,609 | 3,663 | 25 | 82.86 | 305.03 |
| Western Australia ... | 12,945,561 | †1,938,026 | 483,099 | 264 | 58.32 | 8.95 |
| Tasmania ... | 1,019,668 | ‡356,845 | 137,124 | 292 | 92.22 | 32.27 |
| Commonwealth ... | 159,621,788 | 18,997,858 | 5,592,570 | 388 | 70.65 | 8.41 |

* The returns include 2,494,834 mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively. † The returns include 718,007 mixed-train mileage, which has been divided as just stated. ‡ The returns include 700,612 mixed-train mileage, which has been divided as just stated.

The receipts per passenger journey show that there is a considerable difference in the amount of the average receipt per passenger journey. Disregarding the Northern Territory, this amount ranges from 6.20 pence in Victoria, where there is a large metropolitan suburban traffic, to 32.27 pence in Tasmania. The difference in these amounts cannot be accounted for by the amounts of rates charged, which are fairly uniform in the several States (see paragraph 23 hereof), but is largely due to the different traffic conditions which prevail on various lines in the Commonwealth (see paragraph 20 hereof). In order to adequately analyse these figures it would be necessary to have particulars regarding the number of passenger-miles, *i.e.*, the total distance travelled by passengers, in each State; which particulars are not generally available (see paragraph 21 hereof).

The preponderance in the number of passenger journeys in Victoria is accounted for, to a great extent, by the large number of metropolitan suburban passengers in that State. Of the total number of passengers carried in Victoria, 68,799,680 were metropolitan suburban passengers, *i.e.*, were carried between stations within twenty miles of Melbourne, while in New South Wales the number of suburban passengers (between stations within twenty-two miles of Sydney and Newcastle) was 41,404,022. In Sydney a large proportion of the metropolitan suburban traffic is carried on the electric tramways, the number of passenger journeys during the year 1907-8 being 159,722,892. In Melbourne, on the other hand, the number of passengers carried on the cable tramways systems during the same period was 63,945,512; on the St. Kilda-Brighton electric tramways the number was 1,146,484; and on the North Melbourne tramways was 1,639,768, making a total of 66,731,764, which is not as great as the number carried on the metropolitan suburban railways. This matter is referred to hereinafter. (See para. 20.)

15. **Goods and Live-Stock Traffic Receipts per Mile Worked, per Goods-Train Mile, and per Ton Carried.**—The following table shows the gross receipts from goods and live-stock traffic per mile worked, per goods-train mile, and per ton carried for the year ended the 30th June, 1908:—

GOVERNMENT RAILWAYS.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS PER MILE WORKED, PER GOODS-TRAIN MILE, AND PER TON CARRIED, 1908.

| State. | Number of Goods-Train Miles. | Goods and Live-Stock Tonnage. | Goods and Live-Stock Traffic Receipts. | | | |
|------------------------|------------------------------|-------------------------------|--|--------------------------|-----------------------|------------------|
| | | | Gross. | Average per Mile Worked. | Per Goods-Train Mile. | Per Ton Carried. |
| | No. | Tons. | £ | £ | d. | d. |
| New South Wales ... | 7,746,484 | 10,175,389 | 3,043,443 | 877 | 94.29 | 71.78 |
| Victoria ... | 4,245,076† | 3,754,861 | 1,868,441 | 550 | 105.63 | 119.42 |
| Queensland ... | 4,432,563 | 2,423,529* | 1,250,489 | 372 | 67.70 | 123.83 |
| South Australia ... | 3,135,803 | 2,255,996 | 1,184,867 | 637 | 90.68 | 126.05 |
| Northern Territory ... | 20,398 | 3,513 | 8,463 | 58 | 99.57 | 578.17 |
| Western Australia ... | 1,976,204‡ | 2,058,741 | 973,741 | 532 | 118.25 | 113.51 |
| Tasmania ... | 671,185§ | 465,186* | 131,933 | 281 | 47.18 | 68.07 |
| Commonwealth ... | 22,227,713 | 21,137,215 | 8,461,377 | 582 | 91.36 | 96.07 |

* Exclusive of live-stock tonnage. † The returns include 2,494,834 mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively. ‡ The returns include 718,007 mixed-train mileage, which has been divided as just stated. § The returns include 700,612 mixed-train mileage, which has been divided as just stated.

From the above table it may be seen that, disregarding the Northern Territory, the average amount of freight paid per ton ranges from 71.78 pence in New South Wales to 126.05 pence in South Australia. The remarks made in the preceding paragraph (14) hereof with regard to the average fare paid per passenger and to passenger-miles, apply equally to the average amount of freight paid per ton and to ton-miles.

16. **Working Expenses.**—In order to make an adequate comparison of the working expenses of the Government railways in the several States, allowance should be made for the variation of gauges and of physical and traffic conditions, not only on the railways of the different States, but also on different portions of the same system. Where traffic is light, the percentage of working expenses is naturally greater than where traffic is heavy; and this is especially true in Australia, where ton-mile rates are in many cases based on a tapering principle—*i.e.*, a lower rate per ton-mile is charged upon merchandise from remote interior districts—and where on many of the lines there is but little back-loading. Further, though efforts have been made from time to time to obtain a uniform system of accounts in the several States, the annual reports of the Commissioners do not yet comprise fully comparable data of railway expenditure.

The following table shows the total annual expenditure, comprising expenses on (a) maintenance of way, works, and buildings; (b) locomotive power—repairs and renewals; (c) carriages and waggons—repairs and renewals; (d) traffic expenses; (e) compensation; and (f) general and miscellaneous charges; and also the percentage of these expenditures upon the corresponding gross revenues in each State from 1901 to 1908:—

GOVERNMENT RAILWAYS.—TOTAL WORKING EXPENSES AND PERCENTAGES OF WORKING EXPENSES UPON GROSS REVENUES, 1901 to 1908.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| TOTAL WORKING EXPENSES. | | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 2,043,201 | 2,267,369 | 2,266,299 | 2,258,940 | 2,192,147 | 2,308,384 | 2,499,741 | 2,714,889 |
| Victoria* ... | 2,075,239 | 2,166,119 | 2,032,087 | 2,022,403 | 2,222,279 | 2,216,202 | 2,353,303 | 2,436,019 |
| Queensland | 1,057,981 | 992,751 | 863,382 | 811,951 | 814,744 | 863,356 | 912,638 | 1,053,736 |
| S. Australia | 729,039 | 689,517 | 624,511 | 675,395 | 736,791 | 764,885 | 868,005 | 969,530 |
| N. Territory | 25,280 | 34,649 | 12,812 | 13,219 | 13,069 | 13,854 | 13,280 | 14,060 |
| W. Australia | 1,044,920 | 1,256,370 | 1,247,873 | 1,179,624 | 1,256,003 | 1,201,753 | 1,135,907 | 1,007,732 |
| Tasmania ... | 1173,400 | 1173,292 | 1166,355 | 1166,029 | 171,630 | 172,601 | 185,500 | 201,817 |
| C'wealth ... | 7,149,060 | 7,580,067 | 7,213,319 | 7,127,561 | 7,406,663 | 7,540,535 | 7,968,374 | 8,397,733 |

PERCENTAGE OF WORKING EXPENSES TO GROSS EARNINGS.

| | % | % | % | % | % | % | % | % |
|---------------|--------|--------|--------|--------|-------|-------|-------|-------|
| N.S.W. ... | 57.17 | 61.80 | 68.37 | 65.74 | 59.50 | 54.51 | 53.08 | 54.91 |
| Victoria* ... | 62.17 | 64.32 | 66.69 | 58.82 | 62.04 | 58.51 | 58.85 | 62.89 |
| Queensland | 80.34 | 71.83 | 69.95 | 62.19 | 57.84 | 55.84 | 49.88 | 54.01 |
| S. Australia | 58.95 | 63.54 | 58.01 | 58.19 | 57.88 | 56.63 | 55.10 | 55.68 |
| N. Territory | 182.59 | 276.70 | 113.40 | 77.73 | 84.70 | 93.00 | 94.74 | 97.22 |
| W. Australia | 77.19 | 82.58 | 80.33 | 74.28 | 78.01 | 73.52 | 73.89 | 67.10 |
| Tasmania ... | †94.26 | 174.31 | 167.16 | 164.68 | 70.47 | 71.56 | 71.84 | 72.70 |
| C'wealth ... | 64.76 | 67.25 | 68.80 | 63.62 | 62.65 | 53.87 | 57.18 | 58.71 |

* Including amounts paid for pensions and gratuities, and also special expenditures and charges for belated repairs and in reduction of deficiencies as follows:—For the year 1900-1, £111,943; for 1901-2, £115,244; for 1902-3, £196,137; for 1903-4, £220,092; for 1904-5, £351,141; for 1905-6, £217,179; and for 1906-7, £276,630; and for 1907-8, £150,122. † For further particulars see next table. ‡ For the calendar years 1901, 1902, and 1903 respectively. § Estimated for a period of twelve months ended the 30th June, 1904.

From the above table it may be seen that during the last financial year there has been for the whole Commonwealth a slight increase in the percentage of working expenses to gross earnings. This increase is due chiefly to the fact that in three of the States, consequent on the favourable results of previous years, reductions were made in passenger fares and freight rates, while at the same time the natural growth of the traffic in certain commodities was somewhat retarded in some districts owing to the unfavourable season.

(i.) *Victoria—Special Expenditures and Charges.* The amounts of working expenses for Victoria specified in the preceding table include sums in respect of special expenditure and charges paid in liquidation of certain "extraordinary liabilities." The annual report of the Victorian Railways Commissioners for the year 1907-8 shews the amount of the "extraordinary liabilities" taken over at the 1st July, 1903, to be £825,180, composed as follows:—

| Belated Repairs. | Deficiency in Rolling Stock. | Deficiency in Value of Stores. | Loan Funds Advanced for Renewal of Way and Works and Replacement of Rolling Stock. | Railway Accident Fund. | Total. |
|------------------|------------------------------|--------------------------------|--|------------------------|----------|
| £181,087 | £403,950 | £60,855 | £149,869 | £29,419 | £825,180 |

During the years 1901 and 1902 also, special expenditures and charges in respect of "extraordinary liabilities" were paid out of the year's railway revenue.

These "extraordinary liabilities" have now been completely liquidated at a cost lower than the original estimated cost specified above. The following table shows the amounts actually paid in reduction of these liabilities out of railway revenue during each year from 1901 to 1908, inclusive, and also shows the amounts paid for pensions and gratuities:—

VICTORIA.—SPECIAL EXPENDITURES AND CHARGES, 1901 to 1908.

| Particulars. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| Belated repairs ... | ... | ... | 78,913 | 84,555 | 54,752 | 5,617 | ... | ... |
| Repay't of funds advanced | 21,500 | 21,500 | 23,717 | 28,646 | 58,769 | 24,104 | 20,710 | 17,633 |
| Deficiency in rolling stock | ... | ... | ... | 6,355 | 83,448 | 87,821 | 145,099 | ... |
| Deficiency in value of stores | ... | ... | ... | ... | 51,516 | ... | ... | ... |
| Railway accident fund | ... | ... | ... | ... | ... | ... | ... | 29,419 |
| Pensions and gratuities | 90,443 | 93,744 | 93,507 | 100,536 | 102,656 | 99,637 | 110,881 | 103,064 |
| Total... | 111,943 | 115,244 | 106,137 | 220,092 | 351,141 | 217,179 | 276,630 | 150,122 |

(ii.) *Working Expenses per Average Mile Worked and per Train Mile Run, 1901 to 1908.* The following table shows the working expenses per average mile worked and per train mile run in each State for the years 1901 to 1908, inclusive:—

GOVERNMENT RAILWAYS.—WORKING EXPENSES PER AVERAGE MILE WORKED, AND PER TRAIN MILE RUN, 1901 to 1908.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|
|--------|---------|---------|---------|---------|---------|---------|---------|---------|

WORKING EXPENSES PER AVERAGE MILE WORKED.

| | £ | £ | £ | £ | £ | £ | £ | £ |
|-----------------|------|------|------|------|-----|-----|-----|-----|
| N.S.W. ... | 725 | 768 | 737 | 701 | 668 | 686 | 729 | 783 |
| Victoria† ... | 643 | 663 | 609 | 560 | 657 | 653 | 693 | 717 |
| Queensland ... | 378 | 354 | 311 | 287 | 266 | 278 | 291 | 325 |
| S. Australia... | 420 | 397 | 360 | 389 | 422 | 438 | 478 | 521 |
| N. Territory | 174 | 238 | 88 | 91 | 90 | 95 | 91 | 97 |
| W. Australia | 771 | 927 | 870 | 768 | 801 | 748 | 678 | 551 |
| Tasmania ... | *377 | *370 | *355 | †354 | 365 | 367 | 395 | 429 |
| C'wealth ... | 570 | 596 | 556 | 536 | 542 | 545 | 566 | 583 |

WORKING EXPENSES PER TRAIN MILE RUN.

| | d. | d. | d. | d. | d. | d. | d. | d. |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|
| N.S.W. ... | 45.56 | 46.71 | 47.10 | 52.13 | 50.26 | 46.70 | 46.33 | 45.72 |
| Victoria† ... | 45.01 | 46.07 | 47.41 | 52.92 | 59.11 | 56.63 | 56.28 | 56.31 |
| Queensland ... | 43.66 | 42.05 | 41.88 | 41.93 | 39.76 | 39.23 | 35.75 | 38.56 |
| S. Australia... | 39.83 | 39.44 | 39.75 | 43.35 | 46.87 | 47.34 | 48.06 | 46.44 |
| N. Territory | 200.39 | 274.67 | 101.07 | 100.57 | 102.16 | 109.15 | 103.14 | 108.83 |
| W. Australia | 60.78 | 66.89 | 64.95 | 61.62 | 70.34 | 66.16 | 65.21 | 61.01 |
| Tasmania ... | *46.46 | *46.06 | *42.85 | †42.05 | 43.55 | 43.79 | 45.36 | 47.12 |
| C'wealth ... | 46.26 | 47.58 | 47.92 | 51.01 | 53.15 | 50.62 | 49.50 | 48.89 |

* For the years 1901, 1902, and 1903 respectively. † Estimated for a period of twelve months ended the 30th June, 1904. ‡ Including special expenditure and charges referred to above.

17. **Distribution of Working Expenses, 1901 to 1908.**—The subjoined table shows the distribution of working expenses, among four chief heads of expenditure, for each year from 1901 to 1908, inclusive:—

GOVERNMENT RAILWAYS.—DISTRIBUTION OF WORKING EXPENSES, 1901 to 1908.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| MAINTENANCE. | | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 484,750 | 521,983 | 486,596 | 519,339 | 491,164 | 539,700 | 593,290 | 621,885 |
| Victoria ... | 518,488 | 501,938 | 437,840 | 448,939 | 502,022 | 572,297 | 589,452 | 648,589 |
| Queensland | 408,551 | 355,615 | 292,951 | 277,913 | 277,672 | 288,100 | 295,160 | 323,169 |
| S. Australia | 185,291 | 166,691 | 130,297 | 164,066 | 206,894 | 203,487 | 273,686 | 312,801 |
| N. Territory | 18,206 | 29,001 | 6,981 | 7,037 | 7,392 | 7,966 | 7,344 | 7,578 |
| W. Australia | 193,573 | 246,931 | 265,548 | 264,430 | 344,177 | 293,250 | 265,771 | 226,567 |
| Tasmania ... | *59,897 | *58,612 | *51,957 | †49,236 | 54,517 | 53,416 | 57,404 | 62,074 |
| C'wealth | 1,868,756 | 1,880,771 | 1,681,170 | 1,731,080 | 1,883,838 | 1,958,216 | 2,082,167 | 2,202,663 |

LOCOMOTIVE, CARRIAGE, AND WAGGON CHARGES.

| | | | | | | | | |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| N.S.W. ... | 936,103 | 1,059,814 | 1,089,829 | 1,054,168 | 1,023,551 | 1,056,936 | 1,132,268 | 1,249,569 |
| Victoria ... | 793,345 | 855,464 | 762,715 | 719,530 | 763,171 | 788,325 | 844,941 | 956,467 |
| Queensland | 395,876 | 389,766 | 343,675 | 317,759 | 313,804 | 337,316 | 358,010 | 416,726 |
| S. Australia | 362,667 | 343,572 | 317,217 | 343,488 | 360,150 | 380,028 | 404,664 | 441,940 |
| N. Territory | 4,454 | 8,210 | 3,451 | 3,520 | 2,963 | 3,310 | 3,120 | 3,652 |
| W. Australia | 497,188 | 670,485 | 642,808 | 581,655 | 577,002 | 566,420 | 534,828 | 484,586 |
| Tasmania ... | *63,579 | *63,792 | *62,376 | †64,473 | 63,542 | 65,831 | 73,134 | 80,662 |
| C'wealth | 3,053,112 | 3,386,103 | 3,222,071 | 3,084,593 | 3,104,183 | 3,204,166 | 3,350,963 | 3,633,632 |

TRAFFIC EXPENSES.

| | | | | | | | | |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| N.S.W. ... | 537,227 | 588,938 | 605,210 | 601,634 | 596,313 | 631,388 | 682,927 | 741,576 |
| Victoria ... | 609,000 | 640,442 | 592,897 | 586,015 | 562,370 | 588,123 | 593,245 | 612,719 |
| Queensland | 232,557 | 226,237 | 207,303 | 196,806 | 204,858 | 218,314 | 237,994 | 290,488 |
| S. Australia | 164,589 | 162,626 | 151,738 | 151,697 | 152,627 | 157,485 | 171,721 | 195,964 |
| N. Territory | 2,309 | 2,103 | 1,935 | 2,300 | 2,362 | 2,236 | 2,460 | 2,456 |
| W. Australia | 296,045 | 306,409 | 312,364 | 306,998 | 302,234 | 305,138 | 300,742 | 269,890 |
| Tasmania ... | *41,138 | *42,416 | *42,820 | †43,318 | 43,808 | 44,586 | 45,883 | 49,697 |
| C'wealth | 1,882,865 | 1,969,176 | 1,914,267 | 1,888,768 | 1,864,572 | 1,947,269 | 2,034,975 | 2,162,790 |

OTHER CHARGES.

| | | | | | | | | |
|--------------|---------|---------|---------|---------|---------|---------|---------|---------|
| N.S.W. ... | 85,121 | 96,634 | 84,664 | 83,749 | 81,119 | 80,360 | 91,256 | 101,809 |
| Victoria ... | 154,406 | 163,275 | 238,635 | 267,899 | 394,716 | 267,457 | 325,662 | 218,244 |
| Queensland | 20,997 | 21,133 | 19,453 | 19,473 | 18,410 | 19,626 | 21,474 | 23,353 |
| S. Australia | 16,592 | 16,628 | 16,259 | 16,144 | 17,120 | 17,385 | 17,934 | 18,825 |
| N. Territory | 311 | 330 | 445 | 362 | 352 | 342 | 356 | 344 |
| W. Australia | 58,114 | 32,545 | 27,153 | 26,541 | 32,590 | 36,945 | 34,568 | 26,689 |
| Tasmania ... | *8,786 | *8,472 | *9,202 | †9,952 | 9,763 | 8,769 | 9,019 | 9,384 |
| C'wealth | 344,327 | 344,017 | 395,811 | 423,120 | 554,070 | 430,884 | 500,269 | 398,648 |

* For the calendar years 1901, 1902, and 1903 respectively. † Estimated for a period of twelve months ended the 30th June, 1904. ‡ Including special expenditure and charges referred in paragraph 16 hereof.

18. **Analysis of Working Expenses, 1908.**—The following statement gives a comparative analysis of the working expenses of the Government railways in each State and in the Commonwealth; in this statement the total expenses are given, as well as the expenses per train mile and per mile worked.

GOVERNMENT RAILWAYS.—ANALYSIS OF WORKING EXPENSES, 1908.

| Expenditure on:— | N.S.W. | Victoria. | Q'land. | S. A. | N. T. | W. Aust. | Tas. | C'wealth. |
|---|-----------|------------|-----------|---------|--------|-----------|---------|-----------|
| MAINTENANCE OF WAYS AND WORKS— | | | | | | | | |
| Total £ | 621,885 | 648,589 | 323,169 | 312,801 | 7,578 | 226,567 | 62,074 | 2,202,063 |
| Per train mile ... d. | 10.47 | 14.99 | 11.83 | 14.98 | 53.65 | 13.71 | 14.52 | 12.82 |
| Per mile worked... £ | 179 | 191 | 96 | 168 | 53 | 124 | 132 | 151 |
| LOCOMOTIVE POWER REPAIRS AND RENEWALS— | | | | | | | | |
| Total £ | 1,032,469 | 678,753 | 344,151 | 329,296 | 2,175 | 567,066 | 80,662 | 2,834,572 |
| Per train mile ... d. | 17.39 | 15.69 | 12.59 | 15.77 | 16.83 | 22.22 | 18.81 | 16.50 |
| Per mile worked... £ | 299 | 209 | 103 | 176 | 15 | 200 | 171 | 195 |
| CARRIAGE AND WAGON REPAIRS AND RENEWALS— | | | | | | | | |
| Total £ | 217,100 | 277,714 | 72,575 | 112,644 | 1,507 | 117,520 | | 799,060 |
| Per train mile ... d. | 3.65 | 6.42 | 2.66 | 5.39 | 11.66 | 7.12 | | 4.65 |
| Per mile worked... £ | 62 | 82 | 21 | 60 | 10 | 64 | | 55 |
| TRAFFIC EXPENSES— | | | | | | | | |
| Total £ | 741,576 | 612,719 | 290,488 | 195,964 | 2,456 | 269,890 | 49,697 | 2,162,790 |
| Per train mile ... d. | 12.49 | 14.16 | 10.63 | 9.49 | 19.02 | 16.34 | 11.60 | 12.59 |
| Per mile worked... £ | 213 | 180 | 86 | 105 | 17 | 148 | 106 | 149 |
| OTHER CHARGES— | | | | | | | | |
| Total £ | 101,809 | *218,244 | 23,353 | 18,825 | 344 | 28,689 | 9,384 | 398,648 |
| Per train mile ... d. | 1.72 | 5.04 | 0.86 | 0.90 | 2.67 | 1.62 | 2.18 | 2.32 |
| Per mile worked... £ | 29 | 64 | 8 | 12 | 2 | 15 | 20 | 28 |
| TOTAL EXPENSES £ | | | | | | | | |
| Per train mile ... d. | 2,714,839 | *2,436,019 | 1,053,736 | 969,530 | 14,060 | 1,007,732 | 201,817 | 8,397,733 |
| Per average mile worked... £ | 45.72 | 56.30 | 38.57 | 46.44 | 108.83 | 61.01 | 47.10 | 48.88 |
| | 782 | 717 | 314 | 521 | 97 | 551 | 429 | 578 |

* Includes £47,058 for special expenditure and charges.

19. **Net Revenue, Total and per Cent. of Capital Cost, 1901 to 1908.**—The table given hereunder shews the net sums available to meet interest charges, and also the percentage of such sums upon the capital cost of construction and equipment, in each State for the years 1901 to 1908, inclusive:—

GOVERNMENT RAILWAYS.—NET REVENUE AND PERCENTAGE OF NET REVENUE UPON CAPITAL COST, 1901 to 1908.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| NET REVENUE. | | | | | | | | |
| N.S.W. ... | £ 1,530,578 | £ 1,401,317 | £ 1,048,594 | £ 1,177,473 | £ 1,491,869 | £ 1,926,407 | £ 2,209,665 | £ 2,229,295 |
| Victoria* ... | 1,282,558 | 1,201,724 | 1,014,771 | 1,415,738 | 1,359,987 | 1,571,417 | 1,659,338 | 1,437,949 |
| Queensland ... | 258,955 | 389,428 | 370,848 | 493,601 | 598,695 | 682,727 | 917,035 | 897,145 |
| S. Australia ... | 507,577 | 395,658 | 452,101 | 485,244 | 536,530 | 585,380 | 707,36* | 771,729 |
| N. Territory ... | — 11,435 | — 22,127 | — 1,514 | 3,787 | 2,360 | 1,043 | 738 | 402 |
| W. Australia... .. | 308,784 | 265,059 | 305,612 | 408,460 | 354,126 | 432,691 | 401,426 | 494,193 |
| Tasmania ... | 132,391 | 159,919 | 181,328 | 181,881 | 71,926 | 68,587 | 72,723 | 75,789 |
| C'wealth ... | 3,889,408 | 3,690,978 | 3,271,740 | 4,066,184 | 4,415,493 | 5,268,252 | 5,968,288 | 5,905,902 |

PERCENTAGE OF NET REVENUE TO CAPITAL EXPENDITURE.

| | per cent. | per cent. | per cent. | per cent. | per cent. | per cent. | per cent. | per cent. |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| N.S.W. ... | 3.93 | 3.45 | 2.52 | 2.78 | 3.46 | 4.42 | 4.94 | 4.88 |
| Victoria* ... | 3.14 | 2.96 | 2.48 | 3.43 | 3.29 | 3.80 | 4.00 | 3.43 |
| Queensland ... | 1.31 | 1.94 | 1.83 | 2.36 | 2.77 | 3.14 | 4.20 | 3.97 |
| S. Australia ... | 3.86 | 2.98 | 3.37 | 3.59 | 3.95 | 4.30 | 5.16 | 5.57 |
| N. Territory ... | — 0.98 | — 1.91 | — 0.13 | 0.32 | 0.20 | 0.09 | 0.06 | 0.03 |
| W. Australia... .. | 4.35 | 3.58 | 3.75 | 4.56 | 3.61 | 4.34 | 3.90 | 4.60 |
| Tasmania ... | 10.85 | 11.56 | 12.09 | 12.10 | 1.83 | 1.75 | 1.84 | 1.91 |
| C'wealth ... | 3.14 | 2.91 | 2.53 | 3.09 | 3.28 | 3.89 | 4.35 | 4.22 |

* In addition to ordinary working expenses, special expenditures and charges paid out of each year's gross revenue have been deducted; see paragraph 16 above. † For the calendar years 1901, 1902, and 1903 respectively. ‡ Partly estimated.

(i.) *Net Revenue per Average Mile Worked and per Train Mile Run, 1901 to 1908.*—Tables shewing the gross earnings and the working expenses per average mile worked and per train mile run have been given above. The net earnings, *i.e.*, the excess of gross earnings over working expenses, per average mile worked and per train mile run are shewn in the following tables:—

GOVERNMENT RAILWAYS.—NET REVENUE PER AVERAGE MILE WORKED AND PER TRAIN MILE RUN, 1901 to 1908.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| NET REVENUE PER AVERAGE MILE WORKED. | | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 543 | 475 | 341 | 365 | 455 | 572 | 645 | 643 |
| Victoria* ... | 391 | 368 | 304 | 420 | 402 | 463 | 489 | 423 |
| Queensland | 92 | 139 | 134 | 175 | 195 | 220 | 292 | 277 |
| S. Australia | 292 | 228 | 260 | 279 | 308 | 335 | 390 | 415 |
| N. Territory | 79 | 152 | 10 | 26 | 16 | 7 | 5 | 2 |
| W. Australia | 228 | 195 | 213 | 266 | 226 | 269 | 239 | 270 |
| Tasmania ... | †70 | †128 | †173 | ‡174 | 153 | 146 | 155 | 161 |
| C'wealth ... | 310 | 290 | 252 | 306 | 323 | 381 | 424 | 410 |
| NET REVENUE PER TRAIN MILE RUN. | | | | | | | | |
| | d. | d. | d. | d. | d. | d. | d. | d. |
| N.S.W. ... | 34.13 | 28.87 | 21.79 | 27.17 | 34.20 | 38.97 | 40.95 | 37.54 |
| Victoria* ... | 27.38 | 25.56 | 23.68 | 37.04 | 36.17 | 40.16 | 39.68 | 33.22 |
| Queensland | 10.69 | 16.50 | 17.99 | 25.49 | 29.22 | 31.02 | 35.93 | 32.83 |
| S. Australia | 27.73 | 22.53 | 28.78 | 31.15 | 34.11 | 36.25 | 39.17 | 36.97 |
| N. Territory | 90.64 | 175.40 | 11.94 | 28.81 | 18.45 | 8.22 | 5.73 | 3.11 |
| W. Australia | 17.96 | 14.11 | 15.90 | 21.34 | 19.84 | 23.82 | 23.04 | 29.82 |
| Tasmania ... | †8.68 | †15.93 | †20.95 | ‡20.74 | 18.25 | 17.40 | 17.78 | 17.69 |
| C'wealth ... | 25.17 | 23.16 | 21.74 | 29.10 | 31.69 | 35.37 | 37.07 | 34.38 |

* See footnote * to preceding table. † See footnote † to preceding table.
‡ See footnote ‡ to preceding table.

20. Traffic Conditions.—Reference has already been made to the difference in the traffic conditions on many of the lines of the Commonwealth (see paragraphs 14, 15, and 16 hereof). These conditions differ not only in the several States, but also on different lines in the same State, and this is true with regard to both passenger and goods traffic. By far the greater part of the population of Australia is confined to a fringe of country near the coast, more especially in the eastern and southern districts. A large proportion of the railway traffic between the chief centres of population is therefore carried over lines in the neighbourhood of the coast, and is thus, in some cases, open to sea-borne competition. On most of the lines extending into the more remote interior districts traffic is light; the density of population diminishes rapidly as the coastal regions are left behind; there is a corresponding diminution in the volume of traffic, while, in comparison with other more settled countries, there is but a little back-loading.

As an indication of the different traffic conditions prevailing in the several States, the following table is given shewing the numbers of passenger journeys and the tons of

goods carried (a) per 100 of the mean population; and (b) per average mile worked in each State during the financial year 1907-8:—

PASSENGER JOURNEYS AND TONNAGE OF GOODS AND LIVE STOCK, 1907-8.

| Particulars. | N.S.W. | Vic. | Q'land. | S.A. | N.T. | W.A. | Tas. | Cwth. |
|--------------|--------|------|---------|------|------|------|------|-------|
|--------------|--------|------|---------|------|------|------|------|-------|

(a) PER 100 OF MEAN POPULATION.

| Particulars | No. | N.S.W. | Vic. | Q'land. | S.A. | N.T. | W.A. | Tas. | Cwth. |
|--------------------------|------|--------|-------|---------|-------|------|-------|------|-------|
| Passenger journeys ... | No. | 3,009 | 5,965 | 1,888 | 3,253 | 80 | 4,875 | 565 | 3,773 |
| Goods and live stock ... | Tons | 644 | 299 | *439 | 571 | 97 | 775 | *258 | 499 |

(b) PER AVERAGE MILE OF LINE WORKED.

| Particulars | No. | N.S.W. | Vic. | Q'land. | S.A. | N.T. | W.A. | Tas. | Cwth. |
|--------------------------|------|--------|--------|---------|-------|------|-------|-------|--------|
| Passenger journeys ... | No. | 13,689 | 22,057 | 3,217 | 6,901 | 20 | 7,074 | 2,169 | 11,077 |
| Goods and live stock ... | Tons | 2,933 | 1,105 | *748 | 1,212 | 24 | 1,125 | *990 | 1,467 |

* Exclusive of live stock.

Particulars of the actual numbers of passengers and tons of goods and live stock carried have already been given (see paragraph 5 hereof).

(i.) *Metropolitan and Country Passenger Traffic.* A further indication of the difference in passenger traffic conditions might be obtained from a comparison of the volume of metropolitan and country traffic in each State. Particulars are, however, available only for the States of New South Wales and Victoria. The subjoined table shews the number of metropolitan and country passengers carried in each of the States mentioned and the revenue derived therefrom during the year 1907-8:—

METROPOLITAN AND COUNTRY PASSENGER TRAFFIC, 1907-8.

| Particulars. | Number of Passenger Journeys. | | | Revenue. | | |
|--------------|-------------------------------|-----------|------------|---------------|------------|------------|
| | Metropolitan. | Country. | Total. | Metropolitan. | Country. | Total. |
| N.S.W. ... | *41,404,022 | 6,083,008 | 47,487,030 | £455,021 | £1,124,800 | £1,579,821 |
| Vic. ... | †68,799,680 | 6,107,745 | 74,907,425 | †686,062 | 1,016,008 | 1,702,070 |

* Within 22 miles of Sydney and Newcastle. † Within 20 miles of Melbourne.

From this table it may be seen that the number of passenger-journeys in country districts in Victoria is only slightly greater than the corresponding number in New South Wales, while the number of metropolitan passenger-journeys in Victoria is far greater than in New South Wales, although in the latter State both Sydney and Newcastle are included. In Sydney a larger proportion of the suburban traffic is carried by the tramway systems than in Melbourne.

(ii.) *Goods Traffic.* Particulars regarding the quantities of various classes of commodities carried on the Government railways are available for all the States except Tasmania. The following table shews the number of tons of various representative commodities carried, and the percentage of each class on the total tonnage carried during the financial year 1907-8:—

CLASSIFICATION OF COMMODITIES CARRIED, 1907-8.

| State. | Minerals. | Fire-wood. | Grain and Flour. | Hay, Straw, and Chaff. | Wool. | Live Stock. | All other Commodities. | Totals. |
|----------------------|------------------------|------------|---------------------|------------------------|---------|-------------|------------------------|------------------------|
| TONS CARRIED. | | | | | | | | |
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| New South Wales ... | ¹ 6,846,236 | 275,786 | 300,384 | 192,419 | 126,384 | 455,549 | 1,607,265 | ² 9,804,014 |
| Victoria ... | ³ 445,045 | 603,842 | 490,322 | 267,624 | 73,037 | 405,101 | 1,469,890 | 3,754,861 |
| Queensland ... | 1,012,491 | 232,406 | ⁴ 27,391 | ⁵ 191,896 | 45,557 | | 913,788 | ⁶ 2,423,529 |
| South Australia ... | 1,146,365 | 118,890 | 339,201 | 114,371 | 22,485 | 47,016 | 467,668 | 2,255,966 |
| Western Australia... | 384,349 | 691,465 | 112,252 | 93,962 | 6,719 | 30,179 | 739,815 | 2,058,741 |

PERCENTAGE ON TOTAL TONNAGE CARRIED.

| | % | % | % | % | % | % | % | % |
|---------------------|--------------------|-------|-------------------|-------------------|------|-------|-------|---------------------|
| New South Wales ... | ¹ 69.83 | 2.81 | 3.06 | 1.96 | 1.29 | 4.65 | 16.40 | ² 100.00 |
| Victoria ... | ³ 11.85 | 16.08 | 13.06 | 7.12 | 1.94 | 10.79 | 39.16 | 100.00 |
| Queensland ... | 41.77 | 9.59 | ⁴ 1.14 | ⁵ 7.92 | 1.80 | | 37.70 | ⁶ 100.00 |
| South Australia ... | 50.81 | 5.27 | 15.04 | 5.07 | 0.99 | 2.09 | 20.73 | 100.00 |
| W. Australia ... | ¹ 8.67 | 33.59 | 5.45 | 4.56 | 0.33 | 1.46 | 35.94 | 100.00 |

1. Exclusive of 371,375 tons of coal, on which only shunting and haulage are collected. 2. Coal, stone, lime, and bricks. 3. Flour only. 4. Sugar cane. 5. Not available. 6. Exclusive of live stock.

21. **Passenger-Mileage and Ton-Mileage.**—Owing to want of uniformity in the presentation of data in the Railway Reports of the several States, the useful comparisons which can be made with regard to the operations of the Government railways in the Commonwealth are to some extent limited, and it is not possible to furnish totals for the Commonwealth in respect of various important particulars. It would seem desirable, therefore, that more complete and uniform data should be presented in the Reports. It is hoped that in future years it will be possible to include in this article more complete and uniform statistics for each State and for the whole Commonwealth.

An example of want of uniformity in an important detail is the absence of information which would enable particulars regarding "passenger-mileage" (*i.e.*, the total distance travelled by passengers) and "ton-mileage" (*i.e.*, the total distance for which goods and live stock are carried) to be shewn for each State and for the Commonwealth. This information is available either wholly, or in part, for four of the States only, *viz.*, New South Wales, South Australia, Western Australia, and Tasmania, but is not available at all for either Victoria or Queensland. Of the four States which give particulars of the nature indicated, New South Wales is the only one which furnishes the information in a classified form according to class of passengers and nature of commodities carried. The other three States supply particulars for all classes of passengers and goods together respectively. The mere record of the total number of passenger-miles and ton-miles for all classes of passengers and for all classes of goods respectively, although of considerable value, would appear to be insufficient to enable a proper analysis and criticism of the control of railway operations to be made.

(i.) *Passenger-Miles.* Particulars for the whole of the Commonwealth period regarding total "passenger-miles" are available for one State only, namely, Tasmania. For New South Wales particulars are available for suburban and extended-suburban traffic—*i.e.*, including gall stations within 22 miles of Newcastle, within 34 miles of Sydney, and including Richmond and Branxton. For South Australia particulars are available for each year since 1904. No particulars are available for other States. In the

tables given below the average number of passengers carried per "train," etc., is obtained by dividing the number of "passenger-miles" by the number of "passenger-train-miles." The averages given for New South Wales are naturally smaller than those for the other States, since the figures for New South Wales refer to suburban and extended-suburban traffic only.

SUMMARY OF "PASSENGER-MILES," 1901 to 1908.

| Year ended the 30th June. | Passenger Train Mileage. | Number of Passenger Journeys. | Total Passenger Miles. | Amount Received from Passengers. | Average Number of Passengers carried per Train. | Average Mileage per Passenger-journey. | Average Receipt per Passenger-mile. | Average Fare per Passenger-journey. |
|---------------------------|--------------------------|-------------------------------|------------------------|----------------------------------|---|--|-------------------------------------|-------------------------------------|
| NEW SOUTH WALES.† | | | | | | | | |
| | Miles. | No. | No. | £ | No. | Miles. | d. | d. |
| 1901 | * | 26,041,990 | 164,637,780 | 344,873 | * | 6.32 | 0.50 | 3.17 |
| 1902 | * | 27,998,683 | 184,064,179 | 361,849 | * | 6.57 | 0.47 | 2.92 |
| 1903 | * | 29,799,186 | 186,802,718 | 381,245 | * | 6.27 | 0.49 | 3.07 |
| 1904 | * | 31,116,243 | 202,549,922 | 396,923 | * | 6.51 | 0.47 | 3.06 |
| 1905 | * | 31,855,497 | 204,604,352 | 400,944 | * | 6.42 | 0.47 | 3.02 |
| 1906 | * | 34,040,429 | 223,984,703 | 426,931 | * | 6.58 | 0.45 | 3.01 |
| 1907 | * | 37,974,993 | 241,835,782 | 462,404 | * | 6.37 | 0.46 | 2.92 |
| 1908 | * | 42,730,040 | 284,464,686 | 504,646 | * | 6.65 | 0.42 | 2.83 |

† Including all stations within 22 miles of Sydney and Newcastle and stations beyond the 22-mile area, but within 34 miles of Sydney and including Richmond and Branxton. * Not available.

SOUTH AUSTRALIA (PROPER).

| | | | | | | | | |
|------|-----------|------------|-------------|---------|----|-------|------|------|
| 1905 | 1,489,035 | 9,866,621 | 114,378,521 | 312,179 | 77 | 11.61 | 0.65 | 7.59 |
| 1906 | 1,538,166 | 10,715,343 | 125,862,212 | 334,797 | 82 | 11.75 | 0.64 | 7.50 |
| 1907 | 1,667,324 | 11,497,802 | 138,689,171 | 337,916 | 83 | 12.06 | 0.58 | 7.05 |
| 1908 | 1,874,318 | 12,839,428 | 154,037,971 | 426,261 | 82 | 12.00 | 0.66 | 7.97 |

TASMANIA.

| | | | | | | | | |
|-------|---------|-----------|------------|---------|----|-------|------|-------|
| 1901 | 352,705 | 777,445 | 19,562,939 | 78,327 | 55 | 25.16 | 0.96 | 24.18 |
| 1902 | 335,604 | 761,345 | 19,443,913 | 88,541 | 58 | 25.60 | 1.09 | 27.91 |
| 1903 | 337,773 | 814,483 | 19,372,869 | 93,969 | 57 | 23.78 | 1.16 | 27.69 |
| 1904‡ | 357,144 | 872,937 | 21,000,000 | 99,632 | 59 | 24.05 | 1.10 | 27.13 |
| 1905 | 343,868 | 823,911 | 20,692,625 | 95,335 | 60 | 25.16 | 1.10 | 27.77 |
| 1906 | 348,005 | 860,519 | 21,712,179 | 98,202 | 62 | 25.23 | 1.08 | 27.38 |
| 1907 | 357,076 | 951,823 | 23,756,101 | 105,555 | 67 | 24.95 | 1.06 | 26.61 |
| 1908 | 356,845 | 1,019,668 | 25,413,989 | 112,987 | 71 | 24.92 | 1.07 | 26.66 |

‡ Partly estimated.

(ii.) *Ton-Miles.* Particulars regarding total "ton-miles" are available for each year since 1901 for the States of New South Wales, South Australia, and Tasmania; corresponding particulars for Western Australia are available for the last two years only. The average freight-paying load carried per "train" is obtained by dividing the total "ton-miles" in the third column by the goods-train mileage in the first column. In New South Wales the amount of earnings specified excludes terminals. In South Australia and Tasmania they include terminals, while in Western Australia they exclude wharfage and jetty dues, but include all other charges.

SUMMARY OF "TON-MILES," 1901 to 1908.

| Year ended the 30th June. | Goods Train Mileage. | Total Tons Carried. | Total "Ton-Miles." | Earnings. | Average Freight-paying Load carried per "Train." | Average Miles per Ton. | Earnings per "Ton-miles." |
|---------------------------|----------------------|---------------------|--------------------|-----------|--|------------------------|---------------------------|
|---------------------------|----------------------|---------------------|--------------------|-----------|--|------------------------|---------------------------|

NEW SOUTH WALES.

| | | | | £ | Tons. | | d. |
|------|-----------|-----------|-------------|-----------|-------|-------|------|
| 1901 | 5,836,587 | 6,398,227 | 404,740,360 | 1,904,371 | 69.34 | 63.26 | 1.13 |
| 1902 | 6,586,032 | 6,163,977 | 436,814,308 | 1,947,305 | 66.32 | 70.87 | 1.07 |
| 1903 | 6,405,756 | 6,304,194 | 399,578,918 | 1,624,248 | 62.38 | 63.38 | 0.98 |
| 1904 | 5,304,660 | 6,375,949 | 393,094,107 | 1,692,966 | 74.10 | 61.65 | 1.03 |
| 1905 | 5,431,974 | 6,418,596 | 437,416,250 | 1,899,239 | 80.53 | 68.15 | 1.04 |
| 1906 | 6,512,145 | 7,335,201 | 478,642,156 | 2,268,321 | 73.50 | 65.25 | 1.14 |
| 1907 | 7,294,165 | 8,472,012 | 564,708,773 | 2,516,038 | 77.42 | 66.66 | 1.07 |
| 1908 | 7,746,484 | 9,804,014 | 617,642,314 | 2,597,980 | 79.73 | 63.00 | 1.01 |

SOUTH AUSTRALIA.

| | | | | | | | |
|------|-----------|-----------|-------------|-----------|-------|--------|------|
| 1901 | 2,686,789 | 1,628,444 | 202,649,157 | 843,019 | 75.42 | 124.44 | 1.00 |
| 1902 | 2,468,326 | 1,392,257 | 170,523,167 | 681,045 | 69.09 | 122.48 | 0.96 |
| 1903 | 2,311,250 | 1,349,617 | 165,357,307 | 703,522 | 71.55 | 122.52 | 1.02 |
| 1904 | 2,247,003 | 1,515,621 | 178,443,372 | 761,298 | 79.41 | 117.74 | 1.02 |
| 1905 | 2,284,071 | 1,681,003 | 201,789,124 | 860,037 | 88.35 | 120.04 | 1.02 |
| 1906 | 2,337,001 | 1,732,436 | 205,079,077 | 910,106 | 87.75 | 118.38 | 1.07 |
| 1907 | 2,666,919 | 2,042,939 | 239,854,742 | 1,083,504 | 89.94 | 117.41 | 1.08 |
| 1908 | 3,135,803 | 2,255,996 | 272,373,487 | 1,184,867 | 86.86 | 120.73 | 1.04 |

§ WESTERN AUSTRALIA.

| | | | | | | | |
|------|-----------|-----------|-------------|---------|-------|-------|------|
| 1907 | 1,939,959 | 2,091,376 | 144,855,822 | 964,653 | 74.67 | 69.26 | 1.60 |
| 1908 | 1,976,204 | 2,058,741 | 142,719,559 | 948,373 | 72.22 | 69.32 | 1.59 |

* TASMANIA.

| | | | | | | | |
|-------|---------|---------|------------|---------|-------|-------|------|
| 1901† | 542,977 | 314,628 | 12,848,396 | 93,025 | 23.66 | 40.93 | 1.73 |
| 1902† | 567,314 | 407,505 | 14,331,487 | 109,266 | 25.26 | 35.30 | 1.82 |
| 1903† | 593,943 | 418,701 | 13,790,622 | 113,597 | 23.22 | 34.86 | 1.97 |
| 1904‡ | 609,914 | 425,102 | 14,900,000 | 114,361 | 24.43 | 35.05 | 1.84 |
| 1905 | 601,984 | 377,010 | 14,802,425 | 109,220 | 24.59 | 37.58 | 1.77 |
| 1906 | 597,913 | 399,487 | 13,625,731 | 104,416 | 22.79 | 25.46 | 1.83 |
| 1907 | 624,303 | 428,387 | 14,821,533 | 112,457 | 23.74 | 34.59 | 1.82 |
| 1908 | 671,185 | 465,186 | 17,141,045 | 123,493 | 25.54 | 36.84 | 1.73 |

* Exclusive of live stock. † To 31st December for years 1901, 2, and 3; to 30th June for succeeding years. ‡ Partly estimated. § Particulars for previous years not available.

(iii.) *Classification of Commodity Ton Mileage, 1908.* New South Wales is the only State for which particulars, specifying the ton-mileage and the earnings per ton-mile for various classes of commodities, are available. It is hoped that in future years it will be possible to give corresponding particulars for the other States.

The subjoined statement gives particulars for the last financial year. Miscellaneous traffic consists of timber, bark, firewood, bricks, drain-pipes, coal, road-metal in six-ton lots, agricultural and vegetable seeds in five-ton lots, and traffic of a similar nature.

A and B classes consist of lime, vegetables, tobacco leaf, caustic soda and potash, cement, copper ingots, fat and tallow, water and mining plant in six-ton lots, leather in one and three-ton lots, agricultural implements in five-ton lots, and other traffic of a similar nature.

NEW SOUTH WALES.—SUMMARY OF TON-MILEAGE FOR YEAR ENDED 30th JUNE, 1908.

| Particulars. | Total Tons Carried. | Total Miles. | Average Miles per Ton. | Earnings (exclusive of Terminals). | Earnings per Ton-Mile. | Percentage on Total Tonnage. |
|---------------------------|---------------------|--------------|------------------------|------------------------------------|------------------------|------------------------------|
| | Tons. | 1000 Miles. | Miles. | £ | d. | per cent. |
| Coal, coke, and shale ... | 6,489,594 | 152,098 | 23.44 | 334,469 | 0.53 | 66.19 |
| Other minerals ... | 356,642 | 18,156 | 50.91 | 58,702 | 0.78 | 3.64 |
| Crude ores ... | 117,271 | 10,872 | 92.71 | 23,881 | 0.53 | 1.20 |
| Miscellaneous ... | 419,586 | 31,365 | 74.75 | 96,099 | 0.74 | 4.28 |
| Firewood ... | 275,786 | 7,191 | 26.07 | 23,362 | 0.78 | 2.81 |
| Fruit ... | 44,037 | 4,342 | 98.61 | 16,012 | 0.88 | 0.45 |
| Grain and flour ... | 300,384 | 67,557 | 224.90 | 100,848 | 0.36 | 3.06 |
| Hay, straw, and chaff ... | 192,419 | 36,038 | 187.29 | 57,592 | 0.38 | 1.96 |
| Frozen meat ... | 7,635 | 494 | 64.71 | 2,064 | 1.00 | 0.08 |
| General goods ... | 1,821 | 633 | 347.60 | 6,866 | 2.60 | 0.02 |
| A Class ... | 493,724 | 51,922 | 105.16 | 218,293 | 1.01 | 5.04 |
| B " ... | 250,990 | 28,803 | 114.75 | 204,711 | 1.71 | 2.56 |
| C " ... | 23,955 | 1,219 | 50.90 | 10,255 | 2.02 | 0.24 |
| 1st Class ... | 109,441 | 15,123 | 138.18 | 194,301 | 3.08 | 1.12 |
| 2nd " ... | 91,886 | 16,519 | 179.77 | 269,005 | 3.91 | 0.93 |
| 3rd " ... | 46,910 | 7,064 | 150.59 | 142,608 | 4.84 | 0.48 |
| Wool Class ... | 126,384 | 36,232 | 286.68 | 298,441 | 1.98 | 1.29 |
| Live stock ... | 455,549 | 132,014 | 289.79 | 540,471 | 0.98 | 4.65 |
| Total ... | 9,804,014 | 617,642 | 63.00 | 2,597,980 | 1.01 | 100.00 |

22. Interest Returned on Capital Expenditure.—It may be seen from the figures given in the table in paragraph 19 hereof, that the Government railways in Australia have, on the whole, made a substantial profit during each year since the inception of the Commonwealth, but unfortunately the community does not get the full benefit of this profit, owing to the high rates of interest at which money for railways was borrowed in the early days. Though the average rate during the year ended the 30th June, 1908, was about $3\frac{1}{2}$ per cent., an average does not accurately express the position. At an early period the need of constructing railways for the sole purpose of opening up undeveloped districts was recognised, and lines were built which could not possibly pay for some years to come; as these railways always preceded population the money had to be raised at an almost speculative rate of interest, frequently amounting to 6 per cent., while the more recent loans have been effected at less than 3 per cent., hence the railways have been handicapped by a burdensome interest. At the present time also spur lines are constructed, which can scarcely be expected to instantly return revenue in excess of the expenditure, and so must, for a time at any rate, be a charge on the more developed branches of the railway systems, and tend to increase the ratio of working costs to revenue. It may be noted, however, that although the loans made for expenditure on railway construction and equipment very largely increase the amount of the public debt of the Commonwealth, forming, in fact, more than half the total debt, the money borrowed has not been sunk in undertakings which give no return, but has been expended on works which are increasingly reproductive, yielding in most cases a direct return on the capital expended, and representing a greater value than their original cost. In Europe the national debts of various countries have been incurred principally through the expenses of prolonged wars and the money has gone beyond recovery, but in Australia the

expenditure is represented to a large extent by public works which pay a direct return, which is, on the whole, greater than the amount of interest due upon capital invested. In addition to the purely commercial aspect of the figures relating to the revenue and expenditure of the Commonwealth railways, it is of great importance that the object with which many of the lines were constructed should be kept clearly in view; the anticipated advantage in building these lines has been the ultimate settlement of the country rather than the direct returns from the railways themselves, and the policy of the State Governments has been to use the railway systems of the Commonwealth for the development of the country's resources, to the maximum extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges. Further, the money has been spent in developing immense agricultural, pastoral, and mineral resources, which add to the wealth of the community, while the benefits conferred in providing a cheap and convenient mode of transit, and in generally furthering the trade and the best interests of the Commonwealth, are incalculable.

(i). *Profit or Loss after Payment of Working Expenses and Interest, 1901 to 1908.*

The net revenue of the Government railways in each State after payment of working expenses is shewn above, on page 716. The following table shews the amount of interest payable on expenditure from loans on the construction and equipment of the railways in each State, the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost of construction and equipment:—

GOVERNMENT RAILWAYS.—INTEREST ON LOAN EXPENDITURE, PROFIT OR LOSS, AND PERCENTAGE OF PROFIT OR LOSS ON TOTAL COST, 1901 to 1908.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE. | | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| New South Wales ... | 1,424,940 | 1,434,638 | 1,474,473 | 1,484,149 | 1,526,948 | 1,541,427 | 1,598,710 | 1,649,364 |
| Victoria ... | 1,464,809 | 1,492,695 | 1,473,532 | 1,515,755 | 1,461,994 | 1,472,397 | 1,483,284 | 1,483,307 |
| Queensland ... | 819,084 | 837,205 | 859,986 | 873,006 | 876,568 | 881,414 | 900,827 | 931,791 |
| South Australia ... | 454,141 | 469,787 | 466,655 | 470,882 | 468,730 | 474,955 | 479,720 | 494,636 |
| Northern Territory | 45,757 | 47,012 | 46,761 | 46,838 | 46,776 | 46,770 | 46,746 | 46,746 |
| Western Australia ... | 225,713 | 234,932 | 257,195 | 277,181 | 308,916 | 323,564 | 333,237 | 342,727 |
| Tasmania ... | 141,725 | 140,550 | 142,550 | 143,190 | 143,800 | 148,263 | 148,488 | 149,106 |
| Commonwealth ... | 4,576,169 | 4,656,819 | 4,721,152 | 4,811,001 | 4,833,822 | 4,888,790 | 4,991,012 | 5,098,177 |

PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.*

| | £ | £ | £ | £ | £ | £ | £ | £ |
|-----------------------|----------|----------|------------|----------|----------|----------|----------|----------|
| New South Wales ... | +105,638 | -33,321 | -425,879 | -306,676 | -35,079 | +384,950 | +610,955 | +579,931 |
| Victoria ... | -202,251 | -290,971 | -453,761 | -100,017 | -102,007 | +99,020 | +176,054 | -46,458 |
| Queensland ... | -560,129 | -447,777 | -489,138 | -379,405 | -277,873 | -198,687 | +18,208 | -34,646 |
| South Australia ... | +53,436 | -74,129 | -14,554 | +14,362 | +67,800 | +110,425 | +227,643 | +277,093 |
| Northern Territory | -57,192 | -69,139 | -48,275 | -43,051 | -44,416 | -45,727 | -46,008 | -46,344 |
| Western Australia ... | +83,071 | +30,127 | +48,417 | +131,270 | +45,210 | +109,127 | +68,189 | +151,466 |
| Tasmania ... | -109,334 | -80,631 | -61,222 | -61,309 | -71,964 | -79,676 | -75,765 | -73,317 |
| Commonwealth ... | -636,761 | -965,841 | -1,449,412 | -744,817 | -418,329 | +379,462 | +977,276 | +807,725 |

* The positive sign indicates a profit, the negative a loss. † Allowing for payment of special expenditure and charges (see paragraph 16 above).

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--|---------|---------|---------|---------|---------|---------|---------|---------|
| PERCENTAGE OF PROFIT OR LOSS TO CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.* | | | | | | | | |
| New South Wales ... | +0.27 | -0.08 | -1.02 | -0.73 | -0.08 | +0.88 | +1.36 | +1.27 |
| Victoria† ... | -0.50 | -0.71 | -1.12 | -0.24 | -0.25 | +0.24 | +0.42 | -0.11 |
| Queensland ... | -2.84 | -2.22 | -2.41 | -1.81 | -1.28 | -0.91 | +0.07 | -0.15 |
| South Australia ... | +0.41 | -0.56 | -0.11 | +0.11 | +0.50 | +0.81 | +1.66 | +1.99 |
| Northern Territory ... | -4.88 | -5.96 | -4.10 | -3.65 | -3.76 | -3.87 | -3.91 | -3.92 |
| Western Australia ... | +1.17 | +0.41 | +0.59 | +1.46 | +0.47 | +1.09 | +0.66 | +1.41 |
| Tasmania ... | -2.87 | -2.10 | -1.57 | -1.57 | -1.83 | -2.03 | -1.92 | -1.84 |
| Commonwealth ... | -0.55 | -0.76 | -1.12 | -0.56 | -0.31 | +0.28 | +0.71 | +0.58 |

* The positive sign indicates a profit, the negative a loss. † Allowing for payment of special expenditure and charges (see paragraph 16 above).

23. **Passenger Fares and Goods Rates.**—Considerable reductions have been made in recent years in passenger fares and in freight rates. These fares and rates are not only changed from time to time to suit the convenience and varying necessities of the railways, but, as traffic is developed and revenue increased, they are also in many cases reduced to an extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges. During the last financial year reductions were made in the rates and fares in three of the States. In Victoria reductions were made during the year in the charges for the carriage of goods and in the fares for the conveyance of passengers equivalent respectively to approximately £47,000 and £67,000, a total of approximately £114,000 per annum. In Queensland rates and fares were reduced to the extent of £100,000 per annum. The charges on the Mackay, Bower, Cairns, Cooktown, and Normanton lines were previously on higher scales than on the larger systems, and the opportunity was taken to reduce them to the same level on all lines in the State. In Western Australia reductions were made in rates in many directions. These account to a large extent for the falling-off in revenue as compared with the previous year, more especially in respect to goods earnings (see paragraphs 12, 13, and 15 hereof). In New South Wales reductions in rates and fares made prior to July, 1907, and subsequently, operated throughout the last year to the extent of about £174,000; further reductions amounting to about £40,000 were made in the carriage of starving stock.

(i) *Passenger Fares.* On the Australian Government railways two classes are provided for passenger traffic. The fares charged may be classified as follows:—(a) Fares between specified stations (including suburban fares). (b) Fares computed according to mileage rates. (c) Return, season, and excursion fares. (d) Special fares for workmen, school pupils, and others. Fares in class (a) are issued at rates lower than the ordinary mileage rates. Fares in class (b) are charged between stations not included in class (a). Generally it may be said that mileage-rate fares are computed on the basis of about two pence per mile for first-class and about 1½ pence per mile for second-class single tickets. In Tasmania, however, the fares are computed on the general basis of 1½ pence per mile first-class, one penny per mile second-class, with one-sixth added, and a terminal charge of one penny. In New South Wales and Queensland the mileage rates are based upon a tapering principle, *i.e.*, a lower charge per mile is made for a long journey than for a short journey. First-class return fares are generally about 1½ to 1¾ times the single fare, and the second-class are about 30 to 45 per cent. lower than the first-class fares. In Tasmania, however, return fares (except excursions) are double the single fares. Excursion tickets are issued for the return journey at from about single fare to about 1½ times the single fare. Season tickets and special fares are issued at reduced rates.

The following table shows the passenger fares for different distances charged in each State, between stations for which specific fares are not fixed :—

PASSENGER MILEAGE RATES ON GOVERNMENT RAILWAYS, 1908.

| State. | For a journey of— | | | | | |
|-----------------------------------|-------------------|---------------|---------------|----------------|---------------|---------------|
| | 50 Miles. | 100 Miles. | 200 Miles. | 300 Miles. | 400 Miles. | 500 Miles. |
| FIRST-CLASS SINGLE FARES. | | | | | | |
| New South Wales | s. d. 7 10 | s. d. 15 8 | s. d. 30 3 | s. d. 44 10 | s. d. 57 4 | s. d. 65 8 |
| Victoria | 8 11 | 18 0 | 35 9 | 53 9 | 71 9 | 89 7 |
| Queensland | 8 6 | 16 0 | 31 0 | 45 1 | 58 2 | 71 4 |
| South Australia* | 8 4 | 16 8 | 33 4 | 50 0 | 66 8 | 83 4 |
| Western Australia | 8 4 | 16 8 | 33 4 | 50 0 | 66 8 | 83 4 |
| Tasmania | 7 6 | 14 8 | ... | ... | ... | ... |
| Average | 8 3 | 16 3 | 32 9 | 48 9 | 64 1 | 78 8 |
| Average per passenger-mile d. | 1.98 | 1.96 | 1.96 | 1.95 | 1.92 | 1.89 |
| SECOND-CLASS SINGLE FARES. | | | | | | |
| New South Wales | s. d. 4 8 | s. d. 9 5 | s. d. 17 9 | s. d. 26 1 | s. d. 33 5 | s. d. 39 8 |
| Victoria | 5 11 | 12 1 | 23 11 | 35 9 | 47 8 | 59 7 |
| Queensland | 5 8 | 10 4 | 19 9 | 28 2 | 35 8 | 43 2 |
| South Australia* | 5 3 | 10 5 | 20 10 | 31 3 | 41 8 | 52 1 |
| Western Australia | 5 3 | 10 5 | 20 10 | 31 3 | 41 8 | 52 1 |
| Tasmania | 5 0 | 9 9 | ... | ... | ... | ... |
| Average | 5 4 | 10 5 | 20 7 | 30 6 | 40 0 | 49 4 |
| Average per passenger-mile d. | 1.28 | 1.25 | 1.24 | 1.22 | 1.20 | 1.18 |

* Ordinary mileage rates are not published; the amounts given are therefore computed from fares between specified stations.

(ii.) *Parcel Rates.* In all the States parcels may be transmitted by passenger train upon payment of the prescribed rates, which are based upon weight and distance carried. The rates vary slightly in the different States. In New South Wales they range from threepence for a parcel not exceeding 3 lbs. for any distance up to 87 miles, to fifteen shillings for a parcel weighing from 98 lbs. to 112 lbs., for a distance over 510 miles. In Victoria the charge for a parcel weighing from 84 lbs. to 112 lbs. for a distance over 450 miles is twelve shillings. The corresponding rate in Queensland is twelve shillings and sixpence; in South Australia eleven shillings and threepence; in Western Australia thirteen shillings; and in Tasmania for a distance of 250 miles the rate is five shillings and sixpence.

(iii.) *Goods Rates.* The rates charged for the conveyance of goods and merchandise may generally be divided into three classes, viz. :—(a) Mileage rates, (b) District or "development" rates, and (c) Commodity rates. In each of the States there are a number—ranging from 5 in Tasmania to 9 in Victoria—of different classes of freight. The mileage rates are based upon a tapering principle, i.e., a lower charge per ton-mile is made for a long haul than for a short haul. District rates are charged between specified stations and are somewhat lower than the mileage rates. In addition to the ordinary classification of freights under class (a), certain commodities, such as wool, grain, agri-

cultural produce, and crude ores, are given special rates, lower than the mileage rates, under class (c). Special low rates are also charged for truck loads of various commodities.

Space will not permit of anything like a complete analysis of goods rates in the several States being here given. As an indication of the range and amount of such rates the following table is given shewing for each State the charges made per ton for hauls of different distances in respect of (a) agricultural produce not otherwise specified; (b) the highest-class freight; and (c) the lowest-class freight:—

GOODS MILEAGE RATES ON GOVERNMENT RAILWAYS, 1908.

| State. | Charge per Ton for a Haul of— | | | | | |
|--------|-------------------------------|------------|------------|------------|------------|------------|
| | 50 Miles. | 100 Miles. | 200 Miles. | 300 Miles. | 400 Miles. | 500 Miles. |

AGRICULTURAL PRODUCE.

| | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. |
|--------------------------|---------|-------|-------|-------|-------|-------|
| New South Wales | 5 0 | 7 6 | 9 6 | 10 6 | 11 4 | 12 0 |
| Victoria | 5 6 | 9 0 | 11 9 | 13 8 | 15 4 | 17 0 |
| Queensland | 7 6 | 13 9 | 22 1 | 28 4 | 34 7 | 40 10 |
| South Australia | 6 2 | 8 9 | 12 11 | 17 1 | 21 3 | 25 5 |
| Western Australia | 7 11 | 11 9 | 15 9 | 21 8 | 28 0 | 30 0 |
| Tasmania | 6 9 | 9 8 | 13 10 | ... | ... | ... |
| Average | 6 8 | 10 1 | 14 3 | 18 3 | 22 8 | 25 1 |
| Average per ton-mile | d. 1.60 | 1.21 | 0.86 | 0.73 | 0.68 | 0.60 |

OTHER HIGHEST-CLASS FREIGHT.

| | | | | | | |
|--------------------------|---------|-------|-------|--------|--------|-------|
| New South Wales | 39 10 | 54 10 | 108 0 | 131 11 | 144 5 | 160 8 |
| Victoria | 26 0 | 51 0 | 97 0 | 134 6 | 167 9 | 201 0 |
| Queensland | 41 8 | 75 0 | 133 4 | 191 8 | 220 10 | 235 5 |
| South Australia | 27 1 | 52 1 | 97 11 | 134 7 | 166 8 | 194 2 |
| Western Australia | 32 1 | 54 2 | 97 6 | 135 5 | 167 11 | 195 0 |
| Tasmania | 32 0 | 50 0 | 96 0 | ... | ... | ... |
| Average | 33 1 | 56 2 | 105 0 | 145 7 | 173 6 | 197 3 |
| Average per ton-mile | d. 7.94 | 6.74 | 6.30 | 5.82 | 5.20 | 4.73 |

OTHER LOWEST-CLASS FREIGHT.

| | | | | | | |
|--------------------------|---------|------|-------|------|-------|------|
| New South Wales | 5 1 | 8 11 | 14 1 | 18 3 | 22 5 | 24 6 |
| Victoria | 4 3 | 8 4 | 15 0 | 19 0 | 21 0 | 23 2 |
| Queensland | 4 7 | 8 9 | 15 0 | 19 2 | 23 4 | 27 6 |
| South Australia | 4 2 | 7 10 | 13 7 | 17 9 | 21 11 | 26 1 |
| Western Australia | 5 0 | 8 4 | 14 2 | 19 2 | 23 4 | 27 6 |
| Tasmania | 18 8 | 27 0 | 41 9 | ... | ... | ... |
| Average | 6 11 | 11 6 | 18 11 | 18 8 | 22 5 | 24 9 |
| Average per ton-mile | d. 1.66 | 1.38 | 1.13 | 0.75 | 0.67 | 0.62 |

The classification of commodities varies in the several States. Generally the highest-class freight includes expensive, bulky, or fragile articles, while the lowest-class comprises many ordinary articles of merchandise, such as are particularly identified or connected with the primary industries of each State.

In New South Wales, for example, the highest-class freight comprises such articles as benzine and petroleum, belting, cardboard boxes, vehicles, calcium-chloride, china and glassware, drugs and medicines, electroplate ware, fireworks, furniture and household goods, guns, instruments, safes, plants, saddlery, empty tanks, and venetian blinds. In the same State the lowest-class freight comprises agricultural and vegetable seeds, asbestos, bark, barley, screenings, bisulphide of carbon, bones and bonedust, bricks and building stone, chalk, charcoal, clay, coal and coke, drain pipes and tiles, firewood, horns and hoofs, ice, scrap iron, lead, manures, rabbit-proof netting, posts and rails, and shale; while the agricultural produce class includes grain, meal, malt, bran, pollard, millet seed, green chicory root, cabbage, cauliflowers, potatoes, pumpkins, melons, turnips, other agricultural produce not otherwise specified, in "Up" transit, and also manures in "Up" or "Down" transit.

24. **Numbers and Description of Rolling Stock, 1908.**—The following table shews, so far as possible in a comparable manner, the number of locomotives and of various classes of rolling stock in use on the Government railways in each State. The figures given are subject to certain limitations, inasmuch as the classification adopted, as well as the various types of rolling stock in use, are not identical in the several States. In Victoria and Queensland, for example, the brake-vans classified under the heading of coaching vehicles are used indiscriminately for coaching and goods traffic. Again, it is believed that in New South Wales the number of passenger vehicles is really greater than that shewn, certain of the other classes of vehicles being used for composite purposes:—

CLASSIFICATION OF LOCOMOTIVES AND ROLLING STOCK, 1907-8.

| State ... | N.S.W. | Victoria. | | | Qld. | | | South Australia. | | | N.T. | W.A. | Tasmania. | Cwth. |
|--|-----------------|----------------|----------------|----------------|----------------|----------------|----------------------------------|------------------|----------------|----------------|----------------|---------------|-----------|-------|
| Gauge... | ft. in. 4 8½ | ft. in. 5 3 | ft. in. 2 6 | ft. in. 3 6 | ft. in. 5 3 | ft. in. 3 6 | Tram- ways. ft. in. 5 3 | ft. in. 3 6 | ft. in. 3 6 | ft. in. 3 6 | ft. in. 3 6 | ft. 2 | — | |
| 1. Locomotives. | | | | | | | | | | | | | | |
| Tender ... | 567 | 377 | ... | 329 | *90 | 162 | ... | 5 | ... | 66 | ... | ... | | |
| Tank ... | 129 | 103 | 8 | 39 | 67 | 7 | ... | 1 | ... | 7 | 5 | ... | | |
| Total ... | 696 | 480 | 8 | 368 | 157 | 169 | ... | 6 | 317 | 73 | 5 | 2,279 | | |
| 2. Coaching Stock. | | | | | | | | | | | | | | |
| Passenger vehicles ... | 836 | 1,211 | 17 | 468 | 223 | 102 | 13 | 4 | 312 | 178 | 6 | ... | | |
| .. (Joint stock) ... | ... | 11 | ... | ... | 7 | ... | ... | ... | ... | ... | ... | ... | | |
| Brake vans ... | 136 | 304 | ... | 120 | 31 | 28 | ... | 2 | 20 | 15 | ... | ... | | |
| .. (Joint stock) ... | ... | 4 | ... | ... | 3 | ... | ... | ... | ... | ... | ... | ... | | |
| Horse boxes ... | ... | ... | ... | ... | 18 | ... | ... | ... | 54 | 35 | ... | ... | | |
| Carriage trucks ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | | |
| Post office vans ... | 287 | 224 | ... | 99 | 5 | 46 | ... | 1 | 10 | ... | ... | ... | | |
| .. (Joint stock) ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | | |
| Other chg. vehicles ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | | |
| Total ... | 1,259 | 1,754 | 17 | 687 | 287 | 176 | 13 | 7 | 396 | 229 | 6 | 4,831 | | |
| 3. Goods and Live Stock Waggon. | | | | | | | | | | | | | | |
| Waggon ... | 12,205 | ... | ... | ... | 2,220 | 3,729 | 81 | 130 | 6,328 | ... | ... | ... | | |
| Brake vans ... | 335 | 10,641 | 106 | 8,000 | 59 | 89 | ... | 1 | 132 | 1,475 | 67 | ... | | |
| Departmental ... | 1,023 | ... | ... | ... | 103 | 118 | ... | 6 | ... | ... | ... | ... | | |
| Total ... | 13,563 | 10,641 | 106 | 8,000 | 2,382 | 3,936 | 81 | 137 | 6,460 | 1,475 | 67 | 46,848 | | |

* Not including 5 passenger motors.

25. **Number of Railway Employees, 1901 to 1908.**—The following table shows the number of employes in the Railway Departments of each State in the year 1901 and in each year from 1903 to 1908, inclusive, classified according to (a) salaried staff, and (b) wages staff:—

GOVERNMENT RAILWAYS.—NO. OF EMPLOYES IN RAILWAY DEPTS., 1901 to 1908.

| State. | 1901. | | 1903. | | 1904. | | 1905. | | 1906. | | 1907. | | 1908. | |
|-----------------|-----------------|--------------|-----------------|--------------|-----------------|--------------|-----------------|--------------|-----------------|--------------|-----------------|--------------|-----------------|--------------|
| | Salaried Staff. | Wages Staff. | Salaried Staff. | Wages Staff. | Salaried Staff. | Wages Staff. | Salaried Staff. | Wages Staff. | Salaried Staff. | Wages Staff. | Salaried Staff. | Wages Staff. | Salaried Staff. | Wages Staff. |
| N.S. Wales* ... | 1,372 | 11,747 | 1,525 | 11,518 | 1,569 | 11,528 | 1,605 | 11,635 | 1,650 | 11,828 | 1,770 | 13,411 | 1,985 | 15,939 |
| Victoria ... | 1,432 | 10,524 | 1,496 | 10,358 | 1,415 | 9,868 | 1,499 | 11,049 | 1,515 | 11,432 | 1,586 | 12,492 | 1,651 | 12,936 |
| Queensland ... | 994 | 4,633 | 942 | 4,023 | 892 | 4,051 | 890 | 4,146 | 906 | 4,222 | 949 | 4,491 | 1,256 | 4,766 |
| South Aust.† | — | 3,855 | — | 3,666 | — | 3,567 | — | 3,519 | — | 3,520 | — | 5,531 | — | 6,326 |
| N. Territory† | — | 51 | — | 63 | — | 52 | — | 54 | — | 54 | — | 72 | — | 75 |
| West. Aust. ... | 876 | 5,407 | 912 | 5,329 | 910 | 5,837 | 930 | 5,813 | 928 | 5,480 | 921 | 4,895 | 802 | 4,805 |
| Tasmania ... | 178 | 1,252 | 179 | 1,061 | 181 | 1,153 | 178 | 980 | 178 | 1,039 | 177 | 1,030 | 182 | 1,077 |
| C'wealth ... | 4,852 | 37,469 | 5,054 | 36,018 | 4,967 | 36,054 | 5,102 | 37,251 | 5,177 | 37,575 | 5,403 | 41,922 | 5,876 | 45,924 |

* Exclusive of gate-keepers with free house only. † Separate returns for salaried and wages staff are not available; the number of salaried staff is included with the wages staff. ‡ Europeans, sixty-eight; Chinese and coolies, seven.

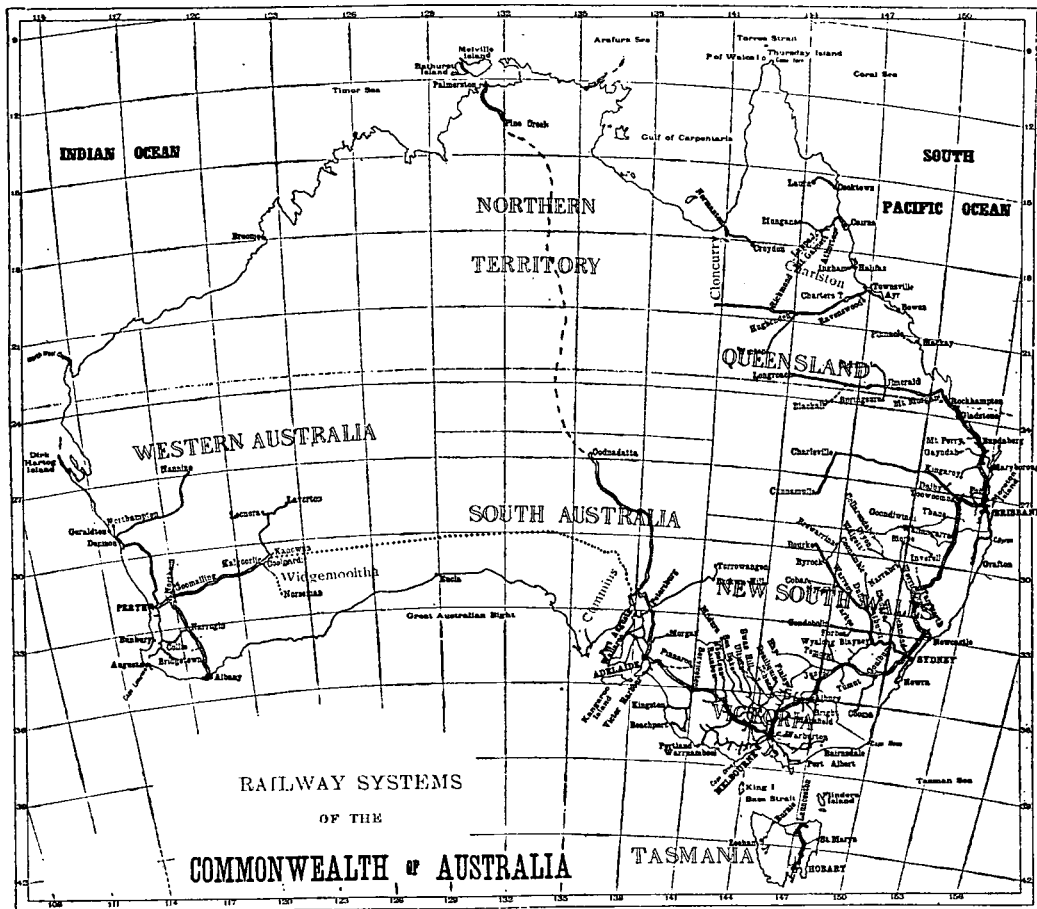
26. **Accidents.—Numbers of Killed and Injured, 1901 to 1908.**—The subjoined tables give particulars of the number of persons killed and injured through train accidents and the movement of rolling stock on the Government railways in each State for the years 1901 to 1908:—

GOVERNMENT RAILWAYS.—TOTAL NUMBER OF PERSONS KILLED AND INJURED, 1900-1 TO 1907-8.

| State. | 1900-1. | | 1902-3. | | 1903-4. | | 1904-5. | | 1905-6. | | 1906-7. | | 1907-8. | |
|------------------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|
| | Killed. | Injured. | Killed. | Injured. | Killed. | Injured. | Killed. | Injured. | Killed. | Injured. | Killed. | Injured. | Killed. | Injured. |
| N.S. Wales ... | † | † | 37 | 219 | 40 | 193 | 26 | 169 | 36 | 186 | 28 | 257 | 44 | 355 |
| Victoria ... | 46 | 452 | 40 | 547 | 28 | 657 | 25 | 500 | 60 | 720 | 55 | 595 | 90 | 1,105 |
| Queensland ... | 13 | 100 | 6 | 58 | 13 | 68 | 10 | 83 | 7 | 104 | 11 | 136 | 3 | 143 |
| S. Australia ... | 8 | 50 | 8 | 35 | 6 | 26 | 9 | 25 | 9 | 64 | 12 | 112 | 15 | 132 |
| N. Territory ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | 2 | ... | 2 | 1 | ... |
| W. Australia* | 5 | 205 | 4 | 228 | 2 | 238 | 11 | 405 | 16 | 320 | 11 | 257 | 14 | 271 |
| Tasmania ... | 1 | 8 | 1 | 7 | 3 | 15 | 1 | 30 | 1 | 11 | 3 | 27 | 2 | 21 |
| C'wealth ... | ... | ... | 96 | 1,094 | 93 | 1,197 | 82 | 1,213 | 130 | 1,407 | 120 | 1,416 | 169 | 2,027 |

* The returns up to and including the year 1904-5 are for accidents to servants of the Railway Department only. † Not available.

THE GOVERNMENT RAILWAY SYSTEMS OF AUSTRALIA.



EXPLANATION OF MAP.—The continuous lines in chocolate denote the existing railway lines of Australia, the heavier lines being the main routes.

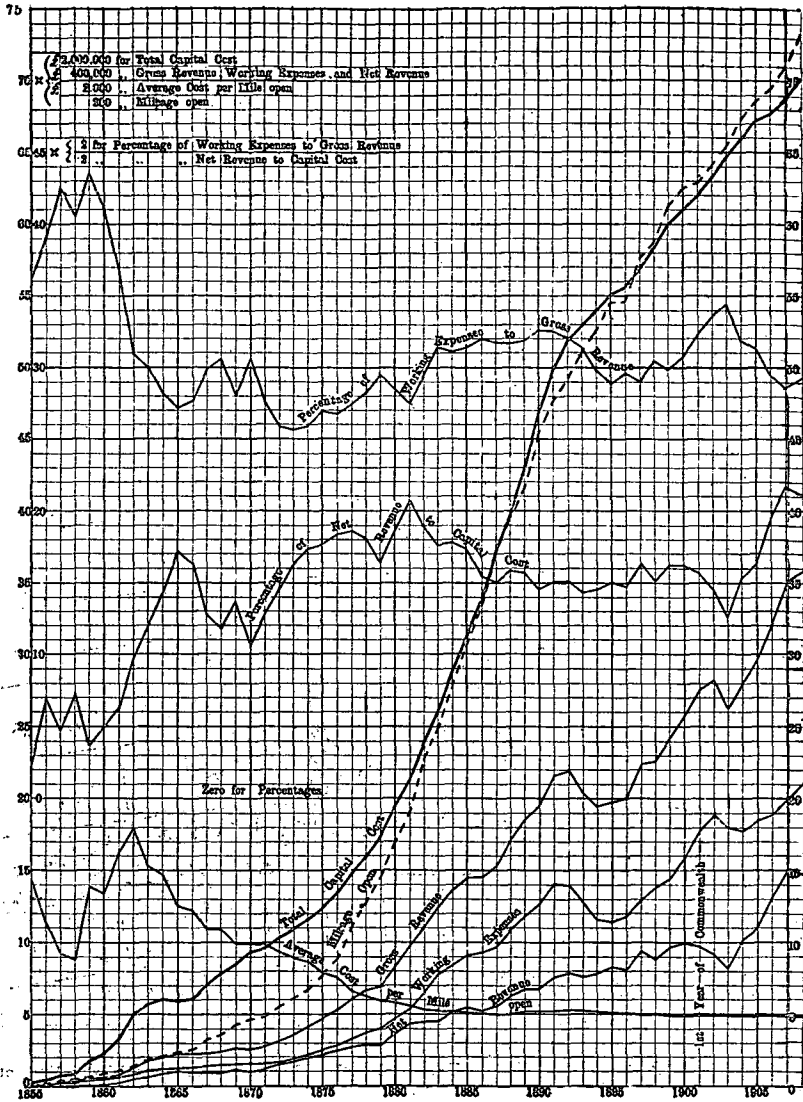
Lines in course of construction are shown by dotted lines, thus - - - - -

A proposed transcontinental line, joining the railways of South and Western Australia—and thus connecting continuously by railway Queensland, New South Wales, Victoria, South Australia, and Western Australia—is shown by dots, thus, and one connecting Oodnadatta in South Australia with Pine Creek in the Northern Territory, thus - - - - -

LIST OF PRINCIPAL SECTIONS OF RAILWAYS.

| | Miles. | | Miles. | | Miles. |
|------------------------------|--------|----------------------------------|--------|-------------------------|--------|
| Townsville to Winton | 368 | Sydney to Hay | 460 | Adelaide to Broken Hill | 334 |
| Rockhampton to Longreach | 428 | " Cooma | 266 | " Oodnadatta | 688 |
| Brisbane to Cunnamulla | 604 | " Melbourne (17 hrs.) | 582½ | Perth to Leonora | 536 |
| Toowoomba to Newcastle | 520 | Melbourne to Adelaide (17½ hrs.) | 482½ | " Nannine | 616 |
| Brisbane to Sydney (28 hrs.) | 725 | " Mildura | 351 | " Albany | 340 |
| Newcastle to Inverell | 405 | " Swan Hill | 215 | Hobart to Launceston | 133 |
| Sydney to Bourke | 508 | | | | |

GRAPHS SHEWING THE FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF AUSTRALIA, 1855 TO 1908.



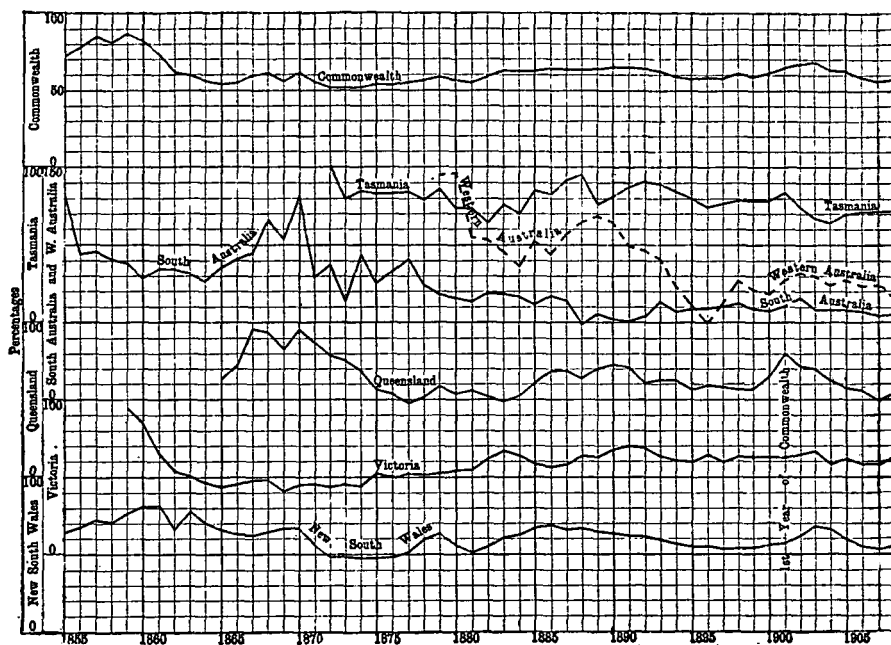
EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The significance of the vertical height of each square varies, however, according to the nature of the several curves.

In the heavy curve denoting the total capital cost of the railways of the Commonwealth, each vertical side of each square denotes £2,000,000.

In the three lighter curves, representing (i.) gross revenue, (ii.) working expenses, and (iii.) net revenue, the vertical height of each single square denotes £400,000. For the curve of average cost per mile open, the vertical side of the small square denotes £2,000. The mileage open is shown by dotted curves, the vertical side of each square representing 200 miles.

For the percentages a new zero is taken at "20" on the scale for the general diagram. The vertical height of each square represents 2 per cent. in the curve shewing the percentage of working expenses on gross revenue. For the curve of percentage of net revenue on capital cost, the vertical height of each square represents only 0.2, that is to say, the vertical scale is ten times that of the preceding curve.

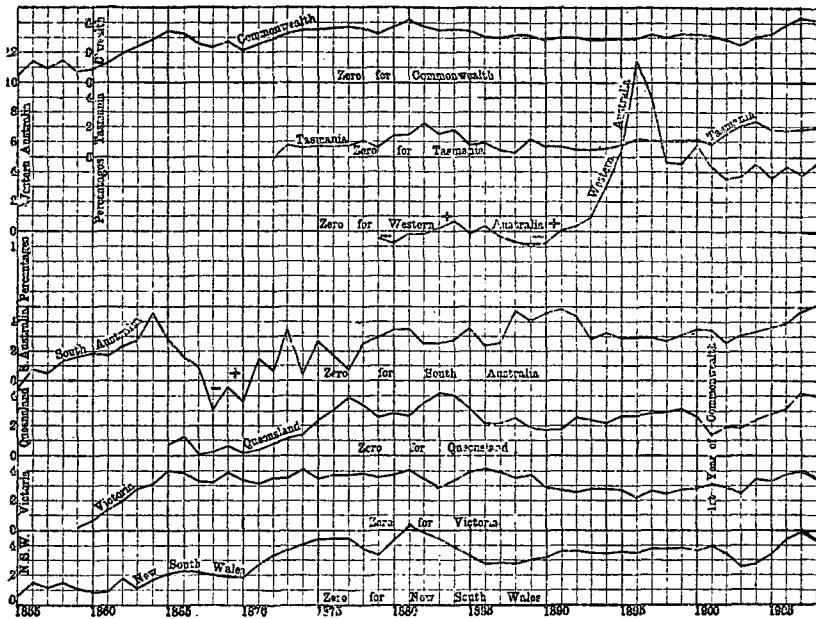
GRAPHS SHEWING PERCENTAGES OF WORKING EXPENSES TO GROSS REVENUE FOR STATES AND COMMONWEALTH, 1855 TO 1908.



EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent., the heavy zero lines being different for each State and the Commonwealth, with, however, one exception, viz., that the zero line for South and Western Australia is identical.

The curve for Victoria commences only in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government railway systems of the several States were inaugurated.

GRAPHS SHOWING PERCENTAGES OF NET REVENUE TO CAPITAL COST OF GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 TO 1906.



EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes 1 per cent., the thick zero lines, however, for each State and for the Commonwealth being different. This was necessary to avoid confusion of the curves.

Where the curve for any State falls below that State's zero line, loss is indicated, the working expenses having exceeded the gross revenue.

The curve for Victoria commences only in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government railway systems of the several States were inaugurated.

(c) **Graphical Representation of Government Railway Developments.**

1. **General.**—Its railways are so important a factor in the development of Australia that it has been deemed desirable to graphically represent the main facts of their progress from their beginning, viz., from 1855 onwards. To this end the graphs shewn on pages 730 to 732 have been prepared. The distribution of the railways is shewn on the map on page 729.

2. **Capital Cost and Mileage Open** (page 730).—The graph shews that the ratio between these elements was, naturally enough, very variable from 1855 to 1870, consequent upon progressive decrease in cost of construction. It then became subject to a more regular change, implying reduction of average cost.

3. **Cost per Mile Open.**—The fluctuations in cost per mile open are clearly indicated by the graph on page 730. In 1855 the cost per mile open was no less than £28,430; by 1858 it had fallen to £17,752, when it rose again to a maximum of £35,958 in 1862. It then diminished rapidly till 1883—when it reached £10,496 per mile—then slowly till 1887, when it amounted to £10,017 per mile. Again rising, this rate attained to £10,537 in 1892, since which it has, on the whole, been declining, attaining its lowest value, £9550, in 1908.

4. **Gross Revenue.**—This graph (page 730) exhibits considerable irregularities, the most striking of which are the maxima at 1892 and 1902. The fall commencing in 1892 was in consequence partly of the commercial crisis and partly of the then droughty conditions of several of the States, while that of 1902-3 was due to drought. In the latter case the recovery was very rapid.

5. **Working Expenses and Net Revenue.**—The characteristics of these graphs (page 730), are similar to those of "Gross Revenue," and the same remarks apply. It may be noted, however, that the working expenses are increasing at a much slower rate than gross and net revenue.

6. **Percentage of Working Expenses to Gross Revenue.**—This is shewn for each State and for the Commonwealth on page 731, and for the Commonwealth only, on a larger scale, on page 730. The curve shews considerable fluctuations, but points also to the fact that, although a slight rise occurred in 1908, there was from 1903 to 1907 a rapid, and therefore very satisfactory, decline in the percentage of working expenses to gross revenue. The fluctuations of this percentage, for the individual States, call for no special comment.

7. **Percentage of Net Revenue on Capital Cost.**—For the Commonwealth this graph is shewn on a large scale on page 730 and on page 732 both for Commonwealth and States. After exhibiting somewhat remarkable oscillations in the earlier years, and less marked ones between 1885 and 1900, and also a rapid fall to 1903, the curve from that year shews a well marked increase until the year 1907, a slight fall occurring in the last year. Maxima were reached in 1865, 1877, 1881, and 1907—viz., 3.44, 3.71, 4.14, and 4.35 per cent.

For the individual States the results are in general very satisfactory, the increases in the percentages recently being greatest for Queensland, New South Wales, and South Australia, less marked for Victoria and Tasmania, and oscillatory for Western Australia.

The remarkable maximum for Western Australia in 1896 is consequent upon the large use made of the western railways at the time of the development of the Western Australian goldfields.

8. **General Indications of Graphs.**—Reviewing the cost of railways, as a whole, it may be noted that for the periods indicated the average cost on the entire total runs as follows:—

| Period ... | 1855-1872. | 1873-1882. | 1883-1892. | 1893-1897. | 1898-1902. | 1903-1908. |
|-------------------|-------------|-------------|-------------|-------------|------------|------------|
| Cost per mile ... | £ 24,561 | £ 13,700 | £ 10,286 | £ 10,167 | £ 9,852 | £ 9,742 |

With the exception of the last year, when bad seasons occurred just at the time when rates had been reduced in some of the States, the percentage of working expenses on the gross revenue has lately been rapidly falling, while the percentage of net revenue on total capital cost has been rising even more rapidly. For the period 1903 to 1907 the fall in percentage of working expenses on gross revenue was from 68.80 to 57.13 per cent., while the rise of the percentage of net revenue on total capital cost was from 2.53 to 4.35 per cent.

While the sinister influence of the drought of 1902 is strikingly shewn in the curves (a) by the fall in the gross and net revenue in 1902 and 1903, (b) by the fall in the percentage of net revenue on capital cost, and (c) by the increase of working expenses on gross revenue, the rapidity of recovery is even more striking, and goes to indicate the great elasticity of the economic condition of the Commonwealth. Still more remarkable is the fact that a group of railways, necessarily constructed largely in accordance with a policy of widespread development of Australia's resources rather than as mere commercial enterprises, and costing so large a sum as £139,988,015 for construction and equipment up to the 30th June, 1908, should, nevertheless, yield so large a revenue, bringing in for the year 1907-8 a return, as pointed out, of no less than 4.22 per cent.

(D).—Private Railways.

1. **Total Mileage Open, 1908.**—As has been stated in a previous part of this Section (see A. 3) a number of private railway lines have from time to time been constructed in the Commonwealth. By far the greater proportion of such lines, however, have been laid down for the purpose of hauling timber, coal, or other minerals, and are not generally used for the conveyance of passengers or for public traffic; in many cases they are often practically unballasted and are easily removable, running through bush and forest country in connection with the timber and sugar-milling industries, and for conveying firewood for mining purposes. Many of these lines may perhaps be said to be rather of the nature of tramways than of railways. Private railways referred to herein include (a) lines open to the public for general passenger and goods traffic; and (b) branch lines from Government railways and other lines which are used for special purposes and which are of a permanent description. Other lines are referred to in the part of this Section dealing with Tramways (see § 3, *Tramways*).

The following table gives particulars of private railways in the Commonwealth open for traffic up to the 30th June, 1908:—

MILEAGE OF PRIVATE RAILWAYS OPEN, 30th JUNE, 1908.

| Particulars. | N.S.W. | Victoria. | Q'land. | S.A. | W.A. | Tas. | C'wealth. |
|-------------------------|--------|-----------|---------|------|------|------|-----------|
| For general traffic ... | 144 | 14½ | 315 | ... | 277 | 165½ | 915¾ |
| For Special purposes... | 127 | 32¾ | 20¾ | 58 | 361½ | 38¾ | 638¾ |
| Total ... | 271 | 47 | 335¾ | 58 | 638½ | 204¼ | 1,554½ |

A classification of these lines according to their gauge has already been given (see A. 6).

2. **Classification of Private Railways, 1908.**—The subjoined statement gives particulars regarding private railways, so far as returns are available, in each State up to the 30th June, 1908. In this statement the lines inset are sub-branches from the main branches specified.

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1908.

| Railway Lines. | Gauge. | Length | Nature of Traffic Carried, etc. |
|--|-------------|-------------|---------------------------------|
| NEW SOUTH WALES. | | | |
| | | ft. in. | Miles. |
| 1. BRANCHES FROM NORTHERN LINE, N.S.W. GOVT. RLYS.— | | | |
| Aberdare Extended Cessnock | 4 8½ | 16½ | Coal and passengers |
| East Greta to Stanford-Merthyr and branches | 4 8½ | 8 | " " |
| Hexham-Minni | 4 8½ | 6 | " " |
| Brown's line to Richmond Vale | 4 8½ | 11½ | Coal |
| Three other sub-branches | 4 8½ | 5 | " " |
| Newcastle-Wallsend Co.'s lines | 4 8½ | 4½ | " " |
| Five sub-branches... .. | 4 8½ | 4 | " " |
| Waratah Coal Co.'s line | 4 8½ | 4½ | " " |
| Old Burwood Pit | 4 8½ | 7½ | " " |
| Gunnedah Coal Co.'s line | 4 8½ | 4½ | " " |
| Twelve other branches | 4 8½ | 16 | Coal, coke, ores & stone |
| Total | 4 8½ | 88½ | |
| 2. BRANCHES FROM NORTH-COAST LINE GOVT. RAILWAYS— | | | |
| New Redhead Coal Co.'s lines, Adamstown to Burwood Extended, and Dudley lines | 4 8½ | 7½ | Coal and passengers |
| Seaham Coal Co.'s lines, Seaham to Killingworth, Cockle Creek, etc. | 4 8½ | 9½ | " " |
| Rhondda Colliery | 4 8½ | 3 | " " |
| Nine other branches | 4 8½ | 8½ | Coal |
| Total | 4 8½ | 28½ | |
| 3. BRANCHES FROM SOUTHERN LINE, N.S.W. GOVT. RLYS.—* | | | |
| Liverpool-Warwick Farm | 4 8½ | ¾ | Racecourse traffic |
| 4. BRANCHES FROM S. COAST LINE, N.S.W. GOVT. RLYS.—† | | | |
| Mount Kembla Coal Co. | 4 8½ | 7½ | Coal |
| Corrinal and Balgownie | 4 8½ | ¾ | " |
| Australian Smelting Co., Dapto | 4 8½ | 2½ | Ores |
| Mount Keira Coal Co., Belmore Basin | 4 8½ | 3 | Coal |
| Nine other branches | 4 8½ | 13½ | " " |
| Mount Pleasant Coal Co. | 3 6 | 3½ | " " |
| Total | 4 8½ | 30½ | |
| | 3 6 | 3½ | |
| 5. BRANCHES FROM WESTERN LINE, N.S.W. GOVT. RLYS.— | | | |
| Commonwealth Oil Corporation's line from Newnes Junction | 4 8½ | 32 | General |
| Eleven other branches | 4 8½ | 6½ | Coal, metal, and ores |
| Total | 4 8½ | 38½ | |
| 6. SILVERTON TRAMWAY— | | | |
| Broken Hill and Cockburn | 3 6 | 36 | General |
| 7. DENILIQUIN-MOAMA LINE | 5 3 | 45 | " |
| Total for State | 4 8½ | 186½ | |
| | 3 6 | 39½ | |
| | 5 3 | 45 | |

* Three other branch private lines having a total length of 24 miles have been constructed for the conveyance of minerals, but are now closed. † The Illawarra Harbour and Land Corporation's line, 6½ miles long, constructed for general traffic, is not now working.

| Railway Lines. | Gauge. | Length | Nature of Traffic Carried, etc. |
|--|------------|------------------|---------------------------------|
| * VICTORIA. | | | |
| | | ft. in. | Miles. |
| 1. KERANG TO KONDRUOK TRAMWAY | 5 3 | 14 $\frac{1}{2}$ | General |
| 2. ALTONA BAY RAILWAY— Williamstown racecourse and pit at Altona | 5 3 | 2 $\frac{1}{2}$ | Sand and stone |
| 3. CHARLOTTE PLAINS DEEP LEAD MINES— Maryborough-Castlemaine line to mines | 5 3 | 2 | Goods, minerals, and timber |
| 4. McIVOR TIMBER Co.'s LINE— Bendigo-Wallan line into bush | 5 3 | 24 | Timber |
| 5. SANDERSON'S TRAMWAY— Forrest railway station to Barwon River | 3 6 | 4 | .. |
| Total for State... .. | 5 3 3 6 | 43 4 | |

* The Rosstown railway, running between Elsternwick and Oakleigh railway stations, about 5 miles in length, is not in use.

QUEENSLAND.

| | | ft. in. | Miles. | |
|--|------------|-------------------------|---------------------------|--|
| 1. BRANCHES FROM GREAT NORTHERN LINE, GOVT. RLYS.— Ayr tramway (Stuart's Creek to Ayr) | 3 6 | 44 | General (chiefly sugar) | |
| Three other lines | 3 6 | 2 $\frac{1}{2}$ | Mineral traffic | |
| 2. BRANCHES FROM NORTH-COAST LINE, GOVT. RAILWAYS— Bundaberg to Millaquin | 3 6 | 2 | Sugar | |
| 3. BRANCH FROM WESTERN LINE, GOVT. RAILWAYS— Munro's tramway to Perseverance | 3 6 | 10 | Timber & farm produce | |
| Gulland's lines to coal mines | 3 6 | 1 $\frac{1}{2}$ | Coal | |
| Stafford's lines to coal mines | 3 6 | $\frac{1}{2}$ | .. | |
| 4. BRANCHES FROM CAIRNS LINE, GOVT. RAILWAYS— Cairns-Mulgrave tramway | 3 6 | 31 | General (chiefly sugar) | |
| Greenhill branch | 2 0 | 4 | Sugar | |
| Chillagoe railway, Mareeba to Mungana | 3 6 | 103 | General (chiefly coal and | |
| Mount Garnet tramways | 3 6 | 30 | .. [minerals] | |
| Stannary Hills tramway | 3 6 | 21 | .. .. |  |
| 5. BRANCHES FROM MACKAY LINE, GOVT. RAILWAYS— *Pioneer shire tramway, Benholme to Kirkup | 3 6 | 7 $\frac{1}{2}$ | .. (chiefly sugar) | |
| *Pinnacle to Finch Hatton | 3 6 | 5 $\frac{1}{2}$ | .. .. |  |
| 6. BRANCH FROM SOUTH-COAST LINE, GOVT. RAILWAYS— Beaudesert tramway to Innes Plain and Xmas Creek... .. | 3 6 | 21 | .. (chiefly timber | |
| 7. INGHAM TRAMWAY— Ingham to Stone River | 2 0 | 18 | and dairy produce | |
| 8. GERALDTON TRAMWAY— Geraldton towards Herberton... .. | 2 0 | 20 | .. (chiefly sugar) | |
| 9. MOSSMAN TRAMWAY— Port Douglas to S. Mossman and Mowbray Rivers | 2 0 | 14 | .. | |
| Total for State... .. | 3 6 2 0 | 279 $\frac{3}{4}$ 56 | | |

* Worked by Commissioner of Railways on behalf of construction authorities.

WESTERN AUSTRALIA*.

| | | ft. in. | Miles. | |
|---|-----|-------------------|----------|--|
| 1. MIDLAND RAILWAY— Joining Govt. lines at Midland Junction and Walkaway | 3 6 | 277 | General | |
| 2. W.A. GOLDFIELDS FIREWOOD SUPPLY Co.'s LINE— From Kurrawang into bush | 3 6 | 70 | Firewood | |
| 3. KALGOORLIE AND BOULDER FIREWOOD Co.'s LINE†— From Lake Side railway station into bush | 3 6 | 33 | .. | |
| 4. W.A. JARRAH SAWMILLS LINE— From Kirrup to mills and into bush | 3 6 | 12 | Timber | |
| 5. TIMBER CORPORATION Co.'s LINE— From Greenbushes to mills and into bush | 3 6 | 12 | .. | |
| 6. S.-WEST TIMBER HEWERS' CO-OP. SOCIETY'S LINE‡— From Collie into bush | 3 6 | 9 $\frac{1}{2}$ | .. | |
| 7. MILLAR'S KARRI AND JARRAH Co.'s LINES§— Upper Darling Range railway, from Pickering Brook to Canning mills and bush | 3 6 | 11 $\frac{1}{2}$ | .. | |
| Jarrahdale and Rockingham railway, from Mundiging to Rockingham and bush | 3 6 | 50 $\frac{3}{4}$ | .. | |
| Yarloop railway to mills and bush | 3 6 | 59 $\frac{1}{2}$ | .. | |
| Mornington mills rly., from Wokalup to mills and bush | 3 6 | 26 $\frac{1}{2}$ | .. | |
| Ferguson River railway, from Dardanup to mills and into bush | 3 6 | 25 $\frac{1}{2}$ | .. | |
| Karridale railway, to Hamelin and Flinders Ports from Karridale and into bush | 3 6 | 51 | .. | |
| Total for State... .. | 3 6 | 638 $\frac{1}{2}$ | | |

* To the 31st December, 1907. † On 31st December, 1907, there were also 45 miles, from Lancefield into the bush, under construction. ‡ In February, 1907. Two miles also under construction. § At end of 1907 there were also 4 miles under construction.

| Railway Lines. | Gauge. | Length | Nature of Traffic Carried, etc. |
|----------------|--------|--------|---------------------------------|
|----------------|--------|--------|---------------------------------|

SOUTH AUSTRALIA.

| | | | |
|---|----------------|--------------|----------------------------|
| BROKEN HILL PROPRIETARY CO.'S LINE— Iron Knob to Spencer's Gulf | ft. in. 3 6 | Miles. 58 | Carriage of ironst'ne flux |
|---|----------------|--------------|----------------------------|

TASMANIA.

| | | | |
|--|----------------|------------------|---|
| 1. EMU BAY RAILWAY CO.'S LINES— Burnie to Waratah | ft. in. 3 6 | } Miles. 103½ | General |
| Guildford Junction to Brewery Junction | 3 6 | | |
| Zeehan to Maestris | 3 6 | | |
| 2. MOUNT LYELL MINING AND RAILWAY CO.'S LINES— Regatta Point to Queenstown | 3 6 | 22 | " |
| Linda to Kelly Basin | 3 6 | 30 | " |
| 3. SANDEFLY COLLIERY CO.'S LINE— North-west Bay Co.'s jetty to mine | 2 0 | 12 | Minerals |
| 4. HUON TIMBER CO.'S LINE ² | 3 6 | 13 | Timber |
| 5. TASMANIAN GOLD MINING CO.'S LINE— Beaconsfield to Beauty Point† | 3 6 | 3½ | Minerals and occasion- ally passengers |
| 6. ZEEHAN TRAM CO.'S LINE— Emu Bay railway to British Queen | 2 0 | 2½ | Minerals and occasion- ally passengers |
| 7. DUCK RIVER RAILWAY— Leesville to Parish of Williams† | 3 6 | 8 | Chiefly timber |
| 8. MAGNET SILVER MINING CO.'S LINES— Magnet Junction to Magnet | 2 0 | 10 | Minerals and passengers |
| Total for State... .. | { 3 6 2 0 | 180 24½ | |

* Terminal points not fixed in May, 1908, as extensions still under construction. † Also branch lines as follows:—Electric railway, 1½ miles long, to reduction works, 2 ft. gauge; surface railways, horse, ¾ mile long, 2 ft. gauge. ‡ Extensions, under construction.

3. **New South Wales.**—In this State the mileage of private railways open to the public for general traffic on the 30th June, 1908, was 144, and of lines used for special purposes was 127. Most of these lines were constructed primarily for the purpose of conveying coal from the mines to the Government railway systems.

(i.) *Private Railways Open for General Traffic.* The most important of the lines open for general traffic are as follows:—(a) *The Deniliquin-Moama Line.* In 1874 permission was granted by the New South Wales Government to a private company to construct a line forty-five miles long from Deniliquin, in the Riverina district, to Moama, on the Victorian boundary opposite Echuca, which is connected by rail with Melbourne. The line was opened in 1876, the land required being granted by the Government. The cost of construction and equipment up to the end of the year 1907 was £162,672. During that year 14,848 passengers and 41,718 tons of goods and live stock were carried. The company owns 4 locomotives, 10 passenger coaches, and 59 waggons. (b) *The Cockburn-Broken Hill Line.* This line is owned by the Silvertown Tramway Company. It was opened in 1888, and connects Broken Hill with the South Australian railway system, having a total length of 36 miles. To the end of 1907 the capital expenditure was £191,105, including the cost of 16 locomotives, 16 passenger coaches, and 577 goods waggons. During that year 61,383 passengers and 937,679 tons of goods were carried. The number of employés was 278. (c) *East Greta Line.* This line, belonging to the East Greta Coal Mining Company, runs from East Greta Junction, on the Northern line of the Government railways, to Stanford Merthyr, a distance of 8 miles. The total capital cost to the end of 1907 was £85,035. During the year 1907 378,604 passengers and 26,306 tons of minerals, etc., were carried. The company owns 11 locomotives, 21 passenger coaches, and 16 goods waggons, the number of employés being 149 at the end of the year 1907. (d) *The New Redhead Coal Company's Railway.* The lines owned by this company branch from the North-coast line of the Government railways, and

run from Adamstown to Burwood Extended colliery, and from Dudley Junction to Dudley colliery, a total distance of $7\frac{1}{2}$ miles. The capital cost to the end of 1907 was £82,443. The line is worked by the Railway Department, coal waggons being supplied by the coal companies using the line. (e) *The Seaham Coal Company's Railways*. These lines have a total length of $9\frac{1}{2}$ miles. Particulars as to capital cost are not available. During the year 1907 20,066 passengers and 6820 tons of goods were carried. The company owns 6 locomotives and 5 passenger coaches, in addition to a number of coal and goods waggons. (f) *Hexham-Minni Railway*. This line branches from the Northern line of the Government railways and has a length of 6 miles. Further particulars are not available. (g) *The Commonwealth Oil Corporation's Railway*. This line runs from Newnes Junction on the Great Western Line of the Government railways to the Company's refinery, a distance of 32 miles. Three of the Shay geared type of locomotives (see p. 707 hereof) are in use on this line. (h) *The Warwick Farm Line* is a short line, three-quarters of a mile in length, connecting the Government line near Liverpool with the Warwick Farm Racecourse. Government rolling-stock is used.

In addition to the lines referred to above, legislative sanction was obtained in 1890 for the construction of a private line from the flux quarries at Tarrawingee to the Broken Hill line, a distance of forty miles. The line was purchased by the Government in 1901, and was leased to the Silverton Tramway Company to work for a period of five years at an annual rent of 3 per cent. on the capital outlay.

4. **Victoria.**—In Victoria the only private railway open for general traffic is the Kerang-Kondrook tramway, opened in 1889. The cost of construction of this line to the end of 1907 was £29,013, paid out of a loan advanced by the Victorian Government. The total length is $14\frac{1}{2}$ miles. The line is at present controlled by the Kerang Shire Council, but proposals have recently been made for its transfer to the Railway Department.

A line running from Elsternwick to Oakleigh, a distance of about five miles, has been constructed by a private company, but is not in use.

5. **Queensland.**—In this State private railways open for general traffic may be grouped under two heads:—(i.) Lines constructed primarily for mining purposes, and (ii.) Shire tramways.

(i.) *Mining Railways.* (a) *The Chillagoe Railway.* The most important of these is the Chillagoe railway, constructed under the Mareeba to Chillagoe Railway Act 1897, and opened in 1901. This line runs from Mareeba, on the Cairns railway, to Mungana, a distance of 103 miles. The cost of construction and equipment to the end of 1907 was £394,483. During that year 47,404 passengers and 154,006 tons of goods, etc., were carried. (b) *The Stannary Hills Line.* This line branches from the Chillagoe railway at Boonmoo and runs to Rocky Bluff, via Stannary Hills, a total distance of twenty-one miles. The capital cost to the end of 1907 was £63,408. During that year 8711 passengers and 61,445 tons of goods, etc., were carried. (c) *The Mount Garnet Railway.* This line also branches from the Chillagoe railway at Lappa Junction, and runs for a distance of thirty miles, as far as Mount Garnet. The capital cost to the end of 1907 was about £100,000. During that year 6379 passengers and 7165 tons of goods, etc., were carried.

(ii.) *Shire Tramways.* Under Part XV. of the Local Authorities Act of 1902 provision is made whereby not less than one-third of the ratepayers in any district may petition the local authority to apply to the Governor for the constitution of a tramway area. The Governor may define the area and may also approve of the plans and specifications of the proposed tramway. The amount which may be advanced by the Government for the construction or purchase of a tramway may not exceed a sum equal to £3000 for every mile of its length. As regards repayment of loans, no sum need be paid during the first three years, but after the expiration of that period the principal and interest must be repaid by half-yearly instalments on the basis provided for by the

“Local Works Loans Act 1880 to 1899.” For the purpose of raising the money to pay these instalments the local authority may levy a rate upon all ratable property within the tramway area. The money required for the tramway may be raised by the local authorities by the issue of debentures.

At the end of the year 1907 there were seven shire tramways in operation having a total length of 161 miles. Particulars are given in paragraphs 2 and 9 hereof.

6. South Australia.—In this State there are no private railways open for general traffic. The only private line is that owned by the Broken Hill Proprietary Company, running from Iron Knob to the seaboard near the head of Spencer’s Gulf, a distance of 58 miles. The line is used for the carriage of flux for use in connection with the smelting works at Port Pirie.

7. Western Australia.—Owing to the Government’s past difficulty in constructing lines, urgently required for the development of the country, private enterprise was encouraged to undertake the work of construction on the land-grant principle, and two trunk lines were thus constructed. The greater part of the private lines now open, however, have been constructed in connection with the timber industry. (i.) *The Midland Railway.* This line is 277 miles in length, and runs from the Midland Junction, ten miles from Perth, to Walkaway, where it joins the Government line running to Geraldton. It was constructed under a concession of 12,000 acres of land per mile of line constructed, to be selected along the entire route of the railway. The total capital expenditure up to the year 1901 was £1,999,006, the revenue for the year 1907 being £90,256, and the expenditure £48,873. (ii.) *The Great Southern Railway.* This line, which was built by private enterprise under the land-grant system, is 243 miles in length, and was acquired by the Government by purchase on the 1st January, 1897. The total price paid, with all the interests of the private company and of the original concessionaire, was £1,100,000, which was divided by the Government for book-keeping purposes into £300,000 for the land and £800,000 for the railway. (iii.) *Millar’s Karri and Jarrah Company’s Lines.* These lines have mostly been built under special timber concessions and leases. There were, at the end of the year 1907, in all eight lines situated in various parts of the State extending into the bush, whence logs are brought to the mills. At the end of 1907 the total length of these lines was 294 miles, and the total capital expended was £330,945. The company owned 21 locomotives, 6 passenger coaches, and 718 goods and timber trucks. Two of these lines have recently been taken over by the Government.

8. Tasmania.—In this State there are three private lines open for general traffic. They are all situated in the western part of the island.

(i.) *The Emu Bay Railway Company.* The lines owned by this company run from Burnie to Waratah, from Guildford to Zeehan, and from Rayna to Maestris, and have a total length of 103½ miles. The total cost of construction and equipment to the end of 1907 was £594,419. During that year 32,935 passengers and 90,007 tons of goods were carried. The company owns 8 locomotives, 5 passenger coaches, and 140 waggons.

(ii.) *The Mount Lyell Mining and Railway Company.* The railways owned by this company run from Regatta Point, Strahan, to Queenstown, and from Kelly Basin to Linda. The former line, 22 miles in length, was constructed in 1895-6, while the latter line, 30 miles long, was taken over from the North Mount Lyell Copper Company on the amalgamation of the two companies in 1903. The line from Kelly Basin to Linda is now run only intermittently. The total cost of construction and equipment to the 30th September, 1907, was £532,724. During the year 1907, 33,850 passengers and 118,624 tons of goods and minerals were carried. The company owns 11 locomotives, 10 passenger coaches, and 174 goods waggons, trucks, and vans.

(iii.) *The Magnet Silver Mining Company’s Railway.* This line runs from Magnet Junction on the Emu Bay Company’s line to Magnet, a distance of 10 miles. The

capital expenditure to the end of 1907 was £21,000, including the cost of 2 locomotives, 1 passenger coach, and 4 goods waggons. During the year 1907 2679 passengers and 4046 tons of goods and minerals were carried.

9. **Operations of Private Railways 1907.**—The tabular statement given below shews particulars, so far as returns are available, for the year 1907 of all private railways open to the public for general traffic in the Commonwealth:—

PARTICULARS OF PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC, 1907.

| Line. | Miles Open. | Capital Cost. | Gross Revenue. | Expenses. | | Train Miles. | Passenger Journeys. | Tons of Goods, etc. | No. of Employés. | Rolling Stock. | | |
|--------------------------------------|-------------|----------------|----------------|----------------|---------------|----------------|---------------------|---------------------|------------------|----------------|------------|--------------|
| | | | | Working. | Interest. | | | | | Locos. | Coaches. | Waggons. |
| NEW SOUTH WALES. | | | | | | | | | | | | |
| Deniliquin-Moama | No. 45 | £ 162,672 | £ 18,836 | £ 11,902 | £ 880 | No. 39,617 | No. 14,848 | Tons. 41,718 | No. 45 | No. 4 | No. 10 | No. 59 |
| Silverton Tramway | 36 | 191,105 | 163,655 | 57,428 | ... | 181,808 | 61,383 | 937,679 | 278 | 16 | 16 | 577 |
| East Greta Railway | 8 | 85,085 | 21,131 | 12,017 | 8,509 | 205,000 | 378,604 | 26,306 | 149 | 11 | 21 | 16 |
| Graham Colliery Co. | 9½ | * | * | * | * | * | * | * | * | * | * | * |
| New Redhead Co. ... | 7½ | 82,443 | 5,497 | 929 | 3,292 | 8,064 | 20,066 | 6,824 | 27 | 6 | 5 | ... |
| Hexham-Minmi ... | 6 | * | * | * | * | 9,192 | * | * | 9 | 1 | 5 | ... |
| Cwlth. Oil Corpor'n | 32 | 149,780 | * | * | * | * | * | * | 8 | 4 | 2 | † |
| Total\$... | 144 | 671,085 | 209,119 | 82,276 | 12,681 | 443,681 | 474,901 | 1012527 | 516 | 42 | 59 | 652 |
| VICTORIA. | | | | | | | | | | | | |
| Kerang-Kondrook ... | 14½ | 29,013 | 3,200 | 1,610 | 1,165 | 17,640 | 6,700 | 14,000 | 7 | 2 | 1 | 5 |
| QUEENSLAND. | | | | | | | | | | | | |
| Chillagoe Railway | 103 | 394,483 | 110,097 | 33,041 | ... | 147,804 | 47,404 | 154,006 | 128 | 6 | 18 | 90 |
| Stannary Hills ... | 21 | 63,408 | 13,624 | 10,511 | ... | 40,920 | 8,711 | 61,445 | 54 | 3 | 2 | ... |
| Mount Garnet ... | 30 | 100,000 | 5,530 | 4,537 | 5,568 | 16,446 | 6,379 | 7,165 | 14 | 1 | 1 | 6 |
| Ayr Tramway ... | 44 | 79,141 | 13,048 | 4,619 | 5,335 | 20,995 | 17,625 | 23,505 | 14 | † | † | † |
| Beaudesert ... | 21 | 58,223 | 4,966 | 2,756 | 2,905 | 17,319 | 9,389 | 10,738 | 15 | 1 | 2 | † |
| Cairns-Mulgrave ... | 31 | 96,723 | 15,723 | 9,287 | 4,890 | 50,116 | 60,696 | 85,438 | 39 | 4 | 6 | 96 |
| Douglas-Mossman ... | 14 | 21,487 | 5,178 | 2,854 | 2,085 | 15,432 | 7,190 | 11,392 | 16 | 1 | 3 | 22 |
| Ingham Tramway ... | 18 | 27,844 | 2,783 | 493 | 1,407 | * | 12,157 | * | 2 | * | * | * |
| Cattle Ck. and Mc-Gregor's Ck. T'way | 13 | 21,254 | 2,967 | 1,732 | 859 | 4,864 | 10,972 | 20,418 | * | † | † | † |
| Geraldton Tramway | 20 | 39,937 | 3,644 | 3,286 | 358 | 21,628 | 4,934 | 20,946 | 15 | 2 | 2 | 17 |
| Total ... | 315 | 902,505 | 177,560 | 73,116 | 23,397 | 335,524 | 188,457 | 400,045 | 297 | 18 | 34 | 231 |
| WESTERN AUSTRALIA. | | | | | | | | | | | | |
| Midland Railway ... | 277 | * | 90,256 | 48,873 | * | 299,571 | 43,813 | 52,753 | 258 | 10 | 10 | 178 |
| TASMANIA. | | | | | | | | | | | | |
| Emu Bay Railway ... | 103½ | 594,419 | 65,658 | 31,418 | 20,370 | 149,839 | 32,935 | 190,007 | 107 | 8 | 5 | 140 |
| Mt. Lyell Railway ... | 22 | 216,086 | 29,741 | 21,634 | ... | 48,681 | 29,637 | 108,227 | 142 | 7 | 7 | 112 |
| Nth. Mt. Lyell Rly. | 30 | 316,638 | 3,801 | 4,994 | ... | 8,667 | 4,213 | 10,397 | 17 | 4 | 3 | 62 |
| Magnet Railway ... | 10 | 21,000 | 2,996 | 2,644 | ... | 12,000 | 2,679 | 4,046 | 10 | 2 | 1 | 4 |
| Total ... | 165½ | 1148143 | 102,196 | 60,690 | 20,370 | 219,187 | 69,464 | 212,677 | 276 | 21 | 16 | 318 |
| Total for Cwlth.\$ | 915½ | 2750746 | 582,331 | 266,565 | 57,613 | 1315603 | 780,395 | 1692002 | 1,354 | 93 | 120 | 1,384 |

* Not available. † Government rolling-stock used. ‡ Exclusive of live stock. § Exclusive of rolling stock and extras. ¶ Incomplete.

§ 3. Tramways.

1. **General.**—Tramway systems are in operation in all the States of the Commonwealth, and in recent years considerable progress has been made in the adoption of electrical traction, the benefit of which is now enjoyed by a number of the principal towns of the Commonwealth.

There are also in many parts of Australia private tramway lines which are used for special purposes, usually in connection with the timber, mining, or milling industries. Though efforts have been made to collect particulars of these lines, the returns are generally too incomplete for publication.

(i.) *Total Mileage Open and Classification of Lines.* The following table shows the total mileage of tramway lines open for general passenger traffic in each State and in the Commonwealth at the end of the year 1908, classified (a) according to the motive power utilised and (b) according to the nature of the authority by which the lines are controlled:—

TRAMWAYS.—CLASSIFICATION OF MILEAGE OPEN FOR PASSENGER TRAFFIC, 1908.

| Nature of Motive Power or Controlling Authority. | N.S. Wales. | Victoria. | Q'land. | *South Australia. | Western Australia. | Tas. | C'wealth. |
|--|-------------|------------|------------|-------------------|--------------------|----------|-------------|
| ACCORDING TO MOTIVE POWER. | | | | | | | |
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| Electric | 91½ | 35 | 30¾ | — | 45½ | 9 | 211½ |
| Steam | 48¾ | 1 | — | — | — | — | 49¾ |
| Cable | — | 45¾ | — | — | — | — | 45¾ |
| Horse | — | 13 | — | 23½ | 25½ | — | 61¾ |
| Total | 139½ | 94¾ | 30¾ | 23½ | 70¾ | 9 | 368¾ |
| ACCORDING TO CONTROLLING AUTHORITY. | | | | | | | |
| Government | 132¾ | 5½ | — | 17½ | 23 | — | 178½ |
| Municipal | — | — | — | — | 6½ | — | 6½ |
| Private | 7 | 89¾ | 30¾ | 6 | 41½ | 9 | 183¾ |
| Total | 139½ | 94¾ | 30¾ | 23½ | 70¾ | 9 | 368¾ |

* Exclusive of 53 miles of single track in the metropolitan district, now in course of electrification.

2. **New South Wales.**—In this State the tramways, with but few comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners.

(i.) *Government Tramways.* In Sydney and suburbs the Government tramways are divided into distinct systems. There were in June, 1908, five such systems in operation within the metropolitan area, the most important being the city and suburban lines—78 miles in length—and the North Shore line—11½ miles in length. Both of these systems are now operated by electricity. There are three systems on which the motive power used is steam, namely—(a) the line from Ashfield to Mortlake and Cabarita, 8½ miles long, (b) the line from Kogarah to Sans Souci, nearly 5 miles in length, and (c) the steam tramway at Manly, 1½ miles long. There are also Government steam tramways in operation at Newcastle, Broken Hill, and Parramatta.

(a) *Sydney Tramways.* The first tramway constructed in Sydney ran from Bridge-street to Hay-street *via* Hunter-street. It was opened in September, 1879, and the motive power was steam. In the following few years these steam tramways were considerably extended. The electric system was not introduced into the city until the close of the year 1899, though it had at that time been in operation for some years in North Sydney. The tramways in the heart of the city, running along King-street to the suburb of Woollahra, as well as those in North Sydney, were originally worked by underground cables, and have since been converted into electric lines on the overhead trolley system. In December, 1899, the electric tramway, extending from the Circular Quay along George-street to the Redfern Station, and thence to the densely-populated district of Pyrmont, was opened for traffic. This tramway is a double track, and is $3\frac{1}{4}$ miles in length. Single lines have been constructed along Castlereagh and Pitt streets, with the object of relieving the traffic along George-street. The whole of the steam tramways in Sydney and suburbs, with the exception of the Ashfield-Mortlake, the Kogarah-Sans Souci, and the Manly lines, have now been converted into electric lines, and provision for the extra power required for the electrification of the first two of these lines has been made at the central station.

(b) *Other Tramway Systems.* In Newcastle the first section of the tramways, from Perkins-street to Plattsburg, was opened in 1887; the total length open on the 30th June, 1907, was $17\frac{1}{2}$ miles. At Broken Hill and Parramatta the first sections of the tramways were opened in 1902. On the 30th June, 1907, the mileage open at Broken Hill amounted to $6\frac{1}{2}$, and at Parramatta to $4\frac{1}{2}$ miles. On the same date the total length of all Government tramways open for traffic was $132\frac{3}{4}$ miles, the capital cost of construction and equipment of these lines being £3,732,991. There were also $20\frac{1}{2}$ miles of line under construction, while further extensions amounting in all to 16 miles had been authorised. There are also three short lengths of tramways in New South Wales run by private companies. Further particulars are given below.

(c) *Particulars of all Government Tramways, 1901 to 1908.* The following table shews the total length, the capital cost, the gross revenue, working expenses, and net earnings, and the percentages of working expenses on gross revenue, and of net earnings on capital cost for each financial year from 1900-1 to 1907-8, inclusive.

The net result of the year 1907-8, after providing for all working expenses and £134,504 interest on the capital invested, was a surplus of £68,425, as compared with £48,961 for the previous year:—

NEW SOUTH WALES.—PARTICULARS OF WORKING OF GOVERNMENT TRAMWAYS.

1901 TO 1908.

| Year ended the 30th June. | Total Length of Lines Open. | Capital Expended on Lines Open. | Gross Revenue. | Working Expenses. | Net Earnings. | Percentage of Working Expenses on Gross Revenue. | Percentage of Net Earnings on Capital Cost. |
|---------------------------|-----------------------------|---------------------------------|----------------|-------------------|---------------|--|---|
| | Miles. | £ | £ | £ | £ | per cent. | per cent. |
| 1901 ... | 79 $\frac{1}{2}$ | 2,194,493 | 551,674 | 462,471 | 89,203 | 83.83 | 4.07 |
| 1902 ... | 104 | 2,829,363 | 631,757 | 541,984 | 89,773 | 85.79 | 3.19 |
| 1903 ... | 124 $\frac{1}{2}$ | 3,371,587 | 752,034 | 654,165 | 97,869 | 86.98 | 2.90 |
| 1904 ... | 125 $\frac{3}{4}$ | 3,471,759 | 802,985 | 673,625 | 129,360 | 83.89 | 3.73 |
| 1905 ... | 125 $\frac{3}{4}$ | 3,637,922 | 813,569 | 685,682 | 127,887 | 84.28 | 3.51 |
| 1906 ... | 126 | 3,669,096 | 851,483 | 665,083 | 186,400 | 78.11 | 5.08 |
| 1907 ... | 128 $\frac{3}{4}$ | 3,669,524 | 908,701 | 727,947 | 180,754 | 80.11 | 4.92 |
| 1908 ... | 132 $\frac{3}{4}$ | *3,732,991 | 1,011,994 | 809,065 | 202,929 | 79.95 | 5.44 |

* £44,770 of this sum has been paid from the Consolidated Revenue, and no interest is payable thereon.

(d) *Particulars of Different Systems of Government Tramways, 1907-8.* In the subjoined statement particulars are given of the working of the electric, steam, and horse tramways in Sydney, and of the other Government tramways at Newcastle, Broken Hill, and Parramatta :—

NEW SOUTH WALES.—PARTICULARS OF THE WORKING OF THE VARIOUS GOVERNMENT TRAMWAYS, 1907-8.

| Particulars. | Sydney. | | | New-castle. (Steam.) | Broken Hill. (Steam.) | Parramatta. (Steam.) | Total. |
|----------------------|-------------|--------|-----------|-------------------------|--------------------------|-------------------------|-----------|
| | Electric. | Steam. | Total. | | | | |
| Length ... miles | 89½ | 14½ | 104½ | 17½ | 6½ | 4½ | 132½ |
| Total cost ... | £ 3,288,480 | 95,479 | 3,383,959 | 248,340 | 70,534 | 30,158 | 3,732,991 |
| Gross revenue ... | £ 925,224 | 12,030 | 937,254 | 52,789 | 18,926 | 3,025 | 1,011,994 |
| Working expenses ... | £ 735,442 | 15,549 | 750,991 | 39,003 | 16,442 | 2,629 | 809,065 |
| Interest ... | £ 118,300 | 3,476 | 121,776 | 9,069 | 2,558 | 1,101 | 134,504 |
| Profit or loss* ... | £ +71,482 | —6,995 | +64,487 | +4,717 | —74 | —705 | +68,425 |

* The positive sign indicates a profit, the negative a loss.

The total capital cost shewn in the preceding table was made up as follows :—

| Permanent Way. | Rolling Stock. | Power-house, Sub-stations, and Plant. | Machinery. | Workshops. | Furniture. | Total. |
|----------------|----------------|---------------------------------------|------------|------------|------------|------------|
| £2,116,914 | £723,065 | £758,714 | £41,547 | £90,359 | £2,392 | £3,732,991 |

The average cost per mile open was £15,946 for permanent way and £12,174 for all other charges, making a total of £28,120 per mile.

During the year 1907-8, eight new extensions, amounting in all to a length of 4 miles, were opened for traffic. On the 30th June, 1908, nine extensions having a total length of 20 miles were under construction, and up to the same date eleven additional extensions, amounting to about 17 miles, had been authorised for construction.

(e) *Sydney Electric Tramways.* The total length of the city and suburban lines is 78 miles, and of the North Shore line 11½ miles, making the total length of the electric tramways in Sydney 89½ miles. The current for the operation of these tramways is generated at the power-house at Ultimo, which has been erected at a total cost of £758,714, including the cost of the sub-stations and plant. The current generated at the power-house is partly continuous and partly alternating, and is used both for lighting and traction purposes. The standard voltage of the continuous current is 600; the alternating current is transmitted by means of high-tension cables to sub-stations, where it is converted to continuous current at the standard voltage. The total output of the power-house, for both lighting and traction purposes, during the year 1907-8, was 41,974,191 kilowatt-hours, of which the direct-current supply was 15,250,021, and the alternating current 26,724,170 kilowatt-hours. The output for traction purposes only was 37,422,267 kilowatt-hours. The following table gives particulars of the working of the electric tramways for each financial year from 1901 to 1908, inclusive :—

NEW SOUTH WALES.—PARTICULARS OF SYDNEY ELECTRIC TRAMWAYS,

1901 TO 1908.

| Year ended 30th June. | Mileage Open for Traffic (Single Track). | Total Cost of Construction and Equipment. | Gross Revenue. | Working Expenses. | Net Revenue. |
|-----------------------|--|---|----------------|-------------------|--------------|
| | Miles. | £ | £ | £ | £ |
| 1901 | 44½ | 1,017,321 | 258,161 | 201,149 | 57,012 |
| 1902 | 52 | 1,285,014 | 340,742 | 257,557 | 83,185 |
| 1903 | 113 | 2,610,287 | 560,693 | 420,718 | 139,975 |
| 1904 | 118½ | 2,715,748 | 670,603 | 515,043 | 155,560 |
| 1905 | 133½ | 3,124,140 | 765,132 | 559,565 | 145,567 |
| 1906 | 139 | 3,259,936 | 780,986 | 569,566 | 211,420 |
| 1907 | 141½ | 3,247,817 | 830,497 | 629,108 | 201,389 |
| 1908 | 146½ | 3,288,480 | *925,224 | *735,442 | *189,782 |

| Year ended 30th June. | Output of Power-house for Traction Purposes. | Tram Miles Run. | Passengers Carried. | Number of Cars in Use. | Number of Persons Employed. |
|-----------------------|--|-----------------|---------------------|------------------------|-----------------------------|
| | Kilowatt-hours | No. | No. | No. | No. |
| 1901 | 10,043,544 | 3,993,407 | 49,068,661 | 337 | 2,173 |
| 1902 | 15,471,747 | 6,174,646 | 63,517,020 | 436 | 2,855 |
| 1903 | 25,541,560 | 11,183,851 | 100,341,281 | 629 | 3,745 |
| 1904 | 30,866,308 | 14,382,761 | 116,312,375 | 626 | 3,873 |
| 1905 | 30,196,806 | 14,783,256 | 122,626,315 | 682 | 4,069 |
| 1906 | 32,315,754 | 15,351,781 | 135,300,401 | 735 | 3,863 |
| 1907 | 33,941,485 | 15,630,887 | 144,038,105 | 727 | 4,044 |
| 1908 | 37,422,267 | *16,517,552 | *159,722,892 | 738 | 4,735 |

* On special occasions steam motors and cars were running to meet exceptional demands, and these figures include same.

(ii.) *Private Tramways.* There are three private tramway lines in New South Wales open for general traffic. (a) There is an electric tramway running from Rockdale to Brighton-le-Sands, a distance of one and a-quarter miles. This line was originally opened as a steam tramway in 1885, but was subsequently converted into electric. The total cost to the end of 1907 was £12,073. During that year the number of tram-miles run was 20,500. (b) A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of three miles, where it connects with the Parramatta River steamers, conveying passengers and goods to and from Sydney. This line was opened for traffic in 1863. (c) Another steam tramway runs between Fassifern and Toronto, on Lake Macquarie, a distance of two and three-quarter miles, and was first opened in 1891. The number of tram-miles run during the year 1907 was about 14,000.

Particulars regarding private tramways used for special purposes are not available.

(iii.) *Sydney Harbour Ferries.* As the ferry services on the waters of Port Jackson are mainly subsidiary to the suburban railway and tramway systems, it has been thought advisable to include them here rather than under shipping. Returns for the year 1907 were received from five companies, and shew that these companies had 62 boats in commission which were licensed to carry a total of 32,079 passengers, or an average of 517 per boat and per trip. The total number of passengers carried during the year is stated as 21,757,243, an average of nearly 60,000 per day. In addition to the ordinary passenger traffic there are two lines providing for vehicular traffic, and thus affording the only rapid means of transit between the city and the northern suburbs. The five companies employed during the year a total of 666 persons. Their capital expenditure to the end of 1907 amounted to £206,435, the gross revenue during 1907 to £200,705, and the expenditure to £140,566, thus giving a net revenue of £60,139. The

services are well managed, and the boats constructed during recent years—double-ended screwboats—are claimed to be superior in size and equipment to boats employed on similar service in any part of the world.

3. **Victoria.**—In Melbourne there are a number of tramway systems carried on under the control of various authorities, the most important being the cable system worked by the Melbourne Tramway and Omnibus Company. There are also two lines of electric tramways, one running from St. Kilda to Brighton, a distance of five and one-eighth miles, belonging to the Government, and under the control of the Railway Commissioners; the other, from Flemington Bridge to the Saltwater River and Keilor Road, a distance of seven and a-quarter miles, is run by a private company. There is also a private cable tramway, two and a-quarter miles in length, between Clifton Hill and Preston; and there are two private tramways worked by horses—one, seven miles in length, runs from Sandringham to Beaumaris, the other, one and a-half miles long, from Brunswick to Coburg. There is a short steam tramway, about one mile long, at Sorrento. There are also systems of electric tramways at Ballarat and Bendigo, constructed and run by a private company. A number of tramways have been constructed for special purposes in various parts of the State under the provisions of the Tramways Act 1890.

(i.) *Melbourne Cable Tramways.* The Melbourne Omnibus Company began its services by the initiation of the omnibus lines in 1869, and in 1878 the company changed its name to the Melbourne Tramway and Omnibus Company, with a view to the introduction of a tramway system in the city and suburbs of Melbourne. It was not, however, until the year 1883, when the Melbourne Tramway and Omnibus Company's Act was passed, that the necessary authority was given by Parliament for that purpose. Under this Act the company was empowered to construct tramways in the streets of Melbourne and suburbs, with the consent of the municipalities interested, who had the option of electing to construct the tramways themselves. All the municipalities decided to exercise the option conferred upon them, and, according to the provisions of the Act, a Tramways Trust was formed. This body, which is composed of seven members from the Melbourne City Council and one member each from the councils of eleven of the surrounding municipalities, received full power to construct tramways, and to borrow money for that purpose, secured on the municipal properties and revenues and on the tramways themselves. The Trust raised sufficient funds to pay for the construction of the tramway tracks and the engine-houses from which the cables are worked. It was required by the original Act, as amended in 1897 and 1892, to complete the tramways by the end of the year 1893, and to grant a thirty-two years' lease of the tramways to the company, dating from the 1st July, 1884—when the liability for interest on the loans commenced—and expiring on the 1st July, 1916. The company is required to find sufficient capital to build the rolling-stock and to equip the lines and engine-houses with all necessary working requisites. The company pays to the Trust annually the interest due upon the loans raised, and also a sufficient sum as a sinking or redemption fund, to repay by its accumulation the principal of the loans raised by the Trust, and at the expiration of the lease must hand back the lines in good working order to the Trust. The expenses of the Trust were paid out of the loan up to the end of the year 1903, but since that date have been paid by the company to an amount not exceeding £1000 per annum, the municipalities being liable for the remainder. The total amount the Trust was empowered to borrow was £1,650,000, which has been raised in London by means of debentures bearing interest at $4\frac{1}{2}$ per cent. The premiums received amounted to £55,794, making a total of £1,705,794. This amount had been expended by the end of the year 1893, when further loan expenditure ceased. On the 1st July, 1908, the sinking fund amounted to £1,032,000. The first line—that to Richmond—was opened to traffic in November, 1885, and the work being rapidly pushed on, the others were opened at short intervals, and the whole system was completed in 1891. The complete system consists of forty-three and a-half miles of double-track cable lines, using constantly over ninety miles of wire rope, and four and a-half miles of double-track horse lines.

(a) *Particulars of Working, 1901 to 1908.* The subjoined statement shews the tram mileage, the number of passengers carried, and the revenue and expenditure for each year ended the 30th June, from 1901 to 1908, inclusive:—

MELBOURNE CABLE TRAMWAYS.—PARTICULARS OF WORKING, 1901 to 1908.

| Year ended the 30th June. | Tram Mileage. | Number of Passengers Carried. | Revenue. | | | Working Expenses. | | | |
|------------------------------|------------------|--|---------------------|---------|---------|-------------------|--------------------------------|---------|---------|
| | | | Traffic Rec'pts. | Other.* | Total.* | Wages. | Repairs & Main- tenance. | Other.* | Total.* |
| | | | £ | £ | £ | £ | £ | £ | £ |
| 1901 | 8,964,734 | 47,195,647 | 465,427 | 18,025 | 483,452 | 122,014 | 80,006 | 60,480 | 262,500 |
| 1902 | 9,226,883 | 47,261,572 | 454,683 | 20,152 | 474,835 | 125,596 | 68,569 | 75,269 | 269,554 |
| 1903 | 9,044,282 | 46,832,910 | 432,505 | 30,040 | 462,545 | 127,746 | 60,611 | 56,569 | 244,926 |
| 1904 | 8,968,928 | 49,183,742 | 444,495 | 28,781 | 473,276 | 124,050 | 71,612 | 45,928 | 241,590 |
| 1905 | 8,932,073 | 50,297,357 | 448,740 | 31,066 | 479,806 | 123,803 | 62,177 | 48,395 | 234,375 |
| 1906 | 9,032,523 | 52,925,654 | 469,079 | 59,861 | 528,940 | 125,390 | 59,361 | 47,395 | 232,146 |
| 1907 | 9,536,397 | 59,069,280 | 507,206 | 39,274 | 546,480 | 140,487 | 69,736 | 54,445 | 264,668 |
| 1908 | 9,810,808 | 63,954,512 | 545,269 | 40,561 | 585,830 | 153,040 | 64,993 | 60,606 | 278,639 |

* Including amounts on account of omnibus lines.

(ii.) *Electric Tramways.* There are in Melbourne two electric tramway systems, namely (a) the St. Kilda-Brighton line and (b) the North Melbourne tramways.

(a) *The St. Kilda-Brighton Line.* Under the St. Kilda and Brighton Electric Street Railways Act 1904 the Board of Land and Works was authorised to construct a tramway from St. Kilda to Brighton. The amount of interest payable on the cost of the land acquired for the tramway was guaranteed by the municipalities of St. Kilda and Brighton for a period of twenty years, and authority was given by the Act to the municipalities to levy either a general or special rate not exceeding one shilling in the pound for the purpose of paying the guarantee. The profit, if any, during the first twenty years is to be set off in reduction of the guarantee. The line was opened for traffic in May, 1906, and the extension to Brighton Beach was opened in the following year. The total capital cost to the 30th June, 1908, exclusive of rolling-stock, was £42,050, and of rolling-stock was £15,473, making a total of £57,523. The subjoined statement gives particulars of the working of this line for the financial year ended the 30th June, 1908:—

| Mileage Open. | Car Mileage. | Passengers Carried. | Gross Revenue. | Working Expenses. | *Special Expenditure. | Interest. | Net Loss |
|------------------|-----------------|------------------------|-------------------|----------------------|--------------------------|-----------|----------|
| | | | £ | £ | £ | £ | £ |
| 5.13 | 335,007 | 1,146,484 | 10,374 | 10,988 | 3,311 | 2,140 | 6,065 |

* Replacement of rolling-stock, car-shed, and equipment destroyed by fire.

(b) *The North Melbourne Tramways,* extending through the northern suburbs to the Saltwater River and to Keilor Road, were constructed by a private company, and were opened for traffic towards the end of the year 1906.

(c) *The Ballarat and Bendigo Electric Tramways* are under the control of a private company, and run along the main streets and to and from the outlying suburbs of the two towns.

(d) *Particulars of Working of all Electric Tramways, 1903 to 1907.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1903 to 1907, inclusive:—

VICTORIA.—PARTICULARS OF WORKING OF ELECTRIC TRAMWAYS, 1903 to 1907.

| Year. | Current Generated for Traction Purposes at Central Stations. | Mileage Open for Traffic. | Total Cost of Construction and Equipment. | Gross Revenue. | Working Expenses. | Tram Miles Run. | Number of Passengers Carried. | Number of Cars in Use. | Number of Employés. |
|-------|--|---------------------------|---|----------------|-------------------|-----------------|-------------------------------|------------------------|---------------------|
| | | | | | | | | | |
| 1903 | 331,712 | 10½ | 106,553 | + | + | 326,878 | 1,214,323 | 12 | 55 |
| 1904 | 463,633 | 10½ | 115,309 | + | + | 453,027 | 1,749,225 | 12 | 86 |
| 1905 | 703,226 | 23½ | 191,882 | + | + | 699,729 | 2,759,868 | 53 | 210 |
| 1906 | 1,790,353 | 34 | 222,486* | 48,554* | 34,522* | 1,793,647 | 7,037,312 | 78 | 379 |
| 1907 | 1,562,221* | 34½ | 272,180* | 69,296 | 55,740 | 1,963,494 | 7,519,361 | 95 | 338 |

* Incomplete; the figures given are for 27½ miles only: † Not available for publication.

(iii.) *Private Tramways for Special Purposes.* There are in Victoria a number of tramways used for special purposes, chiefly in connection with the timber, mining, and milling industries. These lines have been constructed either under authority of the Department of Public Works, pursuant to Section 36 of the Tramway Act 1890, or under leases or licenses issued by the Department of Lands and Survey, pursuant to Sections 144 and 145 of the Land Act 1901. Particulars of these lines are too incomplete for publication.

4. **Queensland.**—In this State there is a system of electric tramways running through the streets of the city and suburbs of Brisbane and controlled by a private company which has its head office in London. The total length of the Brisbane system was thirty and three-quarter miles at the end of the year 1908. There are also a number of tramways, having a total length of 640 miles, run in connection with sugar mills. Particulars of Shire tramways have been given in the part of this section dealing with private railways (see pp. 736 and 738).

(i.) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. The total cost of construction and equipment to the end of the year 1908 was approximately £1,250,000. The following table gives particulars of these tramways for each calendar year from 1901 to 1908, inclusive:—

QUEENSLAND.—BRISBANE ELECTRIC TRAMWAYS, PARTICULARS OF WORKING,
1901 TO 1908.

| Year. | Current Generated. | Mileage Open for Traffic. | Tram Miles Run. | Number of Passengers Carried. | Gross Revenue. | Working Expenses. | No. of Cars in Use. | Number of Persons Employed. |
|---------|--------------------|---------------------------|-----------------|-------------------------------|----------------|-------------------|---------------------|-----------------------------|
| | | | | | | | | |
| 1901... | 3,192,955 | 21 | 2,756,443 | 16,183,801 | 111,483 | 64,710 | 79 | 375 |
| 1902... | 3,852,308 | 24½ | 3,015,548 | 18,125,302 | 125,451 | 73,473 | 88 | 390 |
| 1903... | 3,975,355 | 27 | 3,157,574 | 18,376,000 | 126,526 | 77,539 | 100 | 400 |
| 1904... | 4,154,797 | 29 | 3,243,686 | 18,452,704 | 126,647 | 76,586 | 104 | 430 |
| 1905... | 4,561,780 | 30½ | 3,323,823 | 20,049,978 | 128,436 | 78,918 | 106 | 485 |
| 1906... | 4,370,004 | 30½ | 3,323,657 | 22,052,424 | 141,414 | 78,493 | 107 | 550 |
| 1907... | * | 30½ | 3,330,011 | 24,251,329 | 158,298 | * | 107 | * |
| 1908... | 4,915,202 | 30½ | 3,367,972 | 27,221,466 | 177,567 | * | 107½ | 619 |

* Not available. † Including 99 motors and 8 trailers.

(ii.) *Sugar-Mill Tramways.* There are a number of tramways in various parts of Queensland used in connection with the sugar-milling industry, chiefly for the purpose of hauling cane to the mills. Some of these lines are of a permanent nature, running

through sugar-cane plantations, while others are portable lines running to various farms. At the end of the year 1908, there were 28 sugar-mills running tramways. The total mileage was 640, of which 460 miles were steam and 180 miles horse tramways.

5. **South Australia.**—Up to the year 1906 there were a number of horse tramways in the principal streets of Adelaide and suburbs run by various private companies. Power to acquire part of these lines, with a view to their electrification, was given to the Adelaide Corporation by the Municipal Tramways Trust Act 1906. In accordance with the provisions of the Act, a Trust consisting of eight members, of whom two were nominated by the Governor, two elected by the City Corporation, and two each by the Suburban Corporations and the District Councils, was formed in 1907, and a length of forty-nine route miles of horse traction tramways were purchased from the private companies at a cost of £288,357. Within three years from the 31st December, 1906, the Trust is to electrify the main lines at a cost not exceeding on the average £12,000 per mile. At the commencement of the year 1909 there were fifty-three miles of single track in process of electrification. The power-house will be located at Port Adelaide, nine miles from the city. It will be equipped with three 1500-kilowatt turbo-alternators generating current at 11,000 volts, which will be stepped down and passed through rotary converters to direct current at 600 volts. The cost of construction of the whole undertaking when complete will be approximately £750,000. There are also in South Australia nineteen and three-quarters miles of Government horse tramways in country districts, worked in connection with the railway system, and six miles of private tramways used for passenger service. The subjoined statement gives various particulars of these lines:—

SOUTH AUSTRALIA.—PARTICULARS OF HORSE TRAMWAYS, 1908.

| Particulars. | Length. | Gauge. | Nature of Traffic. |
|-------------------------------------|---------|---------|-----------------------|
| GOVERNMENT TRAMWAYS. | | | |
| | Miles. | ft. in. | |
| Moonta, Moonta Bay, and Hamley Flat | 5½ | 5 3 | Passengers and goods. |
| Gawler | 1½ | 5 3 | „ „ |
| Victor Harbour and Breakwater ... | 1 | 5 3 | „ „ |
| Dry Creek and Magazine | 1 | 2 0 | Explosives. |
| Magazine and Broad Creek | 1½ | 2 0 | „ |
| Port Broughton and Mundoorra ... | 10 | 3 6 | Passengers and goods. |
| PRIVATE TRAMWAYS. | | | |
| Fort Adelaide and Alberton | 2¼ | 5 3 | Passengers. |
| Glenelg and Brighton | 3¾ | 4 8½ | „ |

The total length of the Government tramways referred to above is nineteen and three-quarter miles, and of the private tramways six miles. On the two private tramways mentioned 237,449 passengers were carried during the year 1907, the gross receipts amounting to £1780.

6. **Western Australia.**—In this State there are a number of horse tramways, amounting in all to a length of twenty-three miles, which are the property of the Government. Of these the most important is the line between Roeburne and Cossack, constructed on a 2 ft. gauge and under the control of the Railway Department. The length of this line is eight and a half miles. The remaining fourteen and a half miles belonging to the Government are made up of eleven short lengths varying from eight chains to four and a-half miles, worked in connection with the jetties at various ports for the purpose of providing the necessary communication between such jetties and the goods sheds or warehouses. Most of these short lines are leased at annual rentals, and they are under the supervision of the Harbour Master. Their maintenance and improvement is in the hands

of the Public Works Department. In addition to these Government lines there are electric tramway systems at Perth and Kalgoorlie carried on by private companies, and at Fremantle, under municipal control.

(i.) *Government Tramways.* Particulars as to the working of the Government horse-tramways or as to the rents received therefrom are not generally available. The following statement, however, shews particulars of the working of the Roeburne-Cossack line for the financial year ended the 30th June, 1908 :—

**WESTERN AUSTRALIAN GOVERNMENT RAILWAYS.—PARTICULARS OF THE
ROEBURNE-COSSACK LINE, FINANCIAL YEAR, 1907-8.**

| Mileage Open. | Cost of Construction and Equipment. | Gross Earnings. | Working Expenses. | Interest. | Loss. |
|---------------|-------------------------------------|-----------------|-------------------|-----------|-------|
| 8½ | £24,827 | £2,402 | £2,099 | £864 | £561 |

The total loss on the working of this line since its inception to 30th June, 1908, amounted to £21,471.

(ii.) *Steam Tramways.* During the year 1908 there were four private steam tramways, having a total length of 60½ miles, working in Western Australia; only one of these was run for passenger traffic, the other three being used in connection with the timber industry. The following statement gives particulars of these lines :—

WESTERN AUSTRALIA.—PRIVATE STEAM TRAMWAYS, 1908.

| Particulars. | Length | | Terminal Points. | Nature of Traffic. |
|---------------------------------|--------|---------|-------------------------|--------------------|
| | Miles. | Ft. in. | | |
| Leonora-Gwalia | 2½ | 3 6 | Leonora to Gwalia ... | Passenger |
| Nallan Tram Wood Line | 10 | 3 3 | From Nallan into bush | Firewood |
| Sons of Gwalia Firewood Tramway | 24 | 1 8 | From Leonora into bush | ,, |
| Kurramia Timber Line | 24 | 3 6 | From Kurramia into bush | ,, |

(iii.) *Electric Tramways.* There are now four towns in Western Australia which enjoy the benefits of electric tramway systems, namely, Perth, Fremantle, Kalgoorlie, and Boulder City.

(a) *The Perth Electric Tramways* were opened for traffic by a private company in 1899, and the system has since been extended to many of the outlying suburbs. On the 31st December, 1907, there were 19¾ miles of line open, the total cost of construction and equipment to that date being £143,584, exclusive of amounts paid out of revenue to a sinking fund for the redemption of debenture stock.

(b) *The Kalgoorlie and Boulder City Tramways* are also run by a private company, the first line being opened in 1902. In the commencement of 1904 legislative authority was given for the construction of lines in Boulder City and suburbs, and in November, 1904, the last section of the Boulder system was completed. At the end of the year 1907 the total mileage of the whole system—in Kalgoorlie and Boulder City—amounted to 19 miles, the total cost of construction and equipment being approximately £172,000.

(c) *The Fremantle Tramways* were opened in November, 1905, under the control of the municipality. On the 1st August, 1907, there were 6½ miles of line open for traffic, the cost of construction and equipment at that date being £78,525.

(d) *Particulars of Working of all Electric Tramways, 1901 to 1907.* The subjoined table shews, so far as returns are available, particulars of the working of all electric tramway systems in the State for each year from 1901 to 1907, inclusive:—

WESTERN AUSTRALIA.—PARTICULARS OF ELECTRIC TRAMWAYS, 1901 to 1907.

| Year. | Current Generated. | Mileage Open for Traffic.† | Total Cost of Construction and Equipment. | Tram Miles Run. | Number of Passengers Carried. | Gross Revenue. | Working Expenses. | No. of Cars in Use. | No. of Persons Employed. |
|-------|--------------------|----------------------------|---|-----------------|-------------------------------|----------------|-------------------|---------------------|--------------------------|
| | Kilowatt-hrs. | Miles. | £ | No. | No. | £ | £ | No. | No. |
| 1901 | ... | 16½ | 367,037 | 721,056 | ... | 46,270 | 26,673 | 30 | ... |
| 1902 | ... | 17 | 380,861 | 788,120 | ... | 56,157 | 32,464 | 30 | ... |
| 1903 | *1,561,804 | 36¼ | †411,154 | 1,396,888 | 8,226,926 | 99,794 | 68,567 | 59 | †70 |
| 1904 | *1,831,385 | 42 | §588,129 | 1,590,925 | 9,833,212 | 118,269 | 69,586 | 62 | ‡66 |
| \|\|1905 | *2,695,277 | 54 | §683,280 | 2,190,988 | 12,861,664 | 147,455 | 91,006 | 89 | ‡73 |
| 1906 | *3,076,810 | 54½ | §685,879 | 2,325,378 | 13,595,098 | 152,678 | 92,379 | 89 | ‡36 |
| 1907 | 4,049,980 | 45½ | §694,109 | 2,247,889 | 14,050,086 | 143,403 | 89,266 | 89 | ‡30 |

* Exclusive of Kalgoorlie tramways, for which returns are not available. † Exclusive of Kalgoorlie tramways and also of amounts paid out of revenue to sinking fund for redemption of debenture stock of the Perth Tramways Company. ‡ Exclusive of Perth tramways. § Exclusive of amounts paid out of revenue to sinking fund for the redemption of debenture stock of the Perth Tramways Company. || Including returns for the Fremantle tramways for a period of ten months ended the 31st August, 1906, at which date the municipal financial year ends. ¶ For the year 1907, miles of route are given; for previous years the figures represent miles of single track.

7. **Tasmania.**—In Hobart there is a system of electric tramways, amounting in all to a length of nine miles, owned by a private company. Under the authority of the Launceston Tramway Act of 1906 the Launceston City Council entered into an agreement with a private company for the construction of a system of electric tramways in the city and suburbs of Launceston. The agreement provides that the company is to run the tramways for a period of twenty-five years, when the Council may purchase the lines and stock at cost price; the electric power required is to be supplied by the Council.

(i.) *Hobart Electric Tramways.* These tramways were opened for traffic in 1893, the total cost of construction and equipment to the 31st December, 1907, being £88,500. The following table gives particulars of the working of this system for each year from 1901 to 1907, inclusive:—

TASMANIA.—PARTICULARS OF WORKING OF HOBART ELECTRIC TRAMWAYS, 1901 to 1907.

| Year. | Current Generated. | Mileage Open for Traffic. | Tram Miles Run. | Number of Passengers Carried. | Gross Revenue. | Working Expenses. | Number of Cars in Use. | Number of Persons Employed. |
|-------|--------------------|---------------------------|-----------------|-------------------------------|----------------|-------------------|------------------------|-----------------------------|
| | Kilowatt-hours | Miles. | No. | No. | £ | £ | No. | No. |
| 1901 | ... | 9 | 321,633 | 1,734,120 | 16,097 | 11,735 | 20 | 90 |
| 1902 | ... | 9 | 321,533 | 1,848,104 | 17,819 | 11,820 | 20 | 90 |
| 1903 | ... | 9 | 332,986 | 1,962,617 | 18,326 | 11,106 | 21 | 91 |
| 1904 | 378,857 | 9 | 330,451 | 2,045,629 | 19,855 | 10,906 | 21 | 94 |
| 1905 | 455,833 | 9 | 332,135 | 2,327,448 | 20,560 | 11,260 | 22 | 111 |
| 1906 | 460,315 | 9 | 341,638 | 2,199,759 | 20,261 | 10,968 | 23 | 110 |
| 1907 | 607,324 | 9 | 445,505 | 2,504,773 | 24,421 | *13,635 | 22 | 102 |

* Exclusive of the sum of £4400 spent on renewal of permanent way.

8. **Electrical Traction in Commonwealth, 1907-8.**—The subjoined table gives particulars of electric tramways for each State and the Commonwealth. The returns for Tasmania, for the Ballarat and Bendigo tramways in Victoria, and for the Perth

and Kalgoorlie tramways in Western Australia, are for the calendar year 1907; for the Brisbane tramways the returns are for the calendar year 1908; and for other tramways the returns are for the financial year 1907-8. There are at present no electric tramways running in South Australia:—

ELECTRIC TRAMWAYS IN COMMONWEALTH, 1907-8.

| State. | Current Generated. | Mileage (Route) open for Traffic. | Tram Miles Run. | No. of Passengers Carried. | Capital Cost. | Gross Revenue. | Working Expenses. | No. of Cars, Motors, and Trail'rs | No. of Employés. |
|---------------------|--------------------|------------------------------------|-------------------|----------------------------|------------------|------------------|-------------------|-----------------------------------|------------------|
| | Kilowatt-hours. | Miles. | No. | ,000 omitted. | £ | £ | £ | No. | No. |
| N.S.W. ... | 37,422,267 | 89 $\frac{1}{2}$ | 16,517,552 | 159,723 | 3,288,480 | 925,224 | 735,442 | 738 | 4,735 |
| Victoria ... | *1,562,221 | 34 $\frac{1}{2}$ | 1,963,494 | 7,519 | *272,180 | 69,296 | 55,740 | 95 | 338 |
| Queensland ... | 4,915,202 | 30 $\frac{3}{4}$ | 3,367,972 | 27,221 | 1,250,000 | 177,587 | 180,000 | 107 | 619 |
| West. Australia | 4,049,980 | 45 $\frac{1}{2}$ | 2,247,889 | 14,050 | 694,109 | 143,403 | 89,266 | 89 | 330 |
| Tasmania ... | 607,324 | 9 | 445,505 | 2,505 | 88,500 | 24,421 | 13,635 | 22 | 102 |
| Commonwealth | 48,556,994 | 209$\frac{3}{4}$ | 24,542,412 | 211,018 | 5,593,269 | 1,339,931 | 974,083 | 1,051 | 6,124 |

† Estimated.

SECTION XVIII.

POSTS, TELEGRAPHS, AND TELEPHONES.

§ 1. Posts.

1. **The Commonwealth Postal Department.**—Under the provisions of section 51 of the Commonwealth Constitution Act the Commonwealth Parliament was empowered to make laws with respect to the control of the postal, telegraphic, and telephonic services in Australia, and by proclamation, made under section 69 of the same Act, the six separate State Post and Telegraph Departments were amalgamated and taken over by the Federal Executive on the 1st March, 1901. On the 1st December following the Commonwealth Post and Telegraph Act 1901 came into operation, and the provisions of the various State Acts referring to the postal and telegraphic services thereby ceased to apply; it was, however, specially provided by the Act of 1901 that all regulations in force and all rates and charges levied under any State Act should continue in force and be applied in the same manner as if such State Act were not affected by the Commonwealth Act. The administration of the Act of 1901 was placed in the hands of a Postmaster-General, a responsible Minister with Cabinet rank, whilst a principal officer in each State was provided for under the style of Deputy Postmaster-General. The rates and charges levied in each State for the transmission of letters, telegrams, and postal articles at the date of Federation remained in force until the Post and Telegraph Rates Act came into operation on the 1st November, 1902. This Act secured uniformity throughout the Commonwealth in the rates charged for the conveyance of newspapers by post, and for the transmission of telegrams, but did not alter the charges made in the individual States for the transmission of letters, cards, parcels, and packets. At present there are anomalies in postal rates, to which reference is made hereinafter.

2. **First Post Office in Australia.**—The first Australian office for postal purposes was established in Sydney by Lieutenant-Governor Paterson under a Government order dated the 25th April, 1809, and the site selected was in High-street (now known as George-street) at the residence of Mr. Isaac Nicholls, who was empowered "in consideration of the trouble and expense attendant on this duty" to charge on delivery to the addressee the following sums:—For every letter, one shilling; for every parcel not exceeding 20 lbs. weight, two shillings and sixpence; and for all exceeding that weight, five shillings. Soldiers' letters were charged only one penny. The duties of this office were extended in June, 1810, by Governor Macquarie, who established it as a regular post office, at which all parcels and letters, either colonial or foreign, were to be deposited previous to their distribution.

3. **Postal Services in Early Days.**—After the establishment of this office in Sydney very little improvement in regard to postal matters took place for a number of years, and it was not until 1825 that an Act was passed by Sir Thomas Brisbane, with the advice of the Council, "to regulate the postage of letters in New South Wales." A proclamation under this Act was issued, fixing the rates of postage and the salaries and allowances of postmasters, and inviting tenders for the conveyance of mails between Sydney and Parramatta, Windsor and Liverpool; between Liverpool and Campbelltown; from Parramatta to Emu Plains, and thence to Bathurst. It was not, however, until 1828 that the provisions of the Act were put into full force and a system of general post-office communication was established. In that year rates of postage were fixed, depending

upon the distance and the difficulty of transmission. The lowest single inland rate was threepence and the highest one shilling, the postage on a letter increasing according to its weight, the minimum fee being charged on letters not exceeding a quarter of an ounce. The fee for newspapers was one penny. Letters from New South Wales to Van Diemen's Land were charged threepence each, while other letters by ship were charged fourpence each single rate, and sixpence for any weight in excess. The Act of 1825 was amended by the Postal Act of 1835, under which the Governor was authorised to establish a General Post Office at Sydney, and to make rules and regulations, and to fix rates for the conveyance of letters and parcels. In 1837 a post office was established in Melbourne, and a fortnightly service was established between that city and Sydney. In the same year stamps were introduced in the form of stamped covers or wrappers, which are said to have been the first postage stamps ever used. Post offices were established and a postal service was organised in the other States of the Commonwealth shortly after their settlement, and a tolerably good overland service by horses and mail coaches soon developed between the capitals and the up-country towns, villages, and stations as settlement progressed. In Tasmania the mails were delivered in 1824 by foot post once a fortnight, while in 1835 a mail cart made the journey twice a week from Hobart to Launceston—121 miles—in nineteen hours. In Western Australia the Legislative Council passed an Act establishing a postal department in 1834; a weekly mail between Guildford and York and an overland monthly mail from Perth to King George's Sound were commenced in 1841, and in the following year a regular mail service between all the settled districts of the State was inaugurated.

4. Development of Postal Services.—The New South Wales Postal Act of 1835, referred to above, was amended in 1838, 1840, and again in 1851, when the postage on town letters, *i.e.*, letters received at any post office for delivery at such post office or at any place within the limits of the township in which such post office was situated, was fixed at one penny; for letters transmitted between separate postal towns the postage was twopence, and for letters received from or to be transmitted by ship to places beyond the limits of the colony the fee was threepence in addition to the inland postage. For parcels the rate was twopence up to four ounces weight, and one halfpenny for every additional ounce. Regular mail communication was established between Sydney and Adelaide in 1847, and the rate of postage, on a single letter, was fixed at one shilling and sixpence. In the State of Victoria an Act was passed in 1854 providing for the extension of postal facilities and fixing the rates to be charged for the transmission of letters. The postage on town letters was twopence; on letters for transmission between separate postal towns, sixpence; and on letters for transmission beyond the limits of the State, one shilling. Mails were conveyed along the main roads by mail coaches, built after the style of the old-fashioned English coaches; after the discovery of gold, in 1851, coaches built on the model of the Mexican *estafeta* gradually supplanted the old style. Mails were despatched at night and were delivered with greater rapidity until they were finally sent by railway. The history of the post office in Australia, subsequent to the discovery of gold, has been one of great progress and improvement.

(i.) *Number of Post Offices, Letters and Postcards, and Newspapers, 1841 to 1907.* The number of post offices open in each State and in the Commonwealth at decennial periods since 1841, and at the end of each year from 1901 to 1907, inclusive, is given in the subjoined table, which also shews, for the same years, the total number (in thousands) of letters and postcards dealt with, and the number per 100 of the population, as well as the total number (in thousands) of newspapers dealt with, and the number per 100 of the population in each State and in the Commonwealth. The true total number of letters and postcards and of newspapers dealt with is not obtained by merely adding the figures of the several States together, since interstate letters are counted both in the State from which they are despatched and in that in which they are received for delivery. A second total is therefore given, excluding such interstate excess, obtained by subtracting from the first total for all the States half the sum of the number of interstate letters despatched and received in each of the States:—

DEVELOPMENT OF POSTAL SERVICES, 1841 to 1907.

| Year. | New South Wales. | Victoria. | Queens-land.† | South Australia. | Western Australia. | Tas-mania. | Common-wealth. | C'wealth (excl'ding Interstate Excess). |
|--|------------------|-----------|---------------|------------------|--------------------|------------|----------------|---|
| NUMBER OF POST OFFICES, 31ST DECEMBER, 1841 TO 1907. | | | | | | | | |
| 1841 ... | 56 | 3 | * | ... | ... | 143 | 102 | ... |
| 1851 ... | 101 | 44 | * | 72 | ... | 51 | 268 | ... |
| 1861 ... | 340 | 369 | 23 | 160 | 14 | 100 | 1,006 | ... |
| 1871 ... | 570 | 706 | 81 | 286 | 39 | 144 | 1,826 | ... |
| 1881 ... | 973 | 1,153 | 141 | 488 | 52 | 205 | 3,018 | ... |
| 1891 ... | 1,384 | 1,729 | 307 | 629 | 86 | 323 | 4,463 | ... |
| 1901 ... | 1,684 | 1,637 | 411 | 713 | 187 | 375 | 5,008 | ... |
| 1902 ... | 1,693 | 1,645 | 433 | 702 | 197 | 369 | 5,039 | ... |
| 1903 ... | 1,708 | 1,646 | 441 | 706 | 218 | 370 | 5,089 | ... |
| 1904 ... | 1,725 | 1,652 | 450 | 711 | 243 | 371 | 5,153 | ... |
| 1905 ... | 1,744 | 1,655 | 447 | 711 | 251 | 370 | 5,188 | ... |
| 1906 ... | 1,769 | 1,659 | 468 | 706 | 281 | 373 | 5,256 | ... |
| 1907 ... | 1,809 | 1,656 | 480 | 704 | 298 | 375 | 5,322 | ... |

| NUMBERS OF LETTERS AND POSTCARDS DEALT WITH. (,000 OMITTED.) | | | | | | | | |
|--|---------|----------|--------|--------|--------|--------|---------|---------|
| 1841 ... | 720 | 56 | * | ... | ... | ... | ... | ... |
| 1851 ... | 975 | 504 | * | 364 | ... | ... | ... | ... |
| 1861 ... | 4,370 | 6,110 | 515 | 1,540 | 193 | 836 | 13,564 | 12,844 |
| 1871 ... | 7,510 | 11,716 | 1,793 | 3,163 | 669 | 1,189 | 26,040 | 24,362 |
| 1881 ... | 26,356 | 26,308 | 5,178 | 10,759 | 995 | 2,682 | 72,278 | 67,640 |
| 1891 ... | 64,154 | \$62,527 | 15,346 | 17,836 | 3,193 | 5,852 | 168,908 | 157,297 |
| 1901 ... | 82,783 | 82,599 | 23,270 | 21,395 | 17,451 | 11,173 | 238,671 | 220,177 |
| 1902 ... | 90,781 | 96,486 | 23,444 | 20,966 | 18,151 | 9,379 | 259,197 | 241,795 |
| 1903 ... | 92,238 | 98,811 | 24,244 | 22,153 | 15,787 | 9,911 | 263,144 | 244,945 |
| 1904 ... | 98,270 | 102,515 | 25,256 | 25,050 | 18,598 | 10,752 | 290,431 | 259,167 |
| 1905 ... | 111,961 | 110,455 | 27,310 | 29,095 | 22,106 | 12,615 | 313,542 | 289,584 |
| 1906 ... | 127,684 | 116,459 | 31,463 | 29,357 | 24,829 | 14,552 | 344,344 | 317,118 |
| 1907 ... | 137,229 | 122,508 | 36,006 | 28,364 | 24,653 | 14,911 | 363,671 | 332,301 |

| NUMBERS OF LETTERS AND POSTCARDS DEALT WITH PER 100 OF POPULATION. | | | | | | | | |
|--|-------|---------|-------|-------|--------|-------|-------|-------|
| 1841 ... | 617 | 483 | * | ... | ... | ... | ... | ... |
| 1851 ... | 495 | 652 | * | 548 | ... | ... | ... | ... |
| 1861 ... | 1,237 | 1,132 | 1,651 | 1,228 | 1,240 | 929 | 1,175 | 1,113 |
| 1871 ... | 1,478 | 1,590 | 1,489 | 1,712 | 12,668 | 1,175 | 1,553 | 1,454 |
| 1881 ... | 3,445 | 3,024 | 2,286 | 3,885 | 3,372 | 2,304 | 3,164 | 2,961 |
| 1891 ... | 5,616 | \$5,460 | 3,870 | 5,548 | 6,414 | 3,929 | 5,270 | 4,907 |
| 1901 ... | 6,033 | 6,821 | 4,613 | 5,840 | 9,306 | 6,436 | 6,237 | 5,758 |
| 1902 ... | 6,519 | 7,964 | 4,592 | 5,715 | 8,508 | 5,285 | 6,675 | 6,226 |
| 1903 ... | 6,483 | 8,174 | 4,729 | 6,042 | 7,168 | 5,554 | 6,701 | 6,237 |
| 1904 ... | 6,793 | 8,470 | 4,832 | 6,686 | 7,919 | 5,991 | 7,038 | 6,504 |
| 1905 ... | 7,572 | 9,064 | 5,144 | 7,764 | 8,834 | 7,038 | 7,737 | 7,146 |
| 1906 ... | 8,363 | 9,453 | 5,879 | 7,648 | 9,486 | 8,078 | 8,358 | 7,698 |
| 1907 ... | 8,848 | 9,904 | 6,638 | 7,329 | 9,329 | 8,433 | 8,746 | 7,991 |

| NUMBER OF NEWSPAPERS DEALT WITH. (,000 OMITTED.) | | | | | | | | |
|--|--------|----------|--------|-------|--------|--------|---------|---------|
| 1841 ... | 1,126 | 120 | * | ... | ... | ... | ... | ... |
| 1851 ... | 762 | 456 | * | 517 | ... | ... | ... | ... |
| 1861 ... | 3,384 | 4,277 | 427 | 1,089 | 138 | 896 | 10,211 | 9,603 |
| 1871 ... | 3,992 | 5,173 | 1,307 | 2,213 | 3,552 | 1,136 | 14,173 | 13,336 |
| 1881 ... | 16,528 | 11,441 | 4,530 | 5,927 | 715 | 2,345 | 41,486 | 38,063 |
| 1891 ... | 42,517 | \$22,729 | 11,896 | 8,883 | 1,666 | 5,376 | 93,067 | 85,280 |
| 1901 ... | 52,318 | 26,297 | 12,805 | 9,573 | 7,975 | 7,440 | 116,408 | 102,727 |
| 1902 ... | 47,763 | 27,874 | 13,128 | 6,299 | 9,916 | 6,960 | 111,940 | 98,568 |
| 1903 ... | 37,901 | 31,364 | 13,511 | 6,125 | 8,125 | 7,183 | 104,209 | 92,844 |
| 1904 ... | 40,385 | 32,142 | 14,517 | 6,953 | 8,578 | 7,256 | 109,831 | 93,269 |
| 1905 ... | 44,599 | 29,563 | 16,338 | 7,737 | 10,054 | 9,179 | 117,470 | 97,789 |
| 1906 ... | 47,144 | 29,611 | 17,613 | 8,744 | 9,941 | 10,195 | 123,248 | 103,838 |
| 1907 ... | 48,341 | 30,960 | 19,214 | 7,713 | 9,419 | 10,707 | 126,354 | 106,187 |

| NUMBER OF NEWSPAPERS DEALT WITH PER 100 OF THE POPULATION. | | | | | | | | |
|--|-------|---------|-------|-------|--------|-------|-------|-------|
| 1841 ... | 965 | 1,024 | * | ... | ... | ... | ... | ... |
| 1851 ... | 386 | 590 | * | 778 | ... | ... | ... | ... |
| 1861 ... | 958 | 792 | 1,370 | 868 | 882 | 995 | 885 | 832 |
| 1871 ... | 786 | 702 | 1,086 | 1,198 | 11,407 | 1,122 | 845 | 795 |
| 1881 ... | 2,160 | 1,815 | 2,000 | 2,140 | 2,423 | 2,015 | 1,816 | 1,666 |
| 1891 ... | 3,722 | \$1,985 | 3,000 | 2,763 | 3,346 | 3,609 | 2,904 | 2,621 |
| 1901 ... | 3,813 | 2,172 | 2,538 | 2,617 | 4,253 | 4,285 | 3,042 | 2,655 |
| 1902 ... | 3,430 | 2,301 | 2,569 | 1,718 | 4,649 | 3,922 | 2,882 | 2,538 |
| 1903 ... | 2,664 | 2,594 | 2,635 | 1,661 | 3,580 | 4,035 | 2,653 | 2,364 |
| 1904 ... | 2,792 | 2,655 | 2,772 | 1,865 | 3,655 | 4,036 | 2,756 | 2,341 |
| 1905 ... | 3,016 | 2,426 | 3,078 | 2,045 | 4,018 | 5,121 | 2,899 | 2,413 |
| 1906 ... | 3,087 | 2,403 | 3,291 | 2,278 | 3,797 | 5,658 | 2,992 | 2,520 |
| 1907 ... | 3,117 | 2,503 | 3,543 | 1,993 | 3,564 | 6,056 | 3,038 | 2,553 |

* Included in New South Wales. † In 1844. ‡ In 1872. § In 1890. ¶ The figures up to and including the year 1903 are partly estimated.

(ii.) *Number of Parcels and Packets dealt with, 1901 to 1907.* The following table shews the total number of parcels and packets dealt with in each State and in the Commonwealth during each year from 1901 to 1907, inclusive:—

NUMBER OF PARCELS AND PACKETS DEALT WITH, 1901 to 1907.

| State, | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| PARCELS (.000 OMITTED). | | | | | | | |
| New South Wales | 736 | 786 | 834 | 925 | 994 | 1,162 | 1,375 |
| Victoria | 311 | 366 | 429 | 425 | 469 | 511 | 556 |
| Queensland | 309 | 303 | 314 | 358 | 389 | 464 | 505 |
| South Australia | 77 | 86 | 113 | 132 | 146 | 167 | 161 |
| Western Australia | 36 | 36 | 77 | 88 | 120 | 158 | 173 |
| Tasmania | 40 | 47 | 58 | 64 | 69 | 76 | 73 |
| Commonwealth | 1,509 | 1,624 | 1,825 | 1,992 | 2,187 | 2,538 | 2,843 |
| C'wealth (exc. interstate excess)* | 1,369 | 1,468 | 1,650 | 1,790 | 1,958 | 2,283 | 2,554 |

| | | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|
| PACKETS (.000 OMITTED). | | | | | | | |
| New South Wales | 14,480 | 16,210 | 15,471 | 18,560 | 22,083 | 24,039 | 35,817 |
| Victoria | 14,235 | 12,179 | 12,545 | 14,389 | 14,965 | 16,267 | 16,883 |
| Queensland | 7,333 | 7,453 | 8,127 | 8,430 | 10,121 | 10,231 | 11,806 |
| South Australia† | 1,628 | 1,769 | 2,207 | 1,978 | 2,208 | 2,973 | 6,700 |
| Western Australia | 4,387 | 5,128 | 3,842 | 3,664 | 4,626 | 4,321 | 4,459 |
| Tasmania | 2,238 | 2,599 | 2,961 | 2,901 | 3,029 | 3,528 | 3,804 |
| Commonwealth | 44,301 | 45,338 | 45,153 | 49,922 | 57,032 | 61,359 | 79,469 |
| C'wealth (exc. interstate excess)* | 40,161 | 41,012 | 40,221 | 44,359 | 51,174 | 54,633 | 71,714 |

* In the figures given in this line allowance is made for the fact that in the aggregate obtained by adding together the results of the several States, interstate mail matter is included twice, being counted both in the despatching and in the receiving State. As to the method in which this allowance is computed, see page 753. † Figures for years 1901 to 1906 are exclusive of packets posted at the General Post Office in Adelaide.

5. *Postal Matter Dealt with, 1901 to 1907.*—In the preceding tables is shewn only the *total number* of letters and postcards, newspapers, parcels and packets dealt with—*i.e.*, despatched and received—by the Postal Department in each State, regardless of the place from which they are despatched or of the place at which they are received for delivery. In the following tables the total numbers of letters and postcards, newspapers, parcels, and packets dealt with are divided into (i.) those posted in each State for delivery within the Commonwealth, (ii.) those received in each State from places outside the Commonwealth, and (iii.) those despatched from each State to places outside the Commonwealth.

(i.) *Matter Posted in each State for Delivery within the Commonwealth, 1901 to 1907.* The matter dealt with under this heading is classified in the two following tables, shewing (a) matter posted in each State for delivery within that State, and (b) matter posted in each State for delivery in other States of the Commonwealth, while the third table (c) shews the total matter posted in each State for delivery within the Commonwealth, *i.e.*, it shews the sums of the corresponding figures in tables (a) and (b).

(a) *Matter Posted in each State for Delivery within that State, 1901 to 1907.* The following table shews the number of letters and postcards, newspapers, parcels, and packets posted in each State for delivery within that State during each year from 1901 to 1907, inclusive:—

NUMBERS OF LETTERS AND POSTCARDS, NEWSPAPERS, PARCELS, AND PACKETS POSTED IN EACH STATE FOR DELIVERY WITHIN THAT STATE, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| LETTERS AND POSTCARDS (,000 OMITTED). | | | | | | | |
| New South Wales | 67,926 | 75,652 | 77,315 | 80,232 | 90,672 | 102,790 | 108,449 |
| Victoria ... | 70,255 | 83,748 | 84,871 | 86,803 | 92,341 | 95,757 | 98,997 |
| Queensland ... | 17,890 | 17,614 | 17,792 | 19,231 | 20,795 | 23,590 | 26,521 |
| South Australia | 16,911 | 16,659 | 17,722 | 19,688 | 23,335 | 22,578 | 20,611 |
| West. Australia | 12,327 | 13,005 | 10,345 | 10,479 | 12,868 | 16,537 | 17,181 |
| Tasmania ... | 6,247 | 6,100 | 6,384 | 6,460 | 7,375 | 8,431 | 8,736 |
| Commonwealth | 191,056 | 212,978 | 214,429 | 222,893 | 247,386 | 269,683 | 280,495 |
| NEWSPAPERS (,000 OMITTED). | | | | | | | |
| New South Wales | 41,572 | 37,776 | 27,726 | 28,284 | 30,303 | 30,833 | 30,840 |
| Victoria ... | 14,000 | 14,902 | 18,064 | 17,801 | 12,949 | 12,635 | 12,897 |
| Queensland ... | 8,764 | 8,717 | 8,684 | 9,460 | 10,505 | 11,460 | 11,988 |
| South Australia | 6,688 | 3,664 | 3,530 | 3,987 | 4,728 | 5,564 | 4,086 |
| West. Australia | 2,891 | 4,621 | 2,808 | 2,680 | 3,017 | 4,337 | 4,702 |
| Tasmania ... | 4,798 | 4,428 | 4,660 | 4,411 | 6,310 | 6,767 | 7,206 |
| Commonwealth | 78,708 | 74,108 | 65,472 | 66,623 | 67,812 | 71,596 | 71,719 |
| PARCELS (,000 OMITTED). | | | | | | | |
| New South Wales | 592 | 631 | 667 | 740 | 788 | 927 | 1,102 |
| Victoria... .. | 206 | 239 | 232 | 262 | 291 | 312 | 336 |
| Queensland ... | 251 | 242 | 255 | 279 | 302 | 376 | 400 |
| South Australia | 45 | 50 | 72 | 87 | 97 | 110 | 98 |
| West. Australia | ... | ... | 34 | 39 | 69 | 101 | 111 |
| Tasmania ... | 19 | 21 | 29 | 32 | 34 | 37 | 34 |
| Commonwealth | 1,113 | 1,183 | 1,339 | 1,439 | 1,581 | 1,863 | 2,081 |
| PACKETS (,000 OMITTED). | | | | | | | |
| New South Wales | 11,462 | 13,129 | 12,246 | 13,770 | 16,768 | 18,270 | *27,369 |
| Victoria ... | 10,129 | 7,683 | 8,015 | 9,040 | 9,524 | 10,460 | 10,983 |
| Queensland ... | 5,222 | 5,432 | 5,621 | 6,353 | 8,006 | 7,780 | 8,334 |
| South Australia† | 605 | 645 | 937 | 727 | 868 | 912 | 5,516 |
| West. Australia | 3,007 | 3,684 | 2,396 | 1,761 | 2,337 | 2,546 | 2,739 |
| Tasmania ... | 1,402 | 1,560 | 1,790 | 1,913 | 2,107 | 2,412 | 2,664 |
| Commonwealth | 31,827 | 32,133 | 31,005 | 33,564 | 39,610 | 42,380 | 58,105 |

* This figure is determined on a basis different from that adopted in previous years. † Figures for 1901 to 1906 are exclusive of packets posted at G.P.O., Adelaide.

(b) Matter Posted in each State for Delivery in other States, 1901 to 1907. The following table shows the number of letters and postcards, newspapers, parcels, and packets posted in each State for delivery in a State other than that in which it was posted:—

**NUMBERS OF LETTERS AND POSTCARDS, NEWSPAPERS, PARCELS, AND PACKETS
POSTED IN EACH STATE FOR DELIVERY IN OTHER STATES, 1901 to 1907.**

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|
| LETTERS AND POSTCARDS (,000 OMITTED). | | | | | | | |
| New South Wales | 5,672 | 5,129 | 5,029 | 6,236 | 7,459 | 8,896 | 8,686 |
| Victoria ... | 4,268 | 4,840 | 4,530 | 5,013 | 5,907 | 6,789 | 8,422 |
| Queensland ... | 2,451 | 2,445 | 2,749 | 2,015 | 2,242 | 2,713 | 3,199 |
| South Australia | 1,864 | 1,761 | 1,856 | 2,130 | 2,344 | 2,829 | 2,914 |
| West. Australia | 1,681 | 1,655 | 1,851 | 2,607 | 2,918 | 2,680 | 2,518 |
| Tasmania ... | 2,536 | 1,745 | 1,728 | 2,274 | 2,511 | 2,842 | 2,834 |
| Commonwealth | 18,472 | 17,575 | 17,743 | 20,275 | 23,381 | 26,749 | 28,573 |
| NEWSPAPERS (,000 OMITTED). | | | | | | | |
| New South Wales | 4,226 | 3,473 | 3,648 | 4,646 | 5,559 | 7,249 | 7,578 |
| Victoria ... | 6,731 | 7,133 | 6,457 | 7,592 | 9,225 | 9,572 | 9,616 |
| Queensland ... | 869 | 836 | 1,019 | 726 | 850 | 819 | 1,095 |
| South Australia | 757 | 750 | 784 | 936 | 1,150 | 1,106 | 1,174 |
| West. Australia | 788 | 797 | 798 | 1,135 | 1,278 | 882 | 532 |
| Tasmania ... | 304 | 322 | 325 | 352 | 331 | 365 | 509 |
| Commonwealth | 13,675 | 13,361 | 13,031 | 15,387 | 18,393 | 19,993 | 20,504 |
| PARCELS (,000 OMITTED). | | | | | | | |
| New South Wales | 59 | 59 | 64 | 71 | 83 | 98 | 101 |
| Victoria ... | 50 | 62 | 73 | 83 | 94 | 105 | 119 |
| Queensland ... | 13 | 13 | 14 | 18 | 18 | 21 | 25 |
| South Australia | 11 | 12 | 12 | 14 | 15 | 17 | 18 |
| West. Australia | 5 | 6 | 8 | 9 | 10 | 11 | 12 |
| Tasmania ... | 2 | 4 | 4 | 5 | 6 | 6 | 6 |
| Commonwealth | 140 | 156 | 175 | 200 | 226 | 258 | 281 |
| PACKETS (,000 OMITTED). | | | | | | | |
| New South Wales | 1,292 | 1,178 | 1,202 | 2,259 | 2,713 | 3,400 | 3,255 |
| Victoria ... | 1,701 | 1,715 | 1,597 | 1,866 | 1,787 | 1,893 | 2,100 |
| Queensland ... | 817 | 823 | 996 | 344 | 354 | 550 | 629 |
| South Australia | 199 | 351 | 231 | 233 | 220 | 277 | 246 |
| West. Australia | 461 | 483 | 484 | 474 | 619 | 367 | 247 |
| Tasmania ... | 98 | 100 | 144 | 156 | 161 | 227 | 202 |
| Commonwealth | 4,568 | 4,650 | 4,654 | 5,332 | 5,854 | 6,714 | 6,679 |

(c) *Matter Posted in each State for Delivery within the Commonwealth, 1901 to 1907.* The subjoined table shews the number of letters and postcards, newspapers, parcels, and packets posted in each State for delivery within the Commonwealth during each year from 1901 to 1907, inclusive, *i.e.*, the figures in the subjoined table show the sum of the corresponding figures for each State and during each year in the two last preceding tables:—

NUMBERS OF LETTERS AND POSTCARDS, NEWSPAPERS, PARCELS, AND PACKETS POSTED IN EACH STATE FOR DELIVERY WITHIN THE COMMONWEALTH, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|---------|---------|---------|---------|---------|---------|---------|
| LETTERS AND POSTCARDS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 73,598 | 80,982 | 82,344 | 86,468 | 98,131 | 111,686 | 117,135 |
| Victoria ... | 74,523 | 88,589 | 89,401 | 91,815 | 98,247 | 102,546 | 107,420 |
| Queensland ... | 19,841 | 20,059 | 20,541 | 21,246 | 23,038 | 26,303 | 29,720 |
| South Aust. ... | 18,775 | 18,420 | 19,579 | 21,818 | 25,678 | 25,407 | 23,525 |
| West. Aust. ... | 14,008 | 14,660 | 12,196 | 13,087 | 15,787 | 19,217 | 19,699 |
| Tasmania ... | 8,784 | 7,844 | 8,112 | 8,734 | 9,885 | 11,274 | 11,570 |
| C'wealth ... | 209,529 | 230,554 | 232,173 | 243,168 | 270,766 | 296,433 | 309,069 |
| NEWSPAPERS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 45,798 | 41,249 | 31,374 | 32,930 | 35,862 | 38,082 | 38,418 |
| Victoria ... | 20,731 | 22,085 | 24,521 | 25,393 | 22,174 | 22,207 | 22,513 |
| Queensland ... | 9,633 | 9,553 | 9,703 | 10,186 | 11,356 | 12,279 | 13,083 |
| South Aust. ... | 7,440 | 4,413 | 4,314 | 4,923 | 5,878 | 6,670 | 5,259 |
| West. Aust. ... | 3,679 | 5,418 | 3,606 | 3,816 | 4,295 | 5,219 | 5,234 |
| Tasmania ... | 5,102 | 4,749 | 4,984 | 4,763 | 6,641 | 7,133 | 7,716 |
| C'wealth ... | 92,383 | 87,467 | 78,502 | 82,011 | 86,206 | 91,590 | 92,223 |
| PARCELS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 651 | 690 | 731 | 811 | 871 | 1,024 | 1,203 |
| Victoria ... | 256 | 301 | 355 | 345 | 385 | 417 | 455 |
| Queensland ... | 264 | 256 | 269 | 297 | 321 | 397 | 426 |
| South Aust. ... | 56 | 61 | 84 | 101 | 112 | 127 | 116 |
| West. Aust. ... | 5 | 6 | 43 | 48 | 79 | 111 | 123 |
| Tasmania ... | 21 | 25 | 33 | 38 | 39 | 44 | 40 |
| C'wealth ... | 1,253 | 1,339 | 1,515 | 1,640 | 1,807 | 2,120 | 2,363 |
| PACKETS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 12,754 | 14,307 | 13,448 | 16,030 | 19,482 | 21,671 | *30,624 |
| Victoria ... | 11,829 | 9,398 | 9,612 | 10,906 | 11,311 | 12,354 | 13,083 |
| Queensland ... | 6,039 | 6,255 | 6,616 | 6,697 | 8,359 | 8,330 | 9,463 |
| South Aust. † | 804 | 996 | 1,168 | 960 | 1,089 | 1,189 | 5,763 |
| West. Aust. ... | 3,468 | 4,168 | 2,880 | 2,234 | 2,956 | 2,912 | 2,985 |
| Tasmania ... | 1,501 | 1,659 | 1,934 | 2,069 | 2,269 | 2,639 | 2,866 |
| C'wealth ... | 36,395 | 36,783 | 35,658 | 38,896 | 45,466 | 49,095 | 64,784 |

† Figures for 1901 to 1906 are exclusive of packets posted at G.P.O., Adelaide. * This figure is determined on a basis different from that adopted in previous years.

(ii.) *Postal Matter Received in each State from Places Outside the Commonwealth, 1901 to 1907.* The following table shews the number of letters and postcards, newspapers, parcels, and packets received for delivery in each State from places outside the Commonwealth:—

NUMBERS OF LETTERS AND POSTCARDS, NEWSPAPERS, PARCELS, AND PACKETS RECEIVED IN EACH STATE FROM PLACES OUTSIDE THE COMMONWEALTH, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------------|-------|-------|-------|-------|-------|-------|--------|
| LETTERS AND POSTCARDS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 2,150 | 2,552 | 2,552 | 2,962 | 4,018 | 3,851 | *2,820 |
| Victoria ... | 1,417 | 1,757 | 1,708 | 2,206 | 2,635 | 2,910 | 3,423 |
| Queensland ... | 852 | 890 | 893 | 862 | 872 | 984 | 1,095 |
| South Aust. ... | 348 | 289 | 313 | 436 | 461 | 541 | 762 |
| West. Aust. ... | 587 | 602 | 603 | 1,198 | 1,291 | 1,114 | 1,025 |
| Tasmania ... | 328 | 252 | 223 | 199 | 412 | 414 | 416 |
| C'wealth ... | 5,682 | 6,342 | 6,292 | 7,863 | 9,689 | 9,814 | 9,541 |
| NEWSPAPERS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 1,509 | 1,434 | 1,616 | 1,715 | 2,163 | 2,431 | 2,088 |
| Victoria ... | 2,150 | 2,534 | 2,263 | 2,436 | 2,760 | 2,608 | 3,314 |
| Queensland ... | 1,490 | 1,467 | 1,422 | 1,403 | 1,230 | 1,210 | 1,237 |
| South Aust. ... | 655 | 514 | 454 | 563 | 516 | 488 | 1,013 |
| West. Aust. ... | 1,036 | 1,055 | 1,056 | 1,022 | 1,176 | 817 | 733 |
| Tasmania ... | 443 | 338 | 305 | 356 | 350 | 419 | 368 |
| C'wealth ... | 7,283 | 7,342 | 7,116 | 7,495 | 8,195 | 7,973 | 8,753 |
| PARCELS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 30 | 30 | 31 | 34 | 33 | 38 | 51 |
| Victoria ... | 20 | 24 | 27 | 27 | 27 | 29 | 30 |
| Queensland ... | 10 | 10 | 10 | 14 | 10 | 12 | 13 |
| South Aust. ... | 7 | 8 | 8 | 8 | 9 | 10 | 10 |
| West. Aust. ... | 9 | 9 | 10 | 11 | 10 | 12 | 11 |
| Tasmania ... | 4 | 5 | 4 | 4 | 5 | 5 | 4 |
| C'wealth ... | 80 | 86 | 90 | 98 | 94 | 106 | 119 |
| PACKETS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 516 | 477 | 532 | 714 | 695 | *107 | *1,094 |
| Victoria ... | 1,075 | 1,267 | 1,131 | 1,218 | 1,380 | 1,304 | 1,104 |
| Queensland ... | 622 | 614 | 553 | 453 | 633 | 444 | 580 |
| South Aust. ... | 327 | 257 | 227 | 282 | 258 | 244 | 12 |
| West. Aust. ... | 192 | 197 | 197 | 431 | 440 | 430 | 503 |
| Tasmania ... | 143 | 369 | 180 | 160 | 130 | 159 | 205 |
| C'wealth ... | 2,875 | 3,181 | 2,820 | 3,258 | 3,536 | 2,688 | 3,498 |

* This figure is determined on a basis different from that adopted in previous years.

(iii.) *Matter Posted in each State for Delivery Outside the Commonwealth, 1901 to 1907.* The following is a similar table and shews the matter posted in each State for delivery outside the Commonwealth :—

NUMBERS OF LETTERS AND POSTCARDS, NEWSPAPERS, PARCELS, AND PACKETS POSTED IN EACH STATE FOR DELIVERY OUTSIDE THE COMMONWEALTH, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|
| LETTERS AND POSTCARDS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 1,640 | 2,146 | 2,293 | 2,960 | 3,297 | 4,073 | 4,380 |
| Victoria ... | 1,336 | 1,235 | 1,891 | 2,218 | 2,602 | 3,101 | 3,111 |
| Queensland ... | 550 | 562 | 550 | 575 | 622 | 670 | 760 |
| S. Australia ... | 340 | 341 | 337 | 374 | 520 | 727 | 807 |
| W. Australia... | 461 | 493 | 494 | 591 | 674 | 757 | 816 |
| Tasmania ... | 618 | 295 | 459 | 429 | 837 | 1,066 | 1,020 |
| C'wealth ... | 4,945 | 5,072 | 6,024 | 7,147 | 8,552 | 10,394 | 10,894 |
| NEWSPAPERS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 802 | 1,438 | 1,494 | 1,735 | 1,857 | 1,913 | 2,257 |
| Victoria ... | 1,344 | 1,116 | 2,148 | 2,092 | 2,096 | 2,064 | 2,352 |
| Queensland ... | 353 | 313 | 315 | 305 | 301 | 312 | 354 |
| S. Australia ... | 162 | 142 | 147 | 148 | 128 | 167 | 195 |
| W. Australia... | 211 | 249 | 248 | 253 | 255 | 207 | 196 |
| Tasmania ... | 183 | 182 | 97 | 116 | 153 | 197 | 194 |
| C'wealth ... | 3,055 | 3,440 | 4,449 | 4,649 | 4,790 | 4,860 | 5,548 |
| PARCELS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 14 | 21 | 22 | 23 | 26 | 28 | 30 |
| Victoria ... | 11 | 12 | 13 | 15 | 15 | 17 | 18 |
| Queensland ... | 4 | 3 | 4 | 3 | 4 | 4 | 4 |
| S. Australia ... | 4 | 4 | 4 | 4 | 4 | 5 | 6 |
| W. Australia... | 1 | 3 | 2 | 3 | 3 | 4 | 4 |
| Queensland ... | 1 | 1 | 2 | 2 | 2 | 2 | 2 |
| C'wealth ... | 35 | 44 | 47 | 50 | 54 | 60 | 64 |
| PACKETS (,000 OMITTED). | | | | | | | |
| N.S.W. ... | 409 | 535 | 568 | 690 | 814 | 1,003 | 1,179 |
| Victoria ... | 590 | 542 | 643 | 915 | 919 | 837 | 880 |
| Queensland ... | 86 | 76 | 82 | 82 | 80 | 74 | 84 |
| S. Australia* | 57 | 80 | 47 | 51 | 72 | 77 | 103 |
| W. Australia... | 87 | 88 | 88 | 195 | 235 | 129 | 65 |
| Tasmania ... | 90 | 50 | 35 | 41 | 50 | 49 | 45 |
| C'wealth ... | 1,319 | 1,371 | 1,463 | 1,974 | 2,170 | 2,169 | 2,356 |

* Figures for years 1901 to 1906 are exclusive of packets posted at G.P.O., Adelaide.

6. **Postal Facilities, 1907.**—The subjoined statement shews the area in square miles and the number of inhabitants to each post office (including receiving offices) in each State and in the Commonwealth at the end of the year 1907. It will be observed that the most sparsely populated States have the greatest number of offices in comparison with their population, but in order to judge the relative extension of postal facilities the area of country to each office must also be taken into account :—

**SQUARE MILES OF TERRITORY AND NUMBER OF INHABITANTS TO EACH
POST AND RECEIVING OFFICE, 1907.**

| State | N.S.W. | Vic. | Qld. | S.A. | W.A. | Tas | CwIth. |
|---|--------|-------|-------|-------|-------|------|--------|
| Number of post and receiving offices... | 2,319 | 2,326 | 1,389 | 716 | 365 | 406 | 7,521 |
| Number of square miles of territory to each post office in State | 134 | 38 | 483 | 1,262 | 2,673 | 64 | 395 |
| Number of inhabitants to each office ... | 676 | 536 | 390 | 548 | 716 | 453 | 558 |
| Number of inhabitants per square mile | 5.05 | 14.20 | 0.81 | 0.43 | 0.27 | 7.02 | 1.41 |

7. **Rates of Postage.**—The charges made for the postage of newspapers and parcels, and of interstate and foreign letters, are the same in all the States of the Commonwealth. The rates for the transmission of inland letters, however, are not uniform, the Post and Telegraph Act 1901 having specially provided that the rates and charges levied in any State should continue in force.

(i.) *Letters.* The inland letter postage is at the rate of one penny per half-ounce on town and twopence per half-ounce on country letters throughout the Commonwealth, except in the States of Victoria and South Australia. In Victoria the charge made is one penny per half-ounce, and in South Australia twopence per half-ounce, on all letters posted for delivery within the State. In Victoria the minimum charge was altered in 1890 from twopence per ounce to one penny per half-ounce, but the diminution in revenue at that time was so great that in 1892 the rate was again raised to twopence per ounce; on the 1st April, 1901, it was once more reduced to one penny per half-ounce under the provisions of an Act passed in December, 1900. In New South Wales the town rate of one penny per half-ounce, which is in force in the metropolitan suburban district, is also in operation within a twelve-mile radius of Newcastle, and a thirteen-mile radius of the majority of the other principal country towns. In Queensland the town rate extends to all places within a radius of eleven miles from the General Post Office at Brisbane, and also includes all letters to be delivered from the same office at which they were posted. In Western Australia the town rate has effect within a radius of thirteen miles from the General Post Office at Perth, and in other towns and suburbs within a radius depending upon their population. The postage to the United Kingdom was reduced in January, 1891, from sixpence per half-ounce *via* the Red Sea, and fourpence *via* the Cape of Good Hope, to the uniform rate of twopence halfpenny. In 1891 the States were represented at the Congress of the Universal Postal Union held in Vienna, and on the 4th July a convention was signed on their behalf, by which they joined the Union from the 1st October of that year. On that date the rate of postage to all British possessions and to foreign countries included in the Union was reduced to twopence halfpenny. The charge for postage of interstate letters and of letters to the United Kingdom and to British possessions is now uniformly twopence per half-ounce throughout the Commonwealth; the rate on letters to foreign countries and to other places is twopence halfpenny for each half-ounce.

(ii.) *Newspapers.* The different rates charged for the carriage of newspapers in the various States, prior to Federation, continued after the control of the Postal Departments had been taken over by the Commonwealth, until the 1st November, 1902, when a uniform rate was imposed by the Post and Telegraph Rates Act 1902. On all news-

papers posted for delivery within the Commonwealth (without condition as to the number contained in each addressed wrapper posted) by registered newspaper proprietors, or by newsvendors, or returned by newsvendor or agent to the publishing office, a charge of one penny per twenty ounces on the aggregate weight is imposed. On all other registered newspapers posted within the Commonwealth for delivery therein the charge is a halfpenny per ten ounces for each newspaper. At the end of the year 1907 there were in all 1088 publications registered in the Commonwealth under section 29 of the Post and Telegraph Act 1901 for transmission by post as newspapers, being an increase of 126 on the corresponding number for the previous year. The charge on postage of registered newspapers for transmission to the United Kingdom and to other parts of the world is one penny up to four ounces, and a halfpenny for every additional two ounces. Newspapers which are not registered are charged at the same rates as parcels or packets.

(iii.) *Parcels.* Parcels may not exceed 11 lbs. in weight, 3 ft. 6 in. in length, or 6 ft. in length and girth combined. The rate for the inland postage of parcels is sixpence up to 1 lb., and then threepence for every additional pound. For interstate transmission the rate is eightpence up to 1 lb., and then sixpence per lb., and for transmission to the United Kingdom the rate is one shilling up to 1 lb., and sixpence for every additional pound.

(iv.) *Packets.* The regulations for the conveyance of packets vary in the several States. The ordinary rate is one penny for each two ounces. Packets must not as a rule exceed 2 ft. in length, 1 ft. in breadth or depth; or, if in a roll, 2 ft. 6 in. in length. Special rates are allowed for the conveyance of commercial papers, patterns, samples, etc.

8. **Registered Letters.**—Under section 38 of the Post and Telegraph Act 1901 provision is made for the registration of any letter, packet, or newspaper upon payment of the prescribed fee, and any person who sends a registered article by post may obtain an acknowledgment of its due receipt by the person to whom it is addressed by paying the prescribed fee (see hereunder) in advance at the time of registration in addition to the registration fee.

(i.) *Registration Fees.* The fee payable upon registration of an article is threepence, and the fee payable in order to obtain an acknowledgment of the delivery of the registered article is twopence halfpenny in addition. Registered letters must, as a rule, be handed in at least half-an-hour before the closing of the mails.

(ii.) *Number of Registered Letters Posted, 1907.* The subjoined table shews the number of registered letters posted in each State during the year 1907—except in the State of Queensland, for which returns are not available—classified according to the places to which they were despatched for delivery, viz. :—

REGISTERED LETTERS POSTED DURING 1907.

| State. | Posted in each State for Delivery within that State. | Posted in each State for Delivery in other States. | Posted in each State for Delivery in other Places outside the C'wealth. | Total. |
|-----------------------|--|--|---|-----------|
| New South Wales ... | 691,369 | 54,090 | 48,442 | 793,901 |
| Victoria ... | 789,844 | 92,316 | 49,182 | 931,342 |
| Queensland* | ... | ... | ... | ... |
| South Australia ... | 192,749 | 26,123 | 11,975 | 230,847 |
| Western Australia ... | 246,000 | 46,500 | 19,200 | 311,700 |
| Tasmania ... | 158,850 | 14,518 | 4,672 | 178,040 |
| † Commonwealth ... | 2,078,812 | 233,547 | 133,471 | 2,445,830 |

* Returns not available.

† Exclusive of Queensland.

9. Ocean Mail Services.—The question of regular steamship communication with Europe was first mooted in Sydney, and a meeting was held there in 1846 to consider the question. A committee was appointed to gather information on the subject, and eventually this body recommended the establishment of a steam service *via* Torres Straits and Singapore. No further step was, however, taken until 1849, when the Admiralty Department in London advertised for tenders for the conveyance of the mails between Singapore and Sydney. The tender of a company called the Indian and Australian Steamship Company was accepted, and a contract was entered into, but the company became involved in financial difficulties, and failed to carry out their undertaking. The discovery of gold in Victoria, and the consequent increase in the population and commercial importance of Melbourne, induced the Imperial authorities to modify the conditions and to again invite tenders for a service between Singapore and Sydney, *via* King George's Sound, Adelaide, and Melbourne. The tender of the Peninsular and Oriental Company was accepted, and the service was inaugurated in September, 1852, by the arrival at Melbourne of the "Chusan." This service was continued until 1854, when it was stopped in consequence of the Crimean War, but in 1856 a line of steamers was again started, and the service was carried on by the Peninsular and Oriental Company, in conjunction with the Royal Mail Company, for some years.

(i.) *Mail Route via San Francisco.* The service *via* the Red Sea did not at that time give much satisfaction to the public, and was looked upon with a certain amount of disfavour in New South Wales and New Zealand. The effect was to stimulate the colonists to agitate for an improved service, and proposals were made for the establishment of a line of mail packets from Sydney to Panama *via* Wellington, by rail across the isthmus, and thence to Great Britain. The result was that in 1866 the line was started, and continued in operation until the end of 1868, when it was terminated through the failure of the company by which it had been carried out. The completion of the railway across the American continent in 1869, with its western terminus at San Francisco, opened up a new and agreeable route, and in that year a monthly service was inaugurated by the Union Steamship Company, in conjunction with the Pacific Steamship Company, from Sydney to San Francisco *via* Auckland. This service was subsidised to the extent of £37,000 per annum, of which New South Wales paid £25,750 and New Zealand £11,250, and was continued until November, 1890, when a new contract was entered into and the amount of the subsidy largely reduced, the amount of the contribution being based upon the weight of mail matter carried. Various extensions of the contract were made, but the last agreement made between the New Zealand Government and the Oceanic Steamship Company of San Francisco expired on the 10th November, 1906, and has not since been renewed. From that date mails were carried at Postal Union rates until the 12th April, 1907, when the service was discontinued.

(ii.) *Route via Suez Canal.* The establishment of a mail route *via* America had the effect of stimulating the steamship owners who were engaged in the service *via* Suez, and from that time there was a marked improvement in the steamers, as well as in the punctuality and speed with which the mails were delivered. The Peninsular and Oriental Company have, with very few interruptions, carried mails from the Australian States almost from the inception of the ocean steam service. Towards the end of 1873, the Orient-Pacific Company commenced carrying mails between Australia and the United Kingdom, and has continued to do so ever since. New contracts were entered into with the Peninsular and Oriental and the Orient-Pacific Companies for a weekly service, subsidised by the Imperial Government and by all the States of Australia, to commence on the 1st February, 1898, for a period of seven years. The total amount of the subsidy was £170,000 per annum, of which £98,000 was payable by the Imperial Government and £72,000 by the Australian States in proportion to their population. These contracts expired on the 31st January, 1905, and pending negotiations for a new contract the mails were carried at poundage rates. On the 1st February, 1905, the Peninsular and Oriental Company commenced its eighth Australian contract with the British Postmaster-General on behalf of the Imperial Post Office only, and in connec-

tion with the India and China mail services, one payment being arranged for the whole service, and the Commonwealth Government not, as hitherto, being a party to the contract. Mails are still carried from Australia by the Peninsular and Oriental Company, but are carried at Postal Union rates and not under contract with the Commonwealth. On the 25th April, 1905, the Orient Pacific Company concluded a new contract with the Commonwealth Government for a fortnightly service between England and Australia, and the mails are now carried under this contract. The subsidy is at the rate of £124,880 per annum; the contract expired on the 31st January, 1908, but has been extended until 1910, when a new mail contract comes into operation. The contract time is twenty-nine days between Adelaide and Naples, and the agreement contains conditions that only white labour is to be employed, and that steamers used in the service are to be fitted for the conveyance of refrigerated cargo. The Orient Company have stipulated for liberty to cancel the contract at six months' notice, if any new legislation is imposed which would be detrimental to the Company's interest, unless the Federal Government indemnify them by an increase in subsidy to the extent of the loss imposed. Fremantle has, since the year 1900, been the first and last port of call for the mail steamers to Europe, in lieu of Albany, the original port of call; the Peninsular and Oriental and Orient-Pacific Companies' steamers sail alternately conveying the weekly homeward and outward mails.

(a) *The New Mail Contract.* On the 1st January, 1906, tenders were invited by the Commonwealth Postmaster-General for a fortnightly mail service between Adelaide and Brindisi, to alternate with a similar service to be provided by the Imperial Government, and a contract was entered into with Sir James Laing and Company Limited, providing for a service at an annual subsidy of £125,000. This contract, however, fell through, and new tenders were accordingly called for. On the 15th November, 1907, an agreement was entered into with the Orient Steam Navigation Company Limited providing for a fortnightly service for a period of ten years, commencing in February, 1910. The mail service is to be carried out by existing vessels belonging to the company and by five new mail ships, to be specially built, of at least 11,000 tons gross registered tonnage and of not less than seventeen knots speed. Two more new vessels are to be added within eighteen months and six years respectively from February, 1910. The vessels are to call at Fremantle, Adelaide, Melbourne, Sydney, and Brisbane, and at least six of them at Hobart during the months of February to May, inclusive. The voyage from Brindisi to Adelaide is to be completed within twenty-six days fourteen hours, and from Adelaide to Brindisi within twenty-seven days two hours, but the latter period may be exceeded by thirty-six hours during the prevalence of the south-west monsoon. The amount of the subsidy is fixed at £170,000 per annum; but, if the earnings of the company be decreased, or the expenses increased, by reason of any Commonwealth shipping legislation passed subsequently to the date of the agreement, to the extent of not less than £5000 a year, the contractors have the right to terminate the agreement unless the subsidy is increased. Insulated space of not less than 2000 tons of forty cubic feet is to be provided in each of the new vessels, and the freights are not to exceed one halfpenny per lb. for butter and sixty shillings per ton for fruit. White labour only is to be employed, and no discrimination is to be made between unionists and non-unionists. If before or during the sixth year of the period of the contract an accelerated service is provided by any competing line of mail ships, the contractors must, if so required by the Postmaster-General, provide a service equal to the competing service, at an increased subsidy, to be determined by agreement or arbitration. The Commonwealth flag must be flown on the mail ships, which the Commonwealth has the right to purchase at a valuation at any time. Within six months of the Postmaster-General establishing a permanent wireless telegraphy station at Rottneest Island, or at any point on the coast between Fremantle and Brisbane, the company must fit the mail ships with wireless telegraphy installations.

(b) *French and German Subsidised Mail Services.* Vessels belonging to the Messageries Maritimes and the Norddeutscher Lloyd, which are under contract respectively with the French and German Governments to convey mails monthly between Marseilles

and New Caledonia and between Bremen and Sydney, *via* Genoa, also carry mails for the Commonwealth Government from Australia to Europe at Postal Union rates. The Messageries Maritimes service commenced in November, 1882; the total tonnage of vessels belonging to this company in the Australian service at the end of the year 1907 was 30,014 tons, the amount of the annual subsidy granted by the French Government being £120,000. The first contract for the establishment and maintenance of a mail steamship line between Germany and Australia was made between the Imperial German Government and the Norddeutscher Lloyd in 1885, and the service was inaugurated in July, 1886, with the steamer "Salier."

(iii.) *Route via Vancouver and Canadian-Pacific Railway.* During the year 1893 a direct monthly service was started between Sydney and Vancouver, in British Columbia, *via* Wellington, in New Zealand, and thence to Liverpool *via* the Canadian-Pacific Railway, the New South Wales Government paying an annual subsidy of £10,000 for the maintenance of this service for a period of three years. In 1896 the agreement was renewed for a further period of three years, and in 1899 was again renewed for four years, subject to the same terms and conditions, except that the route was *via* Brisbane instead of Wellington. The contract was further extended, at an increased subsidy, from time to time until the 31st July, 1907, and afterwards, at a subsidy of £26,626 per annum, for a period of two years from 1st August, 1907.

(iv.) *Other Ocean Mail Services.* In addition to the mails *via* the Suez Canal and *via* Vancouver a number of other services, both regular and irregular, are maintained between the Commonwealth and various parts of the world, and also between the principal ports in the various States and a number of small ports in the less settled parts of the Commonwealth which are inaccessible by rail. The following statement gives a summary, in so far as returns are available, of all mail services maintained between the Commonwealth and other countries and between ports in the Commonwealth. The amounts of subsidies specified are the amounts payable per annum unless otherwise stated:—

SUMMARY OF MAIL SERVICES, COMMONWEALTH OF AUSTRALIA, 1907.

| Description of Service. | Frequency of Service. | Ports between which Service is maintained. | Particulars regarding Subsidies. |
|---|------------------------------|---|---|
| 1. <i>To and from Europe, via Suez—</i> | | | |
| (a) Peninsular and Oriental* ... | Fortnightly | Adelaide, Fremantle and London, <i>via</i> Brindisi and Marseilles | Subsidised by Imperial Govt. Mails from Aust. at Postal Union rates |
| (b) Orient Pacific* | .. | Adelaide, Fremantle & London, <i>via</i> Naples | Subsidised. Date of agreement, April, 1905. Term extended to Feb., 1910. Amt. of subsidy £124,800. † Subsidy paid by all States on a <i>per capita</i> basis. |
| (c) Messageries Maritimes ... | Monthly | New Caledonia and Marseilles, <i>via</i> Fremantle and Adelaide | Subsidised by French Govt. Mails from Aust. at Postal Union rates. |
| (d) Norddeutscher Lloyd ... | .. | Fremantle, Adelaide & Bremen, <i>via</i> Genoa | Subsidised by German Govt. Mails from Aust. at Postal Union rates. |
| 2. <i>To and from Europe, via Vancouver†</i> Canadian Australian Steamship Co. | .. | Sydney and Vancouver, B.C., <i>via</i> Brisbane, Fiji, Honolulu, and once every eight weeks to Fanning Island | Subsidised by agreement dated 31st July, 1907, for two years. Amount of subsidy, £26,626. Subsidy paid by all States on a <i>per capita</i> basis. |
| 3. <i>To and from New Zealand—</i> | | | |
| (a) Conjointly by Union S.S. Co. and Huddart, Parker Proprietary | Weekly | Sydney, Melbourne, Hobart, Bluff, Dunedin, Christchurch and Wellington | Poundage rates. |
| (b) Do. do. do. ... | .. | Sydney, Hobart, and Auckland | .. .. |
| (c) Conjointly by Shaw, Savill, and Albion Co. & N.Z. Shipping Co. | Fortnightly | Hobart, Bluff, Dunedin, and Wellington | .. .. |
| (d) Other Steamers,.... | Irregularly, when convenient | Sydney, Wellington, Auckland, and Lyttelton | .. .. |

* Mails carried also to India *via* Colombo. † Carries also mails to Canada and the United States. ‡ Including £4880 paid for extension to Brisbane. In addition the Queensland Government also pays £21,120 for such extension.

| Description of Service. | Frequency of Service. | Ports between which Service is maintained. | Particulars regarding Subsidies. |
|---|---------------------------------------|---|---|
| 4. To and from ports in N.S. Wales— | | | |
| (i.) NORTHERN PORTS— | | | |
| (a) North Coast S.N. Co. ... | Twice weekly | Sydney, Manning River, Port Macquarie, Macleay, Nambucca, Bellingham Rivers, Coffs Harbour, Clarence River, Byron Bay, and Richmond River | Poundage rates. |
| (b) Cain's Co-Operative S S. Co. ... | Weekly | Sydney & Port Macquarie | " " |
| (ii.) SOUTH COAST PORTS— | | | |
| Illawarra and S. Coast S.N. Co. ... | Twice weekly | Sydney, Bermagui, Moruya and Tathra | " " |
| 5. To and from Northern Ports of Qld.— | | | |
| (a) Australian United Steam Navigation Co. | | | |
| | Weekly | Brisbane, Gladstone, Townsville, Cairns, Mourilyan, Geraldton, Pt. Douglas & Cook'n | Subsidised by agreement dated 25th Nov., 1905, for three years. Amount of subsidy, £17,000. |
| (b) Do. do. do. ... | Once every three weeks | Brisbane, Normanton & Burketown, via Townsville, Cooktown, and Thursday Island | Subsidised by agreement dated 16th January, 1906, for three years. Amount of subsidy £6000. Subsidies under 4 (a) and (b) paid by Queensland. |
| (c) Other steamers ... | Irregularly, when convenient | Various... | Poundage rates. |
| 6. To and from Ports in S. Australia— | | | |
| (i.) NORTHERN TERRITORY— | | | |
| (a) The Eastern and Ausn., and the China Navigation Co.'s | | | |
| | Irregularly | To and from Adelaide, Melb'rne, and Sydney, via North Queensland ports, extending to China and Japan | " " |
| (b) Jolly and Co. ... | Four times a year | Port Darwin and Victoria R., calling half-yearly at Roper River | Subsidised by agreement dated 1st April, 1904, for three years and nine months. Amount of subsidy, (a) £125 per voyage, (b) £75; (c) £350; (d) £125 per voyage. |
| (c) " " ... | do. | Port Darwin & Boroloola | |
| (d) " " ... | Every eight weeks | " Wyndham | |
| (ii.) TO SOUTH COAST PORTS— | | | |
| (a) Gulf Steamship Co. ... | Weekly | Pt. Adelaide & Kingscote | Subsidised to 31st December, 1907. Amount of subsidy, (a) £295; (b) £173; (c) £173; (d) £132; (e) £75. |
| (b) " " ... | Twice a wk. | " Edithburgh | |
| (c) " " ... | " | " Stansbury | |
| (d) " " ... | Weekly | " Ardrossan | |
| (e) " " ... | " | " Pt. Vincent | |
| (f) Adelaide Steamship Co. ... | " | " Pt. Lincoln | Subsidised for three and three-quarter years from 1st April, 1904. Amount of subsidy, £1495. |
| (g) Adelaide Steam Tug Co. ... | As required | Landing and embarking mails | Subsidised for one year from 1st July, 1906. Amount of subsidy, £567. |
| (h) " " " ... | " | Port Pirie & Hummocks Hill | Subsidised without agreement. Amount of subsidy, £36. Subsidies under 5 (i.) (b), (c), (d), and (ii.) (a), (b), (c), (d), (e), (f), (g), (h) paid by South Australia. |
| 7. Western Australia— | | | |
| (i) INTERSTATE— | | | |
| (a) By P. & O. and Orient Lines | | | |
| | Weekly | Fremantle and Adelaide | P. and O. at Postal Union rates. Orient line subsidised. See above 1 (a) and (b). |
| (b) Adelaide Steamship, the Ausn. United S. Navigation, and the Huddart, Parker lines | Conjointly, weekly | Fremantle, Albany, and Adelaide | Poundage rates. |
| (c) Messageries Maritimes, Nord-deutscher Lloyd, the German and Ausn., and the White Star lines | Each monthly | Fremantle and Adelaide | Postal Union rates by first two, and poundage rates by last two lines. |
| (ii.) TO & FROM PORTS ON N. W. COAST | | | |
| (a) Adelaide Steamship Co. | | | |
| | Monthly | Fremantle and Derby | Subsidised by agreement dated 26th February, 1907, for three years. Amount of subsidy, £4000. Subsidy paid by Western Australia. |
| (b) " " ... | Once each sixty days | Fremantle & Wyndham | |
| (c) West Aust. & Ocean S. Co.'s | Fortnightly | Fremantle and Broome | Poundage rates. |
| (d) Ausn. United S. Navigation and Adelaide S. Co.'s | Irregularly during the cattle she's'n | Fremantle, Derby, and Wyndham | |
| (iii.) TO AND FROM PORTS ON S. COAST | | | |
| (a) Melbourne Steamship Co. | | | |
| | Weekly | Albany and Esperance | Subsidised by agreement dated 1st January, 1906, for three years. Amount of subsidy, £3000. Subsidy paid by Western Australia. |
| (b) " " ... | Fortnightly | Albany & Israelite Bay | |
| (c) " " ... | Quarterly | Albany and Eucla | |

| Description of Service. | Frequency of Service. | Ports between which Service is maintained. | Particulars regarding Subsidies. |
|--|---------------------------|--|---|
| 8. <i>Tasmania</i> — (a) Union S. Co. and Huddart, Parker Proprietary | 3 times a week | Melb'rne & Launceston | Subsidised by agreement dated 1st October, 1906, for three years. Amount of subsidy, £13,000, payable by all States on a <i>per capita</i> basis. Poundage rates. |
| (b) Do. do. do. ... | Twice a wk. | .. Burnie | |
| (c) Do. do. do. ... | Weekly | Sydney, Hobart, and Wellington | |
| (d) Union Steamship Co. ... | Fortnightly | Sydney, Eden, Launceston, and Devonport | |
| (e) New Zealand mail services, see above New Zealand, 3 (a) & (b) | Twice a wk. | Sydney, Melb'ne, Hobart, Bluff, Dunedin, Christchurch, Wellington and Auckland | |
| (f) To and from ports in Western districts | Weekly | Hobart and Strahan | |
| (g) Ellerker and Co., and Patterson and Co. | When convenient | Various | |
| 9. <i>To Eastern Ports</i> — (a) A. Currie and Co. ... | Once every five weeks | †Melbourne, Sourabaya, Samarai, Batavia, and Singapore | Subsidised by Victorian Government for trade purposes at £2000 a year for three years from December, 1907. Mails at poundage rates. |
| (b) China Navigation, Eastern & Ausn., and Burns, Philp Co.'s | About three times a month | Sydney, to Hong Kong, Manila, etc., <i>via</i> North Queensland ports | Postal Union rates. |
| (c) Norddeutscher Lloyd ... | Monthly | <i>Via</i> Germ'n New Guinea, Bismarck Archipelago, and Singapore | |
| (d) Nippon Yusen Kaisha ... | .. | Sydney to Manila, China, and Japan, <i>via</i> N. Queensland ports | |
| (e) Various other steamers ... | About monthly | Sydney or Newcastle and ports in Borneo, Java, Sumatra, and Malay Peninsula | |
| 10. <i>South Africa</i> — White Star, Lund's, Currie's, and other Companies | Irregularly | Various | |
| 11. <i>North America</i> — (a) Weir line | Monthly | Sydney, San Francisco, and Vancouver | Poundage rates. |
| (b) Oceanic S.S. Co. | .. | Sydney, Auckland, Pago Pago, Honolulu, and San Francisco | †Postal Union rates. |
| (c) Various steamers | About fortnightly | Sydney or Newcastle to San Francisco | Poundage rates. |
| (e) Various steamers | Monthly | Sydney to Guaymas (Mexico) | .. .. |
| 12. <i>South America</i> — Various steamers | About weekly | Sydney or Newcastle to ports in Chili, Brazil, Peru and Uruguay | .. .. |
| 13. <i>Pacific Islands</i> — (a) Burns, Philp and Co. ... | Monthly | Sydney to Lord Howe & Norfolk Islands, N. Hebrides, British New Guinea & Solomon Is. | Subsidised by Commonwealth at £12,000 per annum. |
| (b) | Every two months | Sydney to Gilbert and Marshall Islands | |
| 14. <i>Noumea</i> — (a) Messageries Maritimes ... | Fortnightly | Sydney and Noumea and to Vila (New Hebrides) once a month | Postal Union rates. |
| (b) Other steamers | About fortnightly | Sydney and Noumea | Poundage rates. |
| 15. <i>Fiji</i> — (a) Union S.S. Co. | Monthly | Sydney and Suva | .. .. |
| (b) S.S. South Australian ... | Every six weeks | Sydney & Suva, Fotuna, Rotamah & Wallis Is. | .. .. |
| (c) Union S.S. Co. | Monthly | Sydney, Auckland, Suva, Tonga, and Samoa | .. .. |
| 16. <i>Fiji and Noumea</i> — Burns, Philp and Co. | .. | Sydney, Noumea, & Suva | .. .. |
| 17. <i>Ocean and Pleasant Islands</i> — Various steamships | .. | Sydney, Ocean and Pleasant Islands | .. .. |

† Calling also irregularly at Sydney or Adelaide.

‡ Service ceased 12th April, 1907.

10. **Amount of Mail Subsidies Paid by Each State, 1901 to 1907.**—The mail subsidies are paid by the Commonwealth Postal Department, but are debited to the several States. The following table shews the total amount paid by each State by way of mail subsidies for each year from 1901 to 1907, inclusive :—

MAIL SUBSIDIES.—TOTAL AMOUNTS PAID BY EACH STATE, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ |
| New South Wales ... | 35,888 | 35,901 | 36,670 | 39,802 | 45,679 | 57,110 | 59,878 |
| Victoria ... | 22,642 | 23,137 | 22,555 | 22,179 | 38,770 | 47,182 | 48,390 |
| Queensland ... | 39,297 | 38,815 | 40,876 | 42,971 | 41,292 | 42,145 | 44,836 |
| South Australia ... | 15,252 | 16,539 | 13,173 | 28,412 | 11,685 | 17,344 | 18,031 |
| Western Australia* ... | 12,091 | 13,143 | 16,727 | 16,712 | 16,162 | 18,643 | 17,344 |
| Tasmania ... | 9,162 | 9,682 | 10,096 | 13,546 | 17,706 | 17,039 | 9,996 |
| Commonwealth ... | 134,332 | 137,217 | 140,097 | 163,622 | 171,294 | 199,463 | 198,475 |

* Including tonnage and other dues refunded to the Adelaide Steamship Company in connection with the North-west Coast contract.

The following table shews the amount paid by each State in respect of each mail subsidy during the year 1907 :—

MAIL SUBSIDIES.—AMOUNT PAID BY EACH STATE IN RESPECT OF EACH SUBSIDY, 1907.

| State. | Orient-Pacific. | Van-couver Service. | Victoria-Tas-manian Service. | Northern Ports of Queens-land. | South Coast of South Australia. | Western Australia. | | Total. |
|------------------|-----------------|---------------------|------------------------------|--------------------------------|---------------------------------|--------------------|--------------|---------|
| | | | | | | N. W. Coast. | South Coast. | |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| N. S. W. ... | 46,304 | 9,868 | 3,706 | ... | ... | ... | ... | 59,878 |
| Victoria ... | 38,005 | 7,394 | 2,991 | ... | ... | ... | ... | 48,390 |
| Queensland ... | 16,528 | 3,199 | 1,299 | 23,810 | ... | ... | ... | 44,836 |
| S. Australia ... | 11,861 | 2,292 | 932 | ... | 2,946 | ... | ... | 18,031 |
| W. Australia ... | 8,137 | 1,553 | 635 | ... | ... | 4,019 | 3,000 | 17,344 |
| Tasmania ... | 5,514 | 1,089 | 3,393 | ... | ... | ... | ... | 9,996 |
| C'wealth ... | 126,349 | 25,395 | 12,956 | 23,810 | 2,946 | 4,019 | 3,000 | 198,475 |

Particulars of amounts paid for the carriage of mails at poundage rates and by railways and other conveyances are given in a later part of this section. (See Paragraph 26. *Distribution of Expenditure of Postal Department.*)

11. **Average and Fastest Time of Mails to and from London.**—Great progress has been made in regard to the means of postal communication with the United Kingdom and the continents of Europe and America. In 1857 there was an unsatisfactory ocean mail service, which nominally brought monthly mails, with news nearly sixty days old ; at the present time, though but fifty years have elapsed, there are four lines of modern ocean steamships, which bring the mails in about twenty-nine days to Adelaide, in addition to the monthly service *via* Vancouver, by which mails are sent from Sydney to London in thirty-five days. After leaving Fremantle, where the Western Australian

mails are landed, the outward mail steamers *via* the Suez Canal all call at Adelaide, where the remaining mails are landed and conveyed to their ultimate destination by rail. The subjoined table shews the average and the fastest times occupied in the conveyance of mails from London to Adelaide and *vice versa* during the year 1907:—

AVERAGE AND FASTEST TIME OCCUPIED IN CONVEYANCE OF MAILS VIA SUEZ CANAL, BETWEEN LONDON AND ADELAIDE, AND VICE VERSA, DURING 1907.

| Service. | London to Adelaide. | | | | Adelaide to London. | | | |
|--|---------------------|--------|---------------|--------|---------------------|--------|---------------|--------|
| | Average Time. | | Fastest Time. | | Average Time. | | Fastest Time. | |
| | Days. | Hours. | Days. | Hours. | Days. | Hours. | Days. | Hours. |
| Peninsular and Oriental S.N. Co., <i>via</i> Brindisi and Colombo ... | 28 | 11 | 28 | 0 | 30 | 4 | 29 | 12 |
| Orient Pacific S. N. Co., <i>via</i> Naples and Suez ... | 30 | 5 | 29 | 9 | 32 | 0 | 31 | 1 |
| *Messageries Maritimes, <i>via</i> Mar- seilles ... | ... | ... | ... | ... | 32 | 19 | 32 | 3 |
| *Norddeutscher Lloyd, <i>via</i> Genoa | ... | ... | ... | ... | 32 | 19 | 30 | 13 |

* No mails were received from London by the Messageries Maritimes or by the Norddeutscher Lloyd services.

The journey by rail from Adelaide, where the mails for the eastern States are landed, to Melbourne takes $17\frac{1}{2}$ hours; from Adelaide to Sydney, 42 hours, including a stop of about seven hours at Melbourne; while the through journey from Adelaide to Brisbane takes just over three days. The journey from Melbourne to Hobart occupies about 29 hours, *via* Launceston, and about 32 hours direct.

The subjoined table shews the average and the fastest times occupied in the conveyance of mails between Sydney and London and *vice-versa* by the mail routes *via* Vancouver and San Francisco respectively during the year 1907:—

AVERAGE AND FASTEST TIMES OCCUPIED IN CONVEYANCE OF MAILS VIA VANCOUVER AND SAN FRANCISCO RESPECTIVELY, BETWEEN LONDON AND SYDNEY, AND VICE VERSA, DURING 1907.

| Service. | London to Sydney. | | Sydney to London. | |
|--|-------------------|---------------|-------------------|---------------|
| | Average Time. | Fastest Time. | Average Time. | Fastest Time. |
| | Days. | Days. | Days. | Days. |
| Canadian-Australian Line, <i>via</i> Vancouver ... | $37\frac{1}{2}$ | 37 | $38\frac{2}{3}$ | 34 |
| *Oceanic Steamship Co., <i>via</i> San Francisco ... | $43\frac{1}{2}$ | 40 | $38\frac{2}{3}$ | 34 |

* Service discontinued 12th April, 1907.

12. Letters, Packets, and Newspapers Transmitted by Different Ocean Mail Routes during the Year 1907.—The subjoined table shews the number of letters, packets, and newspapers transmitted for interstate delivery and for delivery in countries other than Australia, by the different routes during the year 1907:—

**NUMBER OF LETTERS, PACKETS, AND NEWSPAPERS RECEIVED AND DESPATCHED
BY DIFFERENT OCEAN MAIL ROUTES, 1907.**

| Classification. | P. and O. Co., <i>via</i> Colombo and Marseilles. | Orient Royal Mail Line, <i>via</i> Suez and Naples. | Can- adian Aus- tralian Steamers <i>via</i> Van- couver. | Oceanic S.S. Co., <i>via</i> San Fran- cisco. | Nord- deut- scher- Lloyd, <i>via</i> Genoa. | Messa- geries Marit- times, <i>via</i> Mar- seilles. | Total by all Mail Steamers. |
|---------------------------------------|---|---|---|---|--|---|--------------------------------------|
| RECEIVED. | | | | | | | |
| INTERSTATE— | | | | | | | |
| Letters ... | 1,336,910 | 1,684,274 | 4,735 | ... | 72,047 | 51,276 | 3,149,242 |
| Packets ... | 364,587 | 372,004 | 214 | ... | 10,291 | 5,677 | 752,773 |
| Newspapers ... | 1,079,485 | 1,221,807 | 995 | ... | 33,138 | 14,697 | 2,350,122 |
| OTHER COUNTRIES— | | | | | | | |
| Letters ... | 3,385,221 | 3,634,697 | 665,226 | 119,733 | 52,600 | 33,688 | 7,891,165 |
| *Packets ... | 462,789 | 578,313 | 46,477 | 34,878 | 6,898 | 2,664 | 1,132,019 |
| *Newspapers ... | 3,803,032 | 3,941,091 | 657,209 | 170,865 | 28,981 | 12,710 | 8,613,888 |
| DESPATCHED. | | | | | | | |
| INTERSTATE— | | | | | | | |
| Letters ... | 1,381,139 | 1,797,040 | 23,716 | 15,233 | 32,898 | 46,810 | 3,296,836 |
| Packets ... | 245,355 | 304,433 | 7,874 | 4,863 | 5,219 | 7,687 | 575,431 |
| Newspapers ... | 1,148,892 | 1,243,463 | 24,329 | 12,581 | 10,500 | 14,344 | 2,454,109 |
| OTHER COUNTRIES— | | | | | | | |
| Letters ... | 2,582,249 | 2,913,744 | 322,819 | 110,736 | 11,368 | 13,743 | 5,954,659 |
| Packets ... | 510,792 | 568,983 | 47,661 | 12,279 | 892 | 929 | 1,141,536 |
| Newspapers ... | 1,017,794 | 1,041,396 | 144,287 | 51,310 | 1,812 | 2,699 | 2,259,298 |
| TOTAL RECEIVED AND DESPATCHED. | | | | | | | |
| INTERSTATE— | | | | | | | |
| Letters ... | 2,718,049 | 3,481,314 | 28,451 | 15,233 | 104,945 | 98,086 | 6,446,078 |
| Packets ... | 609,942 | 676,437 | 8,088 | 4,863 | 15,510 | 13,364 | 1,328,204 |
| Newspapers ... | 2,228,377 | 2,465,270 | 25,324 | 12,581 | 43,638 | 29,041 | 4,804,231 |
| OTHER COUNTRIES— | | | | | | | |
| Letters ... | 5,967,470 | 6,548,441 | 988,045 | 230,469 | 63,968 | 47,431 | 13,845,824 |
| Packets ... | 973,581 | 1,147,296 | 94,138 | 47,157 | 7,790 | 3,593 | 2,273,555 |
| Newspapers ... | 4,820,826 | 4,982,487 | 901,406 | 222,175 | 30,733 | 15,409 | 10,873,186 |

* In the returns for the States of New South Wales, Victoria, and South Australia, the number of newspapers received from other countries is included in the number of packets received. † Service discontinued April, 1907.

13. **Money Orders and Postal Notes.**—The issue of money orders and postal notes in the Commonwealth is regulated by sections 74 to 79 of the Post and Telegraph Act 1901. A money order, which may be issued for payment either within the Commonwealth or abroad, may not be granted for a larger sum than £20, nor a postal note, which is payable only within the Commonwealth, for a larger sum than twenty shillings. Money orders are sent direct from the Commonwealth to the United Kingdom, and to most of the British colonies and possessions; to the German Empire and German colonies; to Italy; and to the United States of America. Money orders, payable in Japan and China, are sent *via* Hong Kong; orders payable in all other countries are sent through the General Post Office in London, where new orders are issued and forwarded to the addresses of the payees, less threepence for every £5, or part thereof. In order that the full amount of the original order may be forwarded to the payee, this extra commission must be paid by the remitter.

(i.) *Value of Orders Issued and Drawn and of Notes Sold, 1907.*—The following table shews the total value of money orders issued and drawn, and of postal notes sold in each State and in the Commonwealth during the year 1907, together with the total amount of commission on money orders and poundage on postal notes received by the Postal Department :—

VALUE OF MONEY ORDERS ISSUED AND DRAWN AND OF POSTAL NOTES SOLD, TOGETHER WITH THE TOTAL AMOUNTS OF COMMISSION AND POUNDAGE RECEIVED IN EACH STATE DURING 1907.

| State. | Value of Money Orders Issued. | Value of Money Orders Paid. | Net Money Order Commission Received. | Value of Postal Notes Sold. | Poundage Received on Postal Notes. |
|-----------------------|-------------------------------|-----------------------------|--------------------------------------|-----------------------------|------------------------------------|
| | £ | £ | £ | £ | £ |
| New South Wales ... | 2,433,898 | 2,506,434 | 20,567 | ... | 17,615 |
| Victoria ... | 938,197 | 1,266,234 | 9,588 | 735,933 | 14,486 |
| Queensland ... | 734,564 | 615,828 | 6,859 | 215,534 | 4,198 |
| South Australia ... | 293,053 | 322,585 | 3,083 | 149,262 | 3,027 |
| Western Australia ... | 858,767 | 587,893 | 6,996 | 182,139 | 3,234 |
| Tasmania ... | 275,046 | 208,742 | 2,685 | 94,192 | 1,857 |
| Commonwealth ... | 5,533,525 | 5,507,716 | 49,778 | ... | 44,417 |

(ii.) *Rates of Commission on Money Orders.* The rates of commission chargeable for the issue of money orders are as follows :—

RATES OF COMMISSION, MONEY ORDERS, 1906.

| If Payable in— | For sums— | | | | | | | | | |
|------------------------------|---|-------------------------------------|-------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|-------|-------|
| | Not exceeding £2. | Exceeding £2, but not exceeding £5. | Exceeding £5, but not exceeding £7. | Exceeding £7, but not exceeding £10. | Exceeding £10, but not exceeding £12. | Exceeding £12, but not exceeding £15. | Exceeding £15, but not exceeding £17. | Exceeding £17, but not exceeding £20. | | |
| | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. |
| State of issue ... | 0 6 | 0 6 | 1 0 | 1 0 | 1 6 | 1 6 | 2 0 | 2 0 | 2 0 | 2 0 |
| Other Australian States ... | 0 6 | 0 9 | 1 6 | 1 6 | 2 3 | 2 3 | 3 0 | 3 0 | 3 0 | 3 0 |
| New Zealand and Fiji ... | 0 6 | 1 0 | 1 6 | 2 0 | 2 6 | 3 0 | 3 6 | 4 0 | 4 0 | 4 0 |
| U. Kingdom & other countries | Six pence for each pound or fraction of a pound | | | | | | | | | |

Remittances may also be made by telegraph to and from money order offices in the Commonwealth which are also telegraph or telephone offices, and to New Zealand. The charge for a telegraph money order is the cost of the telegram of advice in addition to the ordinary commission. The remitter must also send a telegram to the payee advising the transmission of the money, which telegram must be produced by the payee when applying for payment.

(iii.) *Rates of Poundage on Postal Notes.* The values of the notes issued have been so arranged that any sum of shillings and sixpences up to £1 can be remitted by not more than two of these notes. Broken amounts not exceeding fivepence (but not fractions of a penny) may be added by affixing postage stamps. The poundage or commission charged on notes of different denominations is as follows :—

| Denomination of Note ... | 6d. to 1s. 6d. | 2s. to 4s. 6d. | 5s. | 7s. 6d. | 10s. to 20s. |
|--------------------------|----------------|----------------|------|---------|--------------|
| Poundage charged ... | ½d. | 1d. | 1½d. | 2d. | 3d. |

14. **Number and Value of Money Orders Issued, 1901 to 1907.**—The following table shews the total number and face value of money orders issued in each State during each year from 1901 to 1907, inclusive:—

NUMBER AND VALUE OF MONEY ORDERS ISSUED IN EACH STATE, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| NUMBER. | | | | | | | |
| N.S.W. ... | 482,768 | 538,796 | 541,392 | 559,908 | 579,310 | 579,154 | 602,751 |
| Victoria ... | 228,931 | 217,634 | 215,694 | 221,578 | 221,732 | 230,253 | 236,954 |
| Queensland ... | 157,552 | 137,168 | 137,048 | 141,905 | 148,284 | 164,443 | 185,323 |
| South Aust. ... | 99,526 | 78,041 | 71,933 | 73,669 | 73,999 | 75,728 | 80,015 |
| West. Aust. ... | 192,477 | 189,514 | 197,407 | 198,675 | 200,501 | 193,126 | 195,063 |
| Tasmania ... | 156,407 | 121,397 | 97,187 | 93,410 | 88,261 | 86,411 | 87,853 |
| C'wealth ... | 1,317,661 | 1,282,550 | 1,260,661 | 1,289,205 | 1,312,087 | 1,329,115 | 1,387,959 |
| VALUE. | | | | | | | |
| N.S.W. ... | £ 1,637,488 | £ 1,761,149 | £ 1,772,186 | £ 1,834,934 | £ 2,076,146 | £ 2,267,137 | £ 2,433,898 |
| Victoria ... | 700,618 | 706,791 | 721,017 | 747,875 | 759,763 | 814,564 | 938,197 |
| Queensland ... | 539,450 | 506,990 | 501,375 | 525,869 | 556,183 | 613,325 | 734,564 |
| South Aust. ... | 264,330 | 246,826 | 251,655 | 257,034 | 264,608 | 269,233 | 293,053 |
| West. Aust. ... | 725,584 | 768,751 | 839,073 | 866,810 | 849,492 | 835,072 | 858,767 |
| Tasmania ... | 325,176 | 290,113 | 260,705 | 270,688 | 264,768 | 259,496 | 275,046 |
| C'wealth ... | 4,192,646 | 4,280,620 | 4,346,011 | 4,497,210 | 4,770,960 | 5,058,827 | 5,533,525 |

15. **Number and Value of Money Orders Paid, 1901 to 1907.**—The following table shews the total number and face value of money orders paid in each State during each year from 1901 to 1907, inclusive:—

NUMBER AND VALUE OF MONEY ORDERS PAID IN EACH STATE, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| NUMBER. | | | | | | | |
| N.S.W. ... | 478,520 | 545,861 | 553,283 | 564,685 | 583,895 | 605,571 | 618,665 |
| Victoria ... | 299,525 | 306,510 | 318,766 | 319,886 | 312,244 | 316,382 | 320,107 |
| Queensland ... | 102,628 | 105,556 | 115,927 | 119,444 | 124,280 | 137,168 | 153,423 |
| South Aust. ... | 81,078 | 82,479 | 82,930 | 83,581 | 81,614 | 78,926 | 83,745 |
| West. Aust. ... | 82,080 | 85,700 | 190,155 | 107,401 | 118,164 | 119,918 | 130,847 |
| Tasmania ... | 295,278 | 125,317 | 73,379 | 71,178 | 66,079 | 66,146 | 67,204 |
| C'wealth ... | 1,339,109 | 1,251,423 | 1,244,440 | 1,266,175 | 1,286,276 | 1,318,111 | 1,373,991 |
| VALUE. | | | | | | | |
| N.S.W. ... | £ 1,669,730 | £ 1,812,063 | £ 1,835,295 | £ 1,922,787 | £ 2,182,629 | £ 2,350,288 | £ 2,506,434 |
| Victoria ... | 1,005,067 | 1,053,313 | 1,121,807 | 1,125,557 | 1,102,652 | 1,122,551 | 1,266,234 |
| Queensland ... | 398,429 | 400,042 | 431,091 | 440,409 | 466,876 | 523,378 | 615,828 |
| South Aust. ... | 263,875 | 295,372 | 310,658 | 307,039 | 303,526 | 293,300 | 322,585 |
| West. Aust. ... | 338,623 | 372,689 | 451,774 | 481,348 | 513,047 | 543,256 | 587,893 |
| Tasmania ... | 386,586 | 228,958 | 191,949 | 193,192 | 190,872 | 200,835 | 208,742 |
| C'wealth ... | 4,082,310 | 4,162,437 | 4,341,974 | 4,470,332 | 4,759,602 | 5,033,618 | 5,507,716 |

16. **Classification of Money Orders Issued and Paid, 1907.**—The following tables shew the number and value of money orders issued in each State and classified according to the country where payable, and also the number and value of money orders paid in each State and classified according to the country of issue during the year 1907.

MONEY ORDERS ISSUED IN EACH STATE, CLASSIFIED ACCORDING TO COUNTRY WHERE PAYABLE, 1907.

| State in which Issued. | Where Payable. | | | | Total. |
|------------------------|----------------------|-----------------|----------------------|---------------------|-----------|
| | In the Commonwealth. | In New Zealand. | In the United K'dom. | In Other Countries. | |
| NUMBER. | | | | | |
| New South Wales | 551,368 | 7,923 | 33,441 | 10,019 | 602,751 |
| Victoria ... | 198,315 | 5,634 | 23,879 | 9,126 | 236,954 |
| Queensland ... | 161,997 | 1,354 | 16,300 | 5,672 | 185,323 |
| South Australia ... | 67,662 | 866 | 8,769 | 2,718 | 80,015 |
| Western Australia | 172,374 | 1,226 | 19,376 | 2,087 | 195,063 |
| Tasmania ... | 79,858 | 1,915 | 4,897 | 1,183 | 87,853 |
| Commonwealth | 1,231,574 | 18,918 | 106,662 | 30,805 | 1,387,959 |

| | | | | | |
|---------------------|-----------|--------|---------|---------|-----------|
| VALUE. | | | | | |
| | £ | £ | £ | £ | £ |
| New South Wales | 2,287,140 | 25,135 | 78,180 | 43,443 | 2,433,898 |
| Victoria ... | 840,429 | 17,934 | 50,765 | 29,069 | 938,197 |
| Queensland ... | 651,920 | 4,785 | 40,720 | 37,139 | 734,564 |
| South Australia ... | 263,650 | 2,837 | 18,173 | 8,393 | 293,053 |
| Western Australia | 784,228 | 5,191 | 55,646 | 13,702 | 858,767 |
| Tasmania ... | 255,804 | 7,762 | 8,526 | 2,954 | 275,046 |
| Commonwealth | 5,083,171 | 63,644 | 252,010 | 134,700 | 5,533,525 |

MONEY ORDERS PAID IN EACH STATE, CLASSIFIED ACCORDING TO THE COUNTRY OF ISSUE, 1907.

| State in which paid. | Where Issued. | | | | Total. |
|----------------------|----------------------|-----------------|----------------------|---------------------|-----------|
| | In the Commonwealth. | In New Zealand. | In the United K'dom. | In Other Countries. | |
| NUMBER. | | | | | |
| New South Wales | 554,057 | 38,015 | 14,357 | 12,236 | 618,665 |
| Victoria ... | 272,952 | 26,070 | 11,150 | 9,935 | 320,107 |
| Queensland ... | 143,433 | 2,935 | 4,805 | 2,250 | 153,423 |
| South Australia ... | 77,540 | 1,914 | 2,874 | 1,417 | 83,745 |
| Western Australia | 123,887 | 1,742 | 4,127 | 1,091 | 130,847 |
| Tasmania ... | 58,749 | 4,445 | 1,780 | 2,230 | 67,204 |
| Commonwealth | 1,230,618 | 75,121 | 39,093 | 29,159 | 1,373,991 |

| State in which paid. | Where Issued. | | | | Total. |
|----------------------|----------------------|-----------------|----------------------|---------------------|-----------|
| | In the Commonwealth. | In New Zealand. | In the United K'dom. | In Other Countries. | |
| VALUE. | | | | | |
| | £ | £ | £ | £ | £ |
| New South Wales | 2,318,570 | 87,476 | 43,639 | 56,749 | 2,506,434 |
| Victoria ... | 1,126,977 | 63,082 | 34,138 | 42,037 | 1,266,234 |
| Queensland ... | 582,131 | 8,904 | 13,839 | 10,954 | 615,828 |
| South Australia ... | 302,399 | 5,775 | 8,010 | 6,401 | 322,585 |
| Western Australia | 564,054 | 4,651 | 14,066 | 5,122 | 587,893 |
| Tasmania ... | 186,566 | 11,466 | 4,545 | 6,165 | 208,742 |
| Commonwealth | 5,080,697 | 181,354 | 118,237 | 127,428 | 5,507,716 |

In the above tables money orders payable or issued in foreign countries, which have been sent from or to the Commonwealth through the General Post Office at London, are included in those payable or issued in the United Kingdom.

17. **Number and Value of Postal Notes Issued, 1901 to 1907.**—The following table shews the total number and face value of postal notes issued in each State during each year from 1901 to 1907, inclusive:—

NUMBER AND VALUE OF POSTAL NOTES ISSUED IN EACH STATE, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| NUMBER. | | | | | | | |
| N.S.W. ... | 1,400,844 | 1,409,180 | 1,571,612 | 1,756,996 | 2,028,269 | 2,151,429 | 2,436,085 |
| Victoria ... | 1,361,311 | 1,387,039 | 1,475,853 | 1,635,435 | 1,743,227 | 1,846,787 | 1,990,190 |
| Queensland ... | 307,170 | 290,063 | 346,375 | 398,366 | 456,479 | 508,948 | 564,868 |
| South Aust. ... | 297,444 | 296,997 | 320,740 | 344,831 | 378,835 | 400,449 | 432,172 |
| West. Aust. ... | 72,616 | 122,877 | 186,263 | 231,846 | 285,502 | 332,989 | 377,622 |
| Tasmania ... | 67,204 | 77,665 | 121,653 | 158,037 | 206,309 | 237,571 | 259,051 |
| C'wealth ... | 3,506,589 | 3,583,821 | 4,022,496 | 4,525,511 | 5,098,621 | 5,478,173 | 6,059,988 |
| VALUE. | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 508,432 | 506,159 | 581,604 | 655,471 | 723,168 | 808,759 | 894,274 |
| Victoria ... | 523,210 | 528,381 | 558,976 | 617,386 | 652,704 | 690,138 | 735,933 |
| Queensland ... | 117,087 | 110,509 | 130,651 | 151,770 | 171,447 | 192,417 | 215,534 |
| South Aust. ... | 100,585 | 102,112 | 113,076 | 121,321 | 132,329 | 137,639 | 149,262 |
| West. Aust. ... | 21,002 | 55,841 | 90,939 | 115,416 | 138,506 | 162,592 | 182,139 |
| Tasmania ... | 20,095 | 24,851 | 41,930 | 56,820 | 72,352 | 84,156 | 94,192 |
| C'wealth ... | 1,290,411 | 1,327,853 | 1,517,176 | 1,718,184 | 1,890,506 | 2,075,701 | 2,271,334 |

18. **Number and Value of Postal Notes Paid, 1901 to 1907.**—The following table shews the total number and face value of postal notes paid in each State during each year from 1901 to 1907, inclusive:—

NUMBER AND VALUE OF POSTAL NOTES PAID IN EACH STATE, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| NUMBER. | | | | | | | |
| N.S.W. ... | 1,399,712 | 1,423,369 | 1,566,508 | 1,733,142 | 1,958,681 | 2,180,647 | 2,443,177 |
| Victoria ... | 1,392,559 | 1,432,734 | 1,552,775 | 1,724,486 | 1,828,523 | 1,946,109 | 2,046,712 |
| Queensland ... | 288,318 | 259,455 | 298,688 | 331,737 | 363,272 | 405,284 | 450,322 |
| South Aust. ... | 294,907 | 293,590 | 322,341 | 349,089 | 377,481 | 395,967 | 423,426 |
| West. Aust. ... | *66,740 | 112,934 | 186,238 | *245,514 | 294,218 | 259,155 | 301,993 |
| Tasmania ... | 62,725 | 77,445 | 54,894 | 212,418 | 257,002 | 291,546 | 386,713 |
| C'wealth ... | 3,504,961 | 3,599,527 | 3,981,444 | 4,596,336 | 5,079,177 | 5,478,708 | 6,052,343 |
| VALUE. | | | | | | | |
| N.S.W. ... | £ 507,740 | £ 514,048 | £ 580,774 | £ 646,682 | £ 724,669 | £ 807,973 | £ 882,060 |
| Victoria ... | 532,244 | 544,979 | 591,805 | 655,857 | 695,575 | 740,681 | 779,791 |
| Queensland ... | 108,746 | 97,045 | 113,434 | 127,332 | 140,098 | 156,612 | 174,530 |
| South Aust. ... | 97,576 | 102,651 | 118,003 | 129,265 | 141,653 | 148,622 | 161,581 |
| West. Aust. ... | *14,115 | 37,529 | 90,078 | 119,763 | 145,507 | 120,324 | 139,886 |
| Tasmania ... | 19,421 | 28,179 | 22,939 | 80,118 | 91,419 | 103,398 | 134,129 |
| C'wealth ... | 1,279,842 | 1,324,431 | 1,517,083 | 1,759,017 | 1,938,921 | 2,077,610 | 2,271,977 |

* Estimated.

19. Classification of Postal Notes Paid, 1907.—The subjoined table shews the number and value of postal notes paid during the year 1907 in each state and in the Commonwealth, classified according to the State in which they were issued:—

NUMBER AND VALUE OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO STATE OF ISSUE, 1907.

| State in which Paid | Postal Notes Issued in— | | | | | | |
|---------------------|-------------------------|-----------|----------|----------|----------|---------|-----------|
| | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
| NUMBER. | | | | | | | |
| New South Wales | 2,160,666 | 98,136 | 101,131 | 37,940 | 24,788 | 20,516 | 2,443,177 |
| Victoria... | 137,360 | 1,744,710 | 27,573 | 43,956 | 45,466 | 47,647 | 2,046,712 |
| Queensland ... | 30,623 | 5,925 | 410,292 | 1,307 | 1,589 | 586 | 450,322 |
| South Australia ... | 46,644 | 21,614 | 1,671 | 335,130 | 17,157 | 1,210 | 423,426 |
| Western Australia | 5,010 | 8,755 | 683 | 4,095 | 282,918 | 532 | 301,993 |
| Tasmania ... | 46,411 | 113,066 | 23,332 | 9,744 | 5,599 | 188,561 | 386,713 |
| Commonwealth... | 2,426,714 | 1,992,206 | 564,682 | 432,172 | 377,517 | 259,052 | 6,052,343 |
| VALUE. | | | | | | | |
| New South Wales | £ 776,931 | £ 37,282 | £ 38,177 | £ 11,893 | £ 11,083 | £ 6,694 | £ 882,060 |
| Victoria ... | 59,589 | 645,831 | 10,556 | 17,042 | 26,359 | 20,414 | 779,791 |
| Queensland ... | 13,407 | 2,799 | 156,597 | 543 | 937 | 247 | 174,530 |
| South Australia ... | 25,396 | 9,586 | 763 | 114,837 | 10,475 | 524 | 161,581 |
| Western Australia | 2,357 | 4,441 | 325 | 1,910 | 180,661 | 192 | 139,886 |
| Tasmania ... | 16,594 | 36,788 | 9,027 | 3,037 | 2,562 | 66,121 | 134,129 |
| Commonwealth... | 894,274 | 736,727 | 215,445 | 149,262 | 182,077 | 94,192 | 2,271,977 |

The following statement shows the number of postal notes of each denomination paid in the Commonwealth during the year 1907:—

NUMBER OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO DENOMINATION, 1907.

| Denomination. | Number Paid. | Denomination. | Number Paid. | Denomination. | Number Paid. |
|---------------|--------------|---------------|--------------|---------------|--------------|
| s. d. | | s. d. | | s. d. | |
| 0 6 | 77,464 | 3 6 | 309,763 | 10 6 | 148,815 |
| 1 0 | 267,227 | 4 0 | 512,227 | 15 0 | 369,887 |
| 1 6 | 179,331 | 4 6 | 348,479 | 20 0 | 798,086 |
| 2 0 | 334,757 | 5 0 | 737,353 | | |
| 2 6 | 408,278 | 7 6 | 311,911 | | |
| 3 0 | 491,602 | 10 0 | 757,163 | Total ... | 6,052,343 |

20. The Value Payable Post.—This is a system under which the Postal Department undertakes to deliver registered articles sent by parcel post within the Commonwealth, and to recover from the addressee on delivery a specified sum of money fixed by the sender, and to remit the sum to the sender by money order, for which the usual commission is charged. The object of the system is to meet the requirements of persons who wish to pay at the time of receipt for articles sent to them, and also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment. In addition to the ordinary postage, commission on the value of the articles transmitted at the rate of twopence on sums not exceeding ten shillings, and one penny for each additional five shillings or part thereof, must be prepaid by postage stamps affixed to the articles distinct from the postage and marked "commission." The registration fee (threepence) and the proper postage must also be prepaid. If the addressee refuse delivery, the parcel is returned to the sender free of charge. The subjoined statement gives particulars of the number and value of parcels sent through the Value Payable Post in each State during the years 1905, 1906, and 1907. The system has been established in Queensland for some years, but was only extended to the whole Commonwealth with the advent of Federal control of the post office:—

VALUE PAYABLE PARCELS POST.—NUMBER POSTED, VALUE COLLECTED AND REVENUE, 1905 to 1907.

| State. | Number of Parcels Posted. | | | Value collected. | | | Revenue, including Postage, Commission on Value, Registration and Money Order Commission. | | |
|---------------------|---------------------------|--------|--------|------------------|--------|--------|---|-------|-------|
| | 1905. | 1906. | 1907. | 1905. | 1906. | 1907. | 1905. | 1906. | 1907. |
| | No. | No. | No. | £ | £ | £ | £ | £ | £ |
| New South Wales | 1,839 | 3,798 | 4,814 | 2,644 | 6,025 | 7,763 | 257 | 579 | 702 |
| Victoria ... | 890 | 731 | 617 | 1,042 | 1,230 | 1,075 | 30* | 93 | 96 |
| Queensland ... | 18,095 | 25,039 | 27,729 | 23,594 | 33,507 | 36,876 | 2,496 | 3,556 | 3,954 |
| South Australia ... | 95 | 51 | 39 | 104 | 59 | 77 | 11 | 9 | 6 |
| Western Australia | 4,494 | 6,539 | 9,236 | 7,637 | 11,198 | 15,783 | 667 | 971 | 1,333 |
| Tasmania ... | 7 | 10 | 72 | 14 | 17 | 83 | 1 | 1 | 7 |
| Commonwealth | 24,920 | 36,168 | 42,507 | 35,035 | 52,026 | 61,657 | 3,471 | 5,209 | 6,098 |

* Exclusive of postage.

21. Transactions of the Dead Letter Office, 1907.—Under sections 45 to 53 of the Post and Telegraph Act 1901 the Postmaster-General may cause all unclaimed and undelivered postal articles originally posted within the Commonwealth which have been returned from the place to which they were forwarded to be treated as unclaimed articles and opened. Every unclaimed letter and postal article must be kept for the

prescribed period at the office to which it has been transmitted for delivery, and must then be sent to the General Post Office. Letters and packets originally posted elsewhere than in the Commonwealth are returned to the proper authorities in the country in which they were so posted, or, if originally posted in another State, are returned to the General Post Office of that State; but unclaimed or undelivered newspapers may be forthwith sold, destroyed, or used for any public purpose. Opened postal articles not containing anything of value are returned to the writer or sender if his name and address can be ascertained, but may otherwise be destroyed forthwith. As regards opened letters and packets containing valuable or saleable enclosures, a list and memorandum of the contents are kept, and a notice is sent to the person to whom the letter or packet is addressed if he be known, or otherwise to the writer or sender thereof if he be known. Upon application within three months of the date of such notice the letter or packet may be claimed by the addressee, or, failing him, by the writer or sender. If unclaimed within three months the letter and contents may be destroyed or sold, and the proceeds paid into the consolidated revenue fund. The following table shews the total number of letters, postcards, and packets dealt with by the Dead Letter Offices in the Commonwealth during the year 1907, together with the number of inland, interstate, and international letters either returned to writers, delivered, etc., destroyed, or returned as unclaimed:—

TRANSACTIONS OF DEAD LETTER OFFICES IN THE COMMONWEALTH, 1907.

| Particulars. | N.S.W. | Vic. | Qld. | S.A. | W.A. | Tas. | Cwlth. |
|--|----------------|----------------|----------------|----------------|----------------|---------------|------------------|
| LETTERS. | | | | | | | |
| Returned to writers, delivered, etc. ... | 265,811 | 316,965 | 110,131 | 27,531 | 94,576 | 43,106 | 858,120 |
| Destroyed in accordance with Act ... | 66,768 | 51,592 | 9,269 | 7,845 | 3,468 | 3,766 | 142,708 |
| Returned to other States or Countries as unclaimed ... | 41,743 | 29,712 | 17,569 | 9,477 | 18,011 | 12,304 | 128,816 |
| Total ... | 374,322 | 398,269 | 136,969 | 44,853 | 116,055 | 59,176 | 1,129,644 |
| POSTCARDS. | | | | | | | |
| Returned to writers, delivered, etc. ... | 7,823 | 14,029 | 5,624 | 6,880 | 3,242 | 2,134 | 39,732 |
| Destroyed in accordance with Act ... | 7,823 | 16,807 | 4,638 | 8,035 | 1,289 | 2,144 | 40,736 |
| Returned to other States or Countries as unclaimed ... | 8,426 | 7,072 | 2,739 | 1,906 | 3,357 | 624 | 24,124 |
| Total ... | 24,072 | 37,908 | 13,001 | 16,821 | 7,888 | 4,902 | 104,592 |
| PACKETS. | | | | | | | |
| Returned to writers, delivered, etc. ... | 406,596 | 29,641 | 70,593 | 31,625 | 6,642 | 736 | 545,833 |
| Destroyed in accordance with Act ... | 53,971 | 191,188 | 7,074 | 1,061 | 17,052 | 388 | 270,734 |
| Returned to other States or Countries as unclaimed ... | 21,941 | 55,420 | 42,288 | 33,367 | 38,608 | 8,128 | 199,752 |
| Total ... | 482,508 | 276,249 | 119,955 | 66,053 | 62,302 | 9,252 | 1,016,319 |
| Grand Total (letters, postcards, & packets) | 880,902 | 712,426 | 269,925 | 127,727 | 186,245 | 73,330 | 2,250,555 |

22. **Post Offices and Receiving Offices and Employes, 1901 to 1907.**—The following tables shew, as far as returns are available, the numbers of post and receiving offices and the corresponding numbers of employes in each State and in the Commonwealth at the end of each year from 1901 to 1907, inclusive:—

NUMBER OF POST OFFICES AND RECEIVING OFFICES, 1901 to 1907.

| State. | 1901. | | 1902. | | 1903. | | 1904. | | 1905. | | 1906. | | 1907. | |
|------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Post Offices. | Receiving Offices. | Post Offices. | Receiving Offices. | Post Offices. | Receiving Offices. | Post Offices. | Receiving Offices. | Post Offices. | Receiving Offices. | Post Offices. | Receiving Offices. | Post Offices. | Receiving Offices. |
| N.S.W. ... | 1,684 | 524 | 1,693 | 523 | 1,708 | 520 | 1,726 | 513 | 1,744 | 522 | 1,769 | 519 | 1,809 | 510 |
| Victoria ... | 1,637 | 18 | 1,645 | 18 | 1,646 | 18 | 1,652 | 18 | 1,655 | 18 | 1,659 | 657 | 1,656 | 670 |
| Queensland ... | 411 | 823 | 433 | 867 | 441 | 884 | 450 | 921 | 447 | 913 | 468 | 886 | 480 | 909 |
| S. Australia ... | 713 | ... | 702 | ... | 706 | ... | 711 | ... | 711 | ... | 706 | 7 | 704 | 12 |
| W. Australia ... | 187 | 28 | 197 | 28 | 218 | 25 | 243 | 34 | 261 | 34 | 281 | 57 | 298 | 67 |
| Tasmania† ... | 376 | ... | 369 | 6 | 370 | 8 | 371 | 12 | 370 | 9 | 373 | 19 | 375 | 31 |
| C'wealth ... | 5,008 | 1,338 | 5,039 | 1,442 | 5,089 | 1,455 | 5,153 | 1,498 | 5,188 | 1,496 | 5,256 | 2,145 | 5,322 | 2,199 |

* For the years 1901, 1902, and 1903 the number of receiving offices is included in post offices in the official returns, and separate figures here given are estimated. † The return for 1901 includes both post offices and receiving offices.

NUMBER OF EMPLOYEES AND NUMBER OF MAIL CONTRACTORS, 1901 to 1907.

| State. | 1901. | | 1902. | | 1903. | | 1904. | | 1905. | | 1906. | | 1907. | |
|----------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|
| | Employés. | Mail Contractors. | Employés. | Mail Contractors. | Employés. | Mail Contractors. | Employés. | Mail Contractors. | Employés. | Mail Contractors. | Employés. | Mail Contractors. | Employés. | Mail Contractors. |
| N.S.W. ... | 5,636 | 984 | 5,724 | 973 | 5,726 | 996 | 5,763 | 1,006 | 5,850 | 1,029 | 5,943 | 1,037 | 6,964 | 1,072 |
| Victoria ... | 3,982 | 890 | 3,955 | 880 | 4,017 | 914 | 4,041 | 934 | 4,086 | 912 | 4,896 | 919 | 5,744 | 758 |
| Queensland ... | 2,616 | — | 2,627 | — | 2,686 | — | 2,641 | — | 2,640 | — | 2,610 | 630 | 3,021 | 640 |
| South Aust.† | 1,945 | — | 1,974 | — | 1,973 | — | 2,046 | — | 1,727 | 259 | 1,734 | 255 | 1,767 | 261 |
| West. Aust. | 1,303 | 140 | 1,286 | 136 | 1,331 | 140 | 1,316 | 150 | 1,273 | 154 | 1,941 | 152 | 1,579 | 208 |
| Tasmania† | 865 | — | — | — | — | — | — | — | — | — | 811 | 164 | 814 | 172 |
| C'wealth ... | 16,327 | 2,014 | 15,566 | 1,989 | 15,733 | 2,050 | 15,807 | 2,090 | 15,616 | 2,354 | 17,935 | 3,157 | 19,589 | 3,111 |

* Country postmasters and receiving officers included in employés. † Non-official postmasters are included in employés. ‡ The return for 1901 includes all persons in the pay of the Postal Department.

At the end of the year 1907, out of the total number of persons, 23,000, employed in the Postmaster-General's Department, 13,204 were employed wholly, and 9796 were employed partially in the service.

23. **Postal Routes, 1907.** The following table shows the length of postal routes and the number of miles travelled by mail conveyances during the year 1907:—

POSTAL ROUTES, 1907.

| Particulars. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|--------------------------------------|------------|-----------|-----------|-----------|-----------|-----------|------------|
| MILES OF ROUTE. | | | | | | | |
| Railway ... | 3,418 | 3,288 | 3,572 | 2,160 | 2,041 | 631 | 15,110 |
| Water ... | 4,438 | 52 | 2,267 | 7,176 | 3,426 | 881 | 13,240 |
| Other ... | 35,325 | 9,983 | 29,731 | 8,186 | 8,257 | 1,847 | 93,329 |
| Total... .. | 43,181 | 13,323 | 35,570 | 17,522 | 13,724 | 3,359 | 126,679 |
| MILES TRAVELLED BY MAIL CONVEYANCES. | | | | | | | |
| Railway ... | 3,867,350 | 4,130,755 | 2,758,860 | 1,695,879 | 1,326,814 | 812,235 | 14,091,893 |
| Water ... | 629,604 | 20,856 | 273,946 | 320,910 | 159,434 | 207,036 | 1,611,786 |
| Other ... | 12,389,729 | 3,701,512 | 4,163,440 | 1,623,551 | 889,040 | 848,240 | 23,615,512 |
| Total | 16,886,683 | 7,853,123 | 7,196,246 | 3,640,340 | 2,375,288 | 1,867,511 | 39,819,191 |

24. **Gross Revenue of Postal Department, 1901 to 1907.**—The following table shews the gross revenue of the Postal Department in each State for the years 1901 to 1907, inclusive, under three heads, viz., the Postal, the Telegraph, and the Telephone branches. In the Postal branch is included the revenue derived from money-order commissions, poundage on postal notes, private boxes and bags, and miscellaneous sources:—

GROSS REVENUE OF POSTAL DEPARTMENT, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| POSTAL BRANCH. | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 596,552 | 610,434 | 652,761 | 705,393 | 743,986 | 802,353 | 874,528 |
| Victoria ... | 437,894 | 432,311 | 448,486 | 470,886 | 480,979 | 541,430 | 558,610 |
| Queensland | 203,128 | 204,520 | 191,931 | 227,715 | 233,523 | 255,060 | 299,872 |
| S. Australia | 148,336 | 157,474 | 166,400 | 152,429 | 161,920 | 180,827 | 193,394 |
| W. Australia | 109,335 | 121,303 | 122,862 | 135,053 | 157,837 | 153,818 | 155,023 |
| Tasmania ... | 72,009 | 64,834 | 75,412 | 84,605 | 89,569 | 93,392 | 100,000 |
| C'wealth ... | 1,567,254 | 1,590,876 | 1,657,852 | 1,776,081 | 1,867,814 | 2,026,880 | 2,181,427 |
| TELEGRAPH BRANCH. | | | | | | | |
| N.S.W. ... | 191,664 | 187,802 | 154,839 | 151,036 | 150,830 | 186,962 | 208,710 |
| Victoria ... | 120,385 | 125,252 | 106,839 | 111,287 | 124,994 | 133,536 | 136,542 |
| Queensland | 83,939 | 85,514 | 83,266 | 75,649 | 88,285 | 89,772 | 105,593 |
| S. Australia | 106,853 | 84,612 | 74,840 | 81,116 | 87,157 | 94,074 | 99,337 |
| W. Australia | 82,533 | 81,824 | 68,137 | 69,641 | 71,834 | 69,678 | 73,197 |
| Tasmania ... | 17,064 | 16,892 | 17,289 | 16,487 | 15,455 | 16,347 | 18,994 |
| C'wealth ... | 602,438 | 581,896 | 505,210 | 505,216 | 538,555 | 590,369 | 642,373 |
| TELEPHONE BRANCH. | | | | | | | |
| N.S.W. ... | 81,852 | 96,278 | 105,002 | 116,328 | 127,514 | 144,933 | 154,151 |
| Victoria ... | 62,019 | 76,326 | 86,600 | 88,633 | 102,396 | 108,437 | 118,510 |
| Queensland | 20,938 | 24,619 | 27,321 | 28,011 | 31,765 | 36,927 | 42,931 |
| S. Australia | 20,617 | 21,925 | 23,209 | 26,351 | 25,815 | 30,075 | 33,237 |
| W. Australia | 26,950 | 29,464 | 30,324 | 30,970 | 33,995 | 36,239 | 32,430 |
| Tasmania ... | 6,339 | 8,704 | 8,910 | 10,155 | 11,108 | 11,887 | 13,426 |
| C'wealth ... | 218,715 | 257,316 | 281,366 | 300,448 | 332,593 | 368,498 | 394,685 |
| TOTAL POSTAL REVENUE. | | | | | | | |
| N.S.W. ... | 870,068 | 894,514 | 912,602 | 972,757 | 1,022,330 | 1,134,248 | 1,237,389 |
| Victoria ... | 620,298 | 633,889 | 641,925 | 670,806 | 708,369 | 783,403 | 813,662 |
| Queensland | 308,005 | 314,653 | 302,518 | 331,375 | 353,573 | 381,759 | 448,396 |
| S. Australia | 275,806 | 264,011 | 264,449 | 259,896 | 274,892 | 304,976 | 325,968 |
| W. Australia | 218,818 | 232,591 | 221,323 | 235,664 | 263,666 | 259,735 | 260,650 |
| Tasmania ... | 95,412 | 90,430 | 101,611 | 111,247 | 116,132 | 121,626 | 132,420 |
| C'wealth ... | 2,388,407 | 2,430,088 | 2,444,428 | 2,581,745 | 2,738,962 | 2,985,747 | 3,218,485 |

25. **Expenditure in respect of the Postal Departments, 1901 to 1907.**—The sub-joined table shews the total expenditure in respect of the Postal Departments in each State. The figures given include certain items of expenditure, such as rent, repairs and maintenance of buildings, fittings and furniture, sanitation, water supply, and new buildings and additions which are under the control of the Department of Home Affairs:—

**EXPENDITURE IN RESPECT OF POSTAL DEPARTMENTS IN EACH STATE,
1901 TO 1907.**

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| New South Wales ... | 790,783 | 759,619 | 884,963 | 920,390 | 970,808 | 966,498 | 1,077,534 |
| Victoria ... | 517,609 | 550,227 | 582,520 | 624,841 | 627,735 | 668,046 | 800,238 |
| Queensland ... | 389,332 | 420,904 | 425,568 | 419,144 | 415,420 | 438,899 | 496,108 |
| South Australia ... | 240,846 | 237,532 | 240,987 | 254,698 | 259,656 | 281,040 | 272,578 |
| Western Australia... | 251,289 | 257,283 | 277,021 | 300,727 | 302,150 | 295,300 | 321,289 |
| Tasmania ... | 97,470 | 101,431 | 100,232 | 106,571 | 109,389 | 120,962 | 148,551 |
| Commonwealth ... | 2,287,329 | 2,326,996 | 2,511,291 | 2,626,371 | 2,685,158 | 2,770,745 | 3,116,298 |

26. **Analysis of Gross Revenue and Expenditure of Postal Departments, 1907.**—The following tables give an analysis of the gross earnings, and shew the distribution of expenditure in each State and in the Commonwealth, during the year 1907:—

ANALYSIS OF GROSS REVENUE ON POSTAL DEPARTMENT, 1907.

| Particulars. | N S. W. | Vic. | Qld. | S. Aust. | W. Aust. | Tas. | Cwltth. |
|--------------------------|-----------|---------|---------|----------|----------|---------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| Postage ... | 809,697 | 518,631 | 273,389 | 179,102 | 138,126 | 92,357 | 2,011,302 |
| Telegraphs ... | 208,710 | 136,542 | 105,593 | 99,337 | 73,197 | 18,994 | 642,373 |
| Telephones ... | 154,151 | 118,510 | 42,931 | 33,237 | 32,430 | 13,426 | 394,685 |
| Money order commission | 20,794 | 8,750 | 6,695 | 3,131 | 7,018 | 2,693 | 49,081 |
| Poundage on postal notes | 17,615 | 15,474 | 4,198 | 3,003 | 3,234 | 1,857 | 45,381 |
| Private boxes and bags | 6,170 | 2,858 | 3,060 | 1,501 | 1,631 | ... | 15,220 |
| Miscellaneous | 20,252 | 12,897 | 12,530 | 11,657 | 5,014 | 3,093 | 65,443 |
| Total ... | 1,237,389 | 813,662 | 448,396 | 330,968 | 260,650 | 132,420 | 3,223,485 |

DISTRIBUTION OF EXPENDITURE OF POSTAL DEPARTMENTS, 1907.

| Particulars. | N S. W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | Cwltth. |
|--------------------------------------|-----------|---------|---------|----------|----------|---------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| Salaries ... | 506,447 | 355,172 | 173,793 | 144,219 | 161,656 | 48,086 | 1,389,373 |
| Contingencies ... | 171,655 | 150,666 | 91,931 | 44,513 | 54,544 | 26,777 | 540,086 |
| Conveyance of mails— | | | | | | | |
| Steamship—Subsidised | 50,739 | 48,982 | 23,810 | 20,197 | 16,356 | 10,417 | 191,763 |
| Poundage rates | 8,475 | 6,475 | 3,924 | 834 | 1,554 | | |
| Railway ... | 83,651 | 57,589 | 49,861 | *12,792 | 17,949 | 13,211 | 235,053 |
| Other ... | 109,817 | 46,359 | 89,660 | 16,570 | 27,586 | 22,038 | 312,030 |
| Cable subsidies ... | 11,427 | 6,637 | 8,573 | ... | ... | 7,171 | 33,808 |
| Telegraph works ... | 12,995 | 7,794 | 7,600 | 18 | 10,371 | 832 | 39,610 |
| Telephone works ... | 86,139 | 78,989 | 23,344 | 26,154 | 12,559 | 18,149 | 245,334 |
| Rent ... | 5,897 | 2,192 | 1,597 | 508 | 459 | ... | 10,653 |
| Repairs and maintenance of buildings | 7,425 | 3,870 | 2,912 | 1,850 | 2,325 | 1,025 | 19,407 |
| Fittings and Furniture | 1,907 | 1,167 | 598 | 202 | 757 | 235 | 4,866 |
| Sanitation and water supply | 2,349 | 1,164 | 837 | 415 | 951 | 133 | 5,849 |
| New buildings and additions | 8,309 | 25,159 | 14,829 | 3,885 | 11,162 | 86 | 63,430 |
| Pensions ... | 7,569 | 7,595 | 1,075 | ... | 2,344 | ... | 18,583 |
| Supervision of works | 256 | 135 | 175 | 133 | 343 | 126 | 1,168 |
| Proportion of Audit office expenses | 540 | 215 | 432 | 178 | 280 | 261 | 1,906 |
| Unforeseen expenditure | 137 | 78 | 17 | 8 | 93 | 4 | 337 |
| Mail service to Pacific Islands | 1,800 | ... | ... | ... | ... | ... | 1,800 |
| Miscellaneous | ... | ... | 1,140 | 102 | ... | ... | 1,242 |
| Total ... | 1,077,534 | 800,238 | 496,108 | 272,578 | 321,289 | 148,551 | 3,116,298 |

*For nine months' accounts only.

§ 2. Telegraphs.

1. **First Lines Constructed.**—The electric telegraph was first introduced into Australia for use by the public in the year 1854, when a line from Melbourne to Williamstown was opened. The first line in South Australia, from Adelaide to Port Adelaide, was opened in 1856, while the first line in New South Wales was brought into operation in 1858, when the line from Sydney to Liverpool, twenty-two miles in length, was opened. In Tasmania the first telegraphic line was completed in 1857, while in the following year communication was established between Sydney, Melbourne, and Adelaide. The first line to be constructed in Queensland was that between Brisbane and Rockhampton, a distance of 396 miles, which was opened in 1864. In Western Australia the first telegraph constructed was from Perth to Fremantle, a distance of twelve miles, which was brought into use in 1869, and in the same year the cable joining Tasmania with the continent of Australia was completed.

2. **Development of Services.**—During the period from 1871 to 1881 great progress was made throughout Australia in the way of telegraphic construction, over 14,000 miles of line, exclusive of railway telegraph lines, being opened for use during the period mentioned, making the total length of the line open at the end of the year 1881, 25,470 miles. In the case of South Australia this increase was to a large extent due to the construction of the transcontinental lines (a) from Adelaide to Port Darwin (a distance of 2230 miles), which was completed on the 22nd August, 1872, at a cost of nearly half a million sterling, and (b) from Port Augusta to Port Lincoln, and thence along the coast of the Great Australian Bight as far as Eucla, on the Western Australian border. In Queensland there was a large increase resulting from the construction of the line to Normanton, on the Gulf of Carpentaria, while in Western Australia the line from Perth to Albany was extended as far as Eucla on the 9th December, 1877, thus establishing telegraphic communication between the six capital towns, Brisbane, Sydney, Melbourne, Adelaide, Perth, and Hobart. At the present time the systems of telegraph lines throughout Australia are well developed. The longest line extends from Thursday Island, in Torres Straits, by submarine cable to Paterson, on the mainland of Cape York Peninsula; from Paterson the line runs in a southerly direction as far as Brisbane, where it joins the main interstate line to Sydney, Melbourne, and Adelaide; from Adelaide it runs to Port Augusta, then on to Port Lincoln, on Eyre's Peninsula, and thence to Eucla, on the Western Australian boundary; from Eucla the line extends along the coast of the Great Australian Bight to Albany, and thence it runs adjacent to the west coast of Western Australia as far as Onslow, *via* Perth, Geraldton, and Carnarvon. From Onslow connection extends to Broome, in Roebuck Bay, from which place communication is made to Singapore by the Eastern Extension Company's cable. From Roebuck Bay the line crosses the Kimberley district in an easterly direction, and then runs north as far as the terminus at Wyndham. Branch lines extend to all important coastal and inland towns. In Queensland a line runs to Burketown, near the coast of the Gulf of Carpentaria, *via* Normanton; another line extends to Cloncurry and Urandangi, in the extreme west of the State. New South Wales, Victoria, and the south-eastern parts of South Australia are equipped with a considerable network of lines converging from the country districts towards the more important towns, while from Adelaide the transcontinental line referred to above, runs in a northerly direction to Port Darwin, from which place communication is provided with Europe by submarine cable by way of Batavia, Singapore, and Madras. In Western Australia a line runs from Eucla to the Coolgardie goldfields *via* Balladonia and Dundas, and from Coolgardie communication is provided with Perth and with Sir Samuel, in the East Murchison district.

3. **Length of Telegraph Lines and Wire Open, 1901 to 1907.**—The following table shews the length of telegraphic lines and of telegraph wire exclusive of railway telegraphs, available for use in each State at the end of each year, from 1901 to 1907 inclusive:—

**LENGTH OF TELEGRAPH LINE AND WIRE, EXCLUSIVE OF RAILWAY TELEGRAPHS,
AVAILABLE FOR USE IN EACH STATE, 1901 to 1907.**

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| LENGTH OF LINE. | | | | | | | |
| New South Wales* ... | Miles. 14,272 | Miles. 14,356 | Miles. 14,395 | Miles. 14,491 | Miles. 14,827 | Miles. 15,417 | Miles. 15,910 |
| Victoria ... | 3,989 | 4,001 | 4,006 | 3,904 | 3,913 | 3,931 | 3,998 |
| Queensland ... | 10,246 | 10,247 | 10,180 | 10,154 | 10,154 | 10,198 | 10,253 |
| South Australia† ... | 5,763 | 5,776 | 6,099 | 6,071 | 6,092 | 5,330 | 5,380 |
| Western Australia ... | 6,173 | 6,112 | 6,079 | 6,199 | 6,389 | 6,451 | 6,296 |
| Tasmania ... | 1,500 | 1,500 | 1,500 | 1,539 | 1,547 | 1,576 | 1,597 |
| Commonwealth ... | 41,943 | 41,992 | 42,199 | 42,358 | 42,922 | 42,908 | 43,384 |
| LENGTH OF WIRE. | | | | | | | |
| New South Wales‡ ... | 46,153 | 58,907 | 62,356 | 67,058 | 71,086 | 74,754 | 27,211 |
| Victoria ... | 9,795 | 9,894 | 10,161 | 10,518 | 10,583 | 10,663 | 10,786 |
| Queensland ... | 20,537 | 20,695 | 20,759 | 20,764 | 20,786 | 20,875 | 21,000 |
| South Australia† ... | 13,918 | 14,021 | 14,847 | 15,041 | 15,353 | 12,905 | 12,923 |
| Western Australia ... | 9,105 | 9,105 | 9,369 | 9,414 | 9,637 | 9,713 | 10,196 |
| Tasmania ... | 2,200 | 2,200 | 2,200 | 2,286 | 2,294 | 3,029 | 3,057 |
| Commonwealth ... | 101,708 | 114,822 | 119,692 | 125,081 | 129,739 | 131,939 | 85,173 |

* Including telephone and railway. † Previous to 1906 railway telegraph line and wire were included. ‡ Previous to 1907 telephone and railway wire were included.

4. **Number of Telegraph Offices, 1901 to 1907.**—The following table shews the number of telegraph offices, exclusive of railway telegraph offices, open for use in each State from 1901 to 1907:—

NUMBER OF TELEGRAPH OFFICES OPEN, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|
| New South Wales ... | 978 | 983 | 987 | 1,005 | 1,069 | 1,122 | 1,278 |
| Victoria ... | 446 | 472 | 472 | 482 | 509 | 565 | 607 |
| Queensland... ... | 481 | 476 | 481 | 498 | 515 | 536 | 556 |
| South Australia ... | 286 | 287 | 290 | 300 | 299 | 304 | 317 |
| Western Australia ... | 167 | 167 | 172 | 183 | 188 | 200 | 226 |
| Tasmania ... | 210 | 204 | 205 | 206 | 207 | 193 | 224 |
| Commonwealth ... | 2,568 | 2,589 | 2,607 | 2,674 | 2,787 | 2,920 | 3,208 |

5. **Revenue and Expenditure, 1901 to 1907.**—Particulars as to the revenue from the telegraph systems in each State for the years 1901 to 1907 are given on page 780, while particulars as to the expenditure for the year 1907 are also given on the same page.

6. **Number of Telegrams dealt with, 1901 to 1907.**—The subjoined table shews the number of telegrams despatched in each State for delivery in that State, the number of telegrams despatched in each State for delivery in other States of the Commonwealth and

received for delivery in each State from other States, and also the total number of telegrams—exclusive of cablegrams—dealt with in each State. The last set of figures represents the sum of the corresponding figures for each State in the first two sets of figures. The true total for the Commonwealth in the last table, however, is not obtained by merely adding together the figures for the several States, since interstate telegrams are counted both in the State in which they are despatched and in that in which they are received. A second total is therefore shewn, obtained by subtracting from the first total half the sum of the number of interstate telegrams received and despatched:—

NUMBER OF TELEGRAMS DESPATCHED AND RECEIVED IN EACH STATE,

1901 TO 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------|-----------|-----------|------------|------------|------------|-----------|-----------|
| INLAND (COUNTED ONCE). | | | | | | | |
| N.S.W. | 2,220,622 | 2,306,484 | 2,215,823 | 2,192,757 | 2,293,656 | 2,645,749 | 2,903,681 |
| Vic. ... | 1,623,985 | 1,618,128 | 1,706,497 | 1,644,522 | 1,689,145 | 1,785,046 | 1,812,253 |
| Q'land | *963,259 | *902,780 | *1,011,193 | *1,012,984 | *1,126,774 | 1,290,431 | 1,450,074 |
| S.A. ... | 517,617 | 523,762 | 638,803 | 686,330 | 687,010 | 723,577 | 799,679 |
| W.A. ... | 912,335 | 878,469 | 1,072,774 | 1,003,335 | 1,064,710 | 1,123,579 | 1,169,708 |
| Tas. ... | 237,634 | 227,215 | 282,832 | 277,831 | 301,632 | 310,400 | 270,832 |
| C'with. | 6,475,452 | 6,456,838 | 6,927,922 | 6,817,759 | 7,162,927 | 7,878,782 | 8,406,177 |

INTERSTATE, RECEIVED AND DESPATCHED.

| | | | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| N.S.W. | 1,124,283 | 957,591 | 1,026,722 | 1,055,044 | 1,118,322 | 1,307,398 | 1,434,748 |
| Vic. ... | 760,781 | 832,750 | 1,018,126 | 1,028,030 | 1,016,116 | 1,314,722 | 1,413,022 |
| Q'land | *401,745 | *438,246 | *476,609 | *477,663 | *514,501 | 587,752 | 651,157 |
| S.A. ... | 365,599 | 386,088 | 475,040 | 491,134 | 526,596 | 590,461 | 630,368 |
| W.A. ... | 282,996 | 306,279 | 480,744 | 525,258 | 544,937 | 533,929 | 539,682 |
| Tas. †... | *119,491 | *134,459 | *157,239 | 164,159 | 184,970 | 198,139 | 243,839 |
| C'with. | 3,054,895 | 3,105,413 | 3,629,480 | 3,741,288 | 3,905,442 | 4,532,401 | 4,912,816 |

TOTAL DEALT WITH.

| | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|
| N.S.W. | 3,344,905 | 3,264,075 | 3,242,545 | 3,247,801 | 3,411,978 | 3,953,147 | 4,338,379 |
| Vic. ... | 2,384,766 | 2,500,878 | 2,719,623 | 2,672,552 | 2,705,261 | 3,099,768 | 3,225,275 |
| Q'land | *1,365,004 | *1,341,026 | *1,487,802 | *1,490,647 | *1,641,275 | 1,878,183 | 2,101,231 |
| S.A. ... | 883,216 | 909,850 | 1,113,843 | 1,177,464 | 1,213,606 | 1,314,038 | 1,430,047 |
| W.A. ... | 1,195,331 | 1,184,748 | 1,553,518 | 1,528,593 | 1,609,647 | 1,657,508 | 1,709,390 |
| Tas. † ... | *357,125 | *361,674 | *440,071 | 441,990 | 486,602 | 508,539 | 514,671 |
| C'with. | 9,530,347 | 9,562,251 | 10,557,402 | 10,559,047 | 11,068,369 | 12,411,183 | 13,318,993 |
| C'with§ | 8,002,901 | 8,009,545 | 8,742,662 | 8,688,403 | 9,115,648 | 10,144,983 | 10,862,585 |

* Partly estimated. † Interstate cablegrams. ‡ Including interstate cablegrams.

§ Allowing for interstate excess.

7. **Rates for Transmission of Telegrams.**—The present rates for the transmission of telegrams within the Commonwealth were fixed by section 7 of the Post and Telegraph Rates Act 1902, and came into force on the 1st November, 1902. Under this Act charges are made for telegrams according to whether they are "ordinary" or "press" telegrams. "Press" telegrams are defined to mean those the text of which consists of political, commercial, etc., information, and of news intended for publication in a newspaper. The telegram must be sent by an authorised correspondent, and must be addressed to a registered newspaper or recognised news agency. The subjoined tables shew the scales of charges :—

SCALE OF CHARGES FOR ORDINARY TELEGRAMS.

| Particulars. | Town and Suburban, within Prescribed Limits, or within 15 Miles from the Sending Station. | Other Places within the State, except Town and Suburban. | Interstate. |
|----------------------------------|---|--|-------------|
| | s. d. | s. d. | s. d. |
| Including address and signature— | | | |
| Not exceeding 16 words | 0 6 | 0 9 | 1 0 |
| Each additional word | 0 1 | 0 1 | 0 1 |

Double the foregoing rates are imposed for the transmission of telegrams on Sunday, Christmas Day, and Good Friday, and between the hours of 8 p.m. and 9 a.m., and for telegrams sent on "urgent" forms.

SCALE OF CHARGES FOR PRESS TELEGRAMS.

| Particulars. | Within any State. | Interstate. | Relating to Parli- amentary, Executive, Departmental, and other Common- wealth Proceedings, as may be prescribed. |
|----------------------------------|----------------------|-------------|---|
| | s. d. | s. d. | |
| Not exceeding 25 words | 0 6 | 1 0 | s. d. ... |
| From 25 to 50 words | 0 9 | 1 6 | ... |
| From 50 to 100 words | 1 6 | 3 0 | ... |
| Every additional 50 words | 0 6 | 1 0 | ... |
| Within the Commonwealth. | | | |
| Not exceeding 25 words | ... | ... | 1 0 |
| From 25 to 100 words | ... | ... | 1 6 |
| Every additional 50 words | ... | ... | 0 6 |

8. **Wireless Telegraphy.**—Under the Wireless Telegraphy Act 1905 the Postmaster-General is given the exclusive privilege of establishing and using stations and appliances for receiving and transmitting messages by wireless telegraphy within Australia. The Postmaster-General is empowered to grant licenses to establish and use stations and appliances for wireless telegraphy, on the fulfilment of the prescribed conditions and payment of the prescribed fees. The Act does not apply to ships belonging to the King's Navy. Up to the present time no wireless telegraphy stations have been established in the Commonwealth.

§ 3. Submarine Cables.

1. **First Cable Communication with the Old World.**—As far back as 1857 the question of connecting Australia with the old world by means of submarine cables was brought forward in South Australia. No steps, however, were taken in the direction of constructing the cable until the year 1869, when various schemes were proposed. About this time the British Australian Telegraph Company was formed for the purpose of laying a cable to Australia without subsidy or guarantee. Communication had already been provided between London and Singapore *via* Bombay and Madras, and also through Java from Batavia to Banjoewangie. The proposal of the above company was to lay cables from Singapore to Batavia and from Banjoewangie to Port Darwin, from which place connection would be made overland with the Queensland telegraph system at Normanton. It was, however, subsequently decided that the company's line should end at Port Darwin, the South Australian Government undertaking to construct an overland line from Port Augusta to Port Darwin, a distance of 1971 miles. In November, 1871, the submarine cable was completed, and communication was established between Port Darwin and London. On the 22nd August, 1872, the construction of the line from Port Darwin to Adelaide was accomplished at an expenditure of nearly £500,000. The cable from Port Darwin is now under the control of the Eastern Extension Telegraph Company.

2. **The Tasmania-Victoria Cables.**—In the meantime the cable joining Tasmania to the continent of Australia had been laid, and was open for use in 1869, the total length being 170 miles. This cable starts from Flinders, near Cape Schanck, in Victoria, and ends at Low Head, at the mouth of the River Tamar, in Tasmania. The line is owned by the Eastern Extension Telegraph Company, and was subsidised by the Tasmanian Government to the extent of £4200 per annum; the receipts are also guaranteed up to £5600 per annum. Both the subsidy and the guarantee expire in the year 1909.

On the 28th February, 1908, the Postmaster-General entered into an agreement with Messrs. Siemens Brothers and Company Ltd., of London, for the manufacture and laying of two submarine cables between Tasmania and Victoria. The laying of these cables was completed in February, 1909. Their aggregate length is approximately 350 nautical miles of main cable, and 20 nautical miles each of intermediate and shore end cable, making a total of 390 nautical miles. The contract price, excluding the supply of spare cable, was £49,455.

3. **The Eastern Extension Company's Cables.**—In addition to the Victoria-Tasmania cable and the original cable from Port Darwin referred to above, the Eastern Extension Company have constructed and have control over several other cables connecting with various places in the Commonwealth. (a) In 1879 the original cable *via* Banjoewangie was duplicated, the States of New South Wales, Victoria, South Australia, Western Australia and Tasmania having agreed to pay the above company a subsidy of £32,400 per annum for a period of twenty years, the amount to be divided between the States on a population basis. (b) In 1881 a cable was constructed connecting Broome, in Roebuck Bay, W.A., with Banjoewangie; from Broome there is direct telegraphic communication with Perth, from which place communication is made with the Eastern States by the interstate line *via* Albany, Eucla, and Port Augusta. (c) In July, 1899, the company offered to lay a cable direct to Great Britain *via* the Cape of Good Hope, and also offered reductions in the rates charged, if the States would agree to certain conditions giving the company the right of direct dealing with the public. The States of South Australia, Western Australia and Tasmania accepted the terms offered, and New South Wales entered into the agreement in January, 1901. The cable was opened *via* Fremantle and Durbau in October, 1901. (d) Another submarine cable from Fremantle to Adelaide forms an alternative line of communication between the eastern States and Western Australia. (e) There is an alternative route, partly belonging to the Eastern Extension

Company and connecting the Port Darwin-Singapore cable with London, *via* Hong Kong, Shanghai, Posiett Bay (Pacific Russia), Libau (Russian Baltic), and Newbiggin (England).

4. **The Pacific Cable.**—In July, 1898, a conference of representatives of Great Britain, Canada, New South Wales, Victoria, Queensland, South Australia and New Zealand was held for the purpose of considering a project for a cable to be laid across the Pacific Ocean, touching only British territory on its way from Australia to Canada, thus providing an "All Red" route, as it is termed, for a cable system between England and Australia. In the following year it was agreed at a meeting held by representatives of the countries interested that the cable should be laid and that Great Britain and Canada should each pay five-eighteenths of the cost, and the States of New South Wales, Victoria, Queensland, and the Dominion of New Zealand should each pay one-ninth. The construction and management of the cable were placed under the control of a Board composed of seven members—two each from Great Britain, Canada, and Australia, and one from New Zealand—called the Pacific Cable Board. The Australian shore-end of the cable was landed at Southport, Queensland, in March, 1902, and the cable was completed and opened for use on the 3rd November, 1902. There are cable-stations at Norfolk Island, Fiji, and Fanning Island, and a branch cable runs from Norfolk Island to New Zealand. The following table shows particulars of the revenue, expenditure, total loss, and the proportion of the loss payable by the Commonwealth for each financial year since the opening of the cable:—

REVENUE; EXPENDITURE, AND LOSS ON WORKING OF PACIFIC CABLE, 1903 to 1908.

| Year ended the 31st March. | Revenue. | Expenditure, (including Annuities and Renewal Fund. | Loss. | Commonwealth Proportion of Loss. |
|----------------------------|----------|---|--------|----------------------------------|
| | £ | £ | £ | £ |
| 1903 ... | ... | ... | 90,518 | 30,172 |
| 1904 ... | 80,118 | 167,869 | 87,751 | 29,250 |
| 1905 ... | 87,446 | 163,296 | 75,850 | 25,283 |
| 1906 ... | 91,952 | 164,508 | 72,556 | 24,185 |
| 1907 ... | 113,516 | 167,439 | 53,923 | 18,307 |
| 1908 ... | 110,160 | 172,523 | 62,363 | 20,787 |

The total cost of construction to the 31st March, 1908, was £1,998,685, originally paid by Great Britain. The proportions of this cost payable by the other countries is to be paid off by 50 annual instalments. The total amount of the annuity paid to Great Britain during the year 1907-8 was £77,545, while the amount paid to the renewal fund was £32,000.

5. **New Zealand Cables.**—A submarine cable joining New Zealand to the Australian Continent was laid in 1876. The line is 1191 miles in length. The Australian shore-end of the cable is at Botany Bay while the New Zealand terminus is at Wakapuaka, near Nelson, in the Middle Island, from which place another cable, 109 miles in length, is laid to Wanganui, in the North Island. For a period of ten years after its opening the cable was subsidised by the New South Wales and New Zealand Governments, the total contributions amounting to £10,000 a year. The branch from Norfolk Island to New Zealand of the Pacific cable was opened on the 23rd April, 1902. The length of this cable is 597 miles, the New Zealand terminus being at Doubtless Bay in the north of the North Island.

6. **The New Caledonian Cable.**—In April, 1892, a French company, known as the Compagnie Française des Câbles Télégraphiques, entered into an agreement with the French, the New South Wales, and the Queensland Governments to lay down a submarine cable between New Caledonia and Queensland in return for guarantees by the

French Government to the extent of £8000, and by the Governments of New South Wales and Queensland to the amount of £2000 each annually for a period of thirty years. The cable was opened for use in October, 1893, the Australian shore-end being at Bundaberg. The Governments of New South Wales and Queensland are entitled to use the cable for the transmission of official messages up to the amount of their guarantees.

7. **Number of Cablegrams Received and Despatched in each State, 1905 to 1907.**—The subjoined table shows the number of cablegrams received and despatched in each State and in the Commonwealth from 1905 to 1907. Returns for previous years are not available:—

CABLEGRAMS RECEIVED AND DESPATCHED, 1905 to 1907.

| State. | Cablegrams Received. | | | Cablegrams Despatched. | | | Total Cablegrams Received and Despatched. | | |
|-----------------|----------------------|---------|---------|------------------------|---------|---------|---|---------|---------|
| | 1905. | 1906. | 1907. | 1905. | 1906. | 1907. | 1905. | 1906. | 1907. |
| New South Wales | 81,548 | 93,256 | 103,047 | 82,519 | 96,478 | 106,830 | 164,067 | 189,734 | 209,877 |
| Victoria ... | 55,749 | 67,194 | 72,200 | 59,279 | 70,315 | 75,518 | 115,028 | 137,509 | 147,718 |
| Queensland ... | 6,455 | 7,443 | 8,529 | 7,961 | 9,297 | 9,914 | 14,416 | 16,740 | 18,443 |
| South Australia | 17,436 | 16,610 | 17,419 | 13,084 | 15,006 | 16,057 | 30,520 | 31,616 | 33,476 |
| West. Australia | 10,446 | 9,258 | 12,042 | 14,504 | 12,406 | 15,553 | 24,950 | 21,664 | 27,595 |
| Tasmania * | 4,777 | 5,241 | 6,617 | 4,915 | 5,917 | 6,936 | 9,692 | 11,158 | 13,553 |
| Commonwealth | 176,411 | 199,002 | 219,854 | 182,262 | 209,419 | 230,808 | 358,673 | 408,421 | 450,662 |

* Exclusive of interstate cablegrams, which are classed as interstate telegrams (see above).

The following table shows the total number of cablegrams despatched and received in each State during each year from 1901 to 1907, inclusive:—

NUMBER OF CABLEGRAMS RECEIVED AND DESPATCHED, 1901 to 1907.

| State. | Cablegrams Despatched and Received. | | | | | | |
|--------------|-------------------------------------|---------|---------|---------|---------|---------|---------|
| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| N.S.W. ... | 104,590 | 159,031 | 152,814 | 144,936 | 164,067 | 189,734 | 209,877 |
| Victoria ... | 44,824 | 86,243 | 100,715 | 109,635 | 115,028 | 137,509 | 147,718 |
| Queensland | 9,723 | 8,260 | 12,749 | 12,741 | 14,416 | 16,740 | 18,443 |
| S. Australia | 29,431 | 29,472 | 21,823 | 29,373 | 30,520 | 31,616 | 33,476 |
| W. Australia | 30,268 | 30,313 | 34,216 | 25,873 | 24,950 | 21,664 | 27,595 |
| Tasmania.* | †6,289 | †7,077 | †8,276 | 18,679 | 9,692 | 11,158 | 13,553 |
| C'wealth | 225,125 | 320,396 | 330,593 | 341,237 | 358,673 | 408,421 | 450,662 |

* Exclusive of interstate cablegrams, which are classed as interstate telegrams (see page 783).
† Partly estimated.

From the first table given in this paragraph it may be seen that during each of the years specified the number of cablegrams despatched has exceeded the number received. During the year 1907, for example, the number despatched formed 51.21 per cent. on the total number received and despatched. From the second table it may be seen that the total number received and despatched annually has more than doubled since the year 1901.

8. **Lengths of Cable Routes.**—The following table gives the lengths of various cable routes:—

LENGTHS OF CABLE ROUTES.

| <i>Via Roebuck Bay.</i> | | <i>Via Port Darwin.</i> | | <i>Via South Africa.</i> | |
|---------------------------------|---------------|---------------------------------|---------------|--------------------------|---------------|
| | Miles. | | Miles. | | Miles. |
| Perth to Roebuck Bay ... | 1,485 | Adelaide to Port Darwin ... | 2,134 | Perth to Mauritius ... | 4,417 |
| Roebuck Bay to Banjoewangie ... | 970 | Port Darwin to Banjoewangie ... | 1,150 | Mauritius to Durban ... | 1,786 |
| Banjoewangie to London ... | 9,841 | Banjoewangie to London ... | 9,841 | Durban to Cape Town ... | 800 |
| | | | | Cape Town to Madeira ... | 5,715 |
| | | | | Madeira to Penzance ... | 1,341 |
| | | | | Penzance to London ... | 260 |
| Total ... | 12,296 | Total ... | 13,125 | Total ... | 14,319 |

| <i>Via Vancouver.</i> | | <i>Via Russia.</i> | |
|--|---------------|----------------------------------|---------------|
| | Miles. | | Miles. |
| Southport (Queensland) to Norfolk Island ... | 963 | Sydney to Port Darwin ... | 2,992 |
| Norfolk Island to Suva (Fiji) ... | 1,129 | Port Darwin to Hong Kong ... | 4,237 |
| Suva to Fanning Island ... | 2,351 | Hong Kong to Poisset Bay ... | 2,647 |
| Fanning Island to Bamfield (Canada) ... | 3,980 | Poisset Bay to Libau ... | 6,399 |
| Across Canada ... | 3,450 | Libau to Newbiggin (England) ... | 1,657 |
| Canada to Ireland ... | 2,450 | | |
| Total ... | 14,323 | Total ... | 17,932 |

9. **Cable Rates.**—In 1872 the cable rate to England was nine guineas for twenty words, but when word rates were brought into general use in 1875, the rate between Great Britain and Australia was fixed at ten shillings and sixpence, subsequently altered to ten shillings and eightpence. This remained the standard rate for eleven years, when the Eastern Extension Telegraph Company reduced it in 1886 to nine shillings and fourpence a word for ordinary messages, to seven shillings and a penny for Government messages, and to two shillings and eightpence a word for press messages. At a conference of the postal and telegraphic authorities held in March, 1891, the proposal to reduce the rates to four shillings a word for ordinary messages, three shillings and eightpence for Government, and one shilling and tenpence for press messages was agreed to, the States of New South Wales, Victoria, South Australia, Western Australia, and Tasmania undertaking to make good half the loss which the Eastern Company might suffer through such reductions. The States guaranteed to the company one-half of the amount of receipts short of the sum of £237,736—the amount received by the company in 1889 in respect of cable charges—the other half to be borne by the company. The Government of South Australia was also guaranteed by the other contracting States against any loss to the revenue which the lower cable rates might cause in the working of the overland lines. Queensland subsequently joined the other States in these guarantees. Owing to various circumstances the cable traffic did not respond to the reductions, and heavy losses were incurred. It was, therefore, decided at a conference held at Melbourne to increase the rates for ordinary messages to four shillings and ninepence per word. The new rates came into force on the 1st January, 1893, concurrently with an agreement under which New Zealand joined the guarantees to the company and to South Australia.

(i.) *Present Rates to Great Britain.* On the acceptance by three of the States of the terms offered by the Eastern Extension Telegraph Company for the construction of a cable *via* South Africa the rate for ordinary messages was reduced in May, 1900, to four shillings a word. It was further reduced to three shillings and sixpence in January, 1901, and to three shillings in January, 1902, at which amount the standard rate by all routes for cablegrams to Great Britain has since remained. The scale of reductions is governed by a revenue standard, and when the latter averages £330,000 per annum a further reduction to two shillings and sixpence will be made.

(ii.) *Rates to New Zealand.* As a result of the completion of the New Zealand branch of the Pacific cable in 1902, the rates charged for cablegrams between Australia and New Zealand, except to and from Tasmania, were uniformly reduced to fourpence-halfpenny per word. Between New Zealand and Tasmania the charge was fixed at fivepence-halfpenny a word, but it has since been reduced to fourpence-halfpenny. The charge for ordinary cablegrams from New Zealand to Great Britain was reduced from the 1st June, 1902, from five shillings and twopence to three shillings and fourpence a word, and has since been further reduced to three shillings a word.

10. **Cable Subsidies Paid by Each State, 1901 to 1907.**—The agreements between the State Governments and the Eastern Extension Telegraph Company expired on the 30th April, 1900. Since the year 1895 the amounts guaranteed—£237,736 to the company and £37,552 to South Australia—have been met by the receipts, and the contracting States have, therefore, not been called upon to contribute.

(a) The following table shews the total amounts paid by each State by way of cable subsidies for each calendar year from 1901 to 1907, inclusive:—

TOTAL AMOUNT OF CABLE SUBSIDIES PAID BY EACH STATE, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|--------|-------|--------|--------|--------|--------|--------|
| | £ | £ | £ | £ | £ | £ | £ |
| New South Wales ... | 3,494 | 1,993 | 12,028 | 11,613 | 10,530 | 4,223 | 11,427 |
| Victoria ... | 1,505 | ... | 10,058 | 10,114 | 8,430 | 8,073 | 6,637 |
| Queensland ... | 2,519 | 2,513 | 11,770 | 11,984 | 12,000 | 8,501 | 8,573 |
| South Australia ... | 1,423 | ... | ... | ... | ... | ... | ... |
| Western Australia ... | 66 | 22 | ... | ... | ... | ... | ... |
| Tasmania ... | 4,200 | 4,200 | 4,200 | 4,200 | 4,200 | 4,200 | 4,200 |
| Commonwealth ... | 13,207 | 8,728 | 38,056 | 37,911 | 35,160 | 24,997 | 30,837 |

(b) The subjoined statement shews the amounts paid by each State in respect of each cable service during the year 1907:—

AMOUNTS PAID BY THE SEVERAL STATES IN RESPECT OF EACH SUBSIDISED CABLE SERVICE, 1907.

| State. | Tasmania-Victoria. | New Caledonia. | Pacific. | Total. |
|-----------------------|--------------------|----------------|----------|--------|
| | £ | £ | £ | £ |
| New South Wales ... | ... | 2,000 | 9,427 | 11,427 |
| Victoria ... | 525 | ... | 6,112 | 6,637 |
| Queensland ... | ... | 2,000 | 6,573 | 8,573 |
| South Australia ... | ... | ... | ... | ... |
| Western Australia ... | ... | ... | ... | ... |
| Tasmania ... | 4,200 | ... | ... | 4,200 |
| Commonwealth ... | 4,725 | 4,000 | 22,112 | 30,837 |

As the agreement in connection with the Tasmanian cable expires in 1909, and as new cables have been laid by the Commonwealth Government (see page 785 *ante*), the guarantees will, in the course of the year 1909, be reduced to those in connection with the New Caledonia cable and with the Pacific cable.

§ 4. Telephones.

1. **Development of Telephone Services.**—The Postal Departments of the several States have established telephone services in all the capital towns and in many of the important centres of population throughout the Commonwealth. Particulars as to the revenue from telephone services in each State for the years 1901 to 1907 are given on page 780 *ante*, while particulars of the expenditure on telephone works in each State for the year 1907 are given in a subsequent table on the same page. Telephone rates are at present charged under the toll system (see page 791 hereof); it is proposed, however, to shortly remodel the basis upon which such charges are made.

(i.) *Number of Telephone Exchanges, 1901 to 1907.* The following table shows the number of telephone exchanges in each State at the end of each year from 1901 to 1907, inclusive:—

NUMBER OF TELEPHONE EXCHANGES, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|
| New South Wales ... | 48 | 51 | 57 | 61 | 64 | 76 | 96 |
| Victoria ... | 20 | 20 | 20 | 22 | 24 | 31 | 40 |
| Queensland... | 15 | 15 | 15 | 19 | 19 | 24 | 31 |
| South Australia ... | 12 | 12 | 12 | 11 | 11 | 11 | 16 |
| Western Australia ... | 12 | 12 | 13 | 13 | 16 | 20 | 26 |
| Tasmania ... | 13 | 13 | 16 | 16 | 16 | 16 | 17 |
| Commonwealth ... | 120 | 123 | 133 | 142 | 150 | 178 | 226 |

(ii.) *Number of Telephone Connections.* The subjoined table shows the number of telephone connections to the various exchanges in each State at the end of each year from 1901 to 1907, inclusive:—

NUMBER OF TELEPHONE CONNECTIONS, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|--------|--------|--------|--------|--------|--------|--------|
| New South Wales ... | 9,864 | 11,079 | 12,091 | 13,138 | 14,224 | 15,453 | 18,989 |
| Victoria ... | 6,049 | 6,847 | 7,610 | 8,429 | 9,259 | 10,424 | 12,935 |
| Queensland... | 2,978 | 3,296 | 3,749 | 3,936 | 4,210 | 4,405 | 5,820 |
| South Australia ... | 1,831 | 1,983 | 2,179 | 2,319 | 2,508 | 2,510 | 3,123 |
| Western Australia ... | 2,764 | 2,941 | 3,332 | *3,448 | *3,643 | 3,797 | 4,145 |
| Tasmania ... | *1,091 | 1,158 | 1,236 | 1,329 | 1,441 | 1,563 | 1,744 |
| Commonwealth ... | 24,577 | 27,304 | 30,197 | 32,599 | 35,280 | 38,152 | 46,756 |

* Estimated.

(iii.) *Length of Telephone Wire, 1901 to 1907.* The subjoined table shows the length of telephone wire, exclusive of telegraph and railway telephone wire, available for use in each State at the end of each year from 1901 to 1907, inclusive:—

**LENGTH OF TELEPHONE WIRE, EXCLUSIVE OF TELEGRAPH AND RAILWAY
TELEPHONE WIRE, 1901 to 1907.**

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|--------|--------|--------|--------|--------|--------|---------|
| New South Wales ... | 15,885 | 17,727 | 19,479 | 20,853 | 22,111 | 23,403 | 48,971 |
| Victoria ... | 17,354 | 20,894 | 22,577 | 25,073 | 28,638 | 30,984 | 39,368 |
| Queensland ... | 4,360 | 4,911 | 5,613 | 6,309 | 7,697 | 9,758 | 11,812 |
| South Australia ... | 3,935 | 4,244 | 4,572 | 4,972 | 5,384 | 6,034 | 7,209 |
| Western Australia ... | 4,944 | 4,947 | 5,431 | 6,016 | 6,494 | 6,957 | 9,842 |
| Tasmania ... | 1,239 | 1,199 | 1,300 | 1,236 | 1,371 | 1,502 | 1,850 |
| Commonwealth ... | 47,717 | 53,922 | 58,972 | 64,459 | 71,695 | 78,638 | 119,052 |

2. **Telephone Rates.**—On the 31st January, 1907, a uniform toll rate was established throughout the Commonwealth. Subscribers at the time at which this rate was introduced were allowed the option of continuing their subscriptions under the old flat rates, which differed in the several States, or of coming in on the basis of the new rates. The charges made to all new subscribers, or for transferred or extended services, are on the basis of the new rates. The rate charged under the toll system varies according to the population of the area over which the telephone service extends, and also according to whether the person connected subscribes to an exclusive, a two-party, or a three-party service. The following table gives particulars of the rates under the toll system :—

TELEPHONE TOLL SYSTEM.—UNIFORM CHARGES FOR ALL STATES.

| In Telephone Networks having a Population of— | Radius of Network with Main Exchange as Centre. | Minimum Annual Charge— | | |
|--|---|---------------------------------|---|---|
| | | For an Exclusive Service. | For each Sub- scriber or In- strument on a Two-party Service. | For each Sub- scriber or In- strument on a Three-party Service. |
| From 1 to 10,000 ... | Miles. 5 | £ s. d. 4 0 0 | £ s. d. 3 0 0 | £ s. d. 2 10 0 |
| „ 10,001 to 100,000 ... | 10 | 4 10 0 | 3 7 6 | 2 15 0 |
| „ 100,001 upwards ... | 10 | 5 0 0 | 3 15 0 | 3 0 0 |

For the foregoing charges the Postal Department provides and maintains all necessary exchange equipment, subscribers' lines not exceeding one mile in length radially, and one telephone wall-set for each subscriber, and allows 1000 effective calls to be originated by each subscriber in each half-year.

(i.) *Charges for Extra Calls.* For all effective calls beyond 1000 half-yearly the subscriber is charged as follows :—

For calls above 1000 and not exceeding 2000 half-yearly, two calls for one penny.

For calls above 2000 and not exceeding 3000 half-yearly, three calls for one penny.

For calls above 3000 calls half-yearly, four calls for one penny.

(ii.) *Charges for Extra Mileage.* When the radial length of any line exceeds one mile the following charges are made :—

| | Exclusive Services. | Two-party Services. | Three or More Party Services. |
|------------------------------------|------------------------|--|---|
| For each half-mile or part thereof | £1 per annum. | Ten shillings per annum per subscriber or instrument | Five shillings per annum per subscriber or instrument |

(iii.) *Proposed Alteration in Rates.* It is now proposed to abolish the system of rates, on the previous page, and to charge a fixed annual rental, and in addition, a certain sum for each effective call.

3. **Miscellaneous Particulars, 1907.**—The following table gives various interesting particulars of the operation of the telephone services in each State for the year 1907 :—

PARTICULARS OF OPERATION OF TELEPHONE SERVICES, 1907.

| Particulars. | | N.S.W. | Vic. | Qld. | S.A. | W.A. | Tas. | Cwlth. |
|---|-------|---------|---------|---------|---------|---------|--------|-----------|
| Telephone Exchanges ... | No. | 96 | 40 | 31 | 16 | 26 | 17 | 226 |
| Public Telephone Bureaux ... | No. | 855 | 345 | 364 | 196 | 47 | 218 | 2,025 |
| Extension Lines— | | | | | | | | |
| Metropolitan ... | No. | 3,242 | 2,593 | 528 | 157 | 996 | 18 | 7,534 |
| Country ... | No. | 392 | 424 | 400 | 37 | 305 | 47 | 1,605 |
| Total ... | No. | 3,634 | 3,017 | 928 | 194 | 1,301 | 65 | 9,139 |
| Private Lines— | | | | | | | | |
| Metropolitan ... | No. | 335 | 229 | 82 | 229 | 139 | 18 | 1,032 |
| Country ... | No. | 737 | 201 | 198 | 127 | 37 | 107 | 1,407 |
| Total ... | No. | 1,072 | 430 | 280 | 356 | 176 | 125 | 2,439 |
| Connections— | | | | | | | | |
| Central Exchange ... | No. | 5,235 | 5,504 | 2,081 | 2,286 | 1,658 | 862 | 17,626 |
| Suburban Exchanges ... | No. | 9,399 | 5,053 | 320 | 560 | 1,036 | 27 | 16,395 |
| Country Exchanges ... | No. | 4,355 | 2,378 | 3,419 | 277 | 1,451 | 855 | 12,735 |
| Total ... | No. | 18,989 | 12,935 | 5,820 | 3,123 | 4,145 | 1,744 | 46,756 |
| Telephones in use ... | No. | 24,363 | 18,412 | 6,680 | 4,646 | 5,446 | 2,253 | 61,800 |
| Rental received ... | £ | 154,151 | 118,510 | 31,728 | 28,409 | 32,430 | 10,979 | 376,207 |
| Length of wire opened during year ... | Miles | 6,887 | 8,384 | 2,278 | 1,175 | 1,115 | 134 | 19,973 |
| Total length of wire at end of year ... | Miles | 48,971 | 39,368 | 11,812 | 7,209 | 9,842 | 1,850 | 119,052 |
| Cost of construction during year ... | £ | 86,139 | 131,462 | 23,344 | 26,154 | 14,108 | 18,149 | 299,356 |
| Total cost to end of year ... | £ | 651,118 | 723,983 | 194,281 | 167,271 | 165,391 | 62,688 | 1,964,732 |

SECTION XIX.

COMMONWEALTH FINANCE.

§ 1. General.

1. **Financial Provisions of the Constitution.**—The main provisions of the Constitution relating to the initiation and development of the financial system of the Commonwealth are those contained in Chapter IV., "Finance and Trade," being sections 81 to 105 of the Constitution Act. Two other sections which have a most important bearing on questions of Commonwealth finance are sections 69 and 51.

2. **Departments Transferred or Transferable under Constitution.**—In section 69 it is provided that the Departments of Customs and Excise in each State should become transferred to the Commonwealth on its establishment, and that on a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments should become transferred:—

- (i.) Posts, telegraphs, and telephones.
- (ii.) Naval and military defence.
- (iii.) Lighthouses, lightships, beacons and buoys.
- (iv.) Quarantine.

Under proclamation dated 12th February, 1901, and published in the Commonwealth *Gazette* of the 14th of that month, the Departments of Posts, Telegraphs, and Telephones in each State became transferred to the Commonwealth as from the 1st March, 1901, while under a similar proclamation dated 19th February, 1901, and gazetted on the 20th, the Departments of Naval and Military Defence in each State also became transferred to the Commonwealth as from 1st March, 1901.

As the requisite proclamation of transfer has not yet been made in the case of departments dealing with "Lighthouses, light-ships, beacons, and buoys," nor in the case of those concerned in matters of "quarantine," these departments still remain under State control.

3. **Departments Transferable by Means of Commonwealth Legislation.**—In addition to the departments here mentioned which pass to the Commonwealth either automatically or by proclamation, there are several others whose duties the Commonwealth is empowered to undertake after the passing by the Commonwealth of the legislation necessary to authorise the assumption of such duties. These are referred to in section 51 of the Constitution, which contains a statement of all matters respecting which power is (subject to the Constitution) conferred on Parliament "to make laws for the peace, order and good government of the Commonwealth." The matters contained in this section include those already mentioned as being covered by section 69. The principal

matters involving for the due performance of the duties connected therewith the creation or transfer of departments of the Public Service are:—

- (i.) Trade and commerce.
- (ii.) Taxation.
- (iii.) Bounties on production or export of goods.
- (iv.) Postal, telegraphic, telephonic, and other like services.
- (v.) Naval and military defence.
- (vi.) Lighthouses, lightships, beacons, and buoys.
- (vii.) Astronomical and meteorological.
- (viii.) Quarantine.
- (ix.) Census and statistics.
- (x.) Bankruptcy and insolvency.
- (xi.) Copyrights, patents, and trade marks.
- (xii.) Naturalisation and aliens.
- (xiii.) Marriage.
- (xiv.) Divorce and matrimonial causes.
- (xv.) Invalid and old-age pensions.
- (xvi.) Immigration and emigration.
- (xvii.) Conciliation and arbitration.

4. **Commonwealth Departments.**—As a result of legislation passed from time to time, in accordance with section 51, various departments and sub-departments have been transferred from the States to the Commonwealth, whilst other departments necessary for the due performance of the Commonwealth functions have been brought into existence. In the former class are such departments as those of Patents, Trade Marks, Copyrights, Designs, Naturalisation and Meteorology, while in the latter are the Ministerial Departments of External Affairs, Home Affairs, Treasury, Trade and Customs, Defence, Attorney-General and Postmaster-General, as well as such general departments as Public Service Commissioner's Office, Treasury, Audit, Crown Law Department and Census and Statistics. It may, therefore, be said that, so far as its financial aspect is concerned, the effect of Federation up to the present time has been the transfer from States to Commonwealth of the revenue obtainable from the great revenue-producing Departments of Customs and Excise, and of the expenditure connected with various departments whose number is gradually increasing, and that, in addition, the various functions of the Commonwealth have necessitated further new expenditure.

5. **Adjustment of Accounts between Commonwealth and States.**—The fact that the Departments of Customs and Excise were responsible in the several States for the production of a very large proportion of the total revenues of the States, and that the financial relief afforded to the States by means of the transfer of expenditure to the Commonwealth would not, at least initially, be at all commensurate with this transfer of revenue, naturally led to the inclusion in the Constitution of a provision for the repayment to the States of surplus Commonwealth revenue. The means to be adopted for securing an equitable allocation of such repayment amongst the several States received very extensive consideration at the several conventions at which the framing of the Constitution took place, and the basis ultimately agreed upon was that involving for at least ten years after the establishment of the Commonwealth the provisions of what is generally known as the Braddon clause (section 87) and for at least five years after the imposition of uniform duties of Customs, the scheme of allocation which has become known as the "*book-keeping system.*" (Sections 89 and 93.)

6. **The "Braddon" Clause.**—This clause (section 87 of the Constitution) is so called after Sir Edward Braddon, a Tasmanian delegate to the Federal Convention of 1897 and 1898, by whom it was introduced. In its original form the clause provided that for all time the Commonwealth should return to the States not less than three-fourths of the

net revenue of the Commonwealth from duties of Customs and Excise, not prescribing, however, what should be returned to *each State*. At the Melbourne session of the Federal Convention, held in 1898, provision was made that surplus revenue, instead of being returned to a State, might be applied towards the payment of interest on debts of that State taken over by the Commonwealth, and at the Premiers' Conference, held in Melbourne in 1899, a further amendment of the clause was effected by limiting its operations to a "period of ten years after the establishment of the Commonwealth, and thereafter until Parliament otherwise provides." The provisions of this clause *per se* are complied with, so it would appear, if the total amount returned to the States as a whole is not less than three-fourths of the total net revenue from Customs and Excise, and the Commonwealth is not under an obligation to return to each State three-fourths of the net Customs and Excise revenue collected in respect thereof. Thus, since the establishment of Federation, although the total amount of surplus Commonwealth revenue distributed amongst the States has in every year except 1907-8 largely exceeded three-fourths of the total net revenue from Customs and Excise, the amount paid to one of the States, viz., Queensland, has in several of these years fallen short of three-fourths of the net Customs and Excise revenue collected in respect of that State.¹ This occurred in the years 1901-2, 1903-4, 1904-5, and 1907-8, and was due in a large measure to the heavy expense involved in working the Commonwealth departments in that State. The amount returned to Tasmania for 1907-8, also fell short of three-fourths of the net Customs and Excise Revenue collected in respect of that State.

7. The "Book-keeping System."—The scheme set forth in the Constitution for determining the amount to be paid to the several States is contained in sections 89 and 93, the former of which relates to the period prior to the imposition of uniform duties of Customs, the latter to the first five years after the imposition of such duties, and thereafter until Parliament otherwise provides. The principle involved in this scheme is that of crediting each State with the Commonwealth revenue collected in respect of that State, and of debiting it with the expenditure incurred on its behalf in connection with transferred departments, as well as its share on a *per capita* basis of the new expenditure of the Commonwealth. On this account the method of allocation provided by the Constitution has become very generally known as the "*book-keeping system*." As the imposition of uniform duties of Customs and Excise took place throughout the Commonwealth on 9th October, 1901, the five years provided for in section 93 expired on 8th October, 1906, and consequently the "*book-keeping system*," which is still in force, may be changed at any time by the Commonwealth Parliament. In section 93 provision is made that the duties chargeable on goods imported into one State and consumed in another should be credited to the consuming State, the evident intention being that of safeguarding the interests of such States by allowing to each the revenue which its citizens actually contribute, since presumably the duty ultimately falls upon the consumer. The balance in favour of any State is paid monthly by the Commonwealth.

8. Western Australian Sliding Scale.—Owing to the exceptional circumstances of Western Australia, and the fact that the immediate introduction of interstate freetrade would seriously interfere with the development of the State, through the diminution in the funds at the disposal of its Treasurer, provision was made in section 95 of the Constitution for the retention of interstate duties by Western Australia during the five years after the imposition of uniform duties, such duties to be collected by the Commonwealth. It was stipulated that during the first of these years the duty so imposed on any goods should not exceed the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and that during the succeeding years the amount imposed should not exceed four-fifths, three-fifths, two-fifths, and one-fifth respectively, and should cease at the expiration of the fifth year. This special concession to Western Australia, known as the "*Western Australian special tariff*," came to an end on 8th October, 1906, since when trade between all the States has been

1. See report of Treasurers' Conference, 5th to 12th February, 1904, pp. 3 *et seq.*

free. The amount collected under this special tariff during the five years of its operation from 9th October, 1901, to 8th October, 1906, was as follows:—

DUTY COLLECTED UNDER W.A. SPECIAL TARIFF, 1901-2 to 1906-7.

| Year | ... | ... | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | Total. |
|--------|-----|-----|---------|---------|---------|---------|---------|---------|---------|
| Amount | ... | £ | 201,569 | 233,467 | 196,936 | 142,549 | 77,666 | 16,776 | 868,963 |

9. **Special Assistance.**—A clause (section 96 of the Constitution) which has a very important bearing on the financial relations of the States and the Commonwealth was inserted by the Premiers' Conference of 1899. This clause provides that the Commonwealth Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit. It is said to have been introduced with the object of rendering the Constitution more elastic in the matter of aid to the States than would be possible if the Braddon clause and the book-keeping system were rigidly adhered to. No claim for such special assistance has yet been made on the part of any of the States, although it appears that the framers of the clause anticipated that it might be required during the early years of Federation.

10. **Transfer and Consolidation of State Debts.**—Under section 105 of the Constitution power is given to the Commonwealth Parliament to take over from the States either the whole of the public debts of the States as existing at the establishment of the Commonwealth, or a proportion of that debt calculated on a population basis, and to defray the interest payable in respect of such debts from the portions of the surplus revenue of the Commonwealth payable to the several States. The prospective savings in the matter of interest to be effected by means of the consolidation of the State debts formed a strong argument in pre-federal days for those supporting the federal movement. Since the establishment of the Commonwealth, however, the individual States do not appear to have become willing to accept a Commonwealth control of State indebtedness.

11. **Disadvantages of the Present System.**—Under the book-keeping system of regulating the financial relations of the States and Commonwealth an endeavour is made to distribute the surplus revenue in the exact proportion in which it has been contributed by the several States. If these be regarded as States which have merely transferred some of their ordinary functions to the Commonwealth, the crediting each with the revenue received in respect to itself, and debiting it with the expenditure which the administration of Commonwealth affairs on its behalf has occasioned, might be deemed to be as equitable as any method that could be suggested. There are, however, certain practical objections to such a system, which may be summarised as follows:—

- (i.) The trouble and expense which the necessary record entails.
- (ii.) The practical impossibility of ensuring that in every case a consuming State will be duly credited with revenue collected on its behalf in a distributing State.
- (iii.) The difficulty involved in equitably determining the amount to be debited to the several States in respect of general Commonwealth expenses.
- (iv.) The uncertainty on the part of the State Governments as to the amount which will become available.
- (v.) The impossibility of securing independent State and Commonwealth finance.

12. **Proposa to modify present System.**—Various proposals have from time to time been made for modifying the present "book-keeping" system in such a manner as

to obviate certain of the disadvantages inherent therein. The principal of these proposals are those which may be classified under the following heads :—

- (i.) A *per capita* distribution of surplus.
- (ii.) Payment of a fixed annual sum.
- (iii.) Payment of a fixed annual amount per head.
- (iv.) Increase in liability transferred to Commonwealth.

Some of the proposals that have been made involve features of more than one of the systems here specified, and in certain cases combine them with those of the book-keeping system. A dissertation on the merits and demerits of any of the proposals would be beyond the scope of the present publication, but it may be noted that the scheme put forward by Sir George Turner when Commonwealth Treasurer was based on an increase in the liability transferred to the Commonwealth, while that of Sir John Forrest and that of Sir William Lyne were based mainly on the payment of a fixed annual sum.

13. **Interstate Conferences.**—Since the establishment of the Commonwealth, conferences of State Ministers have been held from time to time, at which proposals for adjusting the financial relations between the States and the Commonwealth have been considered. At the conference held in Melbourne in October, 1906, and that held in Brisbane in May, 1907, the scheme put forward by Sir John Forrest was very fully discussed, and in so far as the proposals for the allocation of surplus Commonwealth revenue are concerned was, with some minor amendments, agreed to. The proposals made by Sir John Forrest for the transfer of State debts did not, however, meet with the approval of the conferences. After the retirement of Sir John Forrest from the Commonwealth Ministry, his scheme was abandoned by the Commonwealth Government. A fresh proposal by Sir William Lyne was substituted for it, and was considered by the Conference of Premiers held in Melbourne in 1908, who expressed their dissent from its provisions. Numerous other schemes have been advanced, but none has yet received general approval.

§ 2. Consolidated Revenue Fund.

(A) Nature of Fund.

The provisions made for the formation of a Commonwealth Consolidated Revenue Fund, and the means to be adopted for operating on that fund, are contained in sections 81, 82, and 83 of the Constitution. In section 81 it is provided that "All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution." A strictly literal interpretation of this section would appear to require all loan and trust moneys received by the Commonwealth Executive to be paid to Consolidated Revenue. It is, however, held by Quick and Garran, in their "Annotated Constitution," that the "generic word *moneys* must be controlled by the preceding specific word *revenues*, and limited to moneys in the nature of revenue." This is the view of the matter which has been adopted by the Commonwealth Treasury in the preparation of its accounts. At present the Commonwealth has no Loan Account, but certain moneys received, which are not of the nature of revenue, are paid to Trust Account. As regards expenditure from the Consolidated Revenue Fund, section 82 provides that the costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund should form the first charge thereon, while section 83 stipulates that "no money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law." Such appropriations are either special, and as such are provided for by means of a permanent Act, or are annual, and provided for in an annual Appropriation Act.

(B) Revenue.

1. **Total Collections.**—Particulars concerning the total amount of revenue collected by the Commonwealth Government and credited to the several States from 1st January, 1901, to 30th June, 1908, are contained in the following table:—

CONSOLIDATED REVENUE OF THE COMMONWEALTH, 1901 to 1907-8.

| State to which Credited. | Half-year to 30th June, 1901. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------------|-------------------------------|------------|------------|------------|------------|------------|------------|------------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 1,296,963 | 3,894,266 | 4,391,020 | 4,168,289 | 4,021,310 | 4,314,829 | 4,782,122 | 5,816,755 |
| Victoria ... | 1,536,810 | 2,976,500 | 3,127,120 | 3,102,452 | 3,181,897 | 3,292,885 | 3,537,802 | 4,063,736 |
| Queensland | 806,717 | 1,611,502 | 1,563,791 | 1,458,287 | 1,430,755 | 1,550,360 | 1,707,136 | 1,967,618 |
| South Aust. | 443,050 | 978,098 | 946,707 | 963,103 | 953,608 | 987,792 | 1,113,450 | 1,355,711 |
| West. Aust. | 559,108 | 1,561,538 | 1,621,962 | 1,493,696 | 1,431,624 | 1,287,103 | 1,216,416 | 1,270,732 |
| Tasmania ... | 253,108 | 475,081 | 455,337 | 447,171 | 446,404 | 448,955 | 476,165 | 544,442 |
| C'wealth ... | 4,895,756 | 11,296,985 | 12,105,937 | 11,630,998 | 11,465,593 | 11,881,924 | 12,832,891 | 15,019,034 |

The revenue collected by the Commonwealth during the financial year 1907-8 was, in all the States except Western Australia, higher than in any preceding year, the large increase being mainly due to the additional revenue collected in connection with the new tariff introduced on the 8th August, 1907. In the case of Western Australia the year in which the maximum collection of Commonwealth revenue took place was 1902-3, a continuous decline having been experienced from that year until 1906-7, and a slight rise for 1907-8.

2. **Collections per Head.**—In the table given hereunder particulars are furnished of the amount of Commonwealth revenue per head of population collected in respect of each State since the establishment of the Commonwealth:—

COMMONWEALTH REVENUE PER HEAD OF POPULATION, 1901 to 1907-8.

| State to which Credited. | Half-Year to 30th June, 1901. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------------|-------------------------------|---------|---------|---------|---------|---------|---------|---------|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| N.S.W. ... | 0 19 2 | 2 13 9 | 3 2 7 | 2 18 5 | 2 15 2 | 2 17 10 | 3 2 8 | 3 14 2 |
| Victoria ... | 1 5 7 | 2 9 2 | 2 11 8 | 2 11 4 | 2 12 7 | 2 14 1 | 2 17 5 | 3 5 1 |
| Queensland | 1 12 5 | 3 3 8 | 3 1 3 | 2 16 7 | 2 14 10 | 2 18 9 | 3 3 10 | 3 12 8 |
| South Aust. | 1 4 5 | 2 13 6 | 2 11 8 | 2 12 3 | 2 11 2 | 2 12 3 | 2 18 0 | 3 9 1 |
| West. Aust. | 3 0 9 | 8 0 11 | 7 12 1 | 6 11 8 | 5 18 2 | 5 1 0 | 4 12 11 | 4 17 2 |
| Tasmania | 1 9 4 | 2 14 6 | 2 11 4 | 2 9 10 | 2 9 7 | 2 9 7 | 2 12 10 | 2 19 2 |
| C'wealth ... | 1 5 11 | 2 19 1 | 3 2 4 | 2 19 3 | 2 17 11 | 2 18 8 | 3 2 4 | 3 11 7 |

It is remarkable that the revenue per head for the Commonwealth, and also that for New South Wales, were practically identical for the year 1902-3 and for 1906-7, and were also sensibly the same for those years (about £3 2s. 6d.). It will also be noticed that for the past six years the Commonwealth revenue per head has differed very slightly from that of New South Wales.

In all the States except Western Australia the Commonwealth revenue per head was higher for 1907-8 than for any previous year. In Western Australia, owing in part to the

special circumstances of that State as regards its general conditions, and also in part to the provision made under section 95 of the Constitution permitting the imposition in Western Australia of interstate Customs duties on a sliding scale, the revenue per head in 1901-2 reached the abnormal sum of £8 Os. 11d., or nearly three times the Commonwealth average for the year. A rapid decline has since been in evidence, but notwithstanding this the revenue per head for 1907-8 was £4 17s. 2d., or nearly 36 per cent. more than the average for the Commonwealth. For 1907-8 three of the States (New South Wales, Queensland, and Western Australia) exceeded the Commonwealth average per head, the other three falling short of it.

3. Proportions Collected in respect of the several States.—In the following table particulars are given of the percentage which each State's contribution for the several years was on the total Commonwealth revenue:—

PROPORTION OF REVENUE COLLECTED IN RESPECT OF EACH STATE,

1901 TO 1907-8.

| State. | Half-year to 30th June, 1901. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------|-------------------------------|---------|---------|---------|---------|---------|---------|---------|
| | % | % | % | % | % | % | % | % |
| N.S.W. ... | 26.49 | 32.70 | 36.27 | 35.82 | 35.07 | 36.31 | 37.26 | 38.73 |
| Victoria ... | 31.39 | 26.35 | 25.83 | 26.67 | 27.75 | 27.71 | 27.57 | 27.06 |
| Queensland | 16.48 | 14.26 | 12.92 | 12.54 | 12.48 | 13.05 | 13.30 | 19.10 |
| S. Australia | 9.05 | 8.66 | 7.82 | 8.28 | 8.32 | 8.32 | 8.68 | 9.03 |
| W. Australia | 11.42 | 13.82 | 13.40 | 12.84 | 12.49 | 10.83 | 9.48 | 8.46 |
| Tasmania ... | 5.17 | 4.21 | 3.76 | 3.85 | 3.89 | 3.78 | 3.71 | 3.62 |
| C'wealth... | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

A comparison of the percentages for 1907-8 with those for 1901-2 reveals the fact that, whilst the proportion of the Commonwealth revenue contributed by New South Wales has during the six years increased considerably, and that contributed by Victoria and South Australia has increased moderately, those for Western Australia, Queensland, and Tasmania exhibit decreases, the extent of the decrease being most marked in the case of Western Australia, where a fall in percentage took place from 13.82 in 1901-2 to 8.46 in 1907-8. This rapid decline in Western Australia is due to a variety of causes, the three most important being:—(i.) The abolition of interstate duties, (ii.) the increase in interstate trade, and (iii.) the gradual tendency to equalisation of conditions with those existing in the eastern States.

In view of the various proposals for adjusting the financial relations of the Commonwealth and the States on a *per capita* basis, a comparison of the proportion of Commonwealth revenue collected in respect of each State with that State's proportion of the total Commonwealth population is of considerable interest:—

COMPARISON OF REVENUE AND POPULATION PROPORTIONS, 1907-8.

| Particulars. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | Cwlth. |
|------------------------------------|--------|-------|---------|------|------|------|--------|
| | % | % | % | % | % | % | % |
| Percentage on Commonwealth revenue | 38.73 | 27.06 | 13.10 | 9.03 | 8.46 | 3.62 | 100.00 |
| „ „ „ population | 37.38 | 29.74 | 12.91 | 9.36 | 6.23 | 4.38 | 100.00 |

In the case of New South Wales, Queensland, and Western Australia the revenue percentage is higher than the population percentage, while in Victoria, South Australia,

and Tasmania the population percentage is the higher. The most extensive proportionate divergence occurs in the case of Western Australia.

4. **Details of Revenue, 1907-8.**—The principal revenue-producing departments of the Commonwealth are the Customs, Excise, and Postal, the Customs collections for 1907-8 representing more than 62 per cent. of the total revenue, Excise about 15½ per cent., and Postal nearly 22 per cent. Details of the Commonwealth revenue collected in respect of each State for the year 1907-8 are given in the following table:—

COMMONWEALTH REVENUE, 1907-8.

| Source of Revenue. | Revenue Collected in respect of— | | | | | | Total Revenue Collected by C'wealth Govt. |
|-----------------------------------|----------------------------------|------------------|------------------|------------------|------------------|----------------|---|
| | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tasmania. | |
| | £ | £ | £ | £ | £ | £ | £ |
| Customs ... | 3,672,072 | 2,507,704 | 1,188,494 | 812,097 | 830,005 | 330,736 | 9,341,108 |
| Excise ... | 842,590 | 704,434 | 309,637 | 199,989 | 168,925 | 78,669 | 2,304,244 |
| Postal ... | 1,278,107 | 834,367 | 451,075 | 338,193 | 266,510 | 131,844 | 3,300,096 |
| Defence ... | 1,029 | 1,234 | 10,513 | 374 | 278 | 137 | 13,565 |
| Patents ... | 5,424 | 4,631 | 2,590 | 1,607 | 1,755 | 1,414 | 17,421 |
| Trade Marks, Copyrights & Designs | 3,242 | 2,568 | 1,112 | 807 | 546 | 382 | 8,657 |
| New revenue... | 9,658 | 7,683 | 3,335 | 2,418 | 1,611 | 1,132 | 25,837 |
| Miscellaneous | 4,633 | 1,115 | 862 | 266 | 1,102 | 128 | 8,106 |
| Total ... | 5,816,755 | 4,063,736 | 1,967,618 | 1,355,751 | 1,270,732 | 544,442 | 15,019,034 |

5. **Sources of Revenue.**—The following table furnishes particulars concerning the Commonwealth revenue derived from each source since the establishment of Federation:—

SOURCES OF COMMONWEALTH REVENUE, 1901 to 1907-8.

| Sources of Revenue. | Half-year to 30th June, 1901. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-----------------------------------|-------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| Customs ... | 3,602,194 | 7,669,970 | 8,213,448 | 7,577,734 | 6,992,592 | 7,089,379 | 7,660,874 | 9,341,108 |
| Excise ... | 548,395 | 1,224,349 | 1,471,607 | 1,528,024 | 1,806,938 | 1,910,106 | 1,987,652 | 2,304,244 |
| Postal ... | 740,665 | 2,372,881 | 2,404,730 | 2,510,203 | 2,632,551 | 2,824,348 | 3,128,574 | 3,300,096 |
| Defence ... | 3,304 | 10,657 | 9,329 | 3,885 | 7,465 | 8,106 | 5,112 | 13,565 |
| Patents ... | ... | ... | ... | ... | 10,559 | 23,936 | 18,017 | 17,421 |
| Trade Marks, Copyrights & Designs | ... | ... | ... | ... | ... | ... | 6,890 | 8,657 |
| New Revenue | 25 | 2,775 | 4,710 | 5,100 | 7,355 | 11,854 | 12,529 | 25,837 |
| M'cellaneous | 1,173 | 16,373 | 2,113 | 6,052 | 8,138 | 14,196 | 13,713 | 8,106 |
| Total ... | 4,895,756 | 11,296,985 | 12,105,937 | 11,630,998 | 11,465,598 | 11,881,925 | 12,832,891 | 15,019,034 |

The maximum annual collection of Customs revenue during the period was the total of £9,341,108 obtained during 1907-8, the nearest approach to this figure being that of £8,213,448 obtained during the financial year 1902-3. The Customs revenue for 1906-7 was practically identical with that for 1901-2. The minimum annual collection was £6,992,592 in 1904-5. In the case of Excise and Postal revenue the amounts collected have increased continuously from year to year, the Excise revenue for 1907-8 exceeding that for 1901-2 by no less than 88 per cent., while the 1907-8 Postal revenue shewed an advance of 39 per cent. on that for 1901-2.

6. **Customs.**—As already noted, several of the provisions of the Constitution have been made dependent for their date of commencement on the imposition of uniform duties of Customs. Thus the book-keeping system and the Western Australian special tariff provisions both hinged upon the date on which the uniform duties of Customs were imposed. The Bill to provide for the collection of such duties was introduced in the Commonwealth House of Representatives on 9th October, 1901, and, in accordance with the usual practice, a resolution to protect the revenue and provide for the collection forthwith of the duties specified in the Bill, was duly carried. This date, 9th October, 1901, is consequently that on which the uniform duties of Customs are considered as having been imposed. A reference to the various enactments of the Commonwealth Legislature relative to the imposition of Customs duties will be found in Section XV., "Commerce," pages 593 to 596.

7. **Customs Revenue, 1907-8.**—The Customs revenue, after deduction of drawbacks and refunds, collected in respect of the several States during the year 1907-8, is given hereunder, details being furnished for the principal classes of dutiable articles imported :—

COMMONWEALTH CUSTOMS REVENUE, 1907-8.

| Classes. | Customs Revenue Collected in respect of— | | | | | | Total for Commonwealth. |
|--------------------------|--|------------------|------------------|----------------|----------------|----------------|-------------------------|
| | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | |
| | £ | £ | £ | £ | £ | £ | £ |
| Stimulants ... | 910,795 | 559,842 | 352,182 | 149,282 | 236,515 | 72,808 | 2,281,424 |
| Narcotics ... | 381,544 | 320,122 | 133,429 | 74,860 | 101,448 | 46,593 | 1,057,996 |
| Sugar ... | 23,795 | 16,343 | 2,530 | 4,600 | 2,272 | 1,959 | 51,499 |
| Agricultural products | 320,154 | 201,930 | 113,069 | 54,745 | 89,990 | 26,638 | 806,526 |
| Apparel and textiles ... | 824,178 | 606,273 | 214,636 | 205,593 | 134,518 | 78,476 | 2,063,674 |
| Metals and machinery | 429,418 | 210,176 | 151,827 | 100,783 | 102,627 | 35,688 | 1,030,519 |
| Oils, paints, etc. ... | 69,708 | 54,154 | 30,913 | 22,095 | 14,893 | 6,077 | 197,840 |
| Earthenware, etc. ... | 101,943 | 84,820 | 29,289 | 26,189 | 26,315 | 9,645 | 278,201 |
| Drugs and chemicals ... | 28,688 | 19,228 | 11,734 | 6,854 | 8,198 | 2,579 | 77,281 |
| Wood, wicker, and cane | 130,757 | 129,602 | 15,963 | 51,775 | 22,871 | 9,731 | 360,699 |
| Jewellery, etc. ... | 105,278 | 63,294 | 33,244 | 27,753 | 17,423 | 9,843 | 256,835 |
| Leather, etc. ... | 85,835 | 56,904 | 24,093 | 23,294 | 21,440 | 7,352 | 218,918 |
| Paper and stationery ... | 77,114 | 57,511 | 20,357 | 18,507 | 13,959 | 6,365 | 193,813 |
| Vehicles ... | 60,468 | 35,889 | 18,496 | 14,964 | 10,017 | 8,169 | 148,003 |
| Musical instruments ... | 34,463 | 31,020 | 10,318 | 8,367 | 4,163 | 2,574 | 90,905 |
| Miscellaneous articles | 75,379 | 51,709 | 22,084 | 18,755 | 18,990 | 4,865 | 191,782 |
| Other receipts ... | 12,555 | 8,887 | 4,330 | 3,681 | 4,366 | 1,374 | 35,193 |
| Total Customs... | 3,672,072 | 2,507,704 | 1,188,494 | 812,097 | 830,005 | 330,736 | 9,341,108 |

The figures given in the above table represent the net amount of Customs revenue credited to each State, after adjustment has been made in accordance with section 93 of the Constitution in respect of duties collected in one State on goods subsequently passing for consumption into another State.

8. **Customs Revenue for Past Six Years.**—Corresponding particulars for the Commonwealth as a whole, for the six years 1902-3 to 1907-8, are furnished in the following table :—

COMMONWEALTH CUSTOMS REVENUE, 1902-3 to 1907-8.

| Classes. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|----------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | £ | £ | £ | £ | £ | £ |
| Stimulants ... | 2,113,138 | 2,080,677 | 2,057,431 | 2,098,712 | 2,223,431 | 2,281,424 |
| Narcotics ... | 923,990 | 965,202 | 922,548 | 945,286 | 941,337 | 1,057,996 |
| Sugar ... | 519,451 | 500,763 | 192,385 | 129,692 | 143,830 | 51,499 |
| Agricultural products ... | 1,570,723 | 1,082,110 | 782,705 | 812,596 | 738,612 | 806,526 |
| Apparel and textiles ... | 1,275,322 | 1,240,230 | 1,354,476 | 1,416,977 | 1,578,414 | 2,063,674 |
| Metals and machinery ... | 598,107 | 489,086 | 464,683 | 482,427 | 625,227 | 1,030,519 |
| Oils, paints, etc. ... | 114,873 | 126,436 | 121,794 | 124,157 | 141,314 | 197,840 |
| Earthenware, etc. ... | 155,224 | 150,238 | 138,855 | 150,724 | 170,332 | 278,201 |
| Drugs and chemicals ... | 58,420 | 61,415 | 59,838 | 57,652 | 60,365 | 77,281 |
| Wood, wicker, and cane ... | 192,835 | 202,466 | 204,686 | 187,482 | 219,433 | 360,699 |
| Jewellery, etc. ... | 164,433 | 162,163 | 168,238 | 173,428 | 210,818 | 256,835 |
| Leather, etc. ... | 177,870 | 163,275 | 162,228 | 154,038 | 172,459 | 218,918 |
| Paper and stationery ... | 108,012 | 106,230 | 108,184 | 112,052 | 145,241 | 193,813 |
| Vehicles ... | 65,273 | 72,380 | 81,648 | 77,590 | 101,782 | 148,003 |
| Musical instruments ... | 41,504 | 46,827 | 47,712 | 50,672 | 60,117 | 90,905 |
| Miscellaneous articles ... | 78,542 | 81,173 | 85,624 | 80,112 | 97,403 | 191,782 |
| Other receipts ... | 55,731 | 47,063 | 39,557 | 35,782 | 30,759 | 35,193 |
| Total Customs ... | 8,213,448 | 7,577,734 | 6,992,592 | 7,089,379 | 7,660,874 | 9,341,108 |

It will be seen that throughout the period here dealt with the Customs revenue from stimulants and narcotics has represented, approximately, 40 per cent. of the total Customs revenue. The other principal articles from which Customs revenue was derived were "apparel and textiles," "agricultural products," and "metals and machinery." The most marked increase in the amount of duty collected is in the class of "apparel and textiles" the revenue under this head for 1907-8 exceeding that for 1902-3 by £788,352. The most marked decreases took place in the case of "agricultural products" and "sugar," the former declining during the period by £764,197 and the latter by £467,952. The former of these decreases is to a large extent due to the fact that the figures for 1902-3 were somewhat abnormal owing to the extraordinary importations of these commodities necessitated by the drought of 1902, while the latter has resulted in large measure from the increased local production of sugar, which the Commonwealth Government has aimed at encouraging.

9. **Excise.**—The commodities on which Excise duties are levied are beer, spirits, starch, sugar, and tobacco, whilst the department also obtains a small revenue from the granting of licenses for the manufacture of stimulants and narcotics.

The revenue collected in respect of each State during 1907-8, under each of these heads, is shewn in the following table:—

COMMONWEALTH EXCISE REVENUE, 1907-8.

| Particulars. | Excise Revenue Collected in respect of— | | | | | | Total for Commonwealth. |
|-------------------------|---|----------------|----------------|----------------|----------------|---------------|-------------------------|
| | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | |
| | £ | £ | £ | £ | £ | £ | |
| Beer ... | 183,973 | 187,468 | 766,880 | 40,324 | 56,527 | 20,548 | 555,720 |
| Spirits ... | 114,855 | 114,362 | 63,450 | 44,784 | 10,397 | 3,915 | 351,763 |
| Starch ... | 9,216 | 9,238 | 2,907 | 1,835 | 1,828 | 893 | 25,917 |
| Sugar ... | 266,876 | 226,638 | 103,272 | 63,788 | 46,238 | 35,116 | 741,928 |
| Tobacco ... | 265,128 | 163,937 | 70,233 | 48,100 | 53,129 | 18,072 | 618,599 |
| Licenses ... | 2,542 | 2,750 | 2,895 | 1,132 | 806 | 125 | 10,250 |
| Agric. machinery ... | ... | 41 | ... | 26 | ... | ... | 67 |
| Total Excise ... | 842,590 | 704,434 | 309,637 | 199,989 | 168,925 | 78,669 | 2,304,244 |

Of the total Excise revenue collected, beer, spirits, and tobacco were responsible for rather more than 66 per cent. The figures given in this table are those obtained after deducting drawbacks and refunds and making the necessary adjustments between the States in connection with goods produced or manufactured in one State and consumed in another.

The amount of £67 shewn in the above table under the head of agricultural machinery was collected under the provisions of Act No. 16 of 1906, which imposed Excise duties on agricultural machinery but provided that the Act should not apply to goods manufactured under certain conditions of remuneration of labour. In June, 1908, a judgment was delivered by the High Court to the effect that the Act was not authorised by the Constitution, and instructions were then issued that moneys collected under the Act may be refunded.

10. **Excise Collections, 1901 to 1907-8.**—Particulars concerning the amount of Excise collected under each head from the inauguration of Federation to 30th June, 1908, are given hereunder:—

COMMONWEALTH EXCISE REVENUE, 1901 to 1907-8.

| Particulars. | Half-Yr. to 30th June, 1901. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|---------------------|------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| Beer ... | 83,120 | 519,790 | 500,464 | 483,351 | 491,492 | 502,399 | 513,473 | 555,720 |
| Spirits | 4,742 | 198,055 | 225,712 | 249,717 | 262,035 | 276,516 | 285,295 | 351,763 |
| Starch | ... | 1,766 | 18,937 | 21,206 | 22,471 | 24,597 | 27,321 | 25,917 |
| Sugar | ... | 189,545 | 261,517 | 272,117 | 503,627 | 536,079 | 546,590 | 741,928 |
| Tobacco | 110,374 | 304,954 | 453,171 | 491,434 | 516,761 | 560,409 | 604,960 | 618,599 |
| Licenses | 760 | 10,239 | 11,806 | 10,199 | 10,552 | 10,106 | 10,043 | 10,250 |
| Agric. mach'y | ... | ... | ... | ... | ... | ... | ... | 67 |
| Total Excise | 198,996 | 1,224,349 | 1,471,607 | 1,528,024 | 1,806,938 | 1,910,106 | 1,987,682 | 2,304,244 |

Comparing the Excise collections for 1907-8 with those for 1901-2 it will be seen that whilst the revenue obtained from spirits, sugar, and tobacco increased rapidly during the period, that derived from beer and from starch increased moderately, while the revenue from licenses was practically the same in 1907-8 as in 1901-2.

11. **Commonwealth Taxation.**—Under section 51, sub-section (ii.) of the Constitution, power is given to the Commonwealth Parliament to make laws with respect to taxation, but so as not to discriminate between States or parts of States. Section 90 of the Constitution makes the power of the Commonwealth Parliament to impose Customs and Excise duties an exclusive one, but it would appear that as regards all other forms of taxation the States and Commonwealth possess concurrent powers. The question of the imposition by the Commonwealth Parliament of direct taxes such as land and income taxes is one which has been the subject of considerable discussion, and the opinion has been expressed that the intention of the framers of the Constitution was that of restricting the taxation powers of the Commonwealth to the imposition of Customs and Excise duties except in cases of great national peril. Whatever the intention of the framers may have been in this matter, the Constitution itself contains no such provision, and the Commonwealth Parliament is given an absolutely free hand in the imposition of taxation. Up to the present time the only taxes so levied have been those of Customs and Excise, referred to in detail in the foregoing paragraphs. The total amounts obtained from these two sources in respect of each of the States since the inauguration of Federation are given hereunder:—

COMMONWEALTH TAXATION, 1901 to 1907-8.

| Year. | Customs and Excise Revenue Collected in respect of— | | | | | | Total for Commonwealth. |
|----------------------|---|-----------|-----------|-----------|-----------|-----------|-------------------------|
| | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | |
| Half-year to 30/6/01 | £ | £ | £ | £ | £ | £ | £ |
| 1901-2 | 1,019,008 | 1,356,099 | 710,830 | 351,953 | 491,371 | 221,328 | 4,150,589 |
| 1902-3 | 2,812,731 | 2,376,524 | 1,297,663 | 698,647 | 1,335,614 | 373,140 | 8,894,819 |
| 1903-4 | 3,478,742 | 2,499,014 | 1,260,934 | 639,756 | 1,396,002 | 360,607 | 9,685,055 |
| 1904-5 | 3,229,786 | 2,443,505 | 1,131,761 | 699,792 | 1,258,725 | 342,189 | 9,105,758 |
| 1905-6 | 3,033,617 | 2,488,842 | 1,095,476 | 678,930 | 1,172,064 | 330,651 | 8,799,530 |
| 1906-7 | 3,233,922 | 2,537,070 | 1,183,244 | 688,041 | 1,030,813 | 326,395 | 8,999,485 |
| 1907-8 | 3,573,313 | 2,719,431 | 1,277,914 | 781,326 | 952,617 | 343,455 | 9,648,556 |
| 1907-8 | 4,614,662 | 3,212,138 | 1,498,131 | 1,012,086 | 998,930 | 409,405 | 11,645,352 |

12. **Taxation per Head.**—In the following table are given particulars concerning the amount of Commonwealth taxation per head of population contributed by the several States during the period from 1st January, 1901, to 30th June, 1908:—

COMMONWEALTH TAXATION PER HEAD, 1901 to 1907-8.

| Year. | Customs and Excise Revenue per Head of Population Collected in respect of— | | | | | | Total for Commonwealth. |
|---------------------|--|-----------|---------|----------|----------|---------|-------------------------|
| | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | |
| Half-yr. to 30/6/01 | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| 1901-2 ... | 0 15 1 | 1 2 7 | 1 8 6 | 0 19 5 | 2 13 4 | 1 5 8 | 1 2 0 |
| 1902-3 ... | 2 0 11 | 1 19 3 | 2 11 4 | 1 18 2 | 6 17 7 | 2 2 10 | 2 6 6 |
| 1903-4 ... | 2 9 7 | 2 1 3 | 2 9 4 | 1 17 7 | 6 11 10 | 2 0 8 | 2 9 11 |
| 1904-5 ... | 2 5 3 | 2 0 5 | 2 3 11 | 1 17 11 | 5 10 11 | 1 18 2 | 2 6 5 |
| 1905-6 ... | 2 1 8 | 2 1 2 | 2 2 0 | 1 16 5 | 4 16 9 | 1 16 8 | 2 4 2 |
| 1906-7 ... | 2 3 4 | 2 1 8 | 2 4 10 | 1 16 5 | 4 0 11 | 1 16 1 | 2 4 5 |
| 1907-8 ... | 2 6 10 | 2 4 2 | 2 7 9 | 2 0 9 | 3 12 9 | 1 18 2 | 2 6 10 |
| 1907-8 ... | 2 17 7 | 2 11 6 | 2 15 4 | 2 11 6 | 3 16 5 | 2 4 6 | 2 15 6 |

13. **Postal Revenue.**—Besides the Department of Trade and Customs the only large revenue-earning Commonwealth department is that under the control of the Postmaster-General, comprising the three branches of Post, Telegraph, and Telephone. This department was taken over by the Commonwealth on 1st March, 1901, and consequently contributed only four months' revenue to the Commonwealth total for the financial period ended 30th June, 1901. Particulars relative to the net postal revenue collected in respect of the several States since the federalisation of the department are given hereunder:—

COMMONWEALTH POSTAL REVENUE, 1901 to 1907-8.

| Year. | Postal Revenue Collected in respect of— | | | | | | Total for Commonwealth. |
|-----------------------|---|-----------|---------|----------|----------|---------|-------------------------|
| | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tas. | |
| Four mths. to 30/6/01 | £ | £ | £ | £ | £ | £ | £ |
| 1901-2 ... | 276,936 | 177,931 | 95,586 | 90,703 | 67,735 | 31,774 | 740,665 |
| 1902-3 ... | 873,312 | 591,470 | 312,905 | 277,812 | 225,752 | 91,610 | 2,372,861 |
| 1903-4 ... | 906,798 | 622,700 | 300,737 | 255,214 | 225,244 | 94,037 | 2,404,730 |
| 1904-5 ... | 941,529 | 650,583 | 324,013 | 258,461 | 230,858 | 104,759 | 2,510,203 |
| 1905-6 ... | 980,151 | 683,480 | 331,774 | 266,719 | 257,503 | 112,924 | 2,632,551 |
| 1906-7 ... | 1,065,633 | 735,563 | 359,752 | 291,929 | 252,741 | 118,730 | 2,824,348 |
| 1907-8 ... | 1,191,489 | 797,972 | 422,346 | 327,269 | 259,688 | 129,810 | 3,128,574 |
| 1907-8 ... | 1,278,107 | 834,367 | 451,075 | 338,193 | 266,510 | 131,844 | 3,300,096 |

A comparison of the figures for 1907-8 with those for 1901-2 indicates a substantial increase in the postal revenue of all the States, ranging from 46 per cent. in the case of New South Wales to 18 per cent. in that of Western Australia for the period of six years, and representing for the whole Commonwealth an increase of 39 per cent.

14. **Postal Revenue per Head.**—The postal revenue per head of population varies considerably in the several States, being highest in the case of Western Australia and lowest in that of Victoria. Particulars for the seven complete financial years since Federation are as follows:—

COMMONWEALTH POSTAL REVENUE PER HEAD, 1901-2 to 1907-8.

| Year. | Postal Revenue per Head of Population Collected in respect of— | | | | | | Total for Commonwealth. |
|------------|--|-----------|---------|----------|----------|---------|-------------------------|
| | N.S.W. | Victoria. | Qld. | S. Aust. | W. Aust. | Tas. | |
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| 1901-2 ... | 0 12 8 | 0 9 9 | 0 12 4 | 0 15 2 | 1 3 3 | 0 10 6 | 0 12 5 |
| 1902-3 ... | 0 12 11 | 0 10 3 | 0 11 9 | 0 13 11 | 1 1 1 | 0 10 7 | 0 12 5 |
| 1903-4 ... | 0 13 2 | 0 10. 9 | 0 12 7 | 0 14 0 | 1 0 4 | 0 11 8 | 0 12 9 |
| 1904-5 ... | 0 13 5 | 0 11 4 | 0 12 9 | 0 14 4 | 1 1 3 | 0 12 6 | 0 13 3 |
| 1905-6 ... | 0 14 3 | 0 12 1 | 0 13 8 | 0 15 5 | 0 19 10 | 0 13 1 | 0 13 11 |
| 1906-7 ... | 0 15 7 | 0 13 0 | 0 15 9 | 0 17 1 | 0 19 10 | 0 14 5 | 0 15 2 |
| 1907-8 ... | 0 16 4 | 0 13 4 | 0 16 8 | 0 17 3 | 1 0 5 | 0 14 4 | 0 15 9 |

15. **Details of Postal Revenue, 1907-8.**—Particulars relative to postal revenue are, in the Treasury statements, now classified under six heads:—(i.) private boxes and bags; (ii.) commission on money orders and postal notes; (iii.) telegraphs; (iv.) telephones; (v.) postage, and (vi.) miscellaneous. Details under these heads concerning the revenue collected in respect of the several States for the year ended 30th June, 1908, are given hereunder:—

COMMONWEALTH POSTAL REVENUE, 1907-8.

| Particulars. | Postal Revenue Collected in respect of— | | | | | | Total for Commonwealth. |
|--|---|----------------|----------------|----------------|----------------|----------------|-------------------------|
| | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | |
| | £ | £ | £ | £ | £ | £ | £ |
| Private boxes and bags ... | 6,561 | 2,960 | 2,723 | 1,245 | 1,592 | 787 | 15,863 |
| Commission—Money orders and postal notes ... | 39,008 | 23,915 | 11,067 | 6,093 | 9,991 | 4,550 | 94,624 |
| Telegraphs ... | 206,038 | 143,627 | 107,800 | 96,864 | 76,158 | 19,291 | 650,426 |
| Telephones ... | 161,016 | 122,434 | 46,103 | 34,386 | 32,791 | 14,011 | 410,741 |
| Postage ... | 834,915 | 522,994 | 270,654 | 185,506 | 138,520 | 91,183 | 2,043,777 |
| Miscellaneous ... | 29,921 | 18,437 | 12,728 | 14,099 | 7,458 | 2,017 | 84,660 |
| Total ... | 1,278,107 | 834,367 | 451,075 | 333,193 | 266,510 | 131,344 | 3,300,096 |

16. **Details of Postal Revenue, 1901 to 1907-8.**—Particulars concerning the postal revenue of the Commonwealth for each of the years which have elapsed since the date of Federation are contained in the following table. Owing to the change in classification of postal revenue, which took place in 1903-4, full details for the earlier years are not available:—

COMMONWEALTH POSTAL REVENUE, 1901 to 1907-8.

| Particulars. | 1st March to 30th June, 1901. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|---|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| Private boxes and bags ... | 2,647 | 17,904 | 16,517 | 15,491 | 15,791 | 14,975 | 15,933 | 15,868 |
| Commission— Money orders and postal notes | 24,860 | 83,759 | 78,624 | 81,456 | 84,891 | 88,868 | 92,240 | 94,624 |
| Telegraphs ... | 708,037 | 2,208,346 | 2,264,262 | 498,957 | 525,054 | 565,422 | 598,167 | 650,426 |
| Telephones ... | | | | 284,327 | 312,320 | 332,214 | 388,226 | 410,741 |
| Postage ... | 5,121 | 62,852 | 45,327 | 1,556,362 | 1,620,465 | 1,754,790 | 1,968,950 | 2,043,777 |
| Miscellaneous ... | | | | 71,610 | 74,430 | 48,079 | 75,058 | 84,660 |
| Total ... | 740,665 | 2,372,861 | 2,404,730 | 2,510,203 | 2,632,551 | 2,824,348 | 3,128,574 | 3,300,096 |

17. **Revenue from Patents.**—Under the Commonwealth Patents Act 1903, which was assented to on 22nd October, 1903, and came into force on 1st June, 1904, the complete control of the Patents administration of Australia passed from the several State Governments to that of the Commonwealth, which, under section 19 (a) of the Act mentioned, was authorised to collect for each State the fees to which it was entitled under the State Act in respect of proceedings then pending.

The revenue collected in respect of each of the States since the Act came into force is shewn in the following table:—

COMMONWEALTH PATENTS REVENUE, 1903-4 to 1907-8.

| Year. | Patents Revenue Credited to— | | | | | | Total for Common- wealth. |
|------------------------|------------------------------|-----------|---------|----------|----------|-------|---------------------------------|
| | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | |
| | £ | £ | £ | £ | £ | £ | |
| 1903-4 (June only) ... | 436 | 432 | 226 | 170 | 120 | 134 | 1,518 |
| 1904-5 ... | 2,035 | 2,899 | 1,621 | 1,244 | 1,129 | 1,631 | 10,559 |
| 1905-6 ... | 6,532 | 6,609 | 3,803 | 2,407 | 2,318 | 2,767 | 23,936 |
| 1906-7 ... | 4,976 | 4,702 | 2,908 | 1,772 | 1,997 | 1,662 | 18,017 |
| 1907-8 ... | 5,424 | 4,631 | 2,590 | 1,607 | 1,755 | 1,414 | 17,421 |

It may be noted that, in their financial statement for 1903-4, the Commonwealth Treasury have credited the patents revenue for that year partly to "Miscellaneous Receipts" and partly to "New Revenue."

18. **Revenue from Trade Marks, etc.**—Under the several Acts of the Commonwealth Legislature relating to trade marks, copyrights, and designs, the Commonwealth Government has assumed the exclusive administration of such matters, and now collects all revenue accruing therefrom. The financial year 1906-7 was the first in which this item appeared in the Commonwealth accounts, the total amount received being £6390, credited as follows:—New South Wales, £2305; Victoria, £1896; Queensland, £955; South Australia, £594; Western Australia, £437; and Tasmania, £303. For the year 1907-8 the figures were:—New South Wales, £3242; Victoria, £2568; Queensland, £1112; South Australia, £807; Western Australia, £546; Tasmania, £382; total for Commonwealth, £8657.

19. **Defence Revenue.**—The revenue appearing under the head of "Defence" comprises the receipts derived from the sale of stores and clothing, from fines, etc., and for 1907-8 amounted to only £13,565.

20. **New Revenue.**—Under this head are included receipts in connection with exemption certificates under the Immigration Restriction Act, High Court fees, industrial fees, examination fees, forfeited electoral deposits, etc. The Surplus Revenue Act passed in 1908 defines the term "New Revenue," and authorises the Treasurer to decide what items of revenue should be carried to this head. This revenue is divided amongst the States *per capita*. The total revenue of this nature collected during 1907-8 was £25,837.

(C) **Expenditure.**

1. **Nature of Commonwealth Expenditure.**—The disbursements by the Commonwealth Government of the revenue collected by it fall naturally, under the "book-keeping" system, into three classes, viz.:—

- a) Expenditure on transferred services.
- (b) Expenditure on new services.
- (c) Payment to States of surplus revenue.

Of these three, only the two first are actual expenditure, the last being merely a transfer, the actual expenditure being incurred by the States. In accordance with the provisions of the Constitution the expenditure on transferred services is debited to the several States in respect of which such expenditure has been incurred, while the expenditure on new services is distributed *per capita*. Surplus Commonwealth revenue is paid to the States monthly. During the earlier years of Federation, viz., until the end of the year 1903-4, new works, etc., for transferred departments were treated as transferred expenditure, and were charged to the States on whose behalf the expenditure had been incurred. In subsequent years all such expenditure has been regarded as expenditure on new services and has been distributed amongst the States *per capita*.

2. **Expenditure Debited to the Several States.**—The total expenditure by the Commonwealth Government during the period 1901 to 1907-8 and the amounts debited to the several States are shewn in the following table:—

COMMONWEALTH EXPENDITURE, 1901 to 1907-8.

| State to which Debited. | Half-year to 30/6/1901. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-------------------------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. | 409,391 | 1,312,534 | 1,342,929 | 1,485,095 | 1,492,671 | 1,572,901 | 1,756,986 | 2,199,283 |
| Victoria | 360,026 | 1,056,771 | 1,018,829 | 1,098,015 | 1,166,532 | 1,198,382 | 1,336,589 | 1,686,028 |
| Q'sland | 224,029 | 706,611 | 652,662 | 656,089 | 675,474 | 691,898 | 768,201 | 929,350 |
| S. Aust. | 111,378 | 358,259 | 367,392 | 404,577 | 402,135 | 425,792 | 468,886 | 564,088 |
| W. Aust. | 114,178 | 339,589 | 365,038 | 424,495 | 400,565 | 415,143 | 441,533 | 518,997 |
| Tas. ... | 77,051 | 158,982 | 154,521 | 184,248 | 185,452 | 193,426 | 215,122 | 264,383 |
| Cwth. | 1,296,053 | 3,932,746 | 3,901,371 | 4,252,519 | 4,322,829 | 4,497,542 | 4,987,317 | 6,162,129 |

In all the States the expenditure for 1907-8 was higher than that for any preceding year, and was considerably higher than the expenditure for 1901-2. New South Wales, with an advance of £886,749, exhibited the largest numerical and also the largest proportional increase, the latter amounting to no less than 67½ per cent. Tasmania, whose expenditure increased by £105,401, had the next highest proportional increase, viz., 66 per cent.

3. **Expenditure per Head.**—Particulars concerning the Commonwealth expenditure per head in the several States are furnished hereunder:—

COMMONWEALTH EXPENDITURE PER HEAD, 1901 to 1907-8.

| State. | Half-year to 30/6/1901. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-----------|----------------------------|---------|---------|---------|---------|---------|---------|---------|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| N.S.W. | 0 6 1 | 0 19 1 | 0 19 2 | 1 0 10 | 1 0 6 | 1 1 1 | 1 3 0 | 1 8 0 |
| Victoria | 0 6 0 | 0 17 5 | 0 16 10 | 0 18 2 | 0 19 3 | 0 19 8 | 1 1 8 | 1 7 0 |
| Q'island | 0 9 0 | 1 7 11 | 1 5 7 | 1 5 5 | 1 5 11 | 1 6 2 | 1 8 8 | 1 14 4 |
| S. Aust. | 0 6 2 | 0 19 7 | 1 0 0 | 1 1 11 | 1 1 7 | 1 2 6 | 1 4 5 | 1 8 9 |
| W. Aust. | 0 12 5 | 1 15 0 | 1 14 3 | 1 17 5 | 1 13 1 | 1 12 7 | 1 13 9 | 1 19 8 |
| Tas. | 0 8 11 | 0 18 3 | 0 17 5 | 1 0 6 | 1 0 7 | 1 1 4 | 1 3 11 | 1 8 9 |
| Cwth. | 0 6 10 | 1 0 7 | 1 0 1 | 1 1 8 | 1 1 8 | 1 2 2 | 1 4 3 | 1 9 4 |

4. Details of Expenditure.—Details of the expenditure of the Commonwealth Government since the inauguration of Federation are given hereunder:—

COMMONWEALTH EXPENDITURE, 1901 to 1907-8.

| Heads of Expenditure. | Half-Year to 30th June, 1901. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--|-------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| Transferred expenditure (incl. new works, etc.)— | | | | | | | | |
| Trade & Customs | 121,444 | 260,322 | 272,622 | 264,617 | 258,331 | 262,058 | 263,625 | 286,113 |
| Defence ... | 233,515 | 934,646 | 746,526 | 635,936 | 907,827 | 949,595 | 1,010,013 | 1,306,598 |
| Postal ... | 809,839 | 2,461,916 | 2,563,617 | 2,692,305 | 2,694,244 | 2,776,940 | 2,948,785 | 3,313,565 |
| Sundry depts. ... | ... | ... | ... | ... | ... | ... | ... | 52 |
| Refds & Advances | ... | ... | 3,042 | 30 | 118 | 25 | 778 | 15,689 |
| "Other" expenditure (excl. new works, etc.)— | 131,255 | 275,862 | 315,564 | 459,571 | 462,309 | 508,924 | 764,116 | 1,240,112 |
| Total ... | 1,296,053 | 3,932,746 | 3,901,371 | 4,252,519 | 4,322,829 | 4,497,542 | 4,987,317 | 6,162,129 |

During the six years between 1901-2 and 1907-8 the total cost of the several departments increased from £3,932,746 to £6,162,129, an increase of £2,229,383, or about 57 per cent. The expenditure in the Department of Trade and Customs increased during the period by only £25,791, or about 10 per cent., but the advances under the other heads were very extensive, amounting to £361,952, or 39 per cent. in the case of Defence; £851,701, or 35 per cent., in that of the Postal Department; and no less than £964,250, or 350 per cent., in the case of "other" expenditure, exclusive of new works, etc. It should be noted in this connection, however, that the increase of £851,701 in the postal expenditure was accompanied by an increase of £927,235 in the postal revenue, and that a very considerable portion of the increase in "other" expenditure was due to the payment of sugar bounties, which amounted to £584,622 in 1907-8, as against *nil* in 1901-2, and to the provision of £193,621 towards the Old Age Pension scheme to come into force on 1st July, 1909.

5. New Works, etc.—As previously mentioned the Commonwealth expenditure on new works, etc., for transferred departments was, prior to 1904-5, included under the head of "transferred" expenditure, but in that and subsequent years has been treated as "other" expenditure and debited to the States *per capita*. For convenience of comparison this expenditure has, in the foregoing table, been shown under the department for which it was incurred. Particulars of the expenditure in each year on new works, etc., are given in the following table:—

COMMONWEALTH EXPENDITURE ON "NEW WORKS, ETC.," 1901-2 to 1907-8.

| Departments. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-------------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Trade & Customs | 150 | 53 | 3,467 | 1,980 | 1,814 | 1,162 | 8,972 |
| Defence ... | 57,265 | 22,064 | 113,243 | 200,259 | 171,633 | 195,159 | 440,918 |
| Postal ... | 37,149 | 135,699 | 187,809 | 131,829 | 146,575 | 275,737 | 427,006 |
| Sundry depts. ... | ... | ... | ... | ... | ... | ... | 52 |
| Total ... | 94,564 | 157,816 | 304,519 | 334,068 | 320,022 | 472,058 | 876,948 |

It will be seen that the Commonwealth expenditure under this head has increased rapidly in recent years, the total for 1907-8 being nearly five and a-half times as great as that for 1902-3.

6. "Other" Expenditure.—In accordance with sections 89 and 93 of the Constitution, all expenditure of the Commonwealth other than that incurred solely for the maintenance or continuance as at the time of transfer of any department transferred from the State to the Commonwealth, is required to be apportioned to the several States, each being debited "according to the number of its people." In consequence of this provision all expenditure in connection with transferred departments on account of central office staffs is charged as "other" or new expenditure, and not as "transferred" expenditure. The effect of this is that the ordinary statement in which division is made into "transferred" and "other" expenditure does not, for the purpose of comparison, furnish such complete information as could be desired. It has therefore been deemed expedient to rearrange the items so as to obtain a more accurate statement of the cost of the several branches of the Commonwealth service. In this rearrangement the figures given for 1901-2 represent the cost of service actually rendered in that year, while those for 1902-3 and subsequent years represent in each case the payments made in the respective years. This has been done in order that a fair comparison might be instituted with succeeding years, 1901-2 having borne the very heavy arrears of the initial six months of Federation, and those attaching to the transferred departments at the date of transfer.

7. Cost of Departments, etc.—Prepared in the manner indicated in the preceding paragraph, the cost of the several branches of the Commonwealth service for the years 1901-2 to 1907-8 was as follows:—

COST OF COMMONWEALTH DEPARTMENTS, ETC., 1901-2 to 1907-8.

| Departments, etc. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-----------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Governor-General ... | 23,185 | 14,832 | 16,793 | 17,170 | 23,759 | 18,612 | 18,927 |
| Parliament ... | 122,796 | 103,939 | 192,354 | 149,934 | 132,527 | 177,061 | 153,414 |
| External Affairs ... | 32,876 | 34,518 | 31,953 | 36,516 | 39,484 | 67,241 | 55,061 |
| Attorney-General ... | 2,680 | 2,627 | 16,347 | 18,583 | 20,894 | 27,609 | 32,216 |
| Home Affairs... | 12,232 | 32,967 | 32,613 | 35,013 | 35,643 | 41,385 | 61,590 |
| Treasury ... | 10,466 | 14,111 | 14,625 | 15,993 | 17,528 | 17,768 | 20,413 |
| Trade and Customs ... | 262,503 | 339,633 | 370,368 | 406,041 | 442,614 | 634,328 | 914,973 |
| Defence ... | 861,218 | 766,880 | 855,764 | 934,593 | 970,345 | 1,035,795 | 1,334,744 |
| Postmaster-General... | 2,389,815 | 2,568,846 | 2,697,454 | 2,699,667 | 2,784,664 | 2,966,098 | 3,359,290 |
| All other Expenditure | 15,397 | 18,018 | 24,248 | 9,514 | 30,094 | 1,420 | 211,511 |
| Total ... | 3,733,218 | 3,901,371 | 4,252,519 | 4,322,829 | 4,497,542 | 4,987,317 | 6,162,129 |

The largeness of the expenditure under the head of Parliament in the years 1903-4 and 1906-7 was in great measure due to the fact that the general elections were held in these years, while the expenditure in connection with the sugar bounties is

mainly responsible for the rapid increase which has taken place in the cost of the Department of Trade and Customs. More detailed reference to the items included under the above general heads is furnished in the succeeding paragraphs.

8. **Governor-General.**—In section 3 of the Constitution it is enacted that, until the Commonwealth Parliament otherwise provides, there shall be payable out of the Consolidated Revenue Fund for the salary of the Governor-General an annual sum of ten thousand pounds, and a proviso is made that the salary of the Governor-General shall not be altered during his continuance in office. The total expenditure in connection with the Governor-General and his establishment for the seven years 1901-2 to 1907-8 is as follows:—

EXPENDITURE, GOVERNOR-GENERAL AND ESTABLISHMENT, 1901-2 to 1907-8.

| Details. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------------------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ |
| Salary ... | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Royal visit ... | 10,000 | — | — | — | — | — | — |
| Repairs, etc., Govt. Houses | 2,553 | 2,405 | 5,991 | 5,869 | 5,625 | 6,232 | 6,034 |
| Contingencies | 6,632 | 2,427 | 802 | 1,301 | 8,134 | 2,380 | 1,893 |
| Total ... | 29,185 | 14,832 | 16,793 | 17,170 | 23,759 | 18,612 | 18,927 |

The expenses connected with the Royal visit were responsible for the largeness of this item in 1901-2, while the heavy charge under the head of Contingencies in 1905-6 was to some extent due to payment of arrears of travelling expenses.

9. **Parliament.**—Under this head have been grouped all the items of expenditure connected with the Parliamentary Government of the Commonwealth, including the salaries of the Ministers and the allowances to senators and members of the House of Representatives. Details for the seven years 1901-2 to 1907-8 are furnished in the table given hereunder:—

EXPENDITURE, COMMONWEALTH PARLIAMENT, 1901-2 to 1907-8.

| Details. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ |
| Salaries of Ministers ... | 12,000 | 12,000 | 11,929 | 12,000 | 12,000 | 11,947 | 12,000 |
| Allowances to Senators ... | 14,437 | 14,344 | 14,263 | 14,400 | 14,400 | 14,367 | 19,446 |
| Allowances to Members of House of Representatives | 29,918 | 30,000 | 28,259 | 30,025 | 30,000 | 27,389 | 41,231 |
| Officers, staff, contingencies, etc. ... | 30,317 | 27,878 | 28,236 | 28,964 | 29,309 | 27,745 | 32,273 |
| Repairs, maintenance, etc. | 1,983 | 200 | 782 | 991 | 170 | 846 | 672 |
| Printing ... | 22,621 | 13,332 | 14,891 | 14,306 | 16,615 | 12,346 | 19,139 |
| Travelling expenses of Members and others ... | 8,659 | 7,553 | 8,966 | 8,548 | 8,425 | 9,373 | 8,982 |
| Insurance ... | 312 | 337 | 342 | 342 | 342 | 342 | 342 |
| Electoral Office ... | 773 | 1,207 | 3,638 | 3,581 | 2,934 | 5,085 | 5,824 |
| Election expenses ... | 1,776 | 522 | 47,388 | 2,555 | 1,925 | 36,113 | 4,080 |
| Referendum ... | ... | ... | ... | ... | ... | 793 | ... |
| Administration of Electoral Act ... | ... | 1,566 | 33,660 | 34,222 | 16,408 | 30,715 | 9,425 |
| Total ... | 122,796 | 108,939 | 192,354 | 149,934 | 132,528 | 177,061 | 153,414 |

In section 66 of the Constitution provision is made that there shall be payable out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of Ministers of State, an annual sum which, until Parliament otherwise provides, shall not exceed £12,000. This provision is still in force. Allowances to senators and members of the House of Representatives are also provided for in the Constitution, section 48 of which specifies that until Parliament otherwise provides each such allowance shall consist of £400 a year, reckoned from the day on which the member takes his seat. During the second session of the Commonwealth Parliament in 1907 the question of allowances to members was under consideration, and an Act was passed raising the annual allowance from £400 to £600, such increase to date from 1st July, 1907.

10. **External Affairs.**—Since the establishment of the Commonwealth the portfolio taken by the Prime Minister has, with two exceptions, been that of Minister of State for External Affairs. Under the control of this department is placed the expenditure in connection with the Executive Council, the London Office, and Papua: Particulars for the seven years 1901-2 to 1907-8 are as follows:—

EXPENDITURE, EXTERNAL AFFAIRS DEPARTMENT, 1901-2 to 1907-8.

| Details. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Chief Office ... | 7,718 | 9,491 | 8,308 | 7,500 | 7,500 | 9,248 | 9,172 |
| Executive Council | 1,263 | 1,477 | 1,103 | 830 | 836 | 887 | 870 |
| London Office ... | ... | ... | ... | ... | 673 | 1,559 | 2,215 |
| Papua ... | 20,000 | 20,000 | 20,000 | 21,003 | 20,000 | 23,626 | 25,084 |
| Rents, repairs, &c. | 1,732 | 377 | 142 | 191 | 437 | 498 | 469 |
| Miscellaneous ... | 2,163 | 3,173 | 2,400 | 6,992 | 10,038 | 31,423 | 17,251 |
| Total ... | 32,876 | 34,518 | 31,953 | 36,516 | 39,484 | 67,241 | 55,061 |

11. **Papua.**—The sums shewn in the above table as expenditure in connection with Papua represent the Commonwealth grants towards the cost of administering that territory, as well as certain additional amounts expended in 1904-5, 1906-7, and 1907-8. The ordinary revenue and expenditure of Papua are kept distinct from those of the Commonwealth. Apart from the Commonwealth contribution the principal source of revenue is the Custom House. Details for the seven years 1901-2 to 1907-8 are as follows:—

PAPUAN REVENUE, 1901-2 to 1907-8.

| Details. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Customs dues ... | 13,161 | 13,420 | 17,911 | 15,692 | 15,990 | 15,924 | 18,206 |
| Other collections | 3,707 | 5,687 | 4,316 | 3,582 | 4,246 | 5,889 | 7,813 |
| C'wealth grant | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 25,000 |
| Total ... | 36,868 | 39,107 | 42,227 | 39,274 | 40,236 | 41,813 | 51,019 |

One of the largest items of Papuan expenditure is the maintenance, etc., of vessels and boats, including the steam yacht "Merrie England," the total outlay under this head for 1907-8 being no less than £10,072. The expenditure on public justice for 1907-8 totalled £10,364, comprising "magistrates, etc.," £4782; "armed native constabulary," £3405, and gaols, £2177. The total expenditure for each of the seven years 1901-2 to 1907-8 was as follows:—

PAPUAN EXPENDITURE, 1901-2 to 1907-8.

| Particulars. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-------------------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ |
| Total expenditure | 38,467 | 37,577 | 35,492 | 36,217 | 41,804 | 45,336 | 48,525 |

12. **Attorney-General's Department.**—The rapid growth during recent years in the expenditure connected with this Department has been brought about in large measure by the creation and subsequent extension of the Federal High Court, the total cost of which for the year 1907-8 amounted to £22,522. Details for the seven years 1901-2 to 1907-8 are furnished hereunder:—

EXPENDITURE, ATTORNEY-GENERAL'S DEPARTMENT, 1901-2 to 1907-8.

| Details. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|---|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ |
| Attorney-General's Office | 2,575 | 2,475 | 2,443 | 2,626 | 3,219 | 3,540 | 4,286 |
| Crown Solicitor's Office... | ... | ... | 1,687 | 1,816 | 1,922 | 2,613 | 2,993 |
| Salaries of Justices of High Court ... | ... | ... | 7,023 | 9,500 | 9,500 | 18,815 | 15,500 |
| High Court expenses ... | ... | ... | 3,791 | 4,078 | 5,697 | 6,063 | 7,022 |
| Court of Conciliation and Arbitration ... | ... | ... | ... | 23 | 75 | 505 | 708 |
| Rent, repairs, etc. ... | 30 | 77 | 1,403 | 540 | 469 | 1,073 | 1,707 |
| Miscellaneous... | 75 | 75 | ... | ... | ... | ... | ... |
| Total ... | 2,680 | 2,627 | 16,347 | 18,583 | 20,882 | 27,609 | 32,216 |

13. **Home Affairs Department.**—The creation of new departments such as the Bureau of Census and Statistics, and the Meteorological Bureau, and the extension of the field of operations of the Public Works branch, all of which are grouped for general administrative purposes under the Department of Home Affairs, have led to a considerable increase in the expenditure. Particulars for the seven years 1901-2 to 1907-8 are as follows:—

EXPENDITURE, HOME AFFAIRS DEPARTMENT, 1901-2 to 1907-8.

| Details. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ |
| Chief Office ... | 4,000 | 6,938 | 7,124 | 8,219 | 8,279 | 8,864 | 9,257 |
| Public Service Commr. | 292 | 11,605 | 13,519 | 13,973 | 13,759 | 12,738 | 14,818 |
| Public Works ... | 408 | 1,755 | 3,391 | 6,175 | 9,099 | 9,825 | 10,570 |
| Census and Statistics | ... | ... | ... | ... | ... | 5,007 | 9,781 |
| Meteorological Bureau | ... | ... | ... | ... | ... | 888 | 9,182 |
| Rents, repairs, etc. ... | 3,570 | 5,379 | 3,565 | 4,430 | 2,592 | 3,731 | 5,819 |
| Miscellaneous ... | 4,012 | 7,290 | 5,014 | 2,216 | 1,914 | 332 | 2,153 |
| Total ... | 12,232 | 32,967 | 32,613 | 35,013 | 35,643 | 41,385 | 61,580 |

14. **Treasurer's Department.**—The sub-departments under the control of the Commonwealth Treasurer are the Treasury and the Audit Office. Details of the expenditure of this department for each of the seven years 1901-2 to 1907-8 are furnished hereunder:—

EXPENDITURE, TREASURER'S DEPARTMENT, 1901-2 to 1907-8.

| Details. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Treasury ... | 4,592 | 7,024 | 7,387 | 7,710 | 8,464 | 8,960 | 10,259 |
| Audit ... | 3,923 | 5,739 | 6,046 | 6,334 | 6,698 | 7,003 | 7,804 |
| Rents, repairs, etc. ... | 904 | 941 | 664 | 1,272 | 1,349 | 1,285 | 1,751 |
| Miscellaneous ... | 1,047 | 407 | 528 | 627 | 1,017 | 520 | 599 |
| Total ... | 10,466 | 14,111 | 14,625 | 15,993 | 17,528 | 17,768 | 20,418 |

15. **Trade and Customs.**—Under this head have been included the expenditure of all the sub-departments under the control of the Minister of Trade and Customs, as well as the amounts payable as sugar bounties and the expenses in connection therewith. The large increase in the total expenditure which these figures exhibit for recent years has been due in a large measure to the increased amount payable in respect of sugar bounties. Particulars for the seven years 1901-2 to 1907-8 are given in the following table:—

EXPENDITURE, TRADE AND CUSTOMS, 1901-2 to 1907-8.

| Details. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Chief Office... | 3,694 | 6,175 | 6,189 | 6,251 | 6,625 | 7,449 | 10,880 |
| Customs (ordinary) ... | 251,285 | 260,062 | 249,853 | 241,173 | 243,074 | 244,574 | 255,531 |
| Patents ... | ... | ... | 1,489 | 8,051 | 8,915 | 10,017 | 12,960 |
| Trade Marks & Copy'ts. ... | ... | ... | ... | ... | 1,401 | 3,998 | 4,954 |
| Audit (proportion) ... | 1,557 | 4,620 | 4,850 | 4,601 | 4,259 | 4,053 | 6,153 |
| Quarantine ... | ... | ... | ... | ... | ... | ... | 53 |
| Pensions and retiring allowances ... | 689 | 346 | 1,973 | 4,541 | 5,196 | 6,194 | 6,586 |
| Rents, repairs, etc. ... | 5,035 | 7,169 | 5,332 | 7,589 | 9,357 | 9,144 | 10,648 |
| Sugar bounties & expns. ... | ... | 60,827 | 97,045 | 128,178 | 154,709 | 335,916 | 584,622 |
| Bounties ... | ... | ... | ... | ... | ... | ... | 176 |
| New works, etc. ... | 150 | 53 | 3,467 | 1,980 | 1,814 | 1,162 | 8,972 |
| Miscellaneous ... | 93 | 381 | 170 | 3,677 | 7,264 | 11,821 | 13,437 |
| Total ... | 262,503 | 339,633 | 370,368 | 406,041 | 442,614 | 634,328 | 914,972 |

16. **Cost of Collection.**—Excluding from the above the expenditure incurred in connection with Patents, Trade Marks, Copyrights, Quarantine and Sugar and other Bounties, the balance may be considered as representing approximately the cost entailed by the collection of the Customs and Excise revenue of the Commonwealth. Details for the seven years 1901-2 to 1907-8 are as follows:—

COST OF CUSTOMS AND EXCISE COLLECTION, 1901-2 to 1907-8.

| Particulars. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Gross Customs & Excise revenue | 8,894,319 | 9,635,055 | 9,105,758 | 8,799,530 | 8,999,485 | 9,643,556 | 11,645,352 |
| Cost of collection ... | 262,503 | 273,806 | 271,834 | 269,312 | 277,589 | 284,397 | 312,207 |
| Net revenue ... | 8,631,816 | 9,406,249 | 8,833,924 | 8,529,718 | 8,721,896 | 9,364,159 | 11,333,145 |
| Percentage of cost of collection on gross revenue ... | 2.95% | 2.88% | 2.99% | 3.07% | 3.08% | 2.95% | 2.68% |

It will be seen that throughout the period the cost of collecting the Customs and Excise revenue has been approximately 3 per cent. of the revenue collected, varying only between 2.68 per cent. in 1907-8 and 3.08 per cent. in 1905-6.

17. **Defence.**—The Commonwealth expenditure in connection with Defence, which in 1901-2 amounted to £861,218, had by 1907-8 grown to £1,334,744, the principal factors of this increase being the expenditure in connection with naval matters and that on new works, rifles, etc. Particulars for the seven years 1901-2 to 1907-8 are as follows:—

EXPENDITURE, DEFENCE, 1901-2 to 1907-8.

| Details. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------------------------|----------------|----------------|----------------|----------------|----------------|------------------|------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Chief Office ... | 11,717 | 19,747 | 19,128 | 20,716 | 18,832 | 19,246 | 21,934 |
| Military ... | 586,317 | 517,361 | 458,937 | 490,713 | 500,377 | 535,178 | 577,627 |
| Naval ... | 172,246 | 149,701 | 237,214 | 196,728 | 245,778 | 250,200 | 254,069 |
| Audit (proportion) ... | 446 | 1,422 | 929 | 789 | 754 | 802 | 809 |
| Pensions and retiring allowances ... | ... | 934 | 670 | 712 | 907 | 974 | 974 |
| Rents, repairs, etc. ... | 26,516 | 22,796 | 24,551 | 23,923 | 29,732 | 27,386 | 32,023 |
| New works, etc. ... | 53,321 | 22,064 | 113,242 | 200,259 | 171,633 | 195,159 | 440,918 |
| Miscellaneous ... | 10,655 | 32,855 | 1,093 | 758 | 2,332 | 6,850 | 6,390 |
| Total ... | 861,218 | 766,880 | 855,764 | 934,598 | 970,345 | 1,035,795 | 1,334,744 |

18. **Postal.**—From a total of £2,383,815 in 1901-2 the cost of the department under the control of the Postmaster-General advanced to £3,345,840 in 1907-8, an increase of £962,025. Of this increase the ordinary cost of working the department was responsible for £530,057, while the expenditure on new works, etc., advanced by £389,857. Details for the seven years 1901-2 to 1907-8 are furnished hereunder:—

EXPENDITURE, POSTAL DEPARTMENT, 1901-2 to 1907-8.

| Details. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Chief Office ... | 5,059 | 4,908 | 4,788 | 5,184 | 6,484 | 8,125 | 9,664 |
| Postal Dept. (ordinary) ... | 2,304,689 | 2,369,382 | 2,450,638 | 2,505,828 | 2,574,210 | 2,618,767 | 2,848,196 |
| Audit (proportion) ... | 693 | 2,433 | 2,267 | 2,145 | 1,755 | 2,194 | 1,985 |
| Pensions and retiring allowances ... | 1,988 | 3,862 | 4,556 | 8,091 | 12,768 | 16,573 | 19,419 |
| Rents, repairs, etc. ... | 33,470 | 50,146 | 42,035 | 42,916 | 40,550 | 43,235 | 49,257 |
| New works, etc. ... | 37,149 | 135,699 | 187,809 | 181,829 | 146,575 | 275,737 | 427,006 |
| Miscellaneous ... | 767 | 2,416 | 5,361 | 3,674 | 2,322 | 1,467 | 3,763 |
| Total ... | 2,383,815 | 2,568,846 | 2,697,454 | 2,699,667 | 2,784,664 | 2,966,098 | 3,359,290 |

19. **Miscellaneous.**—In addition to the foregoing there are certain items which do not come under any of the heads enumerated. For 1907-8 these comprised an expen-

diture of £1104 on machinery and plant for the printing office; £689 as refund of fines under the Immigration Restriction Act; £176 for bounties other than sugar; £15,000 as advance for money order purposes; £1044 towards survey of transcontinental railway route; and a provision of £193,621 towards the payment of old-age pensions.

) Surplus Revenue Paid to States.

1. **Net Revenue.**—As mentioned in sub-section 1 of this section, the Constitution provides under sections 87, 93 and 95 for the payment to the States of all surplus revenue of the Commonwealth, such payment to amount in the aggregate during the continuation of the Braddon clause to not less than three-fourths of the net revenue from Customs and Excise. The expression “net revenue” used in section 87 has been taken to mean the gross revenue less drawbacks and refunds, and in addition cost of collection. This view, adopted by the Commonwealth Government, is that indicated by Quick and Garran in their “Annotated Constitution of the Australian Commonwealth,” in which they say: “The net revenue from duties of Customs and Excise is the total receipts from these sources after deducting the cost of collection. No attempt is made in the Constitution to define the deductions which may be made in order to arrive at the net revenue; this is a matter of book-keeping, which is left wholly to the Executive Government.” In actual practice the statutory three-fourths of net Customs and Excise revenue is ascertained by the Commonwealth Treasury by deducting from the total Customs and Excise revenue (less drawbacks and refunds) the “transferred” expenditure of the Department of Trade and Customs and the expenditure on new works for that department, and taking three-fourths of the result.

2. **Actual Payments of Surplus.**—In the following table a comparison is made between the amounts actually paid to the several States since the inauguration of Federation, and the amounts which, in accordance with the preceding paragraph, the Commonwealth was constitutionally bound to pay. It should be noted that the payments here shewn for any year are those made on account of that year although actually paid after its close:—

PAYMENTS OF SURPLUS REVENUE, 1901 to 1907-8.

| Year. | Payment on Account of Period. | Three-fourths of Net Customs and Excise Revenue. | Amount Paid to States out of the one-fourth retainable by Commonwealth. |
|----------------------------------|-------------------------------|--|---|
| | £ | £ | £ |
| Half-year to 30th June, 1901 ... | 3,599,702 | 3,021,857 | 577,845 |
| 1901-2 ... | 7,364,236 | 6,475,495 | 888,741 |
| 1902-3 ... | 8,204,563 | 7,059,329 | 1,145,234 |
| 1903-4 ... | 7,373,479 | 6,633,147 | 745,332 |
| 1904-5 ... | 7,142,769 | 6,407,483 | 735,286 |
| 1905-6 ... | 7,384,383 | 6,554,473 | 829,910 |
| 1906-7 ... | 7,845,574 | 7,039,573 | 806,001 |
| 1907-8 ... | 8,856,905 | 8,526,165 | 330,740 |
| Total ... | 57,776,611 | 51,717,522 | 6,059,089 |

It will be seen from the foregoing table that during the seven and a-half years which elapsed since the foundation of the Commonwealth the surplus revenue returned to the States exceeded the statutory requirements by no less a sum than £6,059,089; in other words, the Commonwealth, during the period, returned to the States surplus revenue to the extent of about 84 per cent. of the net revenue from Customs and Excise instead of the 75 per cent. required under the Constitution.

3. **Payments to the Several States.**—In the following table are furnished particulars relative to the amounts actually paid to the several States on account of the half-year ended 30th June, 1901, and of each of the financial years 1901-2 to 1907-8:—

SURPLUS COMMONWEALTH REVENUE PAID TO STATES FOR 1901 to 1907-8.

| State. | Half-y'ar to 30th June, 1901. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. | Aggre- gate, 1901-8. |
|------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------------------------|
| | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 887,573 | 2,381,735 | 3,048,091 | 2,691,287 | 2,532,156 | 2,741,929 | 3,025,187 | 3,617,472 | 20,925,378 |
| Victoria ... | 1,176,784 | 1,919,729 | 2,108,291 | 2,002,605 | 2,010,502 | 2,094,593 | 2,201,013 | 2,377,708 | 15,891,135 |
| Queensland ... | 582,688 | 904,891 | 911,129 | 804,325 | 755,705 | 858,462 | 938,935 | 1,088,267 | 6,794,402 |
| S. Australia ... | 331,671 | 619,838 | 579,316 | 551,710 | 553,295 | 562,000 | 644,564 | 791,664 | 4,634,058 |
| W. Australia ... | 444,929 | 1,221,948 | 1,256,924 | 1,064,035 | 1,031,223 | 871,960 | 774,382 | 751,735 | 7,417,636 |
| Tasmania ... | 176,057 | 316,100 | 300,815 | 264,517 | 250,888 | 255,529 | 261,043 | 280,059 | 2,114,008 |
| Total ... | 3,599,702 | 7,364,239 | 8,204,566 | 7,378,479 | 7,142,769 | 7,384,383 | 7,845,574 | 8,856,905 | 57,776,617 |

The surplus Commonwealth revenue paid on account of the year 1907-8 was higher than that paid on account of 1906-7 in the case of every State except Western Australia, where a decline of £23,147 was experienced. The payments on account of 1907-8 to New South Wales, Victoria, Queensland, and South Australia were the highest on record for those States, while Western Australia received its highest payments in 1902-3 and Tasmania in 1901-2. The largeness of the amount returned by the Commonwealth to the States in respect of 1907-8 was in great measure due to the increased Customs and Excise revenue collected under the new tariff of that year. Prior to 1907-8 the year 1902-3 was that on account of which the aggregate payment by the Commonwealth to the States was highest, caused to a great extent by the large amount collected in grain duties during that year.

4. **The Commonwealth Fourth of Net Customs and Excise Revenue.**—As noted in paragraph number two above, the Commonwealth has in each financial year paid to the States a considerable portion of the one-fourth of net Customs and Excise revenue which it was entitled under the Constitution to spend for its own purposes. The manner in which this extra payment was distributed amongst the several States from 1901 to 1907-8 is exhibited in the following table:—

PAYMENT TO STATES FROM COMMONWEALTH FOURTH OF NET CUSTOMS AND EXCISE REVENUE, 1901 to 1907-8.

| State. | Half-y'ar to 30th June, 1901. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. | Aggre- gate, 1901-8. |
|--------------|--|---------|-----------|---------|---------|---------|---------|----------|----------------------------|
| | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 145,070 | 319,771 | 491,859 | 327,337 | 306,166 | 371,023 | 400,937 | 292,121 | 2,654,284 |
| Victoria ... | 184,195 | 185,195 | 282,008 | 217,289 | 197,665 | 241,594 | 209,543 | 19,058 | 1,537,147 |
| Q'land ... | 70,525 | 20,188* | 15,077 | 2,455* | 28,811* | 8,639 | 18,812 | 44,114* | 17,485 |
| S. Aust. ... | 76,449 | 115,742 | 81,369 | 42,812 | 63,397 | 65,970 | 81,890 | 55,783 | 583,362 |
| W. Aust. ... | 87,904 | 244,232 | 235,977 | 144,890 | 177,628 | 124,922 | 84,521 | 27,573 | 1,127,647 |
| Tasmania ... | 13,702 | 43,989 | 38,344 | 15,459 | 19,241 | 17,762 | 10,298 | —19,631* | 139,164 |
| Total ... | 577,845 | 888,741 | 1,145,234 | 745,332 | 735,286 | 829,910 | 806,001 | 330,740 | 6,059,989 |

* Amount retained by Commonwealth in addition to one-fourth of the State's net revenue from Customs and Excise.

It will be seen that although the States as a whole received in each year more than three-fourths the net revenue from Customs and Excise, there were four occasions, viz., in 1901-2, 1903-4, 1904-5 and 1907-8 on which the amount returned to Queensland fell short of three-fourths of that State's net revenue from Customs and Excise, and one, viz., in 1907-8, on which the amount returned to Tasmania also exhibited a shortage.

For the whole period of seven and a-half years, however, each State received more than three-fourths of its net revenue from Customs and Excise, the largest aggregate excess being £2,654,284 in the case of New South Wales, and the smallest, £17,485, in that of Queensland.

5. **Proportion Actually Paid.**—For the period of seven and a half years from the 1st January, 1901, to 30th June, 1908, the percentage of net revenue from Customs and Excise duties paid to the several States was as follows:—New South Wales, 86 per cent.; Victoria, 83 per cent.; Queensland, 75 per cent.; South Australia, 86 per cent.; Western Australia, 88½ per cent.; Tasmania, 80 per cent.

(E) **Interstate Customs and Excise Adjustments.**

1. **Reason for Adjustments.**—In order that the duties of Customs and Excise should, during the continuance of the "book-keeping system" of Commonwealth and State finance, be credited to that State in which the goods subject to such duties have been consumed, provision is made in section 93 of the Constitution that "during the first five years after the imposition of uniform duties of Customs, and thereafter until the Parliament otherwise provides, the duties of Customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of Excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State." In the ordinary course duties collected in any State will be credited to that State, and compliance with the above provisions necessitates the debiting of the State with the duty collected when the goods paying such duty pass for consumption into another State, the latter being credited with the amount. Returns shewing such credits and debits thus furnish an indication of the relative positions of the several States as distributors of dutiable goods. States in which the adjustment results in a net debit may be looked upon as distributing States, while those in which the result is a net credit are consuming States.

2. **Interstate Adjustments for 1907-8.**—Particulars for each of the States for the year ended 30th June, 1908; are furnished hereunder:—

INTERSTATE ADJUSTMENTS, 1907-8.

| State. | Customs. | | Excise. | | Total Customs and Excise. | | |
|---------------------|-----------|-----------|----------|---------|---------------------------|-----------|--------------|
| | Credits. | Debits. | Credits. | Debits. | Credits. | Debits. | Net Results. |
| | £ | £ | £ | £ | £ | £ | £ |
| New South Wales | 299,673 | 415,571 | 76,799 | 127,929 | 376,472 | 543,499 | Dr. 167,027 |
| Victoria ... | 151,595 | 547,773 | 37,519 | 162,535 | 189,114 | 710,308 | Dr. 521,194 |
| Queensland ... | 238,898 | 28,928 | 86,524 | 13,343 | 325,332 | 42,271 | Cr. 283,061 |
| South Australia ... | 170,010 | 121,611 | 49,582 | 30,313 | 219,592 | 151,924 | Cr. 67,668 |
| Western Australia | 135,718 | 11,409 | 61,111 | 136 | 196,829 | 11,545 | Cr. 185,284 |
| Tasmania ... | 144,527 | 15,039 | 31,704 | 8,984 | 176,231 | 24,023 | Cr. 152,208 |
| Total ... | 1,140,331 | 1,140,331 | 343,239 | 343,239 | 1,483,570 | 1,483,570 | — |

3. **Net Results, 1901-2 to 1907-8.**—The net results of the interstate Customs and Excise adjustments for each of the seven years 1901-2 to 1907-8, since the imposition of uniform duties of Customs, are given in the following table.

It will be seen that Victoria and New South Wales are the principal distributing States, Victoria occupying the leading position, while Queensland, Western Australia, and Tasmania are the principal consuming States. South Australia occupies what may

be considered as a middle position, being both a distributor and a consumer on a large scale, though rather more of the latter than the former. The growth of Victoria as a distributing centre for the Commonwealth has been both continuous and rapid:—

INTERSTATE ADJUSTMENTS, 1901-2 to 1907-8.

| State. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| New South Wales | Dr. 24,645 | Dr. 75,608 | Dr. 122,309 | Dr. 117,953 | Dr. 133,396 | Dr. 150,215 | Dr. 167,027 |
| Victoria | Dr. 61,314 | Dr. 196,152 | Dr. 254,288 | Dr. 316,006 | Dr. 366,412 | Dr. 424,828 | Dr. 521,194 |
| Queensland | Cr. 60,376 | Cr. 114,935 | Cr. 158,794 | Cr. 175,510 | Cr. 214,358 | Cr. 247,719 | Cr. 283,061 |
| South Australia | Dr. 4,749 | Cr. 21,184 | Cr. 20,721 | Cr. 28,498 | Cr. 36,940 | Cr. 37,724 | Cr. 67,668 |
| Westn. Australia | Cr. 1,766 | Cr. 37,843 | Cr. 90,442 | Cr. 128,805 | Cr. 135,918 | Cr. 161,923 | Cr. 185,284 |
| Tasmania | Cr. 38,566 | Cr. 97,798 | Cr. 106,640 | Cr. 101,146 | Cr. 112,592 | Cr. 127,677 | Cr. 152,208 |

§ 3. Trust Fund.

1. **Trust Accounts.**—The Trust Fund credit balance on 30th June, 1908, amounted to £669,260, as compared with £158,141 for the corresponding date in the preceding year. Details concerning the various trust accounts contributing to this amount are as follows:—

COMMONWEALTH TRUST FUND, 30th JUNE, 1908.

| Trust Accounts. | Balance at 30th June, 1908. | Trust Accounts. | Balance at 30th June, 1908. |
|---------------------------------------|-----------------------------|-----------------------------------|-----------------------------|
| | £ | | £ |
| Harbour & Coastal Defence (naval) | 250,000 | Papua | 287 |
| Commonwealth Ammunition Material | 39 | Officers' Assurance | 258 |
| Small Arms Ammunition | 21,550 | Defalcations | 271 |
| Defence Clothing Material | 7,166 | Guarantee Fund | 8,691 |
| Deferred Pay—military | 989 | Other Trust Moneys— | |
| Small Arms | 8,062 | Home Affairs | 451 |
| Unclaimed Militia Pay—military | 1,279 | Customs | 53,054 |
| " " naval | 361 | Patents | 118 |
| Customs Officers' Overtime | 625 | Defence | 2,252 |
| Money Order | 40,000 | Post Office | 40,678 |
| Internat'n'l Postal & Money Order | 5,563 | Naval Agreement Act | 219 |
| Pacific Cable Board | 43 | Repatriation of Pacific Islanders | 160 |
| Government Printer | 5,892 | Treasury | 78 |
| Pensions, Departmental | 27,553 | | |
| Invalid and Old Age Pensions | 193,621 | Total | 669,260 |

An interesting feature of the balances at 30th June, 1908, is the inclusion of £250,000 set apart for naval purposes, and £193,621 for invalid and old age pensions. The constitutional right of the Commonwealth to treat moneys so allocated as part of the expenditure for the year, and consequently to exclude them from the surplus revenue returnable to the States, was contested in the High Court at the instance of the States, the verdict of the Court being in favour of the Commonwealth.

2. **Distribution.**—The amounts to credit of Trust Fund in the several States on 30th June, 1908, were as follows:—New South Wales, £297,159; Victoria, £166,613; Queensland, £120,161; South Australia, £38,523; Western Australia, £33,443, and Tasmania, £13,361. The total credit balance of £669,260 was held in the following manner:—On fixed deposit, £53,000; Savings Bank deposit, £31; advances to Postal Department, £40,002; held in London, £150; on current account, £572,328.

SECTION XX.

STATE FINANCE.

§ 1. General.

1. Functions of State Governments.—In any comparison of the finances of the several States due recognition must be made of the actual functions assumed by the respective Governments, and also of the local conditions and requirements in each case. Direct comparisons of public expenditure are thus rendered difficult, owing to the fact that functions which in one State are assumed by the Central Government are in another State relegated to local governing bodies, and further by the fact that costly developmental work may, under certain conditions, be not only economically justifiable, but may be an essential of progress, whilst parsimonious expenditure may be a serious economic blunder. A large expenditure may, therefore, be an indication either of gross extravagance and bad economy on the one hand or healthy and vigorous progress and good economy on the other, and an accurate appreciation of the relative positions of the several States requires a careful survey of their respective local circumstances and conditions.

Similarly as regards revenue, imposts which in some States are levied by the Central Government are in others considered as matters to be dealt with locally. Under these circumstances care is needed in instituting comparisons between the several States, and the particulars contained in this section should be read in connection with those contained in Section XXVI., dealing with Local Government. It should also be noted that in many ways the budgets of the Australian Governments differ materially from those of most European countries, owing to the inclusion therein of the revenue and expenditure of departments concerned in rendering public services, such for instance as railways, tramways, water supply, etc., which, in the other countries referred to, are often left to private enterprise.

2. Accounts of State Governments.—The various financial transactions of the States are in each case concerned with one or other of three Funds—the “Consolidated Revenue Fund,” the “Trust Funds,” and the “Loan Funds.” All revenue collected by the State is placed to the credit of its Consolidated Revenue Fund, from which payments are made under the authority of an Annual Appropriation Act passed by the Legislature, or by a permanent appropriation under a special Act. The hypothecation of the revenue from a specific tax to the payment for some special service is not practised in Australia, all statutory appropriations ranking on an equality as charges on the Consolidated Revenue Fund. The Trust Funds comprise all moneys held in trust by the Government, and include such items as savings bank funds, sinking funds, insurance companies’ deposits, etc. The Loan Funds are credited with all loan moneys raised by the State, and debited with the expenditure therefrom for public works or other purposes.

3. Inter-relation of Commonwealth and State Finance.—The principal alteration in State finance, brought about by Federation, has been that the States have transferred to the Commonwealth the large revenue received by the Customs and Postal Departments, and have been relieved of the expenditure connected with these and the Defence Departments, while, on the other hand, a new item of State revenue has been introduced, viz., the payment to the States of the surplus revenue of the Commonwealth. Provision for

the taking over by the Commonwealth of certain of the public debts of the States is made in section 105 of the Constitution, but up to the present no definite arrangements have been made for any such transfer.

§ 2. State Consolidated Revenue Funds.

(A) Receipts.

1. Sources of Revenue.—The principal sources of State revenue are:—

- (a) Taxation.
- (b) The public works and services controlled by the State Governments.
- (c) Sale of and rental from Crown lands.
- (d) The surplus Commonwealth revenue returned to the States.
- (e) Miscellaneous sources, comprising fines, fees, interest, etc.

Of these sources that yielding the largest revenue for the States as a whole is the group of public works and services, the principal contributor being the Government railways and tramways. Next in magnitude comes the payment of surplus revenue by the Commonwealth, followed in order by Taxation and Land Revenue.

2. Amount Collected.—The following table furnishes particulars of the total amount of consolidated revenue received by the several States during the seven years 1901-2 to 1907-8:—

STATE REVENUES, 1901-2 to 1907-8.

| Year. | N.S.W. | Victoria. | Queensland | S. Aust. | W. Aust. | Tas. | Total. |
|------------|------------|-----------|------------|-----------|-----------|-----------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1901-2 ... | 11,007,356 | 6,997,792 | 3,535,062 | 2,477,431 | 3,354,123 | 826,163 | 28,197,927 |
| 1902-3 ... | 11,296,069 | 6,954,619 | 3,526,465 | 2,530,568 | 3,630,238 | 734,663 | 28,672,622 |
| 1903-4 ... | 11,248,328 | 7,319,949 | 3,595,440 | 2,568,100 | 3,550,016 | 857,668 | 29,139,501 |
| 1904-5 ... | 11,336,918 | 7,515,742 | 3,595,399 | 2,798,849 | 3,615,340 | 852,681 | 29,714,929 |
| 1905-6 ... | 12,283,032 | 7,811,475 | 3,853,523 | 2,864,209 | 3,558,939 | 900,657 | 31,271,885 |
| 1906-7 ... | 13,392,435 | 8,345,534 | 4,307,912 | 3,252,705 | 3,401,354 | 970,843 | 33,670,783 |
| 1907-8 ... | 13,960,763 | 8,314,480 | 4,488,298 | 3,722,090 | 3,376,641 | 1,005,274 | 34,867,646 |

The figures given in this table relate in each instance to the financial year ended 30th June, except in the case of Tasmania, where the figures shewn for 1901-2, 1902-3, and 1903-4 relate respectively to the years ended 31st December, 1901, 1902, and 1903.

During the six years from 1901-2 to 1907-8 the aggregate revenues of the States increased by no less a sum than £6,669,719, or little short of 24 per cent. Increases were in evidence in all the States, the largest being that of £2,953,407 in New South Wales, and the smallest an increase of £22,518 in the case of Western Australia.

3. Revenue per Head.—Details concerning the revenue per head of population, collected in the several States of the Commonwealth during the seven years 1901-2 to 1907-8, are furnished in the table given hereunder. It will be seen that throughout the period Western Australia has received by far the largest amount per head, and that Tasmania has received the least:—

STATE REVENUE PER HEAD OF POPULATION, 1901-2 to 1907-8.

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | All States. |
|------------|---------|-----------|---------|----------|----------|-----------|-------------|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| 1901-2 ... | 8 0 1 | 5 15 7 | 6 19 9 | 6 15 6 | 17 5 7 | 4 16 3 | 7 7 5 |
| 1902-3 ... | 8 1 0 | 5 14 10 | 6 18 1 | 6 18 0 | 17 0 4 | 4 5 0 | 7 8 6 |
| 1903-4 ... | 7 17 7 | 6 1 1 | 6 19 6 | 6 19 3 | 15 12 10 | 4 16 11 | 7 8 5 |
| 1904-5 ... | 7 15 7 | 6 4 2 | 6 17 10 | 7 10 2 | 14 18 5 | 4 14 8 | 7 9 2 |
| 1905-6 ... | 8 4 8 | 6 8 2 | 7 5 11 | 7 11 6 | 13 19 4 | 4 19 6 | 7 14 4 |
| 1906-7 ... | 8 15 5 | 6 15 6 | 8 1 0 | 8 9 6 | 12 19 11 | 5 7 9 | 8 3 6 |
| 1907-8 ... | 8 18 0 | 6 13 3 | 8 5 8 | 9 9 7 | 12 18 2 | 5 9 3 | 8 6 2 |

One of the most noticeable features of the figures here given is the low percentage for "public works and services" and the high percentage for "taxation" in the case of Tasmania. In New South Wales and Queensland land revenue is an important item, while in Queensland the revenue from "public works and services" falls considerably below the Commonwealth average.

7. State Taxation.—(a) *Details, 1907-8.* Prior to the inauguration of Federation the principal source of revenue from taxation was the imposition of duties of Customs and Excise. At the present time the most productive form of State taxation is the income tax, which is now imposed in all the States, Western Australia, the last of the States to adopt this method of taxation, having passed the necessary legislation during the Parliamentary session of 1907. Stamp duties rank next to the income tax in importance. For 1907-8 probate and succession duties occupied third place. In addition to these a land tax is now collected in all the States except Queensland, and license fees of various kinds are collected in all the States, while a dividend tax is collected in Western Australia, and an "ability" tax¹ in Tasmania. The total revenue from taxation collected by the States during the year 1907-8 was £3,601,450, details of which are set forth in the table given hereunder:—

STATE REVENUE FROM TAXATION, 1907-8.

| Taxation. | N.S.W. | Victoria. | Q'land. | S. Aust. | W.A. | Tas. | All States |
|-----------------------------------|------------------|----------------|----------------|----------------|----------------|----------------|------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Probate and succession duties ... | 310,704 | 304,830 | 42,788 | 70,227 | 41,688 | 33,087 | 802,324 |
| Other stamp duties ... | 254,538 | 240,535 | 142,573 | 79,547 | 59,617 | 58,832 | 835,642 |
| Land tax ... | 178,889 | 89,496 | ... | 93,762 | 11,140 | 57,742 | 431,029 |
| Income tax ... | 215,283 | 317,354 | 271,299 | 212,643 | 5,933 | 87,916 | 1,090,428 |
| Dividend tax ... | ... | ... | ... | ... | 108,034 | ... | 108,034 |
| Ability tax ... | ... | ... | ... | ... | ... | 33,517 | 33,517 |
| Licenses ... | 118,120 | 19,851 | 57,871 | 21,458 | 43,134 | 14,001 | 274,435 |
| Other taxation ... | ... | 5,554 | 11,009 | ... | 7,917 | 1,561 | 26,041 |
| Total ... | 1,077,534 | 977,620 | 525,540 | 477,637 | 277,463 | 265,656 | 3,601,450 |

The most productive forms of taxation in the several States during the year 1907-8 were as follows:—New South Wales, land tax; Victoria, Queensland, South Australia, and Tasmania, income tax; and Western Australia, dividend tax. Land and income taxes are levied in Western Australia, but as they only came into force on 1st January, 1908, the amounts shewn above as collected in that State in the year 1907-8 represent only a fraction of the annual amounts payable.

(b) *Summary, 1901-2 to 1907-8.* The total amount raised by means of taxation by the several State Governments during the seven years 1901-2 to 1907-8 is given in the following table:—

STATE REVENUE FROM TAXATION, 1901-2 to 1907-8.

| Year. | New South Wales. | Victoria. | Queensland. | S. Australia. | W. Aust. | Tasmania. | All States. |
|--------|------------------|-----------|-------------|---------------|----------|-----------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1901-2 | 1,108,770 | 748,216 | 276,771 | 267,791 | 173,582 | 111,515 | 2,686,645 |
| 1902-3 | 1,108,781 | 878,591 | 415,688 | 398,941 | 221,247 | 105,402 | 3,128,650 |
| 1903-4 | 1,100,193 | 938,147 | 475,184 | 353,432 | 235,114 | 150,091 | 3,252,161 |
| 1904-5 | 1,114,408 | 897,870 | 454,574 | 442,030 | 221,738 | 216,953 | 3,347,573 |
| 1905-6 | 1,297,776 | 990,735 | 494,165 | 369,756 | 260,609 | 248,799 | 3,661,840 |
| 1906-7 | 1,381,305 | 1,110,411 | 540,737 | 411,867 | 266,152 | 276,450 | 3,936,922 |
| 1907-8 | 1,077,534 | 977,620 | 525,540 | 477,637 | 277,463 | 265,656 | 3,601,450 |

1. The "ability" tax is based upon the annual value of the house occupied by the taxpayer, or upon the amount payable by him for board and lodging.

During the five years between 1901-2 and 1906-7 the aggregate State revenue from taxation increased by 48 per cent., the increase varying considerably in the several States. Thus while New South Wales shewed an increase of 25 per cent. and Victoria one of 48 per cent., the Queensland revenue advanced by 95 per cent., and that of Tasmania by no less than 148 per cent. The year 1907-8, however, witnessed a falling-off in taxation in New South Wales, Victoria, Queensland, and Tasmania, and an increase in South Australia and Western Australia. The total decrease in State taxation for the year amounted to no less a sum than £385,472, of which New South Wales was responsible for £303,771.

The revenue from State taxation per head of population, collected in the several States during each of the years 1901-2 to 1907-8, was as follows:—

STATE TAXATION PER HEAD, 1901-2 to 1907-8.

| Year. | New South Wales. | Victoria. | Queensland. | S. Australia. | W. Aust. | Tasmania. | All States. |
|--------|------------------|-----------|-------------|---------------|----------|-----------|-------------|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| 1901-2 | 0 16 1 | 0 12 4 | 0 10 11 | 0 14 8 | 0 17 11 | 0 13 0 | 0 14 1 |
| 1902-3 | 0 15 10 | 0 14 6 | 0 16 3 | 1 1 9 | 1 0 9 | 0 12 2 | 0 16 1 |
| 1903-4 | 0 15 5 | 0 15 6 | 0 18 5 | 0 19 2 | 1 0 9 | 0 17 0 | 0 16 7 |
| 1904-5 | 0 15 4 | 0 14 10 | 0 17 5 | 1 3 9 | 0 18 4 | 1 4 1 | 0 16 10 |
| 1905-6 | 0 17 5 | 0 16 3 | 0 18 9 | 0 19 7 | 1 0 5 | 1 7 6 | 0 18 1 |
| 1906-7 | 0 18 1 | 0 18 0 | 1 0 2 | 1 1 6 | 1 0 4 | 1 10 9 | 0 19 4 |
| 1907-8 | 0 13 9 | 0 15 8 | 0 19 5 | 1 4 4 | 1 1 3 | 1 8 10 | 0 17 2 |

Taking the States as a whole the State taxation increased by three shillings and a penny per head during the six years from 1901-2 to 1907-8, the most marked increase being that of fifteen shillings and tenpence per head in the case of Tasmania. In Queensland the increase amounted to eight shillings and sixpence, in South Australia to nine shillings and eightpence, in Victoria and in Western Australia to three shillings and fourpence, while in New South Wales a decline of two shillings and fourpence took place, owing in large measure to the reductions made in that State in the imposition of income tax and stamp duties. State taxation per head is at present highest in Tasmania and lowest in Victoria.

8. **Commonwealth and State Taxation.**—For the purpose of obtaining an accurate view of the extent of taxation imposed on the people of the Commonwealth by the central governing authorities it is necessary to add together the Commonwealth and State collections. This has been done in the table given hereunder, which contains particulars concerning the total taxation for each of the years 1901-2 to 1907-8, as well as the amount per head of population:—

COMMONWEALTH AND STATE TAXATION, 1901-2 to 1907-8.

| Particulars. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------|------------|------------|------------|------------|------------|------------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| C'wealth taxation | 8,894,319 | 9,685,055 | 9,105,758 | 8,799,530 | 8,999,485 | 9,648,556 | 11,645,352 |
| State taxation ... | 2,686,645 | 3,128,650 | 3,252,161 | 3,347,573 | 3,861,840 | 3,986,922 | 3,601,450 |
| Total ... | 11,580,964 | 12,813,705 | 12,357,919 | 12,147,103 | 12,861,325 | 13,635,478 | 15,246,802 |
| Taxation per head | £3 0 6 | £3 6 0 | £3 2 11 | £3 1 0 | £3 2 6 | £3 6 2 | £3 12 8 |

Whilst the Commonwealth taxation increased during the six years by £2,751,033, the State taxation advanced by £914,805, the aggregate increase being £3,665,838. The amount has, however, fluctuated considerably during the period, and has ranged between a minimum of £3 Os. 6d. per head in 1901-2 and a maximum of £3 12s. 8d. per head in 1907-8.

9. **Public Works and Services.**—A very large proportion of the revenue of all the States of the Commonwealth is made up of the receipts from the various public works and services under the control of the several Governments. The principal of these are railways and tramways, harbour works, and water supply and sewerage, while in addition, State batteries for the treatment of auriferous ores exist in Western Australia, and various minor revenue-producing services are rendered by the Governments of all the States. For the year 1907-8 the aggregate revenue from this source totalled £17,511,959, or more than 50 per cent. of the revenue from all sources. Details of revenue from public works and services for the year 1907-8 are as follows :—

STATE REVENUE FROM PUBLIC WORKS AND SERVICES, 1907-8.

| Particulars. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | All States. |
|-------------------------------|------------------|------------------|------------------|------------------|------------------|----------------|-------------------|
| | £. | £. | £. | £. | £. | £. | £. |
| Railways and Tramways ... | 5,978,060 | 3,873,855 | 1,939,358 | 1,761,500 | 1,521,237 | 277,476 | 15,351,486 |
| Harbour Services ... | 433,595 | 91,143 | 25,507 | 53,616 | 91,896 | ... | 695,757 |
| Public Batteries ... | ... | ... | ... | ... | 88,019 | ... | 88,019 |
| Water Supply and Sewerage ... | 547,676 | 88,109 | ... | 135,864 | 119,269 | ... | 890,918 |
| Other Public Services ... | 199,658 | 1,433 | 47,783 | 117,723 | 73,624 | 45,558 | 485,779 |
| Total ... | 7,158,989 | 4,054,540 | 2,012,648 | 2,068,703 | 1,894,045 | 323,034 | 17,511,959 |

10. **Land Revenue.**—The revenue derived by the States from the sale and rental of Crown lands has, with few exceptions, been treated from the earliest times as forming part of their respective Consolidated Revenue Funds, and has been applied to meet ordinary current expenses. Where the rentals received are for lands held for pastoral or for residential purposes, such application of the revenue appears perfectly justifiable. On the other hand, where the rentals are those of mineral and timber lands, and in all cases of sales of lands, such a proceeding is essentially a disposal of capital in order to defray current expenses. As a matter of financial procedure such a course is open to a very obvious criticism. In the following table particulars of revenue derived from sales and rental of Crown lands are given for the year 1907-8.

STATE LAND REVENUE, 1907-8.

| Particulars. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | All States. |
|------------------|------------------|----------------|----------------|----------------|----------------|---------------|------------------|
| | £. | £. | £. | £. | £. | £. | £. |
| Sales ... | 1,016,527 | 205,393 | 150,012 | 117,299 | 147,891 | 55,422 | 1,692,544 |
| Rentals ... | 767,867 | 122,911 | 500,744 | 144,052 | 110,322 | 37,547 | 1,683,443 |
| Total ... | 1,784,394 | 328,304 | 650,756 | 261,351 | 258,213 | 92,969 | 3,375,987 |

11. **Surplus Commonwealth Revenue.**—The payments to the States of surplus Commonwealth revenue represent in each instance a considerable proportion of the State's revenue, and for the year 1907-8 aggregated £8,859,596. The percentage which the surplus revenue paid to each State for 1907-8 was of the total collected by the Commonwealth in respect of that State is shewn in the following table :—

SURPLUS COMMONWEALTH REVENUE PAID TO STATES DURING 1907-8.

| Particulars. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | All States. |
|---|------------|------------|------------|------------|------------|------------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Surplus Commonwealth revenue paid to each State ... | 3,566,371 | 2,449,243 | 1,003,527 | 792,686 | 753,510 | 294,259 | 8,859,596 |
| Total Commonwealth revenue in respect of each State | 5,816,755 | 4,063,736 | 1,967,618 | 1,355,751 | 1,270,732 | 544,442 | 15,019,034 |
| Percentage of surplus on total Commonwealth revenue in respect of State ... | % 61.32 | % 60.28 | % 51.00 | % 58.47 | % 59.80 | % 54.20 | % 58.99 |

It will be seen from the foregoing table that the surplus Commonwealth revenue which the States received for 1907-8 represented about 59 per cent. of the total Commonwealth collections for that year, the balance, 41 per cent., being absorbed in defraying the expenses of the various transferred and new departments under the control of the Commonwealth Government. The largest percentage returned was 61½ per cent., in the case of New South Wales, and the smallest 51 per cent., in the case of Queensland. The percentage for Western Australia differed but slightly from that for the whole Commonwealth.

12. *Miscellaneous Items of Revenue.*—In addition to the foregoing sources of revenue there are in each State several miscellaneous ones, including such items as interest, fines, fees, etc., which for the year 1907-8 aggregated £1,493,654.

(B) Disbursements.

1. *Heads of Expenditure.*—The principal heads of State expenditure from Consolidated Revenue Funds are:—

- (a) Interest and sinking funds in connection with public debt.
- (b) Working expenses of railways and tramways.
- (c) Other public works.
- (d) Police.
- (e) Education.
- (f) Medical and charitable.
- (g) Miscellaneous heads.

Of these items that of interest and sinking fund in connection with public debt is the most important, and for the year 1907-8 represented about 30 per cent. of the aggregate State expenditure from Consolidated Revenue Funds. Next in order for that year was the item of working expenses of railways and tramways, then education, medical and charitable, public works and police in the order named.

2. *Total Expenditure.*—The total expenditure from Consolidated Revenue Funds in the several States during each of the years 1901-2 to 1907-8 is furnished in the table given hereunder:—

STATE EXPENDITURE FROM CONSOLIDATED REVENUE FUNDS, 1901-2 to 1907-8.

| Year. | N.S. Wales. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | All States. |
|------------|-------------|-----------|-----------|-----------|-----------|---------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1901-2 ... | 11,020,105 | 7,398,832 | 3,967,001 | 2,823,578 | 3,151,427 | 870,442 | 29,231,385 |
| 1902-3 ... | 11,467,235 | 6,759,960 | 3,717,806 | 2,641,789 | 3,521,763 | 850,685 | 28,959,238 |
| 1903-4 ... | 11,319,888 | 7,339,608 | 3,607,864 | 2,707,254 | 3,698,312 | 879,356 | 29,552,282 |
| 1904-5 ... | 11,195,075 | 7,343,742 | 3,581,403 | 3,710,369 | 3,745,224 | 840,184 | 30,415,997 |
| 1905-6 ... | 11,386,864 | 7,261,475 | 3,725,712 | 3,005,499 | 3,632,318 | 853,147 | 29,865,015 |
| 1906-7 ... | 11,876,657 | 7,679,143 | 3,911,797 | 3,396,499 | 3,490,182 | 913,762 | 31,268,040 |
| 1907-8 ... | 12,095,593 | 7,862,246 | 4,373,097 | 3,448,213 | 3,379,006 | 929,885 | 32,088,040 |

As in the case of the table previously given for revenue, the above figures relate to the year ended 30th June, except in the cases of 1901-2, 1902-3, 1903-4, which contain Tasmanian figures for the years ended 31st December, 1901, 1902, and 1903 respectively.

3. **Expenditure per Head.**—Owing to the varying conditions of the several States and the extent to which the different functions of Government are distributed therein between central and local governing authorities, the expenditure per head from Consolidated Revenue Funds differs materially in the several States, being highest in the case of Western Australia and lowest in that of Tasmania. Four of the States, viz., Western Australia, South Australia, Queensland and New South Wales, are above the Commonwealth average per head, and the other two States below. The expenditure per head of population for each State for the years 1901-2 to 1907-8 is as follows:

STATE EXPENDITURE PER HEAD, 1901-2 to 1907-8.

| Year. | N.S.W. | | | Victoria. | | | Q'land. | | | S. Aust. | | | W. Aust. | | | Tas. | | | All States. | | |
|------------|--------|----|----|-----------|----|----|---------|----|----|----------|----|----|----------|----|----|------|----|----|-------------|----|----|
| | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| 1901-2 ... | 8 | 0 | 3 | 6 | 2 | 2 | 7 | 16 | 10 | 7 | 14 | 5 | 16 | 4 | 8 | 5 | 1 | 5 | 7 | 12 | 10 |
| 1902-3 ... | 8 | 3 | 5 | 5 | 11 | 7 | 7 | 5 | 7 | 7 | 4 | 1 | 16 | 10 | 2 | 4 | 18 | 5 | 7 | 9 | 2 |
| 1903-4 ... | 7 | 18 | 7 | 6 | 1 | 5 | 7 | 0 | 0 | 7 | 6 | 10 | 16 | 5 | 11 | 4 | 19 | 5 | 7 | 10 | 6 |
| 1904-5 ... | 7 | 13 | 8 | 6 | 1 | 4 | 6 | 17 | 4 | 9 | 19 | 1 | 15 | 9 | 2 | 4 | 13 | 3 | 7 | 12 | 8 |
| 1905-6 ... | 7 | 12 | 8 | 5 | 19 | 2 | 7 | 1 | 1 | 7 | 18 | 11 | 14 | 5 | 1 | 4 | 14 | 3 | 7 | 7 | 5 |
| 1906-7 ... | 7 | 15 | 7 | 6 | 4 | 8 | 7 | 6 | 2 | 8 | 17 | 0 | 13 | 6 | 8 | 5 | 1 | 5 | 7 | 11 | 10 |
| 1907-8 ... | 7 | 14 | 2 | 6 | 6 | 0 | 8 | 1 | 5 | 8 | 15 | 8 | 12 | 18 | 4 | 5 | 1 | 1 | 7 | 12 | 11 |

In New South Wales, South Australia, Western Australia, and Tasmania decreases in the expenditure per head took place during the year, while in Victoria and Queensland increases were experienced. In the case of Tasmania the expenditure per head in 1907-8 was practically identical with that in 1901-2.

4. **Details of Expenditure for 1907-8.**—The following table furnishes for the year 1907-8 particulars as to the expenditure of the several States under each of the principal heads:—

DETAILS OF STATE EXPENDITURE, 1907-8.

| Particulars. | N.S.W. | | Vic. | | Q'land. | | S. Aust. | | W. Aust. | | Tas. | | All States. | |
|---------------------------------------|-------------------|------------------|------------------|------------------|------------------|----------------|-------------------|---|----------|---|------|---|-------------|---|
| | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| Public debt (int., sinking fund, &c.) | 3,419,773 | 2,092,718 | 1,551,256 | 1,250,579 | 913,954 | 405,746 | 9,634,026 | | | | | | | |
| Rllys. & tramways (working exps.) | 3,503,905 | 2,284,749 | 1,051,736 | 1,051,088 | 1,024,585 | 201,817 | 9,117,850 | | | | | | | |
| Other public works | 215,445 | 479,644 | 104,015 | 214,448 | 167,186 | 30,440 | 1,211,178 | | | | | | | |
| Police | 463,353 | 281,751 | 202,184 | 87,333 | 120,582 | 37,122 | 1,192,330 | | | | | | | |
| Education | 1,037,424 | 781,083 | 348,753 | 198,542 | 189,800 | 71,204 | 2,621,791 | | | | | | | |
| Medical and charitable | 467,739 | 364,162 | 260,718 | 112,520 | 161,868 | 49,444 | 1,416,451 | | | | | | | |
| Miscellaneous | 2,987,949 | 1,578,154 | 856,435 | 583,703 | 801,031 | 134,112 | 6,891,384 | | | | | | | |
| Total | 12,095,593 | 7,862,246 | 4,373,097 | 3,448,213 | 3,379,006 | 929,885 | 32,088,040 | | | | | | | |

5. **Expenditure per Head, 1907-8.**—The expenditure per head of population of the several States for the year 1907-8, under each of the principal items, is given hereunder:—

STATE EXPENDITURE PER HEAD, 1907-8.

| Particulars | N.S.W. | | Victoria. | | Q'land. | | S. Aust. | | W. Aust. | | Tas. | | All States. | | | | | | | | |
|--|----------|-----------|-----------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|-------------|-----------|----------|----------|----------|----------|----------|-----------|-----------|
| | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | | | | | | |
| Public debt, (interest, sinking fund, &c.) | 2 | 3 | 7 | 1 | 13 | 7 | 2 | 17 | 4 | 3 | 3 | 8 | 3 | 9 | 11 | 2 | 4 | 1 | 2 | 5 | 11 |
| Railways and tramways (working expenses) | 2 | 4 | 7 | 1 | 16 | 7 | 1 | 13 | 10 | 2 | 13 | 7 | 3 | 18 | 4 | 1 | 1 | 11 | 2 | 3 | 6 |
| Other public works | 0 | 2 | 9 | 0 | 7 | 8 | 0 | 3 | 10 | 0 | 10 | 11 | 0 | 12 | 9 | 0 | 3 | 4 | 0 | 5 | 9 |
| Police | 0 | 5 | 10 | 0 | 4 | 6 | 0 | 7 | 6 | 0 | 4 | 6 | 0 | 9 | 3 | 0 | 4 | 0 | 0 | 5 | 8 |
| Education | 0 | 13 | 3 | 0 | 12 | 6 | 0 | 12 | 9 | 0 | 10 | 1 | 0 | 14 | 6 | 0 | 7 | 9 | 0 | 12 | 6 |
| Medical and charitable | 0 | 5 | 11 | 0 | 5 | 10 | 0 | 9 | 7 | 0 | 5 | 9 | 0 | 12 | 4 | 0 | 5 | 5 | 0 | 6 | 9 |
| Miscellaneous | 1 | 18 | 1 | 1 | 5 | 4 | 1 | 11 | 7 | 1 | 7 | 2 | 3 | 1 | 3 | 0 | 14 | 7 | 1 | 12 | 10 |
| Total | 7 | 14 | 0 | 6 | 6 | 0 | 8 | 1 | 5 | 8 | 15 | 8 | 12 | 13 | 4 | 5 | 1 | 1 | 7 | 12 | 11 |

In three of the States, viz., Western Australia, South Australia, and New South Wales, the average State expenditure per head exceeded that for the Commonwealth as a whole, falling short of it in the other three States.

6. Relative Importance.—The relative importance of the items of expenditure enumerated above varies considerably in the several States. This will readily be seen from the following table, giving for each State the percentage of the expenditure under the various items, on the total expenditure for the State :—

PERCENTAGE ON TOTAL STATE EXPENDITURE, 1907-8.

| Particulars. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | All States. |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | % | % | % | % | % | % | % |
| Public Debt (interest, sinking fund, &c.) ... | 28.27 | 26.62 | 35.47 | 36.27 | 27.05 | 48.63 | 30.03 |
| Railways and tramways (working expenses) ... | 28.97 | 29.06 | 24.05 | 30.48 | 30.32 | 21.70 | 28.42 |
| Other public works ... | 1.78 | 6.10 | 2.38 | 6.22 | 4.95 | 3.28 | 3.77 |
| Police ... | 3.83 | 3.58 | 4.62 | 2.53 | 3.57 | 3.99 | 3.72 |
| Education ... | 8.58 | 9.94 | 7.93 | 5.76 | 5.62 | 7.66 | 8.18 |
| Medical and charitable ... | 3.87 | 4.63 | 5.96 | 3.26 | 4.79 | 5.32 | 4.41 |
| Miscellaneous ... | 24.70 | 20.07 | 19.59 | 15.43 | 23.70 | 14.42 | 21.43 |
| Total ... | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

Taken together, the interest and sinking fund on the public debt, and the working expenses of the railways and tramways, represented for the year 1907-8 nearly 58½ per cent. of the aggregate State expenditure.

(c) Balances.

1. Position on 30th June, 1908.—On various occasions in each of the States the revenue collected for a financial year has failed to provide the funds requisite for defraying the expenditure incurred during that year, the consequence being a deficit which is usually liquidated either by cash obtained from trust funds, or by the issue of Treasury bills. In some of the States a number of such deficits have occurred, interspersed with occasional surpluses, the result being an accumulating overdraft, which in certain instances assumed very large proportions. Thus during the period of financial stress resultant upon the crisis of 1893 and the drought conditions of succeeding years, the accumulated overdrafts of several of the States grew very rapidly. The very favourable financial conditions of recent years have enabled the various Treasurers to considerably reduce such liabilities from time to time, and at 30th June, 1908, the position of the balances of the several Consolidated Revenue Funds were as set forth in the table hereunder :—

STATE CONSOLIDATED REVENUE FUND BALANCES, 30th JUNE, 1908.

| State. | Cash Credit Balances. | Debit Balance. | | Net Result. |
|-----------------------|-----------------------|-----------------|--|--------------------|
| | | Cash Overdraft. | Overdraft liquidated by Treasury Bills | |
| | £ | £ | £ | £ |
| New South Wales ... | 1,676,924 | ... | 1,214,516 | Cr. 462,408 |
| Victoria ... | ... | 340,494 | ... | Dr. 340,494 |
| Queensland ... | 115,302 | ... | ... | Cr. 115,302 |
| South Australia ... | * 483,523 | † 220,893 | ... | Cr. 262,630 |
| Western Australia ... | ... | 211,094 | ... | Dr. 211,094 |
| Tasmania ... | ... | ... | 37,067 | Dr. 37,067 |
| Total ... | 2,275,749 | 772,481 | 1,251,583 | Cr. 251,685 |

* South Australia proper. † Northern Territory.

(D) Principal State Taxes.**(a) Probate and Succession Duties.**

1. **General.**—Excepting in Western Australia, probate duties have been levied for a considerable time in each State. In the State mentioned such taxation originated in 1895, under the Duties on Deceased Persons' Estates Act. From the provisions of the several State Acts governing the payment of duty which are outlined hereunder, it will be seen that both the ordinary rates and those which apply to special beneficiaries differ widely in several cases. In the following table the amount under which the estates of deceased persons were sworn, is shewn for the years 1901 to 1907 :—

VALUE OF ESTATES OF DECEASED PERSONS, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905 | 1906. | 1907. |
|----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. | 7,033,459 | 5,807,620 | 7,179,882 | 6,155,963 | 7,714,416 | 7,529,437 | 7,563,499 |
| Vic. ... | 6,527,235 | 7,571,482 | 6,074,077 | 5,762,084 | 6,003,478 | 6,424,738 | 6,860,143 |
| Q'land | 1,123,391 | 932,854 | 2,617,348 | 1,513,237 | 1,016,495 | 1,144,116 | 1,670,184 |
| S.A. ... | 1,457,376 | 1,790,102 | 2,464,011 | 2,056,612 | 1,294,968 | 2,041,280 | 1,923,954 |
| W.A. ... | 615,729 | 488,057 | 703,071 | 422,515 | 676,920 | 544,245 | 1,154,126 |
| Tas. ... | 402,157 | 299,408 | 253,167 | 905,254 | 504,196 | 862,222 | 841,227 |
| Cwltth. | 17,159,347 | 16,889,523 | 19,291,556 | 16,815,665 | 17,210,473 | 18,546,038 | 20,013,133 |

The duty collected in the several States for the financial years 1901-2 to 1907-8 is as follows:—

AMOUNT OF PROBATE AND SUCCESSION DUTIES COLLECTED, 1901-2 to 1907-8.

| State. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. | 254,894 | 237,127 | 219,321 | 209,822 | 290,729 | 289,901 | 310,704 |
| Vic. ... | 217,796 | 161,636 | 308,531 | 265,876 | 328,628 | 401,631 | 304,830 |
| Q'land* | 47,933 | 34,988 | 94,910 | 62,636 | 67,935 | 71,399 | 42,788 |
| S.A. ... | 61,106 | 104,028 | 72,926 | 109,427 | 59,970 | 60,204 | 70,227 |
| W.A. ... | 13,624 | 8,952 | 21,759 | 10,587 | 15,707 | 34,309 | 41,688 |
| Tas. ... | †3,629 | †6,980 | †4,750 | 16,658 | 26,336 | 26,602 | 32,087 |
| Cwltth. | 603,982 | 553,711 | 722,197 | 675,006 | 789,305 | 884,046 | 802,324 |

* Approximate. † Calendar years 1901, 1902, and 1903 respectively.

2. **New South Wales.**—(i.) *Legislation.* The Acts relative to probate and succession duties at present in force in New South Wales are, in chronological order, as follows :—

- (a) Wills, Probate and Administration Act 1898.
- (b) Stamp Duties Act 1898.
- (c) Probate Duties (Amendment) Act 1899.
- (d) Administration (Validating) Act 1900.
- (e) Stamp Duties Amendment Act 1904.
- (f) Administration Amending Act 1906.

The first-named Act, assented to on 27th July, 1898, repealed, amongst others, the Probate Act of 1890 (two sections excepted), and also the Probate Amendment Act of the same year. On the same day, 27th July, assent was also given to the Stamp Duties

Act, the rates of duty contained in which were in force until the passing of the Probate Duties (Amendment) Act on 22nd December, 1899, when its schedule was repealed and a new rate of duty was imposed.

The Administration (Validating) Act of 1900 was passed in order to validate certain orders of the Supreme Court giving power or leave to sell, mortgage or lease, the real estate of deceased persons.

(ii.) *Rates of Duty.* In lieu of the duties payable on probate and letters of administration as provided for by the Stamp Duties Act of 1898, the following rates are now payable on the total value of the estate of a deceased person after the deduction of all debts, as enacted by the Amending Act of 1899, viz.—Up to £1000, nil; above £1000 and up to £5000, 2 per cent.; then up to £6000, 3 per cent.; then increasing $\frac{1}{2}$ per cent. for each £1000 up to £10,000, for each £2000 up to £40,000, and for each £4000 up to £100,000, the last group, £96,000 to £100,000, being subject to $9\frac{1}{2}$ per cent. Above £100,000 the duty is 10 per cent. Property left by the deceased to his widow or children is subject to half the foregoing rates, if the total value of the estate, after the deduction of all debts, does not exceed £50,000.

3. *Victoria.*—(i.) *Legislation.* The Acts contained in the subjoined list regulate the probate and succession duties of Victoria :—

(a) No. 1060, Administration and Probate Act 1890, with its amendments, No. 1238 of 1891, 1261 of 1892, 1599 of 1898, 1815 of 1903, and 2120 of 1907.

(b) No. 1419, Intestate Estates Act 1896.

(c) No. 1827, Probate Charges Act 1903, and its amendment No. 1970 of 1905.

(d) No. 1862, Administration and Probate Duties Act 1903, with its amendments, No. 1935 of 1904, 1984 of 1905, 2032 of 1906, and 2089 of 1907.

The principal Act, the Administration and Probate Act 1890, was assented to on 10th July, 1890, and came into force on 1st August of the same year. It repealed Acts Nos. 338, 403, 427, 523, 900, 928, 1035 and 1053, and enacted a scale of duties which was enforced until 1st January, 1903, when the Administration and Probate Act of 1903 came into force.

(ii.) *Rates of Duty.* The last-mentioned Act provides for the following scale of duties, as amended by Act No. 1862, on the estate, real and personal, of deceased persons, after the deduction of all debts, viz. :—Less than £200, nil; above £200 and up to £300, $1\frac{1}{2}$ per cent.; then increasing $\frac{1}{2}$ per cent. for each £100 up to £600; then increasing $\frac{1}{2}$ per cent. for each £200 up to £1000; above £1000 and up to £1500, 4 per cent.; then increasing $\frac{1}{2}$ per cent. for each £500 up to £6000; then increasing $\frac{1}{2}$ per cent. for each £1000 up to £19,000; with the exception of the two stages £10,000 to £11,000 and £14,000 to £15,000, which involve an increase of $\frac{2}{3}$ per cent. and whose rates are respectively $7\frac{1}{2}$ and $8\frac{1}{2}$ per cent.; over £19,000 and up to £20,000, $9\frac{1}{2}$ per cent.; and over £20,000, 10 per cent. is charged.

The rates of duty as shewn above also apply to all settlements of property, both real and personal, where the person taking the property is a brother or sister, or descendant of a brother or sister, or by any other person in any other degree of collateral consanguinity to the settlor, but duty at the rate of 10 per cent. is payable on the value of property taken by a stranger in blood to the settlor or donor.

(iii.) *Special Rates.* Property left by the deceased to his widow, children or grandchildren, is subject to the following rates, except that in cases where the total value of the estate after payment of all debts does not exceed £2000 half these rates only are charged :—Up to £500, nil; over £500 and up to £1000, 1 per cent.; over £1000 and up to £2000, 3 per cent.; then increasing by $\frac{1}{2}$ per cent. for each £1000 up to £5000, and by $\frac{1}{2}$ per cent. for each £1000 up to £8000; over £8000 and up to £10,000, 5 per cent.; increasing then by $\frac{1}{2}$ per cent. for each £2000 up to £24,000, for each £4000 up to £80,000, and for each £5000 up to £100,000, the last group £96,000 to £100,000 being subject to $9\frac{1}{2}$ per cent.; over £100,000, the amount payable is 10 per cent.

4. **Queensland.**—(i.) *Legislation.* The collection of probate and succession duties in Queensland is governed by the following Acts:—

- (a) The Succession and Probate Duties Act 1892.
- (b) The Succession Act Amendment Act 1895.
- (c) The Succession and Probate Duties Amendment Act 1895.
- (d) The Succession and Probate Duties Act 1904.
- (e) The Succession Act 1906.
- (f) The Succession and Probate Amendment Act 1906.

The principal Act, the Succession and Probate Duties Act of 1892, which was assented to on 4th October, 1892, and taken as coming into force on 7th September previous, repealed the Succession Duties Act of 1886, and enacted a scale of duties which is still levied.

(ii.) *Rates of Succession Duty.* If the whole succession or successions derived from the same predecessor, and passing upon death to any person, amount in money or principal value to less than £200, no duty is payable; where the value is £200 and less than £1000, 2 per cent. is due; £1000 and less than £2500, 3 per cent.; £2500 and less than £5000, 4 per cent.; £5000 and less than £10,000, 6 per cent.; £10,000 and less than £20,000, 8 per cent.; and when the value is £20,000 or upwards, 10 per cent. is charged.

(iii.) *Special Rates.* Duty at one-half of the above rates is payable when the successor is the wife or husband, or the lineal issue of the predecessor; and at double the rates if the successor is a stranger in blood to the settlor.

(iv.) *Probate and Administration.* In addition to the foregoing succession duties a probate duty of 1 per cent. is payable on all estates having a net value of £300 or over. When the net value of the property of a deceased person does not amount to £300 it is exempt from duty.

(v.) *Exemptions.* Bequests for educational and charitable purposes in Queensland, are exempt from taxation.

5. **South Australia.**—(i.) *Legislation.* Under the four Acts given hereunder the probate and succession duties are collected in South Australia:—

- (a) No. 537, The Administration and Probate Act 1891.
- (b) No. 567, The Succession Duties Act 1893.
- (c) No. 819, The Administration and Probate Act 1903.
- (d) No. 854, The Administration and Probate Amendment Act 1904.

On 25th October, 1893, the Succession Duties Act was assented to, and by it the Probate and Succession Duty Act of 1876, and its two amendments, Nos. 225 of 1881 and 361 of 1885, were repealed.

(ii.) *Rates of Duty.* On the property derived by any beneficiary the duties are assessed on the net value, and the following scale applies where the person taking the property is the widow, widower, descendant or ancestor of the deceased; and likewise where the property is given or accrues to any of the above-mentioned persons under a settlement or deed of gift:—Under £500, *nil*; over £500 and up to £700, 1½ per cent.; over £700 and up to £1000, 2 per cent.; over £1000 and up to £2000, 3 per cent.; over £2000 and up to £3000, 3½ per cent.; increasing then by ½ per cent. for each £2000 up to £7000; over £7000 and up to £10,000, 5 per cent.; increasing then by ½ per cent. for each £5000 up to £20,000, for each £10,000 up to £40,000, for each £20,000 up to £100,000, and for each £50,000 up to £200,000, the duty from £150,000 to £200,000 being 9½ per cent.; above £200,000 the duty is 10 per cent.

Where the person taking the property is a brother, sister, descendant of a brother or sister, or any person in any other degree of collateral consanguinity to the deceased person, or where the property is given or accrues to any of the aforesaid persons under a settlement or deed of gift, the duty is reckoned on the net present value of such property, and is payable at the rates shewn hereunder:—Under £200, 1 per cent.; up to £300, 1½ per cent.; up to £400, 2 per cent.; up to £700, 3 per cent.; up to £1000, 3½ per cent.; up to £2000, 4 per cent.; then increasing 1 per cent. up to each of the following amounts:—£3000, £5000, £10,000, £15,000, and £20,000; above £20,000 10 per cent. is payable.

If the person taking the property, either by will or under a settlement or deed of gift, is a stranger in blood to the deceased or the settlor or donor, as the case may be, duty is charged at the rate of 10 per cent. on the net present value of the property.

(iii.) *Special Rates.* Duty at one-half the rates shewn above is levied when the person who takes is the child under twenty-one years of age or the widow of the deceased or the settlor or donor, provided that the net value of the whole estate be under £2000.

6. **Western Australia.**—(i.) *Legislation.* The only Act relating to probate and succession duties at present in force in Western Australia is the Administration Act of 1903, which was assented to on 31st December, 1903. It repealed a number of Acts, including the Real Estates Administration Act 1893 and the Duties on Deceased Persons' Estates Act 1895, and levied a new scale of duties.

(ii.) *Rates of Duty.* When the total value of the estate, real or personal, of a deceased person, or of the property given or accruing to any person under a settlement or deed of gift, does not, after the deduction of all debts, exceed £1000, duty is payable at the rate of 1 per cent.; where the value exceeds £1000 and does not exceed £3500, 2 per cent. is charged; £3500 and under £5000, 3 per cent.; £5000 and under £7500, 4 per cent.; £7500 and under £10,000, 5 per cent.; £10,000 and under £15,000, 6 per cent.; £15,000 and under £20,000, 7 per cent.; £20,000 and under £30,000, 8 per cent.; £30,000 and under £50,000, 9 per cent.; £50,000 and over, 10 per cent.

(iii.) *Special Rates.* Half the above rates are charged the parent, issue, husband, wife, and issue of husband or wife, who are *bona-fide* residents of, and domiciled in, Western Australia.

7. **Tasmania.**—(i.) *Legislation.* The duties imposed in connection with probates and letters of administration in Tasmania are provided for by the following Acts:—

- (a) The Deceased Persons' Estates Act of 1874 and 1881.
- (b) The Probate (Foreign) Act 1893.
- (c) The Probate Act 1893, with amendment in 1906.
- (d) The Deceased Persons' Estate Management Act 1903.
- (e) The Deceased Persons' Estates Duties Act 1904.

The Probate Duties Act of 1868 levied a scale of rates which remained in force until the passing of the Deceased Persons' Estates Duties Act in 1904, when the former Act was repealed and a new schedule came into operation.

(ii.) *Rates of Duty.* Duty at the rates given below is payable on the property derived from a deceased person, or comprised in a settlement or deed of gift in so far as it includes, or is a portion of—

- (a) His real and personal property in Tasmania, including that over which he had a general power of appointment, exercised by his will, or by the settlement or deed of gift, if the deceased was, at the time of his death, domiciled in Tasmania.
- (b) His personal property, as above, including all debts, money, etc., recoverable in action by the executor in Tasmania, if the deceased was, at time of death, domiciled elsewhere than in Tasmania; and
- (c) Property accruing to any husband by virtue of his right as husband on the decease of his wife.

When the value of the property of the deceased person, settlor, or donor, as the case may be, at the time of his death exceeds £500, and does not exceed £1000, 2 per cent. is payable; exceeding £1000 and not exceeding £2000, 2½ per cent.; £2000 and not over £5000, 3 per cent.; £5000 and not over £20,000, 4 per cent.; £20,000 and not over £100,000, 5 per cent.; and over £100,000, 10 per cent.

(iii.) *Special Rates.* Double the above rates are charged when the property is derived by, or given or accrues to a brother or sister, or the child of a brother or sister of the deceased person, settlor, or donor, but in no case is a duty of more than 10 per cent. payable. When the property is derived by a stranger in blood to the deceased person, settlor, or donor, or accrues to any collateral relation beyond the third degree, the duty is 10 per cent. on the value of the property of any value whatever. No duty is payable in respect of any money which is payable to any person by a friendly society upon the death of a member or his wife or child.

(b) Stamp Duties.

1. **Legislation in the Several States.**—The principal Acts at present in force in the several States relating to stamp duties are as follows:—

- (a) *New South Wales.* Stamp Duties Act 1878, with amendments in 1900, 1904, and 1907.
- (b) *Victoria.* Stamps Act 1890, with amendments in 1892, 1900, and 1904.
- (c) *Queensland.* Stamp Act 1894, with amendment in 1904.
- (d) *South Australia.* Stamp Act 1886, with amendment in 1902.
- (e) *Western Australia.* Stamp Act 1882, with amendments in 1905 and 1906.
- (f) *Tasmania.* Stamp Duties Act 1882, with amendments in 1886, 1888, 1892, 1900 and 1904.

These Acts provide for the payment of duty on bank notes, bills of exchange, and promissory notes, deeds, leases, policies, receipts, transfers, and so forth, all of which with the exception of bank notes are required to be stamped either by an impressed or adhesive stamp, as the case may be.

The revenue derived by the several States of the Commonwealth from the imposition of stamp duties for the years 1901-2 to 1907-8 is shewn in the accompanying table:—

STAMP REVENUE (EXCLUSIVE OF PROBATE AND SUCCESSION DUTIES), 1901-2 TO 1907-8.

| State. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|----------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. | 250,964 | 240,200 | 252,081 | 268,343 | 299,165 | 343,666 | 254,538 |
| Vic. ... | 195,015 | 192,071 | 194,172 | 199,690 | 222,697 | 240,373 | 240,535 |
| Q'land | 98,580 | 96,358 | 92,079 | 73,554 | 99,631 | 119,397 | 142,573 |
| S. Aust. | 29,776 | 55,589 | 61,899 | 60,894 | 66,480 | 75,034 | 79,547 |
| W. Aust. | 44,433 | 53,500 | 55,768 | 55,064 | 59,200 | 63,634 | 59,617 |
| Tas. ... | 23,455* | 27,364* | 42,093* | 46,048 | 54,080 | 57,198 | 58,832 |
| C'w'lth | 642,223 | 665,082 | 698,092 | 703,593 | 801,253 | 899,302 | 835,642 |

* Calendar years 1901, 1902, and 1903 respectively.

2. **Bank Notes.**—Promissory notes issued by any bank are not required to bear a duty stamp either impressed or adhesive, and may be reissued as often as thought fit. An annual composition has, however, to be paid in lieu of stamp duty. This composition is payable quarterly, and is the same in all States, being at the rate of £2 per annum on every £100 or part thereof of the average annual amount of bank notes in circulation.

On 2nd June, 1893, the Treasury Notes Act of Queensland was assented to, by which the issue of Treasury notes payable on demand was authorised. These notes are now used exclusively by the banks in that State.

3. Bills of Exchange and Promissory Notes.—(i.) *Rates.* In all the States except New South Wales, when a bill of exchange or promissory note is payable on demand, the rate charged is one penny. When the bill was not payable on demand the duty levied in New South Wales, until the Amendment Act of 1907 came into force on 1st January, 1908, was sixpence for every £25 or part thereof, but under this Act no duty is now payable on bills of exchange or promissory notes in that State. The rate in Victoria is sixpence for every £25* up to £100, and one shilling for every £50 over £100. One shilling is charged in Queensland for every £50. For every £25 the duty in South Australia is sixpence if the bill is negotiable in the Commonwealth, but when a bill is drawn in South Australia and payable in any place beyond the Commonwealth, one shilling is charged for every £100, in which case an adhesive stamp only is to be used. In Western Australia, when the amount of the bill does not exceed £25 the duty payable is sixpence, when it exceeds £25 the duty is increased by sixpence for every £25 up to £100, and when it exceeds £100, one shilling for every £50 is charged. An amount of threepence is levied in Tasmania for a bill not exceeding £5; sixpence for one exceeding £5 and under £25; and an additional sixpence for every succeeding £25.

(ii.) *Exemptions.* The chief classes of bills which are exempt from taxation are Government debentures, Treasury notes, drafts on account of Public Service, drafts by banker on banker, letters of credit in the State, on His Majesty's Service, etc.

4. Bills of Lading.—(i.) *Rates.* The charge made for a bill of lading or copy thereof is sixpence in four of the States, viz., New South Wales, Victoria, South Australia, and Tasmania. In Queensland the rate is one shilling, and for a receipt of a bill of lading sixpence, whilst in Western Australia the duty is threepence if the goods do not exceed half a ton in weight or measurement, and sixpence if the goods exceed that quantity. The Acts provide that no bill of lading is to be stamped after its execution.

5. Receipts.—(i.) *Rates.* The duty payable on receipts given on payment of the amount of £2 or upwards in the States of Victoria, South Australia and Western Australia is one penny. Under the provisions of the Stamp Duties Act of 1898 the rate in New South Wales was twopence for £2 or over, but this was repealed by the Stamp Duties Amendment Act of 1907, and no duty is now payable on receipts in that State. Acknowledgments for payment of £1 or upwards were taxed one penny in Queensland under the 1894 Act, but by Amendment Acts of 1901, 1903 and 1904, the first two of which have since been repealed, it was provided that amounts of £1 and less than £2 were to be taxed one penny; £2 and less than £50, twopence; £50 and less than £100, threepence; and £100 or over, sixpence for every £100 or part thereof. By the 1904 Amendment Act of Tasmania, receipts for sums amounting to £2 and not over £5 are subject to a duty of one penny, and when the amount exceeds £5, one penny is charged for every additional £10 or part thereof, provided that the maximum duty on any receipt is fourpence.

(ii.) *Exemptions.* The exemptions from payment of duty on receipts vary considerably in the several States, and amongst others may be mentioned the following:—On His Majesty's Service, banker's receipt for bill of exchange or promissory note, current accounts, savings bank accounts, municipal rates, money orders and postal notes, wages received by labourers, workmen, menial servants, etc.

(c) Land Tax.

1. General.—Queensland is the only State in the Commonwealth in which a land tax is not levied, although it was not until as recently as 1907 that the first tax on land was imposed in Western Australia. In all of the other States the tax dates back to a much earlier period.

* "Or fractional part thereof" is to be understood after all amounts mentioned.

The following table shews the amount collected by means of such taxes in the States in which a land tax was imposed during the financial years 1901-2 to 1907-8:—

LAND TAX COLLECTIONS, 1901-2 to 1907-8.

| State. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ |
| New South Wales ... | 306,298 | 320,653 | 335,223 | 332,530 | 336,785 | 345,497 | 178,889 |
| Victoria ... | 97,862 | 92,867 | 106,445 | 97,840 | 103,536 | 92,438 | 89,496 |
| South Australia ... | 76,352 | 105,024 | 77,371 | 115,033 | 94,601 | 90,200 | 93,762 |
| Western Australia ... | ... | ... | ... | ... | ... | ... | 11,140 |
| Tasmania ... | *42,209 | 41,862 | *50,881 | 54,151 | 54,776 | 56,065 | 57,742 |
| Commonwealth ... | 522,721 | 560,406 | 569,920 | 599,554 | 589,698 | 584,200 | 431,029 |

* Calendar years 1901, 1902, and 1903 respectively.

2. **New South Wales.**—(i.) *Legislation.* The following Acts relating to the levying, assessment, and collection of land tax are at present in force in New South Wales:—

- (a) Land and Income Tax Assessment Act 1895, with amendments in 1896, 1897, 1898, and 1904.
- (b) Land Tax Act 1895, with amendments in 1899, 1900, and 1902.
- (c) Local Government Act 1906.

The principal Act, the Land and Income Tax Assessment Act of 1895, which was enacted for the purpose of establishing a system of direct taxation by means of a tax on land, as well as for other objects, was assented to on 12th December of that year. The Land Tax Act of 1895, assented to on the same day as the above-mentioned Act, provided for a tax which was amended in respect of certain leased lands by the amending Act of 1902, and suspended in cases, which will hereinafter be referred to, by the Local Government Act of 1906.

(ii.) *Rates.* Under the provisions of the principal Act a tax is levied on the unimproved value of all land after the deduction of £240, which deduction is only made once in the case of an owner of more estates than one. Land that is subject to mortgage is liable to a deduction each year from the tax on the unimproved value of a sum equal to the income tax leviable for that year on the interest derivable from the whole mortgage on the land, improvements included. A tax of one penny in the £ of the unimproved value was declared by the Land Tax Act of 1895. The Act of 1902, which only applies to land while it is subject to a lease from the owner which was current at the end of the year 1902, and of which not less than thirty years were at such time unexpired, and land that is subject to a lease from the owner made after the commencement of the Act for a term of not less than thirty years, provided for a similar tax to be paid conjointly by owners and lessees, according to an adjustment made by the Commissioners. Under the Local Government Act of 1906 the operation of the land tax is suspended in the case where a shire or municipality has levied a tax on the unimproved capital value of the rateable land within its boundaries.

(iii.) *Exemptions.* Some of the principal lands on which no taxation is payable are as follows:—

- (a) Crown lands which are not liable to right of purchase, and lands held by way of conditional or special lease and homestead selections under any Crown Lands Act.
- (b) Lands vested in His Majesty or in any person for or on behalf of His Majesty.
- (c) Lands vested in the Railway Commissioners.
- (d) Public roads and thoroughfares; reserves for health, recreation or enjoyment, parks, cemeteries, etc.

- (e) Lands occupied or used exclusively for public hospitals, benevolent and charitable institutions, churches, universities, affiliated colleges, mechanics' institutes, etc., and lands on which are erected public markets, town halls, etc., and land vested in any council, municipality, hospital, or affiliated college.
- (f) Land vested in trustees for the use of agricultural, horticultural, pastoral or zoological show purposes.
- (g) Land used exclusively for the site of a residence of a minister of religion ministering at some place of public worship, and land used as a site for a school attached to, or connected with, any place of public worship.

3. **Victoria.**—(i.) *Legislation.* The Land Tax Act of 1890 (No. 1107), which was assented to on 10th July, 1890, and which repealed the Act of 1877, is the only Act now in force in Victoria. Under this Act every "landed" estate, which is taken to mean land of upwards of 640 acres in extent, forming one area or separate areas not more than five miles apart and valued at over £2500, is subject to taxation.

(ii.) *Rates.* The owner of one or more "landed" estates is taxed every year at the rate of $1\frac{1}{4}$ per cent. on the capital value of his estate above the sum of £2500. The Act provides for the appointment of officers, whose duty it is to estimate the grazing capabilities of the land in every "landed" estate and to classify such under one of the following four divisions, viz.:—

- (a) Land capable of carrying two or more sheep to the acre to be returned as first-class and valued at £4 per acre.
- (b) Land carrying three sheep to two acres, and less than two sheep to the acre, second-class, and valued at £3 per acre.
- (c) Land carrying one sheep to the acre, and less than three sheep to two acres, third-class, and valued at £2 per acre.
- (d) Land which is not capable of grazing one sheep to the acre, fourth-class, and valued at £1 per acre.

4. **South Australia.**—(i.) *Legislation.* The administration of the land tax in South Australia is governed by the following Acts:—

- (a) Taxation Act 1884, with amendments in 1885, 1887, 1894, 1900, 1902, 1903, 1904, and 1905.
- (b) Increase of Taxes Act 1902.

On 14th November, 1884, the principal Act, viz., the Taxation Act, was assented to. It provided for a tax to be paid on the unimproved value of any land in the State of South Australia, but the rate was increased by subsequent Acts, as will be shewn below.

(ii.) *Rates.* The principal Act declared a tax of one half-penny for every £1 sterling in the amount of the taxable value, and the amending Act of 1894 imposed an additional tax of one half-penny for every £1 exceeding the amount of £5000 of the total assessed unimproved value owned by any party. Under the provisions of the Increase of Taxes Act of 1902 the general rate was augmented by one farthing in the £1, and a still further charge of one farthing was made by the 1904 amendment, making a total general rate now payable of one penny in the £1. The last-mentioned Act also increased by one farthing the tax payable on land valued over £5000, as provided in the Act of 1894, the present rate payable on property exceeding £5000 in value being, therefore, one penny three farthings for every £1 of the total assessed unimproved value over that amount. In the case of absentees an addition of 20 per cent. to these rates is provided for under the Amending Act of 1894. Under this Act absenteeism consisted of absence from the State of South Australia for the period of two years prior to the date on which the tax became due, but the duration of absence was reduced to twelve months by the amendment Act of 1904.

(iii.) *Exemptions.* The subjoined is a list of lands that are free from taxation:—

- (a) Land of the Crown which, for the time being, is not subject to any agreement for sale or right of purchase.
- (b) Park lands, public roads, cemeteries, and reserves.
- (c) Land used solely for religious or charitable purposes, or by any public institute.

5. *Western Australia.*—(i.) *Legislation.* The Land and Income Tax Assessment Act of 1907—the first Act relating to the payment of a tax on land in Western Australia—was assented to on 20th December, and came into force on 1st January following. A tax on the unimproved value of land was imposed by the Land Tax and Income Tax Act, which received assent and came into force on the same day as the above-mentioned Act.

(ii.) *Rates.* A tax at the rate of one penny for every pound sterling of the unimproved value of land is charged, provided that the aggregate value of the land held exceeds £50. A rebate of one half of the tax levied is allowed to every owner of improved land.

(iii.) *Exemptions.* The lands specified below are exempt from assessment for taxation:—

- (a) All lands owned by or on behalf of His Majesty.
- (b) Public roads and thoroughfares, public reserves for health, recreation, or enjoyment, and public parks, university endowments, cemeteries and commons.
- (c) Land used in connection with any public hospital, benevolent, charitable or religious institution, mechanics' institute, school of art, etc., and land on which is erected any State market, town hall, or municipal chambers.
- (d) All lands held as mining tenements, and lands dedicated to, or vested in trustees, and used for zoological, agricultural, pastoral, or horticultural show purposes, or other public scientific purposes.
- (e) Land, the unimproved value of which does not exceed £50.

6. *Tasmania.*—(i.) *Legislation.* The Land Tax Act of 1905, which was assented to on 30th September, and amended later on in the same year, consolidated the laws relating to land tax in Tasmania. It repealed the Act of 1888 (which was, until then, the principal Act), and also its eight amendments.

(ii.) *Rates.* When the total value of all the land of any taxpayer is under £5000, the rate of tax on such total capital value is one-halfpenny in the £1 sterling; when the value is £5000 and under £15,000, five-eighths of a penny is payable; £15,000 and under £40,000, three farthings; £40,000 and under £80,000, seven-eighths of a penny; and when the value is £80,000 and over, the rate charged is one penny in the £1 sterling. The owner of any land subject to mortgage, etc., may furnish to the Commissioner such particulars as may be required, and is entitled to deduct from the tax demanded of him, one-sixth of a penny for every £1 of the total amount advanced on such mortgage.

(iii.) *Exemptions.* The number of exemptions as contained in the principal Act is too lengthy to be given in detail, and a few of the most important only are herewith appended:—

- (a) Lands of the Crown which, for the time being, are not subject to lease, sale etc., and land, the property of and occupied by or on behalf of His Majesty.
- (b) Botanical gardens at Hobart and Launceston.
- (c) Public roads, cemeteries, reserves, and recreation grounds.
- (d) Land on which is built any public library, museum, hospital or any building used solely for charitable or religious purposes, or State Schools.
- (e) Any land owned by any local authority, or any local governing or statutory public body.

(d) Income Tax.

1. **General.**—A duty on the income of persons, whether it be derived from personal exertion or from the produce of property, is now imposed in all the States of the Commonwealth. As will be seen in dealing with the different States, the rates, exemptions, etc., are widely divergent, but the general principle of the several Acts is strikingly consistent. The Dividend Duties Acts of Queensland and Western Australia—the former of which is now repealed—supplied to a certain extent the place of an income tax in those States in former years, but, with the increasing demands upon the State Treasury, the levying of a direct income tax has been resorted to.

In the following table particulars are furnished concerning the total amount collected in the several States during the years 1901-2 to 1907-8. In the case of Queensland and Western Australia the amount of dividend duty collected is included, as is also the amount of ability tax in Tasmania, these taxes being closely allied to the income-tax:—

INCOME, DIVIDEND, AND ABILITY TAXES, 1901-2 to 1907-8.

| State. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------|---------|-----------|-----------|-----------|-----------|-----------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 211,871 | 224,306 | 216,655 | 231,442 | 276,299 | 283,422 | 215,283 |
| Victoria ... | 220,645 | 415,353 | 311,178 | 317,290 | 318,233 | 355,148 | 317,354 |
| Queensland | 66,204 | 222,149 | 222,343 | 253,918 | 264,957 | 284,476 | 271,299 |
| S. Aust. ... | 80,893 | 114,720 | 121,469 | 136,866 | 128,756 | 166,582 | 212,643 |
| W. Aust. ... | 85,890 | 127,607 | 125,071 | 123,733 | 137,485 | 116,916 | 113,967 |
| Tasmania | *20,203 | *14,943 | *37,529 | 83,883 | 98,321 | 116,949 | 101,433 |
| C'wealth ... | 685,706 | 1,119,078 | 1,034,245 | 1,147,132 | 1,224,051 | 1,323,493 | 1,231,979 |

* Calendar years 1901, 1902, and 1903 respectively.

2. **New South Wales.**—(i.) *Legislation.* The Acts under which the administration of the income tax is carried out in New South Wales are as follows:—

- (a) Land and Income Tax Assessment Act 1895, with amendments in 1896, 1897, 1898, and 1904.
- (b) Income Tax Act 1895, with amendment in 1907.
- (c) Taxation Amending Act 1905 and 1906.

The Land and Income Tax Assessment Act, which was assented to on 12th December, 1895, and came into force on the first day of the following year, is the principal Act. Under this Act the amount of taxable income from all sources for the year immediately preceding the year of assessment is the amount on which tax is payable, except in the case of income earned outside the State of New South Wales, which is not subject to taxation. The 1898 Act declared that for the purposes of taxation, the extracting from the soil, winning, producing, or manufacturing in the State of any product, commodity or substance and its export, is part of the carrying on of such trade in New South Wales, and the value of such product, etc., when exported is income earned in the said State.

(ii.) *Rates.* Under the Income Tax Act of 1895 the rate payable in New South Wales is sixpence in the pound on the amount of all incomes which exceed £200 per annum.

(iii.) *Exemptions.* The subjoined is a list of incomes, revenues, and funds which are exempt from the payment of income tax:—

- (a) Income not exceeding £200 per annum.
- (b) Revenues of municipal corporations or other local authorities.

- (c) Incomes of mutual life assurance societies, and of other companies or societies not carrying on business for purposes of profit or gain.
- (d) Dividends and profits of the Savings Bank of New South Wales, the Post-office Savings Bank, and the income of registered friendly societies.
- (e) Incomes and revenues of all ecclesiastical, charitable, and educational institutions of a public character.
- (f) Income derived from the ownership, use, or cultivation of land subject to land tax.

The exemptions declared in sub-sections (b) to (e) above do not extend to the salaries and wages of persons-employed by such corporations, companies, etc.

iv.) *Deductions.* In the case of a company the person liable to taxation in respect of an income exceeding £200 was, under the principal Act, entitled to a deduction of £200 in the assessment of such income, but by the Amendment Act of 1907, which came into force on 1st January, 1908, it has been provided that the deduction is in the first place to be made from so much of the income as is derived from personal exertion. The latter Act also provides—(a) that where the income derived from personal exertion is less than £200 the deduction is to be made to the extent of such income, and any part of the £200 not applied in such deduction is to be taken from the income derived from the produce of property; and (b) when the income of any person, not being a company, which is obtained by personal exertion, exceeds £200, he is entitled to a further deduction of the amount by which such income exceeds £200, provided that the total deductions do not, in any case, exceed £1000.

In addition to the above, deductions are allowed on account of losses, repairs, cost of earning incomes, etc., and also on account of expenditure not exceeding £50 per annum on life insurance.

3. *Victoria.*—(i.) *Legislation.* The principal Act in Victoria, the Income Tax Act of 1895, was assented to on 29th January of that year. On the 24th December following the Income Tax Rate Act received assent, and since then, with one exception, an Act has been passed each year declaring rates for the year ending 31st December following the date on which the Act came into force. The first scale of taxation was provided for by the Income Tax Rate Act 1895, and remained in force until 1st January, 1903, when the first amendment of 1903 came into force. The rates contained in the latter Act were superseded when the second amendment of 1903 came into operation, and were further altered by the 1904 Act, the rates of which are in force at present.

(ii.) *Rates.* Under the provisions of the last-mentioned Act a person, not being a company, is subject to the following rates of duty on the amount of his income from personal exertion, viz.—For every £1 up to £500, threepence; over £500 and up to £1000, fourpence; £1000 and up to £1500, fivepence; and over £1500, sixpence; with double these rates if the income be derived from property. An exemption of £156 was allowed under the above Act, but this was increased to £200 by the Act of 1906, and that sum is still exempt from taxation. The Act of 1907 provides that the amount of income tax, computed on the above basis, to be payable by a person, not being a company, for the year ending 31st December, 1908, shall be reduced by 20 per cent. Land used as a residence by the owner is deemed to return 4 per cent. on its actual capital value.

(iii.) *Special Rates.* (a) A tax of sevenpence is levied on the income of any company liable to tax, not being a life assurance company, for every pound sterling of the taxable amount thereof, and a similar tax of eightpence on a company which carries on in Victoria the business of life assurance; and (b) a tax of five pounds on every £100 of the amount payable to him for the carriage of passengers, live stock, mails, or goods shipped in Victoria, is imposed on every owner or charterer of a ship whose principal place of business is out of Victoria.

(iv.) *Exemptions.* Some of the most important exemptions from taxation are as follows:—

- (a) Persons whose income does not exceed £200.
- (b) Income of the Governor, a Minister of the Crown, Board of Land and Works, Railway Commissioners, Harbour Trust, Board of Works, Fire Brigades, Savings Bank, University, Working Men's College, or any Public College affiliated to the University.
- (c) Income of religious bodies, registered friendly, provident, building and trade union societies.
- (d) Trust societies, associations, etc., not carrying on business for purposes of gain to members; mutual fire insurance companies and fire or marine insurance companies, licensed under the Stamps Acts, whose head office is in Australia, and mining companies.
- (e) Interest accruing to any person not resident in Victoria from stock, debentures or Treasury bonds of the Government of Victoria, or issued by any public or municipal trust, body or corporation.

(v.) *Deductions.* Expenditure incurred in Victoria by any taxpayer in the production of his income, and all taxes payable by him (income tax excepted) are allowed to be deducted from the gross amount of his income; as is also a sum not exceeding £50 from the amount of premiums paid for life assurance; but no deduction by way of exemption from income tax is permitted to a person who has been out of the State for six consecutive months in the year during which the income was received; or for any sum expended on repairs of premises, implements, etc., used for the purpose of trade, or for bad debts and the maintenance of the families of taxpayers.

4. *Queensland.*—(i.) *Legislation.* The laws under which the income tax of Queensland is regulated are contained in the Income Tax Act of 1902, and its amendments of 1902, 1904, 1905, 1906, and 1907. The first-named, which is the principal Act, was assented to on 1st December, 1902. The Dividend Duty Act of 1890, which imposed a tax on the dividends declared by public companies having their head office or place of business in Queensland, was repealed by the Income Tax Amendment Act of 1904, and in lieu thereof the rates that are shewn in (c) below are enforced.

(ii.) *Rates.* The present rates of duty as laid down in the Amendment Acts of 1906 and 1907 are as follows, provided that the total income of a person, not being a company or an absentee, exceeds £200:—

- (a) On the income derived from personal exertion:—Where the total income does not exceed £500 the tax levied is sixpence for every pound; where it exceeds £500 and does not exceed £1000, sixpence for every pound of the first £500 and sevenpence for every pound over £500; where it exceeds £1000 and does not exceed £1500, sevenpence for every pound of the first £1000 and eightpence for every pound over £1000; and when the income exceeds £1500, eightpence for every pound is payable.
- (b) On the income derived from the produce of property the rate is ninepence for every pound.
- (c) On the income of all companies, or of an absentee, that is, a person not domiciled in Australia, one shilling in the pound is charged, provided that in the case of a company whose head office is in Queensland, the income is assessed at not less than the amount of dividends declared during the year, and if the profits remain undistributed amongst the shareholders, only sixpence in the pound is payable upon such undistributed profits. In the case of foreign companies, that is, companies whose head office is outside Queensland, special rules are given in the Act for determining the taxable amount of income.

(iii.) *Exemptions.* Included in the list of exemptions are the following incomes which are free from taxation :—

- (a) Income of a person, not being a company, which does not exceed £200.
- (b) Income of the Governor of Queensland, and the revenues of local bodies derived for purposes of local self-government.
- (c) Incomes of societies and institutions not carrying on business for purposes of profit or gain, and of any registered friendly societies.
- (d) Incomes and revenues of religious, charitable, and educational institutions of a public character.
- (e) Incomes arising or accruing from debentures, stock or Treasury bills issued by the Government of Queensland, or derived as dividends from any company which has paid in Queensland income tax on the profits from which such dividends are paid.

(iv.) *Deductions.* When the income of a person, not being a company or an absentee, exceeds £200 per annum, the deduction of £200 is, in the first place, made from the income, if any, derived from personal exertion. The amount of all premiums not exceeding £50 paid by a taxpayer in respect of life assurance policies, or into any super-annuation fund, etc., and all losses and outgoings actually incurred in Queensland by him in production of his income, are also amongst the deductions which are allowed.

5. **South Australia.**—(i.) *Legislation.* Under the Acts given herewith the income tax of South Australia is collected :—

- (a) Taxation Act 1884, with amendments in 1885, 1887, 1894, 1900, 1902, 1903, 1904, and 1905.
- (b) Additional Income Tax Act 1893.
- (c) Income Tax Continuance Act 1893, with amendments in 1897 and 1898.
- (d) Increase of Taxes Act 1902.

On the 14th November, 1884, the principal Act, the Taxation Act, was assented to. The rates of duty enforced thereby were superseded in order by the Additional Income Tax Act of 1893, the Amendment Act of 1894, the Increase of Taxes Act of 1902, and the Amendment Act of 1903; the scale enacted by the latter Act still remaining in operation.

(ii.) *Rates.* Under the last-mentioned Act the income of every person of the value of £150 or over is subject to a tax of fourpence half-penny for every pound up to and inclusive of £800, and sevenpence for every pound above that amount if the income be derived from personal exertion; but if the income consist of the produce of property, the rate is ninepence for every pound up to and inclusive of £800, and thirteence half-penny for every pound above the sum of £800.

(iii.) *Exemptions.* The following incomes are not subject to the payment of income tax :—

- (a) Income of every person under the value of £150.
- (b) Income of municipal corporations and district councils.
- (c) Income of companies, public bodies and societies, not carrying on business for the purpose of gain to be divided among the shareholders, and the income of all friendly societies.
- (d) Income derived from land on which land tax is payable, provided that such income does not exceed 5 per cent. of the actual value thereof.
- (e) Income derived from land and produced by personal exertion where the land does not exceed £1000 in unimproved value.

(iv.) *Deductions.* All expenses, etc., actually incurred by a taxpayer in the production of his income are deducted from the gross amount of his income. If he has been out of South Australia for twelve consecutive months prior to the date on which the tax

falls due, or if his net income from all sources exceeds £400, no deduction of any kind is allowed. In the case of an income which exceeds £150, that sum is deducted from the net amount of income derived from the produce of property, but if such income does not amount to £150, the difference is taken from that derived from personal exertion. No deductions are allowed for (a) cost of maintenance of a taxpayer and his family or establishment; (b) cost of implements, etc., for purposes of the trade, except renewals for wear and tear; or (c) domestic and private expenses.

6. **Western Australia.**—(i.) *Legislation.* On 20th December, 1907, the first Income Tax Act of Western Australia received assent under the title of the Land and Income Tax Assessment Act 1907, and on the same day the Land Tax and Income Tax Act was passed, declaring rates for the year ending 30th June, 1908. The first-named Act provides that when the amount due from taxation exceeds the sum of twenty shillings, the same is payable in two equal half-yearly instalments. Under the second Act only half the tax levied for 1907-8 is required to be collected and is to be paid in one sum. The two Acts thus practically came into force on 1st January, 1908.

(ii.) *Rates.* A tax of fourpence in the pound is levied on the annual amount of all incomes exceeding £200 per annum. An additional 50 per cent. is payable on the income of any person who has not been resident in the Commonwealth of Australia during any part of the year preceding the year of assessment, provided that he has not been absent on public service.

(iii.) *Exemptions.* The following are the most important cases of incomes, revenues, and funds exempt from income tax:—

- (a) Incomes not exceeding £200 per annum.
- (b) Revenues of municipal corporations, road boards, or other statutory public bodies.
- (c) Incomes of life assurance companies and of companies or societies not carrying on business for the purposes of profit or gain.
- (d) Dividends and profits of companies subject to duty under the Dividend Duties Act, and of the Government Savings Bank and Agricultural Bank.
- (e) Income of the Governor of Western Australia, and of all ecclesiastical, charitable and educational institutions of a public character.
- (f) Incomes arising or accruing to any person from Western Australian Government debentures, inscribed stock, and Treasury Bills.
- (g) Income derived from land on which land tax is payable.

(iv.) *Deductions.* Sums expended by a taxpayer for repairs of premises, and expenses, etc., incurred in the production of his income are deducted from the amount on which duty is payable; as are also sums not exceeding £50 in the aggregate which are paid as life assurance premiums or in connection with fidelity guarantees or bonds. The amount paid to a taxpayer's sons and daughters, over the age of sixteen years, employed in his trade or occupation; and a sum representing ten pounds for each child under the age of sixteen residing with, and dependent on him, are also allowed to be deducted from his income.

(v.) *Dividend Duties Act in Western Australia.* This Act was passed in order to impose a tax on the dividends or profits of incorporated companies and repealed the Company Duties Act passed in 1899. The Dividend Duties Act was passed on 20th December, 1902, and an amendment was assented to on 14th December, 1906. The principal Act provides that within seven days after the declaration of a dividend by a company carrying on business in Western Australia such company shall pay to the Colonial Treasurer a duty equal to one shilling for every pound of the amount or value of such dividend. A company that carries on in the State any insurance or assurance business exclusively (not being a life assurance company) is required to pay, on or before

1st March in each year, a sum equal to twenty shillings for every £100 of premiums, and a proportionate sum for every fraction of £100 of such premiums. The rates payable by shipping companies are 5 per cent. of 5 per cent. on all inward or outward traffic, including passenger fares, and 5 per cent. of the profits on sales of coal or other goods, or of the profit of vessels trading exclusively within the State.

7. *Tasmania.*—(i.) *Legislation.* The Income Tax Act of 1902, which received assent on 20th December, 1902, and came into force on the following 1st January, and its amendment of 1904, are the Acts which govern this form of taxation in Tasmania. The first-named Act repealed the Real and Personal Estates Duties Act of 1880 and five of its amendments.

(ii.) *Rates.* The duty levied by the principal Act as amended by the 1904 Act is one shilling for every pound sterling of the taxable amount derived either from personal exertion or from the produce of property, provided that the income is £100 or over per annum. The same scale also applies to the income of any company except those that are specially mentioned below, and to dividends. Special rules for determining the taxable income of certain foreign companies are given in the Act.

(iii.) *Exemptions.* The exemptions from taxation in this State comprise the following:—

- (a) Income of any person, not being a company, under £100 per annum, provided that such income is not received as a prize in any lottery authorised by law in Tasmania.
- (b) Revenues of Municipal Corporations, Road Trusts, Town and Marine Boards, Water Trusts and local government bodies.
- (c) Incomes of companies, societies, etc., not carrying on business for the purposes of gain to the shareholders, and registered friendly societies.
- (d) Income of the Governor of Tasmania.
- (e) Income derived as rent for the use and occupation of land that is subject to land tax.
- (f) Income of every person arriving in Tasmania for a period of six months after his arrival.

(iv.) *Deductions.* When a person's income is £100 and under £400 the following deductions are allowed:—If it be £100 and less than £110, a deduction of £80; £110 and under £120, £70; £120 and under £150, £60; then for every increase of £50 in the income the deduction is reduced by £10. On incomes amounting to £400 or more no deduction is permitted. When the income is derived partly from personal exertion and partly from the produce of property the deduction is made from the part derived from personal exertion, and if such part of the income is insufficient to allow the full benefit of such deduction, then the balance is made up from the part of the income derived from property. Losses, outgoings, etc., and rent paid by a tenant of land and buildings occupied and used for carrying on his business are not deducted, except the rent of such portion as is used for the residence of the occupier. This also applies in the case of the owner of property.

(v.) *Ability Tax in Tasmania.* The Taxation Act of 1904 provides for the levying of a tax upon persons in proportion to their means or ability. It was assented to on 1st November, 1904, and an amending Act was passed on 30th November, 1906. The assessment of the taxable amount is determined according to the annual value of the property occupied or the amount paid for board and lodging, as the case may be, and varies in the case of property from one penny to sixpence in the pound of annual value, with a minimum of two shillings and sixpence, and in the case of board and lodging from three halfpence to sixpence in the pound on the amount payable annually for board and lodging.

8. **Taxation of Commonwealth Salaries and Allowances.**—On 8th October, 1907, the Commonwealth Salaries Act, passed by the Federal Parliament, received the Governor-General's assent. By this Act it is declared that salaries and allowances paid by the Commonwealth are liable to taxation by the States. The tax is payable in the State in which the officer resides and the salary is earned, and in the case of a member of the Parliament of the Commonwealth, in the State in which he was elected. The only exemption from taxation is the salary of the Governor-General. This Act was the outcome of considerable litigation, brought about by the refusal of persons in receipt of Federal salaries and allowances to pay income tax in respect thereof.

§ 3. Trust Funds.

1. **Nature.**—In addition to the moneys received by the several State Governments as revenue, and paid to the credit of their respective Consolidated Revenue Funds, considerable sums are held by the Governments in trust for various purposes. One of the chief sources of these trust funds is the State Savings Bank, which exists in each State, either as a Government department or under the control of a Board acting under Government supervision or Government guarantee. In most of the States also, sinking funds for the redemption of public debt are provided, and the moneys accruing thereto are paid to the credit of the appropriate trust funds. A similar course is followed in the case of municipal sinking funds placed in the hands of the Government. In all the States except New South Wales, life assurance companies carrying on business are required to deposit a substantial sum in cash or approved securities with the Government, and these deposits go to further swell the trust funds. Various other deposit accounts, superannuation funds, suspense accounts, etc., find a place in these funds. The trust funds have at various times enabled the several State Treasurers to tide over awkward financial positions, but the propriety of allowing deficits to be frequently liquidated in this manner is worthy of very serious consideration.

2. **Extent of Funds.**—The amount of such funds held by the several State Governments on 30th June, 1908, was as follows:—

TRUST FUNDS ON 30th JUNE, 1908.

| Particulars. | N S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | All States. |
|-----------------------|-----------|-----------|-----------|----------|-----------|-----------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Amount of trust funds | 1,867,442 | 5,822,293 | 4,543,424 | 1206,426 | 5,837,710 | 1,016,102 | 20,293,397 |

§ 4. Loan Funds.

1. **Nature.**—As early in the history of Australia as 1842 it was deemed expedient to supplement the revenue collections by means of borrowed moneys, the earliest of the loans so raised being obtained by New South Wales for the purpose of assisting immigration, at rates of interest varying from 2½d. to 5½d. per £100 per diem, or approximately from 4½ per cent. to 8 per cent. per annum. The principal reason for Australian public borrowing, however, has been the fact that the Governments of the several States have, in addition to ordinary administrative duties, undertaken the performance of many functions which, in other countries, are usually entrusted to local authorities, or left to the initiative of private enterprise. Principal amongst these have been the construction of railways and the control of the railway systems of the several States, while the

assumption by the State Governments of responsibilities in connection with improvements to harbours and rivers, and the erection of lighthouses, as well as the construction of works for the purposes of water supply and sewerage, have materially swelled the amounts which it has been considered expedient to obtain by means of loans. The Australian loan expenditure and public debt thus differ very materially from those of most European countries, where such expenditure is very largely incurred for purposes of defence, or absorbed in the prosecution of war. The debt of Australia, on the other hand, consists in the main of moneys raised and expended with the object of assisting the development of the resources of the Commonwealth, and is, to a very large extent, represented by tangible assets such as railways, tramways, waterworks, etc.

2. **Loan Expenditure, 1907-8.**—During the year ended 30th June, 1908, the actual expenditure of the Australian States from loan funds amounted to £5,237,170, New South Wales with a total of £1,965,329 being the principal contributor to this amount, while Queensland, whose expenditure amounted to £1,033,676, ranked second. The chief item of expenditure for the year was that of railways and tramways, which represented a total of £2,898,284; water supply and sewerage works to the amount of £899,024; land purchases for settlement, £368,323; and the expenditure on harbours, rivers, etc., totalling £306,314, were the most important of the remaining items. Details for the year for each State are given in the following table:—

AUSTRALIAN LOAN EXPENDITURE, 1907-8.

| Heads of Expenditure. | N.S.W. | Vic. | Qld. | S. Aust. | W. Aust. | Tas. | All States. |
|-------------------------------------|------------------|----------------|------------------|----------------|----------------|----------------|------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Railways and tramways ... | 1,363,314 | 249,646 | 885,070 | 55,510 | 305,817 | 38,827 | 2,898,284 |
| Water supply and sewerage ... | 370,819 | 276,583 | 3,847 | 119,889 | 127,836 | ... | 899,024 |
| Harbours, rivers, etc. ... | 138,561 | ... | ... | 93,563 | 73,464 | 726 | 306,314 |
| Roads and bridges ... | 1,690 | 23 | ... | ... | 7,956 | 94,443 | 104,112 |
| Defence ... | ... | ... | ... | ... | ... | 45 | 45 |
| Public buildings ... | 90,945 | ... | 14,239 | 30,219 | 106,595 | 15,799 | 257,797 |
| Development of mines, etc. ... | ... | ... | ... | ... | 49,463 | ... | 49,463 |
| Advances to settlers ... | ... | ... | ... | ... | 23,358 | ... | 23,358 |
| Land purchases for settlement ... | ... | 254,833 | ... | 113,495 | ... | ... | 368,323 |
| Loans to local bodies ... | ... | ... | 109,904 | ... | ... | 52,259 | 162,163 |
| Rabbit-proof fences ... | ... | ... | 17,642 | 44,196 | 4,361 | ... | 66,199 |
| Other public works and purposes ... | ... | 2,453 | 2,674 | 39,056 | 29,345 | 22,755 | 96,583 |
| Total ... | 1,965,329 | 783,533 | 1,033,676 | 495,928 | 733,745 | 224,954 | 5,237,170 |

3. **Aggregate Loan Expenditure.**—The total loan expenditure of the Australian States from the initiation of the borrowing system to the 30th June, 1908, has amounted to no less a sum than £237,999,605. The manner in which this sum has been spent in the several States is furnished in the following table:—

AGGREGATE AUSTRALIAN LOAN EXPENDITURE to 30th JUNE, 1908.

| Heads of Expenditure. | N.S.W. | Vic. | Qld. | S. Aust. | W. Aust. | Tas. | All States. |
|-----------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|--------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Railways and tramways ... | 51,356,003 | 39,144,835 | 25,183,529 | 13,996,437 | 10,254,815 | 4,182,838 | 144,118,857 |
| Telegraphs and telephones ... | 1,297,582 | ... | 1,049,403 | 991,773 | 269,308 | 142,410 | 3,750,476 |
| Water supply and sewerage ... | 12,553,945 | 9,465,573 | 1,136,020 | 5,485,144 | 3,111,985 | ... | 31,758,567 |
| Harbours, rivers, etc. ... | 10,552,790 | 611,058 | 2,573,672 | 1,767,917 | 2,352,043 | 527,016 | 18,664,497 |
| Roads and bridges ... | 1,891,943 | 176,006 | 972,698 | 1,464,736 | 166,812 | 2,528,283 | 7,107,394 |
| Defence ... | 1,457,536 | 149,323 | 382,327 | 291,030 | ... | 128,224 | 2,406,040 |
| Public buildings ... | 4,898,206 | 1,912,029 | 1,504,503 | 1,000,489 | 285,817 | 874,076 | 10,385,120 |
| Immigration ... | 194,430 | ... | 2,993,524 | ... | 28,085 | 235,000 | 3,367,039 |
| Development of mines, etc. ... | ... | 131,665 | ... | ... | 1,119,866 | ... | 1,251,531 |
| Advances to settlers ... | 683,308 | 114,235 | ... | 87,839 | 32,919 | ... | 918,351 |
| Land purchases for settlement ... | 139,000 | 1,579,015 | ... | 949,523 | 300,000 | ... | 2,967,598 |
| Loans to local bodies ... | ... | ... | 1,946,019 | ... | ... | 527,727 | 2,473,746 |
| Rabbit-proof fences ... | ... | ... | ... | 344,785 | 300,457 | ... | 645,242 |
| Other pub. works and purposes ... | 49,856 | 3,392,856 | 1,674,843 | 2,189,961 | 248,376 | 611,313 | 8,167,205 |
| Total ... | 85,195,499 | 56,676,596 | 39,333,350 | 28,570,234 | 18,469,959 | 9,753,887 | 237,999,605 |

It must be noted that the figures furnished in this table represent the amounts actually spent, and consequently differ somewhat from those given later in the statements relating to the public debt, which represent amount of loans still unpaid at given date. The loan expenditure statement includes all such expenditure, whether the loans by means of which the necessary funds were raised have been repaid or are still in existence. On the other hand, in the public debt statement loans repaid are excluded, but in the case of loans still outstanding each is shown according to the amount repayable at maturity, not according to the amount originally available for expenditure.

4. **Relative Importance of Loan Items.**—The relative importance of the different items of loan expenditure given in the foregoing table varies considerably in the several States, but in each instance the expenditure on railways and tramways predominates, the percentage of this item on total expenditure ranging between the limits of 49 per cent. in the case of South Australia and 69 per cent. in that of Victoria. The following table gives for the several States the percentage of each item on the total loan expenditure of that State to 30th June, 1908:—

**PERCENTAGE OF EACH ITEM ON TOTAL LOAN EXPENDITURE OF THE STATES
to 30th JUNE, 1908.**

| Heads of Expenditure. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | All States. |
|--------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | % | % | % | % | % | % | % |
| Railways and tramways ... | 60.28 | 69.07 | 64.08 | 48.99 | 55.52 | 42.88 | 60.54 |
| Telegraphs and telephones ... | 1.52 | ... | 2.67 | 3.47 | 1.46 | 1.46 | 1.58 |
| Water supply and sewerage ... | 14.74 | 16.70 | 2.89 | 19.20 | 16.85 | ... | 13.34 |
| Harbours, rivers, etc. ... | 12.74 | 1.08 | 6.54 | 6.19 | 12.73 | 5.40 | 7.85 |
| Roads and bridges ... | 2.12 | 0.31 | 2.47 | 5.13 | 0.90 | 25.89 | 2.99 |
| Defence ... | 1.71 | 0.26 | 0.97 | 1.02 | ... | 1.32 | 1.01 |
| Public buildings ... | 5.64 | 3.37 | 3.82 | 3.50 | 1.55 | 8.96 | 4.36 |
| Immigration ... | 0.23 | ... | 7.40 | ... | 0.15 | 2.41 | 1.42 |
| Development of mines, etc. ... | ... | 0.23 | ... | ... | 6.06 | ... | 0.53 |
| Advances to settlers ... | 0.80 | 0.20 | ... | 0.31 | 0.18 | ... | 0.39 |
| Land purchases for settlement | 0.16 | 2.79 | ... | 3.32 | 1.62 | ... | 1.25 |
| Loans to local bodies ... | ... | ... | 4.95 | ... | ... | 5.41 | 1.04 |
| Rabbit-proof fences ... | ... | ... | ... | 1.21 | 1.63 | ... | 0.27 |
| Other public works & purposes | 0.06 | 5.99 | 4.26 | 7.66 | 1.35 | 6.27 | 3.43 |
| Total ... | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

5. **Loan Expenditure in Successive Years.**—In the following table are given particulars relative to the loan expenditure of the several States during each of the years 1901-2 to 1907-8:—

AUSTRALIAN LOAN EXPENDITURE, 1901-2 to 1907-8.

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | All States. |
|------------|-----------|-----------|-----------|----------|-----------|-----------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1901-2 ... | 4,939,241 | 910,833 | 1,161,689 | 566,079 | 1,545,823 | 341,994 | 9,465,659 |
| 1902-3 ... | 4,713,386 | 756,404 | 1,022,405 | 465,554 | 1,665,901 | 238,631 | 8,862,281 |
| 1903-4 ... | 2,288,742 | 447,244 | 603,805 | 415,723 | 710,629 | 167,123 | 4,633,271 |
| 1904-5 ... | 1,571,257 | 373,191 | 225,466 | 449,214 | 654,353 | 150,994 | 3,424,475 |
| 1905-6 ... | 1,367,022 | 932,966 | 297,624 | 449,930 | 372,442 | 136,971 | 3,556,955 |
| 1906-7 ... | 1,058,553 | 583,179 | 683,570 | 494,714 | 900,964 | 156,945 | 3,832,925 |
| 1907-8 ... | 1,965,329 | 783,538 | 1,033,676 | 495,928 | 733,745 | 224,954 | 5,237,170 |

Throughout the seven years under review the loan expenditure of New South Wales exceeded that of any other of the States, and for the years 1901-2 and 1902-3 represented more than half of the aggregate loan expenditure of Australia. The amount so spent in

New South Wales, however, continuously declined from £4,939,241 in 1901-2 to £1,058,553 in 1906-7, but rose again in 1907-8 to £1,965,329. In South Australia the annual loan expenditure during the past six years has varied but little from £450,000. In Tasmania the loan expenditure continuously declined from £341,994 in 1901-2 to £136,971 in 1905-6, but advanced again in 1906-7 and 1907-8, reaching £224,954 in the latter year. In the three remaining States marked fluctuations have been in evidence; thus, Victoria had a minimum loan expenditure for the period in 1904-5 and a maximum in 1905-6, the figures being, respectively, £373,191 and £932,966; Queensland had a minimum of £225,466 in 1904-5 and a maximum of £1,161,689 in 1901-2; while Western Australia had a minimum of £372,442 in 1905-6 and a maximum of £1,665,901 in 1902-3. The large loan expenditure of New South Wales in 1901-2 and 1902-3 was incurred chiefly in connection with railway construction and the resumption of the foreshores and adjoining properties of Darling Harbour. In Victoria the large expenditure of 1901-2 was in great part due to railway construction, while that of 1905-6 resulted in large measure from the purchase of lands for closer settlement. In the case of the large loan expenditure of Queensland in 1901-2 and 1902-3, as well as that of 1906-7 and 1907-8, railway construction was the principal contributing item. In Western Australia the heavy loan expenditure of 1901-2 and 1902-3 was principally in connection with railway construction and water supply.

6. Loan Expenditure per Head.—The loan expenditure per head of population varies materially in the different States and in different years, reaching its highest point for the seven years under review in Western Australia in 1901-2 with £7 19s. 3d. per head, and its lowest in Victoria in 1904-5 with 6s. 2d. per head. Particulars concerning the loan expenditure per head for the seven years 1901-2 to 1907-8 are given hereunder:—

LOAN EXPENDITURE PER HEAD, 1901-2 to 1907-8.

| Year. | N.S.W. | | | Victoria. | | | Q'land. | | | S. Aust. | | | W. Aust. | | | Tasmania. | | | All States. | | |
|--------|--------|----|----|-----------|----|----|---------|----|----|----------|----|----|----------|----|----|-----------|----|----|-------------|----|----|
| | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| 1901-2 | 3 | 11 | 10 | 0 | 15 | 1 | 2 | 5 | 11 | 1 | 10 | 11 | 7 | 19 | 3 | 1 | 19 | 10 | 2 | 9 | 6 |
| 1902-3 | 3 | 7 | 2 | 0 | 12 | 6 | 2 | 0 | 0 | 1 | 5 | 5 | 7 | 16 | 2 | 1 | 7 | 7 | 2 | 5 | 8 |
| 1903-4 | 1 | 12 | 1 | 0 | 7 | 5 | 1 | 3 | 5 | 1 | 2 | 7 | 3 | 2 | 8 | 0 | 18 | 11 | 1 | 3 | 7 |
| 1904-5 | 1 | 1 | 7 | 0 | 6 | 2 | 0 | 8 | 8 | 1 | 4 | 1 | 2 | 14 | 0 | 0 | 16 | 9 | 0 | 17 | 2 |
| 1905-6 | 0 | 18 | 4 | 0 | 15 | 4 | 0 | 11 | 3 | 1 | 3 | 10 | 1 | 9 | 3 | 0 | 15 | 2 | 0 | 17 | 7 |
| 1906-7 | 0 | 13 | 10 | 0 | 9 | 7 | 1 | 5 | 7 | 1 | 5 | 9 | 3 | 8 | 10 | 0 | 17 | 5 | 0 | 18 | 10 |
| 1907-8 | 1 | 5 | 1 | 0 | 12 | 7 | 1 | 18 | 2 | 1 | 5 | 3 | 2 | 16 | 1 | 1 | 4 | 5 | 1 | 4 | 11 |

§ 5. Public Debt.

1. The Initiation of Public Borrowing.—The earliest of the loans raised in Australia for Government purposes was that obtained by New South Wales in 1842. This and nine other loans raised prior to 1855 were all procured locally. In the last-mentioned year Australia's first appearance on the London market occurred, the occasion being the placing of the first instalment of the New South Wales 5 per cent. loan for £683,300. Victoria first appeared as a borrower in 1854, and made its first appearance on the London market in 1859. In the remaining States the first public loans were raised in the following years:—Queensland 1861, South Australia 1854, Western Australia 1845, and Tasmania 1867.

2. Nature of Securities.—All the earlier loans raised by the Australian States were obtained by the issue of debentures, some of which were repayable at fixed dates, and others by annual or other periodical drawings. In more recent years, however, the issue of debentures has given place to a great extent to that of inscribed stock, the inscription in the case of local issues being carried out by the State Treasuries, and in the cases of

loans floated in London being mainly performed by the Bank of England and the London and Westminster Bank. The issue of debentures has not, however, been entirely discontinued, for within the last six years debentures to the amount of upwards of £2,000,000 were placed on the market by the Government of New South Wales. In other States also, recent issues of debentures have taken place, the occasions usually being those in which the term of the loan is less than that ordinarily attaching to issues of inscribed stock. Another form of security is that variously known as the Treasury bill or Treasury bond. This is really neither more nor less than a short term debenture having a currency in most instances of from three to five years. These are issued in certain cases to liquidate deficiencies in revenue, and in others to obtain moneys for the purpose of carrying on public works at a time when it is deemed inexpedient to place a permanent loan on the market. The amount of the public debt of the several States held in each of these forms of security is furnished in the table hereunder:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1908.

| State. | Debentures. | Inscribed Stock. | Treasury Bills. | | Total Amount Outstanding. |
|-----------------------|-------------|------------------|--------------------------------|--------------------|---------------------------|
| | | | For Public Works and Services. | In aid of Revenue. | |
| | £ | £ | £ | £ | £ |
| New South Wales ... | 8,308,350 | 76,206,560 | 1,906,400 | 1,214,516 | 87,635,826 |
| Victoria ... | 5,397,699 | 41,500,928 | 6,281,860 | 125,000 | 53,305,487 |
| Queensland ... | 13,980,580 | 26,653,887 | ... | 1,130,000 | 41,764,467 |
| South Australia ... | 6,045,200 | 19,600,308 | 3,149,350 | 1,191,000 | 29,985,858 |
| Western Australia ... | 419,200 | 19,374,268 | 700,150 | ... | 20,493,618 |
| Tasmania ... | 3,014,250 | 7,041,872 | 94,111 | ... | 10,150,233 |
| Total ... | 37,165,279 | 190,377,823 | 12,131,871 | 3,660,516 | 243,335,489 |

The manner in which the amount of public debt of the Australian States held under these various forms of security has grown during the past seven years will be seen from the following table:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1901 to 1908.

| Date. | Debentures. | Inscribed Stock. | Treasury Bills. | | Total Amount Outstanding. |
|-----------------|-------------|------------------|--------------------------------|--------------------|---------------------------|
| | | | For Public Works and Services. | In aid of Revenue. | |
| | £ | £ | £ | £ | £ |
| 30th June, 1901 | 44,060,320 | 151,140,371 | 5,914,000 | 2,403,584 | 203,518,275 |
| „ 1902 | 44,191,825 | 161,673,758 | 4,006,500 | 4,383,126 | 214,255,209 |
| „ 1903 | 43,639,525 | 168,388,889 | 6,046,775 | 4,796,576 | 222,871,765 |
| „ 1904 | 37,741,025 | 172,796,361 | 12,493,650 | 4,716,576 | 227,747,612 |
| „ 1905 | 39,153,744 | 175,047,336 | 12,045,100 | 4,487,491 | 230,738,671 |
| „ 1906 | 39,587,224 | 181,279,045 | 12,194,464 | 5,367,087 | 238,427,820 |
| „ 1907 | 38,061,799 | 184,157,771 | 13,571,985 | 4,358,172 | 240,149,727 |
| „ 1908 | 37,165,279 | 190,377,823 | 12,131,871 | 3,660,516 | 243,335,489 |

During the seven years between 30th June, 1901, and 30th June, 1908, the public debt of the States increased by £39,817,214, or at the rate of £5,700,000 per annum. The amount of debentures comprised in the total debt diminished by £6,900,000 during the period, while the amount held as inscribed stock increased by £39,200,000, and as Treasury bills by about £7,500,000.

3. Increase in Indebtedness of the Several States.—The table given hereunder furnishes particulars of the increase which has taken place during the past seven years in the public debts of the several States:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1901 to 1908.

| Date. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | All States. |
|---------------------|------------|------------|------------|------------|------------|------------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 30th June, 1901 ... | 87,361,246 | 50,071,275 | 38,416,514 | 26,448,805 | 12,709,430 | *8,511,005 | 233,518,275 |
| " 1902 ... | 71,592,485 | 50,933,957 | 40,418,177 | 27,272,545 | 14,942,310 | *9,085,735 | 214,256,209 |
| " 1903 ... | 77,692,987 | 51,447,900 | 41,031,247 | 27,843,370 | 15,627,398 | *9,528,963 | 227,571,765 |
| " 1904 ... | 90,033,581 | 51,819,962 | 41,773,237 | 23,593,645 | 19,090,258 | 9,436,839 | 227,747,612 |
| " 1905 ... | 82,321,998 | 51,763,787 | 41,764,467 | 23,773,695 | 16,642,773 | 9,471,971 | 230,738,671 |
| " 1906 ... | 85,641,734 | 53,079,800 | 41,764,467 | 30,082,645 | 18,058,553 | 9,800,631 | 238,427,820 |
| " 1907 ... | 85,607,832 | 53,104,980 | 41,764,467 | 30,520,718 | 19,222,638 | 9,923,083 | 240,149,727 |
| " 1908 ... | 87,635,826 | 53,305,437 | 41,764,467 | 29,951,853 | 20,493,618 | 10,150,233 | 243,335,489 |

* On 31st December, 1900, 1901, and 1902 respectively.

The States in which the greatest increase in indebtedness was experienced during the period are New South Wales and Western Australia, the former advancing by more than £20,000,000, the latter by £7,800,000. On the other hand the public debt of Tasmania increased by little more than £1,600,000.

4. **Indebtedness per Head.**—The indebtedness per head of population varies considerably in the several States, being highest in the case of Queensland and South Australia, and lowest in that of Victoria. Details for the period from 30th June, 1901, to 30th June, 1908, are as follows:—

AUSTRALIAN INDEBTEDNESS PER HEAD, 30th JUNE, 1901 to 1908.

| Date. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | All States. |
|---------------------|---------|-----------|---------|----------|----------|-----------|-------------|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| 30th June, 1901 ... | 49 9 3 | 41 11 8 | 76 9 11 | 73 3 6 | 67 5 0 | *49 4 6 | 53 13 11 |
| " 1902 ... | 51 9 4 | 42 1 9 | 79 3 5 | 74 19 8 | 72 3 5 | *52 3 2 | 55 11 6 |
| " 1903 ... | 54 17 7 | 42 11 9 | 80 0 5 | 76 5 7 | 70 7 11 | *52 0 2 | 57 2 9 |
| " 1904 ... | 55 10 6 | 42 19 4 | 80 6 10 | 77 9 1 | 67 12 1 | 53 0 9 | 57 12 5 |
| " 1905 ... | 55 17 0 | 42 14 11 | 79 6 11 | 76 17 7 | 66 4 11 | 53 4 6 | 57 9 5 |
| " 1906 ... | 56 14 4 | 43 8 1 | 78 4 3 | 79 3 10 | 69 5 0 | 55 2 9 | 58 7 3 |
| " 1907 ... | 55 4 6 | 42 17 1 | 77 6 6 | 79 6 2 | 73 5 6 | 55 16 4 | 57 16 1 |
| " 1908 ... | 55 10 6 | 42 9 0 | 75 13 5 | 75 5 10 | 77 3 5 | 56 5 4 | 57 10 6 |

* On 31st December, 1900, 1901, and 1902 respectively.

5. **Flotation of Loans.**—The early loans of the Australian States, usually for comparatively small amounts, were raised locally, but, with the increasing demand for loan funds and the more favourable terms offering in the London than in the local money market, the practice of placing Australian public loans in London came into vogue, and for many years local flotations, except for short terms or small amounts, were comparatively infrequent. In more recent years, however, the accumulating stocks of money in Australia seeking investment have led to the placing of various redemption and other loans locally, with very satisfactory results. In the following table are given particulars of loans of the several States outstanding on 30th June, 1908, which had been floated in London and Australia respectively:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1908.

| State. | Floated in London | | Floated in Australia. | | Total Public Debt. |
|---------------------|-------------------|---------------------------|-----------------------|---------------------------|--------------------|
| | Amount. | Percentage on Total Debt. | Amount. | Percentage on Total Debt. | |
| | £ | % | £ | % | £ |
| New South Wales | 64,692,250 | 73.82 | 22,943,576 | 26.18 | 87,635,826 |
| Victoria... | 37,533,136 | 70.41 | 15,772,351 | 29.59 | 53,305,487 |
| Queensland ... | 35,409,347 | 84.78 | 6,355,120 | 15.22 | 41,764,467 |
| South Australia ... | 20,232,320 | 67.47 | 9,753,538 | 32.53 | 29,985,858 |
| Western Australia | 17,424,153 | 85.02 | 3,069,465 | 14.98 | 20,493,618 |
| Tasmania ... | 8,030,050 | 79.11 | 2,120,183 | 20.89 | 10,150,233 |
| Total ... | 183,321,256 | 75.34 | 60,014,233 | 24.66 | 243,335,489 |

The following table, giving corresponding particulars for the aggregate indebtedness of the Australian States at the end of each of the financial years 1900-1 to 1907-8, furnishes an indication of the rapidity with which the local holdings of Australian securities have grown in recent years:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1901 to 1908.

| Date. | Floated in London. | | Floated in Australia. | | Total Public Debt. |
|---------------------|--------------------|---------------------------|-----------------------|---------------------------|--------------------|
| | Amount. | Percentage on Total Debt. | Amount. | Percentage on Total Debt. | |
| | £ | % | £ | % | £ |
| 30th June, 1901 ... | 174,810,377 | 85.89 | 28,707,898 | 14.11 | 203,518,275 |
| " 1902 ... | 181,493,170 | 84.71 | 32,762,089 | 15.29 | 214,255,209 |
| " 1903 ... | 186,507,721 | 83.68 | 36,364,044 | 16.32 | 222,871,765 |
| " 1904 ... | 188,165,495 | 82.62 | 39,582,117 | 17.38 | 227,747,612 |
| " 1905 ... | 188,918,820 | 81.88 | 41,819,851 | 18.12 | 230,738,671 |
| " 1906 ... | 190,887,001 | 80.06 | 47,540,819 | 19.94 | 238,427,820 |
| " 1907 ... | 185,579,389 | 77.28 | 54,570,338 | 22.72 | 240,149,727 |
| " 1908 ... | 183,321,256 | 75.34 | 60,014,233 | 24.66 | 243,335,489 |

It will be seen that in the course of seven years the London indebtedness of the States has increased by £8,510,879, while the local indebtedness has increased by no less than £31,306,335. In other words, whilst on 30th June, 1901, the Australian portion of the debt represented only about 14 per cent. of the total, the proportion had on 30th June, 1908, grown to nearly 25 per cent.

6. Rates of Interest.—As mentioned above, the rate of interest paid in connection with the earliest Australian public loan was fivepence farthing per £100 per diem or, approximately, 8 per cent. per annum. At the present time the three principal rates of interest payable on Australian public securities are 4 per cent., 3½ per cent., and 3 per cent., most of the loans raised during the last six years bearing interest at the rate of 3½ per cent. The average rate payable on the aggregate indebtedness of the Australian States is approximately 3½ per cent. For the separate States the average rate payable varies considerably, being lowest in the case of Western Australia and highest in that of South Australia; the difference between the two average rates is somewhat more than ½ per cent. In the table given hereunder are furnished particulars of the rates of interest payable on the public debt of the several States of the Commonwealth on 30th June, 1908:—

RATES OF INTEREST PAYABLE ON AUSTRALIAN PUBLIC DEBT, 30th JUNE, 1908.

| Rate of Interest. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | Total. |
|------------------------------------|------------|------------|------------|------------|------------|------------|-------------|
| % | £ | £ | £ | £ | £ | £ | £ |
| 6 | ... | ... | ... | 297,900 | ... | ... | 297,900 |
| 5 | 2,700 | ... | ... | 240,000 | ... | ... | 242,700 |
| 4½ | ... | ... | ... | ... | 58,700 | ... | 58,700 |
| 4 | 23,289,894 | 17,153,795 | 22,514,300 | 15,653,675 | 4,755,308 | 4,025,405 | 87,392,377 |
| 3½ | 1,500,000 | 220,000 | ... | 1,411,760 | ... | ... | 8,131,760 |
| 3 | 44,812,954 | 25,356,269 | 13,760,784 | 6,413,978 | 8,323,610 | 5,433,908 | 104,101,533 |
| 3½ | ... | 125,000 | ... | ... | ... | 24,718 | 149,718 |
| 3 | 18,024,698 | 10,449,423 | 5,489,383 | 5,962,345 | 7,356,000 | 666,202 | 47,948,051 |
| Not bearing interest | 5,550 | 1,000 | ... | 6,200 | ... | ... | 12,750 |
| Total public debt ... | 37,635,823 | 53,305,487 | 41,764,467 | 29,985,858 | 20,493,618 | 10,150,233 | 243,335,489 |
| Average rate per cent. payable ... | £3 10 8 | £3 11 3 | £3 14 1 | £3 14 2 | £3 8 9 | £3 13 4 | £3 11 9 |

The rapid increase which has taken place in recent years in the amount of Australian Government securities, bearing interest at 3½ per cent., is clearly shewn in the table hereunder, which gives particulars concerning the aggregate amount of the Australian indebtedness, at the several rates of interest, on 30th June in each of the years 1901 to 1908:—

**RATES OF INTEREST PAYABLE ON AUSTRALIAN PUBLIC DEBT,
30th JUNE, 1901 to 1908.**

| Rate of Interest. | 30th June, 1901. | 30th June, 1902. | 30th June, 1903. | 30th June, 1904. | 30th June, 1905. | 30th June, 1908. | 30th June, 1907. | 30th June, 1908. |
|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| % | £ | £ | £ | £ | £ | £ | £ | £ |
| 6 | 804,000 | 549,300 | 471,200 | 433,700 | 383,900 | 346,400 | 308,900 | 297,900 |
| 5 | 1,224,100 | 799,200 | 368,400 | 343,400 | 242,700 | 242,700 | 242,700 | 242,700 |
| 4½ | 5,079,500 | 5,077,300 | 5,075,100 | 69,100 | 66,700 | 64,200 | 61,500 | 58,700 |
| 4 | 93,669,865 | 91,610,265 | 93,788,003 | 93,648,571 | 103,944,877 | 102,577,522 | 94,972,288 | 87,392,377 |
| 3½ | ... | ... | 1,500,000 | 1,825,000 | 1,825,000 | 2,045,000 | 2,513,500 | 3,131,760 |
| 3½ | 65,726,655 | 70,697,678 | 71,972,094 | 76,671,477 | 74,794,616 | 84,045,885 | 93,522,109 | 104,101,583 |
| 3½ | 275,000 | 299,918 | 279,418 | 255,700 | 289,100 | 290,300 | 174,718 | 149,718 |
| 3 | 36,733,505 | 45,213,398 | 49,412,900 | 49,492,114 | 49,181,523 | 48,596,333 | 48,292,112 | 47,948,051 |
| Not bearing interest ... | 5,650 | 8,150 | 6,650 | 8,550 | 10,250 | 11,650 | 61,900 | 12,750 |
| Total public debt ... | 203,518,275 | 214,255,209 | 222,871,765 | 227,747,612 | 230,738,671 | 238,427,820 | 240,149,727 | 243,335,489 |
| Average rate % payable | £3 13 8 | £3 12 10 | £3 12 8 | £3 12 4 | £3 12 6 | £3 12 5 | £3 12 1 | £3 11 9 |

During the six years between 30th June, 1901, and 30th June, 1908, the Australian Government 4 per cent. securities decreased by £6,277,488, while the 3½ per cents. advanced by £38,374,878, and the 3 per cents. by £11,214,546. During the same period the total amount at other rates than the three here mentioned declined by more than £3,500,000, from £7,388,250 to £3,893,528.

7. Interest Payable per Head.—The relative burden of the debts of the several States in respect of interest payments will be seen from the following table, which gives for the 30th June, 1908, the amount of interest payable annually on the debt of each State as outstanding at that date, and also the corresponding amount per head of population:—

**ANNUAL INTEREST PAYABLE ON PUBLIC DEBT OUTSTANDING AT
30th JUNE, 1908.**

| Particulars. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | All States. |
|-----------------------------------|-----------|-----------|-----------|-----------|----------|---------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Total annual interest payable ... | 3,097,176 | 1,899,416 | 1,546,881 | 1,112,322 | 704,860 | 371,992 | 8,732,647 |
| Annual interest payable per head | £1 19 3 | £1 10 3 | £2 16 1 | £2 15 10 | £2 13 1 | £2 1 3 | £2 1 3 |

8. Dates of Maturity.—An important point in which the securities of the Australian Governments, whether in the form of inscribed stock, debentures, or Treasury bills, differ from such a well-known form of security as British consols, consists in the fact that whereas the latter are interminable, the Australian Government securities have in almost all cases a fixed date for repayment, the only exception being the State of New South Wales, which includes in its public debt an amount representing interminable securities totalling on 30th June, 1908, £532,890. The terms of the loans raised by the issue of debentures and inscribed stock have varied considerably in the different States, ranging between fifteen and fifty years, while loans obtained by means of Treasury bills have usually been for such short terms as from one to five years. In the case of the majority of the loans the arrival of the date of maturity means that arrangements for renewal are necessary in respect of the greater portion of the loan, as it is only in exceptional cases that due provision for redemption has been made. The condition of the money market at the date of maturity has an important bearing on the success or otherwise with which the renewal arrangements can be effected, and consequently, in order to obviate the necessity for making an application to the market at an unfavourable time, several of the States have now adopted the practice of specifying a period of from ten to twenty years.

prior to the date of maturity within which the Government, on giving twelve, or in some cases six, months' notice, has the option of redeeming the loan. By such means advantage may be taken by the Government during the period of opportunities that may offer for favourable renewals. Particulars concerning the due dates of the loans of the several States outstanding on 30th June, 1908, are given in the following table:—

**DUE DATES OF THE PUBLIC DEBTS OF THE SEVERAL STATES OF THE
COMMONWEALTH OUTSTANDING ON 30th JUNE, 1908.**

| Due Dates. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | Total. |
|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Overdue ... | 5,550 | 1,000 | ... | 6,200 | ... | ... | 12,750 |
| 1908 ... | 2,865,500 | ... | ... | ... | ... | 508,869 | 3,374,369 |
| 1909 ... | 1,200,854 | 25,000 | ... | 3,640,450 | 500,000 | 219,689 | 5,585,993 |
| 1910 ... | 3,766,600 | 25,000 | ... | 1,134,625 | 1,266,305 | 198,249 | 6,390,779 |
| 1911 ... | 1,000,000 | 25,000 | ... | 683,925 | 6,000 | 1,359,529 | 3,074,454 |
| 1912 ... | 9,884,508 | 25,000 | 530,000 | 526,350 | 194,150 | 183,958 | 11,343,966 |
| 1913 ... | ... | 4,025,000 | 2,066,500 | 773,700 | ... | 607,654 | 7,472,854 |
| 1914 ... | ... | ... | ... | 582,650 | ... | 815,000 | 1,397,650 |
| 1915 ... | 3,881,081 | 500,000 | 11,728,800 | 182,675 | 85,840 | 130,201 | 16,508,597 |
| 1916 ... | ... | 2,767,000 | ... | 1,121,100 | ... | 10,700 | 3,898,800 |
| 1917 ... | ... | 3,014,860 | ... | 1,569,625 | 247,315 | 32,455 | 4,864,255 |
| 1918 ... | 12,826,200 | ... | ... | 1,505,550 | ... | ... | 14,331,750 |
| 1919 ... | 120,050 | 4,000,000 | ... | 49,265 | ... | ... | 4,169,315 |
| 1920 ... | ... | 6,000,000 | ... | 26,000 | ... | 300,000 | 6,326,000 |
| 1921 ... | 4,699,343 | ... | ... | 323,300 | ... | 296,427 | 5,319,070 |
| 1922 ... | ... | 63,000 | ... | 353,475 | ... | 8,252 | 424,727 |
| 1923 ... | 1,532,114 | 7,746,795 | ... | 334,663 | 605,325 | ... | 10,218,897 |
| 1924 ... | 16,698,065 | ... | 12,973,834 | 1,872,300 | 664,530 | ... | 32,208,729 |
| 1925 ... | 222,255 | ... | ... | 350,000 | ... | 5,050 | 577,305 |
| 1926 ... | ... | 7,210,000 | ... | 852,250 | ... | 67,600 | 8,129,850 |
| 1927 ... | ... | 156,000 | ... | 259,840 | 2,500,000 | ... | 2,915,840 |
| 1928 ... | ... | 897,500 | ... | 108,775 | ... | ... | 1,006,275 |
| 1929 ... | ... | ... | ... | 355,125 | ... | 300,000 | 655,125 |
| 1930 ... | ... | 985,950 | 3,704,800 | 200,000 | ... | 100 | 4,890,850 |
| 1931 ... | ... | ... | ... | 100 | 1,876,000 | ... | 1,876,100 |
| 1932 ... | ... | 482,400 | ... | ... | ... | ... | 482,400 |
| 1933 ... | 9,686,300 | ... | ... | ... | ... | ... | 9,686,300 |
| 1934 ... | ... | ... | ... | 700 | 995,053 | ... | 995,753 |
| 1935 ... | 12,500,000 | ... | ... | 1,560,400 | 8,280,000 | ... | 22,340,400 |
| 1936 ... | ... | 300,000 | ... | 3,368,050 | 1,100,000 | ... | 4,768,050 |
| 1937 ... | ... | ... | ... | 385,700 | ... | ... | 385,700 |
| 1938 ... | ... | ... | ... | 16,420 | ... | ... | 16,420 |
| 1939 ... | ... | ... | ... | 2,517,800 | ... | ... | 2,517,800 |
| 1940 ... | ... | 220,000 | ... | 202,000 | ... | 5,106,500 | 5,528,500 |
| 1941 ... | ... | 285,880 | ... | ... | ... | ... | 285,880 |
| 1942 ... | ... | 598,600 | ... | ... | ... | ... | 598,600 |
| 1943 ... | ... | 3,600 | ... | ... | ... | ... | 3,600 |
| 1945 ... | ... | ... | 3,815,640 | ... | ... | ... | 3,815,640 |
| 1947 ... | ... | ... | 4,498,693 | ... | 2,000,000 | ... | 6,498,693 |
| 1949 ... | ... | 9,778,519 | ... | ... | ... | ... | 9,778,519 |
| 1950 ... | 2,000,000 | ... | 946,600 | ... | ... | ... | 2,946,600 |
| 1951 ... | 3,000,000 | ... | 999,600 | ... | ... | ... | 3,999,600 |
| 1953 ... | ... | ... | 500,000 | ... | ... | ... | 500,000 |
| 1954 ... | ... | 298,874 | ... | ... | ... | ... | 298,874 |
| Interminable ... | 532,890 | ... | ... | ... | ... | ... | 532,890 |
| Annual Drawings ... | 1,214,516 | ... | ... | ... | 173,100 | ... | 1,387,616 |
| Indefinite ... | ... | 3,870,509 | ... | 5,122,845 | ... | ... | 8,993,354 |
| Total ... | 87,635,826 | 53,305,487 | 41,764,467 | 29,985,858 | 20,493,618 | 10,150,233 | 243,335,489 |

In the above table those loans, in the case of which the Government has the option of redemption during a specified period, have been in each instance classified according to the latest date of maturity. During the fifteen years from 1910 to 1924, inclusive, the amount falling due represents a total of no less than £127,949,843, or more than 52 per cent. of the total outstanding at 30th June, 1908.

9. **Sinking Funds.**—The practice of providing for the ultimate extinction of the public debt by means of the creation of sinking funds, receiving definite annual contributions from Consolidated Revenue, and accumulating at compound interest, has only been consistently adopted in the case of Western Australia. This State has established, in connection with each of its loans, sinking funds varying from 1 per cent. to 3 per cent. per annum of the nominal amount of the loan. These funds are placed in the hands of

trustees in London, by whom they are invested in the securities of the British, Indian, and Colonial Governments, and applied from time to time in the redemption of loans falling due. In the remaining States the sinking fund provision made is varied, consisting in certain instances of the revenues from specified sources, in others of the Consolidated Revenue Fund surplus, and in others again of fixed annual amounts. In the following table are given particulars of the sinking funds of each State, and the net indebtedness of each after allowance for sinking fund has been made, the details given being those for 30th June, 1908 :—

SINKING FUNDS AND NET INDEBTEDNESS, 30th JUNE, 1908.

| State. | Gross Indebtedness. | Sinking Fund. | Net Indebtedness. | Net Indebtedness per head. |
|-----------------------|---------------------|---------------|-------------------|----------------------------|
| | £ | £ | £ | £ s. d. |
| New South Wales ... | 87,635,826 | 223,001 | 87,412,825 | 55 7 8 |
| Victoria ... | 53,305,487 | 629,490 | 52,675,997 | 41 18 11 |
| Queensland ... | 41,764,467 | ... | 41,764,467 | 75 13 5 |
| South Australia ... | 29,985,858 | 1,050,812 | 28,935,046 | 72 13 1 |
| Western Australia ... | 20,493,618 | 1,904,433 | 18,589,185 | 70 0 0 |
| Tasmania ... | 10,150,233 | 304,633 | 9,845,600 | 54 11 6 |
| Total... .. | 243,335,489 | 4,112,369 | 239,223,120 | 56 11 0 |

10. **London Prices of Australian Stocks.**—In examining the prices quoted for Australian Government securities, particularly if the examination is made with the object of comparing the prices at a given time of different stocks, or the prices at different times of the same stock, several points in connection with the securities need to be kept in view; the principal of these are—(a) the rate of interest payable, (b) the date of maturity, and (c) the date at which interest is payable.

In the following tables particulars are given of the London prices of some of the principal $3\frac{1}{2}$ per cent. stocks of the several States during 1908. The quotations given are the middle prices, taken from the *Economist*, and are for the last Friday in each quarter :—

LONDON QUOTATIONS FOR AUSTRALIAN $3\frac{1}{2}$ PER CENT. STOCKS DURING 1908.

| State. | Rate of Interest Payable. | Year of Maturity. | Months in which Interest is Payable. | London Prices (cum dividend) on | | | |
|---------------------|---------------------------|-------------------|--------------------------------------|---------------------------------|-------------------|------------------|------------------|
| | | | | 27th Mar. 1908. | 26th June 1908. | 25th Sept. 1908. | 25th Dec. 1908. |
| New South Wales | $3\frac{1}{2}$ | 1918 | Mar.—Sept. | 99 $\frac{1}{2}$ | 100 $\frac{1}{2}$ | 99 | 99 |
| Victoria ... | $3\frac{1}{2}$ | 1923 | Jan.—July | 100 | 99 $\frac{3}{4}$ | 100 | 98 $\frac{1}{2}$ |
| Queensland ... | $3\frac{1}{2}$ | 1924-30 | Jan.—July | 100 | 99 | 100 | 99 |
| South Australia ... | $3\frac{1}{2}$ | 1939 | Jan.—July | 100 | 99 $\frac{1}{4}$ | 99 | 99 |
| West. Australia ... | $3\frac{1}{2}$ | 1915-35 | May—Nov. | 98 $\frac{1}{2}$ | 98 $\frac{1}{2}$ | 99 $\frac{1}{2}$ | 97 $\frac{1}{2}$ |
| Tasmania ... | $3\frac{1}{2}$ | 1920-40 | Jan.—July | 100 | 99 | 99 | 97 $\frac{1}{2}$ |

Throughout the year the prices of Australian $3\frac{1}{2}$ per cent. stocks on the London market were higher than for the corresponding periods of the preceding year, the average advance being about $1\frac{1}{4}$. Prices in the latter portion of the year 1907 had, however, been somewhat seriously affected by the American financial crisis.

SECTION XXI.

PRIVATE FINANCE.

§ 1. Currency.

1. **The Three Australian Mints.**—Soon after the discovery of gold in Australia steps were taken for the establishment of a branch of the Royal Mint in Sydney. The formal opening took place on the 14th May, 1855, the mint being located in the southern part of the building once known as the "rum hospital," where it has remained up to the present. It is now proposed, however, to erect more suitable buildings for its accommodation in some other part of the city. The Melbourne branch of the Royal Mint was opened on the 12th June, 1872, and the Perth branch on the 20th June, 1899. The States of New South Wales, Victoria, and Western Australia provide an annual endowment, in return for which the mint receipts are paid into the respective State Treasuries, and it may be said that, apart from expenditure on buildings, new machinery, etc., the amounts paid into the Treasuries fairly balance the mint annuities.

2. **Receipts and Issues in 1907.**—(i.) *Assay of Deposits Received.* The number of deposits received during 1907 at the Sydney Mint was 1717, of a gross weight of 760,482 ozs.; at the Melbourne Mint, 4467, of a gross weight of 938,169 ozs.; and at the Perth Mint, 6583, of a gross weight of 1,507,878 ozs. The average composition of these deposits in Sydney was, gold 888.9, silver 74.7, base 36.4 in every 1000 parts; Melbourne, gold 914.8, silver 46.7, base 38.5 in every 1000 parts; and Perth, gold 845.1, silver 103.1, base 51.8 in every 1000 parts. As many parcels have, however, undergone some sort of refining process before being received at the mint, the average assay for gold shows higher in these figures than for gold as it naturally occurs.

(ii.) *Receipts.* Practically all the gold coined at the Australian mints is the produce of either the Commonwealth or of the Dominion of New Zealand. The Sydney Mint, however, receives small parcels from Papua, and some gold produced in Madagascar has been sent to Perth for coinage. The following table shews the origin of the gold received at the three mints during 1907:—

ORIGIN OF GOLD RECEIVED DURING 1907.

| Origin of Gold. | Sydney Mint. | Melbourne Mint. | Perth Mint. |
|--|--------------|-----------------|--------------|
| | ozs. | ozs. | ozs. |
| New South Wales | 179,489.32 | 4,022.41 | ... |
| Victoria | 15.52 | 754,809.80 | 1.00 |
| Queensland... .. | 326,839.74 | 212.21 | ... |
| South Australia | 65.54 | 14,808.10 | 1.00 |
| Western Australia | 1,722.14 | 20,771.97 | 1,507,249.00 |
| Tasmania | 1,299.65 | 30,425.83 | ... |
| New Zealand | 250,831.43 | 103,764.04 | ... |
| Other countries, origin not stated, and light gold coin | 218.32 | 9,354.96 | 627.00 |
| Total | 760,481.66 | 938,169.32 | 1,507,878.00 |

It will be seen that practically all gold produced in New South Wales and Queensland, about five-sevenths of that produced in New Zealand, and a small part of the Tasmanian produce, found its way to the Sydney Mint, while the Melbourne Mint received all Victorian and South Australian gold, together with almost the whole of the Tasmanian and two-sevenths of the New Zealand production, and the Perth Mint coined practically all Western Australian gold with the exception of a small portion sent to Sydney and Melbourne.

(iii.) *Issues.* The Australian mints, besides issuing gold coin in the shape of sovereigns and half-sovereigns, also issue gold bullion, partly for the use of local manufacturers (jewellers and dentists), and partly for export, India taking annually a considerable quantity of gold cast into 10-oz. bars. The issues during 1907 are shewn in the table below:—

ISSUES OF GOLD DURING 1907.

| Mint. | Coin. | | | Bullion. | Total. |
|---------------|-------------|------------------|-------------|-----------|-------------|
| | Sovereigns. | Half-sovereigns. | Total. | | |
| Sydney ... | £ 2,539,000 | £ ... | £ 2,539,000 | £ 337,421 | £ 2,876,421 |
| Melbourne ... | 3,332,691 | ... | 3,332,691 | 314,022 | 3,646,713 |
| Perth ... | 4,972,289 | ... | 4,972,289 | 436,479 | 5,408,768 |
| Total ... | 10,843,980 | ... | 10,843,980 | 1,087,922 | 11,931,902 |

In addition to the issue of gold the Sydney and Melbourne Mints are also charged with the issue of silver and bronze coin struck in London. The total value of silver coin issued in 1907 was £286,200, viz.—£98,800 in half-crowns, £80,200 in florins, £56,000 in shillings, £28,400 in sixpences, and £22,800 in threepences. The value of bronze coin issued was £16,955, viz., £12,400 in pence and £4555 in halfpence.

(iv.) *Withdrawals of Worn Coin.* The mints receive light and worn coin for recoinage, gold being coined locally, while silver is forwarded to London. The value of gold coin so received in 1907 amounted to only £742, viz.—Sydney, £443; Melbourne, £239; and Perth, £60. The value of worn silver coins received during 1907 was £12,550, viz.—Sydney, £9331; Melbourne, £3219.

3. Total Receipts and Issues. (i.) *Receipts.* The total quantities of gold received at the three mints since their establishment are stated in the gross as follows:—Sydney, 32,387,221 ozs.; Melbourne, 30,954,107 ozs.; and Perth, 10,299,426 ozs. As the mints pay for standard gold (22 carats) at the rate of £3 17s. 10½d. per oz., which corresponds to a value of £4 4s. 11½d. per oz. fine (24 carats), it is possible to arrive at the number of fine ounces received from the amounts paid for the gold received. These amounts were:—Sydney, £119,644,987; Melbourne, £121,998,191; Perth, £36,544,784; corresponding to—Sydney, 28,191,964 ozs. fine; Melbourne, 28,746,450 ozs. fine; and Perth, 8,611,052 ozs. fine. Silver found in assaying is paid for if it exceeds 8 per cent.; in Sydney it has been paid for at the rate of one shilling and sixpence per oz. fine since 12th May, 1902; in Melbourne the price is fixed monthly by the Deputy-master of the Mint; and in the Perth accounts it has been taken at one shilling per oz.

(ii.) *Issues.* The total values of gold coin and bullion issued by the three mints were as shewn in the table on page 855. It may be said that about one-half of the total gold production of Australasia has passed through the three Australian mints, the production of the Commonwealth States to the end of 1907 being valued at £488,428,156, and that of New Zealand at £71,528,978, or a total of £559,957,134:—

TOTAL ISSUES OF GOLD.

| Mint. | Coin. | | | Bullion. | Total. |
|---------------|-------------|------------------|-------------|------------|-------------|
| | Sovereigns. | Half-sovereigns. | Total. | | |
| | £ | £ | £ | £ | £ |
| Sydney ... | 110,402,500 | 3,179,000 | 113,581,500 | 5,846,811 | 119,428,311 |
| Melbourne ... | 112,147,399 | 588,384 | 112,735,783 | 9,259,765 | 121,995,548 |
| Perth ... | 33,615,374 | 89,703 | 33,705,077 | 2,830,208 | 36,535,285 |
| Total ... | 256,165,273 | 3,857,087 | 260,022,360 | 17,936,784 | 277,959,144 |

The total issues of silver coins to the end of 1907 were £2,248,200, viz.:—Crowns, £3500; double florins, £4585; half-crowns, £690,200; florins, £488,815; shillings, £566,600; sixpences, £226,420; and threepences, £268,080.

Bronze coins to the value of £142,505 were issued, viz.:—Pence, £99,440; halfpence, £42,965; and farthings, £100.

(iii.) *Withdrawals of Worn Coin.* Complete figures as to the withdrawal of gold coin can only be given for the Sydney Mint, where they amounted to £828,838; at the Melbourne Mint the coins withdrawn since 1890 were worth £44,601, and no figures are given for Perth.

Withdrawals of worn silver coin amounted to £246,101 in Sydney, and to £324,994 in Melbourne.

4. *Standard Weight and Fineness of Coinage.*—The coinage of the Commonwealth is the same as that of the United Kingdom, and the same provisions as to legal tender hold good, viz., while gold coins are legal tender to any amount, silver coins are only so for an amount not exceeding forty shillings, and bronze coins up to one shilling. As will be seen from the table below, the standard weights of the sovereign and half-sovereign are respectively 123.27447 grains and 61.63723 grains, but these coins will pass current if they do not fall below 122.5 grains and 61.125 grains respectively.

STANDARD WEIGHT AND FINENESS.

| Denomination. | Standard Weight. | Standard Fineness. |
|--------------------|------------------|---|
| GOLD— | | |
| | Grains. | |
| Sovereign ... | 123.27447 | Eleven-twelfths fine gold, viz.:— Gold ... 0.91667 } 1.00000 Alloy ... 0.08333 } |
| Half-sovereign ... | 61.63723 | |
| SILVER— | | |
| Crown ... | 436.36363 | Thirty-seven-fortieths fine silver, viz.:— Silver ... 0.925 } 1.000 Alloy ... 0.075 } |
| Double florin ... | 349.09090 | |
| Half-crown ... | 218.18181 | |
| Florin ... | 174.54545 | |
| Shilling ... | 87.27272 | |
| Sixpence ... | 43.63636 | |
| Threepence ... | 21.81818 | |
| BRONZE— | | |
| Penny ... | 145.83333 | Mixed metal, viz.:— Copper ... 0.95 } 1.00 Tin ... 0.04 Zinc ... 0.01 } |
| Half-penny ... | 87.50000 | |
| Farthing ... | 43.75000 | |
| | | |

5. *Prices of Silver and Australian Coinage.*—(i.) *Prices of Silver.* The value of silver has greatly decreased since its demonetisation and restricted coinage in almost the whole of Europe. Its average price in the London market is shewn in the subjoined table:—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1873 to 1907.

| Year. | Price per Standard Oz. | Year. | Price per Standard Oz. | Year. | Price per Standard Oz. |
|----------|------------------------|----------|------------------------|----------|------------------------|
| | d. | | d. | | d. |
| 1873 ... | 59.2500 | 1885 ... | 48.6250 | 1897 ... | 27.5625 |
| 1874 ... | 58.3125 | 1886 ... | 45.3750 | 1893 ... | 26.9375 |
| 1875 ... | 56.8125 | 1887 ... | 44.6250 | 1899 ... | 27.5000 |
| 1876 ... | 53.0000 | 1888 ... | 42.8750 | 1900 ... | 28.3125 |
| 1877 ... | 54.7500 | 1889 ... | 42.6875 | 1901 ... | 27.2500 |
| 1878 ... | 52.5625 | 1890 ... | 47.7500 | 1902 ... | 24.1250 |
| 1879 ... | 51.1875 | 1891 ... | 45.0625 | 1903 ... | 24.7500 |
| 1880 ... | 52.2500 | 1892 ... | 39.8125 | 1904 ... | 26.3750 |
| 1881 ... | 51.7500 | 1893 ... | 35.6250 | 1905 ... | 27.8125 |
| 1882 ... | 51.8125 | 1894 ... | 29.0000 | 1906 ... | 30.8750 |
| 1883 ... | 50.5625 | 1895 ... | 29.8750 | 1907 ... | 30.1875 |
| 1884 ... | 50.6875 | 1896 ... | 30.7500 | | |

The monthly fluctuations during the year 1907 were as follows:—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1907.

| Month. | Price per Standard Oz. | Month. | Price per Standard Oz. | Month. | Price per Standard Oz. |
|--------------|------------------------|------------|------------------------|---------------|------------------------|
| | d. | | d. | | d. |
| January ... | 31.7500 | May ... | 30.4375 | September ... | 31.3125 |
| February ... | 31.8125 | June ... | 30.8750 | October ... | 28.8125 |
| March ... | 31.3125 | July ... | 31.3125 | November ... | 27.1250 |
| April ... | 30.2500 | August ... | 31.6250 | December ... | 25.3750 |

(ii.) *Profits on Coinage of Silver.* As sixty-six shillings are coined out of one pound troy of standard silver, the silver required to produce £3 6s. of coin was only worth £1 10s. 2½d. during 1907; the difference of £1 15s. 9¾d. represents, therefore, the gross profit or seigniorage made on the coinage of every £3 6s. This gross profit is equivalent to over 54 per cent., but from it the expenses of coining (including interest on cost of machinery) and of withdrawals of worn coin must be deducted. Still, given a large annual demand for new silver coin, even the net profit amounts to a considerable sum. Negotiations, therefore, took place for a number of years between the Imperial authorities and the Governments of New South Wales and Victoria, which in 1898 resulted in permission being granted to the two Governments named to coin silver and bronze coin at the Sydney and Melbourne Mints for circulation in Australia. No steps were, however, taken in the matter, and as section 51 of the Commonwealth Constitution makes legislation concerning "currency, coinage, and legal tender" a federal matter, the question remained in abeyance until the latter part of 1908, when the Commonwealth Treasurer announced his intention of initiating the coinage of silver in the near future.

6. Decimal Coinage.—Considered apart from the cognate subject of decimal weights and measures, the introduction of a decimal coinage would present no great difficulties. Of the various systems that have been advocated from time to time, the one that appears to meet with most favour and presents the maximum advantage, would retain the sovereign as the unit, but would divide it into a thousand parts instead of the present 960 farthings. In such a system there would be the following coins (adopting the name of "cent" for the hundredth part of the sovereign):—Sovereign=100c. (gold); half-sovereign=50c. (gold), 20c.=4s. (gold or silver); 10c.=2s. (silver); 5c.=1s. (silver); 2c.=4.8d. (silver); 1c.=2.4d. (silver or nickel); 0.5c. or 5 mils.=1.2d. (nickel or bronze); 0.2c. or 2 mils.=0.48d. (nickel or bronze); 0.1c. or 1 mil.=0.24d. (bronze). As only the subdivisions of the present shilling would be altered, such a system could be introduced with less disturbing effects on the arrangements of trade than other proposals, e.g., one which would make the present farthing its unit.

7. Circulation of Specie.—Many conflicting estimates have from time to time been made as to the amount of coin in private hands. In 1892 the general manager of one

of the Sydney banks estimated the coin in private hands in New South Wales at only £725,000, while the estimate of the Deputy-master of the Mint for the same period was £4,416,000, the truth lying, no doubt, somewhere between those two estimates. In 1906 the Deputy-master of the Perth Mint conducted an enquiry with the object of obtaining information on the condition of the currency in Australia. His estimate was—sovereigns, £2,500,000; half-sovereigns, £500,000; silver and bronze coin, £1,200,000. This estimate appears, however, very low, amounting only to a little over £1 per head of population. The question will shortly have to be considered whether it would not be possible to obtain accurate information by means of a question on the census schedule to be used in 1911. The coin in private hands amounts, however, only to a comparatively small part of the total coin in the country, the value of coin held by the banks during the quarter ended 30th June, 1908, being £23,578,293, of which amount, according to returns embracing more than three-fourths of the banks, it may be said that £22,349,000 was held in gold, £1,192,000 in silver, and £97,000 in bronze. To the active currency must be added the notes in circulation, which for the same period amounted to £3,536,227, exclusive of Queensland Treasury notes, £1,530,982, viz., £812,773 held by banks, and £718,209 in circulation.

8. **Imports and Exports of Coin and Bullion.**—A table is appended shewing the imports into, and exports from, the Commonwealth of coin and bullion during the year 1907, distinguishing the countries of import and export:—

IMPORTS AND EXPORTS OF COIN AND BULLION, 1907.

| Countries from which Imported and to which Exported. | Coin. | | | | Bullion. | | | Total Coin and Bullion. |
|--|------------------------------|---------------------------|--------------------------|------------------|------------------------------|------------------------------|------------------|-------------------------|
| | Gold. | Silver. | Bronze. | Total Coin. | Gold. ¹ | Silver. ² | Total Bullion. | |
| IMPORTS. | £ | £ | £ | £ | £ | £ | £ | £ |
| United Kingdom ... | 10 | 375,684 | 20,961 | 396,655 | 733 | 208 | 941 | 397,596 |
| Canada ... | 350 | ... | ... | 350 | ... | ... | ... | 350 |
| New Zealand ... | 4,305 | 11 | ... | 4,316 | 1,379,834 | 290 | 1,380,124 | 1,384,440 |
| Papua ... | ... | ... | ... | ... | 46,029 | ... | 46,029 | 46,029 |
| Hawaii ... | 1,490 | ... | ... | 1,490 | ... | ... | ... | 1,490 |
| New Caledonia ... | 280 | 95 | ... | 375 | ... | ... | ... | 375 |
| New Hebrides ... | 450 | ... | ... | 450 | 62 | ... | 62 | 512 |
| South Sea Islands ... | 3,082 | 147 | 10 | 3,239 | ... | ... | ... | 3,239 |
| United States ... | ... | ... | ... | ... | 169 | ... | 169 | 169 |
| Total Imports ... | 9,967 | 375,937 | 20,971 | 406,875 | 1,426,927 | 498 | 1,427,325 | 1,834,200 |
| EXPORTS. | | | | | | | | |
| United Kingdom ... | 1,476,669 | ... | ... | 1,476,669 | 2,706,594 | 600,723 | 3,307,317 | 4,783,988 |
| Cape of Good Hope ... | 50,000 | ... | ... | 50,000 | ... | ... | ... | 50,000 |
| Ceylon ... | 3,205,075 | ... | ... | 3,205,075 | 166,000 | 469,200 | 635,200 | 3,840,275 |
| Fanning Island ... | 600 | ... | ... | 600 | ... | ... | ... | 600 |
| Fiji ... | 36,000 | 16,000 | ... | 52,000 | ... | ... | ... | 52,000 |
| Hong Kong ... | 397,522 | ... | ... | 397,522 | 2,684 | ... | 2,684 | 400,206 |
| India ... | 805,353 | ... | ... | 805,353 | 919,256 | 72,460 | 991,716 | 1,797,069 |
| Natal ... | 100,000 | ... | ... | 100,000 | ... | ... | ... | 100,000 |
| New Zealand ... | 757,000 | 2,600 | 2,290 | 761,890 | ... | 1,386 | 1,386 | 763,276 |
| Norfolk Island ... | 300 | ... | ... | 300 | ... | ... | ... | 300 |
| Straits Settlements ... | 10,000 | ... | ... | 10,000 | ... | ... | ... | 10,000 |
| Austria-Hungary ... | 1,007 | ... | ... | 1,007 | ... | ... | ... | 1,007 |
| Belgium ... | ... | ... | ... | ... | 385 | 4,618 | 4,953 | 4,953 |
| China ... | 11,940 | ... | ... | 11,940 | ... | ... | ... | 11,940 |
| France ... | 1,275 | 435 | ... | 1,710 | ... | ... | ... | 1,710 |
| Germany ... | 20 | 29 | 1 | 50 | 1,484 | 5,390 | 6,874 | 6,924 |
| Japan ... | ... | ... | ... | ... | ... | 245 | 245 | 245 |
| Neu-Pommern ... | 100 | ... | ... | 100 | ... | ... | ... | 100 |
| New Caledonia ... | 2,520 | 130 | ... | 2,650 | ... | ... | ... | 2,650 |
| New Hebrides ... | 419 | 1,277 | 1 | 1,697 | ... | ... | ... | 1,697 |
| South Sea Islands ... | 2,038 | 5,190 | ... | 7,224 | ... | ... | ... | 7,234 |
| United States... .. | ... | ... | ... | ... | 239,714 | 39,134 | 278,848 | 278,848 |
| Total Exports ... | 6,857,838³ | 25,667⁴ | 2,292⁴ | 6,885,797 | 4,036,067⁵ | 1,193,156⁶ | 5,229,223 | 12,115,020 |

1. Bullion and gold contained in matte. 2. Bullion and silver contained in matte.
3. Approximately £5,411,572 Australian produce and £1,446,266 other produce. The net value of gold bullion and gold ore of foreign origin introduced (by transfer or importation) into the minting States of the Commonwealth, with the addition of the imports of foreign coin, has been taken to represent the value of the exports of coin of other than Australian origin. 4. Other produce. 5. Australian produce. 6. Australian produce, £1,191,907; other produce, £1249.

§ 2. Banking.

1. **Banking Facilities.**—(i.) *Head Offices of Banks.* Of the twenty-one banks trading in the Commonwealth, four have their head offices in London, viz., the Bank of Australasia; the Union Bank of Australia Limited; the English, Scottish, and Australian Bank Limited; and the London Bank of Australia Limited. The head offices of the following four banks are in Sydney—The Bank of New South Wales; the Commercial Banking Company of Sydney Limited; the Australian Joint Stock Bank Limited; and the City Bank of Sydney. Five banks have their head offices in Melbourne, viz., the National Bank of Australasia Limited; the Commercial Bank of Australia Limited; the Bank of Victoria Limited; the Colonial Bank of Australasia Limited; and the Royal Bank of Australia Limited. Brisbane is the headquarters of three banks, viz., the Queensland National Bank Limited; the Royal Bank of Queensland Limited; and the Bank of North Queensland Limited. Only one bank has at present its head office in Adelaide, viz., the Bank of Adelaide; and one in Perth, viz., the Western Australian Bank. Of the two Tasmanian banks the Commercial Bank of Tasmania Limited has its head office in Hobart, and the National Bank of Tasmania Limited in Launceston. The remaining bank, the Bank of New Zealand, has its headquarters in Wellington. It is proposed, in the few instances where the banks are referred to by name, to arrange them in the order just given.

(ii.) *Establishments in Different States.* Only three of the banks have establishments in all six States of the Commonwealth, the total number of their branches and sub-branches being 386. One bank with a total of 193 branches is trading in five States, and two with 267 branches are established in four States. One bank has fifty-six branches distributed over three States, while five banks with a total of 327 branches confine their operations to two States. The remaining nine banks, with 373 branches, trade only within the State where their head offices are located. Of this total of 1602 banking establishments, New South Wales contains 504; Victoria, 552; Queensland, 211; South Australia, 163; Western Australia, 122; and Tasmania, 50. In addition to the branches in the Commonwealth, four of the banks have a total of 208 establishments in New Zealand, while fourteen have each an office in London. Only two of the banks are established in the Pacific Islands, with a total of three branches. The total for the Commonwealth amounts to about one bank to every 2650 inhabitants, which does not appear out of proportion when the general sparseness of the Australian population is taken into consideration. There is, however, a difference between the various States which is not easy of explanation, but which seems to be due chiefly to the desire of a few of the banks to open up branches wherever there is a prospect of a small amount of business, while other banks are more conservative in this respect. Thus the proportion in New South Wales is about 3150 inhabitants per bank, while in Victoria it is only 2275. In Western Australia, where the proportion is lowest and amounts to one in 2175, there are, of course, exceptional circumstances which explain this apparent disproportion.

2. **Banking Legislation.**—Under section 51 of the Commonwealth Constitution Act the Commonwealth Parliament has power to legislate with respect to "Banking, other than State banking; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money." Up to the present no Commonwealth banking legislation has, however, been passed, and the various State laws under which the banks transact business are in most cases so old as to be quite unsuitable to modern methods of banking. Under the existing laws banks are required to furnish quarterly statements of their average assets and liabilities, but these statements are not equally complete in all the States. Until the close of 1907 these quarterly statements, together with the periodical balance-sheets of the banks (generally half-yearly, but in a few cases yearly), were the only information available in regard to banking business. During the year 1908 the Commonwealth Statistician, under the provisions of the Census and Statistics Act, asked the banks for quarterly returns giving slightly more detailed information than had previously been obtained. As, however, a few of the banks found it

impossible to give all the particulars required during the year 1908, while promising to do so in 1909, the returns for the former year have been practically left in the same condition as those for 1907 and previous years.

The Acts under which the various banks are incorporated are numerous, but it may be stated that while most of the older banks were incorporated by special Acts, *e.g.*, the Bank of New South Wales, by Act of Council 1817; the Bank of Australasia, by Royal Charter; the Bank of Adelaide, by Act of the South Australian Parliament; and the Bank of New Zealand, by Act of the General Assembly of New Zealand; the newer banks are generally registered under a "Companies Act," or some equivalent Act. This is also the case with those banks which, after the crisis of 1893, were reconstructed.

3. Capital Resources of Banks.—The paid-up capital of the twenty-one banks, together with their reserve funds, and the rate per cent. and the amount of their last dividends, is shewn in the table hereunder. The information relates to the balance-sheet last preceding the 30th June, 1908. In regard to the reserve funds it must be stated that in the case of some of the banks these are invested in Government securities, while in other cases they are used in the ordinary business of the banks, and in a few instances they are partly invested and partly used in business:—

CAPITAL RESOURCES OF BANKS.

| Bank. | Paid-up Capital. | Rate per cent. per annum of last Dividend and Bonus. | Amou't of last $\frac{1}{2}$ -yrlly. Dividend & Bonus. | Reserve Fund. |
|---|------------------------|--|--|---------------|
| | £ | % | £ | £ |
| Bank of Australasia | 1,600,000 | 12 & 8/- Bonus p.s. | 112,000 | 1,486,070 |
| Union Bank of Australia Limited | 1,500,000 | 14 | 105,000 | 1,235,870 |
| English, Scottish, and Australian Bank Limited | 539,438 | 5 | 26,972 ⁷ | 186,169 |
| London Bank of Australia Limited | 548,015 ¹ | { 5½ Preferen. } 3½ Ordinary } | 22,332 ⁷ | 46,527 |
| Bank of New South Wales | 2,500,000 | 10 | 124,399 | 1,560,000 |
| Commercial Banking Company of Sydney Limited | 1,250,000 | 10 | 62,420 | 1,277,930 |
| Australian Joint Stock Bank Limited | 154,570 | ... | ... | 21,594 |
| City Bank of Sydney | 400,000 | 3 | 6,000 | 12,324 |
| National Bank of Australasia Limited | 1,498,220 ² | 5 | 37,456 | 174,698 |
| Commercial Bank of Australia Limited | 2,212,869 ³ | { 3 Preferen. } ... Ordinary } | 31,760 | 8,406 |
| Bank of Victoria Limited | 1,478,010 ⁴ | 5 | 36,950 | 205,461 |
| Colonial Bank of Australasia Limited | 439,281 | 6 | 13,178 | 125,885 |
| Royal Bank of Australia Limited | 200,000 | 7 | 7,000 | 91,458 |
| Queensland National Bank Limited | 413,303 ⁵ | 3 | 12,000 | ... |
| Royal Bank of Queensland Limited | 490,989 | 4½ | 5,415 ⁵ | 71,206 |
| Bank of North Queensland Limited | 100,000 | 4 | 2,000 | 21,678 |
| Bank of Adelaide | 400,000 | 9 | 18,000 | 344,014 |
| Western Australian Bank | 175,000 | 20 | 17,006 | 449,440 |
| Commercial Bank of Tasmania Limited | 175,000 | 12 | 10,500 | 182,401 |
| National Bank of Tasmania Limited | 152,040 | 7 | 5,321 | 43,379 |
| Bank of New Zealand | 2,000,000 ⁶ | { 7½ Preferen. } 10 Ordinary } 4 Gntd. stk. } | 127,500 ⁷ | 504,098 |
| Total | 18,226,740 | ... | 783,209 | 8,048,608 |

1. £171,930 preferential, £376,085 ordinary. 2. £305,730 preferential, £1,192,440 ordinary. 3. £2,117,350 preferential, £95,519 ordinary. 4. £416,760 preferential, £1,061,250 ordinary. 5. After deducting £46,865 paid on forfeited shares. 6. £500,000 preference shares issued to the Crown under the "Bank of New Zealand Act 1903." £500,000 ordinary shares, and £1,000,000 guaranteed stock. 7. For 12 months. 8. For 3 months.

4. Liabilities and Assets of Banks.—(i.) *Liabilities of Banks for Quarter ended 30th June, 1908.* As already stated, the banks transacting business in any State are obliged, under the existing State laws, to furnish a quarterly statement of their assets and liabilities, which contains the averages of the weekly statements prepared by the bank for that purpose, and have, during the year 1908, furnished quarterly statements to the Commonwealth Statistician. As all other financial returns in this work embrace, so far as possible, a period ended 30th June, 1908, it seems advisable to give the banking figures for the quarter ended on that date, and, where they are shewn for a series of years, similarly to use the figures for the June quarter of each year. The liabilities are liabilities to the general public, and are exclusive of the banks' liabilities to their shareholders, which are shewn in the preceding table:—

**AVERAGE LIABILITIES OF BANKS IN EACH STATE OF THE COMMONWEALTH FOR
THE QUARTER ENDED 30th JUNE, 1908.**

| State. | Notes in Circulation, not bearing interest. | Bills in Circulation, not bearing interest. | Balances Due to other Banks. | Deposits. | | | Total Liabilities. |
|-----------------|---|---|------------------------------|-----------------------|-------------------|-------------|--------------------|
| | | | | Not Bearing Interest. | Bearing Interest. | Total. | |
| | £ | £ | £ | £ | £ | £ | £ |
| New South Wales | 1,713,314 | 283,573 | 357,316 | 18,847,680 | 24,769,304 | 43,616,984 | 45,971,187 |
| Victoria | 858,781 | 202,099 | 165,678 | 13,274,150 | 24,264,572 | 37,538,722 | 38,765,260 |
| Queensland | ... | 158,246 | 97,561 | 5,797,531 | 9,530,525 | 15,328,056 | 15,583,863 |
| South Australia | 488,570 | 11,051 | 48,651 | 3,502,187 | 5,142,159 | 8,644,346 | 9,192,618 |
| West. Australia | 310,226 | 23,904 | 127,241 | 2,913,527 | 1,981,112 | 4,894,639 | 5,356,010 |
| Tasmania | 165,356 | 29,030 | ... | 1,680,373 | 1,991,263 | 3,671,641 | 3,866,027 |
| Commonwealth | 3,536,227 | 707,903 | 706,447 | 46,015,448 | 67,678,940 | 113,694,388 | 118,734,965 |

(ii.) *Assets of Banks for Quarter ended 30th June, 1908.* The average assets of the banks are shown in the following table:—

**AVERAGE ASSETS OF BANKS IN EACH STATE OF THE COMMONWEALTH FOR THE
QUARTER ENDED 30th JUNE, 1908.**

| State. | Coined Gold and Silver and other Metals. | Gold and Silver in Bullion or Bars. | Government and Municipal Securities. | Landed and House Property. | Notes and Bills of other Banks. | Balances Due from other Banks. | Discounts, Overdrafts, and all other Assets. | Total Assets. |
|----------|--|-------------------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------|--|---------------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. | 9,617,962 | 190,432 | 2,547,624 | 1,783,695 | 348,515 | 487,604 | 35,461,265 | 50,377,097 |
| Victoria | 7,304,827 | 422,614 | 157,966 | 1,808,250 | 301,939 | 255,973 | 33,096,814 | 43,348,363 |
| Q'land | 2,231,241 | 150,856 | 272,071 | 698,745 | 890,352 | 157,059 | 14,973,466 | 19,373,890 |
| S. Aust. | 1,811,631 | 9,367 | 121,002 | 354,747 | 95,047 | 114,318 | 5,684,573 | 8,190,685 |
| W. Aust. | 1,873,253 | 579,782 | 140,252 | 195,052 | 45,478 | 65,233 | 5,440,749 | 9,399,804 |
| Tas. ... | 739,374 | 116 | 215,800 | 97,723 | 11,071 | 51,425 | 2,792,437 | 3,907,946 |
| Cw'ith. | 23,578,293 | 1,353,267 | 3,454,715 | 4,938,212 | 1,692,402 | 1,131,612 | 97,389,304 | 133,537,805 |

(iii.) *Liabilities of Banks for June Quarter, 1901 to 1908.* In the subjoined table, which shows the average liabilities of the banks for the quarters ended 30th June, 1901 to 1908, for the Commonwealth as a whole, it will be seen that the growth in total liabilities is almost entirely due to an increase in the deposits, and that deposits not bearing interest and deposits bearing interest have shared in that increase very equally:—

**AVERAGE LIABILITIES OF BANKS IN THE COMMONWEALTH FOR THE QUARTER
ENDED 30th JUNE, IN THE YEARS 1901 TO 1908.**

| Year. | Notes in Circulation not Bearing Interest. | Bills in Circulation not Bearing Interest. | Balances due to other Banks. | Deposits. | | | Total Liabilities. |
|-------|--|--|------------------------------|-----------------------|-------------------|-------------|--------------------|
| | | | | Not Bearing Interest. | Bearing Interest. | Total. | |
| | £ | £ | £ | £ | £ | £ | £ |
| 1901 | 3,399,462 | 525,958 | 376,972 | 37,457,960 | 54,029,188 | 91,487,148 | 95,789,540 |
| 1902 | 3,305,135 | 518,504 | 459,255 | 37,727,861 | 55,708,373 | 93,436,234 | 97,719,128 |
| 1903 | 3,315,747 | 539,132 | 407,947 | 37,056,187 | 54,701,047 | 91,757,234 | 96,020,060 |
| 1904 | 3,133,288 | 521,287 | 290,411 | 35,630,255 | 55,917,848 | 91,548,103 | 95,493,079 |
| 1905 | 3,036,879 | 553,256 | 446,555 | 36,847,610 | 61,295,775 | 98,143,385 | 102,182,075 |
| 1906 | 3,244,256 | 584,670 | 577,094 | 41,036,116 | 65,470,150 | 106,515,266 | 110,905,288 |
| 1907 | 3,563,181 | 801,878 | 444,460 | 46,781,234 | 65,916,735 | 112,697,969 | 117,507,488 |
| 1908 | 3,536,227 | 707,903 | 706,447 | 46,015,448 | 67,678,940 | 113,694,388 | 118,734,965 |

(iv.) *Asse of Banks for June Quarter, 1901 to 1908.* A similar table shewing the average assets of the banks for the June quarters of each of the years 1901 to 1908 is shewn below. Bullion, in the case of the Tasmanian banks, is included with coin in the years 1901 to 1907:—

AVERAGE ASSETS OF BANKS IN THE COMMONWEALTH FOR THE QUARTER ENDED 30th JUNE IN THE YEARS 1901 to 1908.

| Year. | Coined Gold and Silver and other Metals. | Gold and Silver in Bullion or Bars. | Landed and other Property. | Notes and Bills of other Banks. | Balances Due from other Banks. | All other Debts Due to the Banks. | Total Assets. |
|-------|--|-------------------------------------|----------------------------|---------------------------------|--------------------------------|-----------------------------------|---------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1901 | 18,581,224 | 1,199,304 | 6,145,742 | 695,676 | 1,215,701 | 93,710,166 | 121,547,813. |
| 1902 | 19,744,914 | 1,330,304 | 5,337,277 | 656,302 | 1,152,534 | 94,015,098 | 122,236,429. |
| 1903 | 18,513,784 | 1,507,825 | 5,289,440 | 741,977 | 1,115,369 | 93,301,160 | 120,469,555. |
| 1904 | 17,910,771 | 1,447,698 | 5,245,312 | 692,688 | 781,368 | 87,705,222 | 113,783,059. |
| 1905 | 19,988,465 | 1,501,890 | 5,212,799 | 705,089 | 809,929 | 85,766,259 | 113,984,431 |
| 1906 | 21,268,679 | 1,412,763 | 5,160,875 | 802,225 | 1,234,921 | 87,889,121 | 117,768,584 |
| 1907 | 22,420,395 | 1,291,033 | 5,023,379 | 840,217 | 1,170,276 | 94,990,435 | 125,740,735. |
| 1908 | 23,578,293 | 1,353,267 | 4,938,212 | 1,692,402 | 1,131,612 | 100,844,019* | 133,537,805 |

* Including £3,454,715 Government and municipal securities.

The figures do not call for much comment. As the table shews, the increase in the total amount of assets is mainly due to an increase in the amount of specie held by the banks against liabilities at call and advances.

5. **Percentage of Coin and Bullion to Liabilities at Call.**—(i.) *Commonwealth.* Although it is not strictly correct to assume that the division of deposits into those bearing interest and not bearing interest would in every case coincide with a division into fixed deposits and current accounts, the division, in default of a better one, must be adopted, and in the following table "liabilities at call" are therefore understood to include the note circulation of the banks and the deposits not bearing interest:—

PERCENTAGE OF COIN AND BULLION TO LIABILITIES AT CALL, COMMONWEALTH, 1901 TO 1908.

| Year. | Liabilities at Call. | | | Coin and Bullion. | | | Percentage of Coin and Bullion to Liabilities at Call. |
|----------|-----------------------|--------------------------------|------------|-------------------|-----------|------------|--|
| | Notes in Circulation. | Deposits not Bearing Interest. | Total. | Coin. | Bullion. | Total. | |
| | £ | £ | £ | £ | £ | £ | % |
| 1901 ... | 3,399,462 | 37,457,960 | 40,857,422 | 18,581,224 | 1,199,304 | 19,780,528 | 48.41 |
| 1902 ... | 3,305,135 | 37,727,861 | 41,032,996 | 19,744,914 | 1,330,304 | 21,075,218 | 51.36 |
| 1903 ... | 3,315,747 | 37,056,187 | 40,371,934 | 18,513,784 | 1,507,825 | 20,021,609 | 49.59 |
| 1904 ... | 3,133,747 | 35,630,255 | 38,764,002 | 17,910,771 | 1,447,698 | 19,358,469 | 49.94 |
| 1905 ... | 3,036,879 | 36,847,610 | 39,884,489 | 19,988,465 | 1,501,890 | 21,490,355 | 53.88 |
| 1906 ... | 3,244,256 | 41,036,116 | 44,280,372 | 21,268,679 | 1,412,763 | 22,681,442 | 51.22 |
| 1907 ... | 3,563,181 | 46,781,234 | 50,344,415 | 22,420,395 | 1,291,033 | 23,711,428 | 47.10 |
| 1908 ... | 3,536,227 | 46,015,448 | 49,551,675 | 23,578,293 | 1,353,267 | 24,931,560 | 50.31 |

It would appear from the figures just given that the banks generally consider it advisable to hold about half the amount of liabilities at call in coin and bullion. The drop to 47.10 per cent. in 1907 was due to the very large increase in the amount of deposits during the year, with which the increase in the coin and bullion held, considerable though it was, did not keep pace.

(ii.) *Queensland Treasury Notes.* No bank-notes are issued by any of the banks in Queensland, where a Treasury note has taken the place of bank-notes since 1893. These Treasury notes are disregarded in the quarterly statements of the banks; according to Treasury returns the amount outstanding on 30th June, 1908, was £1,530,982, of which £718,209 was in circulation, while the balance of £812,773 was held by the banks.

(iii.) *States.* The proportion of coin and bullion to liabilities at call varies considerably in the different States, and is generally highest in Western Australia, and lowest in Queensland and Tasmania. A table is appended shewing the percentages for each State for the quarter ended 30th June, 1901 to 1908:—

PERCENTAGE OF COIN AND BULLION TO LIABILITIES AT CALL, STATES AND COMMONWEALTH, 1901 to 1908.*

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | % | % | % | % | % | % | % | % |
| N.S.W. ... | 45.96 | 46.97 | 47.47 | 48.67 | 50.51 | 48.49 | 44.81 | 47.70 |
| Victoria ... | 47.82 | 51.91 | 50.58 | 52.92 | 58.01 | 53.55 | 49.17 | 54.68 |
| Queensland | 40.95 | 44.42 | 46.33 | 39.66 | 45.78 | 40.43 | 37.20 | 41.09 |
| S. Australia | 54.94 | 57.67 | 50.12 | 51.45 | 55.66 | 51.25 | 46.73 | 45.63 |
| W. Australia | 71.59 | 80.46 | 61.83 | 58.70 | 67.35 | 73.98 | 71.14 | 76.09 |
| Tasmania ... | 37.49 | 35.12 | 42.20 | 46.41 | 44.25 | 42.39 | 39.84 | 40.06 |
| C'wealth... | 48.41 | 51.36 | 49.59 | 49.94 | 53.88 | 51.22 | 47.10 | 50.31 |

6. *Deposits and Advances.*—(i.) *Total Deposits.* The total amount of deposits held by the banks shews a steady advance during the period under review, although the totals for 1903 and 1904, when the country was slowly recovering from the effects of the drought, were slightly below those for 1902:—

TOTAL DEPOSITS IN BANKS, STATES AND COMMONWEALTH, 1901 to 1908.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. |
|--------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|
| | £ | £ | £ 691 | £ | £ | £ | £ | £ |
| N.S.W. ... | 33,118,860 | 34,332,531 | 33,309,334 | 33,058,342 | 35,972,265 | 39,092,630 | 41,967,265 | 43,616,984 |
| Victoria ... | 30,991,038 | 30,839,444 | 30,719,334 | 31,188,971 | 33,642,092 | 36,764,392 | 38,393,179 | 37,533,722 |
| Q'land ... | 13,525,489 | 13,795,737 | 12,645,725 | 12,626,184 | 12,987,859 | 13,665,110 | 14,852,584 | 15,328,056 |
| S. Aust. ... | 6,270,396 | 6,212,957 | 6,603,225 | 6,375,267 | 6,892,103 | 7,513,802 | 8,247,366 | 8,644,346 |
| W. Aust. ... | 4,402,519 | 4,742,579 | 4,785,839 | 4,726,158 | 4,999,650 | 5,645,701 | 5,500,112 | 4,894,639 |
| Tasmania | 3,178,846 | 3,462,966 | 3,693,420 | 3,573,181 | 3,649,416 | 3,826,631 | 3,737,463 | 3,671,641 |
| C'wealth | 91,487,148 | 93,436,234 | 91,757,234 | 91,548,103 | 98,143,385 | 106,515,266 | 112,697,969 | 113,694,388 |

(ii.) *Deposits per Head of Population.* To shew the extent to which the population makes use of the banking facilities afforded to it, a table is given hereunder shewing the amount of total deposits per head of mean population for each of the years 1901 to 1908. The figures must not be taken to shew part of the savings of the people, as a large proportion of the deposits is non-interest-bearing and therefore presumably used in the business of the banks' customers, together with a small part of the interest-bearing deposits:—

DEPOSITS PER HEAD OF POPULATION, STATES AND COMMONWEALTH, 1901 TO 1908.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. |
|-----------------------|---------|---------|---------|---------|---------|----------|---------|----------|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| New South Wales ... | 24 6 5 | 24 14 4 | 23 10 7 | 22 18 8 | 24 8 1 | 25 17 11 | 27 1 2 | 27 12 10 |
| Victoria ... | 25 14 9 | 25 9 8 | 25 8 7 | 25 17 2 | 27 15 7 | 30 1 3 | 30 0 19 | 29 18 4 |
| Queensland | 26 18 8 | 27 0 5 | 24 13 3 | 24 5 8 | 24 13 6 | 25 11 10 | 27 7 9 | 27 19 2 |
| South Australia | 17 7 0 | 17 1 8 | 18 1 10 | 17 5 5 | 18 8 3 | 19 15 7 | 21 6 3 | 21 16 4 |
| Western Australia ... | 23 5 11 | 22 18 2 | 21 11 2 | 19 17 2 | 19 18 0 | 21 13 0 | 20 16 3 | 18 10 3 |
| Tasmania ... | 18 10 5 | 20 0 8 | 20 17 6 | 20 1 8 | 20 10 2 | 21 10 7 | 21 2 9 | 20 5 2 |
| Commonwealth ... | 24 2 9 | 24 4 8 | 23 10 6 | 23 3 3 | 24 8 11 | 26 1 6 | 27 2 1 | 26 18 6 |

(iii.) *Total Advances.* In the quarterly statements furnished by the banks the column headed "all other debts due to the banks," which averages from 75 to 80 per cent. of the total assets, is made up of such miscellaneous items as bills discounted, promissory notes discounted, overdrafts on personal security, overdrafts secured by deposit of deeds or by mortgage, etc. The quarterly returns furnished to the Commonwealth Statistician in 1908 provided for a division of the amounts contained under this heading into a number of sub-headings, but all the banks were not in a position to make the necessary division, so that under present circumstances it is impossible to separate these items, and the total amounts contained in the column must, therefore, be treated as advances. The following table shews the totals for each State during the years 1901 to 1908:—

ADVANCES BY BANKS, STATES AND COMMONWEALTH, 1901 to 1908.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. |
|----------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. ... | 39,194,344 | 39,797,960 | 38,658,565 | 33,237,755 | 31,965,017 | 32,057,192 | 34,460,993 | 37,948,889 |
| Victoria ... | 30,953,245 | 30,446,032 | 29,905,949 | 29,426,052 | 28,593,201 | 29,699,683 | 31,394,070 | 33,254,780 |
| Queensland ... | 13,563,589 | 13,633,376 | 14,082,725 | 13,974,233 | 13,590,333 | 13,850,921 | 15,078,455 | 15,245,537 |
| South Aust. | 4,332,730 | 4,434,031 | 4,428,983 | 4,401,991 | 4,793,936 | 5,053,184 | 5,545,346 | 5,805,575 |
| West. Aust. | 3,117,818 | 3,276,409 | 3,633,451 | 3,955,108 | 4,172,953 | 4,635,624 | 5,140,911 | 5,581,001 |
| Tasmania ... | 2,538,442 | 2,397,290 | 2,541,487 | 2,710,083 | 2,650,789 | 2,592,517 | 2,872,660 | 3,008,237 |
| C'wealth | 93,710,166 | 93,985,098 | 93,301,160 | 87,705,222 | 85,766,259 | 87,889,121 | 94,990,435 | 100,844,019 |

(iv.) *Proportion of Advances to Deposits.* The percentage borne by advances to total deposits shews to what extent the needs of one State have to be supplied by the resources of another State, and where the percentage for the Commonwealth as a whole exceeds 100, as it did in 1901, 1902, and 1903, the banks must have supplied the deficiency from their own resources, or from deposits obtained outside the Commonwealth. The figures shew, however, that the banking business of the Commonwealth has been practically self-contained during the period under review:—

PERCENTAGE OF ADVANCES TO TOTAL DEPOSITS, STATES AND COMMONWEALTH, 1901 TO 1908.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|
| | % | % | % | % | % | % | % | % |
| N.S.W. ... | 118.34 | 115.75 | 116.06 | 100.54 | 88.86 | 81.99 | 82.11 | 87.00 |
| Victoria ... | 99.89 | 98.72 | 97.35 | 94.35 | 84.99 | 80.78 | 83.07 | 88.59 |
| Queensland ... | 100.32 | 98.82 | 111.36 | 110.68 | 104.64 | 101.36 | 101.51 | 99.46 |
| South Aust. | 69.10 | 71.37 | 67.07 | 69.05 | 69.56 | 67.25 | 67.24 | 67.16 |
| West. Aust. | 70.82 | 69.08 | 76.97 | 83.69 | 83.47 | 82.11 | 93.47 | 114.00 |
| Tasmania ... | 79.85 | 69.23 | 68.81 | 75.85 | 72.64 | 67.75 | 76.86 | 81.93 |
| C'wealth | 102.43 | 100.59 | 101.68 | 95.80 | 87.39 | 82.51 | 84.29 | 88.70 |

7. Clearing Houses. The Sydney Banks' Exchange Settlement and the Melbourne Clearing House, at which two institutions settlements are effected daily between the banks doing business in New South Wales and Victoria respectively, publish figures of the weekly clearances effected. From these figures it appears that in 1908 the total clearances in Sydney amounted to £227,736,000, and in Melbourne to £221,354,000. These figures represent in both cases a decrease on those for 1907, the decrease in Sydney amounting to £6,433,000, and in Melbourne to £15,240,000. Owing to the different distribution of the banking business in the two cities these figures do not, however, afford a fair comparison of the volume of banking business transacted in Sydney and Melbourne.

§ 3. Companies.

1. **General.**—Returns in regard to registered companies are defective, and with few exceptions are not available for Tasmania. They embrace (1) Returns relating to Trustees, Executors, and Agency Companies; (2) Returns relating to Registered Building and Investment Societies; and (3) Returns relating to Registered Co-operative Societies.

2. **Trustees, Executors, and Agency Companies.**—Returns are available of seven Victorian, two New South Wales, one Queensland, one South Australian, one Western Australian, and two Tasmanian companies. The paid-up capital of these fourteen companies amounted to £404,422; reserve funds and undivided profits to £234,888; other liabilities, £81,030; total liabilities, £720,340. Among the assets are included:—Deposits with Governments, £162,500; other investments in public securities, fixed deposits, etc., £102,027; loans on mortgage, £151,495; property owned, £187,032; other assets, £117,286. The net profits for the year were £58,690, and the amount of dividends and bonus £31,597. Returns as to the amount at credit of estates represented by assets are only available for seven companies, viz.:—Two Victorian, two New South Wales, one Queensland, one South Australian, and one Western Australian. They amount to the following large sums:—

| | | | | | |
|-----------------|-----|------------|-------------------|-----|--------------------|
| Victoria | ... | £9,949,782 | South Australia | ... | £2,083,930 |
| New South Wales | ... | 9,495,542 | Western Australia | ... | 1,146,546 |
| Queensland | ... | 1,528,345 | Commonwealth | ... | <u>£24,204,145</u> |

Probably £8,000,000 would at the least have to be added to this amount for the remaining seven companies, so that the total amount is probably not far short of £32,000,000. None of these companies receive deposits, and advances are only made under exceptional circumstances, and to a very limited extent, the total so shewn in the last balance-sheets being only £57,417.

3. **Registered Building and Investment Societies.**—Returns have been received of a total of 142 societies, viz., 62 in New South Wales, 30 in Victoria, 17 in Queensland, 24 in South Australia, and 9 in Western Australia. The balance-sheets cover various periods ended during the second half of 1907 and the first half of 1908, so that the returns may be assumed to roughly correspond to the financial year 1907-8. The liabilities of the 142 societies are stated as follows:—

LIABILITIES OF REGISTERED BUILDING AND INVESTMENT SOCIETIES.

| State. | Paid-up Capital or Subscriptions. | Reserve Funds. | Deposits. | Bank Over-drafts and other Liabilities. | Total Liabilities. |
|-------------------|-----------------------------------|----------------|-----------|---|--------------------|
| | £ | £ | £ | £ | £ |
| New South Wales | 434,479 | 62,413 | 406,680 | 73,279 | 976,851 |
| Victoria | 1,311,813 | 195,186 | 694,095 | 463,689 | 2,664,783 |
| Queensland | 351,631 | 23,168 | ... | 12,881 | 387,680 |
| South Australia | 296,400 | 3,111 | 995 | 4,150 | 304,656 |
| Western Australia | 86,686 | ... | 13,687 | 15,971 | 116,344 |
| Commonwealth* ... | 2,481,009 | 283,878 | 1,115,457 | 569,970 | 4,450,314 |

* Exclusive of Tasmania.

The assets of the companies for the same period were as follows:—

ASSETS OF REGISTERED BUILDING AND INVESTMENT SOCIETIES.

| State. | Advances on Mortgage. | Landed and House Property, Furniture, etc. | Cash in Hand and on Deposit and other Assets. | Total Assets. |
|-----------------------|-----------------------|--|---|---------------|
| | £ | £ | £ | £ |
| New South Wales ... | 837,713 | 70,363 | 68,775 | 976,851 |
| Victoria ... | 1,296,772 | 1,266,681 | 75,960 | 2,639,413 |
| Queensland ... | 352,724 | 387 | 44,245 | 397,356 |
| South Australia ... | 274,115 | 20,096 | 17,547 | 311,758 |
| Western Australia ... | 112,467 | ... | 6,509 | 118,976 |
| Commonwealth* | 2,873,791 | 1,357,527 | 213,036 | 4,444,354 |

* Exclusive of Tasmania.

4. **Registered Co-operative Societies.**—Returns are available of 78 societies, of which 34 were in New South Wales, 27 in Victoria, 5 in Queensland, 8 in South Australia, and 4 in Western Australia. As in the case of Building and Investment Societies, so in the case of Co-operative Societies do the balance-sheets cover various periods ended during the financial year 1907-8. The liabilities of the 78 societies are shewn in the following table:—

LIABILITIES OF REGISTERED CO-OPERATIVE SOCIETIES.

| State. | Paid-up Capital. | Reserve Funds. | Bank Over-drafts and Sundry Creditors. | Other Liabilities, Profit and Loss Account, &c. | Total Liabilities. |
|-----------------------|------------------|----------------|--|---|--------------------|
| | £ | £ | £ | £ | £ |
| New South Wales ... | 74,882 | 35,471 | 42,355 | 35,548 | 188,256 |
| Victoria ... | 97,173 | 6,274 | 115,795 | 5,032 | 224,274 |
| Queensland ... | 5,488 | 1,816 | 1,001 | ... | 8,305 |
| South Australia ... | 65,887 | 6,367 | 26,725 | 30 | 99,009 |
| Western Australia ... | 6,417 | 1,046 | 5,731 | 1,669 | 14,863 |
| Commonwealth* | 249,847 | 50,974 | 191,607 | 42,279 | 534,707 |

* Exclusive of Tasmania.

The assets of the societies are shewn hereunder:—

ASSETS OF REGISTERED CO-OPERATIVE SOCIETIES.

| State. | Stock and Fittings. | Cash in Hand and Sundry Debtors. | Freehold and other Property and other Assets. | Total Assets. |
|-----------------------|---------------------|----------------------------------|---|---------------|
| | £ | £ | £ | £ |
| New South Wales ... | 96,759 | 50,861 | 40,636 | 188,256 |
| Victoria ... | 175,165 | 57,104 | 1,524 | 233,793 |
| Queensland ... | 4,575 | 2,972 | ... | 7,547 |
| South Australia ... | 72,404 | 22,794 | 7,645 | 102,843 |
| Western Australia ... | 14,437 | 5,108 | 25 | 19,570 |
| Commonwealth* | 363,340 | 138,839 | 49,830 | 552,009 |

* Exclusive of Tasmania.

§ 4. Savings Banks.

1. **General.**—The total number of savings banks, with their branches and agencies, in the Commonwealth, closely approximates to that of banks of issue, and was at the middle of 1908, 1717, distributed as follows:—New South Wales, 635; Victoria, 389; Queensland, 203; South Australia, 216; Western Australia, 137 (exclusive of 70 school penny savings banks); and Tasmania, 137.

In the following tables the figures for Victoria, Queensland, South Australia and Western Australia refer to financial years ended 30th June, and those of New South Wales to calendar years ended 31st December next preceding. In the case of Tasmania figures for the two joint-stock savings banks are made up to the last day of February in each year, and those for the Government Savings Bank to the 31st December, except in 1906-7 and 1907-8, where they relate to the year ended 30th June.

2. **Depositors.**—The total number of depositors, *i.e.*, of persons having accounts open, not of those making deposits, in each of the last eight years is shewn in the following table:—

NUMBER OF DEPOSITORS IN SAVINGS BANKS, 1900-1 to 1907-8.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|----------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| N.S.W. | 282,643 | 306,311 | 323,212 | 331,956 | 355,824 | 364,039 | 392,050 | 421,928 |
| Victoria | 393,026 | 410,126 | 418,511 | 432,867 | 447,382 | 466,752 | 491,318 | 511,581 |
| Q'land | 81,025 | 84,685 | 80,043 | 80,959 | 84,165 | 83,026 | 92,912 | 100,324 |
| S.A. ... | 126,032 | 132,084 | 137,147 | 141,572 | 146,366 | 152,487 | 161,855 | 172,278 |
| W.A.... | 39,318 | 45,108 | 48,008 | 54,873 | 59,764 | 63,573 | 66,737 | *72,178 |
| Tas. ... | 42,509 | 44,527 | 46,451 | 47,904 | 49,438 | 50,731 | 53,817 | 55,620 |
| Cwlth. | 964,553 | 1,022,841 | 1,053,372 | 1,090,131 | 1,142,939 | 1,185,608 | 1,258,689 | 1,333,909 |

* Inclusive of 2645 depositors in school penny savings banks.

The subjoined table shews the above figures in relation to the population of the States; it must, of course, be borne in mind that savings bank accounts are not restricted to the adult population, but that it is, on the contrary, a very usual practice to open accounts in the name of children. Even so, the proportion is a large one, amounting to three-tenths of the total population of the Commonwealth, and rising both in Victoria and in South Australia to more than two-fifths:—

DEPOSITORS IN SAVINGS BANKS PER THOUSAND OF POPULATION,

1900-1 TO 1907-8.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------|---------|---------|---------|---------|---------|---------|---------|---------|
| N.S.W. ... | 208 | 223 | 230 | 233 | 244 | 244 | 257 | 269 |
| Victoria ... | 326 | 339 | 346 | 359 | 369 | 382 | 397 | 407 |
| Queensland | 161 | 166 | 156 | 156 | 160 | 165 | 171 | 182 |
| S. Australia | 349 | 363 | 376 | 383 | 391 | 401 | 418 | 433 |
| W. Australia | 208 | 218 | 216 | 231 | 238 | 244 | 253 | 272 |
| Tasmania ... | 246 | 255 | 262 | 267 | 274 | 280 | 304 | 308 |
| C'wealth ... | 255 | 266 | 271 | 277 | 286 | 291 | 304 | 316 |

3. **Deposits.**—The total amount of deposits in the savings banks of the six States reaches the large sum of forty-six million pounds, and would no doubt be even larger if the banks did not restrict interest-bearing deposits to certain limits. It must be remembered that though not granting him facilities to draw cheques, the Australian savings banks practically afford the small tradesman all the advantages of a current account, in addition to which they also allow him interest on his minimum monthly balance, instead of charging him a small fee for keeping his account, as the banks of issue do. The rates of interest allowed, and the limits of interest-bearing deposits, from 1st January, 1909, are as follows:—New South Wales, Government Savings Bank, 3 per cent. up to £500; Savings Bank of New South Wales, 3½ per cent. up to £200; Victoria, 3¼ per cent. on first £100, and 3 per cent. on excess from £101 to £250; Queensland, 3 per cent. up to £200; South Australia, 3¼ per cent. up to £250; Western Australia, 3 per cent. up to £1000; Tasmania, Government Savings Bank, 3 per cent. up to £250; Hobart Trustees' Savings Bank, 3¼ per cent. up to £150; Launceston Trustees' Savings Bank, 3¼ per cent. up to £150. The savings banks of four of the States—New South Wales (Government Savings Bank), Victoria, South Australia, and Western Australia—have, for the further benefit of depositors, entered into a reciprocity arrangement, under which money deposited in one State may be drawn out in another State, and even by telegraph.

The table below shews the total amounts at credit of depositors in each of the last eight years:—

DEPOSITS IN SAVINGS BANKS, 1901 to 1907-8.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| N.S. Wales... | 10,901,382 | 11,808,710 | 12,425,464 | 12,344,623 | 12,982,648 | 13,963,735 | 15,320,532 | 17,530,157 |
| Victoria ... | 9,662,006 | 10,131,604 | 10,341,857 | 10,532,808 | 10,896,741 | 11,764,179 | 12,702,580 | 13,423,676 |
| Queensland ... | 3,896,170 | 4,118,337 | 3,772,686 | 3,741,967 | 3,875,197 | 4,142,791 | 4,543,104 | 4,621,881 |
| South Aus. ... | 3,795,631 | 3,988,649 | 4,187,590 | 4,217,836 | 4,398,041 | 4,706,007 | 5,320,872 | 5,820,161 |
| West. Aus. ... | 1,618,359 | 1,889,082 | 1,985,624 | 2,079,763 | 2,207,296 | 2,316,161 | 2,633,135 | 2,885,463 |
| Tasmania ... | 1,009,097 | 1,092,047 | 1,194,157 | 1,249,760 | 1,263,542 | 1,332,546 | 1,488,056 | 1,560,951 |
| C'wealth ... | 30,882,645 | 33,023,429 | 33,910,378 | 34,216,757 | 35,623,465 | 38,286,219 | 42,098,239 | 46,147,289 |

A comparison between the tables shewing the number of depositors and the amount of deposits reveals the fact that the average amounts to the credit of each depositor are considerably larger in one State than in another; in other words, that in one State a comparatively larger proportion of the population make use of the savings banks, and that the natural result is a smaller amount to the credit of the individual depositor. Within the same State there is little variation in the figures from year to year:—

AVERAGE AMOUNTS PER DEPOSITOR IN AUSTRALIAN SAVINGS BANKS,

1900-1 TO 1907-8.

| State. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-------------------------|---------------|----------------|----------------|---------------|---------------|----------------|----------------|-----------------|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| New South Wales ... | 38 11 5 | 38 11 0 | 38 8 10 | 37 3 9 | 36 9 9 | 38 7 2 | 39 1 7 | 41 10 11 |
| Victoria ... | 24 11 8 | 24 14 1 | 24 14 3 | 24 9 0 | 24 7 2 | 25 4 1 | 26 0 9 | 26 5 0 |
| Queensland ... | 48 1 0 | 48 12 7 | 47 2 8 | 46 4 5 | 46 0 10 | 47 1 3 | 48 17 11 | 49 1 2 |
| South Australia ... | 30 2 4 | 30 3 11 | 30 10 8 | 29 15 10 | 30 1 0 | 31 5 3 | 32 17 6 | 33 15 8 |
| Western Australia ... | 41 3 3 | 41 17 7 | 41 8 5 | 37 18 0 | 36 18 8 | 36 8 8 | 39 9 1 | 39 19 6 |
| Tasmania ... | 23 14 9 | 24 10 6 | 25 14 2 | 26 1 9 | 25 11 2 | 26 5 4 | 27 13 0 | 28 1 4 |
| Commonwealth ... | 32 0 4 | 32 5 10 | 32 3 10 | 31 7 9 | 31 8 4 | 32 5 10 | 33 8 11 | 34 11 11 |

The average amount deposited per head of population shows a satisfactory increase during the period under review. In 1900-1 it ranged from £10 10s. in South Australia to £5 16s. 9d. in Tasmania, while in 1907-8 the amount in South Australia had risen to £14 12s. 3d., and in Tasmania to £8 13s. 1d. Tasmania's average in 1906-7 was higher than that of Queensland, which, nevertheless, rose from £7 15s. 2d. to £8 7s. 6d. during the seven years. In 1907-8 the average for Queensland was again 1s. 3d. higher than that for Tasmania. The following table gives the figures for each year:—

SAVINGS BANKS DEPOSITS PER HEAD OF POPULATION, 1900-1 to 1907-8.

| State. | 1900-1. | | | 1901-2. | | | 1902-3. | | | 1903-4. | | | 1904-5. | | | 1905-6. | | | 1906-7. | | | 1907-8. | | |
|--------------|---------|----|----|---------|----|----|---------|----|----|---------|----|----|---------|----|----|---------|----|----|---------|----|----|---------|----|----|
| | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| N.S.W. | 8 | 0 | 3 | 8 | 11 | 9 | 8 | 17 | 1 | 8 | 13 | 0 | 8 | 18 | 2 | 9 | 7 | 3 | 10 | 0 | 8 | 11 | 3 | 6 |
| Vic. ... | 8 | 0 | 6 | 8 | 7 | 5 | 8 | 11 | 3 | 8 | 15 | 6 | 9 | 0 | 0 | 9 | 12 | 5 | 10 | 6 | 10 | 10 | 13 | 10 |
| Q'land ... | 7 | 15 | 2 | 8 | 1 | 4 | 7 | 7 | 2 | 7 | 3 | 11 | 7 | 7 | 3 | 7 | 15 | 2 | 8 | 7 | 6 | 8 | 18 | 4 |
| S.A. ... | 10 | 10 | 0 | 10 | 19 | 4 | 11 | 9 | 5 | 11 | 8 | 6 | 11 | 15 | 0 | 12 | 11 | 0 | 13 | 15 | 0 | 14 | 12 | 3 |
| W.A. ... | 8 | 11 | 3 | 9 | 2 | 6 | 8 | 19 | 2 | 8 | 14 | 9 | 8 | 15 | 9 | 8 | 17 | 8 | 9 | 19 | 3 | 10 | 17 | 4 |
| Tas. ... | 5 | 16 | 9 | 6 | 5 | 3 | 6 | 14 | 7 | 6 | 19 | 3 | 7 | 0 | 3 | 7 | 7 | 2 | 8 | 8 | 4 | 8 | 13 | 1 |
| Commonwealth | 8 | 3 | 0 | 8 | 12 | 0 | 8 | 14 | 5 | 8 | 13 | 8 | 8 | 18 | 1 | 9 | 8 | 1 | 10 | 3 | 8 | 10 | 18 | 8 |

4. **Annual Business.**—The annual volume of business transacted by the Australian savings banks is very large when compared with the total amount of deposits. This is mainly due to the fact already pointed out of many accounts being used as convenient current accounts. Thus, during the last year of the period under review, the total amount deposited and withdrawn (exclusive of interest added) amounted to more than 129 per cent. of the total amount of deposits at the end of the previous year, while the amount at credit of depositors (inclusive of interest added) increased by less than 10 per cent. during the same year. The following table shews the business transacted during the year 1907-8:—

TRANSACTIONS DURING THE YEAR 1907-8.

| State. | Total Deposits at End of Year 1906-7. | Amounts Deposited during Year 1907-8. | Interest Added during Year 1907-8. | Total. | Amounts Withdrawn during Year 1907-8. | Total Deposits at End of Year 1907-8. |
|-----------------|---------------------------------------|---------------------------------------|------------------------------------|------------|---------------------------------------|---------------------------------------|
| | £ | £ | £ | | £ | £ |
| N.S. Wales ... | 15,320,532 | 10,093,531 | 482,749 | 25,896,812 | 8,366,655 | 17,530,157 |
| Victoria ... | 12,792,590 | 9,999,045 | 332,952 | 23,124,587 | 9,695,911 | 13,428,676 |
| Queensland ... | 4,543,104 | 2,424,447 | 129,664 | 7,097,215 | 2,175,334 | 4,921,881 |
| South Australia | 5,320,872 | 3,204,265 | 163,429 | 8,688,566 | 2,868,405 | 5,820,161 |
| West. Australia | 2,633,135 | 2,023,556 | 77,514 | 4,734,205 | 1,848,742 | 2,885,463 |
| Tasmania ... | 1,488,056 | 850,212 | 48,504 | 2,386,772 | 825,821 | 1,560,951 |
| Commonwealth | 42,098,289 | 28,595,056 | 1,234,812 | 71,928,157 | 25,780,868 | 46,147,289 |

§ 5. Life Assurance.

1. **General.**—Under section 51 of the Commonwealth Constitution Act, the Commonwealth Parliament is empowered to legislate in regard to “insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned.” With the exception of Act No. 12 of 1905, “an Act relating to assurance on the lives of children by life assurance companies or societies,” no legislation relating to insurance has been passed by the Commonwealth Parliament, and life assurance companies carry on their business under State laws where such laws are in existence, or otherwise under the provisions of various companies or special Acts. A Royal Commission was, however, appointed in 1908, consisting of the Honourable J. H. Hood, one of the judges of the Supreme Court of Victoria, and G. H. Knibbs, Esquire, Commonwealth Statistician, “to inquire into and report upon the law relating to and the methods of operating Fire, Life, Industrial, and other Insurance in Australia.” The Commission is required to report the result of its inquiry before the 30th June, 1909. On this result future Commonwealth legislation will probably be based.

Returns for the year 1907 have been directly collected from life assurance societies by the Commonwealth Statistician, with results which are in the main satisfactory. From two of the foreign companies returns have not yet been received, and in their case 1906 figures had, therefore, to be repeated in the following tables. Unlike previous returns, figures for 1907 refer to business in the Commonwealth only, and omit New Zealand business.

2. **Companies Transacting Business in the Commonwealth.**—The total number of companies at present established in the Commonwealth is twenty, of which the following eight have their head offices in New South Wales:—The Australian Mutual Provident Society, the Mutual Life Association of Australasia, the City Mutual Life Assurance Society Limited, the Citizens' Life Assurance Company Limited, the Standard Life Association Limited, the Australian Metropolitan Life Assurance Company Limited, the People's Prudential Assurance Company Limited, and the Phoenix Mutual Provident Society Limited. Of these companies the Mutual Life Association of Australasia and the Citizens' Life Assurance Company Limited have during 1908 amalgamated. Six companies have their head offices in Victoria, viz.—The Australian Alliance Assurance Company, the National Mutual Life Association of Australasia Limited, the Australian Widows' Fund Life Assurance Society Limited, the Victoria Insurance Company Limited, the Colonial Mutual Life Assurance Society Limited, and the Australasian Temperance and General Mutual Life Assurance Society Limited. The head office of the Provident Life Assurance Company is in New Zealand, and that of the Liverpool and London and Globe Insurance Company in England. The Independent Order of Foresters is a Canadian institution, while the remaining three societies belong to the United States, viz.—The Equitable Life Insurance Society of the United States, the Mutual Life Insurance Company of New York, and the New York Life Insurance Company.

Most of the Australian companies are purely mutual; the Victoria (which takes no new life business), the Citizens', the Standard, the Metropolitan, and the Prudential, are the only companies which are partly proprietary, the shareholders' capital amounting to £40,000, £20,000, £12,500, £10,632 and £4785 respectively. Of foreign companies transacting business in the Commonwealth, the Provident and the Equitable are partly proprietary, the shareholders' capital amounting to £5250 and £20,550 respectively. No returns are available of the Liverpool and London and Globe Insurance Company.

3. **Ordinary and Industrial Business.**—Of the societies enumerated in the preceding paragraph the following five transact both ordinary and industrial business:—

The Australian Mutual Provident Society, the Citizens' Life Assurance Company Limited, the Australasian Temperance and General Mutual Life Assurance Society Limited, the Standard Life Association Limited, and the Australian Metropolitan Life Assurance Company Limited.

The People's Prudential Assurance Company Limited, the Phoenix Mutual Provident Society Limited and the Provident Life Assurance Company restrict their operations to industrial business, the first in addition having a medical benefit branch.

The remaining twelve societies transact ordinary life assurance business only, with the exception of those companies which have fire and accident branches, etc.

It has been attempted in this section to keep returns relating to ordinary and to industrial business apart, so far as it is possible to do so, and figures relating to companies whose head offices are in Europe or America refer to the Australian business of those companies only.

4. Ordinary Business: Australian Business in Force, 1907.—The subjoined table shows the ordinary life business in force at the latest dates available in the seventeen societies conducting operations in the Commonwealth and in New Zealand:—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1907.

| Society. | Policies in force, exclusive of Annuities. | Amount Assured, exclusive of Bonus Addition, etc. | Annual Premium Income. |
|---|--|---|------------------------|
| | No. | £ | £ |
| Australian Mutual Provident Society | 177,038 | 49,318,807 | 1,849,160 |
| Mutual Life Association of Australasia | 17,056 | 4,148,483 | 151,802 |
| City Mutual Life Assurance Society | 13,323 | 1,714,127 | 64,758 |
| Citizens' Life Assurance Company | 41,239 | 5,662,769 | 203,994 |
| Standard Life Association | 4,808 | 632,631 | 22,806 |
| Australian Metropolitan Life Assurance Company | 1,788 | 149,151 | 6,713 |
| Australian Alliance Assurance Company | 648 | 221,713 | 6,222 |
| National Mutual Life Association of Australasia | 53,936 | 11,600,088 | 410,325 |
| Australian Widows' Fund Life Assurance Society | 23,247 | 4,736,261 | 166,459 |
| Victoria Insurance Company | 163 | 79,650 | 2,264 |
| Colonial Mutual Life Assurance Society | 16,490 | 3,574,626 | 121,608 |
| Australasian Temperance and General Mut. Life Ass. Socy. | 19,355 | 2,177,459 | 79,727 |
| Liverpool and London and Globe Insurance Company | 414 | 194,483 | 5,427 |
| *Independent Order of Foresters | 1,448 | 246,700 | 4,877 |
| Equitable Life Assurance Society of United States | 8,782 | 3,180,791 | 157,876 |
| *Mutual Life Insurance Company of New York | 5,305 | 2,169,155 | 83,403 |
| New York Life Insurance Company | 6,647 | 2,514,637 | 98,216 |

* Returns for 1906.

5. Industrial Business: Australian Business in Force, 1907.—Similar information in regard to the industrial business of the eight societies transacting that kind of business is given in the following table:—

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1907.

| Society. | Policies in Force. | Amount Assured. | Annual Premium Income. |
|--|--------------------|-----------------|------------------------|
| | No. | £ | £ |
| Australian Mutual Provident Society | 20,348 | 589,496 | 28,038 |
| Citizens' Life Assurance Company | 183,137 | 3,604,232 | 167,353 |
| Standard Life Association | 24,611 | 666,745 | 26,143 |
| Australian Metropolitan Life Assurance Company | 12,318 | 411,820 | 17,582 |
| People's Prudential Assurance Company | 6,266 | 178,996 | 15,348 |
| * Phoenix Mutual Provident Society | 442 | 18,516 | 3,473 |
| Aust. Temperance and General Mutual Life Ass. Society | 88,604 | 1,701,817 | 104,815 |
| Provident Life Assurance Company | 1,739 | 45,881 | 2,134 |

* Returns for 1906.

6. Receipts and Expenditure of Australasian Societies, 1907.—(i.) *Ordinary Business.* The following returns refer only to those companies whose head offices are in the Commonwealth and in New Zealand. The People's Prudential Assurance Company, whose accounts do not distinguish between revenue and expenditure on account of ordinary and industrial business, has been included among the companies doing industrial business:—

ORDINARY LIFE ASSURANCE.—RECEIPTS AND EXPENDITURE, 1907.

| Society. | Receipts. | Expenditure. | Excess Receipts (Addition to Funds). |
|--|-----------|--------------|--------------------------------------|
| | £ | £ | £ |
| Australian Mutual Provident Society | 2,565,540 | 1,753,752 | 806,788 |
| Mutual Life Association of Australasia | 228,668 | 185,804 | 42,864 |
| City Mutual Life Assurance Society | 82,763 | 54,306 | 28,457 |
| Citizens' Life Assurance Company | 257,054 | 107,264 | 149,790 |
| Standard Life Association | 23,605 | 22,058 | 1,547 |
| Australian Metropolitan Life Assurance Company | 6,776 | 5,042 | 1,734 |
| Australian Alliance Assurance Company | 13,923 | 34,169 | *—20,246 |
| National Mutual Life Association of Australasia | 603,915 | 391,579 | 212,336 |
| Australian Widows' Fund Life Assurance Society | 243,953 | 211,295 | 32,658 |
| Victoria Insurance Company | 11,478 | 25,796 | *—14,318 |
| Colonial Mutual Life Assurance Society | 201,054 | 183,541 | 17,513 |
| Aust. Temperance & General Mutual Life Ass. Socy. | 98,571 | 57,417 | 41,154 |
| Total | 4,337,300 | 3,037,023 | 1,300,277 |

* Decrease.

(ii.) *Industrial Business.* A similar return for those societies which transact industrial business is given below. The figures for the Prudential, as stated above, are included therein:—

INDUSTRIAL LIFE ASSURANCE.—RECEIPTS AND EXPENDITURE, 1907.

| Society. | Receipts. | Expenditure. | Excess Receipts (Addition to Funds) |
|--|-----------|--------------|-------------------------------------|
| | £ | £ | £ |
| Australian Mutual Provident Society | 28,205 | 26,607 | 1,598 |
| Citizens' Life Assurance Company | 216,438 | 126,784 | 89,654 |
| Standard Life Association | 27,066 | 28,760 | *—1,694 |
| Australian Metropolitan Life Assurance Company | 20,343 | 16,543 | 3,800 |
| People's Prudential Assurance Company | 15,919 | 13,693 | 2,226 |
| Phoenix Mutual Provident Society | † | † | † |
| Aust. Temperance & General Mutual Life Ass. Soc. | 112,069 | 61,895 | 50,174 |
| Provident Life Assurance Company | 2,134 | 1,820 | 314 |
| Total | 422,174 | 276,102 | 146,072 |

* Decrease. † Returns not available.

7. **Expenses of Management of Australasian Societies, 1907.**—(i.) *Ordinary Business.* In the following table the expenses of management (including commission, expenses of management, license fees, and taxes) of the several Australasian societies transacting ordinary life business are shown, together with the proportion these expenses bear to premium income and to gross receipts. The People's Prudential company is included amongst the industrial companies in a subsequent table, as that company transacts mainly industrial business, and as its returns include both ordinary and industrial business:—

ORDINARY LIFE ASSURANCE.—EXPENSES OF MANAGEMENT, 1907.

| Society. | Expenses of Management. | Proportion to Premium Receipts. | Proportion to Gross Receipts. |
|---|-------------------------|---------------------------------|-------------------------------|
| | £ | % | % |
| Australian Mutual Provident Society... .. | 220,525 | 13.37 | 8.60 |
| Mutual Life Association of Australasia | 39,508 | 26.08 | 17.28 |
| City Mutual Life Assurance Society | 18,875 | 29.15 | 22.81 |
| Citizens' Life Assurance Company | 20,399 | 10.00 | 7.94 |
| Standard Life Association | 19,461 | 86.13 | 83.21 |
| Australian Metropolitan Life Assurance Company | 2,500 | 37.24 | 36.90 |
| Australian Alliance Assurance Company | 2,441 | 39.23 | 17.53 |
| National Mutual Life Association of Australasia | 64,709 | 15.76 | 10.72 |
| Australian Widows' Fund Life Assurance Society | 45,842 | 27.54 | 18.79 |
| Victoria Insurance Company | 1,307 | 57.73 | 11.36 |
| Colonial Mutual Life Assurance Society | 48,810 | 40.14 | 24.24 |
| Australasian Temperance and General Mut. Life Ass. Soc. | 18,313 | 22.97 | 18.39 |

(ii.) *Industrial Business.* The Australasian assurance societies have, in common with assurance societies elsewhere, made the experience that industrial business is much more expensive than ordinary business. This is, of course, principally due to the great expenses in connection with collection and commission. The subjoined table shows particulars so far as they are available, the figures again including commission, expenses of management, license fees, and taxes:—

INDUSTRIAL LIFE ASSURANCE.—EXPENSES OF MANAGEMENT, 1907.

| Society. | Expenses of Management. | Proportion to Premium Receipts. | Proportion to Gross Receipts. |
|---|-------------------------|---------------------------------|-------------------------------|
| | £ | % | % |
| Australian Mutual Provident Society | 25,206 | 89.90 | 89.37 |
| Citizens' Life Assurance Company | 71,980 | 43.01 | 33.26 |
| Standard Life Association | 19,263 | 73.68 | 71.17 |
| Australian Metropolitan Life Assurance Company | 11,388 | 64.77 | 55.98 |
| People's Prudential Assurance Company* | 7,163 | 46.68 | 45.50 |
| Phoenix Mutual Provident Society | † | † | † |
| Aust. Temperance & General Mutual Life Ass. Socy. | 46,533 | 44.39 | 41.52 |
| Provident Life Assurance Company | 1,118 | 52.39 | 52.39 |

* Including ordinary business.

† Returns not available.

8. **Liabilities and Assets of Australasian Societies, 1907.**—The liabilities of the Australasian societies consist mainly of their assurance funds; as already mentioned, only six of the societies are partly proprietary, viz., the Citizens', with a paid-up capital of £20,000; the Standard, with a paid-up capital of £12,500; the Metropolitan, with a paid-up capital of £10,632; the Prudential, with a paid-up capital of £4785; the Victoria, with a paid-up capital of £40,000; and the Provident, with a paid-up capital of £5250. With the exception of the Victoria, this paid-up capital belongs in every case to the industrial branch of the respective societies. In the following table these amounts are included with the assurance funds. The assets consist mainly in loans on mortgage and policies, in Government, municipal, and similar securities, shares, freehold property, etc. Loans on personal security are only granted by very few of the Australian societies:—

(i.) *Ordinary Business.* The following table shews the liabilities and assets of the Australasian societies transacting ordinary life business:—

ORDINARY LIFE ASSURANCE.—LIABILITIES AND ASSETS, 1907.

| Society. | Liabilities. | | | Assets. | | |
|---|--|--------------------|-------------------|----------------------------------|-------------------------------------|-------------------|
| | Total Funds including Paid-up Capital. | Other Liabilities. | Total. | Loans on Mortgages and Policies. | Securities, Freehold Property, etc. | Total. |
| | £ | £ | £ | £ | £ | £ |
| Australian Mutual Provident Society* ... | 10,207,409 | 344,090 | 10,551,499 | 10,852,390 | 8,699,109 | 19,551,499 |
| Mutual Life Association of Australasia ... | 1,773,795 | 20,362 | 1,794,157 | 1,165,093 | 629,064 | 1,794,157 |
| City Mutual Life Assurance Society ... | 352,753 | 11,430 | 364,183 | 213,210 | 150,973 | 364,183 |
| Citizens' Life Assurance Company ... | 1,241,964 | 5,251 | 1,247,215 | 344,816 | 1,040,185 | 1,385,001 |
| Standard Life Association ... | 22,282 | 2,707 | 24,989 | 893 | 24,076 | 24,989 |
| Australian Metropolitan Life Assurance Co. | 15,490 | 302 | 15,792 | 460 | 15,332 | 15,792 |
| Australasian Alliance Assurance Company | 199,552 | 14,394 | 213,946 | 129,132 | 84,814 | 213,946 |
| National Mut. Life Assoc of Australasia ... | 3,982,603 | 51,468 | 4,034,071 | 2,516,329 | 1,523,888 | 4,040,197 |
| Aust. Widows' Fund Life Assur. Society ... | 1,747,716 | 13,796 | 1,761,512 | 1,359,672 | 401,840 | 1,761,512 |
| Victoria Insurance Company ... | 233,791 | 14,763 | 248,559 | 111,812 | 136,471 | 248,283 |
| Colonial Mutual Life Assurance Society ... | 2,252,829 | 2,337 | 2,255,216 | 1,185,801 | 1,069,415 | 2,255,216 |
| Aust. Temp. & Gen. Mut. Life Assur. Soc.* | 632,152 | 2,647 | 634,799 | 185,791 | 449,008 | 634,799 |
| Total ... | 31,642,316 | 483,602 | 32,125,918 | 18,065,399 | 14,224,155 | 32,289,554 |

* Including industrial business. As the business of these two societies is mainly ordinary life business they have been included in this table.

(ii.) *Industrial Business.* As stated in the footnote to the preceding table, the Australian Mutual Provident Society and the Australasian Temperance and General Mutual Life Assurance Society, which transact a certain amount of industrial business, but whose business is mainly ordinary life business, have been included with those societies doing only ordinary life business. On the other hand, the People's Prudential Assurance Company, in whose case industrial business greatly predominates over ordinary life business, has been included in the following table. Incomplete as the table is, it shews that the funds appropriated to industrial business are very insignificant in comparison with those pertaining to ordinary life business. Taking the table in conjunction with the statements of revenue and expenditure, the question may well be asked whether in the case of some of the societies industrial business is worth catering for at all:—

INDUSTRIAL LIFE ASSURANCE.—LIABILITIES AND ASSETS, 1907.

| Society. | Liabilities. | | | Assets. | | |
|--|---|--------------------|-----------|----------------------------------|-------------------------------------|-----------|
| | Total Funds, including Paid-up Capital. | Other Liabilities. | Total. | Loans on Mortgages and Policies. | Securities, Freehold Property, etc. | Total. |
| Citizens' Life Assurance Company... | £ 598,699 | £ 7,181 | £ 605,880 | £ 187,986 | £ 403,239 | £ 591,225 |
| Standard Life Association ... | 27,856 | 16,094 | 43,940 | 1,785 | 42,155 | 43,940 |
| Australian Metropolitan Life Assurance Co. | 21,352 | 23,929 | 45,281 | 416 | 44,865 | 45,281 |
| People's Prudential Assurance Company* | 17,016 | 214 | 17,230 | 4,861 | 12,369 | 17,230 |
| Phoenix Mutual Provident Society... | † | † | † | † | † | † |
| Provident Life Assurance Company | † | † | † | † | † | † |
| Total | 664,923 | 47,408 | 712,331 | 195,048 | 502,628 | 697,676 |

* Including ordinary business. † Returns not available. ‡ Not separable from New Zealand business.

§ 6. Other Insurance.

1. **General.**—Returns as to fire insurance are very defective, and only for Sydney and Melbourne and the country districts of Victoria have some figures been given which are worth reproducing. The Royal Commission mentioned above under "Life Assurance" is inquiring into fire insurance matters, and Commonwealth legislation may, therefore, be expected at an early date.

2. **Sydney.**—Under the Fire Brigades Act 1902 the cost of the Metropolitan Fire Brigade is defrayed by equal payments on the part of the Colonial Treasurer, the municipal councils within the area under the jurisdiction of the Fire Brigades Board, and the insurance companies represented in Sydney. The companies divide their share proportionately to the amount held at risk. Under this arrangement the amount payable by the companies for the year 1908 was £17,400, divided amongst sixty companies, of which not more than five had their head office in Sydney. The amounts thus held at risk at the close of the last three years for which returns are available were, in 1905, £78,108,749; in 1906, £81,364,129; and in 1907, £86,563,304. As the total capital value of all ratable property in Sydney and suburbs is over £102,000,000, and the unimproved value £44,000,000, the value of buildings and other improvements on ratable property amounts to £58,000,000, and it appears, therefore, that in addition to the value of buildings, represented by this £58,000,000, furniture, stocks in warehouses, machinery, etc., must be insured for over £28,000,000.

3. **Melbourne.**—In Melbourne the Metropolitan Fire Brigades Board assesses the amount payable by the insurance companies on the amount of premiums returned. These premiums for the last three years averaged about £300,000 per annum, while the contributions paid by the companies amounted to about £13,000, or about £4 6s. 8d. for every £100 of premiums. It may be said, therefore, that the companies have to devote about 4½ per cent. of their premium income from metropolitan insurances to the maintenance of the fire brigade.

The annual value of ratable property is nearly £5,000,000, and the amounts contributed by the municipalities—as in the case of the insurance companies, one-third of the amount required by the Fire Brigades Board, the remaining one-third being contributed by the State Treasurer—are equal to about ¾d. per £1 of ratable value. In addition to this contribution insurance companies doing business in Victoria have to take out an annual license at a cost of 1½ per cent. of their gross premium income, which is probably equal to about 1¾ per cent. on net income.

4. **Country Districts of Victoria.**—The country districts are divided into nine areas for fire insurance purposes, and the contributions to be paid vary in these areas according to the actual requirements of the Country Fire Brigades Board. The annual values of ratable property were returned as follows:—In 1905, £1,393,770; in 1906, £1,400,568; and in 1907, £1,440,270. The premium income of the insurance companies from country business during the same three years averaged about £150,000, and the contributions of the companies £3700, equal to nearly 2½ per cent. of the premium income.

5. **Brisbane.**—A similar arrangement holds good in Brisbane, under which the cost of the Fire Brigade Board, amounting to about £6000 per annum, is paid in equal shares by the Government, the Brisbane City Council, and the insurance companies.

6. **Australian Insurance Business.**—Returns are available shewing the revenue and expenditure, assets and liabilities, and investments of sixteen insurance companies having their head offices either in the Commonwealth or in New Zealand. These companies are:—(a) with head-office in Sydney—the Australian Mutual Fire Insurance Company, the City Mutual Fire Insurance Company, the Mercantile Mutual Fire Insurance Company, the Queensland Insurance Company Limited, and the United Insurance Company; (b) with head office in Melbourne—the Australian Alliance Assurance Company, the Colonial Mutual Fire Insurance Company, the Commonwealth Insurance Company Limited, the Victoria Insurance Company, and the Victoria General Insurance and Guarantee Company Limited; (c) with head-office in Hobart—the Derwent and Tamar Fire and Marine Assurance Company Limited; (d) with head-office in Launceston—the Mutual Fire Insurance Company of Tasmania; (e) with head-office in Auckland—the New Zealand Insurance Company, and the South British Fire and Marine Insurance Company of New Zealand; and (f) with head-office in Dunedin—the National Fire and Marine Insurance Company of New Zealand, and the Standard Fire and Marine Insurance Company of New Zealand. As their names imply, the majority of these companies transact marine insurance and in some cases guarantee and other business in addition to fire insurance business, and the returns relating to the latter cannot be separated from the former.

The accounts cover two periods of one year, the second year ending at various dates from 31st August, 1907, to 30th June, 1908. The figures for the first year are put in brackets.

The premiums, less reinsurances and returns, amounted to £1,781,653 (£1,656,173); losses were £1,060,768 (£1,158,819). Expenses and commission came to £544,315 (£499,511), and there was, therefore, a profit on trade operations of £176,570 (loss, £2157, chiefly on account of losses experienced by one of the New Zealand companies in connection with the earthquake and fire in San Francisco). As, however, interest, rent, fees, etc., amounted to £134,267 (£132,589), the total profit was £310,837 (£130,432). Dividends and bonuses came to £175,591 (£163,782). The ratio to premium income of losses was, therefore, 59.54 per cent. (69.97 per cent.), ranging from 17.26 per cent. to 75.01 per cent.; and of expenses and commissions, 30.55 per cent. (30.16 per cent.). The resulting ratio of trade surplus to premium income was 9.91 per cent. (loss ratio, 0.13 per cent.).

The paid-up capital of the sixteen companies was £1,295,347 (£1,261,597); reserve and reinsurance funds, £1,877,166 (£1,733,605); undivided profits, £154,275 (£170,581). The total paid-up capital and reserves were, therefore, £3,326,788 (£3,165,783). In addition to these liabilities there were others, viz.:—Unsettled losses, £256,627 (£243,763); sundry creditors, £110,308 (£134,582); dividend to pay, £121,538 (£119,283); and, in the case of one company, a life assurance fund, £219,797 (£242,013), thus bringing the total liabilities to shareholders and to the general public up to £4,035,058 (£3,905,424).

The corresponding amount of assets is made up of investments, £3,513,308 (£3,389,058), viz.:—Loans on mortgage, £927,899 (£814,198); Government securities,

debentures, shares, etc., £1,034,848 (£954,935); landed and other property, including furniture, £727,308 (£669,556); fixed deposits, £540,089 (£582,589); in the case of one company doing a mixed business—loans on its own life policies, etc., £20,937 (£21,945); other investments, £262,177 (£345,785). The balance of assets consisted of cash in bank, on hand, and bills receivable, £146,036 (£173,339); and sundry debtors, etc., £375,664 (£343,027).

The financial position of the companies is undoubtedly a strong one, owing to the steady accumulation of reserves, and the high ratio (186.7 per cent.) borne by capital and reserves to premium income must be a cause of satisfaction to policyholders.

§ 7. Friendly Societies.

1. **General.**—Friendly societies are an important factor in the social life of the community, as probably nearly one-third of the total population of the Commonwealth comes either directly or indirectly under their influence. Their total membership is nearly 360,000, but as certain benefits, such as medical attendance and free medicine and in many cases funeral expenses, are granted to members' families as well as to members themselves, this figure must, even when due allowance is made for young and unmarried members, be multiplied by four at the least to arrive at the total number of persons more or less connected with these societies. Legislation has conferred certain privileges on friendly societies, but, on the other hand, it insists on their registration, and it is the duty of the Registrars in the various States, prior to registering a new society, to see that its rules are conformable to the law, and that the scale of contributions is sufficiently high to enable the promised benefits to be conferred on members. Societies are obliged to forward annual returns as to their membership and their finances to the Registrar, and elaborate reports are published in most of the States dealing with the returns thus received.

In the following tables the figures for New South Wales, Victoria, and Western Australia refer to the year 1907, those for Queensland and South Australia to the year 1906, and those for Tasmania to the year 1905.

2. **Number of Societies, Lodges, and Members.**—The total number of societies registered in New South Wales is 62; in Victoria, 27; in Queensland, 20; in South Australia, 16; in Western Australia, 17; and in Tasmania, 16. No total is given of these figures for the Commonwealth, as the societies shewn in one State are in most cases represented in all the other States. The number of different lodges, the total number of benefit members at the end of the year, and their average number during the year are shewn in the following table:—

NUMBER OF LODGES AND MEMBERS, 31st DECEMBER, 1907.*

| State | Number of Lodges. | Benefit Members at End of Year. | Benefit Average No. of Members during Year. |
|-------------------|-------------------|---------------------------------|---|
| New South Wales | 1,333 | 116,985 | 101,521 |
| Victoria | 1,376 | 123,443 | 120,002 |
| Queensland | 410 | 33,717 | 32,950 |
| South Australia | 506 | 52,165 | 51,226 |
| Western Australia | 251 | 15,482 | 15,056 |
| Tasmania | 152 | 17,035 | 15,507 |
| Commonwealth | 4,028 | 358,827 | 336,262 |

* See, however, paragraph 1.

3. **Sickness and Death.**—Sick pay is generally granted for a number of months at full rates, then for a period at half rates, and in some societies is finally reduced to quarter rates. The following table shows the total number of members who received sick pay during the year, the number of weeks for which they received pay in the aggregate, and the average per member sick, and further the number of benefit members who died during the year, together with the proportion of deaths per thousand average members :—

SICKNESS AND DEATH, 1907.*

| State. | Number of Members who received Sick Pay. | Total Number of weeks Sick Pay granted. | Average Num- of weeks per Member sick. | Deaths of Benefit Members and Wives. | Proportion of Deaths to 1000 average Benefit Members. |
|---------------------|--|---|--|--------------------------------------|---|
| New South Wales | 22,504 | 123,971 | 5.51 | 733 | 7.32 |
| Victoria ... | 24,456 | 190,702 | 7.80 | 1,499 | 12.49 |
| Queensland ... | 6,202 | 32,552 | 5.25 | 219 | 6.65 |
| South Australia ... | 8,851 | 84,707 | 9.57 | 698 | 13.63 |
| Western Australia | 1,880 | 10,079 | 5.36 | 102 | 6.77 |
| Tasmania ... | 3,176 | 17,600 | 5.54 | 120 | 7.73 |
| Commonwealth | 67,069 | 459,611 | 6.85 | 3,371 | 10.02 |

* See, however, paragraph 1.

4. **Revenue and Expenditure.**—The financial returns are not made up in the same way in each State, but an attempt has been made in the subjoined table to group the revenue under the main headings :—

REVENUE, 1907.*

| State. | Entrance Fees. | Members' Contributions. | Levies. | Interest, Dividends, and Rents.. | All other Income. | Total Revenue. |
|---------------------|----------------|-------------------------|---------|----------------------------------|-------------------|----------------|
| | £ | £ | £ | £ | £ | £ |
| New South Wales | 2,303 | 333,601 | — | 42,706 | 55,390 | 434,000 |
| Victoria ... | † | 353,242 | † | 68,499 | 30,582 | 452,323 |
| Queensland ... | † | 110,030 | † | § | 13,534 | 123,564 |
| South Australia ... | 1,535 | 122,643 | § | 29,464 | 59,227 | 212,869 |
| Western Australia | 1,544 | 37,743 | 548 | 5,245 | 20,734 | 65,814 |
| Tasmania ... | † | 52,035 | † | 4,993 | 7,591 | 64,619 |
| Commonwealth | † | 1,015,224 | † | § | 337,965 | 1,353,189 |

* See, however, paragraph 1. † Included under "Members' contributions." § Included under "All other income."

The returns relating to expenditure are more complete than those relating to revenue, and can be shewn in full for every State. The figures shew that the excess of revenue, amounting in the aggregate of £284,231, was divided amongst the six States as follows:—New South Wales, £112,519; Victoria, £84,840; Queensland, £33,935; South Australia, £33,101; Western Australia, £10,271; and Tasmania, £9,565. The revenue exceeded the expenditure by about seventeen shillings per average benefit member, a margin which cannot be called very large :—

EXPENDITURE, 1907.*

| State. | Sick Pay. | Medical Attendance and Medicine. | Sums Paid at Death of Members & Members' Wives. | Adminis-tration. | All other Expendi-ture. | Total Expendi-ture. |
|---------------------|-----------|----------------------------------|---|------------------|-------------------------|---------------------|
| | £ | £ | £ | £ | £ | £ |
| New South Wales | 96,240 | 110,895 | 24,338 | 44,378 | 45,630 | 321,481 |
| Victoria ... | 128,868 | 126,445 | 26,562 | 60,860 | 24,748 | 367,483 |
| Queensland ... | 24,729 | 38,774 | 8,520 | 17,606 | † | 89,629 |
| South Australia ... | 49,370 | 27,130 | 24,325 | 23,545 | 55,398 | 179,768 |
| Western Australia | 8,521 | 13,354 | 1,921 | 10,876 | 20,871 | 55,543 |
| Tasmania ... | 14,491 | 14,727 | 5,943 | 7,017 | 12,876 | 55,054 |
| Commonwealth | 322,219 | 331,325 | 91,609 | 164,282 | 159,523 | 1,068,958 |

* See, however, paragraph 1. † Included in "Administration."

It appears from the above figures that sick pay averaged about fourteen shillings per week, but, as the returns include pay at half and quarter rates, and as the proportion of these to full rates is not stated, the average given must be taken for what it is worth. Medical attendance and medicine came to nineteen shillings and eightpence per average benefit member, or to nearly £5 per member who received sick pay during the year. Funeral expenses averaged £27 3s. 6d. per death of a member or wife of a member during the year, but this average also must be taken for what it is worth, as the funeral expenses allowed in the case of the death of a member are generally much higher than those allowed in the case of the death of a member's wife.

5. **Funds.**—The two foregoing tables shew that the surplus of revenue over expenditure amounted to £284,231 for the year, and a small surplus must, of course, result annually in every society which levies adequate contributions to enable it to meet all possible claims. These accumulations of profits are generally invested, and the subjoined table shews for five out of the six States the division into invested and uninvested funds, and in the case of Tasmania the total amount of funds:—

FUNDS, 31st DECEMBER, 1907.*

| State. | Invested Funds. | Uninvested Funds. | Total Funds. |
|-----------------------|-----------------|-------------------|--------------|
| | £ | £ | £ |
| New South Wales ... | 1,104,685 | 66,658 | 1,171,343 |
| Victoria ... | 1,715,366 | 77,820 | 1,793,186 |
| Queensland ... | 369,807 | 22,516 | 392,323 |
| South Australia ... | 714,719 | 29,076 | 743,795 |
| Western Australia ... | 103,018 | 21,050 | 124,068 |
| Tasmania... | † | † | 143,577 |
| Commonwealth ... | †4,007,595 | †217,120 | 4,368,292 |

* See, however, paragraph 1. † Returns not available. ‡ Exclusive of Tasmania.

The total funds amounted, therefore, to nearly £12 3s. 6d. per member at the close of the year under review.

§ 8. Probates.

1. **Number of Probates and Letters of Administration and Value of Estates.**—The value of the estates left by deceased persons gives a fair view of the distribution of property among the general population. There occurred in 1907 the deaths of 30,554 adult persons, while the total number of probates and letters of administration granted during the same period was 10,222. It would therefore appear that about one in every three adults who died during the year was possessed of sufficient property to necessitate the taking out of probate. The details for each State are shewn in the table hereunder:—

PROBATES AND LETTERS OF ADMINISTRATION, 1907.

| State. | Number of Estates. | | | Value of Estates. | | |
|-------------------|--------------------|----------------------------|--------|-------------------|----------------------------|------------|
| | Probates. | Letters of Administration. | Total. | Probate. | Letters of Administration. | Total. |
| | | | | £ | £ | £ |
| New South Wales | 2,045 | 1,039 | 3,084 | 6,835,381 | 728,118 | 7,563,499 |
| Victoria | 2,859 | 1,297 | 4,156 | 6,351,166 | 508,977 | 6,860,143 |
| Queensland | 650 | 510 | 1,160 | 1,529,112 | 141,072 | 1,670,184 |
| South Australia | 769 | 206 | 975 | 1,764,995 | 158,959 | 1,923,954 |
| Western Australia | 229 | 204 | 433 | 1,051,437 | 102,689 | 1,154,126 |
| Tasmania | 322 | 92 | 414 | 754,637 | 86,590 | 841,227 |
| Commonwealth | 6,874 | 3,348 | 10,222 | 18,286,728 | 1,726,405 | 20,013,133 |

This would make the average value of each estate £1958, and the average value of property left by each adult who died in 1907, £655.

2. **Private Wealth.**—The probate figures have sometimes been used as a means for estimating the private wealth of a country. There are, however, many reasons why no reliance can be placed on such estimates. Generally, estates under a certain minimum value do not require to pass through the probate office. Settlements and deeds of gift, although liable to probate duty, occasionally evade detection. The falling in of several, or even of one very large estate, may vitiate the figures not only of one year but of a series of years. All these errors can, however, be more or less guarded against, while the assumption that each adult living is possessed of the same average amount of property as each adult who died during the year or during a series of years, an assumption on which the whole calculation is based, remains. But as it is certain that the accumulated wealth of an individual generally advances with age, and is probably in most cases greater at death than at any previous period, it will be seen that the results obtained by such a calculation must be unduly inflated. If the calculation were made for the Commonwealth and based on the figures of 1907 it would shew the average property of each adult to be £655, and of the 2,224,000 adults, which were approximately included in the population of the Commonwealth at the end of 1907, about £1,457,000,000, an estimate probably considerably in excess of the truth.

SECTION XXII.

PUBLIC INSTRUCTION.

§ 1. Early History of Primary Education in Australia.

1. **Primary System of New South Wales.**—(i.) *Place of New South Wales in Australian Education.* The first settlement in Australia being in New South Wales, it is but natural that Australian education should have its beginnings in that State. In the evolution of educational method and system in Australia, New South Wales also has played a leading part, and had practically a dominating influence. For that reason a sketch of the evolution of education in New South Wales contains, as it were, the key to the understanding at the Australian attitude to this question.

(ii.) *Early Difficulties.*¹ Although the instructions issued to Governor Phillip, under whose supervision the first settlement in Australia was founded, contained the direction that 200 acres near every township should be reserved for the maintenance of a schoolmaster, and there were many children in the "First Fleet," no teacher was sent with that fleet, and it was not until 1792, four years after the foundation of the colony, that any interest in the well-being of the children was manifested. The first chaplain, the Rev. R. Johnson, lamenting the neglected condition of the children, suggested that educated persons might be found to undertake the duties of teachers, if means were provided to pay them. With this object he appealed to the Society for the Promotion of the Gospel in Foreign Parts, and that body granted the sum of £40—£10 for each of the four teachers.

The first building used as a school-house was that built as a church for the Rev. R. Johnson, and was wilfully burnt down. Governor Phillip states that in this building from 150 to 200 children were educated under the immediate superintendence of the clergyman. Governor Hunter seems to have been concerned about the juveniles of his charge, for, in his despatch dated August, 1796, he wrote that a "public school for the care and education of the children is much wanted to save them from certain ruin." Though the Ministry of the day turned a deaf ear to his appeals, the Church Society in London resolved to extend assistance to the new settlement, and to begin with holding out encouragement to schoolmasters and schoolmistresses as the most likely means of effecting a reformation. Very little, however, was done; and in March, 1802, Governor King reported "the children numbered 1002, and finer or more neglected children are not to be met with in any part of the world."

(iii.) *Voluntary Effort.* The first voluntary effort to establish a school was made at the Hawkesbury, the leading farming centre of the population. The settlers not having the means to erect a school-house, the Governor had it built at the expense of the Crown, and obtained from the settlers signatures to an instrument, engaging themselves and their heirs, etc., for the term of fourteen years to pay the annual sum of 2d. per acre for all lands granted by the Crown and held by them, for the purpose of providing a maintenance for such persons as might be appointed to teach the children. This is the first instance of a "school-rate" in Australia, and was imposed before a similar rate was thought of in England.

1. The following sketch (paragraph ii. to viii.) is contributed by P. Board, M.A., Under-Secretary of Public Instruction, and Director of Education, New South Wales.

Governor Bligh appears to have shewn great interest in the education of youth. Writing in February, 1807, he refers to the work of regulating schools in the towns and watching over the rising generation, and states: "At present we are doing all in our power to educate the children, having nearly 400 of them under tuition in the different parts of the colony."

(iv.) *State Grants.* From 1810 schools were generally established by the various churches by means of grants from the State. This aid was derived from certain Customs duties called the "Orphan Dues," because the first charge upon them was for the maintenance and education of orphan children. The money was applied chiefly to the payment of teachers' salaries. Each school was wholly independent of others; there was no system or general aim prescribed by a competent authority. Religious instruction, including the Church Catechism, was universally given without regard to the denomination of the pupils; in point of fact, the schools were almost entirely Church of England institutions.

(v.) *Denominational Education.* In 1831 Sir Richard Bourke became Governor, and in his first address to the Legislative Council he recommended a liberal provision for the religious instruction and education of the people, and in 1836 he advised that the "Irish National System of Education" be introduced into the colony. Though the proposal was approved by the Home Government, and was warmly supported by Sir George Gipps, who succeeded Bourke, it was opposed so strongly that for several years nothing was accomplished except that the National System was brought under the notice of the colonists and its principles made familiar to them.

(a) *Advantage of a General System over a Denominational one.* In June, 1884, Mr. Robert Lowe, afterwards Lord Sherbrooke, carried a resolution in the Legislative Council appointing a Select Committee to inquire into and report upon the state of education in the colony, and to devise means of placing the education of youth upon a basis suited to the wants and wishes of the community. In August following, the Committee reported that the state of education was extremely deficient. There were 25,676 children between the ages of 4 and 14, of whom 7642 received instruction in the State-aided denominational schools, and 4865 in private schools, leaving about 13,000 children who received no education at all. The report stated that the Committee were convinced of the superiority of a general over a denominational system, and therefore recommended that one uniform system be established for the whole of the colony, and that an adherence to that system should be made an indispensable condition under which alone aid should be granted. In support of these views, resolutions were carried in the Council, but only by a majority of one—"That it is advisable to introduce Lord Stanley's System of National Education"; "that in order to introduce this system, His Excellency the Governor be requested to appoint a Board of persons favourable to the introduction of Lord Stanley's National System of Education, and belonging to the different religious denominations: this Board to be invested with a very wide discretion as to the arrangements necessary for carrying the system into effect, and all funds to be henceforth applied for the purpose of education to be administered by them. The leading principle by which the Board of Education shall be guided is to afford the same facilities for education to all classes of professing Christians, without attempt to interfere with the peculiar religious opinions of any, or to countenance proselytism; and that the Board be incorporated."

(b) *Board of Denominational Education.* The supporters of the denominational system were strong enough to maintain the *status quo* till 1848, when the Board of National Education was incorporated, and to secure aid for their own schools. A Board of Denominational Education, consisting of one representative each from the Church of England, and the Roman Catholic, Presbyterian, and Wesleyan Churches, was appointed to distribute the sums voted for the maintenance of denominational schools. The management of these schools was thus practically left to the heads of the denominations mentioned.

At this time the denominational schools were attended by 11,725 children, and the grant from State funds for the year 1847 was £8450. It should, of course, be borne in mind that New South Wales then included the territories known as Victoria and Queensland.

(vi.) *Inception of the National System.* The "National System" may therefore be said to have commenced in 1848, and by the end of that year four schools were under the supervision of the Board. In 1849 the number had increased to twenty-five. In 1850, the year before the colony of Victoria was formed, the returns were: National schools, 43 in operation, and 52 in course of formation; pupils enrolled, 2725; expenditure, £7300. In this expenditure a large balance brought forward from the previous year was included. Denominational schools, 184; pupils enrolled, 11,581; expenditure from State funds, £8350.

(a) *Rivalry of Systems.* For eighteen years these two educational bodies co-existed, created by the same authority and supplied with funds from the same source—the public Treasury. Each was of necessity the rival of the other, and in numerous instances competed for the same pupils. The progress of the one was secured at the expense of the other; and instead of mutual help and co-operation in the important work of education, jealousy of each other's success and division and consequent waste of means were the inevitable results. Numerous applications were made to the National Board for the establishment of schools, but as an indispensable condition was that one-third of the cost of building and equipment was to be contributed by the applicants, it can be easily understood that schools did not increase with great rapidity. In 1857 regulations for the establishment of non-vested schools, or schools not erected by or belonging to the Board, were introduced. These non-vested schools were instrumental in bringing the means of education into places where none would have otherwise existed, and met with such favour that, during the first year of their existence, sixty-six applications for aid were made. This marked increase brought the National System more widely before the public, and virtually decided the question that further legislation was necessary, and that the anomaly of dual Boards supported by State funds could no longer be continued. Several attempts to introduce a general system were made, but as the proposals tended to maintain to some extent the denominational system, they received little support either from the legislature or the public.

(vii.) *The New South Wales Public Schools Act of 1867.* It was not until 1866, when Mr. (afterwards Sir Henry) Parkes introduced the "Public Schools Act,"¹ or "an Act to make better provision for Public Education," that the long desired change was effected. This Act came into operation in January, 1867, and introduced very important changes. By its provisions the administration of primary education was committed to a single governing body, thus ensuring a greater measure of consistency in educational policy. A Board of Education, consisting of five members, under the designation of the Council of Education, was incorporated, and entrusted with the expenditure of all moneys appropriated by Parliament for primary education. It was, moreover, empowered to make regulations having the force of law, unless disallowed by express resolution of both Houses within one month of the date of their being submitted to Parliament. These great powers enabled the Council of Education to carry on the work of instruction without restrictions from any quarter except those imposed by law.

(a) *Classes of Schools.*¹ The Public Schools Act recognised four classes of schools. Authority was expressly conferred upon the Council to establish and maintain public schools¹ in localities where twenty-five children would regularly attend; and it was also provided that such schools should, whenever practicable, take precedence of all others supported by Parliamentary grants. Secondly, the Council was permitted to grant aid to denominational schools under certain restrictions as to the number of pupils, the conditions of the buildings, and the distance of public schools from those on behalf of

1. The term "public school" in New South Wales denotes a State school of primary grade.

which assistance was sought; they were required to follow the course of instruction prescribed for public schools, and to be open to inspection in the same manner; and the Council was empowered to withdraw certificates, and therefore aid, in case these conditions were infringed. Thirdly, provisional schools were to be established in places where a sufficient number of children for a public school could not be secured. Fourthly, a class of schools was instituted where the teacher divided his time between two small schools, with about ten or twelve pupils at each, called "half-time schools." The Public Schools Act provided that the instruction to be given in all these schools should consist of two parts, secular and religious, secular instruction, however, being held to include *general* religious teaching, as distinguished from polemical or dogmatic theology, and from the tenets of particular denominations. In the denominational schools the ordinary teachers were permitted to give the special religious teaching, while in the other schools that duty was handed over to the clergy or to other duly accredited religious teachers.

(b) *National Education Boards.* The local oversight of schools was provided for by the appointment of Boards of not less than three members appointed by the Governor on the recommendation of the Council of Education, but such Boards had nothing to do with the appointment or dismissal of teachers, although in the case of denominational schools they were consulted.

(c) *Work of the Council of Education.* The benefits conferred upon the colony by the Council of Education were very great. Under its auspices school buildings of modern type as regards position, shape, size, and equipment were introduced, effective discipline was enforced, and systematic and progressive instruction arranged for. That Board also instituted the appointment and training of "pupil teachers," the training, examination and classification of teachers, and a liberal scale of remuneration, together with a comprehensive system of inspection.

The Council of Education took over 259 national schools, attended by 19,641 pupils, and 310 denominational schools, attended by 27,986 pupils, a total of 569 schools and 47,627 pupils.

(viii.) *The New South Wales Public Instruction Act of 1880.* The Public Schools Act continued in force until 1880; and though the system established by it was essentially one of transition, education made good progress during the thirteen years it was in force, especially after 1875, when the Legislative Assembly passed a resolution abolishing the provision that one-third of the cost of school buildings should be contributed locally, and directing that in future the entire cost of public schools should be defrayed by the public funds.

The principle of granting aid to denominational schools was, however, repugnant to the feelings of the majority of the people, who felt that the work of public instruction, being of such magnitude and involving so large an expenditure from the public funds, ought to become a department of the Government and be placed in the hands of a Minister directly responsible to Parliament. Accordingly, in 1880, an Act embodying these principles was introduced under the auspices of Sir Henry Parkes, and the "Public Instruction Act," now in operation, became law. The Council of Education handed over to the Minister of Public Instruction:—

| Items. | Public. | Provisional. | Half-time. | Denomi- national. | Total. |
|-----------------------|---------|--------------|------------|----------------------|---------|
| Number of schools ... | 705 | 313 | 97 | 105 | 1,220 |
| Number of pupils ... | 68,823 | 8,312 | 1,683 | 22,716 | 101,534 |

(a) *Essential Features of the Act of 1880.* The most important provisions of the Public Instruction Act are:—(1) Primary school education is placed under the sole

direction and control of a responsible Minister ; (2) Teachers are made civil servants, and are paid exclusively from the public funds ; (3) The system is wholly undenominational : all aid to denominational schools ceased on 31st December, 1882 ; (4) Attendance at school is made obligatory upon children between the ages of six and fourteen years, who reside within two miles of the school, for seventy days in each half-year, unless just cause of exemption can be shewn ; (5) The teaching is strictly secular, but the words "secular instruction" are held to include general religious teaching as distinguished from dogmatic and polemical theology : the History of England and Australia must form part of the course of secular instruction ; (6) High schools for boys and girls may be established, in which the instruction shall be of such a character as to complete the public school curriculum and prepare the pupils for the University ; (7) Provision is made for constituting Public School Districts and for the appointment of School Boards with defined powers and duties ; (8) School children are allowed to travel free by rail to the nearest public school ; (9) Four hours during each day must be devoted to secular instruction, and one hour set apart for special religious instruction to be given in a separate class-room, if procurable, or in a separate part of the school-room, by a clergyman or religious teacher of any denomination to children of the same denomination whose parents have no objection to their receiving such religious instruction ; if no religious teacher attends the full five hours must be devoted to the ordinary secular instruction.

(b) *The Question of School Fees.* Prior to the passing of the "Public Instruction Act of 1880" there were varying scales of school fees, and the fees were then retained by the teachers as part of their emoluments. The Act of 1880, however, readjusted teachers' salaries, and a fixed fee of threepence per week was charged, and the amount thus derived was paid into the Consolidated Revenue of the State. These payments amounted in late years to upwards of £80,000 per annum.

In 1906 Parliament passed an Act to abolish the payment of fees in primary and superior public schools of New South Wales, taking effect as from the 8th October of that year.

2. Primary System of Victoria.—This State, originally known as Port Phillip, was separated from the parent State of New South Wales in 1851. The system of dual control of educational matters, alluded to in the preceding section, was also in force in Victoria up to the year 1862, when the "Common Schools Act" dissolved the two Boards, and appointed instead a Board of Education consisting of five laymen. Up to this time, and until the passing of the Act of 1872, school fees, varying from 6d. to 2s. 6d. weekly, were charged, except in the case of those children whose parents were in necessitous circumstances. The Act of 1862 was not found to work with entire satisfaction, chiefly on account of its failure to provide anything like an equal distribution of educational facilities, and it was superseded by the Education Act of 1872, which came into operation on the 1st January, 1873. Under this Act the Board was abolished, and a Department of Education established, and placed under the control of a Minister of Public Instruction, while the principle of "free, secular, and compulsory education" was instituted. Boards of Advice were empowered to decide whether religious instruction should or should not be given out of school hours. Free instruction was given in the following subjects :—Reading, writing, arithmetic, grammar, geography, gymnastics (where practicable), and needlework for girls. Teachers were paid, in addition to fixed salaries, an amount as "results," not exceeding 50 per cent. of their fixed salaries, and determined by the percentage of marks gained at the annual examinations. Amending Acts were passed in October, 1876, and November, 1889, while the Education Act of 1890 consolidated the whole of the legislation dealing with the subject. Under the Education Act of 1901 the system of payment by "results" was abolished. The Act also provided for a permanent head of the department with the title of "Director." Provision was made for more regular attendance of scholars by enacting that the minimum attendance of children of the school age of six to thirteen years was to be raised

from forty school days per quarter to 75 per cent. of the whole number of half-days on which the school was open. Regulations were also made for the establishment of continuation and kindergarten schools. The minimum age of exemption from school attendance was fixed at twelve years. The subjects of free instruction in the primary schools were defined to be reading, writing, arithmetic, grammar, geography, history, drill, singing, drawing, elementary science, manual training, gymnastics, and swimming (where practicable), lessons in health and temperance (in case of children over nine years of age); sewing, cooking, and domestic economy for girls.

The Education Act of 1905, also known as the "Truancy Act," provides, amongst other things, that the limit of school age shall be fourteen instead of thirteen years. The minimum attendance was fixed at eight times in any week on which the school is open ten times, six times when the school is open eight times, and four times when the school is open six times, the word "times" meaning school half-days. Some important provisions in regard to the classification and emoluments of teachers were embodied in the Teachers Act of 1905, which came into force on the 1st January, 1906.

During the period of depression which followed the financial crisis of 1893 a number of schools were temporarily closed in Victoria, while, in the case of schools in closely-populated centres, a principle of amalgamation was put in force under which certain schools became what was termed "adjuncts" to others. A main school and its adjunct were both placed under the control of one principal, but the attendance at the adjunct was restricted to children in the first, second, and third classes. The number of schools at first made into adjuncts was sixty-nine, but the total was later on reduced until in 1907 there were only twenty institutions in this class.

Improvement was made in Victorian educational methods consequent on the Report of the Royal Commission of 1899. Inclusive of those already mentioned which were made the subject of legislative action, the training of teachers was placed on a more systematic basis, by discouraging the employment of pupil teachers and providing better for the proper tuition, in suitably-equipped institutions, of recruits to the ranks of the service. Allusion to the question of training teachers will be made in a later section. Further, the kindergarten teaching was systematised, and an expert was engaged to instruct infant teachers in approved methods, while special attention was given to the subjects of hand and eye work and natural science, in order to obtain the best practical results from the teaching.

Woodwork, cardboard modelling, and paperwork were introduced in 1900, and in 1907 there were twenty single centres for woodwork, each accommodating 200 boys, and one double centre, accommodating 400 boys. Additional teachers are also being trained, and Sloyd classes will be established in some of the smaller country towns. Attention is being given to the subjects of domestic economy and cooking. Twelve cooking centres are now open, giving instruction to 1556 girls. A College of Domestic Economy was opened in Melbourne in 1906, with an enrolment of eighty students. The Teachers' Registration Board, which is to some extent concerned with primary as well as with secondary education, will be referred to under the latter heading.

3. Primary System of Queensland.—From the date of its separation from New South Wales on the 10th December, 1859, up to the 30th September, 1860, primary education in Queensland was under the control of a Board of National Education, appointed by the Governor-in-Council. When the Board took office there were only two national schools in the colony. The Act of 1860 placed the control in the hands of what was termed the "Board of General Education," which consisted of five members, presided over by a Minister of the Crown. The duties of the Board were to superintend the formation and management of primary schools within the colony, and to administer the funds granted for this purpose by the Act. The scheme of operation followed in general principles the Irish National system. There were two classes of schools, vested and non-vested, the vested being unsectarian in character. The non-vested belonged to the

Anglican or Roman Catholic Churches, who provided the buildings and appointed the teachers, the board aiding by granting teachers' salaries and supplying school material. The Act of 1860 was superseded by the State Education Act of 1875, which came into operation in January, 1876, and is still in force. By the Act of 1876 the Board of Education was abolished, and its functions transferred to the Department of Public Instruction, under the official control of a Minister of the Crown, with the title of Secretary for Public Instruction. State aid to non-vested schools was withdrawn from the 31st December, 1880.

The Act in force provides for two classes of schools, State and provisional, State schools to include schools conducted in buildings erected on land vested in the Department of Public Instruction, and the provisional schools to be schools in which temporary provision is made for the primary instruction of children. As pointed out by the Director in a recent report, however, the term "provisional" is in many cases a misnomer, as the buildings are well and solidly built, and likely to fulfil all educational requirements in their districts for a considerable time. Half-time schools are provided in thinly-peopled areas, and itinerant teachers visit families in the remoter districts. One-fifth of the cost of State school buildings is provided by local voluntary subscriptions, the Department supplying the balance of the funds. The State defrays the whole cost of primary instruction, no school fees being charged. In the earlier years of the State's educational history fees were charged ranging from sixpence to one shilling and sixpence per week for each scholar, but these were abolished at the beginning of 1870. The curriculum prescribed by the Act embraced the following subjects:—Reading, writing, arithmetic, English grammar, geography, history, elementary mechanics, object lessons, drill and gymnastics, vocal music and needlework for girls. Drawing was added to the curriculum in 1894, while, by an Amending Act passed in 1897, one or more subjects may be omitted in schools taught by one teacher only, and in other cases additional subjects may be added. Attendance at State schools is compulsory for at least sixty days in each half-year in the case of children not less than six nor more than twelve years of age, except under certain well-defined circumstances. No religious instruction is allowed to be given in school during school hours, but persons desirous of undertaking this work can do so after hours on obtaining the permission of the Minister of Education.

In 1907 evening continuation classes were established for the purpose of (a) enabling pupils to continue their education who had left school before they had been educated up to the standard required by the Education Act, (b) assisting persons to obtain instruction in special subjects relating to their employment, and (c) preparing students for the Technical Colleges.

4. Primary System of South Australia.—The history of public primary education in South Australia may be said to begin with the appointment of the Council of Education in 1875. Prior to that year the educational activity of the State was confined mainly to subsidising private institutions. In 1878 the powers of the Council were vested in the Minister of Education, and a permanent head was appointed. The Act of 1875 provided for the establishment of schools, and the training, classification, and remuneration of teachers, and made the attendance of children between the ages of seven and thirteen living within two miles of a school compulsory, until a certain standard of competency in reading, writing, and arithmetic was reached. Fees were charged, varying in amount at different periods from fourpence to sixpence a week, until in 1891 they were abolished, and education up to the compulsory standard was made free, children over thirteen years of age who remained at school after reaching this standard being charged a fee of one shilling per week. This charge was abolished in 1898; and any child above the age of five years may attend a State school without payment. In 1896, control of primary education was vested in a "Board of Inspectors." In 1902 an Inspector-General was appointed, his deputy being styled Assistant-Inspector-General. In 1906 the permanent head of the Department was styled Director of Education.

The primary schools are divided into two classes,—public schools, taught by certificated teachers, and provisional schools, taught by uncertificated teachers, who have undergone a special examination and served for a certain time in an efficient school so as to gain a knowledge of practical work. Generally speaking, public schools must have an average of twenty or more pupils, while the provisional schools contain less than that number. The public schools are divided into twelve classes, and the salaries paid to the principals in general depend on the class of the school. For male head teachers the salaries range from £110 to £450, and for females from £80. to £156. In schools of the first class the sexes are, as a rule, taught separately, except in the case of infant schools.

Provisional schools are of four classes, and the salaries of the teachers range from £66 to £108 per annum, and in a few cases to £120. The maximum salary for a female provisional teacher is £84.

Wherever practicable, schools are visited by inspectors at least twice each year, the first visit being devoted chiefly to observation of general organisation, while a detailed examination is conducted on the second occasion. Individual examination is applied only in the subjects of arithmetic and spelling, the inspector judging of the success of the teacher's methods in other subjects by a general inspection.

The course of instruction to be given in all schools is decided on by the Director, subject to Ministerial approval. A detailed scheme is drawn up for all classes so as to secure general uniformity of effort throughout the State. The curriculum is, however, not an unelastic one, as teachers are, with the approval of the inspectors, allowed to make variations to suit peculiar circumstances, and considerable freedom of choice is allowed in dealing with such subjects as elementary science, agriculture, horticulture, and various kinds of manual work. The subjects taught include reading, writing, spelling, arithmetic, English, geography, English history, poetry, drawing, singing, nature study, moral lessons, manual work, drill, and needlework for girls. In a few schools the elements of Latin, German, Algebra and Euclid are taught. Books and school materials are supplied to the children at cost price, and are given free to those unable to pay for them. Compulsory attendance is in force, the scholars in or near corporate towns being required to attend for at least four-fifths of the time during which the school is open. Outside these limits, the compulsory attendance for children within three miles of a school is thirty-five days per quarter. The percentage of irregular attendance at present is small, and shews signs of still further decreasing.

5. Primary System of Western Australia.—The Elementary Education Act of 1871 provided for two distinct classes of schools in this State. In the first class were comprised the Government schools, established and supported by the Government, and controlled by a Central Board of Education. Teachers were appointed by a District Board, subject to the approval of the Central Board. The second class comprised the assisted schools. In the establishment of these the Government took no part, but paid a yearly grant towards their upkeep. Under the 1871 Act education was compulsory, but was not free except in cases of absolute poverty. The Elementary Education Act Amendment Act of 1893 abolished the Central Board, and transferred its powers to the Minister of Education, and inspectors and teachers were appointed by the Governor. Provision was made by this Act for the right of entry by clergymen or other religious teachers into all Government schools for the purpose of instructing pupils who desired it in the tenets of their particular faith. The period allowed for this special instruction was not to exceed half an hour each school day. "Secular" instruction was also given by the regular teachers, and was described as including general religious teaching as distinguished from dogmatic or polemical theology. Attendance at general religious instruction was not compulsory. These provisions are still in force, and work quite satisfactorily.

In 1895 the Assisted Schools Abolition Act was passed, a sum of £15,000 being paid to the schools formerly assisted by the Government.

By the Public Education Act of 1899 school fees were abolished in public elementary schools in the case of children between six and fourteen years of age. For scholars over

fourteen a fee may be charged, but so far the only fees charged have been sixpence per week for those over sixteen. Daily attendance is compulsory for children between six and fourteen, the compulsory radius being three miles for children over nine, and two miles for those under that age. Non-Government schools must be declared "efficient" by the Education Department if attendance at them is to be recognised as fulfilling the requirements of the law. The registers of these schools must be open to the inspection of compulsory officers of the Education Department. Under the Education Act Amendment Act of 1905 proprietors or teachers of private schools are required to send monthly and quarterly returns of attendance to the Education Department in order that the compulsory officers may ascertain that no children are evading the law. The curriculum of the primary schools includes English (under which heading are grouped reading, recitation, spelling, grammar, composition and literature), writing and drawing, arithmetic, Scripture, history, geography, nature study, lessons on the laws of health and temperance, manual work, drill and singing. In the upper classes of the larger schools the boys take a course of elementary geometry, algebra, and mensuration, and both boys and girls take a course of elementary science. Certain other subjects may be taken by permission of the Department in the sixth and seventh standards. As is the case in most of the other States, inspectors visit the schools at least twice in the course of each year, the first visit being for observation of methods of teaching and general organisation, and the second being devoted to estimation of the actual results of the teaching.

6. Primary System of Tasmania.—There are no official records conveniently available for tracing the history of public education in Tasmania prior to the year 1839, but it appears that some sort of denominational system was previously in existence. In January, 1839, there were twenty-two schools in operation with an enrolment of 758 scholars receiving Government aid to the amount of about £2000 per annum. Shortly afterwards a Board of Education nominated by the Government assumed control of State education, and considerably widened its scope. Only undenominational religious teaching was allowed in the schools, but clergymen had the right of giving instruction in their particular tenets at stated periods. About the year 1846 the system of subsidising denominational schools at the rate of a penny a day for each child present was introduced. This charge had the effect of withdrawing half the schools from the control of the Board and brought about the resignation of that body in 1848. The system was carried on under direct Government control until 1853, when another Board of Education was created, which continued till 1857, when two Boards—a Northern and Southern—were appointed. This arrangement lasted until 1863, when a reversion was made to a single Board with headquarters in Hobart. This administration continued till 1884, when the control again passed direct to the Chief Secretary until the coming into operation of the Education Act of 1885, which created an Education Department under the control of a Minister of the Crown, assisted by a professional head styled "Director of Education." This method of administration is still in existence. School fees were abolished in Tasmania in 1908. Prior to the Act of 1885 the cost of buildings was borne partly by the people, but the Act provides for meeting such expenditure entirely from the State funds. In the year 1904, owing to a feeling that public education in Tasmania was lagging behind that of the other States, the Government decided to have an investigation made by an independent expert. In consequence of the report received, the Ministry decided on a complete reorganisation. The chief improvements entered upon—and now at different stages of advancement—are as follows:—Classification of schools, regulation of salaries, provision for more up-to-date buildings, reorganisation of teaching and inspection methods, initiation of schools of instruction for teachers, and abolition of pupil-teacher system. Generally speaking, the educational system of Tasmania may be said to be organised very much on the lines of the leading systems of the mainland, although such subjects as manual work, nature study, and drawing have as yet been little developed. Attendance at school is compulsory for children between the ages of seven and thirteen. District Boards of Advice are in existence, but under the Local Government Act—to come into force at the end of 1907—their functions will be assumed by the new municipal councils.

§ 2. State Schools.

1. **Enrolment and Attendance.**—The following table shews the number of State schools, together with the teachers employed and the enrolment and "average attendance" in each State during the year 1907:—

STATE SCHOOLS, TEACHERS, AND SCHOLARS, 1907.

| State. | Schools. | Teachers.* | Enrolment. | Average Attendance. |
|--------------------------|----------|------------|------------|---------------------|
| New South Wales | 3,050 | 5,648 | 213,709 | 152,607 |
| Victoria | 1,974 | 4,681 | 203,782 | 147,270 |
| Queensland | 1,067 | 2,393 | 87,098 | 66,849 |
| South Australia | 707 | 1,278 | 54,560 | 37,861 |
| Western Australia | 381 | 830 | 29,679 | 24,950 |
| Tasmania | 350 | 584 | 23,162 | 14,464 |
| Commonwealth | 7,529 | 15,414 | 611,990 | 444,001 |

* Exclusive of sewing teachers.

Unfortunately, the scheme of enrolment and of the computation of "average attendance" is not identical in each State, so that the comparisons are imperfect. That the educational statistics of each State of the Commonwealth should be made up in the same way is much to be desired.

The enrolment and average attendance at the State schools in the Commonwealth are given below for the year 1891, and for each year of the period 1897 to 1907:—

ENROLMENT AND ATTENDANCE AT STATE SCHOOLS, 1891 to 1907.

| Year. | Total Population. | Enrolment. | Average Attendance. | Year. | Total Population. | Enrolment. | Average Attendance. |
|-------|-------------------|------------|---------------------|-------|-------------------|------------|---------------------|
| 1891 | 3,240 | 561,153 | 350,773 | 1902 | 3,883 | 636,888 | 455,482 |
| 1897 | 3,618 | 586,037 | 411,913 | 1903 | 3,927 | 629,269 | 446,539 |
| 1898 | 3,665 | 594,916 | 397,027 | 1904 | 3,984 | 625,594 | 445,709 |
| 1899 | 3,716 | 608,431 | 424,214 | 1905 | 4,052 | 621,534 | 442,808 |
| 1900 | 3,765 | 623,707 | 441,924 | 1906 | 4,119 | 609,592 | 442,440 |
| 1901 | 3,826 | 638,478 | 450,246 | 1907 | 4,197 | 611,990 | 444,001 |

1. In thousands.

It will be seen from the above table that, despite the increase of population, there has been a considerable decline both in official figures of enrolment and average attendance at the State schools of the Commonwealth during the last five years. An examination of the graphs on pages 258 to 260, shewing birth-rate, will make it apparent that this is at least in part due to the diminished birth-rate of past years.

2. **Births and School Attendance.**—The table below gives the total births in each State and in the Commonwealth during each of the eight-year periods 1890-97, 1891-98, 1892-99, 1893-1900, 1894-1901, and the average attendance at State Schools for each year from 1903 to 1907:—

COMPARISON OF BIRTHS AND SCHOOL ATTENDANCE.

| Year. | New South Wales. | Victoria. | Q'land. | South Australia. | Western Australia. | Tasmania. | Commonwealth. |
|------------------------------|------------------|-----------|---------|------------------|--------------------|-----------|---------------|
| TOTAL BIRTHS. | | | | | | | |
| 1890-97 ... | 310,279 | 281,918 | 116,600 | 83,068 | 18,606 | 38,894 | 849,365 |
| 1891-98 ... | 307,541 | 274,512 | 115,126 | 81,674 | 22,013 | 38,661 | 839,527 |
| 1892-99 ... | 304,544 | 267,015 | 114,310 | 80,344 | 25,401 | 38,364 | 829,978 |
| 1893-1900 | 301,649 | 259,963 | 114,208 | 78,951 | 29,007 | 38,263 | 822,041 |
| 1894-1901 | 299,182 | 254,419 | 114,117 | 77,356 | 32,613 | 37,977 | 815,664 |
| ATTENDANCE AT STATE SCHOOLS. | | | | | | | |
| 1903 ... | 154,382 | 145,500 | 69,759 | 42,752 | 20,283 | 13,863 | 446,539 |
| 1904 ... | 153,260 | 145,122 | 68,661 | 42,234 | 22,111 | 14,321 | 445,709 |
| 1905 ... | 151,033 | 143,362 | 68,780 | 41,807 | 23,703 | 14,123 | 442,808 |
| 1906 ... | 151,261 | 142,216 | 69,771 | 40,489 | 24,973 | 13,730 | 442,440 |
| 1907 ... | 152,607 | 147,270 | 66,849 | 37,861 | 24,950 | 14,464 | 444,001 |

Although the returns of school attendance shew a slight improvement in 1907, the position disclosed by the two sets of figures given above is sufficiently serious to call for earnest consideration. With the exception of Western Australia, Victoria, and Tasmania the States and the Commonwealth as a whole all shew a decreased school attendance consequent on a falling birth-rate over the period dealt with. Moreover, as explained by the Director of Education, the sudden increase in school attendance shewn by Victoria is the result of a more stringent Education Act (No. 2005), while the increase in Tasmania is largely due to keener enforcement of the requirements of the Act in the island State. In explanation of the connection between the two sets of figures it may be noted that the children at school in 1907 will naturally consist chiefly of those born in the period 1894-1901, the attendance for 1906 will be composed principally of the births of the period 1893-1900, and so on.

3. Centralisation of Schools.—The question of centralisation of schools adopted so successfully in America is receiving some attention in the Commonwealth, and particularly in New South Wales. It is recognised that a single adequately-staffed and well-equipped central institution can give more efficient teaching than a congeries of small scattered schools in the hands of less highly-trained teachers, and the small schools in some districts were therefore closed and the children conveyed to the central institution. The principle was first adopted in New South Wales in 1904, when the conveyance of pupils was authorised in the case of twelve schools.

4. Education in Sparsely-settled Districts.—It has always been the aim of the State to carry the benefits of education into the remotest and most sparsely-settled districts. This is effected in various ways. (i.) By the establishment of provisional schools, *i.e.*, small schools in which the attendance does not amount to more than about a dozen pupils, these institutions merging into the ordinary public school list when the attendance exceeds the minimum. (ii.) When there are not enough children to form a provisional school what are known as half-time schools are formed, the teacher visiting them on alternate days. In still more sparsely-peopled districts an itinerant teacher goes from house to house within a certain radius. In New South Wales parents in the thinly-peopled areas are also allowed to club together and build a school, which receives aid from the Government in the form of a yearly subsidy and grant of school material. An experiment on the part of New South Wales, the result of which will be watched with some interest, is the establishment of a "travelling" school. A van has been built, in which the teacher will travel and carry with him a tent for himself and one

to be used as a school, together with such books and apparatus as are required in a primary school.

5. **Higher State Schools.**—(i.) In *New South Wales* public schools, in which the subjects taught embrace, in addition to the ordinary course, such others as will enable the pupils to compete at the Senior and Junior University Examinations, are classed as *Superior Schools*. There were 142 of these schools in existence at the end of 1907. There are also five *High Schools* in the State—two for boys, two for girls, and one for boys and girls. These had an enrolment in 1907 of 739 pupils, with an average attendance of 669. In twenty country centres the superior public schools practically correspond to the high schools, and the educational standards and instructional staff have been so arranged as to prepare for the University matriculation. It is intended also to adapt the teaching in these institutions to the special needs of the districts in which they are situated. Further, these high schools and district schools will be used as preparatory Schools for the training of young persons who wish to become teachers. In order to provide teachers of agriculture, provision is made for ten teacher-students annually to attend the second year's training at the Hawkesbury Agricultural College.

(ii.) In *Victoria*, what are termed "*Continuation Schools*" have been established at Melbourne, Ballarat, and Bendigo for the purpose of giving preliminary training to young people who propose to join the ranks of the teaching service, and it is hoped that ere long the supply from this source will preclude the necessity for the employment of inexperienced pupil teachers. It is expected that these schools will shortly be able to supply the 300 junior teachers annually needed by the Department.

(iii.) *Queensland* does not possess any distinctly secondary schools under State control, although it is proposed to establish high schools in the more important centres at an early date. There are, however, ten grammar schools—six for boys, and four for girls, each of which receives an annual subsidy from the State. Further reference to these will be found later on.

(iv.) *South Australia*. During 1907 continuation classes for higher primary work were established in country centres. These classes are conducted in connection with the chief district schools, and under the supervision of their head teachers. It is probable that they will ultimately be merged in higher primary schools. The Advanced School for Girls was founded in 1879, and in addition to providing for winners of bursaries, receives paying pupils. From its foundation the school has taken a high rank, its pupils being very successful at the various University examinations. The average attendance during the year was eighty-four. During 1907 the total State expenditure on secondary education was £2810, of which the Advanced School for Girls absorbed £1189.

(v.) *Western Australia*. With the exception of the technical schools and the normal school referred to elsewhere, there is no distinctly secondary school under the control of the State in Western Australia. It is proposed to establish shortly a large higher grade or Continuation school in Perth, in which the normal school may be merged, and to establish similar institutions later on in other large centres of population. Evening Schools are held in various parts of the State, but the work carried on is mainly primary. The Perth High School for Boys is subsidised by the State to the extent of £1000 annually.

(vi.) *Tasmania*. No direct provision has hitherto been made by Tasmania for public education of a standard intermediate between that of the State school and the University, but a few pupils are prepared in the ordinary state Schools for the Junior Public Examination of the University. It is intended to encourage this work in future, and the scheme of scholarships, which was discontinued for many years, has recently been revived. For a period of thirty years, from 1860 to 1890, there was in force in Tasmania a system under which the State, without actually providing educational agencies, did much to foster education within the range of the generally accepted high school curriculum, for the Council of Education during this period conducted public examinations of various grades, at which scholarships for juniors to "superior" schools were awarded, as well as

exhibitions to British Universities. The Council also granted the degree of "Associate of Arts" in imitation of the similar Oxford title. Later on the Council of Education evolved and expanded into the University of Tasmania.

6. Agricultural Training in State Schools.—The question of agricultural training in ordinary schools has received considerable attention in *New South Wales*. In 1905 a teacher of school agriculture was appointed to visit schools and districts for the purpose of giving instruction to teachers and scholars in the subject, the officer selected possessing the dual qualifications of a thorough acquaintance with agricultural work and school methods. Under the direction of a capable head master, a college has also been opened at Hurlstone, near Sydney, at which practical lessons will be given in elementary agriculture, and the institution may serve as a stepping-stone to the Hawkesbury Agricultural College.

The question of agricultural colleges and experimental farms is discussed in the section dealing with Agriculture.

In addition to the regular courses of instruction given in the schools, the practice of carrying on "rural camps," where city schoolboys may gain some insight into the conditions of country life, has for some time been in successful operation.

In *Victoria* arrangements have been completed for opening what are termed agricultural high schools at Warrnambool and Sale. Pupils must be at least fourteen years of age, and have obtained a certificate of merit from the local school, or else be able to afford satisfactory proof that they are qualified to profit by the instruction offered. A local council is to be appointed for each school, and will exercise a general oversight over its operations.

Although *Queensland* possesses an Agricultural College and several experimental farms, there is no agricultural institution directly connected with the Education Department. The Government, however, provides a small grant to encourage the study of agriculture, horticulture, and kindred subjects in the State schools, while experts from the Agricultural College and State farms periodically visit the schools in which elementary agriculture is taught, and give instruction to teachers and pupils. A large number of teachers have gained a practical knowledge of milk and cream testing, and the subject is now added to the programme of instruction in several of the dairying districts.

In *South Australia* the Public Schools' Floral and Industrial Society, founded in 1880, holds annual exhibitions of school work from all parts of the State. In addition, it has for some years undertaken the distribution of flower seeds among school children at a very cheap rate, and has thus fostered the love of horticulture with remarkable success.

Beyond encouragement in the direction of making gardens in the school grounds little has been done in the way of practical agricultural training in the schools of *Western Australia* and *Tasmania*.

7. Teachers in State Schools.—The distribution of the teaching staff in the State schools during the year 1907 was as follows:—

TEACHING STAFF IN STATE SCHOOLS, 1907.

| State. | Principal Teachers. | | Assistants. | | Pupil or Junior Teachers. | | Sewing Mistresses. | Total. | | |
|-------------------|---------------------|-------|-------------|-------|---------------------------|-------|--------------------|--------|-------|--------|
| | Males. | Fem. | Males. | Fem. | Males. | Fem. | | Males. | Fem. | Total. |
| New South Wales | 2,187 | 534 | 776 | 1,517 | 251 | 383 | 97 | 3,214 | 2,531 | 5,745 |
| Victoria | 1,425 | 559 | 214 | 823 | 370 | 1,260 | 430 | 2,009 | 3,102 | 5,111 |
| Queensland | 646 | 418 | 355 | 616 | 127 | 231 | — | 1,123 | 1,265 | 2,388 |
| South Australia | 302 | 396 | 50 | 275 | 67 | 188 | 111 | 419 | 970 | 1,389 |
| Western Australia | 240 | 128 | 79 | 297 | 14 | 72 | 56 | 333 | 553 | 886 |
| Tasmania | 164 | 185 | 24 | 110 | 20 | 81 | — | 208 | 376 | 584 |
| Commonwealth | 4,964 | 2,250 | 1,498 | 3,638 | 949 | 2,215 | 694 | 7,311 | 8,797 | 16,108 |

It will be observed that there is a fairly large number of junior teachers, or pupil-teachers, as they are called in most of the States. The pupil-teachers will, however, in time disappear, and their places will be filled by young people who have undergone a course of training in schools specially provided for the purpose. Allusion to the methods of training will be found in the next paragraph.

8. Training Colleges and their Development.—(i.) *New South Wales.* Up to the year 1905 the teachers in New South Wales State schools, generally speaking, commenced their career between the ages of fourteen and sixteen years, when they were known as "pupil-teachers." As such, they were held responsible for the instruction of a certain number of children, and, in return for their services, received payment partly in the form of a small salary, and partly in teaching and advice from the principals of the schools wherein they were employed. *After serving about four years, and subject to passing various examinations designed to test progress in pædagogics and ordinary book learning, a limited number of the pupil teachers was admitted to a course of training in a training college if successful in passing the qualifying examination.* On emerging from this institution, after a course of from one to three years, the teacher became known as an "assistant," and later on became master or mistress of a school. Pupil-teachers who did not enter the Training College were placed in charge of small country schools or appointed "assistants," and later on were allowed to compete in the examinations with the trained teachers; in fact, it was found temporarily to the advantage of teachers not to enter the college. Such was the career of the "trained" teacher; but there was in addition—a considerable body of untrained teachers who had commenced teaching in small country schools, and many of whom by perseverance and natural aptitude had gained positions of considerable importance in the Department.

Within the last few years, however, it has come to be recognised that the logical place of a scheme of training is antecedent to employment as a teacher, and with this end in view it has been decided to abolish the so-called pupil-teacher, and to establish continuation schools from which, as well as from the high schools, the future supply of young teachers is to be drawn. It is hoped that the pupil-teacher as such will be extinct in a few years. In the meanwhile there were still as many as 634 employed at the end of 1907. Unfortunately, many of the smaller country schools will still have to be supplied by appointments of untrained persons; but it is hoped that under the new system of inspection the inspectors themselves will be able to devote a fair amount of time to instructing the teachers in correct methods. During vacations the country teachers will also have some opportunities of forming acquaintances with up-to-date ideas by attending Summer Schools, Rural Camp-schools, etc.

The old Fort-street Training College for males and the Hurlstone College for females were closed in 1905, and pending the erection of a properly-equipped institution in the University grounds the teachers are being trained at the Blackfriars Public School, Redfern. During 1907 there were 299 students in the institution.

(ii.) *Victoria.* The teachers in this State are trained by means of what is known as the "junior-teacher" system, *i.e.*, training of junior-teachers in the State schools by the head masters, or by a two years' course in a junior training college—otherwise known as a continuation school—supplemented by a course of training for two years in the Senior Training College at Melbourne. The junior teacher is, of course, not sensibly different from the pupil-teacher of New South Wales. In January, 1907, 160 students who had completed a two years' course at the Melbourne Continuation School were appointed as junior-teachers at State schools of the third class. At the end of two years in these schools they may qualify for entrance to the Senior Training College for a further period of two years, at the end of which time they will be appointed to sixth-class positions as State school teachers at an annual salary of £120 16s. for men, and £90 to £100 for women.

The Melbourne Continuation School had in May, 1907, an enrolment of 221 first-year students, and 204 in their second year of training. Continuation schools were

opened in 1907 at Ballarat and Bendigo, and it is anticipated that there will shortly be a sufficient number of students in the continuation schools alone to meet the demands of the teaching service. The present junior-teaching system will then be modified to the extent that all candidates for the teaching profession will be required to graduate in one of the continuation schools.

The present Training College dates back to 1874, but during the retrenchment period it was closed, viz., from 1893 to 1900. The institution was reopened in February, 1900, with an enrolment of fifty-seven students. By the 31st August, 1907, the number had increased to 123. Since its reopening the college has also given attention to the training of kindergarten teachers, and the course of study prescribed for infant teachers has received the sanction of the Education Department and also of the Kindergarten Association. Of the students in 1907, 106 were working for the trained teachers' certificate, 19 senior and 26 junior women students and 12 senior men students were working for first year infant teachers' certificate, and 17 students were working for first year diploma of education.

(iii.) *Queensland.* There is no training college in Queensland at the present time, but it is hoped ere long to establish one at Brisbane. Young people of both sexes are admitted to the service as pupil-teachers at the age of fourteen years, the only training received being that given by the principals of the schools to which they are appointed.

(iv.) *South Australia.* In this State young persons of both sexes who shew aptitude for teaching are required to demonstrate their fitness by serving as "monitors" for one year. After signing an agreement for service they are then admitted to the pupil-teachers' schools for two years' study, during which time they receive a small maintenance allowance. The next two years are spent in teaching in the schools. At the expiration of this time they are admitted to the University Training College, where the course of study is for two years. As the college is not a residential institution the State grants maintenance allowance of £30 to £50 per annum. On the conclusion of this period of training, which includes lectures in pedagogy and method, as well as a certain amount of practical teaching, the students are appointed as assistants. Salaries for males begin at £100 per annum, rising in six years to £150. Female assistants receive £72, rising to £124. The whole work of training teachers is undertaken by the University free of cost to the State.

(v.) *Western Australia.* A training college for teachers was opened at Claremont in 1902. The building provides accommodation for over sixty students, the number in training during 1907 being sixty-two, including forty-one women. Central classes for "monitors" (i.e., pupil-teachers) were established at Perth in 1903, and monitors outside the metropolitan area are instructed by correspondence. A normal school was established in Perth in 1907 for the purpose of providing a two years' course of higher instruction for a limited number of children who had completed the State school course and intended to become teachers. The pupils in attendance during 1907 numbered sixty-four, of whom thirty-seven were girls. At the close of the year the bulk of the senior students were appointed as monitors at schools in and around Perth. It may be observed here that the normal school does not aim at giving instruction in the principles and practice of pedagogy, this being left to the teachers to whose schools the students are drafted. To assist teachers of small schools to gain some experience of the best method of school management, a model school has been established at Gosnell's, and arrangements have been made for intending teachers, as well as those actually in charge of small schools, to spend a portion of their time at this institution. The course in the training college lasts two years.

(vi.) *Tasmania.* The system of training adopted in Tasmania is as follows:—(a) The candidate is selected at fourteen years of age by a head teacher, and assists as a "monitor" for about a year, during which period he must give proof of suitability for training. (b) At the end of this period there is a two years' course of training in the training college. (c) The candidate then returns to his own school and teaches there for two years, the head teacher being responsible for his training in practical work, while

the training college authorities give lessons by correspondence. (d) The last stage is a final year in the training college as a senior student. Some of the more advanced are granted a second year's training, and it is proposed to allow at least one each year to proceed to the Diploma of Education at the Melbourne Training College.

At present there is room in the Tasmanian Training College for about sixty students, the number in attendance in 1907 being fifty-three.

9. **Expenditure on State Schools.**—The net expenditure in each State on primary education during each year of the period 1901 to 1907 is shewn below. The figures do not include expenditure on buildings, which is shewn separately in a later table.

EXPENDITURE ON MAINTENANCE, STATE SCHOOLS, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. | 623,734 | 652,860 | 677,683 | 693,954 | 699,789 | 727,471 | 818,947 |
| Victoria | 656,907 | 681,282 | 669,376 | 670,182 | 663,580 | 663,302 | 677,701 |
| Q'land | 256,245 | 261,317 | 256,325 | 261,583 | 278,972 | 286,629 | 297,210 |
| S.A. ... | 152,006 | 151,462 | 147,297 | 147,842 | 151,242 | 152,713 | 152,400 |
| W.A. ... | 89,694 | 103,898 | 122,016 | 134,064 | 139,043 | 153,010 | 160,823 |
| Tas. ... | 37,710 | 48,161 | 48,300 | 50,018 | 44,974 | 45,683 | 52,830 |
| Cwth. | 1,816,296 | 1,898,980 | 1,920,997 | 1,957,643 | 1,977,600 | 2,028,808 | 2,159,911 |

The above figures are equivalent to an expenditure per head of average attendance as follows:—

COST PER HEAD OF AVERAGE ATTENDANCE, STATE SCHOOLS, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------|---------|---------|---------|---------|---------|---------|---------|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| N.S.W. | 4 0 10 | 4 3 9 | 4 7 10 | 4 10 7 | 4 12 8 | 4 16 2 | 5 7 4 |
| Victoria | 4 7 0 | 4 10 8 | 4 12 0 | 4 12 4 | 4 12 7 | 4 13 3 | 4 12 0 |
| Q'land | 3 12 9 | 3 11 9 | 3 13 6 | 3 16 2 | 4 1 2 | 4 2 2 | 4 8 11 |
| S.A. ... | 3 9 5 | 3 9 8 | 3 8 11 | 3 10 0 | 3 12 4 | 3 15 5 | 4 0 6 |
| W.A. ... | 5 9 3 | 5 12 8 | 6 0 4 | 6 1 3 | 5 17 3 | 6 2 6 | 6 8 11 |
| Tas. ... | 2 12 11 | 3 6 3 | 3 9 8 | 3 9 10 | 3 3 8 | 3 6 6 | 3 12 9 |
| Cwth. | 4 0 8 | 4 3 5 | 4 6 0 | 4 7 10 | 4 9 4 | 4 11 8 | 4 17 4 |

Expenditure on school buildings in each of the years quoted was as follows:—

EXPENDITURE ON STATE SCHOOL BUILDINGS, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. | 57,663 | 76,793 | 100,955 | 72,051 | 58,820 | 89,975 | 103,348 |
| Victoria | 36,040 | 81,946 | 39,369 | 19,502 | 32,041 | 39,184 | 68,416 |
| Q'land ... | 33,421 | 9,443 | 9,006 | 14,489 | 14,187 | 24,896 | 30,840 |
| S.A. ... | 13,656 | 11,250 | 11,805 | 9,056 | 9,094 | 13,340 | 15,839 |
| W.A. ... | 49,073 | 32,660 | 35,953 | 32,892 | 35,925 | 39,390 | 39,927 |
| Tas. ... | 7,762 | 11,931 | 6,710 | 4,427 | 4,809 | 3,456 | 7,216 |
| Cwth. ... | 197,615 | 224,032 | 203,798 | 152,417 | 154,876 | 210,241 | 265,586 |

The total net cost and the net cost per scholar in average attendance during the year 1907 were as follows:—

NET TOTAL COST PRIMARY EDUCATION, 1907.

| Item. | N.S.W. | Vic. | Q'land. | S. Aust. | W. A. | Tas. | C'wlth. | N.Z. |
|--|-----------|-----------|-----------|-----------|-----------|----------|-------------|-----------|
| Net cost of primary education, including buildings ... | £ 922,295 | £ 746,117 | £ 328,050 | £ 168,239 | £ 200,750 | £ 60,046 | £ 2,425,497 | £ 686,090 |
| Per scholar in average attendance ... | £6 8/11 | £5 1/4 | £4 18/2 | £4 8/10 | £3 0/11 | £4 3/- | £5 9/3 | £5 16/- |

The average for the Commonwealth in 1901 was £4 9s. 3d. per scholar in average attendance.

§ 3. Private Schools.

1. **School Teachers, etc., in 1907.**—The following table shews the number of private schools, together with the teachers engaged therein, and the enrolment and average attendance in 1907 for each State except Tasmania, where 1906 returns were the latest available:—

PRIVATE SCHOOLS, 1907.

| State. | Schools. | Teachers. | Scholars Enrolled. | Average Attendance |
|-----------------------|----------|-----------|--------------------|--------------------|
| New South Wales ... | 806 | 3,524 | †57,440 | 46,697 |
| Victoria ... | 751 | 2,313 | 53,371 | *42,000 |
| Queensland ... | 173 | 753 | 15,385 | 12,897 |
| South Australia ... | 190 | 580 | 9,369 | 7,860 |
| Western Australia ... | 112 | 389 | 7,639 | 6,358 |
| Tasmania, 1906 ... | 204 | 612 | 8,833 | 7,066 |
| Commonwealth ... | 2,236 | 8,171 | 152,037 | 122,878 |

* Estimated. † December quarter.

2. **Growth of Private Schools.**—The enrolment and average attendance at private schools during 1891 and in each year of the period 1897 to 1907 is shewn below:—

ENROLMENT AND ATTENDANCE AT PRIVATE SCHOOLS, 1891 to 1907.

| Year. | Enrolment. | Average Attendance. | Year. | Enrolment. | Average Attendance. |
|----------|------------|---------------------|----------|------------|---------------------|
| 1891 ... | 124,485 | 99,588 | 1902 ... | 144,437 | 117,293 |
| 1897 ... | 139,175 | 112,813 | 1903 ... | 147,135 | 120,193 |
| 1898 ... | 145,434 | 116,341 | 1904 ... | 146,339 | 119,915 |
| 1899 ... | 151,803 | 122,188 | 1905 ... | 145,143 | 118,627 |
| 1900 ... | 153,433 | 124,313 | 1906 ... | 152,058 | 124,510 |
| 1901 ... | 148,659 | 120,742 | 1907 ... | 152,037 | 122,878 |

* Tasmanian figures not available.

As the table shews, there was a continued increase in enrolment and average attendance up to the end of the year 1900, while from the latter year onwards there was

a more or less persistent decline, although an upward movement is manifested in 1906. This falling-off was principally due to the decrease in the birth-rate during the period 1889 to 1900, a matter to which more extended reference has been made in previous pages.

3. Defects in Returns of Private Schools.—Throughout Australia, until quite recently, no administrative machinery existed by means of which supervision could be exercised over the course of education carried out under other ægis than that of the Departments of Education themselves. These departments were without authority over the qualifications of the teaching staff, the equipments, the curricula, or general circumstances of private or denominational schools. With the exception of Western Australia, Victoria, and Tasmania this state of things continues to the present time.

Without a thorough system of registration of all schools (public or private) the certainty of the operation of the compulsory clause of Public Instruction Acts must necessarily be insecure. Proper statistical information, moreover, cannot be obtained without imposing upon all schools the duty of rendering complete and prompt returns in regard to enrolment, attendance, teaching staff, equipment, etc.

Recent educational criticism has led, not only to a better training of teachers in State schools, and, to some extent, in private schools, but also to a better recognition of the importance of accurate information as to the progress of educational events. It is understood that in New South Wales steps will be taken shortly to secure more adequate information as to the condition of schools generally.

In Victoria up to the year 1906 no attempt had been made to bring private schools under general administrative control; but the Registration of Teachers and Schools Act of 1906 established a registration scheme under a special Board. This Board has now registered the private schools and teachers in the State, excepting, however, teachers of special subjects. The prime object of the Act is that after a lapse of a definite period there shall be no school of any kind in the State which does not comply with reasonable demands and requirements concerning the nature of its building, its equipment, and the qualifications of its teachers. The teachers who have registered belong to the following classes:—Sub-primary, 2357; primary, 4815; secondary, 1657; and 3280 teachers of special subjects. Some teachers have registered under two or three grades, and the number of individual teachers is given as about 8200. The teaching staff of the Department of Public Instruction itself is not subject to the Registration Board. Registered private schools of all kinds number 773. The only control which the Government has on the scholars in private schools is provided by the law as to compulsory attendance, "efficient and regular instruction" in a private school being counted as adequate excuse for not attending the requisite number of days at a State school.

In Queensland there is practically no control over the private schools, beyond the fact that they may submit themselves to inspection if so desired, and there is apparently no provision in South Australia for any Government supervision over private school affairs.

In Western Australia, however, non-Government schools must be declared efficient by the Education Department if attendance at them is to be recognised as fulfilling the requirements of the law, and the school registers must be open to the inspection of the compulsory officers of the Department.

In Tasmania the Education Act requires the teachers of other than State schools "to furnish during January of each year returns shewing attendances at such schools." Despite the fact that penalties are prescribed for non-compliance with the law, nevertheless many teachers neglect to return the forms sent out. Provision has been made for registration of private teachers and schools very much on the lines adopted in Victoria. The Act declares that all persons who were employed in a *bonâ fide* manner for at least three months before 25th October, 1903, are entitled to be registered as teachers without submitting proof of professional qualifications. No person can be registered as a private teacher after July, 1907, unless the Board has been satisfied as to his fitness for the work.

§ 4. Universities.

1. **Sydney University.**—The movement for the establishment of the University of Sydney may be said to have originated as far back as 1825 with the institution of the old Sydney Grammar School, whose first head master, the Rev. Dr. Halloran, is credited with being "the founder of anything like the means of obtaining a classical education in Sydney." The original school was not, however, very successful, and it was succeeded in 1830 by a trustee institution known as the Sydney Public Free Grammar School. By way of endowment a sum of £10,000 was raised in £50 shares, each of which entitled the holder or his executors to the right in perpetuity of having one boy a student at the college. The building was opened for the reception of students in 1835, and was located on the site of the present Sydney Grammar School. In 1849 the proprietors of the institution presented a petition to the Legislative Council, having for its object the conversion of the College into a University. Upon the presentation of this petition the following motion was brought forward by Mr. W. C. Wentworth—"That a select committee be appointed to inquire into *the matters contained in the petition of the proprietors of the Sydney College*, and report upon the best means of instituting a University for the promotion of literature and science, to be endowed at the public expense." The motion was agreed to, with the omission of the words in italics, in order that the committee might have an absolutely free hand in dealing with the matter. The motion was presented on the 6th September, and the committee brought down its report on the 21st of the same month. It recommended the establishment of a University without delay, and suggested an endowment of £5000 a year with £30,000 for a building fund. An important provision in the report was that which specified that the University must belong to no religious denomination and require no religious test. With regard to the first Senate, it was proposed that there should be three *ex officio* members—the Chief Justice, the Colonial Secretary, and the Attorney-General—and nine others to be nominated by the Legislative Council, that there should be a Provost and Vice-Provost, and that the other members should be termed Fellows, that until there should be a hundred graduates, any vacancy in the body should be filled by the surviving or continuing members, but afterwards by election by the graduates.

In its original form the Bill met with considerable opposition, particularly in regard to the proposed absence of religious formularies. It was reintroduced to the Legislative Council in August, 1850, and the second reading was carried on the 11th September. The nomination of the first Senate was left to the Executive Council, and the number of Senators was raised to sixteen. The Act of Incorporation received the assent of the Governor on the 1st October, 1850, and the first Senate was appointed on the 24th December of that year. Mr. Edward Hamilton, M.A., was elected Provost, and Sir Charles Nicholson, M.D., Vice-Provost. Professorships were soon instituted in classics, mathematics, and chemistry and experimental philosophy, and the gentlemen selected to fill these posts arrived in Sydney in 1852. The first matriculation examination was held in October of this year, and twenty-four candidates succeeded in passing the test. The formal inauguration ceremony was held on the 11th October in the large hall of the Sydney College building. Originally it was intended to purchase this college from the trustees, but later on it was deemed essential to secure a larger area of ground, and to erect more commodious premises, and the Government in 1855 granted 128 acres at Grose Farm, where the existing University and Colleges are situated. A sum of £50,000 was also granted for the erection of buildings, on consideration that not more than £10,000 should be spent in any one year. Chiefly through the exertions of Sir Charles Nicholson a Royal Charter was granted to the University on the 27th February, 1858. This document, amongst other things, declared that "the degrees of Bachelor of Arts, etc., already granted or conferred, or hereafter to be granted or conferred by the Senate of the said University of Sydney, shall be recognised as academic distinctions and rewards of merit,

and be entitled to rank, precedence, and consideration in the United Kingdom and in our colonies and possessions throughout the world as fully as if the said Degrees had been granted by the University of the said United Kingdom."

The present main University building was commenced in 1854 and finished in 1860, at a cost of £80,000. The Great Hall, which has a length of 135 feet, by a breadth of 45 feet, is considered by competent judges to be a masterpiece of architectural art. Classes were first held in the completed portion of the building in 1857. Under the original deed of grant of lands for University purposes provision was made for sub-grants for the erection of colleges in connection with the Church of England, Roman Catholic, Presbyterian, and Wesleyan Methodist Churches. St. Paul's College was incorporated by an Act passed in December, 1854, and the building in an incomplete form was opened in 1858. The Act of Incorporation of St. John's was dated 15th September, 1857, while St. Andrew's was incorporated under Act 31 Vic. The right of the Wesleyan body to a grant lapsed in 1860, and efforts to revive it have not been successful. The Women's College was opened in 1892, women being admitted as students of the University in 1881. Prince Alfred Hospital, incorporated in 1873, and erected at a cost of upwards of £180,000, is also situated in the University grounds.

Under an Act passed in 1881 graduates from other recognised Universities were admitted to the rights and privileges of members of the Sydney University, and the same Act also provided for an extension of the academic franchise to B.A.'s of three years' standing. Similar privileges were conferred on Bachelors in the other faculties by the Act of 1884.

As previously stated, there were only three professorships at the inception of the University. Up to 1880 the endowment stood at £5000 per annum, and, practically, the whole of this sum was absorbed in providing for the Chairs of Classics, Mathematics, Chemistry and Physics, and Geology and Mineralogy. The endowment was increased by £1000 in 1880, and it is from this year that the real expansion of the University began, its growth being largely assisted by the munificent Challis bequest, which originally amounted to about £190,000, and is now valued at £268,224. The Chair of Law was established in 1890, although prior to that time lectures in various branches of law were delivered by several lecturers.

The present fine Medical School started from very humble beginnings. Pending its erection a Chair of Anatomy and Physiology was established in 1883, and lecturers were appointed in various medical subjects, the teachers and students being accommodated in the main building until the Medical School, which cost £80,000, was completed.

A separate Faculty of Science was established in 1882, and the Chair of Natural History was divided into the three professorships of geology, physical geography, and biology. The teaching of engineering commenced in 1882 with a lectureship, but in 1884 the position was elevated to a professorship.

The School of Mines was established in 1892.

The progress of the engineering section of the University was greatly assisted by a donation in 1896 of £50,000 from Sir (then Mr.) Peter Nicol Russell, which he most generously supplemented by a second donation of £50,000, making £100,000 in all, in 1904.

Pharmacy students were admitted to the prescribed University courses in 1899, and a Dental School was opened in 1901.

At the present time there are altogether ninety-four teachers engaged in the Sydney University, of whom fifteen are professors, seventy-four lecturers and demonstrators, and five honorary teachers.

2. University of Melbourne.—The University of Melbourne was established by an Act of the Parliament of Victoria, which received the Royal assent on the 22nd January, 1853, and its first Council was appointed by proclamation dated the 11th April of that

year. The foundation stone of the main building was laid on the 3rd July, 1854, and the University was formally opened on the 13th April, 1855. Letters Patent recognising its degrees as entitled to rank with those of any University in the United Kingdom were granted in 1859.

The original Act was subjected to various amendments, and, by a measure passed on the 10th July, 1890, the law relating to the University was consolidated. The principal provisions of this measure were as follows:—By section 4 the University is declared to consist of a Council and of a Senate, and is proclaimed to be a body corporate and politic under the name of "The University of Melbourne," by which title it is to have perpetual succession and a Common Seal, etc. Section 6 declares that the Council shall be elected by the Senate, and shall consist of twenty male members. Teachers in the University may be represented on the Council, but the number of such members is not to exceed three. This Council is to have the entire management of the University, subject to statutes and regulations to be from time to time adopted by Council and Senate. By section 23 it is expressly provided that no religious test is to be applied in order to entitle persons to be admitted as students to the University. The endowment was fixed at the sum of £9000 per annum. It is provided by section 25 that the Council may grant degrees in any faculty except Divinity, its powers in regard to all diplomas being the same as those of any University in the United Kingdom. The provisions of the Act apply equally to both sexes, but the Council may, if it thinks fit, exclude females from attendance at any lectures, but not from any examination in the University. Further amendments were introduced by the Acts of 1903 and 1904, the latter Act providing for three additional members of the University Council, to be appointed by the Governor-in-Council. Provision was also made for increasing the University endowment during the ten years commencing in July, 1904, by additional annual grants of £11,000, on condition that the University would (a) afford increased facilities for carrying on scientific and laboratory training in mining and agriculture; (b) co-operate with schools of mines and agricultural colleges throughout the State in order to ensure a wider sphere of usefulness for these institutions; and (c) provide for the admission of students for diplomas in mining and agriculture without their having passed the full matriculation examination. Provision was made for a further grant of £1000 in case the University provided evening lectures in mining, agriculture, and education.

At present the University grants degrees in Arts, Law, Science, Medicine, Surgery, Dental Surgery, Civil, Mining, and Mechanical Engineering, Agriculture and Music. Diplomas are granted for shorter courses in Education, Public Health, Architecture, Mining, Metallurgy, and Analytical Chemistry. Including that of Music, there are altogether sixteen professorships in the University, twenty-eight lecturers, six lecturers and demonstrators, thirteen demonstrators, and seventeen assistant demonstrators.

There are three Colleges affiliated to the University, and built in adjoining grounds, which provide residence and tuition for University students. They have been founded by, and are under the administration of different religious denominations, but are open to all students without distinction of creed.

Trinity College, opened in 1872, was the first University College established in Victoria, and was founded under the auspices of the Church of England. Attached to the College is a hostel for women students, which was opened in 1886. The College staff consists of a warden, vice-warden, and nine lecturers.

Ormond College, founded by the Presbyterian body, was opened in March, 1881. The lectures of the Theological Hall of the Presbyterian Church of Victoria are delivered by a special staff. The general staff consists of a master, five resident tutors, and ten lecturers and visiting tutors. The college is named after Mr. Francis Ormond, whose benefactions to it amounted to over £100,000.

Queen's College, founded by the Wesleyan Church, was opened in 1888. Its teaching staff consists of a master and six tutors.

The Australian College of Dentistry was affiliated in 1906, the University obtaining certain rights in regard to the control of the college, and undertaking to recognise the professional teaching given therein in connection with the degree of Dental Surgery.

The University Conservatorium of Music was founded in 1892 to provide practical training in connection with the Chair of Music endowed by Mr. Francis Ormond. It has a staff of 18 teachers, and was attended in 1907 by 94 students.

3. University of Adelaide.—This University was established by Act of Parliament in 1874, and by Letters Patent granted in 1881 its degrees were recognised as on the same footing as those granted in any University in the United Kingdom. The foundation of the University was rendered practicable by the munificent gifts of Sir Walter Hughes and Sir Thomas Elder, each of whom contributed £20,000 towards its establishment. The University Act of 1874 also provided for an annual grant equal to five per cent. on the funds possessed by the institution, but stipulated that the total endowment thus given was not to exceed £10,000 in any single year. The Act also provided an endowment of 50,000 acres of land, and a grant of five acres for a site in the city of Adelaide.

When first constituted there were only four professorships in the University—(1) Classics and Comparative Philology and Literature; (2) English Language and Literature, Mental and Moral Philosophy; (3) Mathematics; (4) Natural Science; the endowments for these being provided for by the gifts of Sir Walter Hughes and Sir Thomas Elder.

Lectures commenced in March, 1876, with a total of sixty students, of whom only eight were matriculants. The foundation-stone of the University buildings was, however, not laid until 30th July, 1879, and the formal opening of the institution took place in April, 1882. The total cost up to date was about £38,000. The munificence of Sir Thomas Elder also rendered possible the establishment of a School of Medicine, for as early as 1883 he made a further donation to the University funds of a sum of £10,000. Arrangements for a complete medical curriculum were perfected in 1886. The Angas Professorship of Chemistry, inaugurated in 1885, owes its origin to the munificence of the Hon. J. H. Angas, who provided a sum of £6000 for its endowment. The Chair of Music was established in 1884, and this was also largely assisted by Sir Thomas Elder, who contributed a sum of £300 annually to its upkeep. In 1890 the lectureship in Law, which had existed since 1883, was raised to a professorship. Considerable additions were made to the University library consequent on the gift since 1892 of upwards of £7500 by Mr. Robert Barr Smith. At present it contains about 19,000 volumes.

Sir Thomas Elder, who died in 1897, bequeathed to the University a sum of £65,000, the total donations of this public-spirited citizen amounting to nearly £100,000. According to the terms of his will £20,000 was apportioned to the School of Medicine, £20,000 to the School of Music, and the balance was made available for the general purposes of the University. The Elder Conservatorium of Music was, therefore, established in 1898, the building being finally completed in 1900. Considerable additions were made to the Engineering and Science Schools in 1901 and to the Medical School in 1902.

In 1903 an arrangement was entered into by the University Council with the Council of the South Australian School of Mines and Industries whereby the two institutions, to some extent, combine their resources in the provision of courses of instruction in mining engineering, metallurgy, mechanical engineering, and electrical engineering, and the allied bodies hold examinations and grant diplomas in various branches of Applied Science. The University also practically controls the Training College for public school teachers.

The University grants degrees in Arts, Science, Law, Medicine and Music, and diplomas in various branches of Applied Science and in Music.

It is believed that the Adelaide University was the first Australian University to grant degrees to women, the power to do so being conferred by an Act of Parliament passed in 1880.

4. **University of Tasmania.**—The University of Tasmania was established by Act of Parliament assented to on the 5th December, 1889, the preamble stating that it was intended to supply to all classes without distinction encouragement for pursuing a regular and liberal course of education. A Council and Senate were provided for, to form, when duly constituted, a body politic and corporate, with perpetual succession and a Common Seal, and having the usual powers and privileges attached to such bodies. The Senate was to consist of male graduates of the University with the degree of Master or Doctor, and of all other male graduates of three years' standing, together with certain other persons, but until the number of Senators reached fifty the Council was to administer the affairs of the University. Provision was made for the granting of degrees in Arts, Science, Law, Medicine, Music and any other specified subjects excepting Theology and Divinity, and also for the conferring of "*ad eundem*" degrees. The Council was empowered to make statutes for the affiliation or connection with the University of technical colleges and schools. It was expressly stated that no religious test was to be applied to persons desirous of joining the University. Appropriations from the Consolidated Fund of sums of £3000 in each of the years 1890 and 1891 were authorised for the endowment of the University. For 1892 and subsequent years the appropriation was fixed at £4000.

By an Amending Act passed in 1890 the number of Councillors was fixed at eighteen of whom nine were to be elected by the Senate, and eight by members of both Houses of Parliament, while the remaining member was to be the Minister of Education. The University is housed in a building which was formerly a proprietary high school, and was acquired for University purposes by Act of Parliament dated 21st December, 1892.

By statute dated April 13th, 1905, the Zeehan School of Mines and Metallurgy became affiliated to the University. At the present time there are professorships in classics and English literature, mathematics and physics, and law and modern history, and lectureships in modern languages, chemistry and geology, mechanical engineering, applied mechanics, mechanical drawing and physics, classics, modern history, mental and moral science, and surveying, and an assistant-lectureship in geology.

5. **Teachers and Students at Universities.**—The following table shews the number of professors and lecturers and the students in attendance at each of the Commonwealth Universities during the year 1907:—

| University. | Professors. | Lecturers. | Students attending Lectures. | | |
|--------------------------|-------------|------------|------------------------------|-------------------|--------|
| | | | Matriculated. | Non-matriculated. | Total. |
| Sydney | 15 | 74 | 871 | 307 | 1178* |
| Melbourne | 15 | 64 | 636 | 258 | 894† |
| Adelaide | 10 | 26 | 378 | 266 | 644‡ |
| Tasmania (Hobart) | 3 | 5 | ... | ... | 101 |

* Including 136 females. † Including females, but excluding 98 attending postgraduate courses and 94 music students. ‡ Exclusive of 10 matriculated and 336 non-matriculated music students.

6. **University Revenues.**—The income of the Universities from all sources during the year 1907 was as follows:—

| University. | Government Grants. | Fees. | Other. | Total. |
|--------------------------|--------------------|---------|--------|--------|
| | £ | £ | £ | £ |
| Sydney | 13,750 | 17,220 | 16,713 | 47,683 |
| Melbourne | 21,000 | *18,839 | 3,914 | 43,753 |
| Adelaide | 6,990 | 9,075 | 7,352 | 23,417 |
| Tasmania (Hobart) | 4,000 | 869 | 151 | 5,020 |

* Exclusive of Conservatorium of Music, £2282; Music Examination Board, £1055; Bacteriological Laboratory, £1087.

The column "Other" includes the receipts from private foundations. In the case of the Sydney University these were considerable, the Challis bequest alone representing property to the value of £268,224.

7. University Extension.—Under a statute of the Senate of Sydney University, approved of in 1892, a Board was appointed, which was empowered from time to time to recommend to the Senate the names of suitable persons for giving courses of lectures, and to hold examinations in the subjects of the lectures. The Board receives and considers applications from country centres, and makes provision for engaging lecturers and managing the entire business connected with the various courses. The project has only met with fair success, no lectures having been given in some years, but lately there appears to be an awakening of interest in the matter. The Board also arranges for courses of lectures in Queensland. In 1907 there were eleven courses of lectures given in New South Wales, and attended by 819 students.

University extension lectures in Victoria date from the year 1891, when a Board was appointed by the Melbourne University for the purpose of appointing lecturers and holding classes and examinations at such places and on such subjects as it might think fit. Interest in University extension is apparently on the wane in Victoria, as lectures were delivered in five centres only in 1905 and 1906, as against eight centres in 1904.

The Adelaide University has also instituted short courses of extension lectures in Arts and Science, to which students are admitted on payment of a nominal fee. Public intimation of these lectures is made from time to time during the session. For 1907 a course of eleven lectures was provided—two in Chemistry, three in Science, three in Literature, and three in Law. The Hobart University provides for courses of lecture at Launceston, the lectures being delivered weekly by members of the University teaching staff.

§ 5. Technical Education.

1. General.—Although provision has been made in some of the States in respect to many necessary branches of technical education, the total provision made would imply that this branch of education has not been regarded as of great importance. As will be seen later on, the expenditure on technical education for the whole of Australasia is comparatively insignificant.

2. New South Wales.—The present organisation of technical education in this State dates from the year 1883, when a Technical Education Board was appointed as a result of suggestions made at the Technological Conference held in 1879. This Board continued its functions till November, 1889, when it was dissolved, and the work has thenceforward been carried on as a branch of the Public Instruction Department. The chief centre of activity is, of course, in Sydney, where the Technical College and Technological Museum are situated, the college having been opened for the reception of students early in 1892. Colleges have also been erected in some of the chief country towns, and classes in various subjects are held at a large number of public schools. As mentioned elsewhere, higher technical training is afforded at the Schools of Mines and Engineering in connection with the University. References to the agricultural colleges will be found in the section dealing with Agriculture.

3. Victoria.—Technical instruction in mining has for many years received considerable attention in Victoria, the Ballarat School of Mines, which was established as far back as 1870, having achieved an Australasian reputation. The general scheme of instruction, however, lacked cohesion, and it was not until after the publication of the Report of the Royal Commission on Technical Education, which was appointed in 1899, that many defects were remedied. Science and Art classes have also been established at some of the larger State schools.

4. Queensland.—Previous to 1902 technical colleges were carried on in connection with Schools of Art in many of the towns, under the control of local committees, by whom regulations were framed and the colleges administered. The aid granted by the

State was £1 for every £1 raised locally, but no grant was to exceed the amount voted annually by Parliament. In 1902 a Board of Technical Education was formed, and held office from September of that year till the 27th May, 1905, and during this time devoted much energy towards the improvement of technical education in Queensland. The control, however, was removed from the Board in July, 1905, and vested in the Minister of Education, who appointed an officer of his Department to the position of Inspector of Technical Colleges. This officer reports on technical education generally, inspects the colleges, sees that the grants to the various colleges are spent to the best advantage, and so on. Examinations of students at the colleges were conducted by the Education Department, for the first time, in 1905, the papers being set by local experts, and, in some instances, by experts beyond the State. A differential scheme of endowment came into operation in 1906, the distribution being based on the general and practical utility of the subjects taught, and the subsidy ranging from ten shillings to £3 for every £1 of fees collected according to importance of subject and amount of apparatus required.

5. **South Australia.**—A considerable amount of attention has been given to technical education in South Australia, particularly in connection with the mining industry. The School of Mines and Industries in Adelaide was founded in 1889. There are also Schools of Mines at Moonta, Port Pirie, Kapunda, and Gawler. There is also a School of Design Painting and Technical Arts in Adelaide, with branches at Port Adelaide and Gawler.

6. **Western Australia.**—A technical school was established at Perth in 1900, and since its opening has progressed rapidly. The institution is affiliated with the Adelaide University, and it is hoped that the students will shortly be allowed to take the degree of B.Sc. without leaving the school. Branches have been established at Fremantle and Midland Junction. There are also successful schools at Boulder and Coolgardie, and classes are held at Kalgoorlie and Menzies. The schools are all under the control of the Education Department, the officer entrusted with their supervision being styled Director of Technical Education. The Director also supervises the School of Mines at Kalgoorlie, which is controlled by the Mines Department.

7. **Tasmania.**—In this State provision for technical education dates from the year 1888. At the present time the most important technical institution is the School of Mines and Metallurgy at Zeehan. Courses of instruction are given in metal mining and in metallurgical chemistry and assaying, the diploma in metal mining entitling the holder to the Government certificate of competency as a mine manager. The institution is affiliated to the University of Tasmania. There are also two other schools under the control of the Education Department, each managed by a committee appointed by the Governor-in-Council. Tasmanian technical schools naturally devote their chief attention to mining and mineralogy.

The table hereunder shews the enrolment and attendance at technical schools and classes in the Commonwealth during 1907:—

ATTENDANCE AT TECHNICAL SCHOOLS, 1907.

| State. | No. of Technical Schools. | Enrolment | Average Attendance | Other Technical Classes. | | | |
|------------------|---------------------------|-----------|--------------------|--------------------------|-------------|-----------------------|-------------|
| | | | | At State Schools. | | Schools of Arts, etc. | |
| | | | | Enrolment | Av. Attend. | Enrolment | Av. Attend. |
| N.S.W. ... | 92 | 13,404 | 8,616 | 4,258 | 2,644 | 360 | 310 |
| Victoria ... | 13 | *12,500 | 7,916 | ‡ | ‡ | *139 | 93 |
| Queensland ... | 19 | 11,376 | 2,634 | ... | ... | ... | ... |
| S. Australia ... | 6 | 2,585 | 2,112 | ... | ... | ... | ... |
| W. Australia... | 9 | 1,225 | ‡ | ... | ... | ... | ... |
| Tasmania ... | ‡ | ‡ | ‡ | ... | ... | ... | ... |

* Estimated. ‡ Not available.

8. **Expenditure on Technical Education.**—The expenditure on technical education in each State during the period 1901 to 1907 is shown below :—

EXPENDITURE ON TECHNICAL EDUCATION IN AUSTRALIA, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. | 23,154 | 25,540 | 26,459 | 25,762 | 25,262 | 26,764 | 33,568 |
| Victoria | 26,225 | 22,958 | 16,430 | 16,278 | 17,117 | 21,444 | 22,322 |
| Q'land... | 10,397 | 11,728 | 7,294 | 6,395 | 5,055 | 6,803 | 9,610 |
| S. Aust. | 15,815 | 17,525 | 17,978 | 7,756 | 7,481 | 7,663 | 8,006 |
| W. Aust. | 1,432 | 3,231 | 4,052 | 5,528 | 7,205 | 7,931 | 7,940 |
| Tas. ... | 2,288 | 2,488 | 2,465 | 1,359 | 2,650 | 2,650 | 2,418 |
| C'wealth | 79,311 | 83,470 | 74,678 | 63,078 | 64,770 | 73,255 | 83,864 |

The figures in the preceding table represent an expenditure of a little over 4d. per head of the population of the Commonwealth, as compared with 11s. 3d. per head spent on primary education, and clearly shew that technical education has not attained its proper place in the educational organisation of Australia.

§ 6. Diffusion of Education.

1. **General Education.**—A rough indication of the state of education of the people is obtained at each Census under the three headings, "read and write," "read only," and "cannot read." The grouping of the whole population, exclusive of aborigines, in these three divisions is given at each Census since 1861 :—

EDUCATION AT CENSUS PERIODS, 1861 to 1901.

| State. | | 1861. | 1871. | 1881. | 1891. | 1901. |
|-----------------|---------------|---------|-----------|-----------|-----------|-----------|
| N.S. Wales ... | (Read & write | 188,543 | 296,741 | 507,067 | 835,562 | 1,071,935 |
| | Read only... | 46,024 | 56,391 | 49,372 | 43,539 | 29,728 |
| | (Cannot read | 116,293 | 149,866 | 193,386 | 244,853 | 253,183 |
| Victoria ... | (Read & write | 328,362 | 478,464 | 653,346 | 908,490 | 998,010 |
| | Read only... | 57,351 | 70,953 | 47,950 | 32,794 | 21,852 |
| | (Cannot read | 152,915 | 180,781 | 160,270 | 198,556 | 181,208 |
| Queensland ... | (Read & write | 17,152 | 74,940 | 136,436 | 276,381 | 376,294 |
| | Read only... | 3,680 | 12,080 | 13,657 | 14,618 | 11,737 |
| | (Cannot read | 9,227 | 33,084 | 63,432 | 102,719 | 110,098 |
| South Australia | (Read & write | 72,190 | 117,349 | 200,057 | 236,514 | 290,748 |
| | Read only... | 18,535 | 21,509 | 15,267 | 9,571 | 8,283 |
| | (Cannot read | 36,105 | 46,768 | 64,541 | 74,346 | 64,126 |
| West. Australia | (Read & write | 7,683 | 14,166 | 19,684 | 34,254 | 150,099 |
| | Read only... | 1,301 | 2,717 | 2,430 | 2,061 | 3,107 |
| | (Cannot read | 5,853 | 7,902 | 7,594 | 13,467 | 30,918 |
| Tasmania ... | (Read & write | 48,282 | 55,941 | 74,966 | 103,138 | 133,579 |
| | Read only... | 13,136 | 13,946 | 9,606 | 6,287 | 3,907 |
| | (Cannot read | 28,559 | 29,441 | 31,133 | 37,242 | 34,989 |
| Commonwealth | (Read & write | 662,212 | 1,037,601 | 1,591,556 | 2,394,339 | 3,020,665 |
| | Read only... | 140,027 | 177,596 | 138,282 | 108,870 | 78,614 |
| | (Cannot read | 348,952 | 447,842 | 520,356 | 671,183 | 674,522 |

The proportion in the Commonwealth of the various classes per 10,000 of the population is shewn below for each Census period:—

PROPORTION OF EDUCATED AND ILLITERATE PER 10,000 PERSONS, 1861 to 1901.

| Division. | 1861. | 1871. | 1881. | 1891. | 1901. |
|--------------------|-------|-------|-------|-------|-------|
| Read and write ... | 5,752 | 6,239 | 7,073 | 7,543 | 8,004 |
| Read only ... | 1,217 | 1,068 | 615 | 343 | 208 |
| Cannot read ... | 3,031 | 2,693 | 2,312 | 2,114 | 1,788 |

2. **Education of Children.**—The figures in the preceding tables refer to the entire population of the Commonwealth, and as the age constitution of those dwelling in the various portions of Australia underwent considerable modifications during the period dealt with, a far more reliable test of the diffusion of education will be obtained by a comparison of the Census returns in regard to children of school age. For comparative purposes this has been taken to include all children in the group over five and under fifteen years of age, and the degree of education of these at each Census will be found below:—

EDUCATION OF CHILDREN AT CENSUS PERIODS, 1861 to 1901.

| State. | 1861. | 1871. | 1881. | 1891. | 1901. | |
|-----------------|---------------|---------|---------|---------|---------|---------|
| N.S. Wales ... | Read & write | 34,040 | 68,776 | 121,735 | 196,240 | 251,187 |
| | Read only ... | 20,345 | 26,886 | 25,100 | 21,375 | 15,934 |
| | Cannot read | 25,472 | 32,924 | 41,663 | 48,580 | 60,734 |
| Victoria ... | Read & write | 42,268 | 122,739 | 170,713 | 201,199 | 236,515 |
| | Read only ... | 25,518 | 39,636 | 25,249 | 15,656 | 13,128 |
| | Cannot read | 19,341 | 29,490 | 21,421 | 27,441 | 27,765 |
| Queensland ... | Read & write | 2,156 | 12,698 | 33,317 | 62,402 | 95,635 |
| | Read only ... | 1,534 | 6,104 | 7,019 | 7,580 | 5,955 |
| | Cannot read | 1,629 | 6,015 | 9,615 | 16,257 | 18,827 |
| South Australia | Read & write | 15,485 | 30,608 | 46,630 | 58,291 | 69,451 |
| | Read only ... | 8,748 | 12,432 | 7,926 | 4,618 | 4,229 |
| | Cannot read | 6,907 | 10,074 | 12,483 | 17,988 | 15,480 |
| West. Australia | Read & write | 1,333 | 3,218 | 4,418 | 6,910 | 25,326 |
| | Read only ... | 226 | 617 | 1,260 | 933 | 1,815 |
| | Cannot read | 1,015 | 1,795 | 1,593 | 2,348 | 5,431 |
| Tasmania ... | Read & write | 11,919 | 17,335 | 17,188 | 24,007 | 32,890 |
| | Read only ... | 2,848 | 4,143 | 4,108 | 2,974 | 1,795 |
| | Cannot read | 4,581 | 6,663 | 6,606 | 8,829 | 8,475 |
| Commonwealth | Read & write | 107,201 | 255,374 | 394,001 | 549,049 | 711,004 |
| | Read only ... | 59,219 | 89,818 | 70,662 | 53,136 | 42,856 |
| | Cannot read | 58,945 | 86,961 | 93,381 | 121,443 | 136,712 |

In the case of Tasmania full details for the years 1861 and 1871 are not available, and the figures for those years are approximate. The variation in degree of education will be more readily seen by reducing the foregoing figures to the basis of proportion per 10,000, and the results so obtained are embodied in the following table, a glance at which is sufficient to demonstrate the remarkable strides that at least the lower branches of education have made since 1861. In that year only 45 per cent. of the children of school age could read and write, while 30 per cent. were illiterate. The returns for 1901 shew

that the proportion of those who could read and write had increased to over 80 per cent., while the totally ignorant had declined by fully one-half:—

**EDUCATION OF CHILDREN (AGES 5 TO 15) PER 10,000 AT CENSUS PERIODS,
1861 TO 1901.**

| State. | | 1861. | 1871. | 1881. | 1891. | 1901. |
|-----------------|----------------|-------|-------|-------|-------|-------|
| N.S. Wales | { Read & write | 4,263 | 5,349 | 6,458 | 7,372 | 7,662 |
| | { Read only... | 2,547 | 2,091 | 1,332 | 803 | 486 |
| | { Cannot read | 3,190 | 2,560 | 2,210 | 1,825 | 1,852 |
| Victoria | { Read & write | 4,851 | 6,397 | 7,853 | 8,236 | 8,526 |
| | { Read only... | 2,929 | 2,066 | 1,162 | 641 | 473 |
| | { Cannot read | 2,220 | 1,537 | 985 | 1,123 | 1,001 |
| Queensland | { Read & write | 4,053 | 5,116 | 6,670 | 7,236 | 7,942 |
| | { Read only... | 2,884 | 2,460 | 1,405 | 879 | 495 |
| | { Cannot read | 3,063 | 2,424 | 1,925 | 1,885 | 1,563 |
| South Australia | { Read & write | 4,973 | 5,763 | 6,956 | 7,206 | 7,790 |
| | { Read only... | 2,809 | 2,341 | 1,182 | 571 | 474 |
| | { Cannot read | 2,218 | 1,896 | 1,862 | 2,223 | 1,736 |
| West Australia | { Read & write | 5,179 | 5,716 | 6,076 | 6,780 | 7,775 |
| | { Read only... | 878 | 1,096 | 1,733 | 916 | 557 |
| | { Cannot read | 3,943 | 3,188 | 2,191 | 2,304 | 1,668 |
| Tasmania | { Read & write | 6,160 | 6,160 | 6,160 | 6,704 | 7,620 |
| | { Read only... | 1,472 | 1,472 | 1,472 | 830 | 416 |
| | { Cannot read | 2,368 | 2,368 | 2,368 | 2,466 | 1,964 |
| Commonwealth | { Read & write | 4,757 | 5,910 | 7,061 | 7,588 | 7,984 |
| | { Read only... | 2,628 | 2,078 | 1,266 | 734 | 481 |
| | { Cannot read | 2,615 | 2,012 | 1,673 | 1,678 | 1,535 |

3. Education as shewn by Marriage Registers.—Another common method of testing the spread of education is to compare the number of mark signatures with the total number of persons married during each year of a series. The percentage of males and females signing with a mark to the total persons married in the Census years 1861 to 1901, and during each of the last six years, was as follows. The figures refer to marriages in the Commonwealth in respect of which information was obtainable:—

ILLITERACY AS SHEWN BY MARRIAGE SIGNATURES, 1861 to 1907.

| Year. | Proportion Signing with Marks of Total Persons Married. | | | | | | |
|----------|---|-----------|-----------|----------|-----------|-----------|-----------|
| | Males. | Females. | Total. | Year. | Males. | Females. | Total. |
| | per cent. | per cent. | per cent. | | per cent. | per cent. | per cent. |
| 1861 ... | 18.50 | 30.69 | 24.60 | 1903 ... | 1.17 | 1.02 | 1.10 |
| 1871 ... | 10.55 | 16.40 | 13.49 | 1904 ... | 0.95 | 0.91 | 0.93 |
| 1881 ... | 4.34 | 6.78 | 5.56 | 1905 ... | 0.91 | 0.93 | 0.92 |
| 1891 ... | 2.27 | 2.40 | 2.34 | 1906 ... | 0.92 | 0.86 | 0.89 |
| 1901 ... | 1.35 | 1.29 | 1.32 | 1907 ... | 0.81 | 0.70 | 0.76 |
| 1902 ... | 1.21 | 1.11 | 1.16 | | | | |

The table shews that there has been a large diminution in illiteracy, and judging from the figures for the last few years the proportion bids fair to practically disappear. Up to 1891 there was a higher proportion of illiteracy amongst females, but from 1901 onwards, generally speaking, the opposite condition prevailed.

§ 7. Miscellaneous.

1. **Scientific Societies.**—(a) *Royal Societies.* Despite the trials and struggles incidental to the earlier years of the history of Australia, higher education and scientific advancement was not lost sight of. Thus the origin of the Royal Society of New South Wales dates as far back as 1821, when it was founded under the name of the Australian Philosophical Society, Sir Thomas Brisbane being its first president. In 1856 it was known as the Philosophical Society of New South Wales. Its present title dates from 1866. Some of the papers of the old Philosophical Society were published in 1825 under the title of "Geographical Memoirs of New South Wales," and contain much that is interesting in regard to the early history of Australia. The first volume of the Transactions of the Royal Society of New South Wales was issued in 1867, the title of the series being altered to Journal in 1876. Up to the end of 1907 forty-one volumes had been published. The exchange list comprises 432 kindred societies. At the present time the library contains about 20,000 volumes and pamphlets, valued at £500. Since 1874 the receipts from subscriptions reached nearly £20,000. Government grants since 1877 totalled about £12,000. In 1907 the receipts were £912, including Government endowment of £400.

The Royal Society of Victoria dates from 1854, in which year the Victorian Institute for the Advancement of Science and the Philosophical Society of Victoria were founded. These were amalgamated in the following year under the title of the Philosophical Institute of Victoria, while the society received its present title in 1860. The first volume of its publications dates from 1855. The earlier publications dealt largely with Physics, later on Biology became prominent, while at present the greater number of papers deal with Geology. Up to 1907 forty-three volumes of publications had been issued. The society exchanges with 318 kindred bodies. The constitution of the society states that it was founded for the promotion of art, literature, and science, but for many years past science has monopolised its energies. Since its inception the society has received about £11,000 in annual subscriptions, while Government aid has been given to the amount of about £9500.

The inaugural meeting of the Royal Society of Queensland was held on the 8th January, 1884, under the presidency of the late Sir A. C. Gregory. The society was formed "for the furtherance of the natural and applied sciences, especially by means of original research." Shortly after its formation it received an accession to its ranks by the amalgamation with it of the Queensland Philosophical Society, which was started at the time when Queensland became a separate colony. Up to 1908 total subscriptions reached about £1600. In 1903 the Government grant was 100, but thereafter was discontinued. The society has issued thirty-five publications and exchanges with 120 societies.

The present Royal Society of South Australia grew out of the Adelaide Philosophical Society, which was founded in 1853, its object being the discussion of all subjects connected with science, literature, and art. Despite this programme, the tendency of the papers was distinctly scientific, or of a practical or industrial nature. With the advent of the late Professor Tate the sphere of activity of the society was considerably enlarged. Permission to assume the title of "Royal" was obtained in 1879, the society thenceforward being known as "The Royal Society of South Australia." In 1903 the society was incorporated. Receipts in 1907 were £374, the Government endowment being £234. Up to 1907 the society had issued thirty-one volumes of proceedings and two volumes of memoirs. The exchange list numbers about 170.

The Royal Society of Tasmania, for horticulture, botany, and the advancement of science, dates from 14th October, 1843, although Sir John Franklin had started a scientific society as early as 1838. The names of Captains Ross and Crozier, of H.M.S. *Erebus* and *Terror*, appear in the list of the first corresponding members. The society,

which up to the present has published thirty volumes of proceeding, exchanges with seventy kindred bodies.

(b) *Other Scientific Societies.* The Australasian Association for the Advancement of Science, founded in 1888, has its headquarters in Sydney. Its receipts to date were about £10,000, including Government aid to the amount of £3500. The library contains 4000 volumes valued at £400. Up to date ten volumes of proceedings have been issued. The exchange list numbers 285. The Linnean Society of New South Wales, with headquarters in Sydney, founded in 1875, possesses a library of 9000 volumes valued at £5000. Up to date thirty-two volumes of proceedings have been issued. Exchanges number 175. This society maintains four investigators engaged in research work, and owes its development almost entirely to the benefactions of Sir William Macleay. The British Astronomical Association has a branch in Sydney, and in some of the States the British Medical Association has branches.

The principal scientific society in Western Australia is the West Australian Natural History Society, with which is incorporated the Mueller Botanic Society, founded in July, 1897. The objects of this association are the study of natural history, promoted by periodical meetings, field excursions, and the issue of reports of proceedings. Government aid in 1906 amounted to £75, and in 1907 to £15. Since its establishment the society has issued sixteen journals of proceedings. The exchange list numbers forty-one.

In addition to the societies enumerated above, there are various others in each State devoted to branches of scientific investigation, particulars respecting which are not at present available.

2. **Libraries.**—As far as can be ascertained the total number of libraries in the Commonwealth at the latest available date was about 1500, and the number of books contained therein is estimated at two and a half millions. In each of the capital cities there is a well-equipped Public Library, the Melbourne institution especially comparing very favourably with similar institutions in other parts of the world. The following statement gives the number of volumes in the Public Library of each city:—

METROPOLITAN PUBLIC LIBRARIES.

| City. | Number of Volumes in— | | | Total. |
|------------------|-----------------------|--------------------------|-------------------------|---------|
| | Reference Branch. | Ordinary Lending Branch. | Country Lending Branch. | |
| Sydney | 148,259 | 29,612 | 8,195 | 186,066 |
| Melbourne | 174,647 | 24,651 | * | 199,298 |
| Brisbane | 33,631 | * | * | 33,631 |
| Adelaide | 60,655 | 23,776 | * | 84,431 |
| Perth | 68,652 | * | 4,214 | 72,866 |
| Hobart | 11,839 | * | * | 11,839 |

* Information not available, 19/3/09.

The Launceston Institute in Tasmania possesses a library of 24,640 volumes.

The number of libraries in receipt of State or municipal aid, together with the estimated number of books contained therein, is given below for each State.

| | State. | | | | | |
|--|---------|---------|---------|----------|----------|---------|
| | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. |
| Number of suburban and country libraries ... | 304 | 463 | 183 | 176 | 208 | 39 |
| Estimated number of books | 427,256 | 941,176 | 266,026 | 405,505 | 90,224 | 104,221 |

The figures in the above table can be taken only as approximations, as in many instances returns were not received from various institutions.

3. Museums.—The Australian Museum in Sydney, founded in 1836, is the oldest institution of its kind in Australia. In addition to possessing a fine collection of the usual objects to be met with in kindred institutions, the Museum contains a very valuable and complete set of specimens of Australian fauna. The cost of construction of the building was £59,000. The number of visitors to the institution last year was 172,450, and the average attendance on week-days 528, and on Sundays 638. The expenditure for 1907 amounted to £8337, of which £5560 was absorbed by salaries and allowances, and £2777 by purchases and miscellaneous. There is a valuable library attached to the Museum. Representative collections, illustrative of the natural wealth of the country, are to be found in the Agricultural and Forestry Museum, and the Mining and Geological Museum. The latter institution prepares collections of specimens to be used as teaching aids in country schools. The "Nicholson" Museum of Antiquities, and the "Macleay" Museum of Natural History, connected with the University, are also accessible to the public. There is a fine Technological Museum in Sydney, with branches in five country centres, the metropolitan institution containing over 99,000 specimens. Valuable research work has been undertaken by the scientific staff in connection with oil and other products of the eucalyptus. The average attendance of the public at the Technological Museums during the last five years was well over 200,000.

The National Museum at Melbourne, devoted to Natural History, Geology, and Ethnology, is located in the Public Library building. The expenditure for specimens, furniture, etc., in 1907 was £1550, and salaries and wages £2920. The Industrial and Technological Museum, opened in 1870, contains upwards of 55,000 specimens. There is a fine Museum of Botany and Plant Products in the Melbourne Botanic Gardens. Well equipped museums of mining and geological specimens are established in connection with the Schools of Mines in the chief mining districts.

The Queensland Museum dates from the year 1871, but the present building was opened in January, 1901. Since its inauguration the Government has expended on the institution a sum of £67,443, of which buildings absorbed £16,566, purchases £21,429, and salaries £29,448. The number of visitors during the year was 60,027, of whom 21,598 visited the institution on Sundays. The Queensland Geological Survey Museum has branches in Townsville, opened in 1886, and Brisbane, opened in 1892. The visitors during the year numbered 17,516. The total expenditure on the institution up to the end of 1907 was £5548, of which £2830 was absorbed by buildings.

Under the Public Library Act of 1884 the South Australian Institute ceased to exist, and the books contained therein were divided amongst the Museum, Public Library, and Art Gallery of South Australia, and the Adelaide Circulating Library. The Museum was attended by 80,230 visitors in 1907.

The latest available returns shew that the Western Australian Museum contains altogether 51,000 specimens of an estimated value of £50,000. The Museum is housed in the same building as the Art Gallery, and the visitors to the combined institutions during the year numbered 142,000. The expenditure totalled £4358, of which salaries absorbed £1785.

There are two museums in Tasmania—The Tasmanian Museum at Hobart, and the Victoria Museum and Art Gallery at Launceston, both of which contain valuable collections of botanical and mineral products. The Tasmanian Museum received aid from the Government during last year to the extent of £650.

4. Art Galleries.—Information regarding the State collections of objects of art in the various capitals is in some cases very meagre, while the method of presentation does not admit of any detailed comparisons being made. The Art Gallery of New South Wales originated in the Academy of Art founded in 1871. Up to July, 1908, the cost of construction of the present building was £86,000. The contents, which are valued at

£130,000, comprise 356 oil paintings, 365 water colours, 509 black and white, 150 statuary and bronzes, and 309 ceramics, works in metal and miscellaneous. During 1907 the average attendance on week days was 532, and on Sundays 1830. The expenditure in 1907 amounted to £6800.

The National Gallery at Melbourne at the end of 1907 contained 505 oil paintings, 3530 objects of statuary, and 13,729 water-colour drawings, engravings, and photographs. The Gallery is situated in the same building as the Museum and Public Library, the total cost of construction being £229,000.

The Art Gallery at Adelaide dates from 1880, when the Government expended £2000 in the purchase of pictures, which were exhibited in the Public Library building in 1882. The liberality of private citizens caused the Gallery to rapidly outgrow the accommodation provided for it in 1889, at the Exhibition Building, and on the receipt of a bequest of £25,000 from the late Sir T. Elder, the Government erected the present building, which was opened in April, 1900. The Gallery also received a bequest of £16,500 in 1903 from the estate of Dr. Morgan Thomas. At the latest available date there were in the Gallery 195 oil paintings, 108 water colours, 157 black and white, 74 etchings, 23 statuary and numerous miscellaneous works in metal, etc., the whole being valued at £47,000. Building and site are valued at £31,000. Average attendance was 260 on week days and 270 on Sundays.

The foundation stone of the present Art Gallery at Perth in Western Australia was laid in 1901, the building and site being valued at £60,000. The collection comprises 80 oil paintings, 32 water colours, 117 engravings and black and white, 227 statuary, and miscellaneous metal works, etc., of a total value of £12,000. During last year the visitors averaged 137 on week days and 329 on Sundays.

In Tasmania the Art Gallery at Hobart was opened in 1887. Its present contents consist of 96 paintings and 81 etchings and black and white drawings. Buildings and site are valued at £30,000. The number of visitors during the year on week days averages 62,000, and on Sundays 30,000.

The Art Gallery at Launceston was erected in 1888 at a cost of £5000, and opened on the 2nd April, 1901. Only a small proportion of the contents belongs to the Gallery, the bulk of the pictures being obtained on loan. At latest date there were on view 80 oil paintings and 44 water colours valued at £5000. The total value of buildings and site is estimated at £12,100. The average annual attendance is 36,000, and for Sundays 10,000.

5. **State Expenditure on all Forms of Educational Effort.**—The expenditure from the Consolidated Revenue in each State on all forms of educational and scientific activity during each of the last six financial years was as follows:—

EXPENDITURE ON EDUCATION, SCIENCE, AND ART, 1901 to 1907.

| State. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. | 874,977 | 905,439 | 908,229 | 916,046 | 934,634 | 941,654 | 1,055,197 |
| Victoria | 864,295 | 782,049 | 764,967 | 787,836 | 810,850 | 842,071 | 872,655 |
| Q'land... | 343,870 | 317,916 | 319,799 | 324,502 | 338,426 | 366,635 | 399,291 |
| S. Aust. | 210,441 | 203,305 | 191,929 | 195,648 | 199,628 | 193,346 | 210,712 |
| W. Aust. | 168,770 | 200,204 | 209,573 | 214,733 | 230,573 | 217,036 | 219,176 |
| Tas. ... | 60,759 | 73,300 | 72,129 | 72,435 | 68,163 | 68,777 | 73,242 |
| C'wealth | 2,523,112 | 2,482,213 | 2,466,626 | 2,511,200 | 2,582,274 | 2,629,519 | 2,830,273 |

The expenditure for 1906-7 is equivalent to about 13s. 7d. per head of population in the Commonwealth.

§ 8. Free Kindergarten Movement in Australia.¹

1. **First Kindergarten in Australasia.**—The first free kindergarten south of the equator was opened in Dunedin, New Zealand, some twenty years ago, under the charge of a teacher from the "Golden Gate Free Kindergarten Association" of California. No organised attempt was, however, made either then or later to extend the movement into other parts of the Dominion, although one or two schools have since been opened by private promoters.

2. **History of Kindergarten in New South Wales.**—The inception of free kindergartens in New South Wales dates from 1895, when, as the result of a private meeting, followed by a public meeting at the Town Hall, Sydney, the Kindergarten Union of New South Wales was formed. Its original enrolment of fourteen members has since increased to upwards of 1200.

(i.) *Opening of First Free Kindergarten.* In January, 1896, with the sum of £50 in hand, collected from private sources, the first free kindergarten was opened in a hall in Sussex-street, Sydney. Within a month a fresh trial had to be made in a small terrace house in Charles-street, Woolloomooloo. At the end of a year there were seventy-six children from two to six years of age under the care of one teacher and two trained assistants. Lack of accommodation led to the removal of the school in February, 1897, to its present quarters in Dowling-street.

(ii.) *Opening of Second Metropolitan Free Kindergarten.* A second free kindergarten was opened in Newtown in 1898, and a branch committee, the first of many now in existence, was formed to care for its maintenance. This branch was instrumental in erecting the first building in Australia designed and constructed purely for kindergarten purposes. The institution cost £793, and was officially opened in March, 1907, by Her Excellency Lady Northcote. This kindergarten will be the centre of similar work to that carried on by the Social Settlements in the large cities of England and America.

(iii.) *Present Position of Free Kindergarten in Sydney.* At the latest available date there were eight free kindergartens in the metropolis, situated in the poorest localities and attended by about 500 children.

(iv.) *Extension of Movement beyond the Metropolis.* A free kindergarten was established in 1902 at Newcastle, where there are now two successful institutions. The unions at Newcastle and North Sydney were originally independent bodies, but the difficulty of securing effective staffs led them to place themselves under the direction of the Sydney union.

(v.) *Basis and Aims of the Kindergarten Union.* The Kindergarten Union of New South Wales, founded on a strictly non-political and unsectarian basis, aims at :—(a) The promotion of knowledge of kindergarten principles in New South Wales. (b) The training of teachers in the theory and practice of the kindergarten system. (c) The establishment of free kindergartens in poor neighbourhoods.

(vi.) *Sources of Maintenance.* The kindergartens are dependent for support upon funds raised by the branch committees, and upon government grants. State aid was first received in 1899 to the extent of £100. In each succeeding year an increased grant was given, according as the work grew, until in 1902 the amount had reached £500. For the year 1908 the grant was £1000, of which 150 was paid into the funds of the Newcastle Free Kindergarten Association, this particular association having been the recipient of State aid prior to its affiliation with the parent union. It is gratifying to note, moreover,

1. This article has been condensed from a very full contribution by Mrs. Jeanie Grahame Dane.

that although the schools are free, the parents of the children attending them contribute in many practical ways towards their support. Aid is frequently given by the men in carpentering and gardening, while, besides assisting in various other directions, the united efforts of the women at times result in substantial sums of money being added to the funds.

(vii.) *Kindergarten Training College.* The necessity for a supply of adequately-trained teachers to meet the growing demands of the free kindergarten led to the establishment of the Sydney Kindergarten Training College. In 1897 the union entered into a three years' contract with a graduate of the Normal Training School of Chicago, who at once systematised the teaching and instituted a course of training for teachers and one for children's nurses. The latter section was, however, discontinued after two years. Classes were regularly held in the kindergarten room at Woolloomooloo, and during the first year eight students were admitted for training. Owing to the development of the work additional accommodation became necessary, and in May, 1900, a residential training centre was established at Roslyn Gardens, Darlinghurst. For two years teachers were boarded at a nominal cost and received free training in return for services in the kindergarten. This centre proved the germinating ground for several educational and philanthropic schemes, including the Child Study Association (later known as the Parents' and Teachers' Union), the Kindergarten Club, and the movement to establish day nurseries in connection with kindergarten. In 1902 the scope of the work was enlarged and the training course revised.

The system of training pursued resolves itself into three courses—(a) A regular professional course, covering a period of two years; (b) a sub-primary—also a two years' course—consisting of one year of kindergarten and one year of primary work, and designed for those intending to teach children beyond the kindergarten stage; (c) a post-graduate course for those who wish to become training teachers. In addition to these there is a preparatory course of one year for students who are not quite up to the standard required for admission to the regular kindergarten course.

All teachers in training are required to spend a certain proportion of their mornings in the different free kindergartens for the purposes of observation and practice, and to attend afternoon classes at the college. At present there are fifty students, of whom eleven are resident.

Educational matters in connection with the college are controlled by a council composed of representatives of the Sydney University, Department of Public Instruction, Teachers' Association, the Women's College, and the Kindergarten Union. The college and the private kindergarten and primary school are entirely self-supporting, the money being obtained from the fees charged for the training classes and the tuition of the children attending the kindergarten.

3. Extension of Free Kindergarten in other States.—South Australia was the first of the other Commonwealth States to develop free kindergarten, an association being formed in Adelaide in 1905. At present there are two free schools in operation. A Kindergarten Union was opened in Brisbane, Queensland, in 1906, and a school established. A kindergarten union was formed in Melbourne in 1909. The council includes representatives of the existing kindergarten committees, children's charities, educational bodies—including the State Education Department, the Medical Society, and the Board of Health. In addition to equipping a central kindergarten, the union proposes to establish schools in the more densely populated suburbs. At the present time there are four privately supported kindergartens in Melbourne.

4. Adoption of Kindergarten in State Schools.—No very great attention appears to have been devoted to kindergarten methods in the State schools of New South Wales prior to 1899. In that year instructions issued regarding the qualifications of infant schoolmistresses led to a large number of teachers visiting the free kindergarten, where the union instituted a course of free Saturday morning lectures combined with practical demonstrations. The

Education Department has also considerably enlarged the scope of its own kindergarten at Fort-street, Sydney.

Prior to the report of the first Royal Commission on Education in Victoria some of the chief metropolitan schools possessed kindergarten classes, but comparatively little systematic training had been accomplished. The publication of this report, however, led to an entire remodelling of the plan of infant teaching. At the present time there are fifteen well-equipped schools with kindergarten methods in use, and the kindergarten at Brunswick serves as a training school for students of this system. The course of training extends over two years, one of which is devoted to kindergarten, and one to sub-primary work. Teachers from South Australia and Tasmania visit this institution.

In Western Australia some progress has been made in kindergarten teaching based on English methods.

5. Practical Results of Kindergarten Teaching.—The establishment of the free kindergartens has had a very wholesome effect on both children and parents in the localities where the schools have been placed. Habits of industry, alertness, and self-respect spread from children to parents. The teachers who work in the kindergarten acquire an insight into the psychology of the child mind, and the tolerance, kindness, and self-restraint which they must necessarily possess react for good on the surrounding community. Children from the kindergartens are said to possess greater mental keenness, and to be more responsive to ordinary primary teaching than those who have not attended these institutions.

SECTION XXIII.

PUBLIC JUSTICE.

§ 1. Police.

1. **Introductory.**—It was originally intended to give some account in this chapter of the origin and development of the police forces of Australia, and most of the officers administering the police departments in the various States very kindly supplied the necessary materials. Limitations of space, however, preclude the possibility of publishing “*in extenso*” the valuable store of information thus acquired, but it is hoped to be able to embody it in a later Year Book, or in a still more comprehensive publication.

The following brief notes refer to the evolution of the force in Australia up to the passing of the Police Act of 1862 (25 Vic. No. 16) in New South Wales :—

The first Act of Parliament specially mentioning the establishment of a police force in Australia was passed in 1833 (4 Wm. IV. No. 7), the settlement from 1788 to that year having been under military rule. The Act provided for the appointment of two or more magistrates for the town and port of Sydney, empowered to select a certain number of suitable men for a police force. This force was at first restricted to the capital and its environs, but in 1838 a further Act was passed (2 Vic. No. 2) providing for the establishment and control of police in the chief country districts. About nine years later the prevalence of cases of horse and cattle stealing led to the formation of mounted patrols along the Great Western, Southern, and Northern roads, a central detachment being located in Sydney. The mounted police consisted principally of old soldiers. With the discovery of the goldfields in the early fifties, another branch of the force known as “gold police,” also chiefly old soldiers, was established, and the various divisions were commanded by military officers styled “gold commissioners.” While a large number of the members of the early force were actuated with the desire to carry out their duties honestly and efficiently, there were others who were totally unfitted for the service, and the general lack of cohesion and co-operation was reflected in the high criminal returns. A complete reorganisation was, however, effected by the Police Act of 1862 (25 Vic. No. 16), which placed the entire control in the hands of an inspector-general, who, through the Chief Secretary, was made responsible to Parliament for the general efficiency of the system.

At the present time the police forces of Australia may be said to be satisfactory both in regard to physique and general intelligence; while as regards methods of prevention and detection of crime it is believed that the system in vogue here compares very favourably with those of the older-settled countries of the world.

2. **Strength of Police Force.**—The strength of the police force in each State during the seven years ended 1907 was as follows :—

POLICE FORCES, 1901 to 1907.

| State. | Area of State in Sq. Miles. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|
| N.S.W. | 310,372 | 2,172 | 2,222 | 2,270 | 2,310 | 2,342 | 2,342 | 2,381 |
| Victoria | 87,884 | 1,466 | 1,515 | 1,495 | 1,495 | 1,495 | 1,518 | 1,546 |
| Q'land ... | 670,500 | 1,010 | 962 | 949 | 888 | 911 | 952 | 998 |
| S.A. ... | 903,690 | 406 | 412 | 411 | 414 | 420 | 422 | 444 |
| W.A. ... | 975,920 | 519 | 512 | 500 | 491 | 492 | 507 | 488 |
| Tas. ... | 26,215 | 255 | 245 | 235 | 234 | 234 | 229 | 226 |
| C'wealth | 2,974,581 | 5,828 | 5,868 | 5,860 | 5,832 | 5,894 | 5,970 | 6,083 |

The figures for New South Wales are exclusive of sixty-four "black trackers," *i.e.*, natives employed in detection of offenders in outlying districts, and five female searchers. There are also sixty-five "black trackers" in Western Australia and three female searchers not included in the table.

(i.) *Average Number of Inhabitants to each Police Officer.* The average number of inhabitants to each officer in each State during the same period is shewn below. In considering these figures allowance must, of course, be made for the unequal area and unequal distribution of the population of the various States:—

INHABITANTS TO EACH POLICE OFFICER, 1901 to 1907.

| State. | No. of Persons per Sq. Mile, 1901 Census. | Inhabitants to each Police Officer. | | | | | | |
|------------|--|-------------------------------------|-------|-------|-------|-------|-------|-------|
| | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
| N.S.W. | 4.37 | 633 | 632 | 629 | 631 | 637 | 633 | 659 |
| Victoria | 13.67 | 826 | 800 | 809 | 810 | 815 | 812 | 807 |
| Q'land ... | 0.74 | 501 | 531 | 543 | 587 | 580 | 562 | 543 |
| S.A. ... | 0.40 | 901 | 890 | 897 | 900 | 900 | 910 | 884 |
| W.A. ... | 0.19 | 374 | 417 | 454 | 493 | 518 | 516 | 536 |
| Tas. ... | 6.58 | 694 | 724 | 764 | 770 | 774 | 787 | 814 |
| C'wealth | 1.27 | 657 | 662 | 671 | 683 | 688 | 682 | 690 |

The above figures naturally shew a great disparity in the relative numbers of the population protected by each police officer in the various States, and also in the relative area of territory to each officer. Western Australia and South Australia exhibit the largest figures in the latter respect, this, of course, being due to the fact that extensive areas in each State are as yet unpeopled by white settlers.

3. *Duties of the Police.*—In addition to the ordinary employment attaching to their office, the police are called upon to perform many duties which in other countries are carried out by other functionaries. As far as the Statistician is concerned, it is found that the expert local knowledge possessed by the police renders their services in the collection of such returns as those relating to the agricultural, pastoral, and manufacturing industries, private schools, etc., more than ordinarily valuable. Then, again,

the fact that their services are enlisted by such widely different departments as those dealing with mines, stock, agriculture, elections, registrations of births, deaths, and marriages, forestry, fisheries, explosives, old-age pensions, lunacy, public works, labour, etc., greatly enhances their general alertness by widening the range of their experience. Occasionally the objection is heard in some quarters that these special tasks involve some degree of sacrifice of ordinary routine duties, but that the general intelligence of the Australian police is adequate to the obligation to perform these tasks, besides being most creditable, results in a great saving of the public money.

4. **Cost of Police Forces.**—The expenditure from Consolidated Revenue on the police forces in each State during the seven years 1901 to 1907 is shewn in the following table. Cost of buildings has been excluded from the return:—

COST OF POLICE FORCES, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| N.S.W. | 383,332 | 401,269 | 416,542 | 428,374 | 435,577 | 434,934 | 442,804 |
| Vic. ... | 287,630 | 293,998 | 311,693 | 311,927 | 313,649 | 312,941 | 306,130 |
| Q'land | 183,143 | 184,873 | 172,913 | 161,510 | 159,464 | 176,086 | 202,184 |
| S.A. ... | 83,697 | 84,874 | 84,109 | 85,090 | 82,419 | 85,016 | 87,374 |
| W.A. ... | 119,310 | 123,924 | 130,312 | 128,628 | 126,661 | 126,276 | 125,440 |
| Tas. ... | 38,412 | 39,222 | 37,833 | 36,720 | 36,537 | 35,086 | 37,152 |
| Cwlth. | 1,095,524 | 1,128,160 | 1,153,402 | 1,152,249 | 1,154,307 | 1,170,339 | 1,201,084 |

The figures for Victoria include the sums paid each year to make up the deficiency in the Police Superannuation Fund. Queensland returns for 1907 include a grant of £20,000 in aid of this fund. The cost per head of the population in each State for the period 1901 to 1907 was as follows:—

COST OF POLICE PER INHABITANT, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|
| | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. |
| New South Wales ... | 5 7 | 5 9 | 5 11 | 5 11 | 5 11 | 5 9 | 5 9 |
| Victoria ... | 4 9 | 4 10 | 5 2 | 5 2 | 5 2 | 5 1 | 4 11 |
| Queensland ... | 7 4 | 7 3 | 6 9 | 6 3 | 6 1 | 6 7 | 7 5 |
| South Australia ... | 4 7 | 4 8 | 4 7 | 4 7 | 4 5 | 4 6 | 4 6 |
| Western Australia ... | 12 8 | 12 0 | 11 9 | 10 11 | 10 1 | 9 9 | 9 7 |
| Tasmania ... | 4 6 | 4 6 | 4 3 | 4 1 | 4 1 | 3 11 | 4 2 |
| Commonwealth ... | 5 9 | 5 10 | 5 11 | 5 10 | 5 9 | 5 9 | 5 9 |

The relatively high cost per head in Queensland and Western Australia is due to the fact that there are in those States extensive areas of sparsely settled country, in which mounted patrols have to be maintained.

§ 2. Lower (Magistrates') Courts.

1. Introductory. - In considering the criminal returns of the various States due allowance must be made on account of several factors, such as the relative powers of the courts, both lower and higher, etc. In the case of lower courts, the actual number of laws in each State, the breach of which renders a person liable to fine or imprisonment, must be taken into account. Again, the attitude of the magistracy and police towards certain classes of offences is a factor, for in the case of liquor laws, or laws connected with vagrancy or gaming, the views of magistrates, and instructions issued to the police, may be responsible for considerable variations in the returns. The strength and distribution of the police forces and the age constitution and distribution of the State's population also influence the results. In any consideration of criminal returns, due weight should also be given to the prevalence of undetected crime, but information on this point can only be obtained for the State of Victoria.

2. Powers of the Magistrates.—In New South Wales there is no general limit to the powers of the magistrates in regard to offences punished summarily, their authority depending in each case on the statute which creates the offence and gives them jurisdiction. Except in the case of a very few statutes, and excluding cumulative sentences, the power of sentence is limited to six months. Imprisonment in default of payment of fine is regulated by a scale limiting the maximum period according to the sum ordered to be paid, but in no case exceeding twelve months. Actions for debt and damage within certain limits also come within magisterial jurisdiction. In cases of debts, liquidated or unliquidated, the amount recoverable is not exceeding £50 before a court constituted of a stipendiary or police magistrate at certain authorised places, and not exceeding £30 at any other place before a court constituted of a stipendiary or police magistrate or two or more justices of the peace. The amount in actions of damage is limited to £10, but may extend to £30 by consent of parties.

In Victoria the civil jurisdiction of magistrates is restricted to what may be designated ordinary debts, damages for assault, restitution of goods, etc., where the amount in dispute does not exceed £50. No definite limit is fixed to the powers of the magistrates on the criminal side, and for some offences sentences up to two years may be imposed. The proportion of long sentences is, however, comparatively small, the total punishments of one year and upwards in 1906 comprising only eighty-six out of 16,463 sentenced.

In Queensland, generally speaking, the maximum term of imprisonment which justices can inflict is six months, but in certain exceptional cases, such as offences against sections 233 and 445 of the criminal code (betting-houses and illegally using animals), sentences of twelve months may be imposed. No limit exists as to the extent to which cumulative sentences may be applied, but in practice the term is never very lengthy.

In South Australia, under the Minor Offences Act, magistrates can impose sentences up to six months, and under the Summary Convictions Act up to three months. The Police Act of 1869 gives power to sentence up to one year, with hard labour, in the case of incorrigible rogues, while under the Quarantine Act of 1877, and the Lottery and Gaming Act of 1875, sentences of two years may be imposed.

Under the Petty Sessions Act of 1867, in Tasmania, any person charged with having committed, or with having aided or abetted in the commission of an offence in regard to property of a value not exceeding £10, may, on conviction, for a first offence, before two or more justices in Petty Sessions, be imprisoned for any term not exceeding one year, and for a term not exceeding two years for a second or subsequent offence.

3. **Persons Charged at Magistrates' Courts.**—The total number of persons who were charged before magistrates in each State is given below for the seven years 1901 to 1907:—

PERSONS CHARGED BEFORE MAGISTRATES, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------|---------|---------|---------|---------|---------|---------|--------|
| N.S.W. | 58,681 | 60,373 | 61,394 | 59,851 | 61,127 | 65,197 | 67,183 |
| Vic. ... | 50,169 | 45,198 | 46,125 | 47,210 | 45,484 | 48,244 | 60,687 |
| Q'land | 23,920 | 21,115 | 19,012 | 18,132 | 17,943 | 18,849 | 18,621 |
| S.A. ... | 6,134 | 6,488 | 6,430 | 6,015 | 5,974 | 6,324 | 6,347 |
| W.A. ... | 14,812 | 15,929 | 16,362 | 14,940 | 14,646 | 14,478 | 13,968 |
| Tas. ... | 5,499 | 6,171 | 5,975 | 5,579 | 7,090 | 6,391 | * |
| Cwltth. | 159,215 | 155,274 | 155,298 | 151,727 | 152,264 | 159,483 | ... |

* Not available.

In explanation of the large increase shewn by Victoria for the year 1907 it is stated that the returns of summons were inflated by prosecutions under the new Licensing and Pure Food Acts and the Amending Education Act.

The figures given in the tabulation above include, of course, a number of people who were wrongly charged, and statistically are not of great importance. The actual number of convictions in connection with the persons who appeared before the lower courts in each year of the period 1901 to 1907 is, therefore, also given. A separate line is added shewing the committals to higher courts.

CONVICTIONS AND COMMITTALS AT MAGISTRATES' COURTS, 1901 to 1907.

| State. | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------|---------------|---------|---------|---------|---------|---------|---------|--------|
| N.S.W. | { Convictions | 48,962 | 50,776 | 51,379 | 50,102 | 51,638 | 54,809 | 58,103 |
| | { Committals | 1,262 | 1,271 | 1,419 | 1,551 | 1,454 | 1,286 | 1,130 |
| Victoria | { Convictions | 36,905 | 33,461 | 36,031 | 35,854 | 34,134 | 37,740 | 46,731 |
| | { Committals | 700 | 641 | 631 | 564 | 652 | 584 | 561 |
| Q'land | { Convictions | 19,844 | 17,625 | 15,795 | 15,345 | 14,730 | 15,987 | 16,056 |
| | { Committals | 503 | 489 | 508 | 460 | 495 | 440 | 464 |
| Sth. Aus. | { Convictions | 4,915 | 5,448 | 5,126 | 4,897 | 4,936 | 5,249 | 5,352 |
| | { Committals | 212 | 209 | 193 | 127 | 152 | 168 | 105 |
| W. Aus. | { Convictions | 10,829 | 11,536 | 13,601 | 12,376 | 12,246 | 12,181 | 11,801 |
| | { Committals | 241 | 335 | 316 | 266 | 253 | 182 | 193 |
| Tas. ... | { Convictions | 4,469 | 4,949 | 4,877 | 4,515 | 5,932 | 5,449 | * |
| | { Committals | 76 | 65 | 79 | 51 | 59 | 55 | * |
| Cwltth.... | { Convictions | 125,924 | 123,795 | 126,809 | 123,089 | 123,616 | 131,415 | ... |
| | { Committals | 2,994 | 3,010 | 3,146 | 3,019 | 3,065 | 2,715 | ... |

* Not available, 19/3/09.

4. **Convictions for Serious Crime.**—While the figures given in the preceding table refer to the entire body of convictions, the fact must not be lost sight of that they include a large proportion of offences of a technical nature, many of them unwittingly committed, against various Acts of Parliaments. Cases of drunkenness and minor breaches of good order which, if they can be said to come within the category of crime at all, at least do so in a very different sense to some other offences, also help to swell the list. The following table has, therefore, been prepared for the purpose of shewing the convictions at magistrates' courts for what may be regarded as the more serious offences,

i.e., against the person and property, either separately or conjointly, and forgery and offences against the currency:—

CONVICTIONS FOR SERIOUS CRIME AT MAGISTRATES' COURTS, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------|--------|--------|--------|--------|--------|--------|-------|
| N.S.W. | 4,649 | 5,187 | 5,277 | 4,744 | 4,640 | 4,971 | 4,799 |
| Vic. ... | *2,066 | 3,105 | 3,052 | 2,551 | 2,944 | 2,879 | 2,672 |
| Q'land. | 2,314 | 2,446 | 2,045 | 2,065 | 2,175 | 2,035 | 1,334 |
| S.A. ... | 576 | 611 | 623 | 470 | 441 | 437 | 499 |
| W.A. | 818 | 964 | 958 | 1,075 | 1,256 | 1,215 | 1,301 |
| Tas. ... | 604 | 536 | 508 | 563 | 660 | 522 | † |
| Cwth. | 11,027 | 12,849 | 12,463 | 11,468 | 12,116 | 12,059 | ... |

* Arrests only. Summons cases not available. † Not available, 19/3/09.

Owing to a reclassification adopted by Queensland in 1907, a large number of offences have been transferred from the class "Offences against the Person" to "Offences against Good Order," hence the falling-off shewn by the table.

Compared with the population the above figures give the following results per 10,000 inhabitants:—

CONVICTIONS PER 10,000 INHABITANTS, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------|-------|-------|-------|-------|-------|-------|-------|
| N.S.W. | 34.1 | 37.3 | 37.3 | 32.9 | 31.5 | 32.9 | 31.0 |
| Vic. ... | 17.2 | 25.7 | 25.3 | 21.1 | 24.3 | 23.5 | 21.6 |
| Q'land. | 46.2 | 48.0 | 39.9 | 39.8 | 41.4 | 38.2 | 24.8 |
| S. Aust. | 15.9 | 16.8 | 17.0 | 12.7 | 11.8 | 11.5 | 12.9 |
| W. Aust. | 43.4 | 46.8 | 43.3 | 45.4 | 50.2 | 46.7 | 49.6 |
| Tas. ... | 35.0 | 30.8 | 26.6 | 31.5 | 36.5 | 29.2 | * |
| Cwth. | 29.1 | 33.3 | 31.9 | 29.0 | 30.1 | 29.5 | ... |

* Not available, 19/3/09.

5. **Decrease in Crime.**—The figures quoted in the preceding table show that there has been a considerable decrease in crime during the last six years, while if the comparison be carried back to 1881 the position is seen to be still more satisfactory. The rate of convictions at magistrates' courts per 10,000 of the population is given below for each of the years 1881, 1891, 1901, and 1906. Only the more serious offences, particularised in the preceding paragraph, have been taken into consideration:—

RATE OF CONVICTIONS FOR SERIOUS CRIME IN THE COMMONWEALTH.

| Year. | Convictions per 10,000 Persons. | |
|---|---------------------------------------|------|
| 1881 | ... | 69.3 |
| 1891 | ... | 44.8 |
| 1901 | ... | 29.1 |
| 1906 (Complete 1907 figures not available, 19/3/09) | ... | 29.5 |

6. **Need of Statistic of Distinct Persons.**—The figures already quoted refer to total convictions, and in respect of individuals necessarily involve a considerable amount of duplication, especially in minor offences, such as drunkenness, petty larcenies, etc., in which

the same offender appears before the court many times in the course of the year. In a few of the States it is possible to obtain the number of distinct persons arrested, but there are no means of arriving at the total distinct persons convicted before the magistrates in any State. The forms submitted to and adopted by the Conference of Statisticians in 1906 provide for information as to separate persons convicted, irrespective of whether they were arrested or summoned, and thus the statistical tabulations will, it is hoped, possess in future greater comparative value.

7. Causes of Decrease in Crime.—The statistics given show that there has been a considerable decrease in crime throughout Australia. The results so far quoted are restricted entirely to the lower or magistrates' courts. There has also been a gratifying decrease in regard to offences tried at the higher courts, as will be seen later.

Attempts have been made to account for this decline: e.g., advance in education, enlightened penological methods, etc. Much depends upon what is meant by education. Many classed in census statistics as "educated" can barely read and write. In this connection, moreover, it ought not to be forgotten that collaterally with the introduction of ordinary intellectual education certain people have departed from their pristine virtues.

The deterrent effect of punishment, in respect of many offences, notably drunkenness, vagrancy, petty larcenies, etc., appears to be almost negligible. In general, punishment has declined in brutality and severity, and has improved in respect of being based to a greater extent upon a scientific penological system, though in this latter respect there is yet much to be desired. Recent advances in penological methods will be referred to in a subsequent section. Here it will be sufficient to remark that under the old régime, a prisoner on completion of a sentence in gaol was simply turned adrift on society, and in many cases sought his criminal friends, and speedily qualified for readmission to the penitentiary. Frequently he was goaded to this by mistaken zeal on the part of the police, who took pains to inform employers of the fact of a man having served a sentence in gaol. For a long time any assistance to discharged prisoners was in the hands of private organisations, such as the Salvation Army Prison Gate Brigade, but in some of the States, and notably in New South Wales, the authorities themselves look after the welfare of discharged prisoners in the way of finding work, providing tools, etc.

Improvements in the means of communication and identification have been responsible for some of the falling-off noticeable in the criminal returns, the introduction of the Bertillon system having contributed to certainty of identification. Part of the improvement may no doubt be referred also to the general amelioration in social condition that has taken place during the last fifty years.

8. Drunkenness.—The number of cases of drunkenness and the convictions recorded in connection therewith during the period 1901 to 1907 will be found in the following table:—

CASES AND CONVICTIONS—DRUNKENNESS.

| State. | 1901. | | 1902. | | 1903. | | 1904. | | 1905. | | 1906. | | 1907. | |
|--------|---------|--------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------|
| | Cases. | Convictions. | Cases. | Convictions. | Cases. | Convictions. | Cases. | Convictions. | Cases. | Convictions. | Cases. | Convictions. | Cases. | Convictions. |
| N.S.W. | 23,921 | 23,803 | 24,437 | 24,332 | 24,703 | 24,598 | 23,060 | 22,943 | 24,185 | 24,003 | 25,390 | 25,253 | 28,255 | 28,109 |
| Vic. | *17,360 | 10,846 | 14,540 | 9,394 | 12,630 | 8,494 | 13,831 | 9,231 | 14,458 | 9,360 | 14,020 | 9,529 | 14,763 | 9,151 |
| Q'land | 9,791 | 9,773 | 8,123 | 8,102 | 7,190 | 7,131 | 6,854 | 6,827 | 6,633 | 6,592 | 7,493 | 7,473 | 9,066 | 9,002 |
| S.A. | 2,049 | 2,011 | 2,431 | 2,394 | 2,340 | 2,296 | 2,387 | 2,352 | 2,362 | 2,332 | 2,483 | 2,440 | 2,833 | 2,735 |
| W.A. | 3,848 | 3,237 | 3,347 | 3,283 | 3,572 | 3,513 | 3,597 | 3,531 | 3,509 | 3,425 | 3,588 | 3,505 | 3,591 | 3,535 |
| Tas. | 743 | 705 | 636 | 514 | 526 | 511 | 530 | 556 | 539 | 523 | 459 | 454 | † | † |
| Cwth. | 57,212 | 50,375 | 53,514 | 48,019 | 50,961 | 46,543 | 50,363 | 45,490 | 51,841 | 46,240 | 53,451 | 48,674 | ... | ... |

* Arrests only. Summons cases not available.

† Not available, 19/3/09.

The number of convictions is, as might naturally be expected, almost identical with the number of cases. Victoria, however, is an exception, but in this State it is explained that offenders are generally discharged on a first appearance, and no conviction is recorded, a similar procedure being also adopted in the case of those arrested on Saturday and detained in custody till Monday. The logic of excluding these cases from the list of convictions is certainly open to doubt.

The convictions for drunkenness per 10,000 of the population during each of the years from 1901 to 1907 are given hereunder :—

CONVICTIONS FOR DRUNKENNESS PER 10,000 INHABITANTS.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------|-------|-------|-------|-------|-------|-------|-------|
| N.S.W. | 174.6 | 174.9 | 173.8 | 159.1 | 162.8 | 167.3 | 181.3 |
| Vic. | 90.1 | 77.6 | 70.3 | 76.9 | 77.2 | 77.9 | 73.9 |
| Q'land | 195.0 | 159.0 | 139.1 | 131.5 | 125.4 | 140.3 | 167.0 |
| S. Aust. | 55.4 | 65.7 | 62.8 | 63.6 | 62.2 | 64.7 | 70.9 |
| W. Aust. | 171.8 | 159.5 | 158.7 | 149.3 | 136.8 | 134.8 | 134.8 |
| Tas. | 41.0 | 29.6 | 28.8 | 31.1 | 29.5 | 25.4 | * |
| C'wealth | 133.4 | 124.5 | 119.3 | 115.1 | 115.1 | 119.1 | ... |

* Not available, 19/3/09.

The convictions for drunkenness taken by themselves are not an altogether satisfactory-test of the relative sobriety of the inhabitants of each State, forasmuch as several important factors must be taken into consideration. The age constitution, for example, of the people is by no means identical in each State, Western Australia having by far the largest proportion of adult males. The avocations of the people affect the result, since persons engaged in strenuous callings are, on the whole, more likely to indulge in alcoholic stimulants than those employed in less arduous ones. The distribution of the population is also a factor, the likelihood of arrest or summons for drunkenness obviously being greater in the more densely populated regions, and lastly, allowance must be made for the attitude of the police and public generally in regard to the offence.

It is not unusual to supplement statistics of drunkenness by furnishing also the relative consumption of alcoholic beverages. Deductions drawn therefrom will be very misleading if they fail to take into account also the consumption of non-intoxicating beverages such as tea and coffee and the general habit of the people. Throughout the greater part of Europe tea and coffee are consumed but sparingly, while Australia, as is well known, is one of the greatest tea-drinking countries of the world.

The following table shewing the consumption of spirits, wine, and beer per head of the population has, with the exception of the figures relating to spirits and beer for the States of the Commonwealth, been compiled from returns prepared by the British Board of Trade for the period 1902-6. The figures quoted for the Commonwealth States in respect of spirits and beer refer to the year 1907. It is believed that the returns hitherto given by the Board of Trade regarding the consumption of wine in Australia do not in all cases furnish satisfactory results, and the subject is at present being investigated in this Bureau. Figures based on a combination of returns of production and net export cannot be regarded as giving a true statement of the case in regard to wine, as the production in any year does not necessarily enter into consumption in the same year, while allowance must also be made for the conversion of portion of it into brandy or vinegar.

CONSUMPTION OF ALCOHOLIC BEVERAGES IN VARIOUS COUNTRIES, 1902 to 1906.

| Country. | Consumption per Head of Population. | | | Country. | Consumption per Head of Population. | | |
|---------------------|-------------------------------------|-------|-------|-------------------|-------------------------------------|-------|-------|
| | Spirits. | Wine. | Beer. | | Spirits. | Wine. | Beer. |
| United Kingdom... | 1.00 | 0.32 | 29.50 | Cape of Good Hope | 0.69 | 2.30 | 1.50 |
| New South Wales | 0.93 | 0.61 | 9.83 | Canada | 0.86 | 0.09 | 5.00 |
| Victoria ... | 0.76 | 0.80 | 12.33 | Russia... | 0.95 | ... | 0.97 |
| Queensland ... | 1.06 | 0.26 | 10.31 | Norway ... | 0.60 | ... | 3.46 |
| South Australia ... | 0.72 | 2.93 | 8.46 | Sweden ... | 1.46 | ... | 12.50 |
| Western Australia | 1.21 | 1.04 | 19.35 | Denmark ... | 2.54 | ... | 20.60 |
| Tasmania ... | 0.56 | 0.16 | 9.05 | German Empire | 1.55 | 1.45 | 26.10 |
| Commonwealth | 0.88 | 0.84 | 11.07 | Holland ... | 1.50 | 0.37 | ... |
| New Zealand ... | 0.76 | 0.14 | 9.39 | Belgium ... | 1.35 | 1.02 | 48.00 |
| | | | | France ... | 1.36 | 30.70 | 7.90 |
| | | | | Switzerland ... | 0.99 | 15.10 | 14.10 |
| | | | | Italy ... | 0.26 | 25.10 | 0.18 |

9. **Treatment of Drunkenness as Crime.**—Though the problem of the correct method of dealing with dipsomania is by no means an easy one, it seems fairly clear that the present plan of bringing offenders before magistrates, and subjecting them to the penalty of imprisonment or fine, has little deterrent effect, as the same offenders are constantly reappearing before the courts. Further, the casting of an inebriate into prison, and placing him in his weakened mental state in the company of professional malefactors, doubtless tends to swell the ranks of criminals and certainly tends to lower his self-respect, while examination of the prison records in New South Wales some years ago disclosed the fact that over 40 per cent. of the gaol population had commenced their criminal career with a charge of drunkenness. During the last few years the dangers of moral contamination in this way have been more accurately appreciated, and a system of classification of prisoners has been adopted whereby the petty offender is as far as possible kept from association with the more evil-disposed. With regard to drunkards, however, Captain Neitenstein, the Comptroller of Prisons in New South Wales, advocates the entire abandonment of the system of repeated fine or imprisonment in favour of a course of hospital treatment. The Comptroller-General of Prisons in Queensland states in his report for the year 1907 that "the drunken habit in many cases is merely one of many symptoms which jointly indicate the existence of a graver condition than simple habitual drunkenness."

10. **Treatment of Habitual Offenders.**—In New South Wales the Habitual Criminals Act of 1905 gives judges the power of declaring a prisoner, after a certain number of sentences, to be an habitual criminal, and as such to be detained until, in the opinion of the authorities, he is fit to be at large. Similar enactments were passed in Victoria and New Zealand during the last two years. Naturally it will be some time before the effect of the measures on the prevalence of crime can be estimated.

11. **Treatment of First Offenders.**—In all the States and New Zealand statutes dealing with first offenders have been in force for some years, the dates of passing the Acts being as follows:—New South Wales, 1894; Victoria, 1890; Queensland and South Australia, 1887; Western Australia, 1892; Tasmania and New Zealand, 1886. The method of procedure is practically the same in all cases, *i.e.*, with regard to most first offenders the magistrate or judge is empowered to allow the offender to go free on recognisances being entered into for his good behaviour for a certain period. In practice this humane law has been found to work excellently, very few of those to whom its provisions have been extended having been found to relapse into crime.

12. **Children's Courts.**—Special courts for the trial of juvenile offenders have been established in New South Wales, Victoria, and New Zealand within the last few years, while children's courts, although not under that name, are practically provided for by the State Children's Acts of 1895 and 1900 in South Australia. The object of these courts is to avoid, as far as possible, the unpleasant surroundings of the ordinary police court.

13. **Committals to Superior Courts.**—In a previous section it has been pointed out that comparisons of criminality based on a consideration of the total returns from magistrates' courts are somewhat inadequate, seeing that the figures include numbers of cases which are merely technical breaches of laws having in some instances a purely local significance. The committals to higher courts give a better basis of comparison, although even in this connection allowance must be made for the want of uniformity in jurisdiction. The table below gives the number of committals in each year from 1901 to 1907, with the proportion of such committals per 10,000 of the population. The rates are shewn on a separate line:—

COMMITTALS TO SUPERIOR COURTS, 1901 to 1907.

| State. | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------|--------|-------|-------|-------|-------|-------|-------|-------|
| N.S.W. | { No. | 1,287 | 1,296 | 1,437 | 1,587 | 1,486 | 1,334 | 1,172 |
| | { Rate | 9.4 | 9.3 | 10.2 | 11.0 | 10.1 | 8.8 | 7.2 |
| Victoria | { No. | 700 | 641 | 631 | 564 | 652 | 584 | 561 |
| | { Rate | 5.8 | 5.3 | 5.2 | 4.7 | 5.4 | 4.8 | 4.5 |
| Queensland | { No. | 503 | 489 | 508 | 460 | 495 | 440 | 464 |
| | { Rate | 10.0 | 9.6 | 9.9 | 8.9 | 9.4 | 8.3 | 8.6 |
| South Australia | { No. | 212 | 209 | 198 | 127 | 152 | 168 | 105 |
| | { Rate | 5.8 | 5.7 | 5.3 | 3.4 | 4.1 | 4.4 | 2.1 |
| West. Australia | { No. | 241 | 335 | 317 | 266 | 235 | 182 | 193 |
| | { Rate | 12.8 | 16.3 | 14.3 | 11.2 | 9.4 | 7.0 | 7.4 |
| Tasmania | { No. | 76 | 65 | 79 | 51 | 59 | 55 | * |
| | { Rate | 4.4 | 3.7 | 4.5 | 2.9 | 3.3 | 3.1 | * |
| Commonwealth | { No. | 3,019 | 3,035 | 3,165 | 3,055 | 3,079 | 2,763 | ... |
| | { Rate | 8.0 | 7.9 | 8.1 | 7.7 | 7.7 | 6.8 | ... |

* Not available, 19/3/09.

The above figures shew that there has been a decrease in serious crime, and, if the comparison be carried farther back, it will be found that the improvement has been considerable. This will be evident from an examination of the following figures, which shew the rate of committals per 10,000 persons in Australia at various periods since 1861:—

RATE OF COMMITTALS IN AUSTRALIA, 1861 to 1907.

| Year ... | ... | ... | ... | ... | 1861. | 1871. | 1881. | 1891. | 1901. | 1907. |
|-----------------------------------|-----|-----|-----|-----|-------|-------|-------|-------|-------|-------|
| Committals per 10,000 inhabitants | ... | ... | ... | ... | 22 | 14 | 12 | 11 | 8 | 6 |

In calculating the rate for 1907 it has been assumed that there has not been any change in the Tasmanian proportion since the year 1906.

The decline in proportion to population since 1861 has therefore been about 73 per cent.

§ 3. Superior Courts.

1. **Convictions at Superior Courts.**—The total number of convictions at superior courts, together with the rate per 10,000 of the population, is shown below for each of the years 1901 to 1907 :—

CONVICTIONS AT SUPERIOR COURTS, 1901 to 1907.

| State. | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------|--------|-------|-------|-------|-------|-------|-------|-------|
| N.S.W. ... | { No. | 730 | 775 | 896 | 890 | 819 | 707 | 629 |
| | { Rate | 5.4 | 5.6 | 6.3 | 6.2 | 5.6 | 4.7 | 4.0 |
| Victoria ... | { No. | 393 | 381 | 371 | 338 | 382 | 339 | 368 |
| | { Rate | 3.3 | 3.1 | 3.1 | 2.8 | 3.2 | 2.8 | 3.0 |
| Queensland | { No. | 281 | 249 | 269 | 242 | 288 | 249 | 248 |
| | { Rate | 5.6 | 4.9 | 5.2 | 4.7 | 5.5 | 4.7 | 4.6 |
| S. Australia ... | { No. | 98 | 80 | 100 | 109 | 85 | 92 | 74 |
| | { Rate | 2.7 | 2.2 | 2.7 | 2.9 | 2.3 | 2.4 | 1.9 |
| W. Australia | { No. | 151 | 132 | 191 | 182 | 161 | 150 | 176 |
| | { Rate | 8.0 | 6.4 | 8.6 | 7.7 | 6.4 | 5.8 | 6.7 |
| Tasmania ... | { No. | 39 | 28 | 51 | 26 | 24 | 32 | * |
| | { Rate | 2.3 | 1.6 | 2.9 | 1.5 | 1.3 | 1.8 | * |
| C'wealth ... | { No. | 1,692 | 1,645 | 1,878 | 1,787 | 1,759 | 1,569 | ... |
| | { Rate | 4.5 | 4.3 | 4.8 | 4.5 | 4.4 | 3.8 | ... |

* Not available, 19/3/09.

In considering the above figures allowance must be made for the various factors enumerated in a preceding paragraph. Only when this is done will the comparatively unenviable pre-eminence of Western Australia in regard to serious crime be explained. Tasmania, it will be noted, shews by far the smallest proportion of serious crime, while a reference to a preceding table discloses the fact that the island State is relatively the smallest consumer of alcoholic beverages. That a definite causal relation exists between the figures shewn by the respective tables is not, however, obvious.

2. **Offences for which Convictions were Recorded at Superior Courts.**—In the following table will be found a classification of the principal offences for which persons were convicted at the higher courts during each year of the period 1901 to 1906. Owing to lack of uniformity in the presentation of the returns for the several States the information is confined to the chief offences against the person only. The figures quoted refer to convictions in the Commonwealth during the period dealt with :—

CONVICTIONS FOR SERIOUS CRIME, SUPERIOR COURTS, 1901 to 1906.

| Offences. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. |
|---------------------------------------|-------|-------|-------|-------|-------|-------|
| Murder and attempts at ... | 24 | 31 | 32 | 34 | 32 | 35 |
| Manslaughter ... | 21 | 16 | 19 | 24 | 14 | 21 |
| Rape and crimes of lust ... | 113 | 92 | 90 | 97 | 96 | 70 |
| Other offences against the person ... | 274 | 243 | 244 | 225 | 256 | 239 |

The comparison necessarily closes with the year 1906, owing to non-receipt of returns from Tasmania for 1907.

While there has been no diminution in the convictions for murder and manslaughter there has been a considerable falling-off in the case of crimes of lust. The general total of convictions for all offences against the person shews a decline since 1901 of about 16 per cent.

3. **Capital Punishment.**—The table below gives the number of executions in each State during the period 1901 to 1907:—

EXECUTIONS, 1901 to 1907.

| State. | 1901. | 1902. | 1903 | 1904. | 1905. | 1906 | 1907. |
|-----------------------|-------|-------|------|-------|-------|------|-------|
| New South Wales ... | 3 | ... | 3 | 1 | ... | 1 | 3 |
| Victoria ... | ... | 2 | ... | 1 | ... | ... | ... |
| Queensland... | 5 | ... | 2 | ... | 2 | 3 | 1 |
| South Australia ... | ... | ... | ... | 1 | 1 | 1 | ... |
| Western Australia ... | ... | ... | ... | ... | 3 | 1 | 1 |
| Tasmania ... | ... | ... | ... | ... | ... | ... | ... |
| Commonwealth ... | 8 | 2 | 5 | 3 | 6 | 6 | 5 |

In the early days of the history of Australia the penalty of death was attached to a large number of offences, many of which at the present time would be dealt with in the lower or magistrates' courts. With the growth of settlement, and the general amelioration in social and moral conditions, the list was, however, considerably curtailed, and the existing tendency is practically to restrict death sentences to cases of murder. It may be remarked that in cases of rape, which is a capital offence in the Australian States, the penalty has been but sparingly inflicted during the last few years. Juries are reputed to be loth to convict on this charge, owing to the uncertainty whether sentence of death will be pronounced.

During the period 1861 to 1880 the average number of executions in the Commonwealth was nine, from 1881 to 1900 the average was six, while for the period 1901 to 1907 the figure stood at five.

§ 4. Prisons.

1. **Prison Accommodation and Prisoners in Gaol.**—The table below shews the number of prisons in each State and the accommodation therein at the end of 1907:—

PRISONS AND PRISON ACCOMMODATION, 1907.

| State. | Number of Prisons. | Accommodation in— | | Greatest No. in Confinement during Year. | Prisoners at End of Year. |
|-----------------------|--------------------|-------------------|--------|--|---------------------------|
| | | Separate Cells. | Wards. | | |
| New South Wales ... | 52 | 2,334 | 126 | 2,135 | 1,437 |
| Victoria ... | 16 | 1,515 | 984 | 1,170 | 916 |
| Queensland ... | 13 | 559 | 416 | * | 501 |
| South Australia ... | 11 | 810 | 271 | 314 | 255 |
| Western Australia ... | 28 | 647 | 195 | * | 502 |
| Tasmania ... | 2 | 261 | 25 | ... | 89 |
| Commonwealth ... | 122 | 6,126 | 2,017 | ... | 3,700 |

* Information not available.

The number of prisoners in gaol, exclusive of debtors, at the 31st December in each of the years 1901 to 1907, is given below. A separate line is added in each instance shewing the proportion per 10,000 of the population:—

PRISONERS IN GAOLS, 1901 to 1907.

| State. | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|--------------|-------|-------|-------|-------|-------|-------|-------|
| N.S.W. | { Number | 1,812 | 1,835 | 1,816 | 1,877 | 1,678 | 1,519 | 1,437 |
| | { Proportion | 13.3 | 13.2 | 12.8 | 13.0 | 11.4 | 10.1 | 9.3 |
| Victoria | { Number | 1,150 | 1,071 | 978 | 1,062 | 990 | 927 | 916 |
| | { Proportion | 9.6 | 8.8 | 8.1 | 8.8 | 8.2 | 7.6 | 7.4 |
| Q'land | { Number | 574 | 547 | 508 | 561 | 535 | 507 | 501 |
| | { Proportion | 11.5 | 10.7 | 9.9 | 10.8 | 10.2 | 9.5 | 9.3 |
| S. Aust. | { Number | 238 | 274 | 261 | 267 | 259 | 237 | 255 |
| | { Proportion | 6.6 | 7.5 | 7.1 | 7.2 | 6.9 | 6.2 | 6.6 |
| W. Aust. | { Number | 360 | 397 | 512 | 475 | 465 | 402 | 502 |
| | { Proportion | 19.1 | 19.3 | 23.1 | 20.1 | 18.6 | 15.5 | 19.1 |
| Tas. ... 30th June | { Number | 117 | 80 | 110 | 103 | 92 | 89 | 89 |
| | { Proportion | 6.8 | 4.6 | 6.2 | 5.8 | 5.1 | 5.0 | 5.0 |
| C'wealth. | { Number | 4,251 | 4,204 | 4,185 | 4,345 | 4,019 | 3,681 | 3,700 |
| | { Proportion | 11.2 | 10.9 | 10.7 | 11.0 | 10.0 | 9.0 | 8.9 |

From the preceding table it will be seen that the proportion to population of prisoners in gaol has fallen considerably during the last seven years, while, if the comparison be carried further back, the position is seen to be still more favourable, the prisoners in gaol in the Commonwealth numbering as much as sixteen per 10,000 of the population in 1891.

2. Improvement in Pænological Methods.—During recent years Australia, in common with most other civilised countries, has introduced considerable modifications and improvements in methods of prison management. Under the old régime punishment partook more or less of the character of reprisal for wrongdoing, and the idea of constituting the prison as a reformatory agency was in the background. But of recent years there has been an earnest attempt at effecting a moral reformation in the unfortunates who lapse into crime. This aspect of prison management has been specially prominent in New South Wales. As pointed out by the Comptroller-General of Prisons of that State, there are, however, certain directions in which improvements can be made. The danger and absurdity of sending drunkards to gaol has already been alluded to in a previous section, while present methods of dealing with vagrancy, and particularly with prostitution, have proved quite inadequate.

The general reorganisation of the New South Wales prison system may be said to date from the year 1896. Briefly stated, the chief reforms which have been introduced are as follows:—(a) Prevention of contamination consequent on evil association by the adoption of the "restricted association" scheme, under which prisoners are allowed to have as little intercourse with each other as possible, each prisoner having a separate cell, and mingling with other prisoners only at exercise or at work, and then under close supervision. (b) Careful classification of prisoners to avoid contact of minor or first offenders with the more hardened. (c) Better prison fare. (d) Abolition of solitary confinement in dark cells. (e) Lighting cells up to a reasonable hour at night and allowing well-conducted prisoners the privilege of reading interesting books. (f) Abolition of the practice of sending young children to gaol. (g) Attempt at scientific treatment of the habitual offender. (h) Provision for helping prisoners on leaving gaol to find work through the agency of the Discharged Prisoners' Aid Society.

In 1902 the system of finger-print identification of criminals was introduced, and by the year 1903 bureaux had been established in the various States for the exchange of records.

Space will not permit of more than a passing reference to the improvements brought about in prison management in the other States. In Victoria there is an excellent system of classification and allocation of prisoners to different gaols, while at the important penal establishment at Pentridge a careful segregation into no less than five distinct classes is carried out. In common with the other States the latest humane methods of accommodation and prison treatment have for some time been employed.

Queensland prisons have been considerably modernised during the last few years. The prison for females at Brisbane has been built on the radiating plan, and embodies the latest ideas in penological methods. Classification of prisoners has been fully carried out in the male and female divisions of Brisbane prison, and at the Stewart's Creek penal establishment. The construction of the buildings does not however permit of the plan being adopted in its entirety in all Queensland prisons.

Unusual circumstances have combined to keep crime at a low point in South Australia. In the first place there was never any transportation of criminals to the State, while in the earlier years of its history South Australian lawbreakers were transported elsewhere. The present system was drafted mainly on English and European lines by the late W. R. Boothby, C.M.G., and under his directions and that of his successor has been found to work admirably.

There is no special information available with regard to the prison systems of Western Australia and Tasmania.

§ 5. Civil Courts.

1. **Lower Courts.**—The transactions of the lower courts on the civil side during each of the last seven years are given in the table hereunder. As pointed out previously, the jurisdiction of the courts is by no means uniform in the various States. The figures, however, possess a certain value as indicating that resort to litigation is on the decline in Australasia:—

LOWER COURTS.—CIVIL CASES, 1901 to 1907.

| State. | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------|--------------|---------|---------|---------|---------|---------|---------|---------|
| N.S.W. | Cases No. | 19,989 | 24,629 | 25,592 | 23,102 | 22,497 | 20,573 | 26,548 |
| | Amt. judg. £ | | * | * | | | | 63,350 |
| Victoria | Cases No. | 17,646 | 20,421 | 22,012 | 22,046 | 26,393 | 25,320 | 26,255 |
| | Amount £ | 86,199 | 96,166 | 107,502 | 116,757 | 121,525 | 123,625 | 123,732 |
| Q'land... | Cases No. | 10,682 | 10,593 | 11,058 | 10,831 | 10,061 | 10,311 | 10,304 |
| | Amount £ | 44,004 | 41,522 | 43,242 | 39,022 | 36,553 | 36,408 | 35,576 |
| S. Aust. | Cases No. | 11,582 | 12,397 | 12,190 | 12,282 | 11,518 | 11,844 | 11,737 |
| | Amount £ | 36,640 | 37,345 | 30,173 | 36,857 | 30,335 | 29,123 | 31,804 |
| W. Aust. | Cases No. | 7,026 | 7,021 | 7,198 | 8,009 | 8,224 | 10,109 | 9,930 |
| | Amount £ | 61,977 | 47,432 | 50,112 | 50,264 | 53,681 | 62,556 | 57,000 |
| Tas. ... | Cases No. | 4,023 | 3,395 | 2,841 | 3,535 | 452 | 422 | † |
| | Amount £ | 21,990 | 19,087 | 17,230 | 19,247 | 25,106 | 18,202 | † |
| C'wealth | Cases No. | 70,948 | 78,456 | 80,891 | 79,855 | 79,145 | 78,579 | ... |
| | Amount† £ | 250,810 | 241,552 | 248,259 | 262,147 | 267,200 | 269,914 | ... |

* Not available. † Exclusive of New South Wales. ‡ Not available, 19/3/09.

The figures just given represent the returns from Petty Sessions Courts in New South Wales and Victoria, the Petty Debts Cases in Queensland, the Local Courts of South Australia and Western Australia, and the Court of Requests in Tasmania.

2. **Superior Courts.**—In the next table will be found the transactions on the civil side in the Superior Courts during each of the years 1901 to 1907.

The New South Wales returns are to some extent defective, as the figures quoted for amount of judgments include in the case of the Common Law jurisdiction of the Supreme Court the total judgment signed, while in the case of the other States the figures refer to sums actually adjudged after trial. For New South Wales, also, the transactions of district courts refer to the total amounts sued for, and not the sums actually awarded after trial. Statistically the chief importance of the table consists in the fact that it shews a marked decline in litigiousness in Australia:—

SUPERIOR COURTS—CIVIL CASES, 1901 to 1907.

| State. | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------|----------------|---------|---------|---------|---------|---------|---------|---------|
| N.S.W. | { Causes No. | 1,956 | 1,603 | 1,471 | 1,203 | 1,118 | 915 | 718 |
| | { Amt. judg. £ | 422,738 | 601,949 | 407,790 | 323,312 | 277,292 | 266,896 | 267,830 |
| Victoria | { Causes No. | 669 | 723 | 706 | 651 | 678 | 620 | 694 |
| | { Amount £ | 47,862 | 58,919 | 53,139 | 57,572 | 51,467 | 50,194 | 46,070 |
| Q'land | { Causes No. | 145 | 129 | 136 | 129 | 101 | 118 | 129 |
| | { Amount £ | 14,904 | 20,025 | 17,329 | 17,168 | 15,245 | 11,551 | 8,845 |
| Sth. Aus. | { Causes No. | 17 | 20 | 19 | 26 | 22 | 32 | 29 |
| | { Amount £ | 3,515 | 39,998 | 12,784 | 9,561 | 1,229 | 2,207 | 8,986 |
| W. Aus. | { Causes No. | 501 | 509 | 516 | 621 | 621 | 595 | 9,930 |
| | { Amount £ | 77,174 | 75,376 | 77,982 | 92,378 | 74,431 | 62,770 | 57,000 |
| Tas. | { Causes No. | 154 | 321 | 159 | 296 | 249 | 136 | * |
| | { Amount £ | 4,931 | 9,065 | 7,082 | 11,201 | 9,283 | 4,083 | * |
| Cwth.... | { Causes No. | 3,442 | 3,305 | 3,007 | 2,926 | 2,789 | 2,416 | ... |
| | { Amount £ | 571,124 | 805,332 | 576,106 | 511,192 | 423,947 | 397,701 | ... |

* Not available, 19/3/09.

3. **Divorces and Judicial Separations.**—The number of divorces and judicial separations in each State during the period 1901 to 1907 is shewn below:—

DIVORCES AND JUDICIAL SEPARATIONS, 1901 to 1907.

| State. | 1901. | | 1902. | | 1903. | | 1904. | | 1905. | | 1906. | | 1907. | |
|-----------------|-----------|----------------------|-----------|----------------------|-----------|----------------------|-----------|----------------------|-----------|----------------------|-----------|----------------------|-----------|----------------------|
| | Divorces. | Judicial Separat'ns. | Divorces. | Judicial Separat'ns. | Divorces. | Judicial Separat'ns. | Divorces. | Judicial Separat'ns. | Divorces. | Judicial Separat'ns. | Divorces. | Judicial Separat'ns. | Divorces. | Judicial Separat'ns. |
| N.S. Wales ... | 252 | 20 | 245 | 21 | 206 | 14 | 216 | 8 | 176 | 15 | 175 | 10 | 223 | 14 |
| Victoria ... | 83 | ... | 109 | ... | 101 | ... | 140 | 1 | 136 | 1 | 123 | 2 | 134 | ... |
| Queensland ... | 14 | ... | 8 | ... | 1 | 13 | 1 | 5 | 1 | 14 | 3 | 12 | 1 | ... |
| Sth. Aust. ... | 6 | ... | ... | ... | 10 | ... | 4 | ... | 6 | ... | 3 | 1 | 11 | ... |
| West. Aust. ... | 12 | 1 | ... | ... | 10 | 1 | 16 | ... | 11 | 1 | 18 | ... | 16 | ... |
| Tasmania ... | 11 | ... | 3 | ... | 3 | ... | 2 | ... | 2 | ... | 5 | ... | * | * |
| C'wealth ... | 378 | 21 | 373 | 21 | 338 | 16 | 391 | 10 | 336 | 18 | 338 | 16 | ... | ... |

* Not available, 19/3/09.

The average annual number of divorces and judicial separations in the Commonwealth at decennial periods from 1871 to 1900 and for the six years 1901 to 1906 is given hereunder:—

DIVORCES AND JUDICIAL SEPARATIONS, 1871 to 1906.

| | 1871-1880. | 1881-90. | 1891-1900. | 1901-6. |
|---------------------|------------|----------|------------|---------|
| Commonwealth | 29 | 70 | 358 | 376 |

The bulk of the divorces and judicial separations refer, as the table shews, to New South Wales and Victoria, the Acts of 1892 and 1889 in the respective States making the separation of the marriage tie comparatively easy. In some statistical works it is customary to compare the divorces in any year with the marriages in the same year. The comparison is, however, quite valueless, as there is no necessary connection between the figures. Some value would attach to a comparison of the number of divorces with the number of married people living, but the latter information cannot be obtained with accuracy except at Census periods.

4. **Probates.**—The number of probates and letters of administration granted, together with the value of the estates concerned, is shewn below for each State for the period 1901 to 1907:—

PROBATES AND LETTERS OF ADMINISTRATION, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------|---------|------------|------------|------------|------------|------------|------------|
| N.S.W. ... | Number | 2,657 | 2,782 | 2,767 | 2,850 | 2,804 | 2,852 |
| | Value £ | 7,033,459 | 5,807,620 | 7,179,832 | 6,155,963 | 7,714,416 | 7,529,437 |
| Victoria | Number | 3,846 | 3,976 | 3,884 | 3,827 | 3,853 | 3,982 |
| | Value £ | 6,527,235 | 7,571,482 | 6,074,077 | 5,762,084 | 6,003,478 | 6,424,738 |
| Q'land | Number | 594 | 627 | 710 | 588 | 584 | 602 |
| | Value £ | 1,594,425 | 1,078,931 | 2,617,348 | 1,513,237 | 1,016,495 | 1,794,742 |
| S. Aust. | Number | 927 | 913 | 919 | 964 | 902 | 1,020 |
| | Value £ | 1,457,376 | 1,790,102 | 2,464,011 | 2,056,612 | 1,294,963 | 2,041,280 |
| W. Aust. | Number | 313 | 347 | 399 | 367 | 406 | 476 |
| | Value £ | 615,729 | 458,037 | 703,071 | 422,515 | 676,920 | 544,245 |
| Tasmania | Number | 229 | 280 | 256 | 295 | 270 | 343 |
| | Value £ | 402,157 | 299,408 | 253,107 | 905,204 | 504,196 | 862,222 |
| C'wealth | Number | 8,566 | 8,875 | 8,935 | 8,891 | 8,819 | 9,275 |
| | Value £ | 17,630,381 | 17,035,500 | 19,291,556 | 16,815,615 | 17,210,473 | 19,196,664 |

As may naturally be expected, the figures in the above table giving the value of property left each year, shew considerable variations.

5. **Bankruptcies.**—The returns in bankruptcy during each of the last seven years are given hereunder.

For several reasons comparisons drawn from the figures in the following table are of little value. In the first place, the statements of assets and liabilities are notably unsatisfactory, particularly in regard to the former. Then, again, there is wide dissimilarity in regard to the laws in force in the various States and the method of procedure thereunder in connection with bankruptcy. Further, there are no means of knowing how many persons in each State who were in a bankrupt condition made private arrangements with their creditors either personally or by intervention of a solicitor. The figures quoted in the table exclude the private arrangements in Victoria and South Australia, and the liquidations in Queensland and Tasmania. The Tasmanian statements for the years 1901 and 1903 are defective, inasmuch as they do not include the whole of the assets and liabilities.

BANKRUPTCIES, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | |
|---------|---------------|-----------------|-----------------|---------|-----------|---------|---------|---------|
| N.S.W. | Number | 43 ^a | 45 ^a | 463 | 461 | 421 | 408 | 333 |
| | Liabilities £ | 207,092 | 281,204 | 230,429 | 440,063 | 289,220 | 179,740 | 219,669 |
| | Assets £ | 103,478 | 124,427 | 123,037 | 252,293 | 160,123 | 93,201 | 152,454 |
| Vic. | Number | 327 | 406 | 505 | 462 | 570 | 517 | 448 |
| | Liabilities £ | 216,108 | 364,630 | 210,056 | 387,882 | 235,773 | 231,823 | 196,879 |
| | Assets £ | 86,391 | 270,061 | 84,611 | 133,301 | 74,673 | 81,144 | 53,849 |
| Q'land | Number | 362 | 434 | 374 | 323 | 259 | 307 | 236 |
| | Liabilities £ | 99,207 | 88,311 | 70,916 | 93,235 | 61,827 | 45,583 | 42,343 |
| | Assets £ | 24,264 | 30,321 | 14,817 | 19,385 | 14,634 | 7,045 | 8,475 |
| S.Aust. | Number | 26 | 35 | 24 | 47 | 39 | 93 | 99 |
| | Liabilities £ | 36,000 | 40,798 | 15,221 | 34,370 | 11,630 | 59,412 | 59,631 |
| | Assets £ | 20,824 | 25,138 | 14,633 | 12,509 | 6,102 | 44,781 | 33,029 |
| W.A. | Number | 65 | 76 | 79 | 101 | 107 | 126 | 113 |
| | Liabilities £ | 34,532 | 51,543 | 34,952 | 62,487 | 51,418 | 59,364 | 48,927 |
| | Assets £ | 21,845 | 17,297 | 10,631 | 13,852 | 23,408 | 22,012 | 29,174 |
| Tas. | Number | 7 | 5 | 5 | 11 | 4 | 5 | * |
| | Liabilities £ | 2,439 | 6,018 | 1,242 | 6,792 | 1,019 | 2,340 | |
| | Assets £ | 508 | 3,792 | 33 | 3,486 | 187 | 1,440 | |
| Cwth. | Number | 1,225 | 1,414 | 1,450 | 1,405 | 1,400 | 1,454 | |
| | Liabilities £ | 596,368 | 825,509 | 562,846 | 1,024,829 | 850,937 | 573,267 | ... |
| | Assets £ | 257,310 | 471,036 | 247,762 | 440,356 | 279,127 | 249,623 | |

* Not available, 19/3/09.

6. **High Court of Australia.**—Under the provisions of section 71 of the Commonwealth Constitution Act, the judicial power of the Commonwealth is vested in a Federal Supreme Court, called the High Court of Australia, and in such other courts as the Parliament creates or invests with federal jurisdiction. The Federal High Court possesses both original and appellate jurisdiction, but so far its activities have been confined principally to the latter form. The powers of the court are defined in Chapter III. of the Constitution Act and in the Judiciary Act of 1903. At present the court consists of a Chief Justice and four other judges. Sittings of the court are held in the capitals of the various States as occasion may require. The following statement shews the transactions of the High Court from October, 1903, to 31st December, 1908:—

HIGH COURT.—TRANSACTIONS, 1903 to 1908.

| Items. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. |
|---|-------|-------|--------|--------|--------|--------|
| I. ORIGINAL JURISDICTION. | | | | | | |
| Number of writs issued ... | 3 | 35 | 16 | 23 | 38 | 30 |
| Number of causes entered for trial ... | 1 | 13 | 12 | 5 | 11 | 8 |
| Verdicts for plaintiffs ... | 1 | 8 | 11 | 5 | 7 | 4 |
| Verdicts for defendants ... | 1 | 5 | 1 | 1 | 4 | 5 |
| Otherwise disposed of ... | 1 | 7 | 3 | 6 | 17 | 11 |
| Amount of judgments... | £45 | £560 | £1,330 | £2,395 | £1,092 | £1,058 |
| II. APPELLATE JURISDICTION. | | | | | | |
| Number of appeals set down for hearing... | 1 | 47 | 89 | 93 | 72 | 87 |
| Number allowed ... | ... | 31 | 41 | 42 | 34 | 31 |
| Number dismissed ... | ... | 9 | 31 | 34 | 30 | 36 |
| Otherwise disposed of ... | ... | 7 | 17 | 17 | 8 | 20 |
| III. AMOUNT OF FEES COLLECTED. | | | | | | |
| Amount in each year ... | £58 | £450 | £523 | £566 | £523 | £558 |

§ 6. Cost of Administration of Justice.

The table below shews the expenditure from Consolidated Revenue during each of the last seven years in connection with the administration of justice in each of the States. Expenditure on police and prisons has been separately shewn. With regard to the figures quoted for "other" expenditure, a slight allowance has to be made for the fact that some extraneous expenditure has been included which it was found impossible to disentangle from the total, but the amount is in no instance large. Cost of buildings has been excluded from the return:—

EXPENDITURE ON JUSTICE, 1901 to 1907.

| State. | | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | £ | £ | £ | £ | £ | £ | £ |
| N.S. Wales | Police | 383,332 | 401,269 | 416,542 | 428,374 | 435,577 | 434,934 | 442,804 |
| | Gaols | 97,655 | 101,369 | 101,968 | 103,736 | 93,443 | 85,835 | 83,962 |
| | Other | 258,072 | 235,112 | 240,397 | 243,992 | 227,069 | 216,141 | 244,092 |
| Victoria ... | Police | 287,630 | 293,998 | 311,693 | 311,927 | 313,649 | 312,941 | 306,129 |
| | Gaols | 52,812 | 52,429 | 52,736 | 49,574 | 48,841 | 49,408 | 49,866 |
| | Other | 139,585 | 139,289 | 130,039 | 126,561 | 126,200 | 124,689 | 122,251 |
| Q'land ... | Police | 183,143 | 184,873 | 172,913 | 161,510 | 159,464 | 176,086 | *202,184 |
| | Gaols | 27,694 | 26,474 | 26,389 | 23,305 | 22,573 | 22,724 | 23,558 |
| | Other | 85,704 | 78,379 | 73,285 | 70,319 | 67,621 | 69,108 | 85,234 |
| S. Aust. ... | Police | 83,697 | 84,874 | 84,109 | 85,090 | 82,419 | 85,016 | 87,374 |
| | Gaols | 15,873 | 15,806 | 16,094 | 16,501 | 16,599 | 17,232 | 15,535 |
| | Other | 31,537 | 31,995 | 29,889 | 29,342 | 29,905 | 30,423 | 29,169 |
| W. Aust. ... | Police | 119,310 | 123,024 | 130,312 | 128,628 | 126,661 | 126,276 | 125,440 |
| | Gaols | 25,625 | 22,727 | 25,792 | 29,248 | 31,610 | 32,719 | 32,206 |
| | Other | 69,901 | 64,503 | 70,932 | 63,889 | 64,746 | 64,607 | 61,533 |
| Tasmania | Police | 38,412 | 39,222 | 37,833 | 36,720 | 36,537 | 35,086 | 37,152 |
| | Gaols | 6,035 | 5,828 | 5,765 | 5,596 | 5,893 | 5,731 | 5,465 |
| | Other | 18,592 | 20,342 | 18,684 | 18,911 | 17,267 | 20,911 | 18,610 |
| C'wealth | Police | 1,095,524 | 1,128,160 | 1,153,402 | 1,152,249 | 1,154,307 | 1,170,339 | 1,201,083 |
| | Gaols | 225,694 | 221,431 | 228,744 | 227,960 | 218,959 | 213,649 | 210,592 |
| | Other | 593,391 | 569,620 | 563,226 | 553,014 | 532,908 | 525,879 | 560,889 |

* Includes grant of £20,000 in aid of Superannuation Fund.

The expenditure shewn in the foregoing table is that expended by the State Governments only, and does not include expenditure in connection with the Federal High Court, which is shewn below for the period 1903-4 to 1907-8.

EXPENDITURE ON FEDERAL HIGH COURT

| Year. | Amount. | Year. | Amount. |
|---------------|---------|---------------|---------|
| | £ | | £ |
| 1903-4 | 7,814 | 1906-7 | 20,383 |
| 1904-5 | 13,601 | 1907-8 | 23,230 |
| 1905-6 | 15,272 | | |

For the purposes of comparison the figures in the table on page 932 have been reduced to a population basis, and the results are given in the table hereunder:—

EXPENDITURE ON JUSTICE PER INHABITANT, 1901 to 1907.

| State. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------|----------|-------|-------|-------|-------|-------|-------|
| | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. |
| N.S. Wales ... | { Police | 5 7 | 5 9 | 5 11 | 5 11 | 5 9 | 5 9 |
| | { Gaols | 1 5 | 1 6 | 1 5 | 1 5 | 1 2 | 1 1 |
| | { Other | 3 9 | 3 5 | 3 5 | 3 5 | 3 1 | 2 10 |
| Victoria ... | { Police | 4 9 | 4 10 | 5 2 | 5 2 | 5 2 | 5 1 |
| | { Gaols | 0 11 | 0 10 | 0 11 | 0 10 | 0 10 | 0 10 |
| | { Other | 2 4 | 2 4 | 2 2 | 2 1 | 2 1 | 2 0 |
| Queensland ... | { Police | 7 4 | 7 3 | 6 9 | 6 3 | 6 1 | 6 7 |
| | { Gaols | 1 1 | 1 0 | 1 0 | 0 11 | 0 10 | 0 10 |
| | { Other | 3 5 | 3 1 | 2 10 | 2 8 | 2 7 | 2 7 |
| S. Australia ... | { Police | 4 7 | 4 8 | 4 7 | 4 7 | 4 5 | 4 6 |
| | { Gaols | 0 11 | 0 10 | 0 11 | 0 11 | 0 11 | 0 11 |
| | { Other | 1 9 | 1 9 | 1 8 | 1 7 | 1 7 | 1 7 |
| W. Australia... | { Police | 12 8 | 12 0 | 11 9 | 10 11 | 10 1 | 9 9 |
| | { Gaols | 2 9 | 2 2 | 2 4 | 2 6 | 2 6 | 2 6 |
| | { Other | 6 4 | 6 3 | 6 5 | 5 5 | 5 2 | 5 0 |
| Tasmania ... | { Police | 4 6 | 4 6 | 4 3 | 4 1 | 4 1 | 3 11 |
| | { Gaols | 0 8 | 0 8 | 0 8 | 0 7 | 0 8 | 0 8 |
| | { Other | 2 2 | 2 4 | 2 1 | 2 1 | 1 11 | 2 4 |
| C'wealth ... | { Police | 5 9 | 5 10 | 5 11 | 5 10 | 5 9 | 5 9 |
| | { Gaols | 1 2 | 1 2 | 1 2 | 1 2 | 1 1 | 1 0 |
| | { Other | 3 1 | 3 0 | 2 11 | 2 10 | 2 8 | 2 7 |

The total expenditure in the Commonwealth in connection with the administration of justice has, therefore, fallen from ten shillings per inhabitant in 1901 to nine shillings and fivepence in 1907. Police expenditure works out to exactly the same average for the two years in question, the average for gaols is about twopence per head less, while the expenditure on courts and the remaining machinery of justice has fallen by fivepence per head.

SECTION XXIV.

PUBLIC BENEVOLENCE.

§ 1. Introductory.

1. **General.**—Charity and charitable effort in Australia may be classified under three headings, viz.:—(1) State; (2) public; (3) private. To the first belong all institutions wholly provided for by the State; examples are the lunatic asylums in the various States, the Government hospitals in Western Australia, and the Government asylums for infirm in New South Wales. The second class includes public institutions of two kinds, viz.:—(i.) Institutions partially subsidised by the State or State endowed, but receiving also private aid, and (ii.) those wholly dependent upon private aid. To the former division belong such institutions as the Melbourne and other large metropolitan hospitals. Of the latter examples are institutions established and endowed by individuals for the benefit of the needy generally. To the third class belong all charitable movements of a private or special character.

A more or less accurate statistical account is possible in classes (i.) and (ii.), but in regard to (iii.) it may be said that, for obvious reasons, no tabulation is possible. Public response to special appeals and summary relief in kind, often considerable, is nevertheless not statistically recorded. Hospitals, orphanages, homes, benevolent asylums, etc., form, of course, the main channels in which the current of charity flows. There are, nevertheless, numerous other and minor charities, perhaps less definitely established and less frequently noticed, which mark the course and measure the amount of a considerable volume of private beneficence. In institutions which receive Government aid management and finance are usually relegated to executive bodies, ordinarily elected on a democratic basis.

The distribution of wealth in the Australian Commonwealth, and the generally favourable condition of Australia as regards scope for the exercise of natural ability, operate to prevent the development of a permanent pauper class, and at the same time lessen in a dual way the burden of charity. It does this latter by increasing, on the one hand, the number of people whose prosperity enables them to relieve the indigent and unfortunate, and by reducing, on the other, the number who need assistance. Enactments of States Legislatures have decreed short hours and a liberal holiday allowance for large numbers of persons engaged in industrial and other pursuits, and, even in occupations not covered by Act of Parliament, the general conditions of employment often provide a considerable amount of leisure. This, and an equable climate, enable the community to spend much of its time in the open air, thus reducing the ravages of disease and the scourge of epidemic. No poor-rate is levied in Australia, and Government aid without return is required only for the aged and disabled. The only States which have had an old-age pension system are New South Wales and Victoria; but in June, 1908, legislation by the Commonwealth Parliament (Invalid and Old Age Pensions Act, No. 17 of 1908) provided for the payment of old-age pensions throughout the Commonwealth as from the 1st July, 1909, or such earlier date as may be enacted, and the Old Age Pensions Appropriation Act (No. 18 of 1908) appropriated £750,000 for invalid and old-age pensions.

To meet temporary conditions, or rather what ought to be temporary conditions, various relief works have been started from time to time, in which the able-bodied who may be forced to seek official relief are required to make some return for the assistance afforded. In the past, attempts to relieve the unemployed have led to large expenditures, but at the present time the entire scheme of such relief is on an altogether more satisfactory footing.

In each of the States the care of the insane is undertaken by the Government. Their condition has been steadily ameliorated by progress in psychiatry.

Young children deprived of parental training and control are cared for and educated in "orphanages" and "industrial schools," and those who have been guilty of some specific offence, or who are beyond adequate parental control, are committed to "reformatories."

In common with other civilised communities, relief funds have from time to time been organised for famine-stricken territories (*e.g.*, China, India, etc.), or for places where plague, flood, fire, or earthquake has shewn the need of urgent relief. Proper statistical records of these, however, are not available.

Not uncommonly the Daily Press accepts the duties of collectorship in charity appeals.

2. Charity Reforms.—Lately, the evident overlapping of charitable effort has led to discussion regarding the methods of collection and distribution. The proportion absorbed in expenses, alleged to be unduly large, has also given rise to a desire for improved administration. An important conference of representatives of the charitable associations was held in Melbourne in September, 1908. It was the initiation of an effort to systematically digest the experiences of the committees of management of the various hospitals and kindred institutions. These obtain their revenue from State and municipal subsidies, from proceeds of concerts, entertainments, etc., from organised public collection, from private contributions and bequests, and from patients. Collectors are in some cases paid, in others not. Frequently, institutions similar in character enter into competition for subscriptions. The result is overlapping, both in organisation and expenditure. It has been officially stated that far too small a proportion of the money which the generosity of subscribers furnishes benefits the real sufferers. The public eleemosynary impulse is probably also prejudiced by the utilisation of institutions for the poor or destitute by classes who can afford to pay for medical or surgical treatment, as in the case, for example, of hospitals. Organisation and co-ordination would make available for the sick and needy large sums which are now spent in the upkeep of redundant buildings and the maintenance of unnecessary officers and servants. Societies have accordingly been formed to prevent overlapping.

Other proposed reforms take into account the origins of poverty and crime, seeking to remedy the underlying causes. It is becoming widely recognised that better houses and workrooms and improved sanitation do much to ameliorate the condition of the lower strata of society. Legislative measures by States and municipalities enforce, to some extent, cleanliness and healthy modes of life. By Factories Legislation, Pure Food and Health Acts, provisions for safeguarding dangerous machinery and permitting only competent persons to be employed thereon, it is hoped to secure such improvement of social conditions as will root out the causes of poverty and crime.

3. Difficulties of General Tabulation.—State differences in the organisation of charities necessitate the separate treatment of each State, but certain of the larger features of the statistics of benevolence may be combined for the whole Commonwealth. Combinations for the whole of Australia for the seven years ended 1907 are given for hospitals, benevolent asylums, orphanages, and hospitals for the insane. Satisfactory tabulation for other charities is not yet possible. Where the combination has been for dissimilar periods the nearest years have been taken.

§ 2. The Larger Charities of Australia.

1. **Hospitals.**—Most of the State capitals have several large and well-equipped hospitals, and there is at least one in every important town. In large centres there are hospitals for "specials"—consumptives, women, children, infectious diseases, incurables, etc. The hospitals in Australia, with the admissions, patients treated, deaths, and expenditure, are shewn in the following table; but the figures include (except number of hospitals) for 1901, 1902, 1903, and 1904, only the Adelaide Hospital among South Australian institutions:—

AUSTRALIAN HOSPITALS, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------------|----------|---------|---------|---------|---------|---------|---------|
| Number of institutions ... | 285 | 293 | 302 | 304 | 308 | 313 | 322 |
| Number of beds ... | 10,526 | 10,808 | 11,084 | 11,384 | 11,778 | 12,108 | 12,613 |
| Admissions during year ... | 84,993 | 87,449 | 89,991 | 89,650 | 94,117 | 99,308 | 107,438 |
| Indoor patients treated ... | 91,147 | 98,412 | 96,608 | 96,748 | 101,200 | 106,488 | 114,848 |
| Deaths ... | 7,114 | 7,489 | 7,581 | 6,967 | 7,476 | 7,627 | 8,291 |
| Expenditure ... | £538,920 | 571,167 | 595,689 | 582,761 | 602,394 | 612,628 | 702,228 |

In addition to those admitted to the institutions there are large numbers of out-patients. The exact number of these cannot be given, but 250,000 would be a rough estimate of distinct cases for 1907.

The leading facts regarding hospitals in the States are summarised in the tables which follow:—

HOSPITALS IN NEW SOUTH WALES, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|----------|---------|---------|---------|---------|---------|---------|
| Number of institutions ... | 118 | 119 | 128 | 130 | 132 | 135 | 136 |
| Number of beds ... | 2,391 | 3,523 | 3,744 | 3,935 | 4,088 | 4,252 | 4,345 |
| Number admitted ... | 30,943 | 32,181 | 34,704 | 35,916 | 36,187 | 39,012 | 42,119 |
| Total No. under treatment | 33,012 | 34,426 | 37,011 | 38,430 | 38,646 | 41,552 | 44,667 |
| Deaths ... | 2,477 | 2,594 | 2,660 | 2,431 | 2,529 | 2,576 | 2,767 |
| OUTDOOR RELIEF: Dis- | | | | | | | |
| distinct cases treated— | | | | | | | |
| Ordinary ... | 80,259 | 63,606 | 68,146 | 77,039 | 78,002 | 83,390 | 94,043 |
| Dental Hospital ... | — | 1,228 | 8,335 | 12,266 | 12,395 | 6,181 | 7,689 |
| EXPENDITURE— | | | | | | | |
| Building and repairs | £ 17,354 | 25,896 | 23,749 | 32,366 | 34,541 | 26,815 | 40,260 |
| Maintenance (including | | | | | | | |
| salaries and wages and | | | | | | | |
| outdoor relief) | £141,399 | 152,316 | 172,692 | 168,557 | 167,815 | 179,431 | 193,419 |
| Miscellaneous ... | £ 17,365 | 15,971 | 14,674 | 17,575 | 22,808 | 18,666 | 20,630 |
| Total ... | £176,118 | 194,183 | 211,115 | 218,498 | 225,164 | 224,912 | 254,309 |

HOSPITALS IN VICTORIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------------|----------------------------|---------|---------|---------|---------|---------|---------|
| Number of institutions ... | *51 | *51 | *51 | *51 | *52 | *53 | *53 |
| Number of beds ... | 3,234 | 3,310 | 3,336 | 3,395 | 3,458 | 3,627 | 3,727 |
| Number admitted | (Male) 13,351 | 13,170 | 12,992 | 13,320 | 13,711 | 14,163 | 14,526 |
| | (Female) 10,241 | 10,274 | 11,073 | 11,507 | 11,620 | 12,457 | 13,035 |
| Total number under treatment | (Male) 14,732 | 14,518 | 14,377 | 14,801 | 15,191 | 15,603 | 15,945 |
| | (Female) 11,047 | 11,076 | 11,914 | 12,412 | 12,565 | 13,407 | 14,047 |
| Deaths... | (Male) 1,549 | 1,634 | 1,642 | 1,526 | 1,619 | 1,663 | 1,666 |
| | (Female) 823 | 785 | 844 | 859 | 806 | 936 | 974 |
| OUTDOOR RELIEF— | | | | | | | |
| Distinct cases treated ... | 63,161 | 60,905 | 58,381 | 64,470 | 63,277 | 61,408 | 79,695 |
| Total attendances ... | 300,037 | 212,094 | 208,761 | 226,300 | 217,286 | 222,144 | 309,219 |
| EXPENDITURE— | | | | | | | |
| Buildings & extraordinary repairs ... | £ 15,306 | 12,253 | 21,936 | 12,783 | 21,170 | 19,851 | 31,293 |
| Main-tenance | (Ordinary repairs) £ 3,493 | 3,427 | 2,273 | 2,225 | 2,108 | 2,274 | 2,866 |
| | (All other) £ 124,901 | 136,064 | 137,101 | 133,427 | 136,950 | 143,932 | 146,794 |
| Miscellaneous (incl. int'st) | £ 1,206 | 891 | 1,216 | 1,915 | 2,109 | 1,226 | 4,608 |
| Total ... | £ 144,906 | 152,635 | 162,526 | 150,350 | 162,337 | 167,283 | 185,561 |

* Nine of the general hospitals included here are also benevolent asylums.

HOSPITALS IN QUEENSLAND, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---|----------------|---------|---------|---------|---------|---------|---------|
| Number of institutions ... | 71 | 72 | 75 | 77 | 75 | 76 | 78 |
| Number of beds ... | 2,349 | 2,425 | 2,467 | 2,512 | 2,517 | 2,499 | 2,472 |
| Number admitted | (Male) 12,779 | 12,533 | 12,365 | 11,831 | 12,190 | 12,335 | 13,633 |
| | (Female) 5,828 | 6,445 | 6,526 | 6,426 | 6,653 | 6,630 | 6,969 |
| Total number under treatment | (Male) 13,627 | 13,452 | 13,240 | 12,753 | 13,031 | 13,205 | 14,470 |
| | (Female) 6,161 | 6,803 | 6,961 | 6,920 | 7,092 | 7,053 | 7,410 |
| Deaths... | (Male) 942 | 1,039 | 980 | 859 | 981 | 920 | 998 |
| | (Female) 337 | 398 | 433 | 366 | 375 | 349 | 426 |
| EXPENDITURE— | | | | | | | |
| Maintenance ... | £ 111,958 | 110,916 | 114,294 | 104,913 | 100,670 | 106,679 | 115,828 |
| Administration | £ 6,671 | 6,671 | 6,179 | 6,082 | 6,173 | 4,961 | 5,860 |
| Extraordinary (chiefly for buildings) ... | £ 12,339 | 7,541 | 5,480 | 17,412 | 6,655 | 3,223 | 9,185 |
| Total ... | £ 124,297 | 125,128 | 125,953 | 128,407 | 113,498 | 114,863 | 130,873 |

HOSPITALS IN SOUTH AUSTRALIA, 1901 to 1907.

| Particulars. | 1901.* | 1902.* | 1903.* | 1904.* | 1905.† | 1906.‡ | 1907.‡ |
|------------------------------|----------------|--------|--------|--------|--------|--------|--------|
| Number of institutions ... | 1 | 1 | 1 | 1 | 9 | 9 | 13 |
| Number of beds ... | 320 | 320 | 284 | 284 | 481 | 501 | 758 |
| Number of ad-missions | (Male) 1,992 | 1,786 | 1,666 | 1,421 | 2,350 | 2,448 | 3,353 |
| | (Female) 1,379 | 1,407 | 1,389 | 1,303 | 1,644 | 1,756 | 2,306 |
| Total number under treatment | (Male) 3,554 | (1,905 | 1,774 | 1,529 | 2,504 | 2,609 | 3,595 |
| | (Female) 1,497 | 1,463 | 1,380 | 1,380 | 1,761 | 1,867 | 2,498 |
| Deaths ... | 282 | 264 | 291 | 265 | 361 | 330 | 527 |
| Out-patients (attendances) | 17,233 | 20,233 | 20,059 | 20,818 | 26,404 | 26,111 | 27,209 |
| Expenditure ... | £ 20,104 | 19,065 | 17,542 | 15,491 | 24,071 | 24,826 | 46,192 |

* Adelaide Hospital only; particulars of other hospitals not being available. † Government hospitals. ‡ Figures for 1907 include, for the first time, five subsidised hospitals.

HOSPITALS* IN WESTERN AUSTRALIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Number of institutions ... | 24 | 29 | 27 | 25 | 27 | 28 | 28 |
| Admissions ... { Male | 5,066 | { 4,621 | 4,584 | 4,344 | 4,778 | 4,773 | 4,755 |
| ... { Female |  |  |  |  |  |  |  | 1,284 | 1,438 | 1,499 | 1,611 | 1,931 | 2,376 |
| Total number under treatment ... { Male | 4,124 | 4,864 | 4,872 | 4,649 | 5,091 | 5,101 | 5,074 |
| ... { Female | 1,266 | 1,371 | 1,536 | 1,601 | 1,734 | 2,024 | 2,522 |
| Deaths ... { Male | 383 | 422 | 373 | 381 | 400 | 423 | 453 |
| ... { Female | 91 | 102 | 103 | 121 | 130 | 161 | 211 |
| EXPENDITURE— | | | | | | | |
| Salaries ... | £ 20,764 | 22,685 | 23,589 | 22,405 | 23,570 | 23,268 | 22,450 |
| Other ... | £ 29,877 | 31,828 | 31,432 | 30,341 | 29,906 | 31,028 | 38,146 |
| Total ... | £ 50,641 | 54,513 | 55,021 | 52,746 | 53,476 | 54,296 | 60,596 |

* These particulars relate to Government Hospitals, and those at Perth and Fremantle only; particulars of other hospitals not being available.

HOSPITALS IN TASMANIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Number of institutions ... | 13 | 14 | 13 | 13 | 13 | 13 | 14 |
| Number of beds ... | 465 | 437 | 453 | 458 | 432 | 429 | 458 |
| Admissions ... { Male | 1,985 | 2,149 | 1,900 | 1,216 | 1,965 | 2,225 | 2,476 |
| ... { Female |  |  |  |  |  |  |  | 1,429 | 1,599 | 1,354 | 867 | 1,408 | 1,578 | 1,890 |
| Total number under treatment ... { Male | 2,099 | 2,258 | 2,021 | 1,332 | 2,084 | 2,374 | 2,617 |
| ... { Female | 1,525 | 1,708 | 1,439 | 941 | 1,501 | 1,693 | 2,003 |
| Deaths ... { Male | 147 | 142 | 150 | 92 | 182 | 157 | 170 |
| ... { Female | 83 | 109 | 105 | 67 | 93 | 112 | 99 |
| Out-patients ... Cases | 3,687 | 4,566 | 3,467 | 2,711 | 4,265 | 5,297 | 5,212 |
| EXPENDITURE— | | | | | | | |
| Buildings and repairs | £ 1,304 | 889 | 598 | 783 | 902 | 1,451 | 1,244 |
| Maintenance ... | £ 17,660 | 23,642 | 19,243 | 12,881 | 18,464 | 17,831 | 18,711 |
| Miscellaneous ... | £ 3,790 | 1,112 | 3,691 | 3,605 | 4,482 | 7,166 | 4,742 |
| Total ... | £ 22,754 | 25,643 | 23,532 | 17,269 | 23,848 | 26,448 | 24,697 |

2. **Benevolent and Destitute Asylums.**—In some of the institutions for the relief of the destitute, persons of all ages are admitted, as in the case of the Adelaide Destitute Asylum, but there is in general a well-marked division, orphanages being provided for the young, and benevolent asylums for the aged. In the summaries which follow, only the larger institutions which come wholly or chiefly under one or other of these heads are included:—

BENEVOLENT AND DESTITUTE ASYLUMS, COMMONWEALTH, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------|-----------|---------|---------|---------|---------|---------|---------|
| Number of institutions ... | 19 | 19 | 20 | 22 | 22 | 22 | 22 |
| Number of beds ... | 8,102 | 7,707 | 8,004 | 8,341 | 8,689 | 8,678 | 8,763 |
| Admissions ... | 7,389 | 7,824 | 8,307 | 8,142 | 7,560 | 8,030 | 7,225 |
| Total inmates during year ... | 16,298 | 15,481 | 15,956 | 16,420 | 16,085 | 16,571 | 16,586 |
| Deaths ... | 1,412 | 1,389 | 1,432 | 1,520 | 1,441 | 1,486 | 1,457 |
| Expenditure ... | £ 146,900 | 154,699 | 174,316 | 171,080 | 164,908 | 176,823 | 167,511 |

GOVERNMENT ASYLUMS FOR INFIRM IN NEW SOUTH WALES, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|----------|--------|--------|--------|--------|--------|--------|
| Number of institutions ... | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Number of beds ... | 4,093 | 3,521 | 3,730 | 3,948 | 4,079 | 4,088 | 4,088 |
| Number admitted | 4,075 | 3,964 | 4,903 | 4,480 | 4,265 | 4,616 | 3,825 |
| { Male | 621 | 622 | 556 | 738 | 524 | 542 | 567 |
| { Female | 3,330 | 2,870 | 3,329 | 3,529 | 3,490 | 3,309 | 3,088 |
| Inmates at end of year ... | 768 | 640 | 731 | 768 | 758 | 722 | 721 |
| { Male | 768 | 697 | 722 | 868 | 726 | 805 | 759 |
| { Female | ... | ... | ... | ... | ... | ... | ... |
| Deaths ... | 768 | 697 | 722 | 868 | 726 | 805 | 759 |
| EXPENDITURE— | | | | | | | |
| Buildings and repairs | £ 2,166 | 2,008 | 3,075 | 2,566 | 2,272 | 1,946 | 2,178 |
| Maintenance | £ 63,751 | 65,664 | 68,265 | 81,044 | 64,137 | 71,345 | 54,173 |
| Miscellaneous | £ 2,541 | 2,404 | 12,354 | 251 | 7,708 | 6,727 | 5,047 |
| Total ... | £ 68,458 | 70,076 | 83,694 | 83,861 | 74,117 | 80,018 | 61,398 |

BENEVOLENT ASYLUMS,* VICTORIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------------|----------|--------|--------|--------|--------|--------|--------|
| Number of institutions ... | 6 | 6 | 7 | 8 | 8 | 8 | 8 |
| Number of beds ... | 2,435 | 2,437 | 2,649 | 2,741 | 2,730 | 2,710 | 2,710 |
| Number admitted | 967 | 1,192 | 1,078 | 1,010 | 912 | 1,041 | 968 |
| { Male | 329 | 398 | 374 | 343 | 359 | 319 | 383 |
| { Female | 2,648 | 2,641 | 2,770 | 2,723 | 2,638 | 2,745 | 2,679 |
| Total number of inmates during year | 1,026 | 1,029 | 1,119 | 1,137 | 1,136 | 1,110 | 1,144 |
| { Male | 303 | 279 | 334 | 310 | 333 | 313 | 298 |
| { Female | 94 | 135 | 136 | 123 | 129 | 140 | 152 |
| OUTDOOR RELIEF— | | | | | | | |
| Distinct cases ... | 1,229 | 2,887 | 2,384 | 2,330 | 2,128 | 1,942 | 1,763 |
| Total attendances ... | 39,824 | 28,336 | 28,999 | 25,408 | 23,390 | 21,253 | 16,304 |
| EXPENDITURE— | | | | | | | |
| Bldgs. & extraord'y repairs | £ 768 | 537 | 601 | 441 | 1,556 | 1,458 | 4,022 |
| Mainten'nce | £ 808 | 742 | 487 | 693 | 545 | 884 | 1,112 |
| { Ord'y repairs | £ 29,512 | 30,431 | 30,275 | 30,571 | 29,474 | 29,710 | 29,248 |
| { All other | £ 4,468 | 2,988 | 3,174 | 3,018 | 2,658 | 2,534 | 2,049 |
| Outdoor relief ... | £ 122 | 90 | 130 | 309 | 479 | 318 | 371 |
| Miscellaneous (incl. int.) | £ 122 | 90 | 130 | 309 | 479 | 318 | 371 |
| Total ... | £ 35,678 | 34,788 | 34,667 | 35,032 | 34,712 | 34,904 | 36,802 |

* Nine of the general hospitals are also benevolent asylums, and figures for them are included in the statistics for hospitals.

ADULT INMATES, DESTITUTE ASYLUM,* ADELAIDE, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------|----------|--------|--------|--------|--------|--------|--------|
| Total adult inmates during year | 705 | 686 | 694 | 695 | 655 | 664 | 663 |
| Av'ge number of adult inmates | 409 | 431 | 428 | 420 | 402 | 412 | 406 |
| Number of deaths of adults ... | 70 | 79 | 76 | 95 | 76 | 80 | 92 |
| Total expenditure ... | £ 18,306 | 20,450 | 22,806 | 22,903 | 20,483 | 19,969 | 18,387 |

* The institution includes lying-in and children's departments; the expenditure is for the institution, that for the various departments not being separately furnished.

BENEVOLENT ASYLUMS, QUEENSLAND, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|----------|--------|--------|--------|--------|--------|--------|
| Number of institutions ... | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Number of beds ... | 1,104 | 1,266 | 1,109 | 1,109 | 1,243 | 1,243 | 1,259 |
| Number admitted... { Male | 490 | 628 | 464 | 433 | 448 | 432 | 317 |
| { Female | 151 | 168 | 124 | 100 | 119 | 111 | 135 |
| Total number of in- { Male | 1,363 | 1,516 | 1,500 | 1,436 | 1,455 | 1,482 | 1,359 |
| mates during year { Female | 357 | 366 | 348 | 320 | 319 | 329 | 350 |
| Deaths ... { Male | 158 | 128 | 151 | 117 | 143 | 119 | 135 |
| { Female | 22 | 19 | 25 | 18 | 18 | 28 | 25 |
| EXPENDITURE— | | | | | | | |
| Building ... | £ 1,409 | 173 | 296 | 164 | 219 | 243 | 2,356 |
| Furniture ... | £ 33 | 25 | 78 | 52 | 32 | 26 | 89 |
| Maintenance ... | £ 19,960 | 19,091 | 22,741 | 17,689 | 18,497 | 18,405 | 18,509 |
| Outdoor relief ... | £ 13,377 | 20,056 | 21,332 | 21,967 | 24,774 | 28,988 | 34,497 |
| Miscellaneous ... | £ 80 | 50 | 76 | 311 | 445 | 1,676 | 301 |
| Total ... | £ 34,859 | 39,395 | 44,523 | 40,183 | 43,967 | 49,338 | 55,752 |

HOMES FOR THE DESTITUTE,* WESTERN AUSTRALIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------|---------|--------|--------|--------|--------|--------|--------|
| Number of institutions ... | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
| Number of beds ... | 470 | 483 | 516 | 543 | 537 | 537 | 706 |
| Admissions ... { Male | 647 | 719 | 653 | 856 | 811 | 862 | 601 |
| { Female | 109 | 133 | 155 | 182 | 122 | 107 | 429 |
| Total number of in- { Male | 947 | 1,059 | 1,020 | 1,275 | 1,256 | 1,325 | 1,134 |
| mates during year { Female | 168 | 186 | 224 | 251 | 195 | 174 | 497 |
| Deaths ... { Male | 56 | 77 | 60 | 74 | 78 | 67 | 85 |
| { Female | 11 | 4 | 4 | 10 | 14 | 14 | 3 |
| State expenditure ... | £ 7,896 | 10,431 | 11,432 | 12,004 | 12,112 | 12,563 | 13,559 |

* One of these institutions includes a lying-in department.

3. **Orphanages, Industrial Schools, etc.**—The organisation of charitable effort varies greatly in regard to orphans and waifs. In many institutions shelter and some form of industrial training is offered to destitute children of all classes, whether orphans or not, while some of those styled orphanages do not confine their relief to orphans strictly so called. The figures in the next table are those for institutions where, it is believed, the principal effort is on behalf of those who are really orphans:—

ORPHANAGES IN COMMONWEALTH, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Number of institutions ... | 30 | 30 | 32 | 35 | 35 | 35 | 35 |
| Number of beds ... | *2,853 | *2,989 | †2,379 | †2,732 | †2,781 | †2,848 | 2,946 |
| Admissions ... | 1,207 | 1,242 | 1,305 | 1,328 | 1,286 | 1,333 | 1,465 |
| Total No. inmates during year | 3,860 | 4,074 | 4,324 | 4,772 | 4,887 | 4,868 | 5,081 |
| Deaths ... | 7 | 5 | 20 | 11 | 17 | 15 | 17 |
| Expenditure ... | 56,178 | 59,997 | 60,865 | 60,295 | 60,564 | 61,098 | 62,439 |

* Beds in institutions in Tasmania not included.

† Beds in institutions in New South Wales and Tasmania not included.

ORPHANAGES, NEW SOUTH WALES, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Number of institutions ... | 9 | 9 | 10 | 11 | 11 | 11 | 11 |
| Admissions ... | { Male 58 | { Male 57 | { Male 74 | { Male 83 | { Male 81 | { Male 93 | { Male 91 |
| | { Female 133 | { Female 161 | { Female 201 | { Female 164 | { Female 172 | { Female 160 | { Female 171 |
| Total number under care | { Male 220 | { Male 238 | { Male 277 | { Male 347 | { Male 351 | { Male 373 | { Male 360 |
| | { Female 458 | { Female 567 | { Female 651 | { Female 594 | { Female 622 | { Female 636 | { Female 560 |
| Deaths ... | { Male ... | { Male ... | { Male ... | { Male ... | { Male ... | { Male 2 | { Male ... |
| | { Female 1 | { Female ... | { Female 3 | { Female 2 | { Female ... | { Female ... | { Female 1 |
| EXPENDITURE— | | | | | | | |
| Buildings and Repairs | £ 1,321 | 2,125 | 1,211 | 1,189 | 1,071 | 1,007 | 802 |
| Maintenance (including salaries and wages) | £ 6,513 | 7,033 | 6,782 | 7,785 | 7,046 | 8,409 | 7,634 |
| Other | £ 581 | 623 | 1,160 | 428 | 1,762 | 659 | 440 |
| Total ... | £ 8,415 | 9,781 | 9,153 | 9,402 | 9,879 | 10,075 | 8,876 |

There are three reformatory institutions—the Carpentarian State Reformatory and the "Sobraon" State Training Ship for boys, the enrolment for 1907 being 121 and 413 respectively; and the Girls' State Industrial School, where for the same year the enrolment was 149.

The Training Ship has attained very satisfactory results. In forty years more than 5000 boys have been dealt with, and the records shew that 98 per cent. of these have developed into good citizens. Attached to the "Sobraon" is the steam and sailing schooner "Dart," where the boys are taught seamanship. The boys subjected to a course of training are, at the expiration of their term, apprenticed to approved persons. To the Carpentarian Reformatory are sent boys who have been convicted in the courts, whom it is desired to keep apart from other prisoners, and who are taught useful trades.

ORPHANAGES, VICTORIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Number of institutions ... | 7 | 7 | 7 | 9 | 9 | 9 | 9 |
| Number of beds ... | 996 | 1,005 | 1,083 | 1,338 | 1,386 | 1,399 | 1,483 |
| Admissions ... | { Male 157 | { Male 181 | { Male 208 | { Male 240 | { Male 250 | { Male 257 | { Male 302 |
| | { Female 98 | { Female 147 | { Female 151 | { Female 176 | { Female 163 | { Female 172 | { Female 208 |
| Total number under care | { Male 806 | { Male 823 | { Male 873 | { Male 1,002 | { Male 1,055 | { Male 1,070 | { Male 1,143 |
| | { Female 581 | { Female 590 | { Female 609 | { Female 775 | { Female 779 | { Female 787 | { Female 839 |
| Deaths ... | { Male ... | { Male 1 | { Male 5 | { Male 4 | { Male 6 | { Male 5 | { Male 5 |
| | { Female 2 | { Female 1 | { Female 2 | { Female 2 | { Female 4 | { Female 6 | { Female 4 |
| EXPENDITURE— | | | | | | | |
| Bldgs. & extraord'y repairs | £ 2,077 | 3,856 | 2,585 | 2,711 | 1,770 | 1,250 | 2,621 |
| Mainten'nce { Ord'y repairs | £ 230 | 520 | 412 | 343 | 567 | 642 | 646 |
| | £ 15,313 | 15,178 | 16,464 | 17,151 | 17,413 | 17,728 | 18,205 |
| Miscellaneous (inc. interest) | £ 52 | 81 | 103 | 303 | 311 | 517 | 344 |
| Total ... | 17,672 | 19,635 | 19,564 | 20,508 | 20,061 | 20,137 | 21,816 |

NEGLECTED CHILDREN AND REFORMATORY SCHOOLS,* VICTORIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|----------|--------|--------|--------|--------|--------|--------|
| Admissions ... | 1,281 | 981 | 554 | 511 | 589 | 819 | 840 |
| Total number under care ... | 6,512 | 6,636 | 6,299 | 5,872 | 5,765 | 5,867 | 5,966 |
| Discharges, etc. ... | 857 | 891 | 938 | 696 | 717 | 741 | 754 |
| Inmates—average number ... | 3,908 | 4,113 | 3,943 | 3,604 | 3,425 | 3,444 | 3,590 |
| Distribution at end of year— | | | | | | | |
| In Government schools ... | 181 | 151 | 134 | 132 | 135 | 110 | 111 |
| In assisted schools ... | 190 | 200 | 192 | 189 | 151 | 144 | 146 |
| Boarded out ... | 3,701 | 3,753 | 3,363 | 3,154 | 3,044 | 3,315 | 3,358 |
| At service, etc. ... | 1,633 | 1,641 | 1,672 | 1,701 | 1,718 | 1,557 | 1,597 |
| Total ... | 5,655 | 5,745 | 5,361 | 5,176 | 5,048 | 5,126 | 5,212 |
| Government expenditure ... | £ 67,332 | 72,010 | 67,391 | 63,130 | 61,748 | 61,266 | 63,592 |
| Net cost to State ... | £ 65,668 | 70,219 | 66,111 | 61,687 | 60,263 | 59,623 | 61,660 |

* In addition, there are a small number of children maintained by the State, who are incapacitated and free from legal control.

ORPHANAGES, QUEENSLAND, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------------|----------|--------|--------|--------|--------|--------|--------|
| Number of institutions ... | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Number of beds ... | 868 | 897 | 915 | 977 | 972 | 978 | 992 |
| Admissions ... | | | | | | | |
| { Male | 290 | 276 | 242 | 221 | 182 | 199 | 247 |
| { Female | 354 | 295 | 295 | 300 | 308 | 302 | 304 |
| Total number under care ... | 604 | 601 | 536 | 594 | 545 | 539 | 579 |
| { Male | 692 | 656 | 675 | 771 | 807 | 792 | 797 |
| { Female | 1 | 1 | 7 | 1 | 3 | 2 | 4 |
| Deaths ... | 2 | 1 | 2 | 2 | 3 | 1 | 3 |
| EXPENDITURE— | | | | | | | |
| Building ... | £ 124 | 49 | 100 | 183 | 135 | 288 | 153 |
| Furniture ... | £ 191 | 111 | 154 | 165 | 299 | 144 | 71 |
| Maintenance ... | £ 11,790 | 11,697 | 11,996 | 11,476 | 11,514 | 11,573 | 11,520 |
| Outdoor relief ... | £ 7,889 | 8,063 | 8,066 | 7,195 | 6,623 | 6,496 | 7,265 |
| Miscellaneous ... | £ 2,545 | 2,428 | 2,614 | 2,234 | 2,461 | 2,503 | 2,293 |
| Total ... | £ 22,539 | 22,348 | 22,930 | 21,253 | 21,032 | 21,004 | 21,302 |

INDUSTRIAL AND REFORMATORY SCHOOLS, QUEENSLAND, 1907.

| Particulars. | Male. | Female. | Total. |
|----------------------------------|-------|---------|--------|
| Number of institutions ... | ... | ... | 6 |
| Admissions and re-admissions ... | 69 | 34 | 103 |
| Total inmates during year ... | 160 | 89 | 249 |
| Deaths— | | | |
| Number on 31st December ... | 114 | 65 | 179 |

STATE CHILDREN, SOUTH AUSTRALIA, 1901 to 1906-7.

| Particulars. | 1900-1. | | 1901-2. | | 1902-3. | | 1903-4. | | 1904-5. | | 1905-6. | | 1906-7. | |
|--|--------------|------------|--------------|------------|--------------|------------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| ADMISSIONS— | | | | | | | | | | | | | | |
| Industrial schools ... | 65 | 53 | 101 | 72 | 89 | 70 | 94 | 70 | 56 | 61 | 78 | 72 | 78 | 76 |
| Reformatories ... | 30 | 17 | 50 | 14 | 59 | 22 | 51 | 8 | 45 | 4 | 33 | 9 | 38 | 3 |
| Probationary schools ... | ... | ... | ... | ... | ... | ... | 1 | ... | 3 | ... | 4 | 1 | 1 | ... |
| Methodist Home ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | 1 | ... | 2 |
| Total ... | 95 | 70 | 151 | 86 | 148 | 92 | 146 | 78 | 104 | 67 | 115 | 83 | 117 | 81 |
| | 165 | | 237 | | 240 | | 224 | | 171 | | 198 | | 198 | |
| NUMBER ON 30TH JUNE— | | | | | | | | | | | | | | |
| Industrial schools ... | 16 | 33 | 26 | 44 | 14 | 38 | 20 | 30 | 17 | 29 | 17 | 30 | 16 | 22 |
| Reformatories ... | 89 | 46 | 105 | 41 | 96 | 46 | 76 | 41 | 82 | 37 | 75 | 38 | 53 | 36 |
| Probationary schools ... | 15 | 26 | 17 | 33 | 19 | 28 | 29 | 23 | 25 | 22 | 31 | 26 | 35 | 21 |
| Methodist Home ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | 1 |
| Total ... | 120 | 105 | 148 | 118 | 129 | 112 | 125 | 99 | 124 | 90 | 123 | 94 | 104 | 80 |
| | 225 | | 266 | | 241 | | 224 | | 214 | | 217 | | 184 | |
| Placed out ... | 1,006 | | 1,055 | | 1,114 | | 1,114 | | 1,046 | | 1,052 | | 1,105 | |
| Total ... | 1,231 | | 1,321 | | 1,355 | | 1,338 | | 1,260 | | 1,269 | | 1,289 | |
| DEATHS— | | | | | | | | | | | | | | |
| Industrial schools ... | ... | ... | 3 | ... | 3 | ... | 1 | ... | 1 | ... | 2 | ... | ... | ... |
| Reformatories ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... |
| In other institutions and placed out ... | 14 | ... | 11 | ... | 7 | ... | 11 | ... | 8 | ... | 5 | ... | 8 | ... |
| Total ... | 14 | ... | 14 | ... | 10 | ... | 13 | ... | 9 | ... | 7 | ... | 8 | ... |

ORPHANAGES,* WESTERN AUSTRALIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------------------|--------------|-------|-------|-------|-------|-------|-------|
| No. of institutions | 7. | 7 | 8 | 8 | 8 | 8 | 8 |
| Admissions ... | { Male 76 | 82 | 77 | 101 | 84 | 103 | 85 |
| | { Female 35 | 42 | 47 | 39 | 39 | 42 | 46 |
| In institution at end of year ... | { Male 265 | 287 | 285 | 314 | 331 | 364 | 275 |
| | { Female 162 | 186 | 217 | 243 | 248 | 259 | 178 |
| Deaths ... | { Male 1 | 1 | ... | ... | ... | ... | ... |
| | { Female ... | ... | ... | ... | ... | ... | ... |
| State Expenditure | £ 6,864 | 7,456 | 8,292 | 8,391 | 8,790 | 9,080 | 9,762 |

* Including Industrial Orphanage Schools.

GOVERNMENT INDUSTRIAL SCHOOL, WESTERN AUSTRALIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------|--------------|-------|-------|-------|-------|-------|-------|
| Admissions ... | { Male 47 | 74 | 66 | 95 | 87 | 108 | 102 |
| | { Female 16 | 39 | 35 | 55 | 36 | 58 | 57 |
| Inmates ... | { Male 94 | 105 | 105 | 130 | 133 | 156 | 141 |
| | { Female 32 | 49 | 61 | 77 | 60 | 80 | 90 |
| Deaths ... | { Male ... | ... | ... | ... | 1 | 2 | ... |
| | { Female ... | ... | 1 | 1 | ... | ... | 1 |
| State expenditure | £ 1,482 | 1,489 | 1,826 | 1,991 | 1,962 | 2,048 | 1,930 |

ORPHANAGE, TASMANIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|
| Admissions ... | 6 | 6 | 10 | 4 | 7 | 5 | 11 |
| Inmates during year ... | 52 | 48 | 56 | 47 | 48 | 44 | 49 |
| Deaths ... | ... | ... | 1 | ... | 1 | ... | ... |
| Expenditure £ | 688 | 777 | 926 | 741 | 802 | 1,172 | 683 |

INDUSTRIAL SCHOOLS, UNDER BENEVOLENT INSTITUTIONS, TASMANIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|
| Number of schools ... | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Admissions { Male | 5 | 4 | 8 | 4 | 5 | 7 | 6 |
| { Female | 4 | 11 | 9 | 9 | 9 | 12 | 12 |
| Institutions { Male | 28 | 28 | 31 | 29 | 29 | 28 | 25 |
| during year { Female | 63 | 69 | 67 | 65 | 66 | 60 | 68 |
| Died { Male | ... | ... | ... | ... | ... | 1 | ... |
| { Female | ... | 1 | ... | ... | ... | ... | 1 |
| Remaining at { Male | 23 | 23 | 25 | 24 | 21 | 19 | 18 |
| end of year { Female | 58 | 58 | 57 | 57 | 49 | 53 | 54 |
| Expenditure £ | 1,865 | 1,958 | 1,722 | 1,630 | 8,169 | 2,363 | 2,386 |

BOARDING-OUT SYSTEM, TASMANIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. Half-year. | 1904-5. | 1905-6. | 1906-7. |
|------------------------|-------|-------|-------|---------------------|---------|---------|---------|
| Number of children ... | 221 | 218 | 175 | 145 | 152 | 141 | 160 |
| Males ... | 120 | 124 | 90 | 78 | 81 | 78 | 90 |
| Females ... | 101 | 94 | 85 | 67 | 71 | 63 | 70 |
| Expenditure £ | 2,206 | 2,086 | 1,808 | 861 | 1,608 | 1,570 | 1,640 |

4. **Lepers.** Lazarets for the treatment of lepers have been established in New South Wales (Little Bay); Queensland (Stradbroke Island, near Brisbane, and Dayman Island, Torres Straits); and the Northern Territory of South Australia (Mud Island). Quarantine and isolation stations have also been used for the segregation of patients. A great deal of information concerning the beginning and progress of leprosy in Australia has been collected and published by Dr. J. Ashburton Thompson, Chief Government Medical Officer and President of the Board of Health, New South Wales, from whose reports the following table has been compiled:—

CASES OF LEPROSY RECORDED IN AUSTRALIA, 1855 to 1907.

| State. | Prior to 1901. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | Total. |
|-----------------|----------------|-------|-------|-------|-------|-------|-------|-------|--------|
| N.S.W. ... | 97 | 8 | 1 | 10 | 8 | 9 | 7 | 4 | 144 |
| Victoria ... | *24 | — | 2 | — | — | 1 | — | — | *27 |
| Queensland ... | †111 | 5 | 11 | 9 | 17 | 19 | 14 | 21 | †207 |
| South Aust. ... | 31 | 2 | 2 | 1 | — | 1 | — | 1 | 38 |
| West. Aust. ... | 2 | — | 1 | 1 | — | — | — | — | 4 |
| Tasmania ... | — | — | — | — | — | — | 1 | — | 1 |
| Total ... | *†265 | 15 | 17 | 21 | 25 | 30 | 22 | 26 | *†421 |

* In addition, some Chinese.

† In addition, many Kanakas.

5. **Hospitals for the Insane.**—The method of compiling insanity statistics has been fairly uniform throughout the States, but the various methods of observing the early stages of the development of insanity introduce an element of uncertainty which considerably reduces the value of comparison. In the summary given below licensed houses (except as regards expenditure) are included for New South Wales, and for Victoria in 1907; but not reception houses and observation wards in gaols, figures for which are given under the statistics of the States:—

HOSPITALS FOR INSANE, COMMONWEALTH, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907.* |
|--|----------|---------|---------|---------|---------|---------|---------|
| Number of institutions ... | 25 | 24 | 25 | 28 | 27 | 27 | 32 |
| Number of beds ... | 12,189 | 12,586 | 12,716 | 13,109 | 13,144 | 13,507 | 13,743 |
| Admissions ... | 2,569 | 2,490 | 2,616 | 2,640 | 2,593 | 2,839 | 2,730 |
| Total number under treatment... | 14,791 | 15,513 | 15,876 | 16,164 | 16,462 | 16,803 | 17,653 |
| Discharged as recovered, relieved, or improved ... | 1,157 | 1,190 | 1,181 | 1,300 | 1,183 | 1,258 | 1,271 |
| Deaths ... | 861 | 899 | 1,032 | 986 | 966 | 1,003 | 1,032 |
| Expenditure ... | £249,730 | 387,137 | 392,005 | 386,534 | 387,395 | 404,354 | 424,275 |

* Includes for the first time five licensed houses for insane in Victoria.

The proportion of insane, as well as the total number under treatment, as returned, is gradually rising. In the next table the number of insane under official care in Australia is compared to the total population:—

PROPORTION OF INSANITY IN HOSPITALS FOR INSANE, COMMONWEALTH, 1901-7.

| | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Lunatics at end of year ... | 12,427 | 12,770 | 13,142 | 13,443 | 13,851 | 14,349 | 14,870 |
| Per 100,000 of population ... | 325 | 329 | 334 | 337 | 342 | 348 | 354 |

Increase in the number of recorded cases of insanity does not necessarily imply an actual increase, and does not here imply an equivalent increase. Consequent upon the development of a more rational attitude to the treatment of mental cases there is growing up a greater willingness to submit necessary cases to treatment at an earlier stage than formerly. It is important to bear this in mind, because the small progressive increase in the preceding table is probably to be attributed largely, if not solely, to this circumstance:—

GOVERNMENT HOSPITALS FOR INSANE, NEW SOUTH WALES, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Number of institutions ... | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Admissions and readmissions | { Male 611 Female 413 | { 576 351 | { 618 427 | { 597 385 | { 607 379 | { 668 420 | { 587 366 |
| Total number under treatment | { Male 3,109 Female 2,156 | { 3,414 2,247 | { 3,528 2,355 | { 3,575 2,435 | { 3,754 2,457 | { 3,785 2,492 | { 3,936 2,621 |
| Discharged— | | | | | | | |
| As recovered ... | { Male 198 Female 191 | { 209 159 | { 217 158 | { 246 178 | { 238 172 | { 225 192 | { 219 176 |
| As relieved ... | { Male 28 Female 24 | { 27 15 | { 28 31 | { 31 31 | { 26 27 | { 35 20 | { 48 31 |
| Deaths... | { Male 191 Female 96 | { 199 118 | { 240 108 | { 242 124 | { 219 120 | { 273 112 | { 262 130 |
| Inmates at end of year ... | { Male 2,660 Female 1,763 | { 2,795 1,823 | { 2,920 1,956 | { 2,997 2,013 | { 3,117 2,076 | { 3,251 2,171 | { 3,307 2,202 |
| Total expenditure | £123,531 | 143,253 | 151,309 | 139,974 | 137,971 | 151,439 | 158,223 |

LICENSED HOUSES FOR INSANE, NEW SOUTH WALES, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Number of institutions ... | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Admissions and readmissions { | | | | | | | |
| Male | 8 | 10 | 7 | 17 | 7 | 9 | 8 |
| Female | 14 | 10 | 13 | 21 | 16 | 26 | 16 |
| Total number under treat- { | | | | | | | |
| ment ... | 25 | 27 | 28 | 40 | 33 | 26 | 29 |
| Male | 45 | 45 | 47 | 59 | 59 | 72 | 71 |
| Female | 3 | 4 | 1 | 7 | 9 | 3 | 5 |
| Discharged as recovered ... { | | | | | | | |
| Male | 6 | 6 | 3 | 7 | 11 | 8 | 13 |
| Female | ... | 1 | 3 | 3 | 2 | ... | 3 |
| Discharged as relieved ... { | | | | | | | |
| Male | 2 | 3 | 3 | 2 | 1 | 2 | 4 |
| Female | 3 | ... | 2 | 1 | 3 | 1 | 3 |
| Deaths ... | 2 | 1 | 1 | 3 | ... | 3 | 1 |
| Male | 17 | 21 | 22 | 24 | 17 | 20 | 16 |
| Female | 35 | 34 | 37 | 41 | 42 | 55 | 51 |

INSANE PERSONS AND DEATHS, NEW SOUTH WALES, 1901 to 1907.

| Year. | Number of Institutions. | Number of Patients. | | Deaths. | |
|----------|-------------------------|------------------------|----------------------|---------|------------------------|
| | | Total during the Year. | Average at one Time. | Number. | Per Cent. of Patients. |
| 1901 ... | 10 | 5,335 | 4,272 | 292 | 5.5 |
| 1902 ... | 10 | 5,733 | 4,427 | 318 | 5.5 |
| 1903 ... | 10 | 5,958 | 4,633 | 351 | 5.9 |
| 1904 ... | 10 | 6,109 | 4,858 | 370 | 6.1 |
| 1905 ... | 10 | 6,303 | 4,963 | 342 | 5.4 |
| 1906 ... | 10 | 6,563 | 5,180 | 389 | 5.9 |
| 1907 ... | 10 | 6,657 | 5,355 | 396 | 5.9 |

PROPORTION OF INSANE PERSONS, NEW SOUTH WALES, 1901 to 1907.

| Year. | Number of Insane Persons. | | | Number per One Thousand of Population. | | |
|----------|---------------------------|----------|----------|--|----------|----------|
| | Males. | Females. | Persons. | Males. | Females. | Persons. |
| 1901 ... | 2,677 | 1,798 | 4,475 | 3.70 | 2.74 | 3.24 |
| 1902 ... | 2,816 | 1,857 | 4,673 | 3.80 | 2.78 | 3.32 |
| 1903 ... | 2,942 | 1,993 | 4,935 | 3.90 | 2.94 | 3.45 |
| 1904 ... | 3,021 | 2,054 | 5,075 | 3.91 | 2.98 | 3.46 |
| 1905 ... | 3,134 | 2,118 | 5,252 | 3.95 | 3.02 | 3.51 |
| 1906 ... | 3,271 | 2,226 | 5,497 | 4.02 | 3.12 | 3.60 |
| 1907 ... | 3,323 | 2,253 | 5,576 | 4.01 | 3.12 | 3.59 |

RECEPTION HOUSES FOR INSANE, NEW SOUTH WALES, 1907.

| Inmates. | Number of Admissions. | Total Number under Treatment. | Discharges. | Deaths. | Transfers to Lunatic Asylums. | Inmates at End of Year. |
|------------|-----------------------|-------------------------------|-------------|---------|-------------------------------|-------------------------|
| Male ... | 720 | 728 | 342 | 6 | 365 | 15 |
| Female ... | 285 | 285 | 118 | 2 | 162 | 3 |
| Total ... | 1,005 | 1,013 | 460 | 8 | 527 | 18 |

OBSERVATION WARDS IN GAOLS, NEW SOUTH WALES, 1907.

| Inmates. | Number of Admissions. | Total Number under Treatment. | Discharges. | Deaths. | Transfers to Lunatic Asylums. | Inmates at End of Year. |
|---------------|-----------------------|-------------------------------|-------------|---------|-------------------------------|-------------------------|
| Male | 111 | 129 | 102 | 2 | 15 | 10 |
| Female | 17 | 18 | 17 | — | — | 1 |
| Total | 128 | 147 | 119 | 2 | 15 | 11 |

HOSPITALS FOR INSANE,* VICTORIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------|----------|---------|---------|---------|---------|---------|---------|
| Number of institutions ... | 7 | 7 | 7 | 10 | 9 | 9 | 9 |
| Admissions and readmissions | | | | | | | |
| { Male | 418 | 457 | 433 | 462 | 436 | 446 | 443 |
| { Female | 351 | 341 | 336 | 388 | 374 | 412 | 342 |
| Total number under treatment | 2,794 | 2,825 | 2,909 | 2,916 | 2,900 | 2,925 | 3,030 |
| { Male | 2,628 | 2,707 | 2,622 | 2,673 | 2,700 | 2,811 | 2,860 |
| { Female | | | | | | | |
| Discharged— | | | | | | | |
| As cured ... | | | | | | | |
| { Male | 174 | 176 | 165 | 189 | 160 | 172 | 133 |
| { Female | 125 | 182 | 159 | 151 | 103 | 158 | 123 |
| As improved | | | | | | | |
| { Male | 11 | 15 | 24 | 29 | 39 | 41 | 32 |
| { Female | 16 | 14 | 24 | 37 | 42 | 43 | 32 |
| Deaths | 202 | 203 | 217 | 203 | 185 | 158 | 193 |
| { Male | 128 | 129 | 145 | 135 | 137 | 137 | 140 |
| { Female | | | | | | | |
| Inmates at end of year | 2,307 | 2,354 | 2,371 | 2,395 | 2,436 | 2,486 | 2,550 |
| { Male | 2,194 | 2,193 | 2,199 | 2,251 | 2,332 | 2,390 | 2,419 |
| { Female | | | | | | | |
| Expenditure ... | £122,611 | 133,708 | 133,163 | 137,663 | 138,639 | 143,902 | 139,497 |

* The figures include lunacy wards at hospitals.

There were at the end of 1907 five private licensed houses for the insane in Victoria. The admissions during the year were 32 males and 58 females. The total number under treatment, 52 males, 117 females; 21 males and 34 females were discharged, and 5 males and 4 females died. Of those discharged 10 males and 21 females were discharged as recovered, making a percentage recovery rate of 34.4 on the admissions; but as many of the cases admitted were of long standing and transfers from the hospitals for insane, the work, so far as the recovery of patients is concerned, was much better than the figures indicate. At the end of the year there remained on the books of the licensed houses 26 males and 79 females.

INSANE PERSONS AND DEATHS, VICTORIA, 1901 to 1907.

| Year. | Number of Institutions. | Number of Patients. | | Deaths. | |
|----------|-------------------------|------------------------|----------------------|---------|------------------------|
| | | Total during the Year. | Average at one time. | Number. | Per Cent. of Patients. |
| 1901 ... | 7 | 5,422 | 4,450 | 330 | 6.1 |
| 1902 ... | 7 | 5,532 | 4,524 | 332 | 6.0 |
| 1903 ... | 7 | 5,531 | 4,558 | 362 | 6.5 |
| 1904 ... | 10 | 5,589 | 4,610 | 338 | 6.0 |
| 1905 ... | 9 | 5,600 | 4,707 | 322 | 5.7 |
| 1906 ... | 9 | 5,736 | 4,822 | 295 | 5.1 |
| 1907 ... | 15 | 6,068 | 5,014 | 342 | 5.6 |

PROPORTION OF INSANE PERSONS, VICTORIA, 1901 to 1907.

| Year. | Number of Patients. | | | Proportion per 1000 of Population. | | |
|----------|---------------------|----------|----------|------------------------------------|----------|----------|
| | Males. | Females. | Persons. | Males. | Females. | Persons. |
| 1901 ... | 2,307 | 2,194 | 4,501 | 3.78 | 3.65 | 3.72 |
| 1902 ... | 2,354 | 2,193 | 4,547 | 3.87 | 3.63 | 3.75 |
| 1903 ... | 2,371 | 2,199 | 4,570 | 3.91 | 3.64 | 3.78 |
| 1904 ... | 2,395 | 2,251 | 4,646 | 3.96 | 3.72 | 3.84 |
| 1905 ... | 2,436 | 2,332 | 4,768 | 3.99 | 3.83 | 3.91 |
| 1906 ... | 2,486 | 2,390 | 4,876 | 4.03 | 3.88 | 3.96 |
| 1907 ... | 2,576 | 2,498 | 5,074 | 4.16 | 4.03 | 4.09 |

RECEPTION HOUSE FOR INSANE, VICTORIA, 1907.

On 24th September, 1907, a receiving house was opened at Royal Park, Victoria.

| Inmates. | Number of Admissions. | Total Number under Treatment. | Discharges. | Deaths. | Transferred to Lunatic Asylums. | Inmates at End of Year. |
|------------|-----------------------|-------------------------------|-------------|---------|---------------------------------|-------------------------|
| Male ... | 49† | 48 | 20 | — | 20 | 9 |
| Female ... | 37 | 37 | 16 | — | 13 | 8 |
| Total ... | 86† | 85 | 36 | — | 33 | 17 |

† Including one readmission.

HOSPITALS FOR INSANE, QUEENSLAND, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Number of institutions ... | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Admissions and re- admissions ... | { Male 193 Female 142 | { Male 204 Female 135 | { Male 222 Female 115 | { Male 186 Female 103 | { Male 205 Female 130 | { Male 241 Female 120 | { Male 218 Female 125 |
| Total number under treatment ... | { Male 1,291 Female 763 | { Male 1,295 Female 791 | { Male 1,340 Female 805 | { Male 1,318 Female 816 | { Male 1,352 Female 861 | { Male 1,413 Female 886 | { Male 1,458 Female 914 |
| Discharged— | | | | | | | |
| As cured ... | { Male 90 Female 56 | { Male 74 Female 57 | { Male 92 Female 43 | { Male 75 Female 50 | { Male 71 Female 43 | { Male 88 Female 45 | { Male 87 Female 54 |
| As improved ... | { Male 34 Female 14 | { Male 39 Female 8 | { Male 19 Female 12 | { Male 31 Female 5 | { Male 19 Female 9 | { Male 11 Female 12 | { Male 15 Female 15 |
| Died ... | { Male 76 Female 37 | { Male 62 Female 32 | { Male 96 Female 37 | { Male 64 Female 30 | { Male 89 Female 42 | { Male 72 Female 40 | { Male 83 Female 46 |
| Inmates at end of year ... | { Male 1,091 Female 656 | { Male 1,118 Female 690 | { Male 1,132 Female 713 | { Male 1,147 Female 731 | { Male 1,172 Female 766 | { Male 1,240 Female 789 | { Male 1,273 Female 796 |
| Expenditure* ... | £ 47,985 | 51,455 | 47,372 | 46,127 | 48,126 | 50,268 | 57,291 |

* The amounts given are for years ended on 30th June following, and include expenditure on reception houses.

INSANE PERSONS AND DEATHS, QUEENSLAND, 1901 to 1907.

| Year. | No. of Institutions. | Number of Patients. | | Deaths. | |
|-------------|----------------------|------------------------|-----------------|---------|------------------------|
| | | Total during the Year. | At End of Year. | Number. | Per Cent. of Patients. |
| 1901 | 3 | 2,054 | 1,747 | 113 | 5.5 |
| 1902 | 3 | 2,086 | 1,808 | 94 | 4.5 |
| 1903 | 3 | 2,145 | 1,845 | 133 | 6.2 |
| 1904 | 3 | 2,134 | 1,878 | 94 | 4.4 |
| 1905 | 3 | 2,213 | 1,938 | 131 | 5.9 |
| 1906 | 3 | 2,299 | 2,029 | 112 | 4.9 |
| 1907 | 3 | 2,372 | 2,069 | 129 | 5.4 |

PROPORTION OF INSANE PERSONS, QUEENSLAND, 1901 to 1907.

| Year. | Number of Insane Persons. | | | Proportion per 1000 of Population. | | |
|-------------|---------------------------|----------|----------|------------------------------------|----------|----------|
| | Males. | Females. | Persons. | Males. | Females. | Persons. |
| 1901 | 1,091 | 656 | 1,747 | 3.87 | 2.92 | 3.45 |
| 1902 | 1,118 | 690 | 1,808 | 3.95 | 3.03 | 3.54 |
| 1903 | 1,132 | 713 | 1,845 | 3.97 | 3.09 | 3.58 |
| 1904 | 1,147 | 731 | 1,878 | 3.99 | 3.12 | 3.60 |
| 1905 | 1,172 | 766 | 1,938 | 4.04 | 3.22 | 3.67 |
| 1906 | 1,240 | 789 | 2,029 | 4.24 | 3.25 | 3.79 |
| 1907 | 1,273 | 796 | 2,069 | 4.33 | 3.25 | 3.84 |

RECEPTION HOUSES FOR INSANE,* QUEENSLAND, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Number of institutions ... | 4 | 4 | 4 | 3 | 3 | 3 | 3 |
| Admissions and re- admissions ... | 157 | 166 | 166 | 121 | 145 | 178 | 162 |
| { Male | 102 | 93 | 77 | 64 | 90 | 75 | 88 |
| { Female | 163 | 170 | 170 | 125 | 148 | 182 | 164 |
| Total number under treatment ... | 105 | 94 | 78 | 67 | 91 | 75 | 89 |
| Discharged as cured { Male | 31 | 38 | 27 | 28 | 22 | 31 | 27 |
| { Female | 12 | 11 | 8 | 4 | 4 | 3 | 8 |
| Discharged as im- proved ... | 11 | 3 | 5 | — | 3 | 2 | — |
| { Male | 10 | 5 | 3 | 3 | 4 | 3 | — |
| { Female | 113 | 123 | 131 | 93 | 118 | 145 | 127 |
| Removed to Lunatic Asylum ... | 81 | 76 | 64 | 59 | 82 | 67 | 79 |
| { Male | 4 | 2 | 3 | 1 | 1 | 2 | 2 |
| { Female | 1 | 1 | — | — | 1 | 1 | 1 |

* The expenditure on reception houses is included with that on hospitals for insane, given in *supra*.

The Reception Houses for the Insane act as depôts to which patients are sent to see whether their mental illness is of a merely temporary character, readily to be relieved, or whether it is of such a nature as to need further treatment at the hospital at Goodna, which is the largest of the Queensland Hospitals for Insane.

HOSPITALS FOR INSANE, SOUTH AUSTRALIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Number of institutions ... | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| Admissions and re-admissions | (Male 116 Female 98) | (Male 107 Female 103) | (Male 112 Female 99) | (Male 145 Female 112) | (Male 137 Female 93) | (Male 125 Female 106) | (Male 119 Female 113) |
| Total number under treatment | (Male 693 Female 499) | (Male 683 Female 515) | (Male 678 Female 524) | (Male 686 Female 533) | (Male 691 Female 514) | (Male 690 Female 524) | (Male 685 Female 541) |
| Discharged as recovered | (Male 64 Female 45) | (Male 47 Female 47) | (Male 56 Female 53) | (Male 74 Female 56) | (Male 67 Female 54) | (Male 58 Female 38) | (Male 45 Female 65) |
| Deaths ... | (Male 41 Female 41) | (Male 64 Female 41) | (Male 77 Female 49) | (Male 57 Female 50) | (Male 52 Female 39) | (Male 63 Female 57) | (Male 49 Female 37) |
| Inmates at end of year | (Male 576 Female 412) | (Male 566 Female 425) | (Male 541 Female 421) | (Male 554 Female 421) | (Male 565 Female 418) | (Male 566 Female 428) | (Male 585 Female 434) |
| Expenditure ... | £ 27,668 | 28,181 | 26,967 | 27,512 | 26,266 | 27,404 | 27,112 |

INSANE PERSONS AND DEATHS, SOUTH AUSTRALIA, 1901 to 1907.

| Year. | Number of Institutions. | Number of Patients. | | Deaths. | |
|----------|-------------------------|------------------------|-----------------|---------|------------------------|
| | | Total during the year. | At end of year. | Number. | Per cent. of Patients. |
| 1901 ... | 2 | 1,192 | 988 | 82 | 6.9 |
| 1902 ... | 1 | 1,198 | 991 | 105 | 8.8 |
| 1903 ... | 1 | 1,202 | 962 | 126 | 10.5 |
| 1904 ... | 1 | 1,219 | 975 | 107 | 8.8 |
| 1905 ... | 1 | 1,205 | 983 | 91 | 7.5 |
| 1906 ... | 1 | 1,214 | 994 | 120 | 9.9 |
| 1907 ... | 1 | 1,226 | 1,019 | 86 | 7.0 |

PROPORTION OF INSANE PERSONS, SOUTH AUSTRALIA, 1901 to 1907.

| Year. | Number of Insane Persons. | | | Proportion per 1000 of Population. | | |
|----------|---------------------------|----------|----------|------------------------------------|----------|----------|
| | Males. | Females. | Persons. | Males. | Females. | Persons. |
| 1901 ... | 576 | 412 | 988 | 3.10 | 2.29 | 2.70 |
| 1902 ... | 566 | 425 | 991 | 3.04 | 2.36 | 2.70 |
| 1903 ... | 541 | 421 | 962 | 2.89 | 2.32 | 2.61 |
| 1904 ... | 554 | 421 | 975 | 2.89 | 2.32 | 3.61 |
| 1905 ... | 565 | 418 | 983 | 2.86 | 2.31 | 2.60 |
| 1906 ... | 566 | 428 | 994 | 2.78 | 2.37 | 2.59 |
| 1907 ... | 585 | 434 | 1,019 | 2.86 | 2.39 | 2.64 |

In South Australia, for the past thirty years the admissions have averaged a little over 200, and the discharges a little over 100, the figures for the whole period showing little variation. In 1907, for the first time, the total number of patients at the end of the year exceeded 1000. In 1895 the number first reached 900, so that it has taken twelve years to add another 100 to what may be looked on as the permanent number.

HOSPITALS FOR INSANE, WESTERN AUSTRALIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Number of institutions ... | 2 | 2 | 3 | 3 | 3 | 3 | 3 |
| Admissions and re-admissions | (Male 104 Female 37 | (Male 85 Female 31 | (Male 118 Female 37 | (Male 106 Female 36 | (Male 97 Female 39 | (Male 127 Female 51 | (Male 144 Female 64 |
| Total number under treatment | (Male 301 Female 117 | (Male 325 Female 133 | (Male 381 Female 139 | (Male 430 Female 150 | (Male 448 Female 162 | (Male 484 Female 191 | (Male 541 Female 212 |
| Discharged as recovered or improved | (Male 44 Female 11 | (Male 42 Female 28 | (Male 37 Female 17 | (Male 42 Female 18 | (Male 48 Female 14 | (Male 48 Female 25 | (Male 45 Female 24 |
| Deaths ... | (Male 17 Female 4 | (Male 19 Female 3 | (Male 19 Female 8 | (Male 33 Female 9 | (Male 42 Female 8 | (Male 35 Female 17 | (Male 37 Female 14 |
| Inmates at end of year | (Male 240 Female 102 | (Male 263 Female 102 | (Male 324 Female 114 | (Male 351 Female 123 | (Male 354 Female 140 | (Male 398 Female 148 | (Male 457 Female 173 |
| Expenditure ... | £ 13,045 | 14,983 | 15,937 | 19,182 | 21,605 | 23,256 | 24,861 |

INSANE PERSONS AND DEATHS, WESTERN AUSTRALIA, 1901 to 1907.

| Year. | Number of Institutions. | Number of Patients. | | Deaths. | |
|----------|-------------------------|------------------------|-----------------|---------|------------------------|
| | | Total during the Year. | At End of Year. | Number. | Per Cent. of Patients. |
| 1901 ... | 2 | 418 | 342 | 21 | 5.02 |
| 1902 ... | 2 | 458 | 365 | 22 | 4.80 |
| 1903 ... | 3 | 520 | 438 | 27 | 5.19 |
| 1904 ... | 3 | 580 | 474 | 42 | 7.24 |
| 1905 ... | 3 | 610 | 494 | 50 | 8.20 |
| 1906 ... | 3 | 675 | 546 | 52 | 7.70 |
| 1907 ... | 3 | 753 | 630 | 51 | 6.77 |

PROPORTION OF INSANE PERSONS, WESTERN AUSTRALIA, 1901 to 1907.

| Year. | Number of Insane Persons. | | | Proportion per 1000 of Population. | | |
|----------|---------------------------|----------|----------|------------------------------------|----------|----------|
| | Males. | Females. | Persons. | Males. | Females. | Persons. |
| 1901 ... | 240 | 102 | 342 | 2.03 | 1.34 | 1.76 |
| 1902 ... | 263 | 102 | 365 | 2.03 | 1.22 | 1.71 |
| 1903 ... | 324 | 114 | 438 | 2.38 | 1.25 | 1.93 |
| 1904 ... | 351 | 123 | 474 | 2.43 | 1.25 | 1.96 |
| 1905 ... | 354 | 140 | 494 | 2.35 | 1.34 | 1.94 |
| 1906 ... | 398 | 148 | 546 | 2.59 | 1.37 | 2.09 |
| 1907 ... | 457 | 173 | 630 | 2.98 | 1.59 | 2.40 |

HOSPITAL FOR INSANE, NEW NORFOLK, TASMANIA, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|---------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Admissions ... | (Male 39 Female 26 | (Male 45 Female 35 | (Male 37 Female 42 | (Male 38 Female 44 | (Male 39 Female 32 | (Male 46 Female 42 | (Male 50 Female 45 |
| Total number under treatment | (Male 254 Female 216 | (Male 279 Female 227 | (Male 280 Female 240 | (Male 280 Female 253 | (Male 278 Female 253 | (Male 288 Female 275 | (Male 290 Female 287 |
| Discharged as cured or relieved | (Male 7 Female 14 | (Male 20 Female 17 | (Male 19 Female 17 | (Male 16 Female 22 | (Male 15 Female 11 | (Male 23 Female 11 | (Male 26 Female 21 |
| Deaths ... | (Male 13 Female 10 | (Male 16 Female 12 | (Male 19 Female 14 | (Male 25 Female 10 | (Male 21 Female 9 | (Male 24 Female 14 | (Male 12 Female 16 |
| Inmates at end of year | (Male 234 Female 192 | (Male 243 Female 198 | (Male 242 Female 209 | (Male 239 Female 221 | (Male 242 Female 233 | (Male 240 Female 242 | (Male 252 Female 250 |
| Expenditure ... | £ 14,890 | 15,557 | 17,257 | 16,076 | 14,788 | 16,278 | 17,291 |

INSANE PERSONS AND DEATHS, TASMANIA, 1901 to 1907.

| Year. | Number of Patients. | | Deaths. | |
|-------------|------------------------|-----------------|---------|------------------------|
| | Total during the Year. | At End of Year. | Number. | Per Cent. of Patients. |
| 1901 | 470 | 426 | 23 | 4.9 |
| 1902 | 506 | 441 | 28 | 5.5 |
| 1903 | 520 | 451 | 33 | 6.3 |
| 1904 | 533 | 460 | 35 | 6.6 |
| 1905 | 531 | 475 | 30 | 5.6 |
| 1906 | 563 | 482 | 38 | 6.7 |
| 1907 | 577 | 502 | 28 | 4.9 |

PROPORTION OF INSANE PERSONS, TASMANIA, 1901 to 1907.

| Year. | Number of Insane Persons. | | | Proportion per 1000 of Population. | | |
|-------------|---------------------------|----------|----------|------------------------------------|----------|----------|
| | Males. | Females. | Persons. | Males. | Females. | Persons. |
| 1901 | 234 | 192 | 426 | 2.59 | 2.28 | 2.44 |
| 1902 | 243 | 198 | 441 | 2.63 | 2.32 | 2.48 |
| 1903 | 242 | 209 | 451 | 2.60 | 2.42 | 2.51 |
| 1904 | 239 | 221 | 460 | 2.56 | 2.54 | 2.55 |
| 1905 | 242 | 233 | 475 | 2.59 | 2.66 | 2.62 |
| 1906 | 240 | 242 | 482 | 2.58 | 2.77 | 2.67 |
| 1907 | 252 | 250 | 502 | 2.72 | 2.88 | 2.80 |

6. **Protection of Aborigines.**—For the protection of the aboriginal Australian race there are institutions, under the supervision of Aborigines Boards, where the blacks are housed and encouraged to work, the children receiving elementary education. The work is usually carried on at mission stations, but many of the natives are nomadic in habit of life, and receive food and clothing when they call, whilst others but rarely come under the notice of the boards. The native race is extinct in Tasmania. The expenditure on maintenance, etc., for 1906 was—New South Wales, £13,184; Victoria, £4,325; Queensland, £10,570; South Australia, £12,902; Western Australia, £15,125; total for Commonwealth, £56,106. The figures given for 1907 are—New South Wales, £13,490; Victoria, £4,078; Queensland, £9,498; South Australia, £19,117.

7. **Other Charitable Institutions.**—Owing to variety of name and function of other charitable institutions it has been found impracticable to give detailed results. The aid given in kind—food, clothing, tools of trade, etc.—is considerable, whilst the shelter and treatment afforded ranges from a bed for a night for casual callers in establishments ministering minor charity, to indoor treatment over long periods for those that exist for the relief of the aged and infirm. The institutions not so particularised include asylums for the deaf, dumb, and blind, lock hospitals, maternity institutions and infant homes, homes for the destitute and aged poor, industrial colonies, night shelters, crèches, homes of hope, rescue homes, free kindergarten and ragged schools, auxiliary medical charities, free dispensaries, benevolent societies, charity organisation, ambulance and health societies, boys' brigades, humane and animals' protection societies, prisoners' aid associations, bush fires and mining accident relief funds.

8. **State Expenditure on Charities.**—The table below gives the amount expended by Government on charities. In some of the States amounts have been included for

minor items, which in other States are charged to other heads. The figures are for financial years in New South Wales, Victoria, and Queensland up to 1907, for calendar years in South Australia, and Western Australia, and in Tasmania for calendar years from 1901 to 1904, and financial years 1905-6 and 1906-7. The last column gives the amount in the calendar year 1907 :—

STATE EXPENDITURE ON CHARITIES, 1901 to 1907.

| State. | Year. | Amnt. | Year. | Amnt. | Year. | Amnt. | Year. | Amnt. | Year. | Amnt. | Year. | Amnt. | Amnt. in 1907. |
|-----------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|----------------------|
| | | £ | | £ | | £ | | £ | | £ | | £ | £ |
| N.S.W. | 1901-2 | 504,301 | 1902-3 | 572,696 | 1903-4 | 515,152 | 1904-5 | 494,818 | 1905-6 | 528,281 | 1906-7 | 493,605 | 440,360 |
| Vic. ... | " | 313,735 | " | 300,821 | " | 292,914 | " | 294,483 | " | 292,454 | " | 304,151 | 361,498 |
| Q'land | " | 183,531 | " | 189,832 | " | 181,868 | " | 174,379 | " | 169,336 | " | 193,721 | 206,881 |
| S.A. | 1901 | 106,223 | 1902 | 105,612 | 1903 | 103,426 | 1904 | 98,635 | 1905 | 99,194 | 1906 | 101,023 | 113,345 |
| W.A. | " | 100,647 | " | 108,605 | " | 100,992 | " | 103,891 | " | 108,122 | " | 112,376 | 146,685 |
| Tas. | " | 50,530 | " | 51,908 | " | 66,975 | " | 46,843 | 1905-6 | 44,671 | 1906-7 | 48,911 | 47,537 |

The average annual State expenditure for the first six years given was—New South Wales, £518,142; Victoria, £399,760; Queensland, £182,112; South Australia, £102,352; Western Australia, £105,772; Tasmania, £51,640; Commonwealth, £1,259,778. The total in 1907 was £1,316,306.

9. **Total Charitable Expenditure.**—The expenditure in the Commonwealth in money on hospitals, charities, and all forms of relief publicly given, comprising the amounts furnished by Government and those raised by public subscription, etc., but excluding old-age pensions, is estimated at £1,700,000 for the year 1907.

SECTION XXV.

GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

1. **General.**—The legislative power of the Commonwealth is vested in the Federal Parliament, which consists of the Sovereign, the Senate, and the House of Representatives. The Sovereign is represented throughout the Commonwealth by the Governor-General, who, subject to the Constitution of the Commonwealth, has such powers and functions as the Sovereign is pleased to assign to him. In each State there is a State Governor, who is the representative of the Sovereign for the State, and who exercises such powers within the State as are conferred upon him by the Letters Patent which constitute his office, and by the instructions, which inform him in detail of the manner in which his duties are to be fulfilled. The Legislature in each State is also bi-cameral, and consists of (a) a Legislative Council and (b) a Legislative Assembly, or House of Assembly, the legislative powers of these chambers being delimited by the Commonwealth and the State Constitutions. The latter chamber, which is the larger, is always elective; the qualification for the franchise varies in character. The former chamber is, in the case of New South Wales and Queensland, nominated by the Governor-in-Council, but in the other States it is also elective, the constituencies being differently arranged and some property qualification for the electorate being required. In the Federal Parliament, however, the qualifications for the franchise are identical for both Houses. A brief account of the constitutional history of each of the States has been given in Section II., § 5, hereof. (See pp. 39 to 43).

2. **Number of Members of the Legislatures.**—The following table shows the number of members in each of the legislative chambers in the Commonwealth and in each State in March, 1909:—

PARLIAMENTS OF AUSTRALIA, 1909.

| Members in— | C'wealth. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | Total. |
|-------------|-----------|--------|-----------|---------|----------|----------|------|--------|
| Upper House | 36 | 61 | 34 | 44 | 18 | 30 | 18 | 241 |
| Lower House | 75 | 90 | 65 | 72 | 42 | 50 | 35 | 429 |
| Total ... | 111 | 151 | 99 | 116 | 60 | 80 | 53 | 670 |

The use of the expressions "Upper House" and "Lower House" in the above statement, though not justified constitutionally, is convenient, inasmuch as the legislative chambers are known by different names in the Commonwealth and in some of the States.

In the Commonwealth Parliament the Upper House is known as the Senate, and in the State Parliaments as the Legislative Council. The Lower House is known as

follows:—In the Commonwealth Parliament as the House of Representatives, in the State Parliaments of New South Wales, Victoria, Queensland, and Western Australia as the Legislative Assembly, and in the State Parliaments of South Australia and Tasmania as the House of Assembly.

3. The Cabinet and Executive Government.—A précis of the sections of the Commonwealth Constitution Act dealing with the Executive Government is given on pp. 50-1 herebefore. In both the Commonwealth and the State Legislatures the forms of Government have been founded on their prototype, the Imperial Government, and the relations established between the Ministry and the representatives of the people are in accordance with those prevailing in Great Britain. The executive powers in the Commonwealth and in the State Governments are vested in the Governor-in-Council. The Executive Council in the Commonwealth and in the majority of the States is co-extensive with a group of departmental chiefs who are usually spoken of as the Cabinet, and who change with the rise and fall of party majorities. In Victoria and Tasmania, however, the Cabinet on leaving office remain members of the Executive Council, though they no longer attend its meetings, and it is in fact an essential feature of the Cabinet system of Government that they should not do so, except to assist the Governor in transacting purely formal business, or to advise on non-political questions.

(i.) *The Executive Council.* This body is composed of the Governor and Ministers appointed by the Governor as shewn hereinafter. They are sworn both as Executive Councillors and as Ministers controlling the administrative departments. The meetings are official in character; they are presided over by the Governor-General (or Governor) and are attended by the clerk, who keeps a formal record of its proceedings. At these meetings the decisions of the Cabinet are put into official form and made effective, appointments are confirmed, resignations accepted, proceedings ordered, and notices and regulations published.

In March, 1909, the Executive Council was composed of the following members:—

THE EXECUTIVE COUNCIL OF THE COMMONWEALTH, 1909.

| | |
|--|-------------------------------|
| <i>Prime Minister and Treasurer</i> ... | ... The Hon. ANDREW FISHER. |
| <i>Attorney-General</i> ... | ... The Hon. W. M. HUGHES. |
| <i>Minister of State for External Affairs</i> ... | ... The Hon. E. L. BATCHELOR. |
| <i>Minister of State for Home Affairs</i> ... | ... The Hon. H. MAHON. |
| <i>Postmaster-General</i> ... | ... The Hon. J. THOMAS. |
| <i>Minister of State for Defence</i> ... | ... The Hon. G. F. PEARCE. |
| <i>Minister of State for Trade and Customs</i> ... | ... The Hon. F. G. TUDOR. |
| <i>Vice-President of Executive Council</i> ... | ... The Hon. G. MCGREGOR. |
| <i>Honorary Minister</i> ... | ... The Hon. J. HUTCHISON. |

Particulars of previous Commonwealth Ministries are given on pages 55-6 herebefore, and on page 957 following.

(ii.) *The Cabinet.* The meetings of this body are private and deliberative. No one is admitted but the actual Ministry of the day, no records of the meetings transpire, and no official notice is taken of the proceedings. The members of the Cabinet being the leaders of the party in power in Parliament, control the bent of legislation and must retain the confidence of the people and also of the Governor-General (or Governor), to whom they act as an advising body. They also in effect wield, by virtue of their seats on the Executive Council, the whole executive force of the community. In summoning, proroguing, or dissolving Parliament the Governor-General (or Governor) is usually guided by the advice tendered him by the Cabinet, though legally he is in no way bound to do so. The following statement gives the names of the Ministries of State for the Commonwealth, who have held office since the inauguration of the Commonwealth Government:—

**MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM
1st JANUARY, 1901, to MARCH, 1909.**

| EXTERNAL AFFAIRS. | | | TRADE AND CUSTOMS. | | |
|---|----------|----------|---|----------|----------|
| Name. | From | To | Name. | From | To |
| §Rt. Hon. E. BARTON, P.C., K.C.* | 1/1/01 | 23/9/03 | Rt. Hon. C. C. KINGSTON, P.C., K.C. | 1/1/01 | 24/7/03 |
| Hon. A. DEAKIN* ... | 24/9/03 | 26/4/04 | Hon. Sir W. J. LYNE, K.C.M.G. | 13/8/03 | 26/4/04 |
| Hon. W. M. HUGHES ... | 27/4/04 | 17/8/04 | Hon. A. FISHER ... | 27/4/04 | 17/8/04 |
| Rt. Hon. G. H. REID, P.C., K.C.* | 18/8/04 | 4/7/05 | Hon. A. McLEAN ... | 18/8/04 | 4/7/05 |
| Hon. A. DEAKIN* ... | 5/7/05 | 12/11/08 | Hon. Sir W. J. LYNE, K.C.M.G. | 5/7/05 | 29/7/07 |
| Hon. E. L. BATCHELOR ... | 13/11/08 | \|\| | Hon. A. CHAPMAN ... | 30/7/07 | 12/11/08 |
| | | | Hon. F. G. TUDOR ... | 13/11/08 | \|\| |
| ATTORNEY-GENERAL. | | | TREASURER. | | |
| Name. | From | To | Name. | From | To |
| Hon. A. DEAKIN ... | 1/1/01 | 23/9/03 | Rt. Hon. Sir G. TURNER, P.C., K.C.M.G. | 1/1/01 | 26/4/04 |
| Hon. J. G. DRAKE ... | 24/9/03 | 26/4/04 | Hon. J. C. WATSON* ... | 27/4/04 | 17/8/04 |
| Hon. H. B. HIGGINS, K.C. | 27/4/04 | 17/8/04 | Rt. Hon. Sir G. TURNER, P.C., K.C.M.G. | 18/8/04 | 4/7/05 |
| Hon. Sir J. H. SYMON, K.C.M.G., K.C. | 18/8/04 | 4/7/05 | Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. | 5/7/05 | 29/7/07 |
| Hon. I. A. ISAACS ... | 5/7/05 | 11/10/06 | Hon. Sir W. J. LYNE, K.C.M.G. | 30/7/07 | 12/11/08 |
| Hon. L. E. GROOM ... | 12/10/06 | 12/11/08 | Hon. A. FISHER* ... | 13/11/08 | \|\| |
| Hon. W. M. HUGHES ... | 13/11/08 | \|\| |  |  |  |
| HOME AFFAIRS. | | | DEFENCE. | | |
| Name. | From | To | Name. | From | To |
| Hon. Sir W. J. LYNE, K.C.M.G. | 1/1/01 | 12/8/03 | Hon. Sir J. R. DICKSON, K.C.M.G. | 1/1/01 | ¶ |
| Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. | 13/8/03 | 26/4/04 | Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. | 17/1/01 | 12/8/03 |
| Hon. E. L. BATCHELOR ... | 27/4/04 | 17/8/04 | Hon. J. G. DRAKE ... | 13/8/03 | 23/9/03 |
| Hon. D. THOMPSON ... | 18/8/04 | 4/7/05 | Hon. A. CHAPMAN ... | 24/9/03 | 26/4/04 |
| Hon. L. E. GROOM ... | 5/7/05 | 11/10/06 | Hon. A. DAWSON ... | 27/4/04 | 17/8/04 |
| †Hon. T. T. EWING ... | 12/10/06 | 23/1/07 | Hon. J. W. McCAY ... | 18/8/04 | 4/7/05 |
| Hon. J. H. KEATING ... | 24/1/07 | 12/11/08 | Hon. T. PLAYFORD ... | 5/7/05 | 23/1/07 |
| Hon. H. MAHON ... | 13/11/08 | \|\| | Hon. Sir T. T. EWING, K.C.M.G. | 24/1/07 | 12/11/08 |
| | | | Hon. G. F. PEARCE ... | 13/11/08 | \|\| |
| POSTMASTER-GENERAL. | | | VICE-PRESIDENT OF THE EX. CO. | | |
| Name. | From | To | Name. | From | To |
| Rt. Hon. Sir JOHN FORREST, P.C., G.C.M.G. | 1/1/01 | 17/1/01 | Hon. R. E. O'CONNOR, K.C. | 1/1/01 | 23/9/03 |
| Hon. J. G. DRAKE ... | 5/2/01 | 12/8/03 | Hon. T. PLAYFORD ... | 24/9/03 | 26/4/04 |
| Hon. Sir P. O. Fysh, K.C.M.G. | 13/8/03 | 26/4/04 | Hon. G. MCGREGOR ... | 27/4/04 | 17/8/04 |
| Hon. H. MAHON ... | 27/4/04 | 17/8/04 | Hon. J. G. DRAKE ... | 18/8/04 | 4/7/05 |
| Hon. S. SMITH ... | 18/8/04 | 4/7/05 | †Hon. T. T. EWING ... | 5/7/05 | 11/10/06 |
| Hon. A. CHAPMAN ... | 5/7/05 | 29/7/07 | Hon. J. H. KEATING ... | 12/10/06 | 19/2/07 |
| Hon. S. MAUGER ... | 30/7/07 | 12/11/08 | Hon. Sir R. W. BEST, K.C.M.G. | 20/2/07 | 12/11/08 |
| Hon. J. THOMAS ... | 13/11/08 | \|\| | Hon. G. MCGREGOR ... | 13/11/08 | \|\| |
| WITHOUT PORTFOLIO. | | | | | |
| Name. | From | To | Name. | From | To |
| Hon. N. E. LEWIS† | 1/1/01 | 23/4/01 | Hon. S. MAUGER ... | 12/10/06 | 29/7/07 |
| Hon. Sir P. O. Fysh, K.C.M.G. | 24/4/01 | 12/8/03 | Hon. J. H. COOK ... | 23/1/08 | 12/11/08 |
| Hon. J. H. KEATING ... | 5/7/05 | 11/10/06 | Hon. J. HUTCHISON ... | 13/11/08 | \|\| |

* Prime Minister. § Afterwards the Right Hon. Sir E. Barton, P.C., G.C.M.G., etc. † Afterwards the Hon. Sir T. T. Ewing, K.C.M.G. ‡ Afterwards the Hon. Sir N. E. Lewis, K.C.M.G. || Still in office. ¶ Died 10th January, 1901.

(iii.) *Constitution of Ministries.* The subjoined table shews the constitution of the Ministries in the Commonwealth and the State Governments in March, 1909:—

CONSTITUTION OF MINISTRIES, 1909.

| Ministers with Seats in— | C'wealth. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | Total. |
|--------------------------|-----------|--------|------|---------|------|------|------|--------|
| The Upper House ... | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 12 |
| The Lower House ... | 7 | 8 | 8 | 6 | 4 | 6 | 3 | 42 |
| Total ... | 9 | 10 | 10 | 8 | 6 | 7 | 4 | 54 |

The names of the members of the Ministries in each State in March, 1909, are shown in the following statement:—

MEMBERS OF STATE GOVERNMENT MINISTRIES, 1909.

NEW SOUTH WALES—MINISTRY.

| | |
|---|--|
| <i>Premier, Attorney-Gen., and Min. of Justice</i> HON. C. G. WADE, K.C. | <i>Minister for Agriculture—</i> HON. J. PERRY. |
| <i>Colonial Treasurer—</i> HON. T. WADDELL. | <i>Minister of Public Instruction and Minister for Labour and Industry—</i> HON. J. A. HOGUE. |
| <i>Colonial Secretary and Secretary for Mines</i> HON. W. H. WOOD. | <i>Vice-President of the Executive Council—</i> HON. J. HUGHES, M.L.C. |
| <i>Secretary for Lands—</i> HON. S. W. MOORE. | <i>Members of Ex. Council (without portfolio)</i> HON. J. ASHTON, M.L.C. |
| <i>Secretary for Public Works—</i> HON. C. A. LEE. | HON. C. W. OAKES. |

VICTORIA—MINISTRY.

| | |
|---|--|
| <i>Premier, Chief Sec., and Min. for Labour—</i> HON. J. MURRAY. | <i>Commissioner of Crown Lands and Survey, and Pres. of Board of Land and Works—</i> HON. H. MACKENZIE. |
| <i>Min. of Water Supply and Min. of Agricul.</i> HON. G. GRAHAM. | <i>Min. of Pub. Instruction and Min. of Rlys.—</i> HON. A. A. BILLSON. |
| <i>Treasurer—</i> HON. W. A. WATT. | <i>Minister of Mines and Forests—</i> HON. P. MCBRIDE. |
| <i>Attorney-General and Solicitor-General—</i> HON. J. D. BROWN, M.L.C. | <i>Ministers without Office—</i> HON. J. CAMERON. |
| <i>Minister of Public Health and Commis- sioner of Public Works—</i> HON. W. L. BAILLIEU, M.L.C. | HON. J. THOMSON. |

QUEENSLAND—MINISTRY.

| | |
|--|---|
| <i>Vice-Pres. of Ex. Council and Chief Sec.—</i> HON. W. KIDSTON. | <i>Sec. for Mines and Sec. for Public Works—</i> HON. J. G. APPEL. |
| <i>Home Secretary—</i> HON. J. T. BELL. | <i>Sec. for Railways and Sec. for Agriculture—</i> HON. W. T. PAGET. |
| <i>Secretary for Public Lands—</i> HON. D. F. DENHAM. | <i>Secretary for Public Instruction—</i> HON. A. H. BARLOW, M.L.C. |
| <i>Treasurer—</i> HON. A. G. C. HAWTHORN. | <i>Attorney-General—</i> HON. T. O'SULLIVAN, M.L.C. |

SOUTH AUSTRALIA—MINISTRY.

| | |
|---|---|
| <i>Commissioner of Public Works—</i> HON. T. PRICE. | <i>Treasurer and Attorney-General—</i> HON. A. H. PEAKE. |
| <i>Chief Secretary and Minister of Industry—</i> HON. A. A. KIRKPATRICK, M.L.C. | <i>Minister of Education—</i> HON. F. W. CONEYBEER. |
| <i>Commissioner of Crown Lands and Immigration, Minister of Agriculture—</i> HON. L. O'LOUGHLIN. | <i>Minister of Water Supply and Minister Controlling Northern Territory—</i> HON. J. G. BICE, M.L.C. |

WESTERN AUSTRALIA—MINISTRY.

| | |
|--|---|
| <i>Premier and Minister for Lands—</i> HON. N. J. MOORE, C.M.G. | |
| <i>Colonial Treas. and Min. for Agriculture.—</i> HON. F. WILSON. | <i>Minister for Works—</i> HON. J. PRICE. |
| <i>Minister for Mines and Railways—</i> HON. H. GREGORY. | <i>Colonial Secretary—</i> HON. J. D. CONNOLLY, M.L.C. |
| <i>Attorney-General—</i> HON. N. KEENAN. | <i>Minister without Portfolio—</i> HON. J. MITCHELL. |

TASMANIA—MINISTRY.

| | |
|--|--|
| <i>Premier and Chief Secretary—</i> HON. J. W. EVANS, C.M.G. | <i>Treasurer and Minister for Mines—</i> HON. D. C. URQUHART. |
| <i>Attorney-General and Min. of Education—</i> HON. W. P. PROPSTING, M.L.C. | <i>Minister of Lands and Works—</i> HON. A. HEAN. |

4. **The Appointment of Ministers and of Executive Councillors.**¹—Although it is technically possible for the Governor to make and unmake cabinets at his pleasure, under all ordinary circumstances his apparent liberty in choosing his Executive Council is virtually restricted by the operation of constitutional machinery. When a Ministry is defeated in Parliament or at the polls the procedure both in the Commonwealth and the State Parliaments generally, though not invariably, follows that prevailing in the Imperial Parliament. The members of the Ministry tender their resignations to the Governor-General or Governor, whose duty it is to announce his intention of accepting them. The resignations are not actually accepted at once, for in that case the offices.

1. See Jenks' "Government of Victoria," pp. 269 *et seq.*

would become vacant and business would be at a standstill. The outgoing Premier usually suggests to the Governor the name of the most prominent member of the Opposition, and the Governor thereupon "sends for" the person suggested; and if the latter accepts the responsibility he endeavours to form a Ministry; if he fails he informs the Governor, who applies to some other person. The distribution of portfolios is first arranged by the proposed Ministers themselves and is then submitted to the Governor for approval, which is given as a matter of course unless the list contains the name of any person against whom serious objections exist. Before appointing the persons named to the various offices the Governor accepts the resignations of the outgoing Ministers, and also appoints to seats in the Executive Council such members of the new Ministry as do not already hold them. Their seats in Parliament being ordinarily vacated by acceptance of office the new Ministers must go before their constituencies, and the result of these by-elections usually decides the attitude of the Opposition. In the Commonwealth Parliament, however, seats are not vacated by the acceptance of office. It may be seen from what has been stated above that only certain persons can in practice be chosen as members of a Ministry. The Cabinet must be chosen so that the following conditions are fulfilled:—(a) The members must belong to one or other of the Legislative Chambers and also to the same political party; (b) that party must possess a majority in the House of Representatives or in the Legislative Assembly or House of Assembly as the case may be; (c) the Ministers must carry out a concerted policy; (d) they must acknowledge the leadership of one chief Minister; and (e) must be under a joint responsibility, signified by resignation *en bloc* in the event of Parliamentary censure.

5. **The Resignation of Ministers.**—A Ministry is bound to resign either when it fails to command a majority in the House of Representatives, the Legislative Assembly, or the House of Assembly, as the case may be, or when a want of confidence has been clearly shewn, either (a) by a vote of censure, (b) by a declaration of want of confidence, or (c) by a vote disapproving of some act of the Government. In such cases the Ministry must either resign or must appeal to the country.

6. **Enactments of the Parliament.**—In the Commonwealth all laws are enacted in the name of the Sovereign, the Senate, and the House of Representatives. The subjects with respect to which the Commonwealth Parliament is empowered to make laws are enumerated in the Constitution Act (see pp. 48-9 hereinbefore). In the States laws are enacted in the name of the Sovereign by and with the consent of the Legislative Council and Legislative Assembly or House of Assembly. The Governor-General or the State Governor acts as Viceroy as regards giving the Royal Assent to or vetoing Bills passed by the Legislatures, or reserving them for the special consideration of the Sovereign. In the States the Councils and Assemblies are empowered generally, subject to the Commonwealth Constitution, to make laws in and for their respective States in all cases whatsoever. Subject to certain limitations, they may alter, repeal, or vary their Constitution. Where a law of a State is inconsistent with a law of the Commonwealth the latter prevails, and the former is, to the extent of the inconsistency, invalid.

7. **Powers and Functions of the Governor-General and of the Governors.**—The Governor-General and the State Governors act under the authority of the commissions by which they are appointed and of Letters Patent under the Great Seal of the United Kingdom, and according to instructions issued by the Colonial Office and passed under the Royal Sign Manual and Signet.

(i.) *The Governor-General.* The office of Governor-General and Commander-in-Chief of the Commonwealth was constituted by Letters Patent issued on the 29th October, 1900, in pursuance of the provisions of the Commonwealth Constitution Act. The powers and duties of the Governor-General were further defined by Royal instructions passed on the same date. The principal and most important of his functions, legislative, as well

as executive, are expressly conferred upon him by the terms of the Constitution itself. He is the custodian of the Great Seal of the Commonwealth, and has the appointment of political officers to administer Departments of State of the Commonwealth.

- (a) His legislative functions are exercised with respect to proposed laws as finally passed by the Federal Houses of Parliament. Such Bills are presented to the Governor-General for his assent in the King's name, on receiving which they become law throughout the Commonwealth. The Governor-General may, however, withhold his assent, or may reserve any Bill for the King's pleasure. He may return to the House in which it originated any proposed law with suggested amendments. The King may disallow any law within one year from the date on which it was assented to by the Governor-General.
- (b) The Governor-General's executive functions are, under ordinary circumstances, exercised on the advice of his responsible Ministers. Various specific powers are vested in him by the Constitution; he may summon or prorogue Parliament and may dissolve the House of Representatives. He is the Commander-in-Chief of the military and naval forces of the Commonwealth, and is invested by the Crown with the prerogative of mercy in case of offences committed against the laws of the Commonwealth.
- (c) The Governor-General is also invested with authority in certain matters of Imperial interest, such as the control of the naval and military forces of the Commonwealth; the observance of the relations of foreign States to Great Britain, so far as they may be affected by the indirect relations of such States to the Commonwealth; and the treatment of neutral and belligerent ships in Commonwealth waters in time of war.

The Governor-General may not leave the Commonwealth without having first obtained leave from the Imperial Government, to whom he is alone responsible for his official acts. The present Governor-General is the Right Honourable William Humble, Earl of Dudley, P.C., G.C.M.G., G.C.V.O., etc. He assumed office on the 9th September, 1908. (Particulars of previous Governors-General are given on p. 55 hereinbefore.)

(ii.) *The State Governors.* The powers and functions of the State Governors are, within their respective States, very similar to those exercised by the Governor-General for the Commonwealth, and are defined by the terms of their Commissions and by the Royal instructions accompanying the same. A State Governor is the official head of the State Legislature, and assents in the name of the Crown to all Bills passed by the Parliament, reserving for the Royal Assent certain classes of Bills, which are regulated by the Constitution Acts and by the instructions issued by the Imperial Government. The Governors are, under ordinary circumstances, guided by their Executive Councils, the chief matters in which the exercise of discretion is required being the granting or withholding of a dissolution of Parliament when requested by a Premier; the appointment of a new Ministry; or the assenting to, vetoing, or receiving of Bills passed by the legislative chambers. The Governors are authorised, under certain restrictions, to administer the prerogative of mercy by the reprieve or pardon of criminal offenders within their jurisdiction, and to remit fines and penalties due to the Crown. All moneys to be expended for the public service are issued from the Treasury under the Governor's warrant.

8. Cost of Parliamentary Government.—The following statement shews the cost of parliamentary government in the Commonwealth and in each State, as well as in the whole of Australia, for the year ended the 30th June, 1908 :—

COST OF PARLIAMENTARY GOVERNMENT, 1907-8.

| Particulars. | C'th. | N. S. W. * | Vict. | Q'ld. | S. A. | W. A. | Tas. | Total.† |
|---|----------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| 1. Governor-General or Governor— | | | | | | | | |
| Governor's salary | 10,000 | | 5,000 | 3,000 | 4,000 | 4,000 | 2,750 | 28,750 |
| Private secretary's salary | ... | | ... | 300 | ... | 350 | ... | 650 |
| Governor's establishments | 7,034 | | 2,055 | 826 | ... | 398 | 190 | 15,015 |
| Repairs and maintenance of Governor's residences | 1,848 | | 332 | 925 | 119 | 621 | 372 | |
| Miscellaneous | ... | | ... | ... | 189 | ... | 106 | |
| Total | 18,882 | | 7,387 | 5,051 | 4,308 | 5,369 | 3,418 | 44,415 |
| 2. Executive Council— | | | | | | | | |
| Salaries of officers | 785 | | 298 | 230 | ... | 350 | ... | 1,663 |
| Other expenses | 13 | | 10 | 76 | ... | 30 | 24 | 153 |
| Total | 798 | | 308 | 306 | ... | 380 | 24 | 1,816 |
| 3. Ministry— | | | | | | | | |
| Salary of Ministers | 12,000 | | 8,400 | 7,662 | 4,000 | 6,200 | 3,200 | 41,462 |
| Other expenses | 72 | | ... | ... | 111 | 1,127 | 221 | 1,531 |
| Total | 12,072 | | 8,400 | 7,662 | 4,111 | 7,327 | 3,421 | 42,993 |
| 4. Parliament— | | | | | | | | |
| A. The Upper House: | | | | | | | | |
| Allowances to members | 19,446 | | ... | ... | 3,200 | 1,734 | 1,503 | 25,883 |
| Railway passes | 2,160 | | 1,020 | ... | 450 | ... | 679 | 4,309 |
| Other expenses of members | ... | | ... | ... | ... | ... | 1 | 1 |
| B. The Lower House: | | | | | | | | |
| Allowances to members | 41,231 | | 17,100 | 17,008 | 7,381 | 2,605 | 3,000 | 88,325 |
| Railway passes | 4,500 | | 1,950 | ... | 1,050 | ... | 1,321 | 8,821 |
| Other expenses of members | ... | | ... | 520 | 76 | ... | 10 | 606 |
| C. Miscellaneous: | | | | | | | | |
| Salaries of officers and staff | 12,968 | | 13,051 | 9,377 | 5,689 | 2,184 | 2,440 | 45,709 |
| Printing | 19,169 | | 1,776 | 1,712 | 4,841 | ... | 1,486 | 28,984 |
| Hansard | 7,237 | | 6,077 | 2,909 | 2,668 | 1,850 | ... | 20,641 |
| Library | 3,460 | | 1,288 | 491 | 255 | 150 | 120 | 5,764 |
| Refreshment rooms | 990 | | 1,287 | 785 | 697 | ... | 58 | 23,753 |
| Water, power, light and heat | 1,495 | | 909 | 419 | 720 | 4,325 | 104 | |
| Postage and stationery | 1,180 | | 680 | 169 | ... | ... | 90 | |
| Miscellaneous | 8,307 | | 280 | 806 | 298 | ... | 154 | |
| Total | 122,143 | | 45,418 | 34,096 | 27,325 | 12,848 | 10,966 | 252,796 |
| 5. Electoral Office— | | | | | | | | |
| Salaries of officers and staff | 4,654 | | 14,300 | 1,085 | 976 | 1,983 | ... | 22,998 |
| Other expenses | 10,766 | | 2,056 | 1,553 | 1,496 | 8,656 | 528 | 25,055 |
| Total | 15,420 | | 16,356 | 2,638 | 2,472 | 10,639 | 528 | 48,053 |
| 6. Cost of Elections | 4,078 | | 584 | 7,952 | 161 | ... | 24 | 13,799 |
| 7. Royal Commissions and Select Committees— | | | | | | | | |
| Fees of members | 85 | | 1,200 | 491 | ... | ... | ... | 8,425 |
| Other expenses of members | 33 | | 788 | 6 | 276 | 2,098 | 847 | |
| Miscellaneous | 307 | | 722 | 732 | 842 | ... | ... | |
| Total | 425 | | 2,708 | 1,229 | 1,118 | 2,098 | 847 | 8,425 |
| GRAND TOTAL | 173,818 | | 81,161 | 58,934 | 39,495 | 38,661 | 19,228 | †411,297 |

* Information not available, 23/3/09. † Exclusive of New South Wales.

§ 2. Parliaments and Elections.

1. *Qualifications for Membership and for Franchise.*—The summary on pages 964-5 gives particulars as to the legislative chambers in the Commonwealth and State Parliaments, and shews concisely the qualifications necessary for membership and for the franchise in each House. Persons who are otherwise eligible, either as members or voters, are generally disqualified on the usual grounds of being of unsound mind or attainted of treason, being convicted of certain offences, and, as regards membership, on

the grounds of holding a place of profit under the Crown, being pecuniarily interested in Government contracts, or being an undischarged bankrupt.

2. **The Federal Parliament.**—The Senate consists of thirty-six members, six being returned by each of the original federating States. Members of this chamber are elected for a term of six years, but by a provision in the Constitution a certain number retire at the end of every third year, although they are eligible for re-election. In accordance with the Constitution the total number of members of the House of Representatives must be as nearly as possible double that of the Senate. In the House of Representatives the States are represented on a population basis, and the numbers stand at present as follows:—New South Wales, 27; Victoria, 22; Queensland, 9; South Australia, 7; Western Australia, 5; Tasmania, 5—total, 75. The Constitution provides for a minimum of five members in each original State. Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years. In elections for Senators each State is counted as a single electorate, but an elaborate scheme of subdivision had to be undertaken in order to provide workable electorates in each State for members of the House of Representatives. Members of both Houses are paid at the rate of £600 per annum.

(i.) *Particulars of Elections.* Since the establishment of the Commonwealth there have been three elections for the Senate and for the House of Representatives. Further information as to the Commonwealth Parliaments since their inception is given on page 957 hereinbefore. Particulars regarding the number of electors enrolled and the number of electors to whom ballot-papers were issued at the last two elections may be found in the tables given hereunder:—

FEDERAL ELECTIONS OF 16th DECEMBER, 1903, AND 12th DECEMBER, 1906.

| State. | Electors Enrolled.* | | | Electors to whom Ballot Papers were Issued. | | | Percentage of Voters to Electors Enrolled. | | | |
|---------------------------------------|---------------------|-----------|---------|---|---------|---------|--|-------|--------|-------|
| | Males. | Fem. | Total. | Males. | Fem. | Total. | Males. | Fem. | Total. | |
| THE SENATE. | | | | | | | | | | |
| New South Wales | 1903 | 360,285 | 326,764 | 687,049 | 189,877 | 134,487 | 324,364 | 52.70 | 41.16 | 47.21 |
| | 1906 | 392,077 | 345,522 | 737,599 | 229,654 | 151,682 | 381,336 | 58.57 | 43.90 | 51.70 |
| Victoria ... | 1903 | 302,069 | 310,403 | 612,472 | 171,839 | 141,648 | 313,487 | 56.89 | 45.63 | 51.18 |
| | 1906 | 335,886 | 336,168 | 672,054 | 209,252 | 171,933 | 381,185 | 62.90 | 51.14 | 56.72 |
| Queensland | 1903 | 127,914 | 99,166 | 227,080 | 79,938 | 44,569 | 124,507 | 62.49 | 44.04 | 54.83 |
| | 1906 | 150,037 | 121,072 | 271,109 | 79,567 | 44,972 | 124,539 | 53.03 | 37.14 | 45.94 |
| South Australia ... | 1903 | 85,947 | 81,828 | 167,775 | 35,736 | 19,049 | 54,785 | 41.58 | 23.28 | 32.65 |
| | 1906 | 97,454 | 95,664 | 193,118 | 49,318 | 27,199 | 76,517 | 44.45 | 28.43 | 36.51 |
| Western Australia | 1903 | 74,754 | 42,186 | 116,942 | 28,873 | 6,270 | 35,148 | 35.96 | 14.86 | 28.35 |
| | 1906 | 91,427 | 54,046 | 145,473 | 37,180 | 15,532 | 52,712 | 40.67 | 28.74 | 36.23 |
| Tasmania | 1903 | 43,515 | 38,753 | 82,268 | 23,729 | 13,292 | 37,021 | 54.53 | 34.30 | 45.00 |
| | 1906 | 47,306 | 42,903 | 90,209 | 29,164 | 19,715 | 48,879 | 61.65 | 45.95 | 54.18 |
| Commonwealth | 1903 | 994,484 | 899,102 | 1,893,586 | 527,997 | 359,315 | 887,312 | 53.09 | 39.96 | 46.86 |
| | 1906 | 1,114,187 | 995,375 | 2,109,562 | 628,135 | 431,033 | 1,059,168 | 56.38 | 43.30 | 50.21 |
| THE HOUSE OF REPRESENTATIVES.* | | | | | | | | | | |
| New South Wales | 1903 | 303,254 | 274,763 | 578,017 | 164,133 | 118,381 | 282,514 | 54.12 | 43.08 | 48.88 |
| | 1906 | 363,723 | 314,777 | 678,500 | 216,150 | 141,227 | 357,377 | 59.43 | 44.87 | 52.67 |
| Victoria ... | 1903 | 241,134 | 247,089 | 488,223 | 142,460 | 120,329 | 262,789 | 59.08 | 48.70 | 53.83 |
| | 1906 | 335,886 | 336,168 | 672,054 | 209,266 | 171,999 | 381,265 | 62.90 | 51.16 | 56.73 |
| Queensland | 1903 | 114,550 | 88,375 | 202,925 | 74,042 | 41,689 | 115,731 | 64.64 | 47.17 | 57.03 |
| | 1906 | 150,037 | 121,072 | 271,109 | 79,540 | 44,942 | 124,482 | 53.01 | 37.12 | 45.92 |
| South Australia ... | 1903 | 23,856 | 25,789 | 49,645 | 12,394 | 7,728 | 20,122 | 51.95 | 29.97 | 40.53 |
| | 1906 | 42,065 | 38,578 | 80,643 | 19,850 | 12,669 | 32,519 | 47.19 | 32.84 | 40.32 |
| Western Australia | 1903 | 41,500 | 26,324 | 67,824 | 16,524 | 4,409 | 21,233 | 40.54 | 15.57 | 30.41 |
| | 1906 | 91,427 | 54,046 | 145,473 | 36,976 | 15,740 | 52,716 | 40.44 | 29.12 | 36.24 |
| Tasmania | 1903 | 43,515 | 38,753 | 82,268 | 23,729 | 13,294 | 37,013 | 54.53 | 34.28 | 44.99 |
| | 1906 | 47,779 | 34,839 | 82,618 | 23,753 | 16,441 | 40,194 | 62.87 | 47.19 | 55.35 |
| Commonwealth | 1903 | 767,809 | 708,088 | 1,475,902 | 433,582 | 305,820 | 739,402 | 56.47 | 43.50 | 50.27 |
| | 1906 | 1,020,917 | 899,480 | 1,920,397 | 585,535 | 408,018 | 993,553 | 57.35 | 44.81 | 51.48 |

* For the House of Representatives the number of electors enrolled in contested divisions only is given.

PARLIAMENTS AND ELECTORATES.

| Particulars. | Commonwealth. | New South Wales. | Victoria. |
|--|---|---|--|
| 1. Senate and Legislative Councils. | | | |
| <i>Number of Members</i> ... | 36 | 61. May not be less than 21 | 34 |
| <i>Qualification for Membership</i> ... | Adult British subjects natural-born or naturalised for 5 years, if (a) eligible to vote at the elections for the Senate, and (b) resident for at least 3 years within the Commonwealth | Male adult natural-born or naturalised British subjects | Male natural-born or naturalised British subjects of the age of 30 years or upwards, (a) if possessed of a freehold property of the annual value of at least £50 for one year previous to the election, and (b) in the case of naturalised subjects if a resident of the State for 10 years |
| <i>Period for which elected or nominated</i> ... | 6 years | For life | 6 years |
| <i>Allowance to Members</i> ... | £600 each per annum | None | None |
| <i>Qualification for Franchise</i> | Adult British subjects of either sex who have lived in Australia for 6 months continuously. Aboriginal natives of Australia, Asia, Africa, or the islands of the Pacific, except New Zealand, cannot vote at federal elections unless they have acquired a right to vote at elections for the Lower House of a State Parliament | (Nominated) | Male adult British subjects, if either (a) the owner of a freehold of the annual value of £10 or of a leasehold of property rated at £15, or (b) a graduate of a British university, matriculated students of Melbourne University, qualified legal and medical practitioners, ministers of religion, certificated schoolmasters, and naval and military officers. Naturalised subjects must be of 3 years' standing, and must have resided in the State for 12 months |
| 2. House of Representatives, Legislative Assemblies, etc. | | | |
| <i>Number of Members</i> ... | 75 | 90 | 65 |
| <i>Qualification for Membership</i> ... | The same as for the Upper House | Male adult British subjects if qualified to vote at an election of members of the Legislative Assembly, unless disqualified under the Constitution Acts or the Federal Elections Act 1900 | Male adult natural-born British subjects or aliens naturalised for the period of 5 years, if resident in the State for not less than 2 years |
| <i>Period for which elected</i> ... | Duration of Parliament, which is limited to 3 years | Duration of Parliament, which is limited to 3 years | Duration of Parliament, which is limited to 3 years |
| <i>Allowance to Members</i> ... | £600 each per annum | £300 each per annum | £300 each per annum |
| <i>Qualification for Franchise</i> | The same as for the Upper House | Adult naturalised subjects of either sex, who have resided in the State continuously for one year after naturalisation, and adult natural-born subjects who have resided in the State for a continuous period of 1 year | *Male adult natural-born subjects or naturalised for 1 year prior to the 1st January or the 1st July in any year, if (a) enrolled as ratepayer, or (b) if holding an elector's right and enrolled on the general or supplementary roll |

* The Bill extending the franchise to females had not been assented to on the 22nd March, 1909.

SUMMARY, 1908.

| Queensland. | South Australia. | Western Australia. | Tasmania. |
|--|--|--|---|
| 44 | 18 | 30 | 18 |
| <p>Male adult natural-born or naturalised British subjects</p> <p>For life</p> <p>None</p> <p>(Nominated)</p> | <p>Male natural-born or naturalised British subjects if (a) of the age of 30 years or upwards, and (b) if resident in the State for 3 years</p> <p>6 years</p> <p>£200 each per annum</p> | <p>Male natural-born or naturalised British subjects of the age of 30 years or upwards, if (a) in the case of natural-born subjects, resident in the State for 2 years, and (b) in the case of naturalised subjects, if naturalised for 5 years previous to the election and resident in the State during that period</p> <p>6 years</p> <p>£200 each per annum</p> | <p>Male natural-born or naturalised British subjects of the age of 30 years or upwards, if qualified to vote at the election for the Legislative Council</p> <p>6 years</p> <p>£100 each per annum</p> |
| <p>Adult British subjects of either sex who are either (a) owners of a freehold of the clear value of £50, (b) owners of a leasehold of the clear annual value of £17, with at least 3 years to run or containing a right of purchase, (c) occupiers of a dwelling-house of the clear annual value of £25, (d) registered proprietors of a Crown lease on which there are improvements to the value of at least £50. Voters must have been enrolled for 6 months prior to the election</p> | <p>Adult British subjects of either sex who have resided in the State for 6 months, and who either (a) own a freehold estate to the value of £100, (b) occupy a house or own leasehold property rated at £25, (c) hold Crown leases or licenses to the value of not less than £10 per annum, or (d) are on the electoral list of a municipality or road-board district in respect of property of the annual value of £25. Aboriginal natives may only acquire the franchise in respect of a freehold qualification</p> | <p>Adult British subjects of either sex who have resided in the State for 12 months, if either (a) possessing freehold to the annual value of £10 or leasehold to the value of £30, or (b) graduates of a British university, qualified legal or medical practitioners, or naval or military officers</p> | <p>Adult British subjects of either sex who have resided in the State for 12 months, if either (a) possessing freehold to the annual value of £10 or leasehold to the value of £30, or (b) graduates of a British university, qualified legal or medical practitioners, or naval or military officers</p> |
| 72 | 42 | 150 | 35 |
| <p>All persons qualified and registered to vote at the election of members of the Legislative Assembly are eligible as members.</p> <p>Duration of Parliament, which is limited to 3 years</p> <p>£300 each per annum</p> | <p>Any person qualified for the franchise of the House of Assembly is eligible for membership</p> <p>Duration of Parliament, which is limited to 3 years</p> <p>£200 each per annum</p> | <p>Male adult British subjects, if resident in the State for 12 months. Naturalised subjects must have been naturalised for 5 years and have resided in the State for 2 years previous to the election</p> <p>Duration of Parliament, which is limited to 3 years</p> <p>£200 each per annum</p> | <p>Adult British subjects of either sex if (a) they have resided in the State for 6 months continuously and (b) they are enrolled on the electoral lists</p> <p>Duration of Parliament, which is limited to 3 years</p> <p>£100 each per annum</p> |
| <p>Adult British subjects of either sex who either (a) have resided in Queensland for 12 months continuously and whose names are on the electoral roll, (b) own freehold estate of the value of £100, (c) have occupied a house of the annual value of £10 for at least 6 months, or (d) have a leasehold estate in possession of the annual value of £20 with not less than 18 months to run. Aboriginal natives may vote only under the freehold qualification</p> | <p>Adult British subjects of either sex who have been registered on the electoral roll for 6 months. In the Northern Territory only natural-born British subjects and naturalised Europeans or Americans may vote</p> | <p>Adult British subjects of either sex who have resided in the State for 6 months, and who either (a) own freehold to the value of £50, (b) hold a household or leasehold property to the value of £10 per annum, (c) hold a pastoral, agricultural, occupation, or mining lease or license from the Crown to the value of £5 per annum, or (d) are registered on the roll of a municipality or roads board. Aboriginals may only be registered in respect of freehold property</p> | <p>Adult British subjects of either sex who have resided in the State for 12 months</p> |

In the Senate the figures for the year 1906 shew that ballot-papers were issued to a little more than half the electorate, and are a slight improvement on those for the year 1903, when only about 47 per cent. of the electors visited the polls. Allowing for the various causes which may have prevented those qualified from recording their votes, it cannot be said that the electors of the Commonwealth have, so far, set a high value on the privilege of the franchise. In the elections for the House of Representatives the figures for both years shew an improvement in percentage of voters as compared with the returns for the Senate; nevertheless they cannot be looked upon as satisfactory. In every instance the percentage of female voters is very far below that of the males.

3. The Parliament of New South Wales.—The Legislative Council is in this State a nominee chamber, the Legislative Assembly being an elective body. Theoretically the Legislative Council may contain an unlimited number of members, but in practice the number is restricted to about sixty, the members at the latest available date being sixty-one. Members are appointed by the Governor, acting on the advice of the Executive Council. The tenure of the seat is for life; four-fifths of the members must be persons not holding any paid office under the Crown, but this is not held to include officers of His Majesty's sea or land forces on full or half pay, or retired officers on pensions. The Legislative Assembly consists of ninety members, who hold their seats during the existence of the Parliament to which they are elected. The duration of any single Parliament is limited to three years.

(i.) *Particulars of Elections.* Since the introduction of responsible government in New South Wales there have been twenty complete Parliaments, the first of which opened on the 22nd May, 1856, and was dissolved on the 19th December, 1857, while the twentieth opened on the 23rd August, 1904, and closed on the 12th July, 1907. The average duration of the Parliaments was two years and five months. The first session of the twenty-first Parliament was opened on the 30th September, 1907.

Particulars of voting at the last six elections are given below:—

LEGISLATIVE ASSEMBLY ELECTIONS, NEW SOUTH WALES.

| Date of Opening of Parliament. | Electors upon the Roll. | Members Returned. | Members Unopposed. | Contested Electorates. | | | | |
|--------------------------------|-------------------------|-------------------|--------------------|-------------------------|-----------------|-------------------------------|-------------------------------|------|
| | | | | Electors upon the Roll. | Votes Recorded. | Percentage of Votes Recorded. | Percentage of Informal Votes. | |
| 7th August, 1894 | 298,817 | 125 | 1 | 254,105 | 204,246 | 80.38 | 1.62 | |
| 13th „ 1895 | 267,458 | 125 | 8 | 233,233 | 153,034 | 64.24 | 0.88 | |
| 16th „ 1898 | 324,339 | 125 | 3 | 294,481 | 178,717 | 60.69 | 0.92 | |
| 23rd July, 1901 | 346,184 | 125 | 13 | 270,861 | 195,359 | 72.13 | 0.79 | |
| 23rd August, 1904 | Males | 363,062 | 90 | 2 | 304,396 | 226,057 | 74.26 | 0.59 |
| | Females | 326,428 | | | 262,433 | 174,538 | 66.51 | |
| 10th September, 1907 | Males | 392,845 | 90 | 5 | 370,715 | 267,301 | 72.10 | * |
| | Females | 353,055 | | | 336,680 | 204,650 | 60.78 | * |

* Not available.

The franchise was extended to women in 1902, and was exercised for the first time at a State election in 1904.

4. The Parliament of Victoria.—Both of the Victorian legislative chambers are elective bodies, but there is a considerable difference in the number of members of each House, as well as in the qualifications necessary for members and electors. In the Legislative Council the tenure of the seat is for six years, but one member for each province retires every third year, except in the case of a dissolution, when one half of the

newly elected members hold their seats for three years only. Members of the Legislative Assembly are elected for the duration of Parliament, which is limited to three years. An elector for the Legislative Assembly may only vote once, plurality of voting having been abolished in 1899; an elector, however, qualified in more than one district, may select that for which he desires to record his vote.

(i.) *Particulars of Elections.* Since the introduction of responsible government in Victoria there have been twenty-one complete Parliaments, the first of which was opened on the 21st November, 1856, and closed on the 9th August, 1859, while the twenty-first opened on the 9th July, 1907, and closed on the 3rd December, 1908. The first session of the twenty-second Parliament opened on the 9th February, 1909.

Statistics regarding the last four elections will be found below:—

PARTICULARS OF VICTORIAN ELECTIONS, 1902 to 1908.

| Year. | Legislative Council. | | | | Legislative Assembly. | | | |
|----------|----------------------|----------------------------------|-------------------------------|--------------|-----------------------|----------------------------------|--------------------------------|--------------|
| | Electors on Roll. | Electors in Contested Districts. | Voters in Contested Districts | Per-centage. | Electors on Roll. | Electors in Contested Districts. | Voters in Contested Districts. | Per-centage. |
| 1902 ... | 134,087 | * | * | * | 290,241 | 216,063 | 141,471 | 65.47 |
| 1904 ... | 172,495 | 104,843 | 61,382 | 58.54 | 264,709 | 223,600 | 140,127 | 62.66 |
| 1907 ... | 180,738 | 78,512 | 27,152 | 34.58 | 260,787 | 191,131 | 117,098 | 61.26 |
| 1908 ... | 185,234 | * | * | * | 263,876 | 164,919 | 88,461 | 53.64 |

* Not contested.

As the table shews, the proportion of voters for the Legislative Council is considerably less than that for the Legislative Assembly. The number of persons who voted by post at the elections for the Legislative Assembly in 1908 was 3790.

5. The Parliament of Queensland.—No limit is set by the Constitution Act to the number of members of the Legislative Council of Queensland, the total at the latest available date being forty-four. Members are appointed by the State Governor, and it is provided that not less than four-fifths of the members must consist of persons not holding any office under the Crown, except officers of His Majesty's sea or land forces on full or half-pay, or retired officers on pensions. The members are nominated for life. The Legislative Assembly is composed of seventy-two members, returned from sixty-one electorates, eleven electorates returning two members each, the others being single electorates.

(i.) *Particulars of Elections.* Since the establishment of responsible government in Queensland there have been sixteen complete Parliaments, the first of which opened on the 29th May, 1860, and dissolved on the 20th May, 1863, while the sixteenth Parliament opened on the 23rd July, 1907, and closed on the 10th December, 1907. The seventeenth Parliament is now in session. Statistics regarding the elections of 1902, 1904, and 1907 are given below:—

ELECTIONS FOR QUEENSLAND LEGISLATIVE ASSEMBLY.

| Year. | Number of Seats. | Number of Candidates Nominated. | Candidates sent to the Poll. | Electors Enrolled. | | | Electors who Voted. | | | Percentage of Electors Voting in Contested Electorates. | | |
|-------|------------------|---------------------------------|------------------------------|--------------------|---------|---------|---------------------|---------|---------|---|---------|--------|
| | | | | Males. | Females | Total. | Males. | Females | Total. | Males. | Females | Total. |
| | | | | 1902 | 72 | 159 | 154 | 108,548 | — | 108,548 | 80,076 | — | 80,076 | 76.88 | — | 78.88 |
| 1904 | 72 | 140 | 117 | 103,943 | — | 103,943 | 60,265 | — | 60,265 | 74.16 | — | 74.16 |
| 1907 | 72 | 185 | 179 | 125,140 | 95,049 | 220,189 | — | — | 152,049 | 73.42 | 63.64 | 71.61 |

The election of 1907 was the first State election in Queensland at which women voted, the privilege being conferred under Act 5 Edw. VII., No. 1. Some of the returns

did not separate the sexes in the figures respecting the number of electors who voted, and the percentage of males and females was therefore calculated on the total returns where the subdivision was made.

6. Parliament of South Australia.—In this State there is a Legislative Council composed of eighteen members and a House of Assembly with forty-two members, both chambers being elective. Under the Constitution Amendment Act, 1908, the State of South Australia (including the Northern Territory) is divided into four Council Districts, of which one returns six members, and the other three return four members each, to the Legislative Council. For the purpose of electing members of the House of Assembly the State (exclusive of the Northern Territory) is divided into twelve electoral districts, and the Northern Territory remains, as before, an electoral district returning two members. One of the electoral districts (Torrens) returns five members; two (Adelaide and Alexandra) four members each; and the others return three members each.

(i.) *Particulars of Elections.* Since the inauguration of responsible government in South Australia there have been eighteen complete Parliaments, the first of which was opened on the 22nd April, 1857, and dissolved on the 1st September, 1859, while the eighteenth was opened on the 20th July, 1905, and terminated on the 10th October, 1906. The first session of the nineteenth Parliament opened on the 30th November, 1906. Particulars of voting at the last three elections are given below:—

PARLIAMENTARY ELECTIONS IN SOUTH AUSTRALIA.

| Year. | Electors on Rolls. | | | Electors Who Voted. | | | Percentage of Electors Voting. | |
|------------------------------|--------------------|----------|---------|---------------------|----------|---------|--------------------------------|----------|
| | Males. | Females. | Total. | Males. | Females. | Total. | Males. | Females. |
| LEGISLATIVE COUNCIL. | | | | | | | | |
| 1900 ... | 38,688 | 9,854 | 48,542 | 21,403 | 3,907 | 25,310 | 55.32 | 39.65 |
| 1902 ... | 38,413 | 13,496 | 51,909 | 29,978 | 7,940 | 37,918 | 78.04 | 58.83 |
| 1905 ... | 39,011 | 13,873 | 52,884 | 28,820 | 8,328 | 37,148 | 73.88 | 60.03 |
| LEGISLATIVE ASSEMBLY. | | | | | | | | |
| 1902 ... | 77,147 | 72,080 | 149,177 | 53,471 | 36,545 | 90,016 | 62.14 | 49.22 |
| 1905 ... | 95,396 | 92,249 | 187,645 | 64,330 | 50,246 | 114,576 | 67.43 | 54.47 |
| 1906 ... | 96,724 | 93,438 | 190,162 | 60,109 | 45,997 | 106,106 | 69.31 | 50.73 |

The proportions of votes recorded to total persons entitled to vote in each of the three years given above were as follows:—Legislative Council, 52.14, 73.05, and 70.24 per cent.; and Legislative Assembly, 55.80, 61.06, and 60.34 per cent.

It is interesting to note that South Australia was the first of the States to grant women's suffrage (under Act No. 16 of 1894), the franchise being exercised for the first time at the Legislative Assembly election on the 25th April, 1896.

7. Parliament of Western Australia.—In this State both chambers are elective. For the Legislative Council there are thirty members, each of the ten electorates returning three members, while the Legislative Assembly is composed of fifty members, one member being returned by each of the fifty electoral divisions. At the expiration of two years from the date of election to a seat in the Legislative Council, and every two years thereafter, the senior member for the time being for each province retires. Seniority is determined (a) by date of election, (b) if two or more members are elected in the same day, then the senior is the one who polled the least number of votes, (c) if the election be uncontested, or in case of an equality of votes, then the seniority is determined by the alphabetical precedence of surnames and, if necessary, Christian names. Members of the Legislative Assembly are elected for three years.

(i.) *Particulars of Elections.* Since the establishment of responsible government in Western Australia there have been five complete Parliaments, the first of which was opened on the 30th December, 1890, and was dissolved on the 22nd March, 1893, while the sixth Parliament was opened on the 23rd November, 1905, and closed on the 12th August, 1908. The first session of the seventh Parliament commenced on the 10th November, 1908. Particulars relating to the last four parliamentary elections are given in the table below. The figures refer to electors for the Assembly only, no returns being published with regard to voting at Council elections :—

ELECTIONS FOR LEGISLATIVE ASSEMBLY, WESTERN AUSTRALIA.

| Year. | Electors on the Roll. | | | In Contested Districts. | | | Votes Recorded. | | | Percentage of Electors Voting. | | |
|-------|-----------------------|----------|---------|-------------------------|----------|---------|-----------------|----------|--------|--------------------------------|----------|--------|
| | Males. | Females. | Total. | Males. | Females. | Total. | Males. | Females. | Total. | Males. | Females. | Total. |
| 1901 | 74,874 | 16,648 | 91,522 | 67,967 | 14,775 | 82,742 | 29,832 | 8,255 | 38,077 | 44 | 56 | 46 |
| 1904 | 108,861 | 54,965 | 163,826 | 88,524 | 49,791 | 138,315 | 45,285 | 23,500 | 66,785 | 49 | 47 | 48 |
| 1905 | 79,025 | 42,697 | 121,722 | 65,296 | 36,706 | 102,002 | 33,482 | 19,435 | 52,917 | 51 | 53 | 52 |
| 1908 | 83,060 | 52,919 | 135,979 | 69,277 | 44,804 | 114,081 | 46,411 | 29,412 | 75,823 | 67 | 66 | 66 |

8. **Parliament of Tasmania.**—In Tasmania there are two legislative chambers—the Legislative Council and the House of Assembly, both bodies being elective. The Council consists of eighteen members, returned from fifteen districts, Hobart returning three, Launceston two, and the remaining thirteen districts sending one member each. For the Parliament which expired in March, 1909, there were thirty-five House of Assembly districts, each district returning one member, but, in accordance with the Constitution Amendment Act of 1906, upon the expiration of the last Assembly, either by dissolution or by effluxion of time, there are to be five House of Assembly districts, viz., the Commonwealth electoral districts, each district returning six members. The existing electoral system will remain in force until the elections of 1909, when the provisions of the Electoral Act 1907 come into force.

(i.) *Particulars of Elections.* Particulars of the voting at the last three elections are given hereunder.

ELECTIONS, HOUSE OF ASSEMBLY, TASMANIA.

| Year. | Electors on Roll. | | Electors in Contested Districts. | | Votes Recorded. | | Percentage of Electors Voting. | | |
|-------|-------------------|----------|----------------------------------|----------|-----------------|----------|--------------------------------|----------|-------|
| | Males. | Females. | Males. | Females. | Males. | Females. | Males. | Females. | |
| 1900 | ... | 39,002 | ... | 29,022 | ... | 18,872 | ... | 65.02 | ... |
| *1903 | ... | 43,999 | ... | 40,267 | ... | 23,766 | ... | 59.87 | ... |
| †1906 | ... | 47,400 | 41,629 | 37,120 | 33,415 | 23,128 | 17,194 | 62.30 | 51.46 |

* Manhood suffrage, Act 64 Vic., No. 5. † Universal adult suffrage, Act 3 Edward VII., No. 13.

It is proposed to give, in a future issue of this book, particulars of the systems of preferential voting in force in certain of the States of the Commonwealth.

§ 3. Administrative Government.

In each State, as well as in the Commonwealth, the Government is administered by a number of chief departments, on lines similar to those on which administrative government is carried on in the United Kingdom. Reference has already been made to the creation of the Commonwealth Departments (see pages 793-4). In the States the

number and functions of the administrative departments vary considerably. This matter has also been referred to hereinbefore (see page 819). In many cases more than one department is under the control of a single Minister. The tabular statement given on this page and on the following pages shews the sub-departments, branches, etc., of each Ministerial Department in each State and in the Commonwealth, together with the Acts administered and other more important matters dealt with.

COMMONWEALTH—ADMINISTRATIVE GOVERNMENT, 1909.

| Departments, Sub-departments, Branches, etc. | Acts Administered. | Matters dealt with or under Control. |
|--|---|--|
| 1. External Affairs— | Contract Immigrants, Extradition, Immigration Restriction, Naturalisation, Pacific Island Labourers, Papua, Royal Commissions. | Commonwealth Gazette, Communications with the States, Consular appointments, Federal Executive Council, external affairs, extra territorial fisheries, High Commissioner, immigration and emigration, aliens and naturalisation, officers of Parliament, passports, relations with Pacific Islands, Royal Commissions, and territories of the Commonwealth. |
| 2. Attorney-General's— (a) Crown-Solicitor (b) High Court | Conciliation and Arbitration, High Court Procedure, Judiciary, Rules Publication, Service and Execution of Process, State Laws and Records Recognition. | Bankruptcy and insolvency, bills of exchange and promissory notes, conciliation and arbitration, Crown Law offices, divorce and matrimonial cases, foreign corporations, judiciary & courts, marriage, Parliamentary drafting, recognition throughout Commonwealth of State laws, records, and judicial proceedings, service and execution throughout Commonwealth of State process and judgments. |
| 3. Home Affairs— (a) Bureau of Census and Statistics. (b) Electoral Office. (c) Meteorological Office. (d) Public Works. (e) Public Service Commissioner. | Census & Statistics, Electoral, Electoral Divisions, Franchise, Governor-General's Residences, Lands Acquisition, Property for Public Purposes Acquisition, Public Service, Referendum (Constitution alteration), Representation, Seat of Government, Senate Elections. | Acquisition of lands, census & statistics, elections, franchise, Inter-state Commission, Public Service, public works, railways, representation of the people, rivers, seat of Government. |
| 4. Treasury— (a) Audit Office | Audit, Invalid and Old-Age Pensions, Life Assurance (Companies), Surplus Revenue. | Appropriation & supply, audit, banking, currency and coinage, Government printer, insurance, invalid & old-age pensions, public loans and moneys, State debts, taxation (other than Customs and Excise duties). |
| 5. Trade and Customs— (a) Patents, Copyright, Designs, and Trade Marks. | Australian Industries Preservation, Beer Excise, Bounties, Commerce (trade descriptions), Copyright, Customs, Customs Tariff, Designs, Distillation, Excise, Excise Tariff, Excise Procedure, Manufacturers' Encouragement, Patents, Quarantine, Sea-carriage of Goods, Secret Commissions, Spirits, Sugar Bounty, Trade Marks, | Bounties, copyright, customs & excise, designs, lighthouses & lightships, buoys and beacons, patents, quarantine, trade and commerce (including navigation & shipping), trade-marks, weights and measures. |
| 6. Defence— (a) Naval Board (b) Military Board | Defence, Naval Agreement. | Control of railways with respect to transport for naval and military purposes, naval and military defence. |
| 7. Postmaster General's— | Meteorology, Post and Telegraph, Post and Telegraph Rates, Tasmanian Cable Rates, Wireless Telegraphy. | Astronomical & meteorological observations, postal, telegraphic, and other like services. |

NEW SOUTH WALES—ADMINISTRATIVE GOVERNMENT, 1909.

| Departments, Sub-Departments, Branches, etc. | Acts Administered. | Matters dealt with or under Control. |
|--|---|---|
| <p>1. Premier's Office*— (a) Executive Council Office. (b) Agent-General. (c) Immigration & Tourists Bureau.</p> | <p>...</p> | <p>Is charged with—Departmental business connected with the Houses of Parliament, including official publication of debates, foreign correspondence, Executive Council, correspondence with Colonial, Commonwealth, and States Governments, Agent-General, Intelligence Department, Immigration</p> |
| <p>2. Chief Secretary— (a) Priv. Secy. to Governor. (b) Audit Dept. (c) Police Dept. (d) Inspector-General of Insane. (e) Public Health Dept. (f) Master in Lunacy. (g) Medical Board. (h) Inspector of Charities. (i) Fisheries Board. (j) Aborigines Protection Board. (k) Fire Brigades Board. (l) Electoral Office. (m) International Exchanges Board. (n) Registry of Friendly Societies and Trade Unions. (o) Bureau of Microbiology. (p) Bureau of Statistics.</p> | <p>Parliamentary Electorates and Elections, Electorates Redistribution, Women's Franchise, Lunacy, Audit, Agreements Validating, Apprentices, Banks and Bank Holidays, Birds Protection, Bread, Building & Co-operative Societies, Sunday Closing, Careless Use of Fire, Constitution, Dentists, Destitute Children's Society, Dog and Goat, Fire Brigades, Fisheries, Friendly Societies, Gaming and Betting, Inebriates, Medical Practitioners, Metropolitan Traffic, Native Animals Protection, Native Dogs Destruction, Noxious Trades, Obscene Publications, Police Offences, Police Regulation, Printing, Public Entertainments, Public Hospitals, Public Health, Quarantine, Sydney Corporation, Vagrancy, Weights and Measures.</p> | <p>Is charged with—the public seal, execution of capital sentences, appointment of magistrates, the police, public health, issue of theatrical & racecourse licenses, care and treatment of insane and inebriates, hospitals & charitable institutions, business relating to ecclesiastical establishments, supervision of dairies, general elections, franchise, statistics, and all matters of business not expressly assigned to any other department.</p> |
| <p>3. Treasury— (a) Stamp Duties Office. (b) Taxation Dept. (c) Government Printing Office. (d) Explosives Dept. (e) Shipping Offices, Sydney and Newcastle. (f) Navigation Dept. (g) Old Age Pensions Bd. (h) Resumed Properties Office. (i) Stores Supply & Tender Board. The following departments are connected with the Treasury though administered by Commissioners:— (a) Government Railways and Tramways. (b) Sydney Harbour Trust. (c) Government Savings Bank.</p> | <p>Stamp Duties, Probate Duties, Companies, Death Duties, Land and Income Tax Assessment, Land and Income Tax, Taxation, Amending Income Tax Deduction, Seamen's, Merchant Shipping, Navigation, Wharfrage and Tonnage Rates, Old-Age Pensions, Invalidity and Accidents, Pensions, Government Railways, Railways Commissioners Appointments, Sydney Harbour Trust, Advances to Settlers, Government Savings Bank.</p> | <p>Finance, management of Consolidated Revenue, public works, closer settlement, Treasury guarantee, and general loan funds, also of public debt, resumed properties, payment of Imperial and State pensions, purchase and issue of stores, Govt. printing office, Govt. railways and tramways, Sydney Harbour Trust, navigation and shipping, storage and issue of explosives, engagement and discharge of seamen in British and colonial vessels, tenders and contracts for public works, etc., State clothing factory.</p> |
| <p>4. Dept. of Attorney-General and of Justice— (a) Prothonotary & Registrar in Divorce. (b) Master in Equity. (c) Sheriff. (d) Registry in Bankruptcy. (e) Registry of Probates, etc. (f) Registry Industrial Disputes. (g) Crown Solicitor. (h) Parliamentary Draftsman. (i) Clerk of the Peace. (j) Registry of Sydney District Court. (k) Registry General. (l) City Coroner. (m) Children's Court. (n) Petty Sessions. (o) Prisons Department. (p) Public Service Board.</p> | <p>Auctioneers, Bankruptcy, Billiards, Companies, Contractors' Debts, Coroners, Crimes, Fines and Penalties, Habitual Criminals, Hawkers and Pedlars, Industrial Disputes, Interstate Debts, Jury, District Courts, Legal Process, Liens on Crops, Liquor, Lotteries, Marriage, Money-lenders, Crown Suits, Defamation, Newspapers, Pawnbrokers, Petty Sessions, Prisons, Public Service, Real Property, Registration of Births, Deaths, and Marriages, of Deeds of Firms, Sheriff, Debts Recovery, Stage Carriages, Wills, Probate and Administration.</p> | <p>Is charged with—business relating to Chief Justice, and Puisne Judges, Supreme Courts, Industrial disputes and District Courts, Quarter Sessions, deals with all matters relating to remission of sentences, or of fines or estreats, with control of Courthouses, etc., and advises the Govt. on all legal questions.</p> |

* This is not a separate department, but is attached to the Ministerial department held by the Premier for the time being.

NEW SOUTH WALES (continued).

| Departments, Sub-Departments, Branches, etc. | Acts Administered. | Matters dealt with or under Control. |
|---|--|---|
| <p>5. Department of Lands.— (a) Survey of Lands. (b) Local Land Boards. (c) Trigonometrical Survey. (d) Land Appeal Court. (e) Western Land Board. (f) Forestry. (g) Closer Settlement Advisory Boards.</p> | <p>Crown Lands, Newcastle Pasturage Reserve, Conditional Purchaser's Relief, Public Roads, Public Parks, Public Gates, Public Trusts, Labour Settlements, Appraisement, Prickly Pear Destruction, Western Lands, Closer Settlement, Block-holders, Church and School Lands, and Timber Licenses.</p> | <p>All business arising from tenures created by Crown Lands Acts, dedications and reservations, exchanges of land, proclamation of towns and villages, business connected with Land Appeal Court, local boards, district surveyors, and Crown land agents, survey of Crown lands, and triangulation survey of State, forestry, and making lands available for settlement.</p> |
| <p>6. Dept. of Public Works.— (a) Architects Branch. (b) Rivers, Water Supply and Drainage. (c) Railway and Tramway Construction. (d) Roads and Bridges. (e) Engineering Drafting. (f) Survey Drafting. (g) Survey. (h) Valuation. (i) Local Government. (j) Accounts. (k) Bonds and Contracts. (l) Labour Bureau. (m) Dock Establishment. (n) Metropolitan Board of Water Supply and Sewerage, and (o) Hunter District Board.</p> | <p>Drainage Promotion, Public Watering Places, Water Rights, Water and Drainage, Artesian Wells, Public Works, Country Towns Water and Sewerage, Metropolitan and Hunter District Water and Sewerage, Scaffolding and Lifts, Local Government, Impounding, and all Acts connected with Public Works.</p> | <p>Erection, maintenance, and repair of public buildings and works; construction of harbour works, docks, water supply and sewerage works, artesian bores, tanks and wells, railways and tramways; "National" roads and bridges; surveys and valuations; administration of new Local Government Acts; construction of dredges and punts, machinery, etc.; registration of unemployed.</p> |
| <p>7. Department of Mines— (a) Registry and Enquiry. (b) Account. (c) Lease. (d) Charting and Mining Survey. (e) Geological Survey. (f) Metallurgical and Assay. (g) Inspectors of Coal Mines and of Mines. (h) Miner's Accident Relief Board. (i) Prospecting Board.</p> | <p>Mining, Miner's Accident Relief, Mines Inspection, Coal Mine Regulations.</p> | <p>All matters relating to mining generally; geological and mining surveys; assays, inspection of mines, miner's accident relief, advances to prospectors.</p> |
| <p>8. Dept. of Agriculture—</p> | <p>Vine and Vegetation Diseases, Wine Adulteration, Fertilisers, Pastures Protection, Commons, Stock, Stock Diseases, Irrigation, Agricultural Society.</p> | <p>Matters relating to agriculture, including agricultural and experimental farms, stud farms and stations; Botanic Gardens, Centennial Park and Domain, Sydney; irrigation farms, and supervision of dairies for instructional purposes.</p> |
| <p>9. Dept. of Public Instruction— (a) Public Library. (b) Observatory. (c) National Art Gallery. (d) State Children's Relief Dept. (e) Dept. of Labour and Industry. (f) Technical Education Bch. (g) Training College for Teachers. (h) Industrial Schools and Reformatories</p> | <p>Public Instruction, State Children's Relief, Children's Protection, Infant Protection, Neglected Children and Juvenile Offenders, Anatomy, Public Library and Art Gallery, University and University Colleges, Sydney Grammar School, Early Closing, Factories and Shops, Shearer's Accommodation, Truck.</p> | <p>All matters dealing with education; district schools, continuation schools, subsidised teaching, technical education, medical inspection of school children, anthropometrical survey of school children, rural camp schools for city children; regulations as to early closing, factories and shops.</p> |

VICTORIA.—ADMINISTRATIVE GOVERNMENT, 1909.

| | | |
|---|---|---|
| <p>1. Chief Secretary— (a) Board for the Protection of Aborigines. (b) Public Service Commissioner. (c) Registry of Friendly Societies. (d) Observatory. (e) Government Statist. (f) Marine Board.</p> | <p>Aborigines, Animals Protection, Constitution, Crimes, Explosives, Fire Brigades, Friendly Societies, Gaols, Inebriates, Libraries, Licensing (part), Lunacy, Marine, Marine Stores and Old Metals, Medical, Neglected Children, Poisons, Police Offences, Police Regulations, Public Service, Registration of Births, Deaths and Marriages, Theatres, Weights and Measures, Lotteries and Gaming, Dentists, Indeterminate Sentences, Infant Life Protection, Statistics, & Opium (part).</p> | <p>Departmental business connected with the Houses of Parliament, execution of capital sentences, local option, prisons, the Gov. Gazette, Public Library Museum, and Art Gallery, "Hansard."</p> |
|---|---|---|

VICTORIA (continued).

| Departments, Sub-Departments, Branches, etc. | Acts Administered. | Matters dealt with or under Control. |
|---|---|--|
| <p>2. Attorney-General and Minister of Justice— (a) Supreme Court. (b) County Court. (c) Crown Law Offices. (d) Crown Solicitor. (e) Master in Equity and Lunacy. (f) Prothonotary. (g) Registrar of Titles. (h) Sheriffs.</p> | <p>Supreme Court, County Court, Coroners, Justices, Licensing (part), Probate, Crimes, Juries, Declarations & Affidavits, Children's Courts, Companies, Conveyancing, Crown Remedies, Registration of Firms, Hawkers, Insolvency, Instruments, Mines (part), Money-lenders, Pawnbrokers, Real Property, Transfer of Land, Stamps, Trusts, Book Debts, and Imprisonment of Fraudulent Debtors.</p> | <p>Bankruptcy and insolvency, administration and probate, control of courthouses, etc., preparation of legal instruments, administration of justice generally, and advice to Government in all legal questions.</p> |
| <p>3. Treasury— (a) Audit Office. (b) Land and Income Tax Office. (c) Printing Office.</p> | <p>Auction Sales, Audit, Hospitals and Charities, Public Moneys, Savings Bank, Old Age Pensions, Income Tax, Licensing (part), and Acts relating to loans.</p> | <p>Conduct of finances, Government banking, the public debt, preparation of Estimates and Budget, financial aid to charities, endowment to municipal institutions.</p> |
| <p>4. Public Instruction—</p> | <p>Education, Teachers, Registration of Teachers and Schools.</p> | <p>Education generally, supervision of the Training College, registration of teachers & schools.</p> |
| <p>5. Railways—</p> | <p>Railways and other Acts relating to specific railways and railway loans.</p> | <p>Management and maintenance of Government railways.</p> |
| <p>6. Mines—</p> | <p>Mines, Gold Buyers, Boilers Inspection, Mines Development.</p> | <p>Deals with applications for mining leases and licenses, water-rights, prospecting.</p> |
| <p>7. Water Supply—</p> | <p>Water, Waterworks Construction, Water Supply, Loans Application.</p> | <p>Administration of various water works trusts, construction of water works and irrigation systems, boring for water.</p> |
| <p>8. Agricultural—</p> | <p>Agricultural Colleges, Vegetation Diseases, Stock Diseases, Milk and Dairy Supervision, Artificial Manures, Thistle, and Vine Diseases.</p> | <p>Agricultural colleges & experimental farms, orchards, vineyards, and horticultural gardens, dissemination of information regarding agricultural etc. pursuits, lectures and demonstrations in practical and theoretical agriculture, etc., "Agricultural Journal" and "Agricultural Year Book."</p> |
| <p>9. Crown Lands— (a) Survey. (b) Botanic Gardens and Domain. (c) Closer Settlement Board. (d) Small Improved Holdings Board.</p> | <p>Lands, Closer Settlement, Small Holdings, Rabbit Suppression, Vermin Destruction, Local Government (part), Seed Wheat Advances, Bush Fires Loan, State Aid Abolition, Village Settlement, Mines (part).</p> | <p>Survey, sale, and administration of Crown lands, including occupation for industrial, agricultural, and pastoral purposes.</p> |
| <p>10. Public Works— (a) Roads and Bridges and Local Govt. Brch. (b) State Schools. (c) Dredges and Snagging. (d) Ports and Harbours.</p> | <p>Local Government, Fisheries, Game, Electric Lighting and Power, Pounds, Dog, Unused Roads and Water Frontages, Tramways, Drainage Areas, Municipal Grounds.</p> | <p>Construction of public works, erection and repairs of all Government buildings, railway construction, lighthouses, buoys, and signal stations, snagging operations in rivers, Alfred Graving Dock, Government steamer, immigration.</p> |
| <p>11. Labour—</p> | <p>Factories and Shops, Servants Registry Office.</p> | <p>Inspection of factories, workshops and shops.</p> |
| <p>12. Forests—</p> | <p>Forests.</p> | <p></p> |
| <p>13. Public Health—</p> | <p>Health, Cemeteries, Pure Food.</p> | <p>Public health generally, inspection of food.</p> |

QUEENSLAND.—ADMINISTRATIVE GOVERNMENT, 1909.

| Departments, Sub-Departments, Branches, etc. | Acts Administered. | Other Matters dealt with or under Control. |
|---|--|---|
| <p>1. Chief Secretary— <i>(a)</i> Auditor-General. <i>(b)</i> Agent-General. <i>(c)</i> Board of Exchange of Publications. <i>(d)</i> Govt. Residence, Thursday Island. <i>(e)</i> Immigration Dept. <i>(f)</i> Intelligence and Tourist Bureau. <i>(g)</i> S.S. <i>Lucinda</i>. <i>(h)</i> Pub. Library, Art Gallery, and Museum.</p> | <p>Constitution, Extradition, Immigration, Officials in Parliament, Pacific Island Labourers, Public Service, Standard Time, Influx of Criminals Prevention.</p> | <p>Commissions, etc., under Great Seal of State, foreign correspondence, immigration, justices of the peace, legislation, public service, communications with Governor and with States, Commonwealth, British, colonial, and foreign Governments.</p> |
| <p>2. Public Instruction—</p> | <p>Grammar Schools, Orphanages, State Education, Brisbane Technical College, University.</p> | <p>Primary education, schools of art and technical colleges, grammar schools and orphanages.</p> |
| <p>3. Railways—</p> | <p>Railways, Railway Construction (Land Subsidy), Railways (Employés' Appeal).</p> | <p>Railways and tramways management and construction.</p> |
| <p>4. Home Secretary— <i>(a)</i> Government Advertising Board. <i>(b)</i> Electoral Department. <i>(c)</i> Board of Health. <i>(d)</i> Registrar-General. <i>(e)</i> Dental Board. <i>(f)</i> Local Auditors Board. <i>(g)</i> Medical and Pharmacy Board.</p> | <p>Aboriginals, Bank Holidays, Brisb. Traffic, Careless Use of Fire, Carriers, Cemetery, Census, Charitable Instit'ns, Children's Protection, Contagious Diseases, Conciliation, Dental, Elections, Fencing, Fire Brigades, Hawkers, Health, Hospital, Indust. Schools, Inebriates, Insanity, Legitimations, Leprosy, Licensing, Local Govt, Medical, Native Labourers, Old-Age Pensions, Party Processions, Pharmacy, Police, Prisons, Quarantine, Religious etc. Instns., Registration Births, etc., Poisons, Statistical Returns, Water Police.</p> | <p>Is charged with business connected with—aboriginals, cemeteries, conciliation courts, elections, fire brigades, hospitals and charitable institutions, industrial & reformatory schools, insanity, lazarets, police, prisons, public health, quarantine, remission and execution of sentences and penalties, theatres, miscellaneous services, and all other matters of internal arrangement not confided to any other Minister.</p> |
| <p>5. Treasury— <i>(a)</i> Government Analyst. <i>(b)</i> Govt. Printing Office. <i>(c)</i> Government Savings Bank. <i>(d)</i> Government Stores. <i>(e)</i> Harbours and Rivers Department. <i>(f)</i> Income Tax Department. <i>(g)</i> Labour Bureau. <i>(h)</i> Marine Department. <i>(i)</i> Marine Board. <i>(j)</i> Water Supply Department. <i>(k)</i> Comptroller of Central Sugar Mills.</p> | <p>Audit, Coast Survey, Explosive, Fisheries, Savings Banks, Annuities, Harbour Bds., Harbour Dues, Income Tax, Irrigation, Loans, Local Wks. Loans, Merch't Shipping and Seamen's, Navigation, Oyster, Pearlshell and Béche-demer, Port Dues Revision, Firms Registration, Stock Inscription, Sugar Works, Treasury Notes and Bills, Tobacco, Water Authorities Weights and Measures.</p> | <p>Central sugar mills, dredges, fisheries, finance generally, harbour boards and improvements, navigation, ports and harbours, powder magazines, public debt, savings banks, taxation generally, trade and commerce, wharves and jetties.</p> |
| <p>6. Attorney-General— <i>(a)</i> Crown Solicitors. <i>(b)</i> Supreme & District Courts. <i>(c)</i> Curator in Intestacy and Insanity. <i>(d)</i> Trustees in Insolvency. <i>(e)</i> Registry of Friendly Societies. <i>(f)</i> Registry of Titles. <i>(g)</i> Com. of Stamps. <i>(h)</i> Police Magistrates. <i>(i)</i> Petty Sessions.</p> | <p>Building Societies, Companies, District Courts, Friendly Societies, Inquests of Death, Inquest on Fires, Insolvency, Intestacy, Jury, Printing, Real Property, Small Debts, Stamp, Succession and Probate, Supreme Court, Totalisator Restriction, Totalisator Tax, Trade Unions.</p> | <p>Administration of justice generally, advising Government on all legal questions, judicial establishments, courts of petty sessions, preparation of all legal instruments and contracts.</p> |
| <p>7. Mines— <i>(a)</i> Geological Survey. <i>(b)</i> Mining Registries. <i>(c)</i> Mines Inspc'rs. <i>(d)</i> Gold Wardens.</p> | <p>Gold Mining, Mineral Lands, School of Mines.</p> | <p>Geological survey, mineral fields, regulation of mines, Charters Towers School of Mines.</p> |
| <p>8. Public Lands— <i>(a)</i> District Land Offices. <i>(b)</i> District Survey Offices. <i>(c)</i> Survey Office.</p> | <p>Agric. Lands Purchase, Crown Lands, Pastil. Leases, Pub. Parks, Pub. Works, Land Resumption, Rabbit, Marsupial-proof Fencing, Trustees of Pub. Lands.</p> | <p>Destruction, etc., of rabbits, opening and closing roads, reserves, survey, sale, settlement, and occupation of Crown lands, town commonages.</p> |
| <p>9. Agriculture— <i>(a)</i> Agricultural College. <i>(b)</i> Inspectors of Stock and Sheep & Registry of Brands. <i>(c)</i> Botanic Gardens. <i>(d)</i> State Farms and Nurseries. <i>(e)</i> Sugar Experiment Stations.</p> | <p>Agric. Bank, Brands, Dairy, Diseases in Plants, Sheep and Stock, Game & Fish Acclimatization, Grape-vine Diseases, Live Stock and Meat Export, Marsupial Boards, Meat and Dairy Produce Encouragement, Native Birds Protection, Slaughtering, Shearer's and Sugar-workers, Sugar Experiment Stations.</p> | <p>Agric. College, Botanic Gardens, brands (horses, sheep, and cattle), diseases in animals and plants, loans in aid of co-operative agric. production, marsupial destruction, meat and dairy produce encouragement, museum, slaughter of cattle for consumption, State farms and nurseries, sugar experiment stations.</p> |
| <p>10. Public Works— <i>(a)</i> Government Architect. <i>(b)</i> Engineer for Bridges. <i>(c)</i> Director of Labour. <i>(d)</i> Factories etc. Inspectors.</p> | <p>Brisb. Water Supply, Electric Light and Power, Factories and Shops, Wages Bds, Inspection of Machinery and Scaffolding.</p> | <p>Construction of public buildings, State-school buildings, bridges, hospitals, electric light and power stations.</p> |

SOUTH AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1909.

| Departments, Sub-Departments, Branches, etc. | Acts Administered. | Matters dealt with or under Control. |
|--|--|---|
| 1. Chief Secretary— (a) Statistical Dept. (b) Audit. (c) Public Actuary, (d) Sheriff. (e) Registry-General. (f) Government Printer. (g) Police. (h) Central Board of Health. | Civil Service, Audit, Friendly Societies, Jury, Criminal Jurors' Payment, Prison, Police Prisons, Sheriffs, Marriage, Registration, Legitimation, Public Hospitals, Lunatics, Destitute Persons, Affiliation Law, Married Women's Property, State Children's Health, Quarantine, Sale of Food and Drugs, and other Acts dealing with law and order. | Chamber of Manufactures, Civil Service exams., fire brigades, kerosene inspectors, public charities, Royal commissions, prisons, State printing, inspectors of public houses, administration of hospitals, asylums, etc., pub. health, law and order, police, prisons, and correspondence with judges of Supreme Ct., Leg. Council, House of Assembly, other Governments, and consuls. |
| 2. Department of Industry— | Conciliation, Factories, Early Closing, Sale of Furniture, Scaffolding, Lifts. | Factories, shops, early closing, industrial disputes, etc. |
| 3. Treasury— (a) Land and Income Tax Department. (b) Stamp Duty Department. | Motor Vehicles, Seed Wheat, Unclaimed Moneys, Oyster Fishery, Pawnbrokers, Appraisers, Auctioneers, Taxation, Phylloxera, Stamp Duty. | Finance and taxation generally, Imperial and other Government pensions, Public Service Superannuation Fund. |
| 4. Attorney-General— (a) Law Officers. (b) Pub. Trustees. (c) Curator of Convicts' Estates. (d) Supreme Ct. (e) Registries of Industrial Soc., etc., in Admiralty, of Probates, of Companies, and of Blding-Soc. (f) Insolvency Court. (g) Police and Local Courts. (h) Licensing Benches. (i) Coroners. (j) Electoral Dept. | Administration and Probate, Public Trustee, Supreme Court, Legal Practitioners, Succession Duties, Companies, Insolvency, Police, Criminal Law, Local Courts, Real Property, Bills of Sale, Preferable Liens, Workmen's Liens, Deposit of Deeds, Coroners, Electoral Code, Acts in which magistrates have jurisdiction. | Responsible for Government Parliamentary bills and administration of Local Option and Electoral Acts. Deals with issue of summonses and warrants and with preparing informations & plaints, licenses, franchise, appeals from courts. |
| 5. Crown Lands and Immigration, Mines & Agriculture— (a) Crown Lands Office. (b) Mines Department. (c) Roads Department. (d) Govt. Veterinary Surgeon. (e) Dairy Department. (f) Poultry Department. (g) Woods and Forests Department. (h) Department of Agriculture. (i) Tourist Bureau. (j) Intelligence Department. (k) Survey Department. (l) Stock and Brands Department. (m) Produce Department. (n) Fisheries Department. | Corporations, District Councils, Dog, Fisheries, Manufacturing Districts, Ornamental Grounds, Hocker's Loan, Fences, Bird Protection, Game, National Park, Noxious Weeds, Wild Dog and Foxes, Reclaimed Swamps and Irrigation, Wine and Brandy, Mining, Gold Dredging, Roads, Main Roads, Woods and Forests, Fertilisers, Vine, Fruit and Vegetable Protection, Pastoral, Vermin, Licensed Surveyors, Weights and Measures, Brands, Stock Diseases, Scab, Commerce, Botanic Garden, Fisheries. | Matters affecting municipal corporations respecting the Acts under which they are constituted. Payment of main road grants, subsidies, and license fees. All matters affecting Crown lands or arising under mining Acts, warden's courts, record of assays, roads and bridges, veterinary science, scientific dairying, agricultural colleges and experimental farms, immigration, forest reserves, agriculture, surveys, botanic gardens, handling and shipping of produce, fisheries, issue of monthly bulletins. |
| 6. Public Works— (a) Railways Department. (b) Engineer-in-Chief's Department. (c) Works and Buildings Department. (d) Marine Board. (e) Supply and Tender Board. (f) Observatory Department. (g) Aborigines Department. | Railway Commissioners, Railways Service Appeal Board, Refreshment Rooms, South-eastern Drainage, Water Conservation, Marine Board, Merchant Shipping and Seamen's. | Construction and maintenance of railways, water conservation, construction of harbours, jetties, and lighthouses, roads outside district councils, River Murray improvements, dredging works, Govt. buildings, astronomical work, protection of aborigines. |
| 7. Education— (a) Adelaide University. (b) School of Mines. (c) Public Library, Museum, and Art Gallery. | Education, Adelaide University, Degrees in Surgery, University Site, Anatomy Act, Public Library, Museum and Art Gallery, Free Libraries, Institutes, School of Mines. | Education generally, Adelaide University, School of Mines. |
| 8. Water Supply— (a) Hydraulic Engineer's Department. | Waterworks, Sewers, Water Conservation, Mount Gambier, Onkaparinga, Bundaleer, and Barossa Waterworks. | Water supply and sewerage. |
| 9. Northern Territory— | Judicial, Bills of Sale, Jurors, Electoral, Crown Lands, Mining, Pearl Sale and Export Regulation, Tropical Products. | General administration of N. Territory affairs under Acts relating to whole of the State where N. Territory is not excepted. |

WESTERN AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1909.

| Departments, Sub-Departments, Branches, etc. | Acts Administered. | Matters dealt with or under Control. |
|---|---|---|
| <p>1. Colonial Secretary— (a) Public Charities. (b) Fisheries and Aborigines. (c) Friendly Societies. (d) Gaols. (e) Gardens. (f) Harbour and Lights. (g) Lunacy. (h) Public Health. (i) Observatory. (j) Police. (k) Registrar-General. (l) State Children's.</p> | <p>Bread, Bank Holidays, Royal Commissioners, Dentists, Dog, Employment Brokers, Fremantle Harbour, Fire Brigades, Municipal Corporations, Newspaper Libel, University Endowment, Poor House Discipline, State Children's, Aborigines, Fisheries, Oyster, Pearl Shell, Pearl Dealers, Game, Building Societies, Conspiracy, Conciliation, Public Institutions, Trades Unions, Truck Worker's Compensation, Workmen's Wages, Co-operative and Friendly Societies, Prisons, Bills of Lading, Boat Licensing, Coasting Vessels, Harbours and Rivers, Execution of Process, Pilot and Ship Dues, Jetties and Bridges, Merchant Shipping, Navigation, Seamen's Relief, Wharf Tolls, Lunacy, Early Closing, Factories, Hospitals, Health, Medical, Pharmacy, Quarantine, Vaccination, Marine Stores, Police, Marriage, Registration, Statistical.</p> | <p>Immigration, industrial arbitration, passports, public charities, labour bureau, friendly societies, trade unions, light-houses and signal stations, coastal surveys, police, statistics, births, marriages and deaths, prisons, lunacy.</p> |
| <p>2. Treasury— (a) London Agency. (b) Printing Dept. (c) Savings Bank. (d) Lithography. (e) Inspection of Liquors. (f) Stores. (g) Audit. (h) Taxation.</p> | <p>Loan, Inscribed Stock, Treasury Bills, Auctioneers, Stamp, Wines, Beer and Spirits Sale, Employment Brokers, Gun Licensing, Gov. Savings Bank, Audit, Land and Income Tax, Dividend and Totalisator Duties.</p> | <p>Finance generally, general stores, liquor inspection, taxation generally, audits as provided by special Acts, also under Ministerial authority.</p> |
| <p>3. Attorney-General— (a) Crown Law Offices. (b) Supreme Court. (c) Stipendiary Magistrates. (d) Land Titles Office. (e) Electoral Office.</p> | <p>Bankruptcy, Crimes, Electoral, Franchise, Intestacy.</p> | <p>Criminal and civil law, conveying, parliamentary drafting, sheriffs, bankruptcy, intestacy, licensing, petty debts, petty sessions and police courts, land titles and registration of deeds.</p> |
| <p>4. Public Works— (a) Engineering Dept. (b) Architectural Division.</p> | <p>Roads Board, Water Boards, Public Works, Tramways.</p> | <p>Public buildings and works generally, goldfields water supply, metropolitan waterworks, Fremantle and Claremont water supply, railway and tramway construction.</p> |
| <p>5. Agricultural— (a) Stock and Brands. (b) Rabbit Branch. (c) Orchard and Insect Pests. (d) Markets & Refrigerating Works. (e) Entomological. (f) Public Abattoirs.</p> | <p>Rabbit, Stock Diseases, Scab, Brands, Insect Pests, Noxious Weeds, Fertilisers and Feeding Stuffs, Contagious Diseases in Bees, Droving.</p> | <p>Agricultural, horticultural, and pastoral pursuits generally.</p> |
| <p>6. Education— (a) Director of Technical Education.</p> | <p>Education.</p> | <p>Primary and technical education, inspection of schools.</p> |
| <p>7. Railway—</p> | <p>Government Railways.</p> | <p>Management, maintenance and control of Gov. Railways.</p> |
| <p>8. Mines— (a) Explosives and Analytical. (b) Inspection of Machinery. (c) Mining Engineers. (d) Mines Water Supply. (e) Geological Survey. (f) State Batteries.</p> | <p>Mining, Sluicing and Dredging for Gold, Explosives, Inspection of Machinery, Mines Regulation, Coal Mines, Mining Development.</p> | <p>Mining generally, water supply and stock routes on the goldfields, State batteries and reduction plants.</p> |
| <p>9. Lands— (a) Lands and Surveys. (b) Woods and Forests.</p> | <p>Land, Roads, Cemeteries, Licensed Surveyors, Bush Fires, Timber Regulations.</p> | <p>All business in connection with holdings under the Lands Acts, forest reserves, roads, land selection, land agencies.</p> |

TASMANIA.—ADMINISTRATIVE GOVERNMENT, 1909.

| Departments, Sub-Departments, Branches, etc. | Acts Administered. | Matters dealt with or under Control. |
|--|---|---|
| <p>1. Premier— (a) Governor's Establishment. (b) Premier's Dept. (c) Executive Council. (d) Agent-General.</p> | <p>... ..</p> | <p>Correspondence with State, Federal, Colonial, British, and and Foreign Govts., with Agent-General & Governor, despatches from Secretary of State referred by the Governor, matters submitted by other Ministers.</p> |
| <p>2. Chief Secretary— (a) Houses of Parliament. (b) Electoral. (c) Audit. (d) Statistical & Registration. (e) Inspection of Machinery. (f) Fisheries. (g) Public Buildings. (h) Charitable Institutions. (i) Boys' Training School. (j) Invalid Depôt. (k) Neglected Children's Department. (l) Medical Institutions. (m) Hospitals. (n) Public Health. (o) Explosives. (p) Public Service Board.</p> | <p>Audit, Bank Holidays, Cemeteries, Coroners, Registration of Births and Deaths, Botanical Gardens, Charitable Institutions, Electoral, Fire Brigades, Fisheries, Hospitals, Inebriates, Museum and Art Gallery, Newspapers, Pensions, Pharmacy, Public Health, Public Service, Quarantine, Vaccination.</p> | <p>Charitable institutions, cemeteries, public health, electoral, franchise, fisheries, immigration, machinery, statistics, training & industrial schools, public service, explosives.</p> |
| <p>3. Treasury— (a) Taxes. (b) Printing. (c) State Savings Bank. (d) Agricultural Bank. (e) Merchant Ship's Officers Exam. Board.</p> | <p>Suppression of Public Betting, Licensing, Billiard Tables Licensing, Stamp Duties, Auction, Pawnbrokers, Public Debts, Loans to Local Bodies, Land Tax, Taxation, Income Tax, Assessment, Savings Bank, State Advances, Merchant Ship's Officers' Examination.</p> | <p>Finance generally, collection of internal revenue and of stamp duties, Govt. printing.</p> |
| <p>4. Mines—</p> | <p>Mining, Mining Companies, Mining Companies (Foreign).</p> | <p>All matters arising under Acts dealing with mining, registration of mining companies.</p> |
| <p>5. Lands— (a) Lands Branch Office, Launceston. (b) Agricultural and Stock Dept. (c) Council of Agriculture.</p> | <p>Crown Lands, Closer Settlement, Game Protection, Stock, Diseased Animals, Contagious Diseases (cattle), Rabbits Destruction, Californian Thistle, Vegetation Diseases, Coalin Moth.</p> | <p>Crown lands and surveys, agriculture and stock.</p> |
| <p>6. Public Works—</p> | <p>Railway Management, Public Works, Local Government.</p> | <p>Construction and control of public works, including railways.</p> |
| <p>7. Attorney-General— (a) Supreme Court. (b) Lands Titles. (c) Sheriff. (d) Magistracy. (e) Police.</p> | <p>Probate, Stamp Duties, Foreign Companies, Legal Practitioners, Real Property, Prisons, Bankruptcy, Local Courts, Infant Life Protection, Motor Traffic, Police, Police Regulation.</p> | <p>Courts of law, gaols, justices of the peace and coroners, lands titles, police, registration of deeds, Supreme Court & Judges.</p> |
| <p>8. Education—</p> | <p>Education.</p> | <p>Primary & technical education, University of Tasmania.</p> |

SECTION XXVI.

LOCAL GOVERNMENT.

§ 1. Introduction.

1. **Systems of Local Government.**—In all civilised nations, whatever the previous course of their constitutional history, the persistent and rapid growth of the functions of the central Government, with repeated assumptions of new and onerous duties and responsibilities, have rendered some attempts at decentralisation and some form of local government essential. Without such a relief national administration could be carried on with success only with great difficulty, if at all. Experience, ancient and modern alike, has demonstrated that a completely centralised bureaucracy—that is, a body of officials working from a single centre and responsible only to itself—cannot carry on indefinitely the administration of a large country; such a body tends to ignore the varieties of local conditions, to become stereotyped in its ideas and methods, and sooner or later breakdown is inevitable. There are two possible policies which a Legislature may adopt towards local authorities apart from the imposition of compulsory duties upon them. There is first (*a*) the grant of general power to all local bodies of a particular class—that is, the Legislature may establish a set of authorities and empower them to do anything which in their judgment will tend to promote the satisfactory administration and general well-being of the areas under their control, so long as any particular powers which they propose to use are not expressly prohibited or reserved to other authorities. But as this liberty might easily in some cases be abused, there is necessarily the restriction, of greater or less extent according to the country and the nature of the authorities in question, that the actual exercise of these general powers shall be subject to the approval of an administrative department of the central Government. Or, on the other hand, the Legislature may (*b*) grant only specific powers to local bodies—that is, may give them permission to do all or any of a number of enumerated things, with or without the approval of the central departments, and in this case nothing further can be done by the local body unless permitted by fresh legislative enactments. In a general way it may be said that legislation on the continent of Europe has ordinarily followed the first of these two methods, and has given to the local self-governing communities power to do anything for which they can get administrative approval; while in the Commonwealth, as well as in Great Britain and in the United States, the practice has been the opposite one—local authorities are empowered to do only specified things; but in order, in spite of this, to allow free play to local initiative and enterprise, parliamentary procedure permits of local authorities being able to obtain additional powers for particular works or undertakings by means of special Acts. This difference between the Australian or British and continental systems has two important results.

(i.) *Difference between Australian and Continental Systems.* (*a*) The first important result of this difference is that in Australia, England and the United States the enterprise and activity of local authorities depend upon the temper and ideas of Parliament—that is to say, upon the elected representatives of the nation; whilst throughout a large part of the continent of Europe the controlling influence is ordinarily exercised by a bureaucracy whose opinion upon the matters in question may or may not be coincident with the majority of the electorate. The result is that in Australia it is the business of

the State Parliaments to determine what powers are to be conferred upon local authorities, while, ordinarily, under the continental systems the administrative bodies have to regulate what the local authorities may or may not do. The efficiency of such continental systems depends almost entirely upon the character of the controlling bureaucracy, although it is true that the legal powers of a municipality under that system might be very much wider than those of a municipal council in Australia. If the bureaucracy is enterprising and ready to encourage and aid in every way the growth of local action and experiment—as it is in Prussia—then there is the largest scope for municipal development; but if, as in France, the bureaucracy is conservative in its ideas and slow to move, the action of local authorities remains cramped and limited.

(b) The second important result of the difference between the Australian and continental systems is that in all matters entrusted to them local authorities in Australia consider that their duty is to carry out the law according to the will of, and in the manner desired by the ratepayers of their local areas, subject generally to the supervision of the central Government, whereas on the continent of Europe local authorities regard themselves normally as bodies appointed to carry out, within their respective localities, the will of the central Government, even in such matters as are of purely local importance. Local authorities under the continental systems are responsible to the central Government and are subject to administrative control, whilst in Australia municipal councils, so long as they do not infringe the Acts under which they are constituted, or which they have to administer, are responsible only to the ratepayers of their respective localities.

(ii.) *Various Systems in the Several States of the Commonwealth.* In all the States of the Commonwealth Acts have now been passed providing for comprehensive schemes for the decentralisation of power by the constitution of various forms of local authorities to deal with a large variety of subjects and matters. The general policy of the Legislatures towards local authorities in Australia has already been pointed out. Generally speaking, these authorities exercise their powers under enactments of two kinds. (a) There are, first, what may be called constituent Acts, which create the various classes of local bodies and arm them with the powers necessary for the fulfilment of the duties intended to be discharged by them, and there are, secondly (b) general Acts dealing with one subject, or group of subjects, of administration—such as the Public Health Acts—and giving power to the local authorities for that particular service. Although the Acts controlling local government in the several States vary considerably in detail, especially as regards the election of councillors and presiding officers, method of valuation, and rating powers, there is a great similarity between the powers and duties conferred and imposed upon local authorities in the various States; these powers and duties are many and varied. As a rule the municipal council is the highway authority, being responsible for all the roads within its area and the up-keep of all bridges; it is a public health authority; it supervises the sanitary work, the water supply, and the lighting of its area, and for these and for other purposes may appoint officers; it administers the Acts relating to the sale of foods and drugs, the slaughter and diseases of animals, weights and measures, and river pollution; it may establish hospitals, public recreation grounds, libraries, and museums, and may provide asylums and support charitable institutions; it may make provision for preventing fires and floods; it administers the municipal property, makes by-laws with regard to a large variety of things and matters, and may acquire other powers by petition to the Governor. The councils are elected by the ratepayers, and seek only to carry out the wishes of the electorate, subject to the general supervision of the central Governments.

(iii.) *Systems on the Continent of Europe.* On the continent of Europe a careful distinction is generally drawn between those internal affairs in which the central Government is thought to be directly concerned and those which are held to be primarily of only local interest. In Prussia, for instance, the former includes, besides the army, State taxes and domains, ecclesiastical affairs, police, and the general supervision of local

authorities, while to the localities are left roads, poor relief, and a number of miscellaneous matters. The work of the central Government is deconcentrated, that is to say, the country is divided into districts, in each of which there is a delegation of the central authority, doing its work and thereby decreasing the pressure upon the head offices. The executive agents in each locality are elected by the inhabitants, but they are also the representatives of the central Government, and as such they are members of the bureaucracy and are under its control, with the consequence that they look to the central Government for guidance and direction in regard to local affairs. Local government is in fact weak; it is not so much the exercise of the will of a locality by the central power, as the exercise of the will of the latter by the locality. The system of deconcentrated centralised control as carried out in Prussia has, however, some distinct advantages.

- (a) In the first place the duties of supervising the actions of a large number of local authorities do not rest only upon a comparatively small number of officials at the seat of Government, but are carried out by delegations in all parts of the country, which are able to acquire a more intimate knowledge of local requirements and conditions.
- (b) Secondly, the supervision is not only by Government officials, but by responsible and experienced persons elected by the inhabitants and who command local confidence. The general results are that, firstly, the staff at the central offices is relieved of much detailed work, and, secondly, that the control of the localities is rendered much less bureaucratic.

2. Early History of Local Government in Australia.—Before the more comprehensive systems of self-government were first provided for in the several States various enactments had from time to time been passed and amended in order to satisfy the growing demand for local government which asserted itself as one of the primary results of the spread of education and increase of population. In the latter part of the year 1839 the first municipal law was passed in South Australia, which was thus the birth-place of local government in the Commonwealth. On 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council. In 1842 the Sydney City Incorporation Act was passed by the New South Wales Government; under this Act the city was divided into six wards, and resident occupiers or owners of houses, warehouses, or shops within a radius of seven miles were duly enrolled as citizens and entitled to vote at the elections of councillors, the number of which was fixed at twenty-four. A city fund was established and rates levied. The duties of the council were to construct and maintain streets, sewers, and waterworks, to light the streets, and to make by-laws for the general good rule and government of the city. In the same year, 1842, Melbourne was incorporated as a town by special Act, and as a city in 1847, while Geelong was incorporated in 1849. The Acts by which Sydney and Melbourne were incorporated contained no provision for the extension of the municipal principle to other localities, but in 1842 an Imperial Act was passed under which the Governor of New South Wales was empowered to incorporate by Letters Patent every county or any part of a county to form districts for the purpose of local government. In the following year the districts of Appin, Campbelltown, Camden, Narellan, and Picton, in New South Wales, were incorporated under one county district council, while later in the same year Appin and Campbelltown were constituted as a separate district under the control of six councillors. In 1844 the Sydney City Incorporation Act was amended; by this time the number of county district councils had increased to eight, and these, in conjunction with the municipal council of Sydney and the Road Trusts, which were generally created by special Acts, constituted the whole of the local government system in New South Wales prior to 1858. The Imperial Act of 1850, under which the State of Victoria was granted responsible government, provided for the division of the State into districts under the government of local councils. In all the States of the Commonwealth systems of local government have been provided for; in some of the States, such as Victoria, practically the whole area of the State has for some

years been divided into districts for the purposes of self-government, while in others, more especially in New South Wales, a general system of extending the advantages of local government throughout the more settled parts of the country has only recently been provided. In other States systems of local government which have been in force for some years have, as is only to be expected, made comparatively slow progress owing to the small population scattered over such large areas. Taking, however, into consideration the benefits which must accrue, especially in a country of great distances, from the establishment of suitable systems of local government, and judging by the success of similar institutions in other countries, there is every reason to expect that, as population increases and settlement progresses, the people of Australia will take fuller advantage of the systems provided.

§ 2. New South Wales.

1. Development of Local Government Systems.—In the year 1858 the Municipalities Act, the first important measure with regard to general local government in New South Wales, was passed. Under this Act provision was made for the incorporation of any town or rural district as a municipality upon presentation to the Governor of a petition signed by at least fifty of the respective ratepayers, and containing a larger number of signatures than those attached to any counter petition. The members of the council were elected by the ratepayers, and the chairman was chosen by the councillors from their own number. The duties of the council were to abate and remove nuisances; to make by-laws for the regulation of their own proceedings and for the general good government of the town; to control all roads, bridges, ferries, and wharves; to establish hospitals, asylums, libraries, and gardens; and to establish tolls and rents for the use of markets, bridges, wharves, and jetties within and belonging to the municipality. The general rate was not to exceed one shilling in the pound, but a special rate for water supply, sewerage, and street lighting could be levied. Government endowment was provided for, by way of subsidies on the amount collected from rates, over a period of fifteen years. In all thirty-five districts were incorporated under this Act, and these districts, with the exception of Cook, which was united to Camperdown in 1870, and East St. Leonards, subsequently joined to St. Leonards, still exist, though the boundaries of most of them have since been changed.

(i.) *The Municipalities Act 1867.* The Act of 1858 was repealed in 1867 by the Municipalities Act of that year. Under the provisions of the latter Act the thirty-five existing municipalities were to continue their existence under the designation of boroughs, and all municipalities created in the future were to be classified either as (a) boroughs, or (b) municipal districts.

(a) *Boroughs* could consist of any city, town, or suburb of the metropolis, or of any populous country district, but every borough had to have a population of not less than 1000 and had to contain an area of not more than nine square miles, of which no part was more than six miles distant from any other part.

(b) *Municipal Districts* could comprise any part of the colony not containing a borough, but had to include an area of not more than fifty square miles, with a population of not less than 500 souls.

The duties and powers of the councils were extended and defined, while the maximum rate remained as before. This Act still left it optional for any district to become constituted as a municipality, with the consequence that only a small proportion of the State was incorporated under its provisions.

(ii.) *Division of the State into Shires, 1905.* The Act of 1867 was amended from time to time during the succeeding thirty years until the whole of the Acts—sixteen in number—were repealed by the consolidating Act of 1897. This Act did not alter the

chief features of previous Acts, and still retained the voluntary principle of incorporation, which was not conducive to the adoption of a general system of local government. because so long as the central Government continued to construct and pay for local works, it was natural that the inhabitants benefited would be willing to deny themselves the advantages of self-government. The law on the subject remained in an admittedly unsatisfactory condition for several years, and, though various measures were introduced into Parliament for its amendment, it was not until the year 1905, when the Shires Act was passed, that a comprehensive scheme of local government was extended to the greater part of the State.

- (a) *The Shires Act 1905* divides the whole State, with the exception of existing municipalities, the western division, Lord Howe Island, the islands in Port Jackson, and the Quarantine Station of Port Jackson, into shires, which were themselves subdivided into ridings, each riding having equal representation in the council, and were classified according to their extent and probable revenue and expenditure. A sum of not less than £150,000 was made payable annually out of the consolidated revenue for the endowment of the shires, the amount payable to each shire being apportioned according to the class to which it belonged and to the proceeds of the general rates received during the next preceding year. An important feature of the Act was that the rates were to be charged on the unimproved value of the land, instead of on the annual rental; the rate to be levied was not to be less than one penny, nor more than twopence in the pound, and the minimum rate in respect of any portion of land was fixed at two shillings and sixpence. Another important provision of the Act was that as soon as a rate was imposed by a council, the operation of the Land Tax Act was suspended. The councils were vested with wide general powers and could acquire additional powers by resolution of a majority of the council followed by an application by the President on behalf of the council to the Governor.
- (b) *The Local Government Extension Act 1906* amended and consolidated the law relating to municipalities and extended the principles of the Shires Act to municipalities. Provision was also made whereby the Governor was authorised to proclaim as a city any municipality which had, during the previous five years, a population of at least 20,000 persons and a revenue of at least £20,000, and which formed an independent centre of population.
- (c) *The Local Government Act 1906*. Towards the close of the year 1906 the Local Government Act, which deals comprehensively with both shires and municipalities, was passed; by this Act both the Shires Act 1905 and the Local Government Extension Act 1906 are repealed, and their provisions are amended and consolidated.
- (d) *The Local Government (Loans) Act 1907*. In 1907 the Local Government (Loans) Act was passed in order to overcome certain difficulties at the inception of the new system, authorising the Governor to approve of municipal loans in special cases, without going through the procedure required by the Local Government Act.

2. Local Government Systems now in Operation.—The law relating to local government in New South Wales is now contained in the Act of 1906 referred to above. The Local Government Commissioners issued an *interim* report in July, 1905, proposing to divide the State into 132 shires, the unimproved value of which was £67,131,466; by the final report, issued in January, 1906, the establishment of 134 shires was recommended. This recommendation has since been carried into effect.

(i.) *Areas Incorporated*. Prior to the year 1907 the total area incorporated formed a very small part of the whole area of the State, as may be seen in the following statement:—

AREAS INCORPORATED IN NEW SOUTH WALES, 1860 to 1906.

| | | | | | | | | | |
|-----------------------------|-----|-----|-----|-------|-------|-------|-------|-------|-------|
| Year | ... | ... | ... | 1860. | 1870. | 1880. | 1890. | 1900. | 1906. |
| Area incorporated—Sq. miles | ... | 409 | 649 | 1,482 | 2,387 | 2,763 | 2,830 | | |

Total area of State (exclusive of Lord Howe Island), 310,367 square miles.

The areas incorporated in 1906 in each of the three territorial divisions of the State were as follows :

DISTRIBUTION OF INCORPORATED AREAS, 1906.

| Division. | Incorporated Area. | Unincorporated Area. | Total Area. |
|--------------------------|--------------------|----------------------|-------------|
| Eastern Sq. miles | 1,977 | 93,742 | 95,719 |
| Central " | 571 | 88,579 | 89,150 |
| Western " | 282 | 125,216 | 125,498 |
| Total | 2,830 | 307,537 | *310,367 |

* Total area of State, exclusive of Lord Howe Island, the area of which is 5 square miles.

Under the Shires Act 1905 and the Local Government Extension Act 1906 the whole of the eastern and central divisions, amounting in all to 184,869 square miles, were incorporated, either as shires or as municipalities, which are now administered under the Local Government Act of 1906. The provision of the Shires Act as to the incorporation of cities is retained, and under this provision the municipality of Broken Hill was proclaimed a city in 1907.

(i.) *General.* This Act came into operation on the 1st January, 1907; it provided for the continuation of existing shires and municipalities, for the creation of new ones, and for their reconstitution by uniting, dividing, altering, or converting areas. Each shire is divided into three ridings, and each municipality may be divided into wards by petition of the council or of a majority of the ratepayers to the Governor. The councils consist in the case of shires of either six or nine councillors, and in the case of municipalities of from six to twelve aldermen, except in the case of the union of two or more municipalities, when the Governor may determine that the council of the united areas shall consist of any number from twelve to eighteen aldermen. All occupiers of ratable property of a yearly value of at least £5 who have been in occupation for at least three months, of either sex, who are either natural-born or naturalised British subjects, of the age of twenty-one years and upwards, are entitled to be registered on the electors' roll, and any male person so enrolled is qualified to be elected as a councillor or alderman, unless he is otherwise ineligible.

(ii.) *Functions of Councils.* The general scheme of the Act was that councils, on their constitution, should start with a limited number of powers of a primary nature, and that, as their needs develop, they should from time to time acquire additional powers on following the prescribed procedure. On the constitution of a shire or municipality the councils may exercise any of the following powers :—The construction and maintenance of all public places, except those vested in the Railway Commissioners or other public bodies or trustees, and except national works; lighting of, and controlling the traffic in streets and roads; prevention of fires and floods; the administration of the Public Watering Places Act 1900 and the Impounding Act 1898, and certain parts of the Police Offences Act 1901, the Public Health Act 1902, and the Cattle Slaughtering and Diseased Animals and Meat Act 1902. Other powers and duties, such as the construction of drainage and water supply systems without reticulation, the care and management of parks and

commons, and the licensing of hawkers and public vehicles, are conferred and imposed upon municipal councils, while these same powers and duties may be acquired by shire councils by resolution of the council followed by application to the Governor.

(a) *Acquisition of Further Powers.* Further powers may also be acquired either by shires or by municipalities if the council decide that they are necessary for the good government of the locality; these are the administration of the Public Gates Act 1901, and the Native Dog Destruction Act 1901; water supply by reticulation; the maintenance of passenger ferries, of fire brigades, of municipal buildings, of cattle-yards and abattoirs, of markets, parks, and recreation grounds, of refuse destructors, of cemeteries and public baths; the manufacture and supply of gas, electricity, and hydraulic or other power; the regulation and control of theatres, public halls, and lodging houses; the establishment and management of public libraries, art galleries, museums, and public bands; the regulation and supervision of buildings and balconies; of the sale of fish and meat, and the suppression of nuisances caused by the emission of smoke or vapour. These powers may be acquired by a resolution passed by an absolute majority of the council followed by an application in the prescribed form to the Governor. On receipt of a petition signed by not less than fifty, or if there be less than 300 ratepayers on the roll, by one-sixth of the ratepayers, the Governor may direct that a poll be taken as to whether all or any of the powers applied for shall be conferred on the council.

(b) *Appointment of Executive Officers.* Provision is made in the Act for the appointment of officers and servants, such as shire engineers, municipal clerks, and sanitary inspectors, and also for the acquisition by councils of land or buildings either by agreement or compulsorily, for which purpose the provisions of the Public Works Act 1900 are incorporated.

(iii.) *Rates and Ratable Property.* All land is ratable except the following:—Commons, public parks, and public reserves not held under lease or license; cemeteries, public hospitals, benevolent institutions, and buildings used exclusively for public charitable purposes; churches and free public libraries; unoccupied Crown lands; lands vested in the University of Sydney occupied and used solely for the purposes of education; and vested in the Chief Commissioner for Railways and Tramways and actually used for the purposes of the Government railways or tramways. Rates levied by a council may be of four kinds, namely, general, special, local, or loan rates.

(a) *General Rates* are levied on the unimproved value at a rate of not less than one penny nor more than twopence per pound, but if the minimum rate be more than sufficient to meet the requirements of the council, it may be further reduced at the discretion of the Governor. A council of a municipality which has levied a general rate of not less than one penny on the unimproved value may impose such additional rate as may be required either on the improved or the unimproved value.

(b) *Special, Local, and Loan Rates* may also be imposed either on the improved or the unimproved value at the option of the council, but in the case of special and local rates a poll may be demanded by the ratepayers as to whether the rate shall be imposed or not. Rates on the unimproved value of land may also be levied for the purposes of the Country Towns Water Supply and Sewerage Acts 1880-1905, which provide for the construction by the Government of waterworks and sewerage systems in municipalities which are outside the areas served by the Metropolitan and Hunter River Boards. The cost becomes a charge against the municipality, carrying interest at a rate of 4 per cent., and repayable by annual instalments over a period of not more than 100 years.

(iv.) *Endowment.* The amount of and the conditions as to the endowment of shires are similar to those of the Shires Act. (See para. 1. ii. (a) above). It is also enacted that all municipalities not receiving statutory endowment under any Act thereby repealed shall, upon the result of investigations made into their administration and financial necessities, be entitled to a sum not exceeding three shillings and fourpence in the pound on the general rate collected; but if the revenues are sufficient to meet the reasonable requirements of the corporations under proper management no endowment will be paid.

(v.) *Borrowing Powers and other Provisions.* A council of a municipality is authorised to borrow up to 10 per cent. of the unimproved capital value, and all money so borrowed is a charge upon the revenue of the council. If a council desire that any proposed loan should be guaranteed by the Government application must be made to the Treasurer, who may either refuse or recommend the guarantee. Both shires and municipalities may temporarily borrow in any year an amount not exceeding one-third of the estimated revenue to be received from rates if the consent of the Minister shall have been first obtained. Auditors are appointed by the councils, and Government examiners are appointed to inspect the accounts of the councils. A defaulting area is defined to be an area in which a sufficient number of councillors have not been elected to form a quorum, or in which the requirements of the Act as to the levying of a general rate have not been carried out, or in which the council has ceased for six months to exercise its functions. The Governor is authorised to appoint an administrator for a defaulting area.

3. Shires, 1907.—The total area of the 134 shires constituted under the new system was 179,130 square miles, and the approximate population at the end of the year 1907 was 542,800. During the year ended the 31st December, 1907, the total revenue of these shires, excluding £76,572 received for temporary loans and £11,864 for trust account, was £535,659, of which the general rates amounted to £287,635, and Government endowment and other grants to £235,794. During the same year the total expenditure, exclusive of repayments and temporary loans (£59,078) and trust account (£6783), amounted to £385,605, of which £100,435 was spent on administrative expenses, and £249,868 on public works (roads, streets, bridges, ferries, etc.). The unimproved capital value for the year ended 31st December 1907, was £81,526,814.

4. Annual and Capital Improved Value of Ratable Property, 1901 to 1908.—The following table shews the annual and capital improved values of ratable property in municipalities for each year from 1901 to 1908, inclusive:—

NEW SOUTH WALES—RATABLE PROPERTY IN MUNICIPALITIES, ANNUAL AND CAPITAL IMPROVED VALUES, 1901 to 1908.

| Year ended February.* | Sydney and Suburbs. | | Country. | | Total. | |
|-----------------------|---------------------|----------------|---------------|----------------|---------------|----------------|
| | Annual Value. | Capital Value. | Annual Value. | Capital Value. | Annual Value. | Capital Value. |
| | £ | £ | £ | £ | £ | £ |
| 1901 ... | 5,069,630 | 88,116,600 | 2,836,130 | 36,429,600 | 7,905,760 | 124,546,200 |
| 1902 ... | 5,188,700 | 90,060,600 | 2,920,500 | 37,936,300 | 8,109,200 | 127,996,900 |
| 1903 ... | 5,455,270 | 93,413,300 | 2,624,890 | 36,606,500 | 8,080,160 | 130,019,800 |
| 1904 ... | 5,669,670 | 96,171,600 | 2,681,750 | 38,046,700 | 8,351,420 | 134,218,300 |
| 1905 ... | 5,866,860 | 98,857,900 | 2,675,200 | 38,355,800 | 8,542,060 | 137,213,700 |
| 1906 ... | 5,974,970 | 101,090,900 | 2,741,390 | 39,223,700 | 8,716,360 | 140,314,600 |
| 1907 ... | 6,081,690 | 102,037,900 | 2,770,620 | 39,417,000 | 8,852,310 | 141,454,900 |
| 1908 ... | 6,310,420 | 103,323,200 | 2,961,570 | 41,668,300 | 9,271,990 | 144,996,500 |

* The municipal year of the City of Sydney begins on the 1st January; the returns for this city are, therefore, included as up to the 31st December in the preceding year. In other municipalities the financial year begins on the first Tuesday in February.

5. **Capital Value, Area, Population, and Rates Levied, 1901 to 1908.**—The following table shews the improved capital value, the area, population, number of buildings, and amount of rates levied in municipalities for each year from 1901 to 1908, inclusive:—

NEW SOUTH WALES—IMPROVED CAPITAL VALUE, AREA, POPULATION, NUMBER OF BUILDINGS, AND TOTAL RATES LEVIED IN MUNICIPALITIES, 1901 to 1908.

| Year ended February.* | Sydney and Suburbs. | | | | | Country. | | | | |
|-----------------------|-------------------------|--------|-------------|----------------------|---------------------|-------------------------|------------|-------------|----------------------|---------------------|
| | Improved Capital Value. | Area. | Population. | Number of Buildings. | Total Rates Levied. | Improved Capital Value. | Area. | Population. | Number of Buildings. | Total Rates Levied. |
| | £ | Acres. | No. | No. | £ | £ | Acres. | No. | No. | £ |
| 1901 ... | 88,118,600 | 91,320 | †487,900 | †94,907 | 277,457 | 36,429,600 | 1,732,302 | 371,330 | 73,862 | 127,564 |
| 1902 ... | 90,060,600 | †† | †487,900 | †94,907 | 333,065 | 37,936,300 | †1,711,312 | †372,218 | 74,032 | 131,570 |
| 1903 ... | 93,413,300 | ††† | 516,180 | 99,125 | 377,016 | 36,606,500 | 1,711,312 | 379,430 | 79,141 | 174,900 |
| 1904 ... | 96,171,600 | †††† | 514,750 | 102,061 | 382,509 | 38,046,700 | 1,719,612 | 386,610 | 79,712 | 178,249 |
| 1905 ... | 98,857,900 | ††††† | 512,500 | 105,336 | 396,268 | 38,355,800 | 1,719,612 | 391,370 | 81,506 | 188,929 |
| 1906 ... | 101,090,900 | †††††† | 523,530 | 107,922 | 404,332 | 39,223,700 | 1,719,692 | 396,820 | 83,075 | 191,460 |
| 1907 ... | 102,037,900 | †† | 550,760 | 110,430 | 412,093 | 39,417,000 | 1,719,692 | 401,140 | 84,094 | 194,754 |
| 1908 ... | 103,328,200 | 95,259 | 577,180 | 117,955 | 426,792 | 41,668,300 | 1,824,638 | 433,470 | 83,511 | 208,631 |

* See footnote to preceding table. † Census, March, 1901. ‡ Not available.

The following table gives particulars, for the years 1907 and 1908, of the improved and unimproved capital values in Sydney, in the suburbs, and in the country:—

NEW SOUTH WALES—IMPROVED AND UNIMPROVED CAPITAL VALUES, 1907 AND 1908.

| Particulars. | 1907. | | 1908. | |
|-----------------------------------|-------------|-------------|-------------|-------------|
| | * Improved. | Unimproved. | Improved. | Unimproved. |
| | £ | £ | £ | £ |
| METROPOLITAN— | | | | |
| * City of Sydney ... | 45,749,800 | 20,207,812 | 45,749,800 | 20,207,812 |
| Suburban Municipalities ... | 56,288,100 | 19,583,598 | £7,578,400 | †23,835,688 |
| Total Metropolitan ... | 102,037,900 | 39,791,410 | 103,328,200 | 44,043,500 |
| COUNTRY MUNICIPALITIES ... | 89,417,000 | 14,875,612 | 41,668,300 | 21,583,928 |
| Grand Total ... | 141,454,900 | 54,667,022 | 144,996,500 | 65,627,428 |

* For year ended the 31st December, 1907. † As per valuation notices, subject to reduction on appeal.

The unimproved capital value for shires at the end of the year 1907 was £81,526,814 (see para. 3). The total unimproved capital value of districts under the operation of the Act of 1906 was therefore £147,154,242.

6. **Revenue and Expenditure, Assets and Liabilities of Municipalities, 1901 to 1908.**—The subjoined table shews the total revenue and disbursements, and also the total assets and liabilities of the municipalities for the years 1901 to 1908, inclusive. As regards revenue and expenditure, the figures given are exclusive of proceeds and repayments of loans:—

**NEW SOUTH WALES.—REVENUE AND EXPENDITURE AND ASSETS AND LIABILITIES
OF MUNICIPALITIES, 1901 to 1908.**

| Year ended Feb.* | Sydney and Suburbs. | | | | Country. | | | |
|------------------|---------------------|--------------|-----------|-------------|----------|--------------|-----------|--------------|
| | Revenue. | Exp'ndit're. | Assets. | Liabilities | Revenue. | Exp'ndit're. | Assets. | Liabilities. |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| 1901 | 513,734 | 510,240 | 2,476,354 | 2,417,642 | 296,875 | 291,700 | 1,326,432 | 674,673 |
| 1902 | 489,838 | 474,921 | 2,464,662 | 2,401,643 | 328,369 | 309,609 | 1,393,353 | 672,641 |
| 1903 | 518,839 | 496,740 | 2,489,917 | 2,427,873 | 315,335 | 331,031 | 1,378,472 | 694,560 |
| 1904 | 503,571 | 496,590 | 2,437,589 | 2,428,732 | 332,204 | 327,454 | 1,436,278 | 678,491 |
| 1905 | 525,859 | 628,417 | 2,421,023 | 2,555,732 | 329,549 | 339,139 | 1,508,237 | 693,667 |
| 1906 | 569,255 | 591,166 | 2,539,920 | 2,637,930 | 340,482 | 356,067 | 1,528,915 | 711,001 |
| 1907 | 602,327 | 607,080 | 2,548,727 | 2,653,486 | 400,909 | 383,002 | 1,665,059 | 703,028 |
| 1908 | 660,609 | 725,482 | 2,687,164 | 2,878,228 | 435,241 | 446,674 | 1,709,459 | 734,704 |

* See footnote to preceding table but one.

7. **Expenditure by General Government on Local Works, 1860 to 1907.**—Since the year 1860 the Government of New South Wales has expended £41,068,700 on works of a purely local character, not including the amount spent on school buildings and on works of national importance. The new arrangements introduced by the Local Government Act 1906 will not necessarily put an end to the direct expenditure on works of local interest by the central Government. The subjoined table shews the total amount so expended and the amount per head of population during each financial year from 1901 to 1907, inclusive, as well as the total amount up to the 30th June, 1900 :—

EXPENDITURE BY CENTRAL GOVERNMENT ON LOCAL WORKS, 1860 to 1907.

| Year ended 30th June— | Country Districts. | | Metropolitan District. | | Total. | |
|-----------------------|--------------------|-----------------------------------|------------------------|-----------------------------------|--------------|-----------------------------------|
| | Expenditure. | Per Head of Estimated Population. | Expenditure. | Per Head of Estimated Population. | Expenditure. | Per Head of Estimated Population. |
| | £ | £ s. d. | £ | £ s. d. | £ | £ s. d. |
| 1860 to 1900 | 22,245,400 | ... | 11,184,000 | ... | 33,429,400 | ... |
| 1901 | 1,061,600 | 1 4 6 | 604,400 | 1 4 9 | 1,666,000 | 1 4 7 |
| 1902 | 1,135,800 | 1 5 6 | 535,600 | 1 1 4 | 1,671,400 | 1 4 0 |
| 1903 | 839,700 | 1 0 0 | 509,400 | 0 18 8 | 1,349,100 | 0 19 2 |
| 1904 | 579,400 | 0 12 7 | 189,000 | 0 7 5 | 768,400 | 0 10 9 |
| 1905 | 456,800 | 0 9 8 | 184,500 | 0 7 1 | 641,300 | 0 8 9 |
| 1906 | 487,800 | 0 10 1 | 167,600 | 0 6 4 | 655,400 | 0 8 9 |
| 1907* | ... | ... | ... | ... | †887,700 | 0 11 7 |
| Total ... | †26,806,500 | ... | †13,374,500 | ... | 41,068,700 | ... |

* Separate returns for metropolitan and country districts are not available. † Including expenditure from Public Works Fund. ‡ To the 30th June, 1906.

Out of the total expenditure £9,821,000 was spent on tramways, water supply, and sewerage works, which are sources of revenue.

8. **Sydney Metropolitan Board of Water Supply and Sewerage.**—Prior to the year 1888 the main water supply and sewerage systems of Sydney and suburbs were under the control of the City Corporation, while several of the suburban councils had constructed local systems. For some years, however, it had been recognised that owing to the great increase in the population and size of the metropolitan area the water supply was inadequate and the sewerage system antiquated and inefficient. In 1867 a Royal Commission had been appointed to enquire into and report upon various schemes for supplying water to the city and suburbs, and in 1869 a report was sent in recommending the adoption of what is known as the "Upper Nepean Scheme." Another commission was appointed in 1875 to investigate different proposed sewerage systems, and two years later a report was presented containing certain recommendations which form the basis of the present system. After considerable discussion and further investigation an Act was passed in 1880 autho-

rising the schemes recommended by the two commissions being carried out. In the year 1888 the works had so far progressed that the Government, with the object of placing the administration of both water supply and sewerage systems throughout the county of Cumberland under the control of an independent body, passed an Act authorising the establishment of the Metropolitan Board of Water Supply and Sewerage. This Board consists of seven members, three of whom are appointed by the Government, two by the City Council, and two by the suburban and country municipalities in the county of Cumberland. The Board is under the general supervision of the Minister for Works—a provision considered necessary since the loan expenditure of the Board forms part of the public debt of the State.

9. **Metropolitan Water Supply.**—In the year 1850 authority was given by the Legislative Council to the City Corporation to construct water and sewerage works. Under this authority a water supply scheme was adopted and carried out, at a cost of nearly £1,750,000, by which the waters of the streams draining into Botany Bay were intercepted and pumped into three reservoirs. This system has now been superseded by the "Upper Nepean Scheme" referred to above, the management of which was transferred to the Metropolitan Board of Water Supply and Sewerage in May, 1888.

(i.) *The Cataract and Prospect Dams.* A work of great importance and magnitude in connection with the Sydney water supply—the Cataract Dam—was completed in 1907. Prior to the construction of this dam, the system had been weak in the matter of storage, the only reservoir of any importance being that at Prospect, which was formed by the construction of an earthen dam completed in 1890, and which contains a supply available by gravitation of 5,446,000,000 gallons of water. The Prospect reservoir is supplied from the unstored waters of the Nepean, Cataract, and Cordeaux rivers by means of tunnels and conduits capable of carrying 150,000,000 gallons a day; the combined catchment area of the three rivers extends to an area of 354 square miles, and is favourably situated with regard to the coastal rainfall. The whole of this area has been acquired by the Crown, and every precaution is exercised to guard against pollution of the supply. It was found, however, in 1902—almost the driest year on record—that the Prospect reservoir was insufficient for the needs of the increasing population of Sydney and suburbs during a dry period. The Government, therefore, decided to construct additional reservoirs on the rivers forming the sources of supply, in which would be stored as much of the flood water from the available catchment area of 345 square miles as would be necessary to meet the constantly increasing requirements of the metropolis.

The first of this series of reservoirs is the Cataract dam, which was completed in 1907, and of which the catchment area above the impounding dam is about fifty-four square miles. The water released from this reservoir flows down the bed of the Cataract River to a diversion weir at Broughton's Pass, where it enters the previously existing tunnel, and is conveyed thence by a system of open canals to the Prospect reservoir. In traversing the steep and rocky bed of Cataract River the water is thoroughly aerated. The total distance travelled by the water from Cataract to Sydney *via* Prospect is 66½ miles, of which 21½ miles represents the distance from Prospect to Sydney.

The principal dimensions of the Cataract and Prospect dams are given below:—

CATARACT AND PROSPECT DAMS.

| Dam. | Height above Foundation. | Width at Top. | Thickness at Bottom. | Length. | Area of Reservoir. | Capacity of Reservoir. |
|--------------|--------------------------|---------------|----------------------|---------|--------------------|------------------------|
| | Feet. | Feet. | Feet. | Feet. | Acres. | Gallons. |
| Cataract ... | 192 | 16½ | 150 | 811 | 2,400 | 21,411,500,000 |
| Prospect ... | 85½ | 30 | * | 7,300 | 1,266½ | 11,029,200,000† |

* Not available. † Of which 5,527,000,000 gallons are available by gravitation.

The present population of Sydney and suburbs supplied with water from these works is estimated at 620,400. The winter consumption of water ranges from twenty to twenty

two million gallons a day, while the summer consumption and evaporation together approximate to thirty million gallons a day. As the combined available capacity of the Cataract and Prospect reservoirs amounts to nearly 32,500,000,000 gallons, the storage available represents a supply for about 1000 days without rainfall.

(ii.) *Aqueducts and Mains.* The water is drawn off from the Prospect reservoir through a valve tower by cast-iron pipes and thence proceeds by canal, five miles in length, to the Pipe Head Basin, situated $16\frac{1}{2}$ miles from Sydney. It is then conveyed for a further distance of five miles by two wrought-iron pipes, each six feet in diameter, to Potts' Hill reservoir, which has a capacity of 100,000,000 gallons, covers twenty-four and a half acres, and is designed to tide the city over any interruption of supply from Prospect, and to prevent fluctuation of pressure. A by-pass is laid along the floor of the reservoir to enable both six-feet mains to deliver water to Sydney direct. At Potts' Hill the water passes through a screening tank constructed of copper-gauze screens, and thence proceeds towards the city in two 48-inch cast-iron mains. The first laid main is 48-inch as far as Petersham, where it bifurcates, one branch (48-inch) leading to Petersham reservoir, the other (42-inch) to Crown Street reservoir, where the main pumping station is situated. The new 48-inch main, completed in 1893, continues of the same diameter direct to Crown Street. The main pumping plant consists of three pairs of compound high-duty pumping engines. The first set is capable of raising 400,000 gallons per hour to the Centennial Park reservoir, a height of 104 feet above the pumps, at which place a new covered reservoir, of a capacity of 17,000,000 gallons, has been constructed for the purpose of ensuring a larger bulk of water within the city limits; the second set is capable of raising 210,000 gallons per hour to the Woollahra reservoir, a height of 140 feet, and also of raising 200,000 gallons per hour to Waverley, a height of 220 feet above the pumps; while the third set is capable of raising 100,000 gallons per hour to the Waverley tanks.

(iii.) *Storage Reservoirs.* In connection with the water supply there are in all twenty-nine service reservoirs, with a total maximum capacity of 47,216,000 gallons. An auxiliary pumping station at Ryde has been erected for the supply of North Sydney. The station receives its supply either from Potts' Hill reservoir, through a 24-inch diameter pipe, or through a new 32-inch steel main from the Pipe Head Basin. Both these mains discharge into a reservoir, from which the water is pumped to a 1,000,000-gallon tank at Ryde, 234 feet above high-water mark, and by a continuation of the same main into two other tanks at Chatswood, at an elevation of 370 feet above high-water mark, and having a joint capacity of 3,000,000 gallons. A 9-inch main extends over the Parramatta and Iron Cove bridges to supply the heights of Balmain.

(iv.) *Revenue, Expenditure, and Capital Cost of Sydney Waterworks.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan waterworks for each financial year from 1901 to 1908 :—

SYDNEY WATERWORKS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 to 1908.

| Year Ended 30th June. | Revenue. | Working Expenses. | Total Capital Cost. | Capital Cost exclusive of Items on which Interest is not charged. | Percentage of Working Expenses to Revenue. | Percentage of Revenue to Capital Cost. | Interest Payable on Capital Cost. | Net Profit after Working Expenses and Interest. |
|-----------------------|----------|-------------------|---------------------|---|--|--|-----------------------------------|---|
| | £ | £ | £ | £ | % | % | £ | £ |
| 1901 | 203,348 | 49,270 | 4,676,479 | 4,300,552 | 24.22 | 4.72 | 152,333 | 1,745 |
| 1902 | 223,201 | 57,360 | 4,800,585 | 4,423,203 | 25.69 | 5.04 | 162,262 | 3,579 |
| 1903 | 220,745 | 71,139 | 4,866,942 | 4,489,560 | 32.22 | 4.91 | 159,773 | —10,167† |
| 1904 | 222,827 | 58,929 | 4,922,038 | 4,544,656 | 26.44 | 4.90 | 163,314 | 584 |
| 1905 | 251,503 | 66,015 | 4,608,581 | 4,434,991 | 26.24 | 5.67 | 156,372 | 29,116 |
| 1906 | 270,263 | 64,487 | 4,847,978* | 4,674,341 | 23.86 | 5.78 | 164,216 | 41,560 |
| 1907 | 275,591 | 67,593 | 5,059,559 | 4,902,463 | 24.52 | 5.62 | 176,170 | 31,828 |
| 1908 | 283,410 | 75,016 | † | 5,009,012 | 26.47 | 5.66 | 183,033 | 25,361 |

* As adjusted by the Committee appointed to investigate the capital accounts of the Board in May, 1904. † Represents a loss. ‡ Not available.

(v.) *Quantity of Water, Number of Houses, and Population Supplied, 1901 to 1908.* The following table gives various particulars shewing the increase in the supply of water in Sydney and suburbs from 1901 to 1908:—

SYDNEY WATERWORKS.—NUMBER OF GALLONS, HOUSES AND POPULATION SUPPLIED, 1901 to 1908.

| Year Ended 30th June. | Number of Houses Supplied. | Estimated Population Supplied. | Average Daily Supply. | Total Supply for the Year. | Aver. Daily Supply. | | Mains Laid. |
|-----------------------|----------------------------|--------------------------------|-----------------------|----------------------------|---------------------|-----------------------------------|-------------|
| | | | | | Per House. | Per Head of Estimated Populat' n. | |
| | No. | No. | 1000 Gallons. | 1000 Gallons. | Gallons. | Gallons. | Miles. |
| 1901 | 98,298 | 491,000 | 21,583 | 7,877,677 | 219 | 43.95 | 40 |
| 1902 | 101,966 | 509,000 | 21,906 | 7,995,822 | 205 | 43.03 | 44 |
| 1903 | 104,681 | 523,000 | 16,896 | 6,166,991 | 162 | 32.30 | 30 |
| 1904 | 109,191 | 546,000 | 18,690 | 6,840,549 | 171 | 34.23 | 14 |
| 1905 | 112,343 | 561,715 | 21,713 | 7,925,184 | 195 | 38.65 | 36 |
| 1906 | 116,202 | 581,010 | 22,393 | 8,173,555 | 192 | 38.54 | 60 |
| 1907 | 120,782 | 603,910 | 22,913 | 8,263,104 | 189 | 37.92 | 56 |
| 1908 | 124,083 | 620,400 | 24,500 | 8,967,135 | 197 | 39.50 | * |

* Not available.

Graphs relating to the water supply of Sydney for the past ten years may be found on page 999 hereinafter.

(vi.) *Other Water Supply Systems under the Metropolitan Board.* In addition to the main metropolitan water supply system there are certain other systems within the County of Cumberland managed by the Metropolitan Board. (a) The Richmond waterworks are entirely unconnected with the Sydney supply. The system consists of a small pumping station on the left bank of the Hawkesbury River, just below the confluence of the Grose and Nepean, a 6-inch supply main, four miles in length, and five and one-eighth miles of 3-inch and 4-inch reticulation mains. (b) The Wollongong waterworks are also unconnected with the Sydney supply. The source of supply is the Cordeaux River and the catchment area is 2400 acres in extent. The total capacity of the reservoir is 173,000,000 gallons and the total length of the main about nineteen miles. The town, of which the population is about 3700, is well reticulated with 4-inch and 3-inch pipes. (c) The Manly waterworks are supplied by a special catchment area of about 1300 acres, and are also connected with the metropolitan system by a 10-inch main from Mosman, crossing Middle Harbour, with ball and socket pipes. There are two horizontal compound duplex pumps, each having a capacity of 1,000,000 gallons in seventeen hours. (d) The water-supply for the districts of Campbelltown, Camden and Narellan, and Liverpool is not drawn from the main Sydney supply through Potts' Hill, but is received by gravitation from the upper canal at Prospect.

10. Metropolitan Sewerage System.—The system which is now under the control of the Metropolitan Board of Water Supply and Sewerage comprises the old and new systems. The old system was initiated by the City Commissioners in 1853, and continued by their successors, the present City Council, since their incorporation in 1857. The old system was designed on the principles of what is known as the "combined system," and comprises four main outfalls, with subsidiary sewers along the principal streets; these, in turn, receive the reticulation sewers of the minor thoroughfares. The four main outfalls discharged directly into the harbour, and the consequent pollution of the water and menace to public health led to the appointment of a commission to enquire into the best means of diverting the sewage from the harbour, and of disposing of it when thus diverted. The new intercepting system is the outcome of the labours of that commission. At the time of the transfer, in 1889, of the original sewerage works to the Metropolitan Board there were 70½ miles of old city sewers in existence. The new system

adopted is on the lines of the partially "separate system," and intercepts all sewage from the gravitation zone—*i.e.*, from above a contour line about forty feet above high-water mark; while the sewage from the low level areas—*i.e.*, from below that contour line, is eventually pumped into the gravitation sewers. The new scheme provides for two main outfalls, (a) the northern, and (b) the southern.

(i.) *The Northern System* discharges into the Pacific Ocean, and will, when the low-level systems are complete, take all sewage previously discharged into the harbour. The discharge is near Bondi, and at this place a large chamber has been constructed in the sandstone rock. From this chamber two channels bifurcate, so as to ensure a free discharge during either northerly, easterly, or southerly gales, while above the chamber a shaft has been erected for ventilation and escape of air when the sea breaks into the discharge tunnels. The northern system receives sewage from the City, Waverley, Bondi, Woollahra, Paddington, Elizabeth Bay, Double Bay, Darling Point, Rushcutters' Bay, the Glebe, and portions of Annandale, Leichhardt, and Balmain. Stormwater channels have also been constructed at various points to carry off the superfluous water after heavy rainfalls. The work in connection with the whole of the northern system was carried through varying formations; in some instances the stratum was indurated sandstone, in others shale, clay, and water-charged driftsand. Concrete enters largely into the constructional works, the lining of rock tunnels being principally bluestone concrete rendered with cement mortar, and wherever the outfall sewer crossed natural creeks or water-courses offlet and scour valves have been provided.

(ii.) *The Southern System* has its discharge into the sewage farm near Botany Bay, and passes from the main outfall into the screening chambers of the inlet house. The chambers, which intercept all extraneous matter before the sewage passes to the syphon-well, are in duplicate and controlled by valves, so that when one series is in use the other is being cleared out. The silt caught on the screens is forced through a pipe by means of compressed air into a wrought-iron silt tank, from which it is distributed over the farm in trucks drawn by a small locomotive, while the sewage flows from the syphon-well along a main carrier, and is distributed by means of valves over the irrigation beds and settling tanks. A portion of the area of the sewage farm has been cultivated, and fair crops have been grown, but it is stated that some course of treatment is necessary for this particular class of sewage, which contains a large amount of grease from the boiling-down establishments, before it can be utilised for agricultural purposes. The southern main outfall receives the drainage from Alexandria, Waterloo, Erskineville, Newtown, and parts of the Surry Hills district.

(iii.) *The Western System.* In addition to the two main outfalls already mentioned a subsidiary outfall called the western outfall has recently been constructed to deal with the sewage of the western suburbs. This starts at a receiving chamber at one end of the sewage farm, and runs in an open channel across portion of the sewage farm to another receiving chamber. From this chamber it continues in 6 ft. circular triplicate sewers to a penstock chamber in Premier-street, Marrickville, being carried on aqueducts over low-lying ground. The latter chamber receives the sewage from the eastern, northern, and western branch sewers, and drains part of Marrickville, Petersham, Stanmore, Newtown, Leichhardt, Annandale, Camperdown, Summer Hill, Ashfield, Enfield, Burwood, Five Dock, and Concord.

(iv.) *Other Systems.* Another branch outfall has been constructed at Coogee, which discharges into the ocean and serves the districts of Randwick, Kensington, and Coogee. On the northern side of the city extensive works have been completed, and in the borough of North Sydney septic tanks were built in 1899 to deal with the sewage, while at Middle Harbour, Mosman, and Manly ample provision has been made for the sanitation of the districts.

(v.) *Revenue, Expenditure, and Capital Cost of Sydney Sewerage Systems.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan sewerage systems during each year from 1901 to 1908:—

**SYDNEY SEWERAGE SYSTEMS.—REVENUE, EXPENDITURE, AND CAPITAL COST,
1901 TO 1908.**

| Year ended the 30th June. | Revenue. | Working Expenses. | Capital Cost. | Capital Cost, exclusive of Items on which Interest is not Charged. | Percentage of Expenditure to Revenue. | Percentage of Revenue on Capital Cost. | Interest Payable on Capital Cost. | Profit or Loss after Payment of Working Expenses and Interest. |
|---------------------------|----------|-------------------|---------------|--|---------------------------------------|--|-----------------------------------|--|
| | £ | £ | £ | £ | % | % | £ | £ |
| 1901 | 125,290 | 45,395 | 3,280,427 | 3,066,147 | 36.23 | 4.05 | 106,475 | *—26,580 |
| 1902 | 135,441 | 45,884 | 3,396,582 | 3,182,302 | 33.87 | 4.25 | 111,035 | *—21,478 |
| 1903 | 145,666 | 46,747 | 3,591,155 | 3,365,155 | 32.09 | 4.32 | 117,496 | *—18,577 |
| 1904 | 156,274 | 44,458 | 3,763,234 | 3,562,741 | 28.44 | 4.38 | 124,819 | *—13,003 |
| 1905 | 213,937 | 54,313 | 4,265,424 | 3,774,264 | 25.38 | 5.66 | 134,568 | 25,061 |
| 1906 | 220,629 | 55,368 | 4,330,397 | 3,828,495 | 25.09 | 5.76 | 134,527 | 30,734 |
| 1907 | 217,864 | 62,141 | 4,414,822 | 3,922,514 | 28.52 | 5.55 | 140,980 | 14,743 |
| 1908 | 216,258 | 64,020 | † | 4,053,591 | 29.60 | 5.33 | 148,142 | 4,096 |

* Represents a loss. † Not available.

(vi.) *Number of Houses Drained, Population, and Length of Sewers in Sydney Metropolitan Sewerage Systems.* The following table gives particulars as to the number of houses drained, the population, and the length of sewers within the Sydney metropolitan area for each year from 1901 to 1908:—

**SYDNEY SEWERAGE SYSTEMS.—NUMBER OF HOUSES DRAINED, POPULATION,
AND LENGTH OF SEWERS, 1901 to 1908.**

| Year ended the 30th June. | Number of Houses Drained. | Estimated Population Served. | Total Length of Sewers. | Total Length of Storm-water Drains. | Ventilating Shafts Erected. | Sewers Ventilated. |
|---------------------------|---------------------------|------------------------------|-------------------------|-------------------------------------|-----------------------------|--------------------|
| | No. | No. | Miles. | Miles. | Feet. | Miles. |
| 1901 ... | 75,416 | 370,000 | 515.62 | 25.91 | 194,667 | 450.0 |
| 1902 ... | 82,644 | 413,000 | 550.40 | 27.37 | 236,855 | 552.0 |
| 1903 ... | 78,620 | 400,000 | 588.38 | 37.27 | 239,767 | 595.0 |
| 1904 ... | 82,215 | 410,000 | 610.73 | 38.76 | 252,977 | 614.0 |
| 1905 ... | 85,958 | 430,000 | 630.42 | 44.71 | 256,535 | 621.7 |
| 1906 ... | 88,881 | 444,405 | 656.84 | 44.82 | 264,255 | 636.0 |
| 1907 ... | 91,940 | 456,670 | 684.38 | 46.15 | 281,885 | 654.0 |
| 1908 ... | 94,735 | 470,000 | 724.37 | 46.94 | 286,000 | 684.0 |

11. *The Hunter District Water Supply.*—The waterworks of the Lower Hunter were constructed by the Government under the provisions of the Country Towns Water Supply and Sewerage Act of 1880. In 1892 a special Act was passed establishing an independent Board to control the works. This Board consists of seven members, of whom three are nominated by the Governor, one elected by the Newcastle Municipal Council, two by the adjacent municipalities, and one by the municipalities of East and West Maitland and Morpeth. The following municipalities and incorporated areas are within the area of the Board's jurisdiction:—

Newcastle Division.—Adamstown, Argenton, Ash Island, Boolaroo, Carrington, Hamilton, Hexham, Holmesville, Lambton, Merewether, Minmi, Newcastle, Plattsburg, Wallsend, Waratah, and Wickham.

Maitland Division.—Abermain, Bolwarra, East Greta, Heddon Greta, Hinton, Homeville, Kurri Kurri, Lorn, East and West Maitland, Morpeth, Oakhampton, Pelaw Main, Rutherford, Stanford Merthyr, Telarah, and Weston.

(i.) *Description of Waterworks.* The water supply is pumped up from the Hunter River about a mile and a half from West Maitland, the engines being situated above

flood level on a hill about forty-four chains from the river. At the pumping station there is a settling tank of 1,390,500 gallons capacity, four filter beds, a clear water tank holding 589,500 gallons, and a storage reservoir of 172,408,100 gallons capacity. The filtered water is pumped from the clear water tank into two summit reservoirs, one of which is connected by a 10-inch cast-iron main $4\frac{1}{2}$ miles in length, and supplies East and West Maitland, Morpeth, and Maitland, while the other is fed by two rising mains, one riveted steel pipe 20 $\frac{1}{2}$ in. diameter, and a 15-inch cast-iron main, 5 $\frac{1}{2}$ miles long, and supplies the other districts under the control of the Board. In seven of these districts reservoirs having a total capacity of nearly 4,000,000 gallons are supplied by gravitation. On the hill at Newcastle there is also a high-level iron tank with a capacity of 20,000 gallons, which is supplied by a small pumping engine on the roof of the Newcastle reservoir.

(ii.) *Capital Cost, Revenue, and Expenditure, 1901 to 1907.* By the Act of 1892 referred to above and an Amending Act of 1894 the capital debt of the Board was to be liquidated by annual instalments distributed over 100 years with interest at 3 $\frac{1}{2}$ per cent. By a further amending Act of 1897 the repayment of expenditure on permanent works was abrogated, and the annual instalments were to be paid in liquidation of the cost of renewable works to be fixed by the Government from year to year. In the subjoined table particulars are given as to the capital cost, revenue, and expenditure, and also as to the number of houses and population supplied for each financial year from 1901 to 1907, inclusive:—

THE HUNTER DISTRICT WATER SUPPLY BOARD, CAPITAL COST, REVENUE, EXPENDITURE, NUMBER OF HOUSES, AND POPULATION SERVED, 1901 to 1907.

| Year ended 30th June. | Revenue. | Working Expenses (including Interest). | Capital Cost. | Houses Supplied. | Estimated Population Served. | Supply. | |
|-----------------------|----------|--|---------------|------------------|------------------------------|----------------|---------------|
| | | | | | | Daily Average. | Total. |
| | £ | £ | £ | No. | No. | 1000 Gallons. | 1000 Gallons. |
| 1901 ... | 27,405 | 30,948 | 485,835 | 9,086 | 45,400 | 1,005 | 366,889 |
| 1902 ... | 29,558 | 32,109 | 494,644 | 9,875 | 49,400 | 1,119 | 408,508 |
| 1903 ... | 31,102 | 32,217 | 500,784 | 10,522 | 52,600 | 1,113 | 406,172 |
| 1904 ... | 31,360 | 32,361 | 515,565 | 11,100 | 55,500 | 1,093 | 399,954 |
| 1905 ... | 34,486 | 33,714 | 533,270 | 12,167 | 60,800 | 1,266 | 461,936 |
| 1906 ... | 40,801 | 34,801 | 544,798 | 12,968 | 64,800 | 1,479 | 539,655 |
| 1907 ... | 41,776 | 2 | 544,798 | 13,569 | 67,845 | 1,479 | 539,965 |

1. Based upon statement referred by the Minister for Works to the Board for report. The debt has not yet been finally determined. 2. Not available.

The average daily consumption of water for all purposes per inhabitant was 21.80 gallons during the year 1907, as against 22.80 gallons during the previous year.

The operations of the Hunter District Board are at present entirely confined to water supply, but a sewerage scheme is in course of construction by the Public Works Department, and when completed will be handed over to the Board.

12. *Water Supply and Sewerage in Country Towns.*—With the object of assisting municipalities to construct systems of water supply and sewerage, the Country Towns Water Supply and Sewerage Act of 1880 was passed. Under this Act the amount for carrying out the works is advanced by the State, and the municipality has the option of undertaking the construction of the works, failing which the Government undertakes the duty. Municipalities which avail themselves of the provisions of the Act are empowered to levy a rate for each service not exceeding a maximum of 5 per cent. on the assessed value of land and tenements, in addition to the ordinary municipal rates. The original Act, as amended in 1894 and in 1905, provides that the sum advanced, with interest at 4 per cent. per annum, must be repaid by a maximum number of 100 yearly repayments, and also provides for the issue of licenses to workmen, for the recovery of rates and for making by-laws for the assessment of lands and other purposes.

(i.) *Waterworks.* Up to the 30th June, 1908, forty country municipalities had availed themselves of the privileges of the Act as regards waterworks, all of which at that date had been completed and handed over by the Government. The total amount expended on these works was £726,898, and the total of the sums payable annually for a period of 100 years was £26,637, including interest at the rate of $3\frac{1}{2}$ per cent., the first repayments having become due at various dates ranging from the end of the year 1893 to the end of 1904. In the calculation of these repayments the interest on the expenditure has been added, and any payments by the councils, as well as sums remitted under the authority of the Act, have been deducted.

(a) Fifteen municipalities have constructed works out of their own resources, and of these seven have also new works constructed by the Government. The estimated values of the works constructed by the municipalities on the 6th February, 1908, were £73,712.

(b) The waterworks at Broken Hill and Silverton were constructed by a private company under a Special Act of Parliament passed in 1888, but a scheme for the supply of Broken Hill is now being carried out by the Government.

(ii.) *Sewerage Works.* Up to February, 1908, twenty-three municipalities had constructed sewerage works. Two of these municipal works (Ashfield and Strathfield) are now under the control of the Metropolitan Board; the value of the remaining twenty-one works was £54,169 in February, 1908.

13. Gas and Electric Lighting Works.—Under the old Municipalities Acts municipal councils were authorised to construct works for public lighting, and were empowered to provide private consumers with gas, but electric lighting schemes could not be carried out excepting under the authority of a special Act. Under the Local Government Act 1906 the duty of lighting streets, roads, and public places is imposed on the councils, who may, if they desire, acquire power to construct and maintain works for the supply of electricity. In February, 1908, there were twenty-eight municipal gas-works in New South Wales, the value of the plant being £197,344; of these three were acetylene gas plants valued at £480. At the same date seven municipalities—Sydney, Redfern, Broken Hill, Newcastle, Penrith, Tamworth, and Young—had erected electric-lighting plants, the total value of which was £499,402. Of this sum £421,702 had been spent on the city of Sydney electric-light plant, further particulars of which are given below.

(i.) *Gas Lighting.* There are three private companies which supply gas for public and private lighting within the metropolitan area of Sydney, viz., the Australian Gas Light Company, the North Shore Gas Company, and the Manly Gas, Light, and Coal Company. Returns for the North Shore Company are not available. Gas was first used for public lighting in Sydney in 1841.

The following statement gives particulars of the supply of gas for lighting purposes (exclusive of the North Shore Company) for the year 1907:—

SYDNEY.—PUBLIC LIGHTING, GAS, 1907.

| | | | | |
|---------------------|----------|---------------|---------------------------|----------------|
| Coal used* | Tons | 206,319 | <i>Capital Cost</i> — | |
| Gas manufactured | cub. ft. | 2,319,498,000 | Land and buildings | ... £321,871 |
| Gas sold | cub. ft. | 2,130,946,000 | Plant and machinery | ... £1,199,184 |
| Number of customers | ... | 81,266 | Total | ... £1,521,055 |
| Number of employés | ... | 1,384 | <i>Revenue</i> — | |
| | | | From sale of gas | ... £427,535 |
| | | | From sale of bye-products | ... 53,433 |
| | | | From other sources | ... 14,154 |
| | | | Total | ... £495,122 |
| | | | <i>Expenditure</i> | ... £372,370 |

* Including shale-oil equivalent to tons of coal.

(ii. *Electric Lighting.* In Sydney there are a number of electric light and power undertakings under the control of various authorities, viz., the Commissioners for Railways and Tramways, local authorities, and private companies.

(a) *Railways and Tramways Electric Power and Lighting Plants.* There are three central stations under the control of the Commissioners. The supply of current for public and private lighting is, however, only on a comparatively small scale, and is incidental to the business of the Railway Department or the maintenance of its buildings. The supply of current for motive power purposes is on a large scale, but is confined to public departments, of which the largest consumer is the Board of Water Supply and Sewerage, to whom current has been supplied since 1898. Among the services for which current is generated and supplied by the Commissioners are the following:—Tramways and tramway buildings, railway and tramway workshop motors, lighting Sydney station and yard, coal and grain elevators, sewerage pumping, operating swing bridges, lighting coaling wharves and other places. *The Ultimo Power House* is used chiefly for the supply of power to the city and to portion of the suburban tramway systems (see pp. 742-4 *ante*). The direct current plant consists of four generators of 850-kilowatt capacity, supplying current at 600 volts; the alternating current plant consists of four 1500-kilowatt generators and one 1500-kilowatt turbo-alternator, 3-phase system, 25 cycles, 6600 volts. The high-tension current is transformed to 375 volts 3-phase alternating current, which is converted to direct current at 600 volts by means of rotary converters. Current was first supplied in December, 1898. *The Bullock Island Electric Light Plant* has a capacity of 40 kilowatts (125 volt) direct current, and 150 kilowatts (3-phase, 50 cycles, 2000 volts) alternating current. *The Clyde Railway Yards Plant* has a capacity of 36 kilowatts direct current.

(b) *The City of Sydney Electricity Supply Undertaking* is under the control of the City Council. The central power house is in Pymont and the plant installed generates 3-phase alternating current, which is transmitted at 5000 volts to sub-stations. The total capacity of the generators is 3500 kilowatts. The current for lighting the centre portion of the city is converted at two sub-stations to continuous current at 240 and 480 volts on a three-wire network, and for lighting the outlying districts is transformed at other sub-stations for distribution on a four-wire 3-phase alternating current network of 240 and 415 volts, the periodicity being 50 complete cycles per second. The districts served comprise the city, Paddington, Oxford-street area, Glenmore-road area, Camperdown, Missenden-road and Bridge-road areas. There are altogether nearly 86 miles of feeders and distributors. Current was first supplied in July, 1904, since which time great progress has been made and electric lights have been installed in all the public parks and the more important streets and roads.

(c) *The Redfern Electrical Works* are operated by the Municipal Council of Redfern. The total capacity of the plant is 550 kilowatts (single phase, alternating current) at 1100 volts, which is transformed to 110 volts for lighting. Current was first supplied in 1892 for lighting, and in 1905 for motive purposes.

(d) *The Sydney Harbour Trust* run electric light stations at Circular Quay, Napoleon-street, and Cowper Wharf. The total capacity of the generators is 80 kilowatts; there are about eleven miles of overhead direct current cable and two miles of submarine cable. The district supplied comprises the Circular Quay, Darling Harbour, and Woolloomooloo. Current was first supplied in February, 1901.

- (e) *The Oxford Street Electric Lighting Station* is worked by a private company and has a capacity of 320 kilowatts. Direct current is generated and was first supplied in 1898.

The subjoined statement gives particulars, so far as available, for the year 1907. Particulars of works under the control of the Railway and Tramway Commissioners are not included in this statement.

SYDNEY ELECTRIC LIGHT STATIONS, 1907.*

| | | | | | |
|------------------------------|-------|-----|------------|----------------------|-------------|
| Units sold | ° ... | ... | 4,317,600† | Revenue— | |
| Arc lamps connected | ... | ... | 947‡ | From sale of current | £43,588 |
| Incandescent lamps connected | ... | ... | 65,000 | Other | ... 5,825 |
| Capital cost | ... | ... | £277,439 | | £49,413 |
| | | | | Expenditure | ... £34,074 |

* Exclusive of works under the control of the Commissioners for Railways and Tramways.
 † Exclusive of units supplied by the Redfern works. ‡ Exclusive of private lamps connected with City Council's supply.

14. **Fire Brigade Boards.**—Under the provisions of the Fire Brigades Act of 1902, which repealed the Act of 1884, a Metropolitan Fire Brigade Board and forty-one country boards have been established. The expense incurred in maintaining the metropolitan brigade is shared equally by the Government, the municipalities within the metropolitan area, and the various fire insurance companies. The country boards also are subsidised by the Government, the municipalities interested, and the insurance companies.

(i.) *The Metropolitan Fire Brigade Board* consists of six members, viz.—the chairman, appointed by the Government, and five elected members, one of whom is appointed by the Municipal Council of Sydney, one by the other municipalities within the proclaimed area, two by the fire insurance companies, and one by the volunteer fire companies. The municipalities contribute *pro rata* to the assessed value of ratable property in their respective districts, and the fire insurance companies proportionately to the net risks held on properties within the metropolitan district. During the year 1907 the marine insurance companies were for the first time required to contribute on account of the risks in connection with their marine policies. Sydney Harbour is outside the jurisdiction of the Board, but by an agreement entered into in October, 1905, between the Harbour Trust and the Fire Brigades Board it is provided that in all cases of fire occurring on board any vessel in the port, the Trust's brigade shall work under the direction of the superintendent of fire brigades. The Trust possesses two vessels fitted with fire-fighting appliances; these vessels are always under steam, and in readiness for any emergency. There are nineteen stations belonging to the metropolitan brigade, employing in all 192 firemen; telephones connected with these stations are placed in fire-alarm boxes in the important localities of the city and suburbs. At the end of the year 1907 there were 309 telephone fire alarms. There are also twenty-one volunteer fire companies within the metropolitan area, having 196 firemen on their rolls; these companies are registered at the offices of the Board and subject to the inspection and orders of the superintendent of the metropolitan brigade. During the year 1907 there were 757 fire alarms recorded by the Metropolitan Brigade; false alarms accounted for 108 calls, chimney fires 13, and other fires 636.

(ii.) *Receipts and Disbursements of Metropolitan Board with Total Amounts at Risk, 1902 to 1907.* The subjoined table shews the actual receipts and disbursements of the Metropolitan Board, and also the total amounts of risks held by the insurance companies within the metropolitan area for each year from 1902 to 1907, inclusive :—

SYDNEY METROPOLITAN FIRE BRIGADES BOARD.—RECEIPTS AND DISBURSEMENTS, ALSO TOTAL AMOUNTS AT RISK, 1902 to 1907.

| Year. | Receipts. | | | | | Disbursements. | Net Risks. |
|----------|------------------|----------------------|--------------------------------|---------------------|--------|----------------|------------|
| | From Government. | From Municipalities. | From Fire Insurance Companies. | From other Sources. | Total. | | |
| | £ | £ | £ | £ | £ | £ | £ |
| 1902 ... | 10,200 | 10,281 | 10,235 | 1,981 | 32,697 | 37,128 | 71,750,461 |
| 1903 ... | 15,150 | 15,323 | 15,150 | 2,498 | 48,121 | 42,055 | 73,083,028 |
| 1904 ... | 14,000 | 13,942 | 14,000 | 3,293 | 45,235 | 45,235 | 75,147,807 |
| 1905 ... | 14,300 | 14,147 | 14,300 | 6,395 | 49,142 | 49,142 | 78,108,749 |
| 1906 ... | 14,700 | 15,145 | 14,700 | 6,959 | 51,504 | 51,504 | 81,364,129 |
| 1907 ... | 15,650 | 15,646 | 15,700 | 2,722 | 49,718 | 50,193 | 86,563,300 |

(iii.) *Country Fire Brigade Boards.* Forty-one country Boards have been established under the Act. These Boards are entitled to receive subsidies from the Government. Owing to an ambiguous clause in the statute the insurance companies and municipalities do not always consider themselves called upon to contribute to the expense of maintenance of the brigades as defined by the Act. In addition to the Boards constituted under the Act there were at the end of the year 1906 seventy-six country fire brigades in existence, towards the support of which the several municipalities generally contribute. In many country districts volunteer fire brigades have been established for the purpose of dealing with bush fires.

15. **Sydney Harbour Trust.**—The establishment of this Trust was the direct outcome of the outbreak of bubonic plague in the port of Sydney in the early part of the year 1900. It was proved that this disease was due to the introduction of plague-stricken rats in vessels arriving from ports in which the disease had made its appearance. As a consequence the whole of the foreshores of the harbour, together with certain adjoining wharves, stores, dwelling houses, and other properties, were vested in a body of trustees. The Trust was established by an Act which came into force on the 11th February, 1901. Under this Act an independent body of three Commissioners was created for the purpose of administering the affairs of the harbour and of fostering its interests, each commissioner being entitled to hold office for seven years, subject to certain conditions. This Board of Commissioners is invested with the exclusive control of the port and shipping, lighthouses, beacons, buoys, wharves, and docks (with the exception of wharves and docks constructed on land which has been alienated from the Crown), in Sydney Harbour, and is empowered to levy certain tolls, dues, rates, rents, and charges, and to resume or purchase lands and buildings. Prior to the establishment of the Trust, the extensive foreshores of the port offered opportunities to private individuals of acquiring water frontages, which enabled them to participate in the revenue to be derived from the wharfage and tonnage rates as prescribed by the various Acts. This alienation of the water frontages was in return for comparatively small payments. In effect this deprived the Crown of an annual revenue which, under other circumstances, might have been applied to the maintenance of the port. One of the greatest changes made by the Sydney Harbour Trust Act was the alteration of the basis upon which wharfage is charged, so that goods which do not use the wharf, but are lightered overside, are subject to wharfage. The Act embodied the wharfage schedule appended to the Wharfage and Tonnage Rates Act of 1880, by which the inward rates were fixed at one shilling and eightpence per ton, and the outward at tenpence; but it did not provide for any reduced rate for transhipment goods arriving from oversea as had previously been allowed,

although it gave the Commissioners power to make or to recommend certain exemptions and to increase the inward wharfage to three shillings per ton measurement, or to four shillings per ton dead-weight. During the year 1901 the Commissioners recommended the Government to increase the inward rates to two shillings and sixpence per ton and to abolish outward wharfage, and these recommendations were duly endorsed by the Executive Council. Liberal concessions were also made with regard to transhipment goods arriving from overseas. All goods produced or manufactured within the State of New South Wales were exempt from wharfage rates until the Sydney Harbour Rates Act 1904 was passed. Under this Act a schedule of wharfage charges was provided for, a small charge of fivepence per ton being imposed on all goods transhipped; important amendments were also made in the old tonnage rates charges (which had been in existence since 1880), with the result that many vessels which previously escaped payment have now to pay a fair charge for the use made of the wharfage accommodation provided by the Trust. Considerable improvements have been made by the Commissioners in the wharfage accommodation of the port and in the sanitary condition of the area vested in the Trust by the construction of new jetties, sheds, offices, and waiting rooms; by dredging and by preventing the pollution of the waters of the port; by opening up new roads; and by taking means to prevent rats and other vermin from finding a harbourage in the produce stores and in the vicinity of the wharves.

(i.) *Revenue, Expenditure, and Capital Cost.* The subjoined table gives particulars of the revenue and expenditure of the Trust, and also shews the total capital debt for properties, etc., vested in the Commissioners, the amount of interest payable on the debt, and the balance of revenue after deducting expenditure, interest, and the amount of the Commissioners' salaries.

**SYDNEY HARBOUR TRUST.—REVENUE, EXPENDITURE, CAPITAL DEBT, INTEREST,
AND BALANCE, 1901 to 1908.**

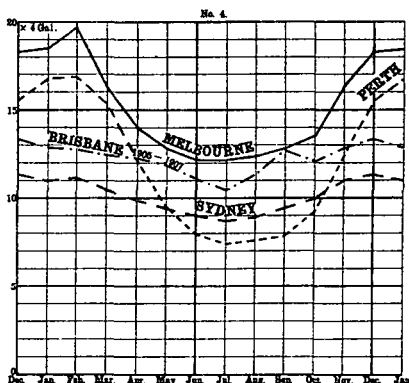
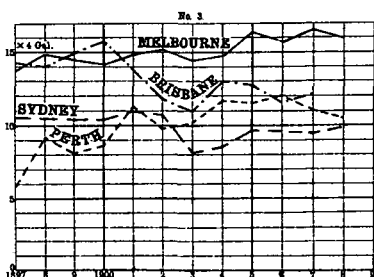
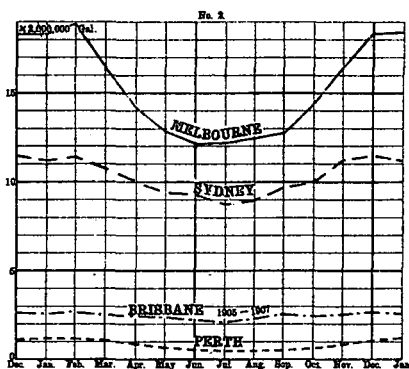
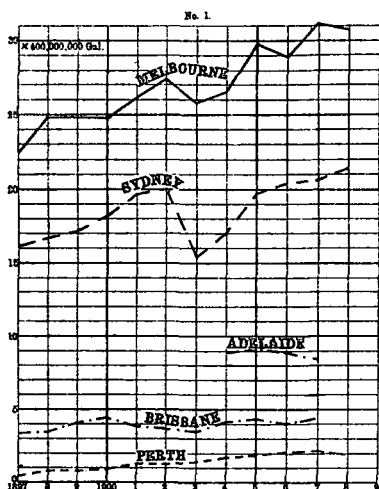
| Year ended the 30th June— | Revenue. | | | | Expendi- ture. | Total Capital Debt.† | Interest.‡ | Balance.§ |
|------------------------------------|--------------------|-------------------|---------------------------|---------|-------------------|----------------------------|------------|-----------|
| | Wharfage Rates. | Tonnage Rates. | From Other Sources. | Total. | | | | |
| | £ | £ | £ | £ | | | | |
| 1901* ... | 42,841 | 3,208 | 12,326 | 58,375 | 9,983 | ... | ... | ... |
| 1902 ... | 127,197 | 9,824 | 82,626 | 219,647 | 75,692 | ... | ... | ... |
| 1903 ... | 147,718 | 3,762 | 104,665 | 256,145 | 82,185 | ... | ... | ... |
| 1904 ... | 117,214 | 5,715 | 138,748 | 261,677 | 80,032 | 5,091,372 | 180,257 | \|\|—2,612 |
| 1905 ... | 111,891 | 7,076 | 134,614 | 253,581 | 73,845 | 5,112,194 | 182,962 | \|\|—7,226 |
| 1906 ... | 143,625 | 6,935 | 120,129 | 270,689 | 76,304 | 5,155,289 | 180,951 | 9,434 |
| 1907 ... | 163,896 | 11,364 | 122,682 | 297,942 | 78,714 | 5,137,646 | 181,531 | 33,697 |
| 1908 ... | 183,371 | 12,610 | 131,544 | 327,525 | 87,034 | 5,227,360 | 187,907 | 48,584 |

* For the period from 11th February to the 30th June, 1901. † Not determined until the year 1904. ‡ The amount of interest has been computed by taking the rate of interest on the total capital debt of the State. § After deducting expenditure, interest, and also £4000 per annum for Commissioners' salaries. || Represents a loss.

The revenue for the year 1907-8 shews an increase of £29,583, equal to 9.95 per cent., and is the highest attained since the formation of the Trust. After allowing for Commissioners' salaries, etc., the net revenue was £236,491, which is equivalent to a return of £4 12s. per cent. on the interest-bearing portion of the capital debt, namely, £5,145,324.

(ii.) *Dredging and Towing.* The subjoined statement gives particulars of the dredging and towing done by the five dredges and the six tug boats owned by the Trust:—

GRAPHS SHEWING CONSUMPTION OF WATER IN METROPOLITAN AREAS.—
MELBOURNE, SYDNEY, BRISBANE, AND PERTH, 1897 TO 1908.



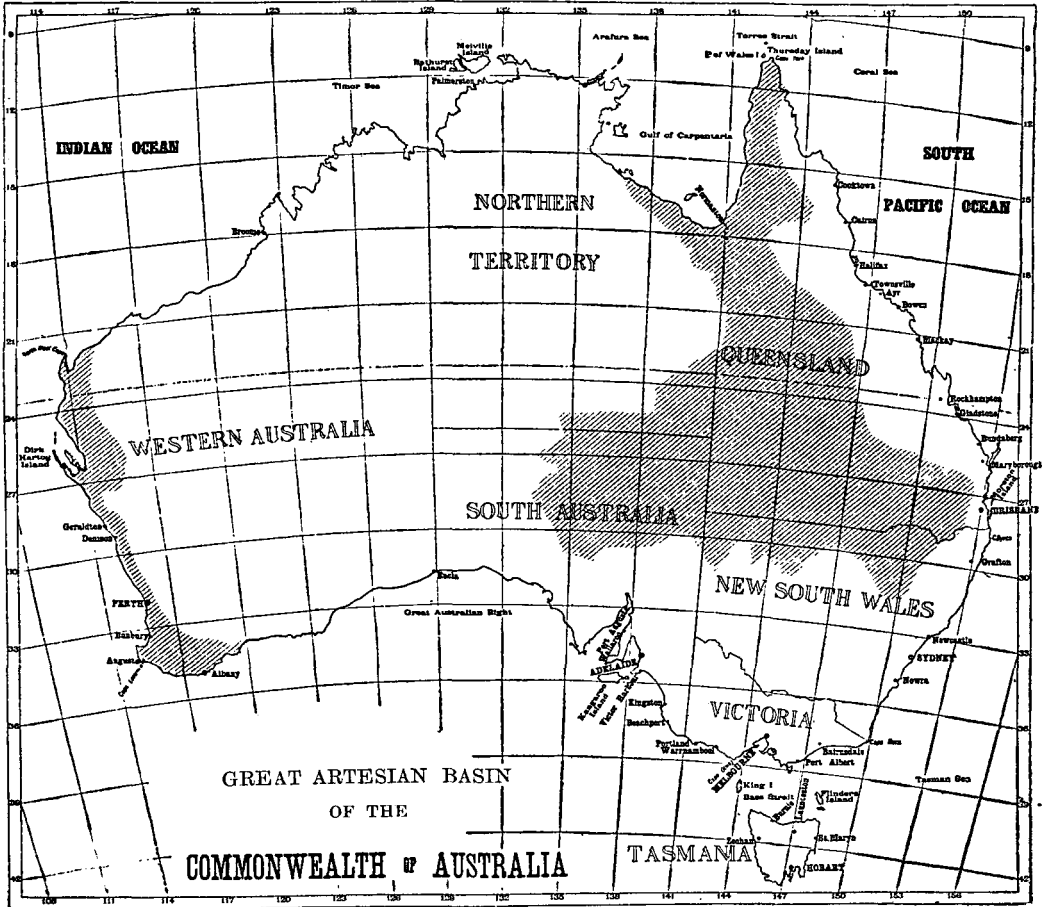
EXPLANATION OF GRAPHS.—No. 1.—Total annual consumption of water in metropolitan area, 1897 to periods shown on graph. In the Adelaide water districts there are no governing meters; the quantities shown are as recorded by gaugings taken at the reservoirs and include evaporation and absorption. The base of each small rectangle represents an interval of one year, and the vertical height represents 400,000,000 gallons.

No. 2.—Average daily consumption of water in metropolitan area during each month of the year. (Mean of period 1897 to 1908.) The base of each small rectangle represents an interval of one month, and the vertical height represents 2,000,000 gallons.

No. 3.—Average daily consumption of water per head of population in metropolitan area, 1897 to 1908. The base of each small rectangle represents an interval of one year, and the vertical height represents 4 gallons.

No. 4.—Average daily consumption of water per head of population in metropolitan area during each month of the year. (Mean of period 1897 to 1903.) The base of each small rectangle represents an interval of one month, and the vertical height represents 4 gallons.

MAP SHEWING THE POSITION AND EXTENT OF THE "GREAT AUSTRALIAN ARTESIAN BASIN."



The area occupied by this basin, coloured chocolate on map, is approximately 644,000 square miles, of which 376,000 square miles are in Queensland, 110,000 square miles in South Australia, 83,000 square miles in New South Wales, and 75,000 square miles in Western Australia.

SYDNEY HARBOUR TRUST.—PARTICULARS OF DREDGING AND TOWING,

1901 TO 1908.

| Year. | Dredging. | | | Towing Dredged Material. | | |
|-------|---------------|--------------------|----------------------|--------------------------|------------------------------|------------------------------|
| | Tons Dredged. | Total Expenditure. | Expenditure per Ton. | Miles run Towing. | Total Expenditure in Towing. | Expenditure per Mile Towing. |
| | Tons. | £ | Pence. | Miles. | £ | Pence. |
| 1901* | 317,500 | 3,696 | 2.79 | 29,277 | 2,849 | 23.35 |
| 1902† | 320,740 | 5,112 | 3.75 | 25,993 | 2,825 | 26.08 |
| 1903 | 783,374 | 12,486 | 3.82 | 65,444 | 8,037 | 29.47 |
| 1904 | 629,792 | 11,829 | 4.50 | 55,216 | 7,404 | 32.18 |
| 1905 | 490,045 | 8,808 | 4.31 | 46,542 | 5,378 | 27.73 |
| 1906 | 489,610 | 8,311 | 4.08 | 39,301 | 5,207 | 31.78 |
| 1907 | 482,474 | 8,087 | 4.02 | 45,617 | 5,392 | 28.37 |
| 1908 | 504,760 | 8,915 | 4.24 | 45,485 | 6,940 | 36.62 |

* From the 11th February to the 31st December, 1901. † For the six months ended 30th June, 1902.

§ 3. Victoria.

1. **Development of Types of Local Authorities.**—In Victoria there are now two types of municipal institutions, (a) boroughs, including cities and towns, and (b) shires, and although they are now dealt with by the same Act their origin was distinct, and in the early days of their development they were provided for by independent enactments. Melbourne and Geelong, the latter of which was for many years the second largest town in the State, having been incorporated under special statutes prior to the establishment of a general system of local government, are not subject to the provisions of the Local Government Acts except in a few comparatively unimportant details. Melbourne was incorporated as a town in 1842, and as a city in 1847; Geelong was incorporated as a town in 1849.

(i.) *Institution of Road Districts.* The Imperial Act of 1842, under which the Governor of New South Wales was authorised to form districts for the purpose of self-government, has already been referred to. This Act was succeeded by the Act of 1850, under which the district of Port Phillip was separated from New South Wales, and which provided that the proclamation of districts (under the Act of 1842) which had not been followed by an election of councillors should be void, and where councillors had been elected the Letters Patent forming such districts could be revoked by petition. For the future such districts were only to be incorporated upon petition of the inhabitants to the Governor, who was authorised to establish elective district councils, with power to frame by-laws for making and maintaining roads and bridges, establishing schools, and levying local tolls and rates. The necessity for a more comprehensive scheme of local government soon became apparent, owing to the increase of settlement on the land which followed the excitement of the gold rush, and in 1852 two committees of the Legislative Council were appointed, one to enquire into the operations of district councils which had been established, the other to report generally upon the condition of the roads and bridges in the State, and as to how the funds for their construction and maintenance could be best expended. The report of the latter committee was of considerable value, because it formed the basis of the first Victorian Act which provided a scheme for the local government of country districts, namely the Roads Act of 1853. Under this Act a distinction was made between main roads and parish or cross roads. The Governor was authorised to declare any part of the colony to be a road district; main roads were placed under the

care of a central Road Board with an Inspector-General and staff, while parish roads were to be made and maintained by the district councils, who were empowered to levy rates for the purpose.

(ii.) *Establishment of Shires and Extinction of Road Districts.* The Act of 1853 continued in force for ten years, when it was repealed, and its provisions amended and consolidated in the Road Districts and Shires Act 1863. By this Act the central Road Board was abolished, and the establishment of shires and shire councils was authorised. Any district having an area of not less than 100 square miles and a revenue from general rates of not less than £1000 might be incorporated as a shire, the duties and powers of which were the same as those of the districts, but additional privileges, such as power to raise loans and to grant licenses, were conferred upon the shires. Provision was also made for the regulation of the proceedings of shire councils, the preparation of voters' lists, elections, accounts, revenue, rates, auditors, and other matters, and these provisions have been substantially continued in later Acts. The result of the Act of 1863 was that the road districts were gradually developed into or were absorbed by the shires, and the next important measure which was passed, the Shires Statute Act of 1869, recognised only the latter, and with respect to shires retained the principal features of the preceding Act.

(iii.) *Constitution of Urban Municipal Districts and Boroughs.* In the meantime suburban districts and country towns were growing up, and in the year 1854 an Act was passed for the establishment of municipal boroughs in Victoria. Provision was made whereby any district having an area of not more than nine square miles, no part of which was more than six miles from any other part, and having a population of not less than 300, might, on petition, be constituted a municipal district. This Act, which thus originated those municipalities now known as boroughs (including cities and towns), was amended and repealed by the Municipal Institutions Consolidating and Amendment Act 1863, which re-enacted the principal features of the previous Act. These features are practically the same as those which now prevail with regard to boroughs. The Act of 1863 was in turn amended from time to time, and the law relating to boroughs was consolidated in 1869 by the Boroughs Statute Act.

(iv.) *Legislation applying to all Types of Municipalities.* Both the Shires Statute Act and the Boroughs Statute Act of 1869 were repealed and their provisions amended and consolidated by the Local Government Act 1874, which, after further improvements and extensions, was in turn consolidated by the Local Government Act 1890, which was itself amended from time to time. In 1899 a select committee of the Legislative Assembly was appointed to enquire into and to report upon the working of the Act of 1890 and to suggest amendments required in the law relating to local government. This committee was subsequently constituted a Royal Commission, and in 1902 issued a report to which was appended the draft bill which became the Local Government Act 1903, the provisions of which now regulate the working of municipalities in the State.

2. Local Government Systems now in Operation.—Local government is now administered under the Act of 1903 throughout the whole of the State, with the exception of about 600 square miles in the mountainous parts of the county of Wonnangatta, and the whole of French Island.

(i.) *Constitution of Municipalities.* Provision is made for the continuation of municipalities established under previous Acts and for the constitution of new ones.

- (a) *Shires.* Any part of the State containing ratable property yielding, upon a rate not exceeding one shilling in the pound, a sum of £1500 may be constituted a shire upon petition of at least fifty inhabitants.
- (b) *Boroughs.* Any part of the State, not exceeding in area nine square miles, and having no point distant more than six miles from any other point, and containing a population of not less than 500 and ratable property yielding, upon

a rate not exceeding one shilling in the pound, a sum of £300, may be constituted a borough upon petition of at least 250 resident householders. Any borough having during the preceding financial year a revenue of £10,000 may be declared a town, or having a revenue of £20,000 may be declared a city upon petition under the common seal of such borough. Provision is also made for severing any part of a municipality and annexing the same to an adjoining municipality; for dividing municipalities into any number of subdivisions not exceeding eight; and for uniting two or more boroughs which form one continuous area so as to form one borough.

(c) *Townships.* Upon petition signed by not less than twenty-five ratepayers resident in any portion not exceeding three square miles in extent of any shire and distant more than ten miles from the boundaries of the city of Melbourne, the Governor may with the consent of the municipal council proclaim such portion a township.

(ii.) *The Municipal Council.* It is provided by the Act of 1903 that, in the case of existing municipalities, the council shall consist of the number of members assigned to it at the commencement of the Act, but, when the number of members is determined under the Act, such number shall be, in case the district is not subdivided, some multiple of three, not less than six nor more than twenty-four, and, in case such district is subdivided, the number produced by the return of three councillors for every subdivision. Every person liable to be rated in respect of property in the municipal district of the ratable value of £20 at the least is qualified to hold the office of councillor in any municipality, provided that no female, nor any undischarged bankrupt, nor a person attainted of treason or convicted of felony shall be so qualified. Other persons may also be disqualified on the ground of interest. Provision is made for the retirement of one-third of the councillors annually in rotation, and for the election and privileges of the chairman, who is styled the mayor of a borough and the president of a shire.

(ii.) *The Municipal Electorate.* Every person who on the 10th June in any year has attained the age of twenty-one years, and is liable to be rated in respect of property within a municipal district, in respect of which all rates made before the 10th March of the year have been paid, is entitled to be enrolled as a voter, but no person may be enrolled in respect of property rated under £5 a year, unless there is a house on the property, and he resides there. The occupier and the owner of any ratable property may not be both enrolled in respect thereof, the former having the right to be enrolled instead of the latter. Corporations liable to be rated may appoint not more than three persons to be enrolled in their place. Joint occupiers and owners, not exceeding three, are each entitled to be enrolled, and in case more than three persons are rated in respect of any property, those whose names stand first in order upon the rate last made or upon the last valuation and return are so entitled. All persons who are not entitled to be enrolled by reason solely of non-payment of rates may be placed on a separate voters' list, and for the purpose of enabling them to vote at elections of members for the State Parliament they may be included in the rolls of ratepaying electors therefor if duly qualified in other respects. Plurality of votes is allowed on the scale shewn in the following statement:—

VICTORIA.—PROPERTY QUALIFICATIONS FOR ENROLMENT AS MUNICIPAL VOTER.

| Number of Votes. | Annual Ratable Value of Property. | |
|------------------|--|------------------|
| | Boroughs (including Cities and Towns). | Shires. |
| 1 | Under £50. | Under £25. |
| 2 | From £50 to £100. | From £25 to £75. |
| 3 | £100 and upwards. | £75 and upwards. |

Voters' lists are prepared annually by collectors appointed for the purpose; provision is made for the revision of the lists, for the time and place of holding elections, for the nomination of candidates, for the application of the Voting by Post Act 1900; for the appointment of officers, and for the meetings and proceedings of councils.

(iv.) *Powers and Functions of Councils.* Municipal councils are empowered to make by-laws for a great number and variety of purposes, of which the most important are as follow:—The control and regulation of roads and streets, buildings, wharves, and public places, of nuisances, passenger vehicles, carters, boatmen, and porters; the regulation and maintenance of water-supply, sewerage, drainage, and lighting; the establishment and control of fairs and public sales, labour marts and offices; the preservation and management of commons and public reserves; the regulation of traffic and hoardings; the public health and the prevention of contagious or infectious diseases, and generally for maintaining the good rule and government of the municipality. Councils are authorised to undertake the supply of light, heat, or motive power for public or private purposes; they may construct and maintain tanks, dams, and reservoirs, and may provide public baths, markets, weigh-bridges, pounds, abattoirs, places of public recreation, and charitable institutions. One of the principal functions of the councils is to construct and maintain public highways, streets, bridges, ferries, and jetties within their respective localities. At the request of the council the provisions of the Act as to the maximum weight which it is permissible to carry on vehicles on any public road within the municipality may be made to apply by proclamation.

(v.) *Ratable Property.* All land, including buildings and improvements thereon, within a municipality, is ratable property, except the following:—Crown lands unoccupied or used for public purposes; land used exclusively for commons, mines, public worship, mechanics' institutes, public libraries, cemeteries, free primary schools, and charitable purposes; land vested in, in the occupation of, held in trust for, or under the control of any municipality, local governing body, or commissioners under the Rates Act; land vested in the Railway Commissioners, in the Minister of Public Instruction, in the Board of Land and Works, in the Commissioners of the Melbourne Harbour Trust, and in the Melbourne and Metropolitan Board of Works. The valuation of all property is computed at its net annual value, that is to say, at the rent at which the same might reasonably be expected to let from year to year, free of all usual tenants' rates, taxes, and cost of insurance, but no ratable property may be computed as of an annual value of less than 5 per cent. upon the fair capital value of the fee-simple thereof.

(vi.) *Rates.* The municipal councils are empowered to levy rates, which, together with grants and subsidies received from the Government, license fees, market dues, rents, tolls, and sanitary charges, form their chief sources of income. The rates which may be levied are of three kinds, namely—general, extra and separate rates.

(a) *General Rates* are levied at least once in every year, and must not exceed two shillings and sixpence in the pound of the net annual value, nor be less than sixpence in the pound of such value. Every general rate must be made for one year or half a year or such other period less than a year, but not less than three months, as the council thinks fit, and must be levied on the occupier of the property rated, or if there be no occupier, or if the occupier be the Crown or the Minister of Public Instruction, or a public or local body, then upon the owner of the property.

(b) *Extra Rates* may be levied in any municipal district which is subdivided equally in respect of all the ratable property within any one or more of the subdivisions, but cannot be levied except in accordance with the requisition of not less than two-thirds of the councillors returned by such sub-division. The amount of general and extra rates levied in any year must not exceed two shillings and sixpence in the pound of the net annual value.

- c) *Separate Rates* may be levied where it appears to the council that any works or undertakings authorised by the Act are for the special benefit of any particular portion of the municipal district, but may be made only upon petition signed by a majority of the occupiers and by at least one-third of the owners of the properties affected, and must be confirmed by order of the Governor-in-Council. Separate rates may be levied equally on all properties affected, or may be differential according to the benefits to be received by different properties, and the amount of the rate must be such as will, in the opinion of the council, suffice to provide for the payment of interest and periodical repayments of, or sinking fund for, the money borrowed on the security of such rate.

(vii.) *Borrowing Powers.* The council of every municipality may borrow money upon the credit of such municipality by the sale of debentures, either for the purpose of liquidating previous loans or for the purpose of constructing certain specified permanent works or undertakings, such as the construction, alteration, or enlargement of streets, roads, bridges, ferries, sewers, and drains; the construction and purchase of waterworks, electric light or gas works, abattoirs, markets, baths, pleasure grounds, libraries, museums, and places of public resort and recreation; the establishment of hospitals, asylums, and other buildings for charitable purposes; the destruction and disposal of refuse, and the purchase of land or any easement, term, right, or privilege in, over, or affecting land. The amount of money so borrowed at any time for permanent works must not exceed ten times the average income of the municipality for the three preceding years, and the amount borrowed in the case of any municipality already indebted must not exceed the difference obtained by subtracting from ten times such average income the balance remaining unpaid of any previous loans. The question as to whether any loan for the purpose of permanent works shall be incurred must be submitted to a poll of the ratepayers upon demand signed by any twenty persons whose names are inscribed on the municipal roll. The council of any municipality may, in addition to the borrowing powers mentioned above, borrow money for permanent works or undertakings on the security of its income, but not upon the credit of the municipality, by the issue of debentures or by a mortgage over such income. The amount of money so borrowed must not at any time exceed five times the average income of the municipality for the three preceding years. The income referred to does not include moneys derived from general, separate, or extra rates, special improvement charges, publicans' licenses, or endowment from the consolidated revenue fund. Temporary advances by way of overdraft of the current account may also be obtained, but must not at any time exceed one-half the prior year's revenue.

(viii.) *Endowment.* Under the Local Government Act 1874 an annual endowment of £310,000 was provided for the municipalities. This amount ceased to be payable in 1879, but a subsidy, amounting to £310,000, was voted by Parliament annually, and was increased year by year, until £450,000 was granted in 1889-90 and 1890-91. The Local Government Act 1891 authorised the payment of an annual endowment of £450,000, but this amount was reduced year by year to £50,000 in 1902, but was increased to £75,000 for the year 1906-7, and to £100,000 from the 1st July, 1907. For the purpose of distributing the endowment the shires are classified. Under the Municipal Endowment and Reclassification of Shires Act 1907, a new classification was adopted under which the amount of the endowment is to be allocated. In addition to the endowment of £75,000 (increased to £100,000 from the 1st July, 1907) the municipalities received from the Government during the financial year 1906-7 a sum of £87,804 out of the Licensing Act Fund as the equivalent for (a) fees for licenses, (b) fees for the registration of brewers and spirit merchants, and (c) fines, penalties, and forfeitures incurred under the Licensing Act 1876. Under the Act of 1907 the endowment of £100,000 is payable in equal moieties in March and September of each year. No city or town is entitled to receive any part of the endowment. The distribution

amongst the boroughs and shires is based on the amount of general and extra rates received in the twelve months ending on the preceding 30th September according to the following scale:—

VICTORIA.—ENDOWMENT OF BOROUGHS AND SHIRES, 1907-8.

| | |
|---|--|
| To every Borough or 1st Class Shire, 3s. in the £ | To every 4th Class Shire, 8s. in the £ |
| „ „ 2nd Class Shire 5s. „ „ | „ 5th „ 10s. „ „ |
| „ „ 3rd „ „ 6s. „ „ | „ 6th „ 12s. „ „ |

3. Boroughs and Shires.—Number, Population, and Value of Ratable Property, 1901 to 1908.—The following table shews the number of cities, towns, boroughs, and shires, their estimated population, the number of ratepayers and dwellings, and the value of ratable property for the years 1901 to 1908, inclusive:—

VICTORIA.—PARTICULARS OF MUNICIPALITIES, 1901 to 1908.

| Financial Year. | Number of Municipalities. | Estimated Population. | Number of Ratepayers, (both sexes). | Estimated Number of Dwellings. | Estimated Value of Real Property. | |
|-----------------|---------------------------|-----------------------|-------------------------------------|--------------------------------|-----------------------------------|---------|
| | | | | | Total. | Annual. |

CITIES, TOWNS, AND BOROUGHS.

| | | | | | £ | £ |
|------|-----|----------|---------|----------|-------------|-----------|
| 1901 | 58 | 627,237 | 153,783 | 130,358 | 67,302,423 | 4,765,632 |
| 1902 | 60 | *647,397 | 157,820 | *134,465 | 77,289,493 | 5,223,282 |
| 1903 | 60 | 632,607 | 155,262 | 140,248 | 92,099,451 | 5,308,546 |
| 1904 | 60 | 652,658 | 158,691 | 142,352 | 93,376,880 | 5,366,477 |
| 1905 | 60 | 657,815 | 159,953 | 143,667 | 94,583,732 | 5,498,471 |
| 1906 | †60 | 684,358 | 169,536 | 149,649 | 99,354,665 | 5,664,425 |
| 1907 | 60 | 695,192 | 171,909 | 151,833 | 100,801,295 | 5,779,231 |
| 1908 | 60 | 708,672 | 176,420 | 153,629 | 103,666,178 | 5,944,691 |

SHIRES.

| | | | | | £ | £ |
|------|------|----------|---------|----------|-------------|-----------|
| 1901 | 150 | 571,683 | 159,128 | 122,645 | 106,839,331 | 5,771,865 |
| 1902 | †148 | *551,523 | 147,671 | *118,538 | 107,812,500 | 5,661,805 |
| 1903 | 148 | 557,285 | 150,724 | 118,996 | 111,803,468 | 5,880,386 |
| 1904 | 148 | 556,350 | 152,204 | 121,643 | 115,766,850 | 6,071,353 |
| 1905 | 148 | 552,414 | 153,908 | 121,335 | 116,336,442 | 6,244,799 |
| 1906 | †146 | 541,242 | 149,350 | 118,339 | 117,260,959 | 6,130,718 |
| 1907 | 146 | 565,739 | 151,869 | 120,114 | 121,797,646 | 6,395,094 |
| 1908 | 146 | 573,715 | 152,973 | 121,465 | 129,059,488 | 6,694,209 |

* Census figures. † The shires of Caulfield and Malvern were constituted boroughs in 1901. ‡ The shires of Coburg and Camberwell were constituted boroughs, and North Melbourne and Flemington were joined to City of Melbourne in 1905.

4. Municipal Assets and Liabilities, 1901 to 1907.—The assets of municipalities may be classified under three heads—(a) the municipal fund, (b) the loan fund, and (c) property; the liabilities under two heads—(a) the municipal fund, and (b) the loan fund. The following table shews the amount of municipal assets for each financial year from 1901 to 1907, inclusive:—

VICTORIA.—MUNICIPAL ASSETS AND LIABILITIES, 1901 to 1907.

| Items. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| ASSETS. | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ |
| MUNICIPAL FUND— | | | | | | | |
| Uncollected rates ... | 187,205 | 141,482 | 130,203 | 119,013 | 119,028 | 124,174 | 112,435 |
| Other assets ... | 122,581 | 153,490 | 166,753 | 168,107 | 168,737 | 184,380 | 196,048 |
| LOAN FUND— | | | | | | | |
| (a) Sinking funds | | | | | | | |
| Amount at credit ... | 675,310 | 697,019 | 654,281 | 680,989 | 701,503 | 740,382 | 772,662 |
| Arrears due ... | 1,391 | 1,175 | 2,033 | 4,352 | 4,459 | 1,341 | 3,616 |
| (b) Unexpended balances | 394,136 | 282,229 | 223,624 | 160,321 | 112,643 | 302,400 | 325,901 |
| PROPERTY— | | | | | | | |
| Buildings, markets, etc. | 2,507,441 | 2,470,460 | 2,449,762 | 2,495,101 | 2,530,858 | 2,573,017 | 2,697,701 |
| Waterworks ... | 197,675 | 210,367 | 226,220 | 226,084 | 234,461 | 221,548 | 223,687 |
| Gasworks ... | 63,732 | 61,592 | 60,820 | 68,744 | 65,760 | 60,510 | 66,269 |
| Total ... | 4,149,471 | 4,017,814 | 3,913,696 | 3,922,711 | 3,937,449 | 4,207,752 | 4,398,319 |
| LIABILITIES. | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ |
| MUNICIPAL FUND— | | | | | | | |
| Arrears due sink'g f'nds | 1,021 | 1,175 | 2,033 | 4,352 | 4,459 | 1,341 | 3,616 |
| Overdue interest ... | 9,413 | 13,044 | 17,616 | 17,875 | 16,637 | 16,951 | 17,060 |
| Bank overdrafts ... | 157,046 | 143,236 | 107,090 | 89,825 | 90,660 | 89,370 | 94,825 |
| Temp'y Govt. advances | 20,901 | 17,604 | 13,310 | 8,098 | 4,018 | 694 | ... |
| Other liabilities ... | 142,530 | 147,888 | 126,671 | 132,088 | 139,717 | 175,964 | 179,342 |
| LOAN FUNDS— | | | | | | | |
| Loans outstanding | 4,253,304 | 4,254,061 | 4,212,051 | 4,205,886 | 4,186,602 | 4,375,116 | 4,442,713 |
| Due on loan contracts... | 52,826 | 33,455 | 30,092 | 29,947 | 27,438 | 2,256 | 39,726 |
| Total ... | 4,637,041 | 4,615,463 | 4,508,863 | 4,488,081 | 4,469,531 | 4,661,692 | 4,777,282 |

5. Revenue and Expenditure of Municipalities, 1901 to 1907.—The following table shews the revenue from various sources, and the expenditure under various heads, of municipalities during each year from 1901 to 1907, inclusive:—

VICTORIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1901 to 1907.

| Items. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| SOURCES OF REVENUE. | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ |
| Taxation | | | | | | | |
| Rates ... | 722,346 | 784,810 | 765,910 | 808,082 | 802,253 | 836,024 | 887,580 |
| Licenses ... | 104,499 | 105,871 | 91,977 | 105,123 | 112,475 | 106,621 | 106,742 |
| Dog fees ... | 14,965 | 15,446 | 14,971 | 15,435 | 16,022 | 16,257 | 17,455 |
| Market & weighbridge dues ... | 49,623 | 58,113 | 52,522 | 52,772 | 55,259 | 56,939 | 57,190 |
| Govt. endowments and grants | 175,972 | 99,304 | 98,609 | 80,681 | 90,572 | 95,090 | 117,304 |
| Contributions for streets, etc. | 24,999 | 21,901 | 21,577 | 20,485 | 22,755 | 18,597 | 30,816 |
| Sanitary charges ... | 48,253 | 48,332 | 44,718 | 50,097 | 55,731 | 56,052 | 56,918 |
| Rents ... | 54,117 | 56,494 | 58,081 | 59,956 | 60,344 | 63,242 | 66,601 |
| Other sources ... | 89,210 | 110,263 | 130,697 | 117,759 | 129,810 | 139,470 | 163,825 |
| Total ... | 1,233,984 | 1,300,534 | 1,279,062 | 1,310,300 | 1,345,221 | 1,388,292 | 1,504,431 |
| HEADS OF EXPENDITURE. | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ |
| Salaries, etc. ... | 139,270 | 139,174 | 135,730 | 138,884 | 136,066 | 141,438 | 147,933 |
| Sanit'y wk. streetcleaning, etc. | 132,542 | 131,847 | 125,535 | 126,219 | 131,378 | 135,466 | 134,632 |
| Lighting ... | 86,059 | 97,414 | 68,665 | 69,877 | 69,315 | 72,571 | 72,217 |
| Fire brigades' contributions... | 16,769 | 15,884 | 16,530 | 16,668 | 16,061 | 17,431 | 17,144 |
| Public works (Construction) | 244,315 | 195,487 | 131,508 | 167,919 | 138,275 | 217,346 | 266,658 |
| Maintenance | 345,334 | 340,791 | 330,897 | 360,831 | 378,859 | 403,791 | 441,335 |
| Formation of priv. streets, etc. | 23,350 | 22,197 | 19,307 | 19,504 | 23,676 | 19,627 | 23,236 |
| Redemption of loans | 27,745 | 32,015 | 50,146 | 43,959 | 55,866 | 49,483 | 54,937 |
| Interest on loans ... | 197,810 | 195,186 | 193,638 | 191,310 | 186,439 | 188,111 | 196,987 |
| Charities ... | 13,407 | 13,277 | 12,431 | 13,117 | 13,185 | 13,637 | 13,401 |
| Other expenditure ... | 103,403 | 112,454 | 113,842 | 142,460 | 134,023 | 118,748 | 156,894 |
| Total ... | 1,330,004 | 1,295,726 | 1,198,229 | 1,200,748 | 1,343,743 | 1,377,649 | 1,534,473 |

6. **Number and Assessment of Properties Rated, 1905-6.**—The number of properties rated and the annual assessment thereon in cities, towns, boroughs, and shires, in the financial year 1905-6, were as follows :—

VICTORIA.—NUMBER AND ASSESSMENT OF PROPERTIES RATED, 1905-6.

| Ratable Values. | Number of Properties Rated. | | | Assessment of Properties. | | |
|------------------|---------------------------------|------------|---------|---------------------------------|------------|------------|
| | In Cities, Towns, and Boroughs. | In Shires. | Total. | In Cities, Towns, and Boroughs. | In Shires. | Total. |
| | No. | No. | No. | £ | £ | £ |
| Under £25 ... | 148,373 | 125,806 | 274,179 | 3,028,065 | 2,486,591 | 5,514,656 |
| £25 to £50 ... | 36,677 | 40,172 | 76,849 | | | |
| £50 to £75 ... | 8,428 | 12,151 | 20,579 | 766,858 | 1,231,471 | 1,998,329 |
| £75 to £100 ... | 3,585 | 6,745 | 10,330 | | | |
| £100 to £200 ... | 4,078 | 7,028 | 11,106 | 539,909 | 922,449 | 1,462,358 |
| £200 to £300 ... | 1,086 | 1,424 | 2,510 | | | |
| £300 to £400 ... | 470 | 510 | 980 | 1,329,593 | 1,490,207 | 2,819,800 |
| £400 to £500 ... | 242 | 288 | 530 | | | |
| £500 and upwards | 679 | 718 | 1,397 | | | |
| Total ... | 203,618 | 194,842 | 398,460 | 5,664,425 | 6,130,718 | 11,795,143 |

7. **The Melbourne and Metropolitan Board of Works.**—This Board was established by an Act passed at the end of the year 1890, and entered upon its duties in June, 1891. The Board consists of forty members, one of whom is a chairman elected every four years by the other members, the retiring chairman being eligible for re-election. Nine members are elected by the Melbourne City Council, four by the South Melbourne Council, three by the Prahran, two each by the Fitzroy, Richmond, St. Kilda, and Collingwood, and one each by the other suburban municipal councils. The district over which the Board exercises control consists of twenty cities, towns, and boroughs, and four shires, comprising a total area of 90,821 acres, and containing an estimated population on the 31st December, 1908, of 527,000. The waterworks for the supply of Melbourne and suburbs were originally carried out by the Government, which had for that purpose contracted loans amounting to £2,389,934; these works were vested in the Board in 1891. The primary object of the creation of the Board was not, however, to take over these works, but was to supply the long called for and pressing want of a sewerage system for the metropolis. The plans and estimates of the cost of the metropolitan sewerage were originally prepared by an expert civil engineer from England, and were furnished to the Board on its creation. The plan recommended by the designer and selected by the Board's engineer-in-chief was estimated to cost £5,030,000, but this plan was modified by the engineer-in-chief, with the concurrence and assistance of the Board, so as to reduce the estimated cost to £3,451,000, and plans were made and the work carried out accordingly. The original plan and estimate contemplated only the construction of the main sewers, but this was altered by Parliament, which added the duty of constructing branch sewers and of treating right-of-ways as streets and sewerage them likewise, an obligation which added considerably to the original estimate. To carry out its work the Board is authorised to borrow £8,750,000, exclusive of the loans contracted by the Government for the purpose of waterworks and taken over by the Board. The liability on Government loans on the 30th June, 1908, was £1,688,663, and for loans raised by the Board was £8,251,000. The Board is still empowered to borrow £1,000,271 before reaching the limit of its borrowing powers.

(i.) *Total Cost of Water Supply and Sewerage, 1853 to 1907-8.* The subjoined table shows the total expenditure on construction and maintenance of water supply and sewerage from 1853 to 1908. The figures given include proportion of salaries, law costs, advertising, travelling expenses, etc.:—

MELBOURNE AND METROPOLITAN BOARD OF WORKS—TOTAL COST OF CONSTRUCTION AND MAINTENANCE OF WATER SUPPLY AND SEWERAGE, 1853 to 1908.

| Period. | Water Supply. | | Sewerage. | | | Total. £ |
|---------------------|--------------------|-------------------|--------------------|-------------------|----------------------|-------------------|
| | Con- struction. | Main- tenance. | Con- struction. | Main- tenance. | Working Expenses. | |
| | £ | £ | £ | £ | £ | |
| 1853 to 1890-1 ... | 3,378,246 | 149,622 | ... | ... | ... | 3,527,868 |
| 1890-1 to 1899-1900 | 322,627 | 146,678 | 3,026,162 | *20,411 | *21,286 | 3,537,164 |
| 1900-1 ... | 14,330 | 18,445 | 280,973 | 13,287 | 11,240 | 338,275 |
| 1901-2 ... | 16,053 | 20,786 | 302,460 | 10,906 | 13,430 | 363,635 |
| 1902-3 ... | 10,412 | 21,480 | 311,615 | 12,047 | 14,495 | 370,049 |
| 1903-4 ... | 8,649 | 20,765 | 293,602 | 12,696 | 13,860 | 349,572 |
| 1904-5 ... | 1,391 | 16,105 | 425,137 | 4,750 | 21,929 | 469,312 |
| 1905-6 ... | 16,562 | 15,539 | 340,386 | 5,242 | 23,338 | 401,067 |
| 1906-7 ... | 25,119 | 17,731 | 277,820 | 4,652 | 21,180 | 346,502 |
| 1907-8 ... | 33,058 | 23,004 | 262,148 | 4,075 | 31,149 | 353,434 |
| Total ... | 3,826,447 | 450,155 | 5,520,303 | 88,066 | 171,907 | 10,056,878 |

* From the 30th June, 1897, to the 30th June, 1900.

(ii.) *Revenue and Expenditure of Melbourne and Metropolitan Board of Works.*
The following table shews the actual receipts and expenditure, and also the loan receipts and expenditure of the Board during each year from 1901 to 1908, inclusive:—

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—REVENUE AND EXPENDITURE DURING EACH YEAR, 1901-2 to 1907-8.

| Particulars. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|------------------------------|----------------|----------------|----------------|------------------|----------------|----------------|----------------|----------------|
| ORDINARY RECEIPTS. | | | | | | | | |
| Water supply ... | £ 164,271 | £ 171,956 | £ 179,885 | £ 167,036 | £ 181,890 | £ 186,179 | £ 214,834 | £ 229,674 |
| Sewerage ... | 115,058 | 124,696 | 148,641 | 161,030 | 171,448 | 192,518 | 216,236 | 226,609 |
| Live stock—Metropolitan farm | 13,464 | 19,929 | 35,568 | 28,970 | 38,559 | 42,078 | 47,349 | 39,132 |
| Interest ... { Water supply | 82 | ... | 17 | 19 | ... | 20 | 20 | 129 |
| { Sewerage | 15,512 | 17,448 | 18,605 | 25,037 | 26,988 | 23,785 | 20,635 | 16,562 |
| Total ... | 308,387 | 334,029 | 382,716 | 382,092 | 418,885 | 444,560 | 499,074 | 512,106 |
| ORDINARY EXPENDITURE. | | | | | | | | |
| General management ... | 35,225 | 33,621 | 33,933 | 32,513 | 31,081 | 31,484 | 31,095 | 33,267 |
| Livestock—Metropolitan farm | 10,945 | 16,702 | 25,718 | 23,345 | 23,985 | 29,050 | 47,276 | 41,536 |
| Maintenance { Water supply | 19,411 | 22,205 | 22,980 | 21,990 | 20,095 | 20,079 | 21,523 | 25,018 |
| { Sewerage | 24,582 | 24,396 | 26,590 | 26,655 | 26,833 | 25,765 | 33,214 | 35,588 |
| Interest ... { Water supply | 104,069 | 102,670 | 102,959 | 104,114 | 101,999 | 102,081 | 101,628 | 101,044 |
| { New offices | ... | ... | ... | ... | 932 | 932 | 932 | ... |
| { Sewerage | 179,720 | 192,952 | 206,964 | 226,861 | 239,929 | 257,059 | 263,410 | 270,130 |
| Total ... | 373,952 | 392,546 | 419,144 | 435,478 | 444,854 | 469,450 | 499,078 | 506,583 |
| LOAN RECEIPTS. | | | | | | | | |
| Water supply ... | 2,636 | 1,636 | 2,855 | 2,103 | 1,583 | 1,937 | 2,492 | 6,725 |
| Sewerage ... | 76,964 | 88,425 | 87,664 | 88,164 | 96,588 | 84,020 | 79,088 | 72,415 |
| Proceeds of loans | 645,148 | 396,238 | 722,641 | 950,927 | 189,696 | 346,519 | 395,085 | 307,500 |
| Miscellaneous | ... | ... | 215 | 152 | 3,508 | 16,204 | 12,332 | 14,865 |
| Total ... | 724,748 | 486,299 | 813,375 | 1,041,346 | 291,375 | 448,680 | 488,997 | 401,505 |

| Particulars. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--|---------|---------|---------|---------|---------|---------|---------|---------|
| LOAN EXPENDITURE. | | | | | | | | |
| Water supply construction ... | 16,332 | 17,058 | 12,925 | 10,457 | 8,990 | 16,045 | 26,023 | 40,183 |
| Sewerage construction ... | 394,774 | 410,760 | 409,232 | 395,104 | 472,384 | 414,310 | 336,799 | 309,194 |
| Expenses in floating and redemption of loans ... | 280,457 | 5,200 | 25,773 | 528,561 | 7,360 | 67,533 | 160,163 | 34 |
| Miscellaneous ... | 3,533 | *4,293 | 19,050 | 20,116 | 3,417 | 12,780 | 8,670 | 16,655 |
| Total ... | 695,096 | 428,725 | 466,980 | 954,238 | 492,151 | 510,668 | 531,655 | 368,066 |

* Excess of Stock Distribution over Purchases.

8. *Melbourne Metropolitan Water Supply.*—From the year 1835 to 1857 the inhabitants of Melbourne depended for their water supply entirely upon rainwater caught in tanks, or upon water carts filled from the River Yarra above the falls. In 1848 the city council appointed a committee to enquire into and report generally upon the water supply and sewerage of the city; this committee recommended that a comprehensive system of sewerage should be carried out, and a rate levied for that purpose; the stringent enforcement of provisions as to slaughtering stock and as to the removal of refuse; that the space between Melbourne and the beach be cleared so as to allow the free access of pure sea air; that a Building Act should be passed and that the streets should henceforth be formed of a uniform width. Most of these recommendations were carried out. A Building Act was passed in 1849, and the filthy lanes in the city were formed and drained. In 1845 the first proposal was made to supply the city with water, by means of a water-wheel to be worked by the Yarra Falls. Five years later a small steam engine was erected to pump water into a tank situated in Flinders Street, from which water was drawn by carts, and in 1851 an elaborate report was issued by the city surveyor, recommending a plan for the city water supply which was soon afterwards adopted. The source from which it was proposed to conserve the water for the supply of Melbourne consisted of several creeks and springs which flow from Mount Disappointment, about thirty-two miles north of the metropolis, and which when united form the Plenty River; this scheme was adopted and has resulted in the Yan Yean Reservoir scheme. In 1853 the duty of supplying water to the metropolis was transferred from the city council to the Commissioners of Sewers and Water Supply, and towards the end of the same year the work of construction of the Yan Yean system was commenced. On the 31st December, 1857, the first water was turned on by Major-General McArthur, acting for the Governor, Sir Henry Barkly, K.C.B.

(i.) *Development of System, 1857 to 1908.* The following statement shews the development which has taken place in the water supply system of Melbourne during the first fifty years since its inception:—

MELBOURNE WATER SUPPLY SYSTEM, 1857 to 1908.

| Year. | Served Population. | Capital Cost. | 1000 Gallons, Charge per— | Rate in £ | Mains & Pipes, Mileage of— | Supply in Gallons, Average daily |
|----------|--------------------|---------------|---------------------------|-----------|----------------------------|----------------------------------|
| 1857 ... | 95,442 | £ 748,974 | 10/- and 6/- | 1/- | 104 | 3,250,000 |
| 1908 ... | 527,000 | 3,826,447 | 1/- | 7d. | 1,305 | 31,559,830 |

(ii.) *Proposed Extensions.* The water supply committee of the Metropolitan Board of Works has also recommended the augmentation of the catchment area by permanently reserving two areas amounting in all to 140 square miles—the one comprising the Upper Yarra watershed, eighty-one square miles in area; the other comprising the O'Shanassy River district, fifty-nine square miles in extent. A second service reservoir—having a capacity of 25,000,000 gallons—was completed at Preston in March, 1909, at a cost of £29,000.

(iv.) *Description of Water Supply Systems.* The water supply of Melbourne consists of two main systems—the Yan Yean and the Maroondah.

(a) *The Yan Yean System* is the main source of supply. It commences by collecting the water from the Silvery and Wallaby Creek valleys, to the north of Mount Disappointment, 2700 feet high, which forms one of the prominent heights of the main Dividing Range in Victoria. The waters of the Silvery Creek are brought by means of an aqueduct a little over eight miles long, constructed at a cost of £55,000, to a weir at the head of the Wallaby Creek aqueduct, which carries the combined waters of the two creeks for a distance of five and a quarter miles, and discharges over the crest of the Dividing Range at a height of 1694 feet above sea level, and then drops a height of 133 feet in 683 feet into Jack's Creek, one of the branches of the Plenty River. The Wallaby Creek aqueduct was constructed at a cost of £54,000. Its carrying capacity is 33,000,000 gallons a day, while the average daily flow of the combined Silvery and Wallaby Creeks is 12,000,000 gallons. From its drop into Jack's Creek the water follows the natural bed of the stream for about three miles to the Tourourrong reservoir, which is a small reservoir of about thirty-six acres in extent, and having a capacity of 60,000,000 gallons. From Tourourrong the clear water channel carries the water for a distance of four and three-quarter miles to the old Plenty inlet channel of the Yan Yean reservoir. This channel is 13 feet 6 inches wide and 4 feet 6 inches deep, the section being a quadrant of a circle of 4 feet 9 inches radius, with one to one side slopes. The fall of this channel is 7 feet 6 inches to the mile, with a carrying capacity of 12,000,000 gallons per day, constructed at a cost of £68,000. In it there are waterfalls, the heaviest of which is 17 feet. The water from the old Plenty channel enters the Yan Yean reservoir through a spur, forming its western bank, by means of a tunnel 1000 feet long. The Yan Yean reservoir, which is twenty-two miles from the city, is formed by the construction of an earthen bank 49 chains long, 30 feet high, 20 feet wide on top, with a slope next the water of three to one, and an outside slope of two to one. The bywash is five feet below the top of the embankment, at a level of 602 feet above low-water mark in Hobson's Bay. The reservoir, when full, covers an area of 1360 acres, with a maximum depth of 26 feet, and an average depth of 18 feet. Its total capacity is 6,400,000,000 gallons, of which 5,400,000,000 gallons are available for consumption. From the Yan Yean reservoir to the Pipe Head dam at Morang, a distance of seven miles, an open aqueduct capable of delivering 33,000,000 gallons a day has been constructed. From the Morang reservoir, the bywash of which is 485 feet above sea level, a 30-inch cast-iron main, 27-inch cast-iron and a 30-inch wrought-iron main carry the water a distance of seven miles to the storage reservoir within the metropolitan area, at Preston. The No. 1 Preston reservoir is constructed partly in excavation and partly in bank; it is 20 feet deep, and holds 16,000,000 gallons. The by-wash is 328 feet above the sea level, and the cost was £11,000. This is the main distributing reservoir of the central city supply.

(b) *Maroondah System.* The water for this system is obtained from the Maroondah River, a tributary of the Yarra. The waters of the Graceburn are picked up by a small weir 686 feet above sea level, and carried for a distance of three-quarters of a mile in a concrete-lined channel to a well near the main road leading from Healesville to Marysville. From this well an 18-inch wrought-iron pipe, one and a-quarter miles long, leads the water to the main Maroondah aqueduct. The completed Maroondah scheme involves a storage reservoir with a dam 105 feet high, calculated to store 2,000,000,000 gallons of water. This dam has not yet been constructed, as the natural flow of

the creeks, together with the storage in Yan Yean reservoir, has proved quite capable of providing all the water at present required for the metropolis. A temporary weir of Portland cement concrete has been constructed across the Maroondah River, from which point the water is led in an aqueduct forty-one miles long to the Preston reservoir, where it joins the water from the Yan Yean system. The channel, owing to recent improvements, is now capable of delivering 32,000,000 gallons daily, the cross section being a quadrant of three feet ten inches radius with one to one slopes and a fall of one foot to the mile. The valleys are crossed by wrought-iron syphons, and with the exception of the Plenty River, which is crossed on a wrought-iron girder bridge, all the syphons are laid under the beds of streams. Each syphon is provided with a scour pipe large enough to take the full flow of the aqueduct, enabling the water to be directed down any of the natural water courses when it becomes necessary to empty any length of the aqueduct for cleansing purposes. A scour main from the Preston reservoir was completed early in 1909 at a cost of £5000.

- (c) *High Level System.* Besides the Yan Yean and Maroondah systems, the high levels of the eastern suburbs of Melbourne are provided for by a direct main from the Yan Yean reservoir. This main is thirty-two inches in diameter, constructed of wrought-iron plates from $\frac{1}{4}$ inch to $\frac{7}{16}$ inch thick, $20\frac{1}{2}$ miles long, and cost £190,000. The discharge is about 9,000,000 gallons per day. There is a storage reservoir of 9,000,000 gallons capacity at Surrey Hills, the by-wash of which is 430 feet above sea-level.

(v.) *Catchment Areas, Reservoirs, and Aqueducts.* (a) *Drainage Areas.* The whole of the catchment areas are absolutely free from population or cultivation. The Government pursued the policy of gradually purchasing all private rights over the various water-sheds, which policy the Board has carried on and completed; the original owners have been bought out, while the township of Fernshaw, in the Maroondah system, was entirely purchased and obliterated. The present drainage areas from which the water is delivered cover the following areas:—

MELBOURNE WATER SUPPLY.—CATCHMENT AREAS, 1908.

| | Silver and Wallaby Creeks. | Plenty River and Jack's Ck. | Yan Yean Reservoir Catchment. | Maroondah Catchment. | Total. |
|---------------|-------------------------------|--------------------------------|----------------------------------|-------------------------|--------|
| Area in acres | 12,000 | 12,000 | 5,000 | 40,000 | 69,000 |

All the water is delivered by gravitation, no pumping being required in any portion of the area supplied.

- (b) *Storage Reservoirs.* Within the metropolitan area there are seven service reservoirs having a total capacity of 48,000,000 gallons. From the Preston reservoir a number of service mains lead into the reticulation system of the metropolis. The total daily quantity of water which can be sent into Melbourne is as follows:—

MELBOURNE WATER SUPPLY.—MAXIMUM DAILY SUPPLY WHICH CAN BE DELIVERED.

| System. | Yan Yean. | Maroondah. | High Level Main. | Total Supply. |
|-----------------|----------------|------------|------------------|---------------|
| Gallons per day | ... 33,000,000 | 32,000,000 | 9,000,000 | 74,000,000 |

- (c) *Aqueducts.* Up to the 31st December, 1908, about 190 miles of 12 inch to 48 inch mains and 1035 miles of reticulation mains, below 12 inch, had been laid, in addition to which there were eighty miles of aqueducts and syphons, or a total length of aqueducts, mains, and reticulation pipes of 1305 miles.

(vi.) *Quantity of Water, Number of Houses, and Population Supplied, 1901 to 1908.* The following table gives various particulars shewing the increase in the supply of water in Melbourne and suburbs from 1901 to 1908, inclusive:—

MELBOURNE WATERWORKS—NUMBER OF HOUSES, POPULATION, AND WATER SUPPLIED, 1901 to 1908.

| Year Ended 30th June. | Number of Houses Supplied. | Estimated Population Supplied. | Average Daily Supply. | Total Supply for the Year. | Average Daily Supply. | | Rate Levied. | Assessments of Tenements Served by Metropolitan Water Supply. |
|-----------------------|----------------------------|--------------------------------|-----------------------|----------------------------|-----------------------|-----------------------------------|----------------|---|
| | | | | | Per House. | Per Head of Estimated Population. | | |
| | No. | No. | ,000 Gallons. | ,000 Gallons. | Gallons. | Gallons. | | £ |
| 1901 ... | 103,818 | 483,230 | 28,722 | 10,483,680 | 59.44 | 276.66 | } 6d. in the £ | 3,479,721 |
| 1902 ... | 103,951 | 492,230 | 30,038 | 10,983,945 | 61.02 | 288.96 | | 3,650,573 |
| 1903 ... | 104,885 | 492,990 | 28,469 | 10,391,163 | 57.74 | 271.42 | | 3,830,872 |
| 1904 ... | 107,701 | 491,570 | 28,997 | 10,612,930 | 58.98 | 269.23 | | 4,004,543 |
| 1905 ... | 109,393 | 498,230 | 32,657 | 11,919,937 | 65.54 | 298.53 | | 4,061,258 |
| 1906 ... | 111,494 | 504,920 | 31,680 | 11,563,244 | 62.74 | 284.14 | } 7d. in the £ | 4,030,890 |
| 1907 ... | 114,049 | 515,700 | 34,157 | 12,467,383 | 66.23 | 299.49 | | 4,309,278 |
| 1908 ... | 116,781 | 527,000 | 33,626 | 12,307,201 | 63.31 | 287.94 | | 4,484,868 |

(vii.) *Total Cost of Construction, Revenue, Expenditure and Net Profits, 1854 to 1908.* The following table shows the total cost of construction, the revenue, expenditure, and net profits up to the 30th June, 1900, and for each financial year from 1901 to 1908, inclusive:—

MELBOURNE WATERWORKS.—CONSTRUCTION, COST, REVENUE, EXPENDITURE, AND NET PROFITS, 1854 to 1908.

| Year Ended the 30th June. | Capital Cost. ¹ | Annual Revenue. ² | Annual Expenditure on Maintenance and Management. ³ | Percentage of Expenditure to Revenue. | Interest. ⁴ | Net Profit after Payment of Expenditure and Interest. |
|---------------------------|----------------------------|------------------------------|--|---------------------------------------|------------------------|---|
| | £ | £ | £ | % | £ | £ |
| Total to 1900 | 3,700,873 | 4,672,030 | 749,798 | ... | 1,938,868 | 1,983,364 |
| 1901 ... | 14,330 | 163,212 | 38,548 | 23.61 | 103,988 | 20,676 |
| 1902 ... | 16,053 | 171,889 | 40,156 | 23.36 | 102,670 | 29,063 |
| 1903 ... | 10,412 | 169,295 | 40,257 | 23.78 | 102,942 | 26,096 |
| 1904 ... | 8,649 | 165,457 | 37,374 | 22.59 | 104,096 | 23,987 |
| 1905 ... | 1,391 | 184,529 | 31,761 | 17.21 | 102,465 | 50,303 |
| 1906 ... | 16,562 | 182,926 | 28,016 | 15.31 | 102,548 | 52,362 |
| 1907 ... | 25,119 | 211,059 | 30,573 | 14.49 | 102,075 | 78,411 |
| 1908 ... | 33,058 | 233,549 | 41,656 | 17.83 | 100,915 | 90,978 |
| Total ... | 3,826,447 | 6,153,946 | 1,038,139 | ... | 2,760,567 | 2,355,240 |

1. Works commenced in 1853. 2. Revenue commences in 1854. 3. Returns for expenditure commence in 1859. 4. First interest paid in 1856.

Graphs relating to the water supply of Melbourne may be found on page 999 hereinafore.

9. *Melbourne Sewerage.*—As stated above, the chief object of the creation of the Melbourne and Metropolitan Board was to carry out an efficient system of sewerage. Old Melbourne used to be a city of cesspits, and it was not until the latter sixties that these were abolished, filled up, and the movable pan system gradually adopted throughout the whole metropolitan area with night removal. The cost of removal in 1894 was about £90,000, equal to a capital expenditure of £1,750,000. This objectionable system has been displaced by the water carriage system throughout a large portion of the metropolis,

and in other parts the work of reticulation is now proceeding. A considerable part of central Melbourne is below the 10 foot contour and was originally full of swamps, which were sources of danger to the public health. All these swamps have now been filled up, and the abolition of the accumulations of stagnant water has effected a very great improvement in the health of the city and suburbs. The sewerage system is designed to carry off all water used in water closets, lavatories, baths, and urinals, together with all chamber slops and water used in cooking, washing clothes and floors, and from sinks in kitchens and sculleries, drainage from stables and cow houses, together with all liquid refuse, which in the opinion of the Board will not prejudicially affect the sewers, the machinery, or the sewage farm. Rainfall from the streets flows into the river and is not taken into the sewers, which are designed to provide for 30 cubic feet per head per day from the assumed future population, calculated on the basis of a population of 1,000,000 people ultimately settled on the areas now capable of being connected with the pumping station.

(i.) *Description of Sewerage Systems.* The whole of the sewage of the metropolis is being gradually collected by means of two principal main sewers leading to the pumping station at Spotswood. The first house was connected in August, 1897, and on the 31st December, 1908, a total number of 96,930 tenements had been connected, while at the same date 1156 tenements were in process of connection. The 4-inch and 6-inch reticulation sewers in the rights-of-way join the 9-inch street reticulation pipes, which are gradually collected into 12-inch, 15-inch, and 18-inch stoneware pipes, and then again into brick and concrete branch sewers which join the mains and sub-mains. On the 31st December, 1908, the sewerage system, including mains, had been laid in the following districts:—Port Melbourne, South Melbourne, Melbourne, Richmond, Prahran, and Fitzroy, and nearly the whole of Footscray, St. Kilda, and Collingwood. A large portion of Essendon, Caulfield, Malvern, Kew, Camberwell, Hawthorn, Brunswick, Williamstown, and Brighton has been dealt with. Work is now proceeding in Caulfield, Malvern, and Northcote, and a considerable portion still remains to be done in Williamstown, Essendon, Northcote, Brunswick, Camberwell, Kew, Hawthorn, Malvern, Caulfield, and Brighton. A small portion has also to be done in Collingwood and Fitzroy. The two main systems are:—

- (a) *The South Yarra System*, which provides for Brighton, Caulfield, St. Kilda, Malvern, Prahran, Hawthorn, Kew, Richmond, Collingwood, South Melbourne, and Melbourne, except Carlton; and
- (b) *The North Yarra System*, which provides for Heidelberg, Preston, Northcote, Coburg, Brunswick, Fitzroy, Carlton, North Melbourne, Essendon, and Footscray.

When collected at Spotswood the two systems are dealt with in separate buildings, and are arranged to be worked either separately or unitedly. The sewage enters the pumping station through straining wells, one of which is established on each system; the wells are 22 feet internal diameter, and each contains two straining cages, one of which is always in position. The solid matter caught in them is transferred to a drier in the building over the wells, where it is subject to steam pressure and consequently to a high temperature, which renders the material innocuous. The material from the drier is of no manurial value and is destroyed in a furnace. The sewage is raised by the pumps about 125 feet to the head of the outfall sewer, through about two and three-quarter miles of 6-foot and 4-foot wrought-iron rising mains, whence it gravitates to the Werribee sewage farm, a distance of $15\frac{3}{4}$ miles, through a partly-open and partly-closed channel eleven feet in diameter, with a fall of about two feet to the mile. The full capacity of this outfall sewer is 18,000 cubic feet a minute.

(ii.) *Metropolitan Sewage Farm.* The farm contains 8847 acres, situated on the western side of the Werribee River. The price paid for the land was £17 10s. per acre. About £282,000 has been spent on the property in perfecting the arrangements for the distribution of sewage. The cost of the farm to the 30th June, 1908, was £437,443. About

22,000,000 gallons of sewage have to be disposed of every twenty-four hours in irrigating the fields. It is spread over properly-prepared blocks of land by a series of mains and lateral carriers. The effluent, after filtering through the land, is discharged into Port Phillip Bay in a clear and transparent condition, all the sewage held in suspension being left in the soil. The main supply channels for carrying the sewage on to the fields are about ten chains apart, and a good system of open drains to carry off the surplus water is provided. Many of these drainage channels are ten feet to twelve feet wide at the top and seven feet deep, and through them the water drained off from the subsoil is constantly flowing to the bay. The prepared blocks on the farm are laid down with prairie grass and lucerne, on which sheep are depastured. During the financial year 1907-8, 56,573 sheep were bought, at a cost of £35,063, other expenses amounting to £6473. During the same period the total receipts from the sale of wool, skins, and 60,054 sheep amounted to £39,132. The loss on sheep for the year amounted to £6247.

(iii.) *House Connections.* The work of house connections with the sewerage system is carried out under a carefully prepared by-law. Under the Amending Act of 1897, after a property has been declared to be a sewered property, the owner has several options.

a) He may submit a plan of his house connections for approval, and on approval being given, may agree to carry out the work within one month. (b) He may submit a plan, which, if approved of, he may ask for an estimate of the cost of carrying out. This the Board is bound to supply, and then the owner may either carry out the work himself or ask the Board to carry out the work, which it must do for the estimated price, whether the work costs less or more. (c) On default of the owner the Board may carry out the work, and at the request of the owner accept payment by forty quarterly instalments, bearing interest on such portion as from time to time remains unpaid at the rate of 5 per cent.

(iv.) *Number of Houses Connected, Capital Cost, Revenue and Expenditure, 1901 to 1908.* The following table gives particulars as to the number of houses connected to the sewerage system, the total capital cost, and the receipts and disbursements during each year from 1901 to 1908, inclusive:—

MELBOURNE SEWERAGE WORKS.—TENEMENTS CONNECTED, CAPITAL COST, RECEIPTS AND DISBURSEMENTS, 1901 to 1908.

| Year ended the 30th June. | Number of Houses Connected. | Capital Cost. | Receipts. | | | Maintenance and Working Expenses. |
|---------------------------|-----------------------------|---------------|-------------|----------------------|---------|-----------------------------------|
| | | | From Rates. | From other Sources * | Total. | |
| | No. | £ | £ | £ | £ | £ |
| 1901 ... | 38,696 | 3,307,135 | 109,790 | 5,268 | 115,058 | 24,582 |
| 1902 ... | 47,029 | 3,609,596 | 119,222 | 5,474 | 124,696 | 24,396 |
| 1903 ... | 55,727 | 3,921,208 | 141,994 | 6,647 | 148,641 | 26,590 |
| 1904 ... | 64,487 | 4,214,812 | 154,857 | 6,174 | 161,031 | 26,696 |
| 1905 ... | 71,689 | 4,639,949 | 165,500 | 5,948 | 171,448 | 26,906 |
| 1906 ... | 79,597 | 4,980,335 | 185,803 | 6,715 | 192,518 | 28,828 |
| 1907 ... | 87,853 | 5,258,156 | 209,805 | 6,431 | 216,236 | 33,296 |
| 1908 ... | 94,067 | 5,520,303 | 221,953 | 4,656 | 226,609 | 35,939 |

* Excluding revenue from sale of sheep and from interest.

10. *Water Supply in Country Towns.*—By the Water Act 1905, which came into operation on the 1st May, 1906, the control and management of all Irrigation Trusts, with one exception, and of a number of waterworks and water supply districts were centralised, and their works and property vested in the State Rivers and Water Supply Commission, to whom many of the duties of the Water Supply Department were also handed over. Further information with regard to this Commission and to the works and districts under its control are given in the section in this book dealing with Irrigation and Water Supply. There are, however, in different parts of Victoria a number of other waterworks which

are concerned chiefly with domestic supply, and which are controlled by local authorities, *i.e.*, by Waterworks Trusts or by municipal corporations. These works are constructed out of moneys either granted or lent by the general Government. The following gives particulars as to the waterworks under the control of Trusts and municipal corporations for each year from 1901 to 1907, inclusive :—

VICTORIA.—COUNTRY WATERWORKS UNDER TRUSTS AND MUNICIPAL CORPORATIONS, 1901 to 1907.

| Year. | Waterworks Trusts. | | | | | | Municipal Corporations.* | | | |
|---------|--------------------|---------------|-----------------------|-----------------------|-----------|--------------|--------------------------|---------------|-----------------------|-----------------------|
| | Number of Trusts. | Capital Cost. | Capital Indebtedness. | Interest Outstanding. | Receipts. | Expenditure. | Number of Corporations. | Capital Cost. | Capital Indebtedness. | Interest Outstanding. |
| | No. | £ | £ | £ | £ | £ | No. | £ | £ | £ |
| 1901... | 76 | 823,418 | 748,089 | † | † | † | 24 | † | 470,041 | † |
| 1902... | 76 | 935,286 | 754,447 | † | † | † | 24 | 687,317 | 476,952 | † |
| 1903† | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1904... | 73 | 1,051,424 | 775,701 | 18,520 | † | † | 24 | 675,161 | 479,815 | 2,133 |
| 1905... | 74 | 1,068,985 | 786,505 | 19,520 | 71,654 | 71,876 | 23 | 669,438 | 471,998 | 8,107 |
| 1906... | 78 | 1,367,565 | 905,336 | 17,029 | 89,083 | 86,764 | 23 | 669,684 | 466,395 | 2,586 |
| 1907... | 84 | 1,406,510 | 933,033 | 22,351 | 93,247 | 88,671 | 23 | 674,366 | 468,462 | 9,786 |

* Particulars as to the receipts and expenditure in respect of waterworks under the control of municipal corporations are not available. † Returns not available.

Under the provisions of the Local Government Act 1903 municipal councils are authorised to construct and maintain tanks, dams, and reservoirs, and must maintain existing works for the gratuitous supply of water. They are also empowered to accept the management and control of new waterworks within their respective localities, and may, with the consent of the Governor, construct or purchase new works within or without their locality. Councils are also authorised to enter into contracts for the supply of water for any period not exceeding ten years with the owners of any waterworks. Every municipality may levy a special water rate for water supplied, or for the purpose of constructing waterworks or paying the interest on any loan contracted by the council for such purpose, but the amount of the rate must not exceed in any year the sum of two shillings in the pound, provided that a minimum sum of ten shillings may be fixed by the council to be paid in respect of any property at which water is supplied.

(i.) *Geelong Waterworks Trust.* The Geelong Municipal Waterworks Act 1907 provided for the constitution of a Municipal Waterworks Trust for the supply of water to Geelong and district. In January, 1908, the works were transferred to the Trust from the control of the State Rivers and Water Supply Commission, the amount paid by the Trust to the State being £265,000, which was raised by loan. The capital cost of the works at the date of transfer was £442,322. The available storage capacity of the reservoir is 642,207,000 gallons. The Trust is authorised to supply water to (a) the town of Geelong, (b) the suburbs thereof, including all places within five miles of the Geelong Post Office, and (c) any place within ten miles on either side of the main pipe from Stoney Creek to Geelong.

11. Fire Brigades.—Under the Fire Brigades Act of 1890 a metropolitan fire district and nine country fire districts were established, the former being placed under the control of a Metropolitan Fire Brigades Board, and the latter under the control of a Country Fire Brigades Board.

(i.) *Metropolitan Fire Brigades Board.* The metropolitan fire district originally comprised the area included in the several municipalities within a radius of ten miles from the Melbourne General Post Office, but this area has since been extended in certain directions so as to include the greater part of the Shire of Moorabbin and also the township of Mordialloc. The Board is composed of nine members, of whom three are

appointed by the Governor-in-Council, three by the municipal councils, and three by the insurance companies. On the 31st December, 1907, the Board had under its control 50 stations, 176 permanent men, 166 auxiliary firemen, 10 steam fire engines, 2 gasolene engines, 2 chemical engines (1 motor), 1 petrol motor fire engine, 95,128 feet of hose, and 114 fire-alarm circuits having 139 fire-alarm points and 413 fire-alarm and telephone points. The total length of wire in use outside stations for fire alarms and telephones is about 290 miles. During the year 1907, 1590 calls were received; of these, 674 were accounted for by false alarms.

(ii.) *The Country Fire Brigades Board.* This Board consists of nine members, of whom three are appointed by the Governor-in-Council, two are elected by the municipal councils of the districts where there are brigades registered under the Board, two by the fire insurance companies, and two by the registered fire brigades. At the end of the year 1907 there were eighty-nine municipal councils and fifty-five insurance companies included in the operations of the Act. All the brigades are volunteer brigades, but in the large towns permanent station-keepers and watchmen are employed. There were about 99 registered brigades and 1991 firemen at the end of the year 1907. At the same date the plant consisted chiefly of 5 steam engines, 62 manual engines, 10 horse brakes, 61 apparatus carriages, 3 fire escapes, and about 145,000 feet of canvas hose.

(iii.) *Financial Operations of both Boards.* The following table gives particulars as to the financial operations of both Boards during each year from 1901 to 1907, inclusive :—

**VICTORIA.—REVENUE AND EXPENDITURE OF METROPOLITAN AND COUNTRY
FIRE BRIGADES BOARDS, 1901 to 1907.**

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| ORDINARY RECEIPTS. | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ |
| Contributions | 48,494 | 49,280 | 49,002 | 48,874 | 49,083 | 50,937 | 51,934 |
| Receipts for services | 1,344 | 2,062 | 727 | 692 | 754 | 551 | 1,336 |
| Interest and sundries | 2,324 | 1,954 | 4,626 | 2,814 | 3,442 | 3,080 | 3,116 |
| Total | 52,162 | 53,296 | 54,355 | 52,380 | 53,279 | 54,568 | 56,386 |
| ORDINARY EXPENDITURE. | | | | | | | |
| Salaries | 22,000 | 22,865 | 23,112 | 23,103 | 24,793 | 25,316 | 27,411 |
| Fire expenses | 2,917 | 3,027 | 2,873 | 2,936 | 2,990 | 3,041 | 3,201 |
| Horses, quarters, etc. | 13,654 | 13,009 | 12,002 | 9,207 | 10,930 | 9,596 | 9,986 |
| Plant—Purchase and repairs... .. | 4,403 | 2,866 | 4,862 | 4,305 | 4,589 | 6,560 | 5,783 |
| Interest | 6,087 | 6,080 | 6,073 | 6,057 | 6,103 | 5,752 | 5,803 |
| Sinking fund * | 2,000 | 1,971 | 2,028 | 2,250 | 2,250 | 2,250 | 2,895 |
| Miscellaneous | 1,001 | 1,087 | 2,221 | 4,332 | 2,108 | 4,310 | 2,884 |
| Total | 52,062 | 50,905 | 53,171 | 52,190 | 53,763 | 56,825 | 57,963 |
| LOAN EXPENDITURE— | | | | | | | |
| Sewerage connections | ... | ... | ... | ... | 405 | 3,250 | 2,623 |

12. *The Melbourne Harbour Trust.*—This Trust was constituted under an Act passed in 1876, as a result of public agitation and demands extending over a period of thirty-four years, to the effect that the cost of landing goods should be reduced, and the

delays in receiving goods should be abolished. Both demands arose from the fact that vessels of a draught greater than twelve feet had to discharge in the bay into lighters.

(i.) *Constitution of the Trust.* The Harbour Trust Act was drafted on the lines of similar institutions in Great Britain, such as the Thames Conservancy, the Mersey Harbour Board, and the Clyde Trust. Under the Act of 1876, as amended in 1883, the number of Commissioners is fixed at seventeen, nominated or elected as follows:—Five were nominated by the Governor-in-Council, three elected by merchants, three by ship-owners, two were elected by the City Council, and one each by the ratepayers of South Melbourne, Port Melbourne, Williamstown, and Footscray. The sum of £1700 per annum was set aside for the remuneration of the Commissioners.

(ii.) *Works Undertaken by Trust in the River and in the Port.* In 1879 a report dealing with various propositions for the improvement of the port and harbour was issued by Sir John Coode, an English engineer, who had been engaged by the Commissioners for the purpose. This report, which recommended (i.) the cutting of a new channel through the flats to the south of Fishermen's Bend, (ii.) the construction of a dock, and (iii.) the widening and deepening of the channel in the river, was adopted by the Commissioners, who were empowered in 1883 to borrow the amount of £1,000,000 for the purpose of carrying out the necessary works. In 1890 a consolidating Act was passed, and the borrowing powers of the Trust were increased to £2,000,000. The river was widened from Queen's Bridge to the bay from about 140 to about 300 feet, while the depth has been gradually increased until at the present time it is twenty-six feet at low water.

(a) *The Coode Canal.* In 1886 the canal across the flats below Fishermen's Bend was completed at a cost of £96,000. The length of the canal is 2602 yards, the distance from Queen's Bridge to the river entrance being thereby reduced from seven miles to five and three-quarter miles, and the navigation being greatly facilitated. At the present time this channel, which is called the Coode Canal, is being widened 100 feet, which will make its total width 408 feet, and its width at low water 366 feet.

(b) *The Victoria Dock.* This dock, opened in 1892, has an area of ninety-six acres and a depth of twenty-six feet at low water. There are 9000 feet of wharfage, and the total cost, including wharfs, sheds, and approaches thereto, was £416,038. The sheds have a total length of 12,000 feet, and cover an area of 568,070 square feet.

(iii.) *Works in the Bay.* Prior to 1889 all the mail steamers and vessels of heavy draught had to lie at anchor in the bay, and there discharge into lighters. One of the first works undertaken by the Commissioners was to make the railway piers at Williamstown available to these vessels. This work was completed at a cost of £256,160. In 1893 a channel over 8000 feet long and 600 feet wide was constructed, running in a southerly direction from Port Melbourne Railway Pier and having a navigable depth of twenty-eight feet. The cost of this work was £218,379.

(iv.) *Dredging.* The total amount of material raised by the dredging and excavation done in the improvement of the river and bay and the method in which the material has been disposed of are as follows:—

| Material Dredged. | Cubic Yards. | Material Disposed of. | Cubic Yards. |
|------------------------------|--------------|-----------------------------|--------------|
| From river and Victoria dock | 23,379,572 | Landed for reclamation ... | 10,491,849 |
| From bay | 13,426,985 | Deposited in deep water ... | 26,314,708 |
| Total | 36,806,557 | Total | 36,806,557 |

During the past ten years the average cost of dredging per cubic yard was 2.11 pence, and the cost of towing and depositing 3.17 pence, not allowing for depreciation of plant. The Trust has expended £224,970 in reclaiming land within its jurisdiction. The amount of material raised annually is now about 1,200,000 cubic yards.

(v.) *Financial Operations.* The revenue of the Trust is obtained from wharfages and quayage rates, rents and license fees from lands and ferries, and other license fees. One-fifth of the revenue of the Trust is paid to the consolidated revenue of Victoria. The following table gives particulars of the revenue and expenditure of the Trust from 1901 to 1907, inclusive :—

MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE, 1901 to 1907.

| Particulars. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|--------------------------------|---------|---------|---------|---------|---------|---------|---------|
| REVENUE. | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ |
| Rates and rents ... | 196,294 | 198,497 | 227,856 | 226,041 | 227,282 | 254,142 | 257,787 |
| Interest ... | 2,658 | 2,597 | 2,535 | 2,351 | 2,489 | 2,987 | 2,949 |
| Recoups ... | 1,344 | 1,690 | 1,188 | 2,549 | 2,174 | 2,535 | 5,542 |
| Total ... | 200,296 | 202,784 | 231,079 | 230,941 | 231,945 | 259,664 | 266,278 |
| EXPENDITURE. | | | | | | | |
| Wharfage refunds ... | 4,106 | 1,859 | 1,568 | 1,502 | 1,054 | 796 | 783 |
| Consol. rev. of Victoria | 38,419 | 38,798 | 45,607 | 44,145 | 45,164 | 51,204 | 51,565 |
| Wharfage drawback ... | 6,576 | 6,162 | 6,296 | 8,627 | 1,175 | ... | ... |
| Maintenance and management ... | 46,713 | 47,131 | 36,076 | 46,011 | 51,714 | 52,519 | 53,741 |
| Interest on loans ... | 88,135 | 88,235 | 87,982 | 86,869 | 86,630 | 86,530 | 86,375 |
| Dredging (constructn.) | 10,106 | 11,926 | 17,496 | 10,219 | 6,630 | 7,182 | 8,163 |
| Wharf | 13,709 | 16,071 | 9,123 | 2,149 | 1,012 | 1,021 | 12,345 |
| Harbour improvements | ... | ... | ... | ... | ... | ... | 4,999 |
| Plant account | ... | ... | ... | ... | ... | ... | 11,310 |
| Total ... | 207,764 | 210,182 | 204,143 | 199,522 | 193,379 | 199,252 | 229,281 |
| PROFIT OR LOSS. | | | | | | | |
| Profit ... | ... | ... | 26,931 | 31,419 | 38,566 | 60,412 | 36,997 |
| Loss ... | 7,468 | 7,398 | ... | ... | ... | ... | ... |

13. **Public Lighting in Melbourne.**—In Melbourne the public lighting is partly carried on by local authorities and partly by private companies. As far as records are available, it would appear that gas was first in use amongst private consumers in Melbourne in the early part of January, 1856, and that the streets of the city were first illuminated by gas on the 10th August, 1857.

(i.) *Gas Lighting.* In the metropolitan area there are four private companies which supply gas for public and private lighting. These are the Metropolitan, Brighton, Footscray, and Williamstown Companies. The Heidelberg Gasworks are owned and worked by the Heidelberg Shire Council.

(a) *The Metropolitan Gas Company* was formed in 1878 by the amalgamation of three companies under the Metropolitan Gas Company's Act 1878. The company is authorised to supply gas to all places within a radius of eight

miles of the Melbourne Post Office, exclusive of the municipal districts of Brighton, Footscray, and Williamstown. The gas supplied by the company is manufactured and stored at three stations at West Melbourne, South Melbourne, and Fitzroy, and in addition there are holder stations at North Melbourne, Richmond, St. Kilda, and Malvern. There are about 800 miles of mains, varying in diameter from 3 inches to 36 inches.

- (b) *The Footscray Gas Company* first supplied gas for both public and private purposes in 1878. The works were enlarged in 1888, and towards the end of the year 1908 were again in process of being enlarged and extended. The district over which the operations of the company extend is about four square miles.
- (c) *The Williamstown Gas Company* supplies the districts of Williamstown, Newport, and Spotswood. The holders have a storage capacity of 300,000 cubic feet, and there are about fifty miles of mains. Gas was first supplied in the year 1866, and in February, 1909, there were about 1500 consumers.
- (d) *The Heidelberg Gasworks*, owned and worked by the shire council, supply the Fairfield, Ivanhoe, and Heidelberg ridings, having an area of about eight square miles. Gas was first supplied in the year 1900. The mains have a total length of about twelve miles.

The subjoined statement gives particulars of gas lighting in Melbourne for the year 1907, exclusive of the Williamstown and Brighton gas works, for which particulars are not available :—

MELBOURNE.—PUBLIC LIGHTING, GAS WORKS, 1907.

| | | | | | |
|------------------|----------|---------------|-----------------------------|-----|----------|
| Coal used* ... | Tons | 159,257 | <i>Receipts—</i> | | |
| Gas manufactured | Cub. ft. | 1,669,035,000 | From sale of gas ... | ... | £358,242 |
| „ sold ... | „ | 1,508,287,000 | „ „ by-products ... | ... | 86,069 |
| No. of consumers | | 70,053 | „ other sources ... | ... | 1,122 |
| „ employés | | 1,085 | Total ... | ... | £445,433 |
| Capital cost ... | | £2,192,166 | <i>Working Expenses</i> ... | ... | £315,946 |

* Including shale-oil equivalent in tons of coal.

(ii.) *Electric Lighting.* In Melbourne there are three central stations for the supply of current for electric light and power purposes. One of these, viz., the City of Melbourne Electric Supply Undertaking, is owned and worked by the City Council; the other two, viz., the Electric Lighting and Traction Company's works at Richmond and the North Melbourne Electric Tramways and Lighting Company's works at Ascot Vale, are run by private companies.

- (a) *The City Council's Electric Supply Undertaking* supplies an approximate area of eleven and three-quarter square miles, including the City of Melbourne, North Melbourne, West Melbourne, Carlton, East Melbourne, and South Yarra. The supply for public lighting was commenced in 1894 and for private lighting and power purposes in 1897. The generation is divided into two systems, viz., direct current 460-520 volts, 3-wire system of distribution to the central portion of the city, and alternating current, 4000-4400 volts, single phase 50 cycles, to supply the outlying districts. The total capacity of the direct current plant is 3850 kilowatts, and of the alternating

current generators is 1650 kilowatts; the latter include two 750-kilowatt British-Westinghouse turbo-alternators, which have recently been installed. The alternating current feeders terminate in seventeen brick sub-stations, in which are transformers for private light and power and also constant potential transformers for the street arc lighting. The system comprises forty-two miles of direct current cables underground, seventeen miles of alternating high tension cables underground, and about 200 miles of overhead cables. The number of customers has increased during the years 1901 to 1907 from 964 to 2512; during the same period the number of units sold per annum has increased from 3,508,000 to 6,260,000, and the total load connected (16 candle-power lamp equivalent) has increased from 51,526 to 121,028.

(b) *The Electric Lighting and Traction Company of Australia Ltd.* This company commenced operations in 1901, having amalgamated two existing undertakings. Alternating current, single phase system of 50 periods, is generated, the total capacity of the generators being 3675 kilowatts, including a Curtis turbo-alternator of 1000 kilowatts, and a Brush-Parsons turbo-alternator of 1500 kilowatts. The high tension distributors (4000 volts) deliver into about eighty sub-stations, and the secondary distributing system is carried out on the 3-wire system. The district supplied covers about forty-one square miles and comprises parts of Fitzroy, Collingwood, Kew, Richmond, Prahran, Malvern, Caulfield, St. Kilda, South Melbourne, and the Harbour Trust territory south of the Yarra. The supply is available in about eighty-four miles of streets.

(c) *The North Melbourne Electric Tramways and Lighting Company.* This company supplies current for lighting purposes in connection with the North Melbourne tramway undertaking. Direct current is generated at 460 and 230 volts, and is distributed on the 3-wire system. The total capacity of the generators is 750 kilowatts; there are six miles of mains and thirty-four miles of distributing line.

The following statement gives particulars for the year 1907 of the three undertakings referred to:—

MELBOURNE.—ELECTRIC LIGHT STATIONS, 1907.

| | | | |
|--|------------|------------------------------------|-----------|
| Total load connected— (16 c.p. lamp equivalent) ... | *184,015 | Total capital cost ... | £681,663 |
| Total motors con- nected { Horse power ... | 4,482 | Revenue { From sale of current ... | £114,894 |
| { Number ... | 1,454 | { From other sources... † | £20,459 |
| Total arc lamps { Public ... | 1,029 | { Total ... | †£135,353 |
| connected { Private ... | 1,934 | Expenditure ... | †£69,887 |
| Total glow lamps { Public ... | 4,166 | Total number of employés ... | †358 |
| connected { Private ... | 89,775 | | |
| Units sold during year | *8,080,784 | | |

* Excluding North Melbourne Co., for which particulars are not available. † Including operations of the tramway undertaking of the North Melbourne Co., separate particulars not being available.

§ 4. Queensland.

1. **Development of Local Government Systems.**—The first step in the direction of local government in Queensland was the incorporation of Brisbane as a municipality by proclamation on the 6th September, 1859, about three months prior to the separation of that State from New South Wales. The provisions of the Municipalities Act, which was passed in the mother colony in 1858, and which has already been referred to, applied to settlement in the Moreton Bay district, and were amended by an Act of the Queensland Government in 1861. Three years later the provisions of these two Acts were amended and consolidated, and authority was given for the incorporation as a municipality of any city or town, or of any rural district, on petition to the Governor signed by at least 100 resident householders. The duties and powers of the councils were extended and additional privileges were conferred under this Act.

(i.) *Inauguration of General System of Local Government.* Various amendments were made in the law from time to time, without, however, altering the main features of the Act of 1864, until the year 1878, when the Local Government Act was passed, amplifying the powers of municipalities, and providing for the incorporation of rural areas as shires. The provisions of this Act, which was adopted from the then new Local Government Act of Victoria, were found to be unsuited to the requirements of a large and sparsely populated country like Queensland, and were not applied to any new area. The Act was therefore only of practical value to a few of the existing municipalities. In 1879 the Divisional Boards Act was passed. This Act was intended to provide for local government outside the boundaries of municipalities, and was applied simultaneously by the Executive to about 660,000 square miles of territory; which was divided, by proclamation, into seventy-two divisions, some of them of immense area and carrying only a very small population. The Act provided for a free grant to any division equal to one shilling in the pound of the annual value, and also for endowment to the amount of £2 for every £1 of rates collected for a period of five years. In case of the failure of the people of any division to elect the first members of their Board, the appointments were made by the Governor-in-Council. On the 30th April, 1880, a Gazette was issued first announcing the names of the elected Boards, and then appointing the members of the nominated Boards.

In 1881 and 1887 the Divisional Boards Act was amended, and by a further amending Act, passed in 1890, the rates thenceforward were to be charged on the unimproved capital value of the land, and this system has since been retained. In 1896 a commission was appointed to enquire into the working of the Local Government Acts and to recommend amendments which might be considered desirable; a report subsequently sent in by this commission recommended that increased powers of local government should be granted in certain matters, and to the report was appended a draft bill which, with certain alterations and curtailments, became the Local Authorities Act of 1902, the provisions of which, together with the amendments in 1903 and 1905, now regulate generally the working of local areas within the State.

(ii.) *The Local Authorities Act 1902.* Considered generally this Act comprises the Local Government Act 1878, and amending Acts, together with the Divisional Boards Act of 1887, the Valuation and Rating Act of 1890, and the Local Authorities (Joint Action) Act of 1886. It does not, however, comprise all the statutes relating to the powers and duties of local authorities, for certain Acts, such as the Tramways Acts and the Health Acts, while conferring powers upon these bodies, deal also with other subjects,

and are in the nature of general Acts upon these subjects. The Act of 1902 contains a number of provisions enlarging the powers of local bodies and rendering their duties more explicit; thus the jurisdiction of councils with respect to roads, bridges, wharves, ferries, and reserves is amplified, and provision is inserted for putting under their control, when circumstances warrant it, such public lands as cemeteries, commons, foreshores, and the like. They have enlarged powers as to traffic, the eradication of noxious weeds, the reclamation of lands, the destruction and prevention of pests, the construction of buildings, the prevention of fires, and the control of places of public resort and amusement. They are empowered to establish works for lighting, etc., and to construct tramways in districts and under circumstances to which the existing Tramways Acts are not readily applicable. The proper execution of all these matters requires additional rating, and provision is made therefor in the Act.

2. **Systems of Local Government now in Operation.**—The principal features of previous enactments as to the division of the State into local areas are retained in the Act of 1902, but such areas in the future are to be of two classes—(a) towns and (b) shires. All municipalities formerly constituted as boroughs become towns, except Brisbane, Rockhampton, and Townsville, which are declared to be cities, and all shires and divisions become shires. The Governor-in-Council may, after giving notice in the *Gazette*, constitute, unite, divide, or abolish areas for the purpose of forming new areas, and may by proclamation constitute a town a city.

(i.) *The Municipal Council.* All local areas are governed by councils, the members of which are called aldermen in the case of towns and councillors in the case of shires. *Town councils* are composed of either seven, nine, or eleven members, as declared by Order-in-Council, but, if the town has wards, three members are assigned to each ward. *Shire councils* are composed of five, seven, or nine members, as declared by Order-in-Council, but, if the shire is divided, the number cannot be more than three for each division, and need not be the same for every division.

(ii.) *Qualification of Aldermen and Councillors.* Every male ratepayer of the age of twenty-one years, if a natural-born or naturalised subject, is qualified to be elected as a member of a council, unless he is an uncertificated insolvent, is undergoing imprisonment, is financially interested in any contract with the council, or is insane. Provision is made for the election of the mayor or chairman, and for the retirement of members by rotation. The first council of a newly constituted town is elected, but that of a newly constituted shire is appointed by the Governor-in-Council, unless otherwise directed by the order constituting the shire.

(iii.) *Qualification of Voters.* Generally every person of either sex of the age of twenty-one, who is a natural-born or a naturalised subject, and is rated as an occupier or owner of ratable land, is entitled to vote. The number of votes depends upon the value of the land in the following scale:—

MUNICIPALITIES.—PLURALITY OF VOTES.

| | | | | |
|-----------------|-----|-----------------|---------------------|--------------------|
| Value of land | ... | Less than £500. | From £500 to £1000. | £1000 and upwards. |
| Number of votes | ... | 1 | 2 | 3 |

In case of joint owners or occupiers, each is to be considered the owner or occupier of land of a value equal to that of the whole divided by the number of owners or occupiers not exceeding three. If more than three persons are joint owners or occupiers, those whose names stand first on the rate book or valuation or return are to be taken. Companies may nominate their secretaries, managers, or directors for the purpose of voting.

(iv.) *Powers and Duties of Councils.* Generally the council is charged with the construction, maintenance, and management of all roads, streets, bridges, culverts, ferries, wharves, jetties, and other necessary public works, and is invested with powers to acquire land and buildings in connection with a variety of public works and for a number of public purposes. The council also has general power to make by-laws with a view to the good government of the local area under its management. Authority is given to the councils to establish markets and weighbridges and to fix dues for the use of the same; to undertake the manufacture or supply of light or hydraulic or other power; to destroy noxious weeds; and to control the erection of new buildings and the repair of dangerous or neglected ones. The council may also make by-laws with respect to a multitude of matters mentioned with great particularity in a schedule to the Act, and may also exercise various powers conferred by a number of Acts, set forth in the second schedule, such as the Tramways Act 1882, the Water Authorities Act 1891, the Electric Light and Power Act 1896, and the Health Act 1900.

(v.) *Valuation.* All land is ratable except the following:—Crown land unoccupied or used for public purposes; land in the occupation of the Crown, but this does not include lands rented in towns by the Crown; land used for public purposes; commons; cemeteries; and land not exceeding in area fifty acres and used exclusively for public worship, educational purposes, an orphanage, or library. Generally the value is estimated at the fair average value of unimproved land of the same quality held in fee-simple in the same neighbourhood. In the case of land held under gold-mining lease, or under lease from the Crown, the value is deemed to be a sum equal to twenty times the annual rent.

(vi.) *Rates* are levied on the unimproved capital value, and are of two kinds, general and special. *The general rate* must not be greater than threepence in the pound, nor less than a halfpenny, while *special rates* must not exceed threepence in the pound, but this provision does not include separate rates, special water rates, loan rates, cleansing rates, or tramway rates. Special rates may be levied for the purpose of constructing and maintaining permanent works, while separate rates may be declared for defraying expenses incurred in the execution of a work for the special benefit of any particular part of the area. A special rate may also be levied for the administration of the Health Acts.

(vii.) *Loans.* Money may be borrowed by local authorities either from the central Government, from outside sources by means of debentures, or by way of overdraft of current account. (a) *Government Loans.* The total amount that may be advanced by the Treasury, inclusive of sums owing, may not exceed a sum equal to five times the then ordinary annual revenue of the local authority, except in the case of loans for reproductive undertakings, for which special arrangements may be made by application to the Governor-in-Council. Notice of a proposed loan must be published, and, if demand be made by any ratepayers, having in the aggregate twenty votes, a poll must be taken to decide whether the money shall be borrowed or not. (b) *Debentures.* A local authority may apply to the Governor-in-Council for permission to borrow money by the sale of debentures, but application must only be made after a resolution for borrowing the money has been adopted and confirmed, and after an opportunity has been given for the taking of a poll on the question, and (if a poll has been taken) when the result is in favour of the loan. (c) *Temporary loans* from banks may be made by way of overdraft of the current account, but no such overdraft may exceed the ordinary revenue of the local authority in the year then last past.

(viii.) *Tramways.* Any ratepayers, having not less than one-third of all the votes of the ratepayers within any particular area, may by petition request the local authority to apply to the Governor-in-Council for the constitution of such area as a "tramway area."

After an opportunity for taking a poll on the question has been given, and (if a poll has been taken) when the result is in favour of the tramway, the petition may be granted by the Governor, who may authorise the issue of a Government loan for the purpose of constructing or purchasing the tramway. The total amount advanced for the purpose must not exceed £3000 for every mile constructed. As regards the repayment of tramway loans, the local authority may levy a tramway rate, and the provisions of the Local Works Loans Acts 1880 to 1889 are incorporated. Up to the end of the year 1907 tramways had been constructed under these provisions in seven shires, their total length being 161 miles. In some cases these lines are run by the Queensland Railway Commissioner on behalf of the constructing authority. Particulars as to the working of tramways run by local authorities are given in the section in this book on "Roads and Railways." (See pp. 736, 738-9, and 740 hereinbefore.)

3. Area, Population, Number of Dwellings, Rates, Assets and Liabilities of Cities, Towns, and Shires, 1903 to 1907.—The following table gives particulars of the area, population, number of inhabited tenements, assets and liabilities of cities and towns and of shires, for each year since the Act of 1902 came into operation:—

QUEENSLAND.—PARTICULARS OF CITIES AND TOWNS AND OF SHIRES,

1903 TO 1907.

| Year. | Municipality. | Area. | Population. | Number of Inhabited Dwellings. | Capital Value. | Assets. | Liabilities. | | |
|-------|------------------|---------|-------------|--------------------------------|----------------|-----------|-------------------|---------|-----------|
| | | | | | | | Government Loans. | Other. | Total. |
| 1903 | Cities and Towns | 361 | 207,334 | 39,077 | 14,546,208 | 1,261,850 | 338,192 | 632,394 | 970,586 |
| | Shires ... | 667,891 | 290,009 | 66,224 | 29,603,766 | 280,607 | 152,862 | 36,058 | 188,920 |
| | Total | 668,252 | 497,343 | 105,301 | 44,149,974 | 1,542,457 | 491,054 | 668,452 | 1,159,506 |
| 1904 | Cities and Towns | 354 | 222,397 | 41,931 | 14,865,198 | 1,252,764 | 309,713 | 634,674 | 944,387 |
| | Shires ... | 667,898 | 271,529 | 63,687 | 28,786,043 | 229,843 | 108,753 | 32,728 | 141,481 |
| | Total | 668,252 | 493,926 | 105,618 | 43,651,241 | 1,482,607 | 418,466 | 667,402 | 1,085,868 |
| 1905 | Cities and Towns | 354 | 224,672 | 42,857 | 14,409,576 | 1,272,911 | 302,838 | 678,835 | 981,673 |
| | Shires ... | 667,898 | 290,576 | 64,844 | 27,948,597 | 250,052 | 134,694 | 33,798 | 168,692 |
| | Total | 668,252 | 515,248 | 107,701 | 42,358,173 | 1,522,963 | 437,732 | 712,633 | 1,150,365 |
| 1906 | Cities and Towns | 354 | 227,106 | 43,457 | 13,980,737 | 1,292,040 | 330,515 | 656,569 | 987,084 |
| | Shires ... | 669,901 | 306,212 | 68,211 | 29,197,808 | 254,363 | 113,550 | 45,199 | 158,749 |
| | Total | 670,255 | 533,318 | 111,668 | 43,178,545 | 1,546,403 | 444,065 | 701,768 | 1,145,833 |
| 1907 | Cities and Towns | 354 | 231,851 | 43,864 | 13,840,010 | 1,296,743 | 325,685 | 637,196 | 962,881 |
| | Shires ... | 669,901 | 318,336 | 66,984 | 29,977,860 | 259,519 | 100,951 | 44,525 | 145,476 |
| | Total | 670,255 | 550,197 | 110,848 | 43,817,870 | 1,556,262 | 426,636 | 681,721 | 1,108,357 |

4. Receipts and Expenditure of Cities, Towns, and Shires, 1903 to 1907.—The following table shews the receipts and expenditure (including loan moneys) of cities and towns and of shires, as well as the total receipts and expenditure of all municipalities, for each year since the Local Authorities Act 1902 came into operation:—

**QUEENSLAND.—REVENUE AND EXPENDITURE OF CITIES, TOWNS AND SHIRES,
1903 TO 1907.**

| Year. | Municipality. | Receipts. | | | | Expenditure. | | | | |
|---------|------------------|-----------------------|-------------|------------------------|---------|---------------------|-----------------------|--|-------------------------|---------|
| | | From Govern- ment. | From Rates. | From other sources. | Total. | On Public Works. | Loan Redem- ption. | Office Expenses and Salaries. | Other Ex- penses. | Total. |
| | | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| 1903... | Cities and Towns | 29,971 | 191,975 | 60,582 | 282,528 | 184,397 | 30,863 | 24,120 | 65,065 | 304,445 |
| | Shires ... | 30,042 | 148,127 | 16,559 | 194,728 | 132,135 | 18,470 | 32,861 | 24,304 | 207,770 |
| | Total ... | 60,013 | 340,102 | 77,141 | 477,256 | 316,532 | 49,333 | 56,981 | 89,369 | 512,215 |
| 1904... | Cities and Towns | 11,766 | 216,133 | 65,304 | 293,203 | 164,099 | 31,897 | 27,173 | 69,021 | 292,190 |
| | Shires ... | 2,131 | 160,759 | 18,294 | 181,184 | 109,393 | 22,349 | 31,838 | 21,760 | 185,340 |
| | Total ... | 13,897 | 376,892 | 83,598 | 474,387 | 273,492 | 54,246 | 59,011 | 90,781 | 477,530 |
| 1905... | Cities and Towns | 5,071 | 216,283 | 91,156 | 312,510 | 175,279 | 62,988 | 24,906 | 58,473 | 321,646 |
| | Shires ... | 10,023 | 161,198 | 19,612 | 190,838 | 107,934 | 18,778 | 32,753 | 20,992 | 180,457 |
| | Total ... | 15,099 | 377,481 | 110,768 | 503,348 | 283,213 | 81,766 | 57,659 | 79,465 | 502,103 |
| 1906... | Cities and Towns | 4,699 | 217,168 | 62,571 | 284,438 | 161,149 | 28,143 | 24,006 | 72,541 | 285,839 |
| | Shires ... | 6,915 | 170,617 | 20,818 | 198,350 | 131,571 | 23,211 | 33,359 | 27,580 | 215,721 |
| | Total ... | 11,614 | 387,785 | 83,389 | 482,788 | 292,720 | 51,354 | 57,365 | 100,121 | 501,560 |
| 1907... | Cities and Towns | 10,824 | 226,948 | 52,037 | 289,809 | 173,887 | 13,651 | 24,303 | 73,198 | 285,039 |
| | Shires ... | 5,813 | 187,397 | 26,249 | 219,459 | 141,252 | 12,594 | 34,311 | 31,500 | 219,657 |
| | Total ... | 16,637 | 414,345 | 78,286 | 509,268 | 315,139 | 26,245 | 58,614 | 104,698 | 504,696 |

5. Brisbane Water Supply.—The water supply of the city of Brisbane and suburbs is administered by a Board of five members, of whom the Secretary for Public Works for the time being is an *ex officio* member. The supply is derived from the upper reaches of the Brisbane River, and from two storage reservoirs, known respectively as the Enoggera and the Gold Creek reservoirs. For some years after the constitution of Brisbane as a municipality in 1859, the city supply was drawn from a chain of water-holes and sold to the residents. This scheme was later superseded by another under which water-carriers were licensed. Later, again, the Board of Water Supply was constituted, and the construction of the Enoggera reservoir by the damming of Ithaca Creek was commenced in 1864 and completed in August, 1866. This was followed in 1885 by the construction of the Gold Creek reservoir, which provided an improved service and better water. In April, 1892, the works at Mount Crosby, at the head of the Brisbane River, were completed. At these works the water is pumped to a reservoir 455 feet above Brisbane high-water mark, whence it is delivered to the city by gravitation. The water can also be diverted to Gold Creek, where the reservoir is kept filled, while a reservoir on Highgate Hill is also connected and fitted with aerating apparatus. The question of constructing an improved water supply system for Brisbane is now receiving attention.

(i.) *The Brisbane River Supply.* This is the principal source of supply, about 60 per cent. of the water used being taken from it. The catchment area above the pumping station is about 4000 square miles. The Mount Crosby service reservoir, into which the water is pumped from the river, is built in cement concrete, and is 267 feet long, 100 feet wide, and 15 feet deep from high-water line, which is 455 feet above high-water mark at Brisbane. The capacity is about 2,500,000 gallons. The outlet pipe is thirty-four inches in diameter, and leads through the valve-house to the gravitation main to

Brisbane, 17½ miles long and twenty-four inches in diameter. At Kenmore, eleven miles from Mount Crosby, a junction is effected between this 24-inch main and the 16-inch main from Gold Creek.

(ii.) *The Enoggera Reservoir.* The Enoggera are the oldest works now in use, and are distant from Brisbane about eight miles by road. The catchment area is nearly thirteen square miles in extent, and the reservoir, which is formed by an earthen dam, holds 1,000,000,000 gallons, of which 600,000,000 are available by gravitation. The greatest length of the reservoir is 2600 yards, and its greatest breadth 700 yards. There are three lines of pipes from the reservoir to Brisbane—sixteen inches, twelve inches, and eight inches in diameter. The total carrying capacity of these pipes is about 3,000,000 gallons a day.

(iii.) *The Gold Creek Reservoir.* This reservoir is situated in the upper waters of Gold Creek, a branch of Moggil Creek, distant from Brisbane by road about thirteen miles. The supply is drawn from a catchment area adjoining that of Enoggera, and comprising an area of nearly four square miles. The total capacity is about 406,000,000 gallons, of which 400,000,000 gallons are available. The diameter of the service main is sixteen inches, the distance from the valve house to Brisbane being 12½ miles. The greatest length of the reservoir is 1650 yards, and its greatest breadth 682 yards.

(iv.) *Highgate Hill Service Reservoir.* This reservoir was constructed in 1889 to supply parts of South Brisbane. Its capacity is 2,176,000 gallons. To fill this reservoir, and in order to ensure a good water supply to the south side generally, an inverted syphon, sixteen inches in diameter, was laid under the Brisbane River between Toowong and West End in 1889. The syphon is 800 feet long, and is connected both with the Mount Crosby and Gold Creek mains.

(v.) *Brisbane Waterworks: Cost, Revenue, Expenditure, and Interest, 1901 to 1907.* The subjoined table gives particulars as to the cost, the revenue and expenditure, and the amount of interest and loan redemption during each year from 1901 to 1907, inclusive:—

**BRISBANE WATERWORKS.—COST, REVENUE, EXPENDITURE, INTEREST AND
REDEMPTION OF LOANS, 1901 to 1907.**

| Year. | Capital Cost. | Revenue from Rates and Sales of Water. | Working Expenses. | New Work Construction. | Interest and Redemption of Loans. |
|-------------|---------------|--|-------------------|------------------------|-----------------------------------|
| | £ | £ | £ | £ | £ |
| 1901 | 694,973 | 60,120 | 17,462 | 7,535 | 42,426 |
| 1902 | 711,178 | 60,917 | 19,305 | 18,168 | 26,716 |
| 1903 | 727,311 | 62,435 | 18,917 | 17,429 | 26,716 |
| 1904 | 740,618 | 63,338 | 23,888 | 13,244 | 26,716 |
| 1905 | 751,477 | 65,584 | 25,606 | 10,860 | 26,716 |
| 1906 | 774,921 | 67,280 | 19,255 | 23,444 | 26,716 |
| 1907 | 792,264 | 69,709 | 20,025 | 17,343 | 26,716 |

* The book value of the works at the end of 1907 was £569,770, the difference being amounts written off for depreciation, losses through floods, or the removal of smaller mains.

(vi.) *Brisbane Waterworks: Length of Mains, Tenements and Population Served, and Water Consumption, 1901 to 1907.* The following table shews the length of mains, the number of tenements connected, the population supplied, the total quantity of water supplied, the average daily supply, and the average daily supply per head of population supplied during each year from 1901 to 1907, inclusive:—

BRISBANE WATERWORKS.—PARTICULARS, 1901 to 1907.

| Year. | Length of Reticulation Mains. | Number of Tenements Connected. | Estimated Population Supplied. | Quantity Supplied. | Average Daily Supply. | Average Daily Supply per Head of Estimated Population. |
|-------|-------------------------------|--------------------------------|--------------------------------|--------------------|-----------------------|--|
| | Miles. | No. | No. | ,000 Gallons. | Gallons. | Gallons. |
| 1901 | 198 | 15,652 | 78,260 | 1,536,260 | 4,208,931 | 55 |
| 1902 | 216 $\frac{3}{4}$ | 17,346 | 86,730 | 1,499,674 | 4,108,696 | 47 |
| 1903 | 229 $\frac{1}{4}$ | 17,435 | 87,175 | 1,413,722 | 3,873,211 | 44 |
| 1904 | 240 $\frac{1}{4}$ | 17,814 | 89,070 | 1,686,845 | 4,621,493 | 52 |
| 1905 | 250 $\frac{1}{2}$ | 18,855 | 94,275 | 1,749,820 | 4,794,028 | 51 |
| 1906 | 264 | 19,223 | 96,115 | 1,630,899 | 4,468,216 | 46 $\frac{1}{2}$ |
| 1907 | 280 $\frac{1}{4}$ | *21,513 | 100,250 | 1,777,333 | 4,869,406 | 48 $\frac{1}{2}$ |

* Excluding 4904 blocks of unimproved land.

The total length of the trunk mains is 52 $\frac{1}{2}$ miles.

Graphs relating to the water supply of Brisbane may be found on page 999 hereof. Particulars relating to the sewerage system of Brisbane are not available.

6. **Country Towns Water Supply, 1907.**—In addition to the city of Brisbane there were at the end of the year 1907 twenty-two towns in Queensland provided with water supply systems, constructed by municipalities chiefly from Government loans. The sub-joined statement gives particulars of all the water supply systems—exclusive of Brisbane—for the year 1907 :—

QUEENSLAND.—PARTICULARS OF COUNTRY WATER SUPPLY SYSTEMS, 1907.

| | | | | | | |
|--------------------------|-------|---------|-------------|-----------------------|---------|--------|
| Cost of construction | £ | 616,564 | Expenditure | Office and salaries | £ | 9,529 |
| Government loans | £ | 5,218 | | Construction | £ | 17,890 |
| Rates and sales of water | £ | 64,314 | | Maintenance | £ | 24,096 |
| Other | £ | 2,671 | | Interest & redemption | £ | 24,877 |
| Receipts | Total | £ | 72,203 | Total | £ | 76,392 |
| Assets | £ | 533,591 | Liabilities | £ | 433,738 | |

7. **Fire Brigades.**—In the year 1907 there were twenty-six fire brigades organised in various towns in Queensland. The revenue of these brigades is derived chiefly from grants from the Government, from municipalities, and from the insurance companies, generally in equal proportions. The following table gives particulars for the year 1907 for the seventeen fire brigades from which returns were received :—

QUEENSLAND.—FIRE BRIGADES, 1907.

| Receipts. | | Amount. | Expenditure. | | Amount. |
|-----------------------|---|---------|-------------------------------|---|---------|
| | | £ | | | £ |
| From Government | £ | 4,305 | Salaries and wages | £ | 6,755 |
| „ Municipalities | £ | 4,307 | Building, repairs, etc. | £ | 3,906 |
| „ Insurance companies | £ | 4,255 | Plant, stores, clothing, etc. | £ | 1,172 |
| „ Other sources | £ | 840 | Other | £ | 3,221 |
| Total | £ | 13,707 | Total | £ | 15,054 |

At the end of the year 1907 the fire brigades staffs comprised 38 permanent men, 321 partly paid, and 51 volunteers. The metropolitan brigade at Brisbane and the South Brisbane brigade protect an area of 9 $\frac{1}{2}$ square miles; their joint staffs comprise 41 men. They have three steam engines, seven hose carts, and about 15,250 feet of hose. There are 28 telephone fire alarms and 43 call points.

8. **Public Lighting in Brisbane.**—In the metropolitan area of Brisbane the supply of both gas and electricity for lighting purposes is in the hands of private companies.

(i.) *Gas Lighting.* There are two gas companies in the metropolitan area. (a) *The South Brisbane Gas and Light Company Limited.* The works belonging to this company are capable of an output of 500,000 cubic feet of gas per day. The company commenced operations in 1885, and in July, 1908, the length of mains was thirty-five miles and the number of customers 1826. The bye-products manufactured are coke, tar, and sulphate of ammonia. (b) *The Brisbane Gas Company Limited.* Particulars of this company (other than those included in the table below) are not available.

The following table gives particulars of the operations of the two companies specified for the year 1907:—

BRISBANE.—GAS WORKS, 1907.

| | | | |
|-------------------------------|-------------|------------------------------|----------|
| Average No. of hands employed | 158 | <i>Capital Value—</i> | |
| Cubic feet made | 242,209,000 | Machinery and plant ... | £179,580 |
| Cubic feet consumed | 212,446,000 | Land and buildings ... | 66,711 |
| Length of mains ... Miles | 129½ | Total | £246,291 |
| Gasometer capacity Cub. ft. | 2,286,000 | <i>Revenue—</i> | |
| Coal used... .. Tons | 24,074 | From sale of gas | £57,440 |
| Coke made Tons | 14,464 | From sale of by-products ... | 5,792 |
| | | Other | 2,302 |
| | | Total | £65,534 |
| | | <i>Expenditure...</i> | £34,387 |

(ii.) *Electric Lighting.* In Brisbane there are two private companies which supply electricity for public and private lighting. (a) *The City Electric Light Company's* station generates direct current (110-220 volts) which is distributed on the three-wire system. The generators have a total capacity of 750 kilowatts and include five Parsons' turbo-generators ranging from 50 to 200 kilowatts each. The area served comprises the business area of the city and the Valley area. Current was first supplied in 1887; there are about 26 miles of low tension cable. (b) *The Brisbane Tramways Company Limited* also supplies current from its power house in connection with its tramway system (see p. 747 ante). Both direct and alternating current are supplied, the capacity of the generators being 1400 kilowatts direct, and 75 kilowatts alternating. Inasmuch as the power is supplied directly from the tramway circuit, it is impossible to allocate capital cost to supply for lighting purposes only. The company supplies current in bulk to the Queensland Railway Commissioner to meet the requirements of the railways in the metropolitan area. Current was first supplied in 1900.

The following statement gives particulars, so far as available, of the supply of electricity for public and private lighting for the year 1907:—

BRISBANE.—ELECTRIC LIGHT STATIONS, 1907.

| | | | |
|---------------------------------------|-----------|--------------------------|---------|
| Units sold during year | 1,568,500 | <i>Revenue—</i> | |
| Total motors connected { H.P. | 694 | From sale of current ... | £22,810 |
| { No. | 201 | Other | £2,826 |
| Total arc lamps connected { Public | 60 | Total | £25,636 |
| { Private | 306 | <i>Expenditure</i> | £12,000 |
| Total incandescent connected { Public | — | No. of employes | £667 |
| { Private | 7,692 | | |
| Total number of customers ... | 507 | | |

† Approximate.

‡ Including tramways.

§ 5. South Australia.

1. **Development of Local Government Systems.**—In the latter part of 1839 the first municipal law was passed in South Australia, which was thus the birthplace of municipal government in the Commonwealth. On the 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council, consisting of nineteen members, and the system has since been extended throughout the settled parts of the State by the formation of district councils and municipal corporations, which are the two types of local authorities now in existence.

2. **District Councils.**—The first District Councils Act was passed in 1858, was amended in 1862, and was further amended and consolidated by the District Councils Act of 1876, which provided for the continuation of existing districts and for the establishment of new ones by proclamation on the petition of the ratepayers. The revenue of the councils consisted of rents, profits, and income from lands vested in the council or over which the council had the control and management; fines and penalties enforced under the Act; fees for licenses; and general and special rates and loans. Provision was made for the election of councillors, their number, qualification, and retirement; for the election of auditors; the meetings, powers and functions of councils; the appointment of constables; revenue and expenditure; assessment and rates; and for making by-laws for various purposes. The Act of 1876 was amended from time to time, and was finally amended and consolidated by the Act which is now in force, namely, the District Councils Act 1887, which has in turn been amended in the years 1890, 1893, 1897, and 1904.

(i.) *The District Councils Act 1887* provides for the continuation and amalgamation of existing districts and for the constitution as a new district of any part of the State containing ratable property capable of yielding upon a rate not exceeding one shilling in the pound the sum of £200. The Governor is authorised to alter the area or boundaries of any district by annexation or by subdivision. New districts are constituted upon petition to the Governor; every petition must be signed by fifty inhabitants of the part sought to be constituted, and if the proposed district comprises portion of a previously existing district, by a majority of the ratepayers of such portion.

(a) *Qualification of Councillors.* Every male ratepayer, if of full age, is qualified to be a councillor, unless he is a minister of religion, a stipendiary magistrate, an uncertificated insolvent, or is the treasurer or a paid official of the district council, or is interested in any contract, except for advertisements and printing, with the district council. The chairman is elected by the councillors from their own number.

(b) *Qualification of Electors.* Every person of either sex, if of the age of twenty-one years, whose name appears as a ratepayer in the assessment book is entitled to vote at the elections of councillors and auditors. In case of a joint tenancy or a tenancy in common, only one person is entitled to a vote for every £75 or part thereof at which the property is assessed.

(ii.) *Assessments and Rates.* Assessments are generally made at four-fifths of the gross annual rent at which the property would let for a term of seven years, or at 5 per cent. on the capital value, but in case of land within a township, not less than twenty acres in area, and not built on, used, or divided by roads, assessment is made at the rate of $2\frac{1}{2}$ per cent. on the value of the fee-simple. All other township land unbuilt on is assessed at 5 per cent. on the fee-simple value, and for lands held under mining lease from the Crown, the assessment may not exceed the annual rental. (a) *General Rates* may not be more than one shilling and sixpence nor less than threepence in the pound on the

assessed value. (b) *Special Rates* for the execution of permanent works may also be declared, provided that the general and special rates together do not exceed two shillings and sixpence in the pound. No special rate may be declared without the consent of the ratepayers to be obtained at a meeting called for the purpose, and any six ratepayers may demand a poll to be taken on the subject. The ratepayers of any portion of a district may memorialise the council for specific works for the benefit of such portion of the district, and if the council decide to comply with the memorial a *separate rate* may be levied in respect of property in the portion defined. Lighting rates may also be declared, but must not exceed fourpence in the pound.

(iii.) *Loans*. Any council may, for the execution of any works for which a special or separate rate has been declared, borrow on the security of such rate up to ten times the amount which at the time of borrowing would result from a rate of one shilling in the pound, but if demand be made by any twenty ratepayers, the question whether or not the proposed loan be incurred must be submitted to a poll of the ratepayers. The interest payable on any such loan must not exceed 6 per cent. By an amending Act passed in the year 1904, additional borrowing powers were conferred on the councils for the purpose of carrying out permanent works subject to the conditions that the total amount borrowed must not at any time exceed three times the amount which would result from a rate of one shilling in the pound, and that the principal sum and interest must be repaid by means of a sinking fund within forty-two years.

(iv.) *Revenue and Expenditure*. The revenue of the councils consists of rents, profits and income from property vested in the council or over which the council has control; the proceeds from the sale of such property; fines and penalties imposed under the Act; fees for licenses; rates; and main road subsidies. Under the District Councils and Corporation Subsidy Act 1890 provision is made for grants out of the general revenue to district councils and corporations in lieu of fees received under the Auctioneers Act 1862 and the Licensed Victuallers Act 1880. The amount of such grant is a sum equal to five shillings in the pound on the amount collected from general rates not exceeding one shilling in the pound declared during any one year. Revenue may be expended in carrying out any authorised works; in payment of salaries and professional fees; in subscriptions to charities; in payment of councillors' travelling expenses; in promoting bills before Parliament, and generally in carrying out the purposes of the Act.

(v.) *Powers and Duties of Councils*. A council may carry out certain permanent works which are defined in the Act, and which comprise the following:—The construction of new streets and roads, sewers, and drains; the construction or purchase of water-works, district offices, pounds, abattoirs, markets, baths, hospitals, and other charitable institutions; the providing of libraries, museums, and places of public recreation; and the construction of tramways and machinery for the treatment of refuse. The councils are invested with wide powers to make by-laws for the more effective exercise and discharge of their powers, duties, and liabilities, particularly in respect of the following matters:—The compulsory purchase of land; manufacturing districts; the public health; the sale of food and drugs; the management of unoccupied waste lands of the Crown; drainage; piers, jetties, and wharves; weights and measures; vermin destruction; game and fisheries; streets, roads, and public places; fire brigades; impounding; and for fixing penalties for breaches of such by-laws. Upon the district councils also is imposed the duty of administering the Health Acts, the Sale of Food and Drugs Acts, the Game and Fisheries Acts, the Vermin Acts, the Bush Fires Act, the Impounding Act, the Weights and Measures Act, and the Slaughter House Act.

3. **Municipalities** were first established under the Municipal Corporations Act of 1861, which, after providing for the extensions of the powers and duties of the Corporation of the City of Adelaide, authorised the Governor, on petition of a majority of not less than two-thirds of the property-owners, to incorporate any town, district, or place within the province, a municipality. This Act and its amendments were consolidated

in the Municipal Corporations Act of 1880, which was amended from time to time until the year 1890, when it was repealed and its provisions consolidated by the existing Act, the Municipal Corporations Act of 1890, which was in turn amended in 1903.

(i.) *The Municipal Corporations Act 1890.* After making provision for continuing existing corporations and by-laws the Act authorises the Governor to constitute new municipalities, or to alter the boundaries of existing ones, on petition of not less than two-fifths of the ratepayers or owners of ratable property within the land proposed to be incorporated, separated, or added; and also to rearrange, increase, or diminish the number of wards of a municipality on petition of not less than one-fifth of the ratepayers. Each council consists of a mayor, and of two councillors for each ward, and the provisions as to their qualifications are substantially the same as in the case of district councils referred to above. All persons of full age, if British subjects and not in receipt of public relief or alms, who are either owners or occupiers of any ratable property within a municipality are entitled to vote at the election of the mayor and councillors. Provision is made for the nomination and election of the mayor, councillors, and auditors, and for regulating the meetings of the councils.

(ii.) *Municipal Functions of Councils.* All public streets and roads are vested in the council of the municipality in which they lie, but no street can be declared a public street after the passing of the Act unless it is at least forty feet wide. Full powers are given as to opening, closing, or fencing public streets, and for supervising the formation and repair of private streets and lanes. Councils are further authorised to execute works for, or to contract for the lighting, sewerage, and drainage of municipalities; to take all measures requisite for the public health; to establish public baths, fountains, and parks; to grant licenses for slaughter-houses, hide and skin markets, for the depasturing of cattle, and for the removal of sand and gravel; to control the erection or pulling down and the maintenance of buildings and hoardings; to organise fire brigades, and to order the removal of inflammable buildings.

(iii.) *Assessments and Rates.* Owners and occupiers of ratable property in municipalities are assessed each year on the same basis as stated above in respect to ratable property within districts under the government of district councils. In addition to the rate authorised by the Public Health Act a *general rate*, not exceeding one shilling in the pound, may be declared; rates for lighting and for the improvement of parks and reserves may also be levied, the former being limited to fourpence and the latter to threepence in the pound. The council may also declare a rate for defraying the expense of watering streets, to be apportioned among the persons liable for the rates in respect of properties fronting such streets. *Special and separate rates* may also be levied in the same manner as by district councils, but, in the case of municipalities, the general and special rates together must not exceed two shillings in the pound.

(iv.) *Borrowing powers* of municipal corporations are substantially the same as those of district councils, and similar additional powers were given to municipalities as to districts by the Municipal Corporations Amendment Act 1903.

(v.) *Revenue, Expenditure, and Miscellaneous.* Other provisions as to the revenue and expenditure of municipalities, and their powers as regards permanent works, are the same as those in force under the District Councils Acts, referred to above, while very wide powers are given to municipal councils in respect of a variety of matters and things to provide by means of by-laws for the general good government of the municipalities.

4. Finances of District Councils and Corporations, 1901 to 1907.—The subjoined tables shew the amounts of assessment and the revenue and expenditure of district councils and of corporations for each financial year from 1901 to 1907, inclusive; the figures given are exclusive of the Main Roads Funds, particulars as to which may be found in the section of this book on "Roads and Bridges." (See pages 681-2 *ante*.)

SOUTH AUSTRALIA.—ASSESSMENT, REVENUE, AND EXPENDITURE OF LOCAL AUTHORITIES, 1901 to 1907 (EXCLUSIVE OF MAIN ROADS FUNDS).

| Year.* | Amount of Assessment. | Revenue. | | | | Expenditure. | |
|--------------------|-----------------------|-------------|-----------------|----------------|---------|------------------|---------|
| | | From Rates. | From Subsidies. | Other Sources. | Total. | On Public Works. | Total. |
| DISTRICT COUNCILS. | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ |
| 1901 | 1,412,507 | 63,321 | 15,225 | 51,919 | 130,465 | 65,406 | 128,499 |
| 1902 | 1,433,036 | 63,193 | 15,735 | 38,198 | 117,126 | 66,355 | 121,210 |
| 1903 | 1,452,413 | 64,207 | 15,358 | 40,713 | 120,278 | 64,642 | 122,936 |
| 1904 | 1,488,716 | 70,975 | 14,252 | 39,766 | 124,993 | 70,201 | 123,779 |
| 1905 | 1,503,230 | 71,603 | 15,490 | 46,603 | 133,696 | 69,769 | 131,028 |
| 1906 | 1,604,979 | 75,253 | 16,845 | 39,987 | 132,085 | 72,067 | 128,605 |
| 1907 | 1,647,895 | 81,295 | 18,296 | 28,395 | 127,986 | 81,298 | 121,030 |
| CORPORATIONS. | | | | | | | |
| 1901 | 1,177,850 | 87,289 | 9,733 | 49,342 | 146,364 | 55,533 | 146,091 |
| 1902 | 1,195,991 | 87,961 | 9,113 | 60,531 | 157,605 | 58,651 | 157,523 |
| 1903 | 1,208,825 | 85,702 | 10,470 | 57,509 | 153,681 | 55,544 | 152,475 |
| 1904† | 1,222,522 | 96,545 | 14,766 | 45,534 | 156,845 | 61,004 | 156,722 |
| 1905 | 1,236,578 | 98,632 | 15,127 | 47,267 | 161,026 | 60,720 | 159,863 |
| 1906 | 1,253,566 | 99,160 | 14,713 | 52,225 | 166,098 | 63,422 | 162,078 |
| 1907 | 1,254,956 | 100,863 | 14,276 | 39,779 | 154,918 | 88,525 | 161,754 |

* Up to and including the year 1903, the financial year for Corporations ended on the 31st December, but after that date ends on the 30th November. The financial year for district councils ends on the 30th June. † For eleven months ended the 30th November, 1904.

5. **Adelaide Water Supply System.**—The water supply system of Adelaide is under the control of the Public Works Department. The supply is obtained partly from the catchment areas of the rivers Onkaparinga, Torrens, and Sixth Creek, and partly from springs and pumping stations. There are three storage reservoirs, situated at Happy Valley, Hope Valley, and Thorndon Park, having an aggregate capacity of 3,895,000,000 gallons, while the tanks used in connection with the springs and pumping stations have a further capacity of 4,824,000 gallons. The total capital cost up to the 30th June, 1907, was £1,693,884, the total amount paid by way of interest on loans being £1,463,824, the total expenditure on maintenance £640,112, and the total revenue £2,191,789. The area served at the same date was 76,532 acres.

The following table gives various particulars relating to the water supply of Adelaide for the years 1904 to 1907, inclusive:—

ADELAIDE WATER SUPPLY.—LENGTH OF MAINS, REVENUE, EXPENDITURE, AND CONSUMPTION OF WATER, 1904 to 1907.

| Year Ended 30th June. | Length of Mains. | Gross Revenue. | Working Expenses. | Net Revenue. | Percentage of Net Revenue on Capital Cost. | Total Consumption of Water. ¹ |
|-----------------------|------------------|----------------|-------------------|--------------|--|--|
| | Miles. | £ | £ | £ | % | Million of Gals. |
| 1904 ... | 640 | 70,333 | 19,257 | 51,076 | 3.09 | 3,550 |
| 1905 ... | 647 | 72,471 | 20,002 | 52,469 | 3.16 | 3,650 |
| 1906 ... | 656½ | 72,976 | 22,298 | 50,678 | 3.02 | 3,550 |
| 1907 ... | 667½ | 74,727 | 19,703 | 55,023 | 3.24 | 3,350 |

1. In the Adelaide Water District there are no governing meters. The quantities shown above are as recorded by gaugings taken at the reservoirs, and include evaporation and absorption.

Graphs relating to Adelaide water supply may be found on page 999 *ante*.

6. **Adelaide Sewerage System.**—In connection with the sewerage system of Adelaide, which is also under the control of the Public Works Department, 247 miles of sewers had been laid in the city and suburbs up to the 30th June, 1907, the total number of premises connected being 24,393. The sewage is disposed of on a farm and filter-beds, the latter being used only during the winter months. The total cost of construction to the 30th June, 1907, was £625,309.

The following table gives particulars relating to the Adelaide sewerage system for the years 1904 to 1907, inclusive:—

ADELAIDE SEWERAGE SYSTEM.—REVENUE AND EXPENDITURE, 1904 to 1907.

| Year Ended the 30th June. | Revenue. | | | Expenditure. | | | Net Revenue. | |
|---------------------------|---------------------|-------------------------------------|--------|--------------|-------------------------------|--------|--------------|-----------------------------|
| | Rates and Interest. | Sewage Farm. Sales of Produce, etc. | Total. | Maintenance. | Sewage Farm Working Expenses. | Total. | Total. | Percentage on Capital Cost. |
| | £ | £ | £ | £ | £ | £ | £ | % |
| 1904 ... | 30,923 | 6,594 | 37,517 | 5,466 | 5,962 | 11,428 | 26,089 | 4.12 |
| 1905 ... | 31,682 | 6,817 | 38,499 | 5,679 | 5,393 | 11,072 | 27,427 | 4.41 |
| 1906 ... | 32,530 | 7,006 | 39,536 | 5,921 | 5,901 | 11,822 | 27,714 | 4.45 |
| 1907 ... | 32,380 | 6,390 | 38,770 | 6,284 | 5,460 | 11,744 | 27,026 | 4.00 |

7. **Water Supply in Country Towns.**—In South Australia there are a number of country waterworks under the control of the Public Works Department. These works are partly used for irrigation purposes, and the most important of them have already been referred to in the section of this book dealing with the subject of "Irrigation." (See p. 589 *ante*.) In addition to the works mentioned in the section referred to, there are other country districts served by reticulations extending over 311 square miles. Detailed particulars of the various works are not available. The total extent of country for which reservoir water was available in 1907 was 4211 square miles, the reservoirs holding, in the aggregate, 7,370,000,000 gallons, and the main pipe-lines reaching 2177 miles. The capital cost of the works under the waterworks branch, as distinct from the water conservation branch, which deals with isolated and remote districts, was £4,016,000, and the net revenue in 1906-7 was £121,250, returning a net percentage of 2.13 on the cost of construction.

8. **Public Lighting in Adelaide.**—In the metropolitan area of Adelaide, public lighting—both by gas and electricity—is carried on by private companies.

(i.) *Gas Lighting.* The South Australian Gas Company supplies gas to the city of Adelaide, Port Adelaide, and Glenelg, and also to Port Pirie, Gawler, Kapunda, and Strathalbyn. The total length of mains is about 200 miles. The following table gives particulars as to the supply of gas in the places specified, separate particulars for the metropolitan area alone not being available:—

SOUTH AUSTRALIA.—PUBLIC LIGHTING, GASWORKS, 1907.

| | | | | |
|---------------------|----------|-------------|----------------------------|----------|
| Gas manufactured | Cub. ft. | 302,543,000 | <i>Capital cost</i> | £350,808 |
| Gas sold | Cub. ft. | 282,733,000 | <i>Revenue—</i> | |
| | | | From sale of gas | £82,437 |
| | | | " " by-products | £23,274 |
| Coal used | Tons ... | 28,850 | Other | £1,308 |
| Number of customers | ... | 13,178 | Total | £107,019 |
| Number of employés | ... | 284 | <i>Expenditure</i> | £67,727 |

(ii.) *Electric Lighting.* Current for public and private lighting in Adelaide is generated by the Adelaide Electric Supply Company Limited. Electricity is supplied from the power house in Grenfell-street by means of direct current generators for the central area of the district served; the suburban areas, as well as Port Adelaide, are supplied through the agency of direct current to alternating current motor generators. In July, 1908, the capacity of the direct current generators was 1050 kilowatts, and of the direct to alternating current motor generators was 150 kilowatts. Two 750-kilowatt continuous current generating sets were in course of erection. Within the city area proper the three-wire continuous current system was in use; in the suburbs alternating current of 50 periods at 2000 volts is supplied to transformer stations and is thence distributed on the three-wire system. The supply to Port Adelaide is transmitted by a feeder line $8\frac{1}{2}$ miles long at a pressure of 4000 volts, obtained by means of step-up transformers. The district served comprises the City of Adelaide, North Adelaide, Prospect, Walkerville, St. Peters, Kensington and Norwood, Burnside, Unley, Thebarton, Hindmarsh, Woodville, Alberton, and Port Adelaide, covering about 62 square miles. The length of street in which the supply is available amounts to 78 miles. There are $14\frac{1}{2}$ miles of high tension and $87\frac{1}{2}$ miles of low tension cable overhead, and $10\frac{1}{2}$ miles of high tension and $19\frac{1}{2}$ miles of low tension cable underground.

The following table gives particulars of the electric light supply in Adelaide for the year 1907:—

ADELAIDE.—ELECTRIC LIGHTING, 1907.

| | | | | |
|--|--------------------------------|--------|--------------------------|----------|
| Total Load connected (16 candle-power lamp equivalent) ... | ... | 51,378 | Total capital cost ... | £211,188 |
| Total motors connected | { H.P. 1,431 No. 390 | | Revenue— | |
| Total Arc lamps connected | { Public 63 Private 548 | | From sale of current ... | £21,932 |
| Total Glow lamps connected | { Public 340 Private 19,521 | | Other ... | £691 |
| Units sold during year | ... 1,384,178 | | Total ... | £22,623 |
| | | | Expenditure ... | £12,593 |
| | | | Number of employes ... | 94 |

It may be mentioned that in the private Act of the Adelaide Electric Supply Company Limited, the right is reserved to the Adelaide City Council to acquire the company's undertaking, and that the matter of securing these works is one which the City Council will consider in the near future.

§ 6. Western Australia.

1. *Types of Local Authorities.*—In this State there are three forms of local authorities, namely:—(i.) Municipalities, (ii.) Road Districts, and (iii.) Local Boards of Health. The first Municipalities Act was passed in 1871, but only a few districts were incorporated under it. In 1895 a more comprehensive measure, the Municipal Institutions Act, was passed, and after being amended from time to time was consolidated by the Municipal Institutions Acts 1902 and 1904. In 1906 the most recent enactment, the Municipal Corporations Act, was passed, repealing and consolidating previous enactments. The whole area of the State outside incorporated municipalities is divided into road districts, which are administered under the Roads Act 1902 and 1904. In municipalities the councils act as Health Boards for the purpose of administering the Public Health Act, while outside municipalities local Boards of Health may be formed. In 1904 another local government measure, the Water Boards Act, was passed, under which Boards may

be appointed for the control of waterworks, and rates may be levied for the purpose, the maximum being fixed at two shillings in the pound of ratable value.

2. **Municipalities** are now regulated by the Municipal Corporations Act, which came into force on the 1st January, 1907. Provision is made for the continuation of existing municipalities, and the Governor is authorised to constitute new municipalities on petition signed by at least fifty property-holders of the district proposed to be incorporated; to unite adjoining municipalities on petition under their common seals; to sever any portion from a municipality on petition signed by a majority of the ratepayers, and to annex such portion to a contiguous municipality or road district.

(i.) *Municipal Councils* consist of a mayor and councillors, the number of which depends upon the population of the municipality; if the population is less than 1000 there are six councillors, if from 1000 to 5000 there are nine councillors, and if the population is over 5000 there are twelve councillors, or three for each ward. Any male ratepayer of the age of twenty-one years, if a natural-born or naturalised subject, is eligible for election as mayor or councillor, except ministers of religion, uncertificated bankrupts, prisoners, and certain other persons who may be disqualified on the ground of interest.

(ii.) *Qualification of Voters.* Every ratepayer, if of twenty-one years of age or over, is entitled to vote at the municipal elections. In the case of joint owners or occupiers, each owner or occupier, if not exceeding two in number, is deemed to be the owner or occupier of half the property; if more than two in number the owners or occupiers may appoint two of their number to be registered in respect of the property. Corporations and companies may also nominate two persons to be registered as voters.

(iii.) *Powers and Duties of Councils.* The councils have power to make by-laws with respect to the usual matters pertaining to municipalities, and are also invested with the control and management of all public places, streets, roads, bridges, sewers, and drains within the municipality. They may contract for the lighting of any part of the municipality for a period not exceeding three years, and may levy a lighting rate; they may construct dams or reservoirs for water supply, may establish fire brigades and baths, and may provide places of recreation, pounds, abattoirs, markets, and weighbridges.

(iv.) *Valuation of Ratable Property.* All land is ratable property except the following:—Property of the Crown used for public purposes or unoccupied; property used for religious or charitable purposes; public libraries, museums, etc.; cemeteries; any land declared by the Governor to be exempt from municipal rates. Generally the annual value of improved or occupied land is the average rent obtainable, less 20 per cent., but in no case may the annual value be less than 4 per cent. of the fee-simple value. The annual value of unimproved or unoccupied land is taken to be not less than $7\frac{1}{2}$ per cent. on the capital value. No allotment of ratable land may be valued at an annual value of less than £2 10s.

(v.) *Rates.* General rates are levied annually, but may not exceed one shilling and sixpence in the pound on the annual value. Lighting rates and special rates for the repayment of debentures and interest may also be struck, but may not exceed the maximum rate allowed in the case of general rates.

(vi.) *Borrowing Powers.* The council of a municipality may borrow money on the credit of the municipality for permanent works, or for the purpose of liquidating the principal moneys owing on account of any previous loan. Permanent works may be the construction or alteration of any street, footway, road, bridge, culvert, wharf, or jetty; the construction of sewers and drains, and works connected with sewerage and drainage;

the construction or purchase of waterworks, tramways, municipal offices, pounds, abattoirs, markets, and baths; the improvement of endowment lands; providing places of public recreation; the construction of a general warehouse, or a theatre, or of refuse destructors; and the purchase of quarries or land. The amount borrowed at any time may not exceed ten times the average ordinary income of the municipality for the two years last preceding, and the amount borrowed to liquidate any loan must not exceed the balance of principal owing. A municipality may also overdraw on the amount of its current account, but the overdraft must not at any time exceed one-third of the ordinary revenue for the preceding year.

(vii.) *Government Subsidies.* Grants are made annually to municipalities by way of subsidies on the amounts of rates collected. To entitle any council to participate in the allocation of the annual Parliamentary vote the council must have levied a minimum general rate of one shilling in the pound, and must have collected not less than £300 from such rate. Newly-constituted municipalities are, during the first year of existence, dealt with apart from the provisions of the general scheme, and are allowed a subsidy of £2 for every £1 of general rate collected; in subsequent years they participate according to the general provisions. The following table shews the basis on which the municipalities are classified:—

WESTERN AUSTRALIA.—CLASSIFICATION OF MUNICIPALITIES.

| Income from General Rates. | From £20,000 to £30,000. | From £10,000 to £20,000. | From £5,000 to £10,000. | From £500 to £5,000. | Under £500. |
|----------------------------|--------------------------|--------------------------|-------------------------|----------------------|-------------|
| Class | 1st | 2nd | 3rd | 4th | 5th |

No subsidy is paid on income from general rates exceeding £3000.

3. Area, Population, etc., of Municipalities.—Returns regarding the area, population, and valuation of municipalities are defective. They are shewn in the table hereunder:—

WESTERN AUSTRALIA.—NUMBER, AREA, POPULATION, NUMBER OF DWELLINGS, AND VALUATION OF MUNICIPALITIES, 1901 to 1907.

| Year ended the 31st October. | Number of Municipalities. | Area | Population. | Dwellings. | | | Unimproved Capital Value of Freehold Land. | Amount Payable in respect of Rates. |
|------------------------------|---------------------------|--------|-------------|------------|-------------|----------|--|-------------------------------------|
| | | | | Occupied. | Unoccupied. | Total. | | |
| | | | | No. | No. | No. | | |
| 1901 ... | 42 | 71,721 | *96,807† | †20,989 | †967 | †21,956 | £ | £ |
| 1902 ... | 44 | 68,867 | *96,807† | †20,989 | †967 | †21,956 | £ | £ |
| 1903 ... | 44 | 73,338 | ¶115,350 | †20,989 | †967 | †21,956 | £ | £ |
| 1904 ... | 43 | 77,331 | †115,182 | †20,961 | †960 | †21,921 | £ | £ |
| 1905 ... | 43 | 75,415 | †115,182 | †20,961 | †960 | †21,921 | £8,280,698 | £132,453 |
| 1906 ... | 45 | 81,519 | =125,474 | †20,961 | †960 | †21,921 | £8,280,698 | £142,229 |
| 1907 ... | 47 | 89,748 | 136,845 | \$26,756 | \$2,050 | \$28,806 | £8,280,698 | £142,770 |

* Census figures, 1901. † Returns for thirty-nine municipalities only. ‡ Returns for thirty-eight municipalities only. § Not available. ¶ Exclusive of one municipality. ¶ Rough census figures, 1903. = Returns for forty-four municipalities.

4. Revenue and Expenditure of Municipalities, 1901 to 1907.—The following table gives particulars as to the revenue and expenditure of municipalities during each year from 1901 to 1907, inclusive:—

**WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES,
1901 to 1907.**

| Year ended the 31st October | Revenue. | | | | Expenditure. | | | |
|-----------------------------|-------------|--------------------|---------------------|---------|-------------------------|------------------------------------|-----------------|---------|
| | From Rates. | From Govt. Grants. | From other Sources. | Total. | Works and Improvements. | Disbursements in respect of Loans. | Other Expenses. | Total. |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| 1901 * | 78,021 | 66,860 | 82,228 | 227,109 | 111,241 | 23,809 | 79,365 | 214,415 |
| 1902 ... | 94,894 | 81,436 | 113,591 | 289,921 | 125,721 | 33,936 | 123,615 | 283,272 |
| 1903 ... | 104,760 | 80,938 | 116,653 | 302,351 | 142,347 | 33,294 | 137,228 | 312,869 |
| 1904 ... | 119,110 | 90,868 | 213,785 | 423,763 | 187,747 | 38,227 | 168,524 | 394,498 |
| 1905 ... | 130,575 | 85,798 | 167,793 | 384,166 | 183,226 | 53,746 | 174,716 | 411,688 |
| 1906 ... | 146,206 | 95,997 | 210,226 | 452,429 | 165,421 | 50,739 | 200,844 | 417,004 |
| 1907 ... | 136,868 | 85,473 | 151,865 | 374,206 | 249,453 | 57,804 | 111,125 | 418,382 |

* Incomplete.

5. **Assets and Liabilities of Municipalities, 1901 to 1907.**—The following table gives particulars respecting the assets and liabilities of municipalities at the end of each financial year from 1901 to 1907, inclusive:—

**WESTERN AUSTRALIA.—ASSETS AND LIABILITIES OF MUNICIPALITIES,
1901 to 1907.**

| Year ended the 31st October | Assets. | | | | | Liabilities. | | |
|-----------------------------|-------------------|--|--|---------------|---------|------------------------------|--------------------|---------|
| | Balance in Hand.* | Value of Property owned by Municipalities. | Accrued Sinking Funds for Redemption of Loans. | Other Assets. | Total. | Outstanding Debts and Bonds. | Other Liabilities. | Total. |
| | £ | £ | £ | £ | £ | £ | £ | £ |
| 1901† ... | 37,259 | 214,984 | 42,311 | 13,432 | 307,986 | 321,000 | 19,762 | 340,762 |
| 1902† ... | 49,557 | 294,800 | 62,239 | 20,420 | 427,016 | 413,050 | 29,700 | 442,750 |
| 1903 ... | 41,375 | 332,492 | 64,036 | 34,140 | 472,943 | 437,300 | 41,200 | 478,500 |
| 1904 ... | 72,894 | 354,798 | 81,514 | 36,718 | 545,924 | 589,800 | 32,304 | 622,104 |
| 1905 ... | 43,209 | 473,320 | 94,892 | 36,086 | 647,507 | 623,414 | 28,031 | 651,445 |
| 1906 ... | 78,579 | 537,407 | 110,165 | 46,495 | 772,646 | 713,350 | 45,597 | 758,947 |
| 1907 ... | 39,414 | 553,873 | 125,742 | 55,430 | 774,459 | 730,994 | 47,131 | 778,125 |

* Including bank balance, cash in hand, and fixed deposit. † Incomplete.

‡ Exclusive of the municipality of Mount Morgans.

6. **Road Districts.**—The whole area of the State, outside incorporated municipalities, is divided into districts, the executive powers being vested in elective boards. These districts were originally formed solely for the purpose of controlling roads and bridges, but their powers and duties have been extended, so that at the present time they correspond closely to the shires of the other States of the Commonwealth. The enactments at present governing the administration of the Road Boards are the Roads Acts 1902 and 1904, the Parks and Reserves Act, the Cattle Trespassing Act, the Width of Tires Act, the Cart and Carriage Licenses Act, and the Dog Act. The general powers and duties of the Boards as regards roads and bridges are described in the chapter of this book entitled "Roads and Bridges." (See pages 682-3 *ante*.) In addition to these powers and duties the Boards have power to do everything necessary for the proper management of the property under their control, and may also construct and maintain tanks, wells, and dams, and bore for water for the purpose of supplying water along any road in the district. Subject to the provisions of the Roads Acts, the Board has also the control and management of any such public reserves, parks, commons, wells, dams, reservoirs, buildings, machines, etc., as the Governor may direct. The Board has also extensive powers for making, altering, and repealing by-laws.

7. **Boards of Health** may be established under the Public Health Act 1886, either within or outside of municipal boundaries. In the former case the Act is administered by the municipal councils, while in the latter case special Boards are elected by the ratepayers. The revenue of these Boards consists chiefly of moneys received from health rates and sanitary fees, and the largest item of expenditure is directly connected with the sanitary service. The following table shews particulars of the receipts and expenditure of the various Boards—both municipal and extra-municipal—during each year from 1901 to 1907, inclusive:—

**WESTERN AUSTRALIA.—RECEIPTS AND EXPENDITURE OF LOCAL HEALTH BOARDS,
1901 to 1907.**

| Year ended the 31st October. | Revenue. | | | Expenditure. | | |
|------------------------------------|-----------------------------|------------------------|--------|--------------------------|--------------------|--------|
| | From Public Health Rate. | From other Sources. | Total. | On Sanitary Services. | Other Expenses. | Total. |
| | £ | £ | £ | £ | £ | £ |
| 1901 | 15,230 | 17,477 | 32,707 | 18,787 | 12,992 | 31,779 |
| 1902 | 17,616 | 22,569 | 40,185 | 19,248 | 20,114 | 39,362 |
| 1903 | 21,884 | 22,610 | 44,494 | 22,872 | 21,184 | 44,056 |
| 1904 | 25,777 | 25,904 | 51,681 | 28,299 | 23,321 | 51,620 |
| 1905 | 26,003 | 30,864 | 56,867 | 30,724 | 28,061 | 58,785 |
| 1906 | *28,242 | 40,943 | 69,185 | 40,518 | 28,038 | 68,556 |
| 1907† | †33,289 | 35,285 | 68,574 | 39,419 | 31,697 | 71,116 |

* Including sanitary rates, £11,745. † Including sanitary rates, £16,564. ‡ Exclusive of particulars of twenty-one boards which did not furnish returns, and of five boards which were not active during the year, all outside municipalities. Particulars for previous years are also incomplete.

On the 31st October, 1907, there were forty-six Local Boards of Health within municipalities and fifty-five extra-municipal Boards.

8. **The Perth Metropolitan Waterworks.**—These works were first opened by a private company in October, 1890. Under the provisions of the Metropolitan Waterworks Act 1896, however, the works were purchased by the Government at a cost of £220,000, and were placed under the control of a Board, which was in the year 1904 superseded by the Minister for Works. The original Act was subsequently amended in 1898, 1902, and 1905. The supply of water is derived from three sources—(i.) the Victoria reservoir, (ii.) the Mundaring reservoir, and (iii.) from six artesian bores.

(i.) *The Victoria Reservoir.* This is the main source of supply. The reservoir has a capacity of 212,000,000 gallons, and has a catchment area of 10,000 acres on the Darling Ranges. The water gravitates from the Victoria reservoir to Perth through two mains which are respectively 21 inches and 12 inches in diameter, and 15½ and 17 miles in length. There are two service reservoirs—one of 2,413,000 gallons, and the other of 600,000 gallons capacity. The quantity of water drawn from this reservoir during the year ended the 30th June, 1907, was about 506,000,000 gallons.

(ii.) *The Mundaring Reservoir.* This reservoir is used as an emergency supply. It has a capacity of 4,650,000,000 gallons, but is only connected by one eight-inch main. During the last financial year about 12½ million gallons were drawn. This reservoir has a catchment area of 569 square miles, and was constructed in connection with the gold-fields water supply. (See p. 582 hereinbefore.)

(iii.) *Artesian Bores.* There are in all six artesian bores, the flow from which augments the main supply from the Victoria reservoir. The total flow is about 360,000,000 gallons during the season, which lasts approximately for six months.

(iv.) *Financial Operations of Board, 1901 to 1908.* The following table gives particulars of the financial operations of the Metropolitan Waterworks Board for each year ending the 30th June, from 1901 to 1908, inclusive:—

PERTH METROPOLITAN WATERWORKS BOARD.—PARTICULARS OF FINANCIAL OPERATIONS, 1901 to 1908.

| Year ended the 30th June. | Capital Cost of Works. | Depreciation. | Net Capital Cost. | Gross Revenue. | Cost of Maintenance and Management. | Interest Earned by Net Revenue on Net Capital Cost. | Percentage of Expenses on Gross Revenue. |
|---------------------------|------------------------|---------------|-------------------|----------------|-------------------------------------|---|--|
| | £ | £ | £ | £ | £ | Per cent. | Per cent. |
| 1901 ... | 386,414 | ... | 386,414 | 27,249 | 8,021 | 4.9 | 29.4 |
| 1902 ... | 395,764 | ... | 395,764 | 32,676 | 13,059 | 5.2 | 36.9 |
| 1903 ... | 408,681 | ... | 408,681 | 34,164 | 18,536 | 3.8 | 54.2 |
| 1904 ... | 413,764 | ... | 413,764 | 36,517 | 14,674 | 5.3 | 40.2 |
| 1905 ... | 418,479 | ... | 418,479 | 42,177 | 14,561 | 6.6 | 35.0 |
| 1906 ... | 440,125 | 6,165 | 433,960 | 43,571 | 12,989 | 7.0 | 29.8 |
| 1907 ... | 486,857 | 15,915 | 470,942 | 45,848 | 14,923 | 6.6 | 32.5 |
| 1908 ... | 503,581 | 25,463 | 478,118 | 46,300 | 12,685 | 7.0 | 27.4 |

(v.) *Perth Water Supply.—Consumption of Water, 1901 to 1908.* The following table shews the total annual supply, the average daily supply, and the average daily supply per house and per head of population during each financial year from 1901 to 1908 inclusive:—

PERTH METROPOLITAN WATERWORKS BOARD.—CONSUMPTION OF WATER, 1901 TO 1908.

| Year ended the 30th June. | Total Annual Supply.* | | | Average Daily Supply.* | Number of Houses Supplied. | Estimated Population Supplied. | Average Daily Supply. | |
|---------------------------|-----------------------|-------------|-----------|------------------------|----------------------------|--------------------------------|-----------------------|-------------------------|
| | From Reservoir. | From Bores. | Total. | | | | Per House. | Per Head of Population. |
| | 000 Gals. | 000 Gals. | 000 Gals. | 000 Gals. | No. | No. | Gals. | Gals. |
| 1901 ... | 380,003 | 161,589 | 541,592 | 1,484 | 6,182 | 32,000 | 240 | 45.2 |
| 1902 ... | 334,752 | 168,489 | 503,191 | 1,378 | 7,043 | 35,000 | 195 | 39.3 |
| 1903 ... | 203,517 | 366,504 | 570,021 | 1,561 | 8,108 | 38,350 | 192 | 40.7 |
| 1904 ... | 436,657 | 264,566 | 701,223 | 1,921 | 9,104 | 41,000 | 211 | 46.8 |
| 1905 ... | 481,528 | 274,327 | 755,855 | 2,071 | 10,105 | 45,000 | 204 | 46.1 |
| 1906 ... | 552,373 | 288,812 | 841,185 | 2,305 | 10,882 | 48,000 | 212 | 48.0 |
| 1907 ... | 506,751 | 359,797 | 866,548 | 2,375 | 12,164 | 52,000 | 195 | 45.6 |
| 1908 ... | 562,316 | 219,718 | 782,034 | 2,137 | 13,156 | 52,000 | 162 | 41.9 |

* In thousands of gallons.

Graphs relating to the water supply of Perth will be found on page 999 *ante*.

9. **Perth Metropolitan Drainage and Sewerage.**—In Perth systems for the disposal of sewage and storm water have recently been put in hand by the Public Works Department. The construction of septic tanks and filter beds was commenced in April, 1906, and has now been completed. The construction of the main sewers and drains is proceeding under the direction of the Public Works Department, while the City Council is engaged in the construction of subsidiary storm water drains. The work of reticulation had not been commenced at the end of the year 1908.

It has recently been urged that the construction and control of the drainage and sewerage works should be handed over to a Board, as has been done in Sydney and Melbourne.

10. **Fremantle Harbour Trust.**—Under the provisions of an Act passed in 1902 a Harbour Trust was constituted for the general administration of Fremantle harbour, and since January, 1903, the Trust has had full control of all the affairs of the harbour. The works, which were commenced in 1892, were designed with the object of forming a safe and commodious harbour within the mouth of the Swan River, so as to admit

vessels at all states of the tide, and thus enable cargo to be loaded and discharged at the quays and goods-sheds on the river banks. Two ocean moles have been thrown out from the north and south heads, the former being 3450 feet and the latter 2040 feet long. A channel, 450 feet wide and 30 feet deep at low water, has been blasted and dredged through the rock which formerly crossed the estuary to the river, and wharves and goods-sheds have been constructed along the reclaimed foreshore on the south side of the harbour. At the present time all the European mail boats, which make Fremantle the first and last port of call in Australia, are able to enter and leave the harbour in all weather and at all tides. For the year ended the 30th June, 1908, the total revenue of the Trust was £116,495, and the expenditure £105,047, of which £62,585 was interest on loans, redemptions, etc., paid to the State Government.

11. **Fire Brigades Boards.**—Fire brigades have been established in a number of the more important centres of population in the State. The brigades are under the control of local boards, and are in some cases municipal and in others volunteer. At the end of the year 1907 there were thirty-two such Boards in existence. The figures given below shew particulars of thirty of these Boards for the year 1907, two Boards having remained inactive during the year:—

WESTERN AUSTRALIA.—FIRE BRIGADE BOARDS, 1907.

| | | | |
|--------------------------|---------|-----------------------------------|----------|
| Number of firemen | 498* | Value of land, buildings, & plant | £31,703* |
| Receipts | £13,943 | Expenditure... .. | £13,524 |

* In 1906.

12. **Public Lighting in Perth.**—With the exception of the Subiaco Municipal Electric Lighting Plant the supply of both gas and electricity for public and private lighting in the metropolitan area of Perth is under the control of private companies. At present the streets of Perth are lighted almost entirely by gas, the number of incandescent gas lamps in the city alone being 1148 in November, 1908, and the number of electric lamps being only seven. The City Council in June, 1908, served on the Perth Gas Company notice of intention to exercise the powers conferred under the Perth Gas Company Act 1886, and to purchase the works and plant of the company; with the object of fixing the price to be paid a survey and valuation has recently been made.

(i.) *Gas Lighting.* The Perth Gas Company Limited commenced to supply gas for public and private lighting and for power in 1885. Though the company has the right to supply gas within a radius of five miles from the General Post Office, Perth, the present supply is limited to a radius of two miles, comprising the City of Perth, and parts of Subiaco, Leederville, and Mount Lawley. The works are capable of producing daily 250,000 cubic feet of coal gas and 120,000 cubic feet of oil gas. The length of the gas mains is about forty-five miles, ranging from 2 inches to 10 inches in diameter.

The following table gives particulars regarding the supply of gas for public and private lighting in the metropolitan area of Perth during the year 1907:—

PERTH.—PUBLIC LIGHTING, GASWORKS, 1907.

| | | | |
|----------------------------|---------------------|-------------------------------|--------|
| Gas manufactured | Cub. ft. 51,837,000 | <i>Capital Cost</i> — | |
| Gas sold | Cub. ft. 47,498,000 | Buildings* | £4,310 |
| Coal used | Tons 4,780 | Machinery, plant, etc. | 38,465 |
| Number of customers | 1,081 | Total... .. | 42,775 |
| Number of employes... .. | 57 | | |
| | | <i>Revenue</i> | 23,828 |
| | | <i>Expenditure</i> | 13,952 |

* Land is used conjointly in connection with both the gas and electricity supply undertakings of the company. The value of freehold property in 1908 was 222,568.

(ii.) *Electric Lighting.* (a) *The Perth Gas Company Ltd.* is empowered to supply electric light within a radius of five miles from the General Post Office, Perth. Particulars of the operations of the company in regard to electric lighting are not available. (b) *The South Perth Electric Supply and Power Company Ltd.* supplies current in the municipality of South Perth. Continuous current is generated and distributed on the 3-wire system, the length of cables (overhead) being about twenty-four miles. Current was first supplied in 1905. (c) *The Subiaco Municipal Electric Lighting Plant* supplies current over an area of about one and three-quarters miles in the Subiaco municipality, the length of streets wired (overhead) being thirteen and a-half miles. Continuous current is generated, the capacity of the generators being 200 kilowatts, and is distributed on the 3-wire system (440-220 volts). Current was first supplied in June, 1903. The capital cost at the end of the year 1907 was £15,451, exclusive of land; at the same date there were four motors, eighteen arc lamps, and 5386 glow lamps connected. During the year 1907 there were 133,136 units of current sold, the revenue therefrom being £4094, and the expenditure £2833.

Particulars regarding electric lighting for the metropolitan area are too incomplete for publication.

§ 7. Tasmania.

1. **Development of Local Areas.**—In this State the city of Hobart was incorporated by special Act in the year 1852, but it was not until 1858, when the Rural Municipalities Act was passed, that a general scheme for the establishment of municipalities was extended throughout the State. This Act was amended from time to time without, however, altering its chief characteristics. In 1869 a Roads Act was passed, and after being amended at various times was consolidated in 1884. Under the provisions of these Acts parts of the State were placed under the control of Town Boards and Road Trusts. The general rate under the Municipalities Acts was limited to one shilling and sixpence in the pound of annual value, while special rates could be levied in rural districts, provided that the general and special rates together did not exceed one shilling and sixpence in the pound. Road rates might also be imposed in addition to municipal rates under the Roads Acts, with reference to which further particulars are given in the chapter of this book on "Roads and Bridges."

2. **Acts now in Force.**—In 1906 the whole of the Acts dealing with local authorities were amended and consolidated by the Local Government Act of that year. The whole State, with the exception of the urban municipalities of Hobart and Launceston, is divided into municipal districts, and every Rural Municipality, Town Board, Main Road District, Road District, Local Health District, Fruit District, Rabbit District, School District, and Public Recreation Ground District included in any municipality established by the Act is abolished. Each district is incorporated and is under the control of a warden and councillors, who, in addition to the specific duties and powers imposed and conferred by the Act of 1906, are vested with powers and authorities under the following Acts:—The Codlin Moth Act 1888, the Rabbits Destruction Act 1889, the Public Health Act 1903, the Education Act 1885, the Roads Act 1884, the Rural Municipalities Act 1865, the Police Act 1905, the Town Boards Act 1896, the Public Recreation Grounds Act 1888, the Cemeteries Act 1865, and the Californian Thistle Act 1883. The Governor is authorised to unite, subdivide, or abolish municipalities or wards on petition, and may do so without petition if in any municipality there is at any time no council or an insufficient number of councillors to form a quorum. The Act of 1906 was amended in 1908.

(i.) *Formation of Councils.* In the case of municipalities not divided into wards the council is to consist of the number of members, being a multiple of three, assigned to it by the Governor, while the councils of municipalities which are subdivided consist of three councillors for each ward. Any resident elector is eligible to act as a councillor

unless he is disqualified as being an interested person, a bankrupt or convict, or as undergoing a sentence of imprisonment, or as insane. The warden is elected by the councillors from their own body.

(ii.) *Qualification of Electors.* Both owners and occupiers of property within a municipality are allowed plurality of votes according to the following scale:—

| | | | | | | |
|-----------------------------|------------|-------------|--------------|---------------|---------------|----------------------|
| Annual Value of Property | Under £30. | £30 to £80. | £80 to £160. | £160 to £240. | £240 to £360. | £360 and upwards. |
| Number of Votes | 1 | 2 | 3 | 4 | 5 | 6 |

In the case of joint owners or occupiers the number of votes according to the above scale is equally divided as far as possible, and the vote or votes which cannot be so divided may be given by such one of the joint owners or occupier as may be appointed by the others. The provisions of the Acts relating to voting by post at parliamentary elections may be made applicable to any municipal election on the petition of the council to the Governor.

(iii.) *Local Districts and Committees.* Any municipal council may by special resolution define a local district to be assigned to a local committee, and any district proclaimed under the Public Recreation Grounds Act 1888 may also be defined as a local district. A local committee may exercise any of the powers and functions conferred upon councils as may be declared to be within its province by special resolution.

(iv.) *Revenue and Rates.* The ordinary revenue of a council, which consists principally of (a) rates (other than special rates), tolls, ferry dues, market dues, fees, and other charges authorised by the Act, and (b) grants from the central Government, is carried to a general account called the municipal fund. Rates are of two kinds, namely, (a) general, and (b) special. (a) *General Road-Rates*, of not less than sixpence in the pound of the annual value of the whole of the ratable property in a municipality, must be levied at least once a year, but the total amount of all such rates levied in any one year must not exceed one shilling and threepence in the £. The proceeds of general road rates are carried to a separate account and are to be applied for the purposes of constructing and maintaining roads, streets, bridges, jetties, wharves, and tramways; at least three-fifths of all sums received in respect of property situate in a particular ward from the making of such a rate must be expended within such ward for the purposes mentioned. *General Health Rates* may be levied either prospectively or retrospectively in order to defray the expenses incurred in the execution of the Public Health Act 1903. (b) *Special Rates* may be made for the purpose of defraying the cost of constructing and maintaining works for sewerage or drainage, for the manufacture of gas, electricity, hydraulic or other power; watering or lighting roads; maintaining public recreation grounds; the destruction of rabbits; any of the purposes of the Public Health Acts; and of constructing and maintaining slaughter houses, abattoirs, or other works. A *Codlin Moth Tax* may be levied as prescribed by the Codlin Moth Act 1888, and when a council undertakes the removal of house refuse from premises the expense of such work is to be paid for by a *Special Cleansing Rate*. For defraying the expenses incurred in the execution of any work for the special benefit of a particular part of a municipality, the council may also levy a special rate called a *Separate Local Rate* upon all ratable property within such part, but the question as to whether any work is or is not for the special benefit of any particular part of the municipality must be referred to the Minister, who may direct, when such rate would exceed sixpence in the pound, that the question of levying the same be left to the decision of the electors of the defined part; whenever the expense to be incurred involves more than one yearly rate, the question must be referred to the electors.

(v.) *Ratable Property.* The council is not empowered to levy any rate or charge (except for water, prevention of fire, cleansing, drainage, or sewerage, or for light or power actually supplied, or for any service actually rendered) upon—Crown property; any property used solely for religious purposes; any portion of any premises used exclusively as a public library, museum, school of arts or mines, literary or scientific institution, or any cemetery; benevolent asylums or charitable institutions; or upon any building or place vested in trustees for an agricultural or pastoral society for the purposes of a show ground. The Crown has in any such case the right to commute its liability by payment of a sum agreed upon between the council and the Treasurer.

(vi.) *Borrowing Powers.* Power is given to the council to borrow money either—

- (a) By the sale of debentures under provisions of the Local Bodies Loans Act for the purpose of permanent works and undertakings, or for the purpose of liquidating the principal sum owing on account of a previous loan; or
- (b) By way of temporary advances against rates to an amount not exceeding one-half the expected total proceeds of such rate. Temporary advances must be paid off within twelve months of the date of borrowing.
- (c) Under the amending Act of 1908, councils may raise temporary loans by way of bank overdraft on the credit of the municipality to an amount not exceeding one half of the prior year's revenue, and in addition may overdraw to the extent of deposit receipts for money due by the bank.

(vii.) *General By-laws.* The councils have wide powers to make by-laws for the general purposes of the Act, and particularly in connection with the following matters:—The trespass and agistment of animals; the erection or demolition of buildings, awnings, and temporary structures; the prevention and extinction of fires; the granting of licenses; the regulation of markets and weighbridges and the establishment of rents and fees for the use thereof; the regulation or the prohibition of the introduction of any pest or anything affected by a pest; the control of public safety and the preservation of public decency; the control and management of roads and footways; the imposition and collection of tolls upon roads and bridges, and of rates and dues upon ferries, wharves, tramways, jetties, piers, and markets under the control of the council; the regulation of various trades and callings; the control of the general traffic in public places, boats and boatmen, vehicles, steam rollers and bicycles.

The councils are also vested with all powers which were conferred upon any of the local bodies mentioned above (see page 1042 *ante*, para. 2), and which were abolished by the Local Government Act 1906.

(viii.) *Water Districts.* Any number of municipalities, situated so as to be capable of taking advantage collectively of some common water system or catchment area, may by petition to the Governor be constituted a water district under the Act. In every case where a water district is proclaimed upon the joint petition of two or more municipal councils the management of such district is in the hands of a joint council consisting of such a number of members of each of the councils as the Governor may determine. This council is invested with borrowing and rating powers and may supply water within the district on such terms as it may fix, provided that no water may be supplied for irrigation until domestic and stock supply purposes have first been satisfied. Provision is also made in the Act for uniting municipalities for the purpose of carrying out sewerage, irrigation, or water conservation schemes for the common benefit of the municipalities, or for any other purpose authorised by the Act, such as, in the opinion of the Governor, is likely to be of permanent utility, and is best capable of being carried out by concerted action.

3. **Annual Value, Revenue, and Expenditure of Municipalities.**—The following table shews the annual value, total receipts, and expenditure of municipalities for the years 1901 to 1906, inclusive. Particulars of operations under the Act of 1906 are not yet available:—

TASMANIA.—ANNUAL VALUE, REVENUE, AND EXPENDITURE OF MUNICIPALITIES,
1901 TO 1906.

| Year. | Number of Municipalities. | Annual Value of Ratable Property. | Revenue. | | | | Expenditure. ² |
|----------|---------------------------|-----------------------------------|-------------|------------|----------------------------------|---------|---------------------------|
| | | | From Rates. | From Govt. | From other Sources. ¹ | Total. | |
| | | £ | £ | £ | £ | £ | £ |
| 1901 ... | 21 | 683,039 | 55,953 | 3,798 | 47,880 | 107,631 | 109,811 |
| 1902 ... | | 688,745 | 57,526 | 4,498 | 51,870 | 113,894 | 107,932 |
| 1903 ... | | 702,067 | 56,367 | 500 | 50,890 | 107,757 | 110,162 |
| 1904 ... | | 718,635 | 61,107 | ... | 85,045 | 146,152 | 141,202 |
| 1905 ... | | 739,005 | 60,097 | ... | 89,555 | 149,652 | 153,937 |
| 1906 ... | | 749,537 | 64,059 | 150 | 72,610 | 136,819 | 140,745 |

1. Including sums derived from loans. 2. Including repayments of loans.

4. **Annual Value, Revenue, and Expenditure of Town Boards, 1901 to 1906.**—The following table gives similar particulars to the above for town boards. These boards were abolished by the Act of 1906, but particulars of the new municipal districts are not yet available:—

TASMANIA.—ANNUAL VALUE, REVENUE, AND EXPENDITURE OF TOWN BOARDS,
1901 TO 1906.

| Year. | Number of Town Boards | Annual Value of Ratable Property. | Receipts. | | | | Expenditure. |
|----------|-----------------------|-----------------------------------|-------------|-------------------------|---------------------|--------|--------------|
| | | | From Rates. | From Govt. ¹ | From other Sources. | Total. | |
| | | £ | £ | £ | £ | £ | £ |
| 1901 ... | 20 | 154,101 | 16,014 | 9,073 | 3,847 | 28,934 | 28,851 |
| 1902 ... | 20 | 165,937 | 10,171 | 6,645 | 8,691 | 25,507 | 25,015 |
| 1903 ... | 22 | 172,905 | 10,321 | 4,758 | 10,077 | 25,156 | 24,302 |
| 1904 ... | 23 | 192,572 | 13,320 | 6,599 | 10,468 | 30,387 | 29,735 |
| 1905 ... | 23 | 194,878 | 13,328 | 5,278 | 14,962 | 33,568 | 32,193 |
| 1906 ... | 23 | 243,424 | 14,284 | 572 | 15,173 | 30,029 | 34,080 |

1. Including loans.

5. **Total Revenue and Expenditure of Local Bodies, 1901 to 1906.**—Particulars as to Road Boards and Road Trusts are given in the chapter of this book on "Roads and Bridges." In addition to the local authorities already mentioned, Marine Boards have been established at seven ports in Tasmania for the purposes of constructing and maintaining wharves and jetties and of controlling all matters relating to the shipping in the respective ports. Twenty water trusts and forty cemetery trusts have also been established in connection with municipal bodies. The subjoined statement shews the total revenue and expenditure for all local bodies, exclusive of all amounts contributed by the general Government, during each year from 1901 to 1906, inclusive. Particulars under the Act of 1906 are not yet available:—

TASMANIA.—REVENUE AND EXPENDITURE OF ALL LOCAL BODIES, EXCLUSIVE OF AMOUNTS CONTRIBUTED BY THE GENERAL GOVERNMENT, 1901 to 1906.

| Particulars. | 1901. | 1902. | 1903 | 1904. | 1905. | 1906. |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| *REVENUE. | | | | | | |
| | £ | £ | £ | £ | £ | £ |
| Marine Boards and Lighthouses | 44,114 | 44,095 | 36,827 | 50,016 | 60,672 | 77,224 |
| Municipalities | 103,833 | 109,397 | 107,349 | 146,152 | 150,291 | 186,669 |
| Road and Bridge Trusts | 21,564 | 22,794 | 25,124 | 28,879 | 28,663 | 30,271 |
| Cemetery Trusts | 1,093 | 1,062 | 1,087 | 1,227 | 2,078 | 1,121 |
| Town Boards | 19,861 | 18,862 | 19,506 | 24,304 | 28,290 | 29,457 |
| Water Trusts | 6,794 | 8,378 | 8,427 | 9,318 | 12,623 | 12,363 |
| Total | 197,259 | 204,588 | 198,320 | 259,896 | 282,617 | 287,105 |
| †EXPENDITURE. | | | | | | |
| | £ | £ | £ | £ | £ | £ |
| Marine Boards and Lighthouses | 43,157 | 42,525 | 36,006 | 57,804 | 54,867 | 68,114 |
| Municipalities | 106,013 | 103,434 | 109,662 | 141,202 | 153,937 | 140,595 |
| Road and Bridge Trusts | 18,941 | 20,429 | 30,133 | 28,703 | 27,166 | 30,060 |
| Cemetery Trusts | 1,086 | 1,134 | 1,062 | 1,204 | 1,152 | 1,208 |
| Town Boards | 19,778 | 18,370 | 19,752 | 23,351 | 26,815 | 33,508 |
| Water Trusts | 6,891 | 8,451 | 8,967 | 6,697 | 12,593 | 12,446 |
| Total | 195,316 | 194,343 | 205,582 | 258,961 | 276,530 | 285,931 |

* Exclusive of amounts contributed by the general Government. † Exclusive of expenditure from Government contributions.

The total amount advanced by the general Government to local bodies for public works up to the 30th June, 1906, was £391,838, of which £78,350 had been advanced for the purpose of water supply, £10,700 for light, £6937 for buildings, £154,476 for harbour improvements, £15,100 for roads and streets, £3600 for the redemption of debentures, £83,334 for drainage, £2841 for cemeteries, £1500 for recreation grounds, and the remaining £35,000 for the lighting and water supply of Launceston.

6. **Hobart Water Supply.**—The original water supply of Hobart was obtained from a stream known as the Hobart Rivulet, flowing from Mount Wellington, the works being carried out in 1831 by the Imperial Government. These works consisted of an aqueduct and a line of cast-iron pipes, the water being distributed to several points known as “wells.” By an Act of the State Parliament passed in 1860 the works were transferred to the municipality. Under this Act certain additional streams flowing from Mount Wellington were acquired as sources of supply, and a storage reservoir containing 45,000,000 gallons was constructed. The catchment area on Mount Wellington at present comprises an area of 4200 acres, the sources of supply having been extended at various times as far as the North West Bay River, fifteen miles from Hobart.

(i.) *Storage Reservoirs.* There are two storage reservoirs about 2½ miles from the city. One contains 68,000,000 gallons and is 502 feet above sea-level, while the other contains 45,000,000 gallons and is 447 feet above sea-level. The whole of the supply is by gravitation. The water is brought from the various streams by means of stone aqueducts and cast-iron pipes to the reservoirs, and thence by three 10-inch cast-iron mains, of which two lead to the distributing reservoirs and one direct to the shipping and southern portion of the city.

(ii.) *Capital Cost, Tenements Connected, Length of Mains, Revenue and Expenditure, 1907.* The total capital cost to the end of 1907 was £186,692, but a considerable amount of reticulation work has been done out of revenue and not charged to capital account. The outstanding loans at the end of 1907 amounted to £160,750. At the same date the number of tenements supplied in the city and suburbs was 7301, the population at the last census in 1901 was 32,418, and the length of reticulation mains at the end of 1906 was seventy-four miles. The revenue and expenditure for the last eight years were as follows:—

HOBART WATERWORKS.—REVENUE AND EXPENDITURE, 1901 to 1908.

| Particulars. | 901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| Revenue | 18,806 | 19,091 | 18,862 | 20,200 | 20,127 | 19,125 | 21,802 | 19,719 |
| Expenditure ... | 20,161 | 16,126 | 16,624 | 15,667 | 16,576 | 15,817 | 17,785 | 22,901 |

(iii.) *Proposed Extensions.* Parliamentary sanction to borrow £63,000 has been obtained for the purpose of improving the water supply of the city and suburbs of Hobart; £49,000 of this amount is to be spent on the construction of a new storage reservoir.

7. **Hobart Sewerage System.**—A scheme for the construction of a sewerage system in Hobart was adopted in 1903. The sewage is collected and treated in septic tanks and is then discharged into the estuary of the River Derwent. Up to the end of the year 1907 about twenty-six miles of sewers had been laid, and 1809 tenements, sewerage a population of 9045, had been connected at a cost of about £100,000. During the year 1907 the average quantity of sewage treated daily was 278,000 gallons, the revenue for the year being £3107. Extensions are in progress with a view to completing the sewerage of over 2000 acres so as to serve an estimated population of about 30,000 people.

8. **Public Lighting in Hobart.**—Gas is supplied for public and private lighting in the metropolitan district of Hobart by the Hobart Gas Company. The plant is capable of an output of 500,000 cubic feet of gas per day, the holder capacity being 660,000 cubic feet. The district served comprises the city of Hobart, New Town, and Queenborough. Gas was first supplied for public lighting in 1857. In September, 1908, there were about 51 miles of mains, ranging in diameter up to 18 inches.

The following statement gives particulars of public and private lighting in Hobart for the year 1907:—

HOBART.—PUBLIC LIGHTING, GASWORKS, 1907.

| | | | | | |
|------------------------|----------|------------|--------------------------|---------|--|
| Gas manufactured | Cub. ft. | 90,157,000 | <i>Revenue—</i> | | |
| Gas sold ... | Cub. ft. | 82,381,000 | | | |
| Coal used ... | Tons | 7,721 | From sale of gas ... | £25,124 | |
| Number of customers | ... | 3,610 | From sale of by-products | 4,299 | |
| Number of employes | ... | 80 | From other sources | 111 | |
| Capital cost— | | | Total ... | £29,534 | |
| Land and buildings | ... | £12,304 | <i>Expenditure</i> ... | £19,924 | |
| Machinery, plant, etc. | ... | 77,077 | | | |
| Total | ... | £89,381 | | | |

(ii) *Electric Lighting.* The Hobart Electric Tramway Company Limited supplies a small amount of current for lighting purposes; this supply is, however, only on a very small scale and is incidental to the business of the company or the maintenance of its tramways. (See p. 750 *ante*.)

SECTION XXVII.

INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

§ 1. Development of Trade Unions in Australia.

1. **General.**—In Australia, industrial unionism paved the way for industrial legislation. Conditions of employment were on the whole favourable to the investigation of industrial problems; and experimental legislation was possible because of the simplicity and directness of the aim of those engaged in industrial occupations. Moreover the non-existence of the complexity of the problems and of the organisation of older countries did not interpose difficulties which might otherwise have operated. Hence also rapid changes in laws regulating industry occur and are likely to occur. To a great extent the trades unions were responsible for these laws. They steadily and continuously urged an amelioration of the condition of the working man, and by organisation and discipline they presented a united front to opposing forces, and attained many advantages by a recognition of the principle that unity is strength. Their efforts have resulted in improved conditions, particularly short hours and a healthier mode of life. One great aim of present-day industrial legislation has been said to be, to extend “the reasonable comforts of a civilised community” to those engaged in every branch of industry. Large organisations have been able to attain their ends by force of numbers, and, in the case of the great bulk of the artisan and similar classes, through the solidarity of their unions. The smaller and less perfectly organised industries, unable to maintain an effectual struggle with hope of success, are now receiving, by legislative enactment, the benefits already accrued to the trades unions.

While the demands of the early unionists have almost in their entirety been conceded by the employer, unionism nevertheless continues. Industrial legislation has not yet reached the stage when the conflicts between employer and employes cease. A numerically strong union will sometimes attain its end by the threat—and sometimes by the fulfilment of the threat—of a strike.

Each State of the Commonwealth, it may be said, has enacted, with more or less elaboration, legislation respecting trade unions and respecting the regulation of the conditions of industrial life, particularly those of factory employment; and each State, except Tasmania, has regulated the hours of business for the great majority of shops. Some of the States have also established machinery for the regulation of wages, as well as of other matters connected with employment.

At the present time there is an obvious tendency to adjust such matters throughout Australia on uniform lines. The industrial condition of any State of the Commonwealth

naturally reacts quickly on any other State. This is one of the consequences of a unified tariff, and of the fact that the general economic conditions of any one part of the Commonwealth must necessarily affect very intimately any other part. An expression of the intimacy of these economic and industrial relations of different parts is seen, for example, in the refusal of an Arbitration Court in New South Wales to fix wages in the boot trade in that State at a higher rate than that fixed by the Wages Board in Victoria, because of the additional burden which such a rate would place on local manufacturers.

2. History of Unionism in Australasia.—(i.) *Commencement of Unionism: the Eight Hours' System.* The first trade union in Australia was the "Operative Masons' Society," established in Melbourne in 1850. In 1851 a branch of the "English Amalgamated Society of Engineers" was founded in Sydney. For many years the only unions existing were practically those formed by the several branches of the building trades. They were all subject to the English law prohibiting conspiracies and combinations in restraint of trade, though it does not appear that such law was ever put in force in Australia. The main object of the early unions in Australia was the limitation of the working week to forty-eight hours. The minor and friendly society benefits that were usual amongst the unions of older countries were also desired; but the chief aim was the establishment of the eight hours' principle, and that aim for many years was the chief link between the unions. It is difficult to obtain detailed information concerning the unions prior to trade union legislation, but their early history generally resolves itself into an account of the early efforts put forth by metropolitan operatives to secure the limitation of the working day to eight hours.

(ii.) *New Zealand.* The system was first put into practice in Australasia in 1848 by the "Otago Association," which purchased an area of land upon Port Chalmers, N.Z., and proceeded to build the town of Dunedin, under a system which recognised the eight hours' day, thus instituting, in the New World of the south, that period of toil as the limit of the working day. Thus the system began voluntarily in New Zealand long before the unions that demanded and acquired it in Australia had come into existence. But many years elapsed in the Dominion before trades unionism became an established fact. The first Congress of New Zealand Trades was held in 1885. In that year, too, the general celebration of the eight hours' principle by the combined trades was inaugurated.

(iii.) *New South Wales.* In New South Wales, the operative masons obtained the eight hours' concession in 1855, after a strike; but little development of the movement was noticeable until 1871, in which year four eight-hour trades—the brickmakers, stone-masons, labourers, and carpenters—inaugurated the annual celebration.

(iv.) *Victoria.* The first Melbourne Eight Hours' procession was held in 1856, the trades taking part being the masons, bricklayers, carpenters and joiners, plasterers, painters, and slaters. In the following year nine trades and about 700 men took part in the function; but the principle of the Eight Hours' Day had been recognised, and new unions were quickly established under the influence and guidance of the pioneers of the movement.

(v.) *Queensland.* After the fever of the gold rush to the Fitzroy River had subsided, settled conditions prevailed in the building industry, and the trades, being well established and organised in Queensland, celebrated their inaugural festival of the eight hours in 1866. In this Capital, as in Melbourne, the pioneer trade was the stonemasons.

(vi.) *South Australia.* In South Australia, the establishment of the eight hours' system by the unions was accomplished in 1873, the building trades, represented by the stone-cutters, painters, and carpenters, again being the leaders.

(vii.) *Western Australia.* The discovery of gold in Western Australia caused rapid development in the infant cities and towns of that State, and mechanics found abundant employment in the building trades. Unions were soon formed, and the eight hours became an established system in 1896.

(viii.) *Tasmania.* Trade unions were established in Tasmania in 1874, the shipwrights of Hobart being the pioneer society. Here, as on the mainland, the eight hours' day was the chief aim of the operatives, and here, as in Sydney, it was conceded only after a strike. Within a few years, the general system of trades unions was instituted. The inaugural celebration of the system was celebrated in 1890.

(ix.) *The System Universal throughout Australasia.* No provision for eight hours was made in the original documents which set out the conditions of labour under which the members of the Otago Association were to work in 1848. It was intended to insert a clause embodying the principle, but it was found that such a clause would be inoperative, as contracts to bind free settlers to serve under any conditions of labour beyond the seas were not provided for by any Imperial Statute. The system, however, was tacitly agreed to by both parties, and quietly and voluntarily the eight hours' day was established. Not so amicable were the methods by which it was acquired in the other colonies. There had to be unions of men and unions of trades, before the requisite forces were available to overbear opposition to the system, and, at any rate in two cases, the tradesmen resorted to strikes before the concession was granted. Generally it may be said that trades unions in the Commonwealth sprang out of the desire for an eight hours' day; and with the Western Australia celebration of 1896, trades unionism, with its eight hours' charter, completed its circuit of the Commonwealth. From 1880 to 1890 there was in the States where industry was systematised great activity in the organisation of labour, more particularly at the end of that period. In sympathy with the widespread industrial unrest in England the occurrence of similar unrest in Australia drew the wage-earners into the unions in large numbers: the return of industrial peace, however, was marked by a decrease in numbers.

(x.) *Organisation of Unions.* The first regular association of unions in Australia was the Trades Committee in Melbourne, formed in 1859, which afterwards became the present Trades and Labour Council. Similar councils now exist in all the States. Composed of delegates from the unions they exercise a general care over the interests of their members.

(xi.) *Union Acts.* The Trade Union Acts of England and the collateral Conspiracy and Protection of Property Act have been copied by the States, the Acts also providing for unions of employers. The latter provision has been but slightly utilised, however, as apparently it offers no well-defined inducement. South Australia adopted the Acts in 1876, New South Wales in 1881, Victoria in 1884, Queensland in 1886, Tasmania in 1889, and Western Australia in 1902.

The Acts referred to provide for the legal recognition of combinations which come under the definition of trade unions; the registration of unions of seven or more persons, the registration of councils or other bodies to which registered trade unions are affiliated; the vesting of union property in registered trustees, with penal provisions in respect of

defaulting officers. The registered unions are required to furnish annual returns of members and funds to a special department.

3. Operations and Organisation of Unions subsequent to the Acts.—(i.) *Unions.* Except as hereinafter mentioned, the unions do not avail themselves of the Trade Union Acts to any large extent. Information concerning them in some States is not at present available, since they do not publish information regarding their members and funds. The figures given for registered trade unions must not therefore be regarded as affording any criterion by which the present position of unionism may be judged. The discrepancy between the numbers of registered and unregistered unions in some States may be gauged by the fact that there are seventy-four unions affiliated with the Melbourne Trades Hall, thirteen with the Bendigo, and sixteen with the Ballarat Trades Hall, making a total of 103. In Victoria only seven, however, are registered, and some of the latter are not affiliated. In South Australia there are sixty-seven unions affiliated to the local Trades Council, but only twenty-four are registered. In Western Australia the number of unionists registered under the Industrial Arbitration Act is about 33 per cent. more than the number registered under the Trade Union Acts. In New South Wales the numbers are almost identical.

The failure to register under the Trade Union Acts does not deprive the unions of the privileges conferred by the Conspiracy Acts.

The largest individual union in Australia is the Australian Workers' Union, whose members are pastoral workers (shearers, etc.), and number more than 20,000. It has branches in Queensland, New South Wales, and Victoria, and the east centre of South Australia, covering the whole of the principal wool-growing districts of Australia. It maintains newspapers in Sydney and Brisbane, each of which is known as *The Worker*.

(ii.) *Workmen and Employers in Unions.* Available statistics at present do not shew what proportion of Australian workmen are members of trade unions, though a census of occupations would at least for some States enable an estimate to be made.

The Acts are but little availed of by employers.

(iii.) *Concerted Action.* The consummation of the eight hours' system, at which the early unions had aimed, was followed by demands for further concessions and privileges. An intercolonial congress of delegates of trades unions was first held in Sydney in 1879. At the second congress in Melbourne, in 1884, sixty-nine delegates from New South Wales, Victoria, and South Australia were present, representing forty-one unions, branches, or societies. Following the methods of European associations the Australian unions sought to achieve an improved condition for their members by the establishment of rules concerning minimum wage, limited hours of toil, the restriction of the number of apprentices and improvers, and the prohibition of the employment of non-union labour. Some of the unions refuse to admit to membership any but skilled journeymen, on the ground that their object is to encourage the attainment of proper skill.

(iv.) *Representation in Parliament.* It was during the decade 1880-1890 that the trade unions of Australia espoused direct legislative representation and advocated State interference between employer and employé. This policy has been called "new unionism." A resolution affirming the desirability of Parliamentary representation of labour being carried at the congress of 1884, a number of members representing the special interests of the wage-earners were elected to the Legislatures of some of the States, but the unions took no steps to obtain representation by men chosen from among their own ranks until after the great labour troubles of 1890-1892. In that period serious strikes occurred in the maritime, shearing, and mining industries, and it was then that the Labour party

proper was formed, though a certain amount of ameliorative legislation had already found its way into the statute books of the States. Since 1890 the party has considerably influenced Australian politics. In the year 1904 a Labour Government occupied the Commonwealth Treasury benches, and again in December, 1908, a second Labour Government took office. The second Deakin Ministry had the support of the Labour party. In South Australia the Premier is a direct Labour representative. In Queensland a third of the House of Representatives are Labour members. In New South Wales the election of 1907 strengthened the party, and it is now an important element in Parliament. Victoria and Western Australia have also elected a considerable number of direct Labour representatives.

Triennial federal conferences laid down a policy for the party, but at present there is no authoritative Commonwealth organisation, and the policy is not binding upon a State league. The Political Labour Council controls political and the Trades Hall Council trade union matters. The former consists of delegates from both unions and "branches." The branches are coterminous with State electoral districts, and nominate candidates for those districts. Candidates for the Commonwealth Senate are balloted for by all league members in the State, and for the Commonwealth House of Representatives by the branches in the constituency.

4. Registered Trade Unions and Industrial Associations.—(i.) *Unions of Employes.* The statistics of registered trade unions of employes not only do not represent the position of unionism, but, in addition, the statistics themselves for past years are so defective as to be practically valueless. The number, etc., of these unions is therefore no guide to the position of unionism in Australia. The figures for 1907 are as hereunder:—

REGISTERED TRADE UNIONS OF EMPLOYES, 1907.

| State. | No. of Unions. | No. of Members. | Receipts. | Expenditure. | Funds. |
|--------------------------|----------------|-----------------|-----------|--------------|---------|
| | | | £ | £ | £ |
| New South Wales | 136 | 92,230 | 96,038 | 91,929 | 90,605 |
| Victoria | 7 | 9,516 | 6,702 | 5,642 | 6,478 |
| Queensland | 25 | 11,236 | 11,458 | 9,674 | 6,992 |
| South Australia | 24 | 5,649 | 6,669 | 5,524 | 12,758 |
| Western Australia | 84 | 11,637 | 28,871 | 28,162 | 17,223 |
| Tasmania | 1 | 52 | 178 | 34 | 44 |
| Commonwealth | 277 | 130,320 | 149,916 | 140,965 | 134,100 |

(ii.) *Unions of Employers.* There are in New South Wales two unions of employers, with 1451 members; in Queensland three, with 133 members; and in Western Australia fifty-eight, with 552 members.

5. Registration under Industrial Arbitration Acts.—Western Australia, and New South Wales up to 30th June, 1908, were the only States with Industrial Arbitration Acts under which industrial associations could be, and actually were, registered. The development of such registered associations during the period 1901 to 1907, and a comparison with the development of trade unions for the period 1903 to 1907, are given in the tables hereunder. The Western Australian figures include councils and associations:—

**INDUSTRIAL ASSOCIATIONS REGISTERED UNDER INDUSTRIAL ARBITRATION ACTS
(INCLUDING COUNCILS AND ASSOCIATIONS.)**

NEW SOUTH WALES.

| Year. | 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------------------|-------|--------|--------|--------|--------|--------|--------|
| EMPLOYERS— | | | | | | | |
| Unions | ... | 109 | 119 | 122 | 120 | 107 | 109 |
| Members | ... | 2,302 | 2,916 | 3,204 | 3,343 | 3,172 | 3,165 |
| EMPLOYEES— | | | | | | | |
| Unions | ... | 87 | 124 | 127 | 122 | 121 | 119 |
| Members | ... | 58,203 | 63,510 | 71,031 | 78,665 | 85,199 | 88,075 |

WESTERN AUSTRALIA.

| | | | | | | | |
|-------------------|-------|--------|--------|--------|--------|--------|--------|
| EMPLOYERS— | | | | | | | |
| Unions | 7 | 15 | 17 | 45 | 59 | 57 | 58 |
| Members | 54 | 199 | 221 | 441 | 520 | 534 | 552 |
| EMPLOYEES— | | | | | | | |
| Unions | 56 | 80 | 132 | 140 | 140 | 130 | 122 |
| Members | 8,920 | 11,442 | 15,294 | 15,743 | 15,461 | 16,015 | 14,544 |

UNDER COMMONWEALTH ACTS.

| | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|--------|--------|
| EMPLOYERS— | | | | | | | |
| Unions | ... | ... | ... | ... | ... | 1 | 1 |
| Members | ... | ... | ... | ... | ... | 6 | 6 |
| EMPLOYEES— | | | | | | | |
| Unions | ... | ... | ... | ... | ... | 20 | 24 |
| Members | ... | ... | ... | ... | ... | 41,413 | 57,306 |

1. New South Wales, up to 30th June, 1908, and Western Australia, were the only States of the Commonwealth with Industrial Arbitration Acts.

In the two States where industrial unions were registered under the Industrial Arbitration Acts, the figures for these, as compared with registered trade unions, are shewn in the table hereunder. In Western Australia many of the trade unions are registered also as industrial unions :—

TRADE AND INDUSTRIAL UNIONS, 1903 to 1907.

| Year. | New South Wales. | | | | | | Western Australia. | | | | | |
|-------|------------------|---------------|--------|--------------------------------|---------------|--------|--------------------|---------------|--------|--------------------------------|---------------|--------|
| | Trade Unions. | | | Industrial Unions of Employés. | | | Trade Unions. | | | Industrial Unions of Employés. | | |
| | No. | Mem- bers. | Funds. | No. | Mem- bers. | Funds. | No. | Mem- bers. | Funds. | No. | Mem- bers. | Funds. |
| | | | £ | | | † | | | £ | | | £ |
| 1903 | *135 | 72,312 | 63,540 | 124 | 63,510 | † | 65 | 9,999 | † | 132 | 15,294 | 19,250 |
| 1904 | *134 | 79,815 | 69,409 | 127 | 71,031 | † | 83 | 11,025 | † | 140 | 15,743 | 22,421 |
| 1905 | *135 | 84,893 | 73,324 | 122 | 78,665 | † | 80 | 11,235 | † | 140 | 15,461 | 25,225 |
| 1906 | *129 | 87,435 | 81,122 | 121 | 85,199 | † | 82 | 12,031 | 21,506 | 130 | 16,015 | 26,000 |
| 1907 | 136 | 92,230 | 90,605 | 119 | 88,075 | † | 84 | 11,637 | 17,223 | 122 | 14,544 | 26,391 |

* Number filing returns. † No information.

§ 2. Laws Relating to Conditions of Labour.

1. **Tabular Statement of Statutes affecting Labour.**—The Statutes enacted in the several States of the Commonwealth, which, more or less directly, affect the general conditions of labour, are shewn in the table below. Where merely an incidental reference to labour conditions is made in a statute, as is the case with, *e.g.*, the Hawkers and Pedlars Act 1892 of Western Australia, or the Firms Registration Act 1899 of South Australia, the Act is not included in the table:—

TABLE OF STATUTES.

| New South Wales. | Victoria. | Queensland. | South Aust. | Western Aust. | Tasmania. |
|---|--|---|--|--|---|
| Factories & Shops 1896 Early Closing 1899 " 1900 " 1906 | Factories and Shops 1905 (2) Factories and Shops 1907 Factories and Shops 1909 | Factories and Shops 1900 Factories and Shops 1908 Wages Boards 1908 | Factories 1894 " 1900 " 1904 " 1906 " 1908 Early Closing 1900 " 1901 " 1902 " 1903 | Factories 1904 (2) Early Closing 1902 Early Closing 1904 (2) Seats for Shop Assistants 1899 | Women and Children Employment 1884 " 1903 " 1906 Chimney Sweepers 1882 |
| Industrial Arbitration Act 1901 Industrial Arbitration Act 1905 Industrial Disputes 1908 | — | — | Conciliation 1894 | Industrial Conciliation and Arbitration 1902 | — |
| Mines Inspection 1901 Coal Mine Regulation 1902 Coal Mine Regulation 1905 Miners' Accident Relief 1900 Miners' Accident Relief 1901 | Mines 1897 | Mining 1898 " 1901 " 1902 | Mining 1893 | Mines Regulation 1906 Goldfields Act 1895 Coal Mines Regulation 1902 | Mining 1900 |
| Contractors' Debts 1897 | Employers and Employés 1890 Employers and Employés 1901 | Contractors' & Workmen's Lien 1906 Wages 1870 " 1884 | Workmen's Liens 1893 Workmen's Liens 1896 | Workmen's Wages 1898 | — |
| Attachment of Wages Limitation 1900 | — | Wages (as above) | Wages Attachment 1898 | Workmen's Wages 1898 | Wages Attachment 1900 |
| Public Health 1896 | Health 1890 | Health 1886 " 1890 " 1900 | Health 1898 | Health 1898 " 1906 | Public Health 1903 |
| Truck 1900 Truck 1901 | See Factories | See Factories | See Factories | Truck 1899 " 1900 " 1904 | — |
| Shearers' Accommodation 1901 | — | Shearers' and Sugarworkers' Accommodation 1905 Do. 1906 | Shearers' Accommodation 1905 | — | — |
| — | Closer Settlement (Workers' Homes) 1904 | — | — | — | — |
| — | Boilers' Inspection 1906 | Inspection of Machinery & Scaffolding 1908 | — | Steam Boilers 1897 Inspection of Machinery 1904 | Inspection of Machinery 1902 |

TABLE OF STATUTES.—Continued.

| New South Wales. | Victoria. | Queensland. | South Aust. | Western Aust. | Tasmania. |
|---|--|--|--|--|---|
| — | Servants' Registry Offices 1897 | — | — | Employment Brokers 1897 Imported Labour Registry 1897 | — |
| — | Trade Unions 1890 | Trade Unions 1886 | Trade Unions 1876 | Trade Unions 1902 | — |
| Masters & Servants 1902 Apprentices 1901 | Employers and Employés Masters and Apprentices 1890 | Apprentices 1828 " 1844 Master and Servants 1861 | Masters & Servants 1878 | Masters and Apprentices 1873 Masters & Servants 1892 | Masters & Servants 1856 " " 1882 " " 1884 " " 1887 |
| Employers' Liability 897 | Employers and Employés (Employers' Liability) | Employers' Liability 1886 Employers' Liability 1888 Workers' Compensation 1905 | Employers' Liability 1884 Employers' Liability 1889 Workmen's Compensation 1900 Workmen's Compensation 1904 | Employers' Liability 1894 Workers' Compensation 1902 | Employers' Liability 1895 Employers' Liability 1898 Employers' Liability 1903 |
| Bankruptcy 1898 (preference to wages) | Insolvency | Insolvency 1874 Insolvency 1876 | Insolvency | Bankruptcy 1892 Associations Incorporation 1895 | Bankruptcy 1870 Bankruptcy 1899 |
| — | — | — | — | Breach of Contract about Fisheries 1847 Pearl-Shell Fishery Regulation 1875 Fisheries 1899 | — |

2. Benefits sought to be Conferred by the Acts.—(i.) *General Provisions.* The legislation enacted has generally had for its object the shortening of hours, fixing of rates of payment, provision of sanitary accommodation, ventilation and cleansing of premises, and general amelioration of the conditions of labour, particularly that of females and children, in factories. The principal provisions of these statutes are set out in the tables hereinafter. It may be stated that Tasmania is now the only State where no adequate factories legislation is in force.

(ii.) *Historical.* The first Australian Factories Act was passed in 1873 in Victoria, and became law on 1st January, 1874. It was entitled "The Supervision of Workrooms and Factories Statute," and contained only six sections. The existing Victorian Act, passed in 1905, contained originally 163 sections, and is now extended by two amendments of 35 and 40 sections respectively. There are, moreover, numerous regulations in force under its authority. The three principal provisions in the Act of 1873 were (a) that any place in which not less than ten persons were engaged for hire in manufacturing goods should be constituted a factory b) that such factories as to building, sanitation, etc., should be subject to regulations made by the Central Board of Health; and (c) that no female should be employed for more than eight hours in any one day without the permission of the Chief Secretary. The administration of the Act was entrusted entirely to the local Boards of Health, and the system was found to be less effective than was hoped. The conditions which have given rise to trouble in the old world tended to reproduce themselves in the young and growing industries of the States. The advocacy of legislation to control the conditions of employment became pronounced in Victoria in 1880, and a strike of tailoresses in Melbourne in 1882 led to a recognition of the real state of affairs. As a result of unsatisfactory working under the local governing bodies, and on account of agitation of the operatives, a commission was appointed in 1883, and reported the necessity of legislation for the regulation of factories, and in particular

pointed out the fact that men were compelled to toil for as many as eighteen hours and women sixteen hours a day. It also shewed that the condition of out-workers was very undesirable, and that the apprenticeship system was frequently used to obtain labour without remuneration, apprentices being dismissed upon asking for payment at the end of their time. The Factories and Shops Act 1884, while providing for the suppression of many evils in respect of accommodation and lengthy hours, did not touch the two last mentioned. It provided for Government inspection, and also that six persons should constitute a factory if the premises were situated in a city, town or borough. In 1887 a short amending Act was brought in to remedy some defects that were found to exist. Its principal provision was that any place in which two or more Chinese were engaged should be deemed a factory. In 1893, a further enactment reduced the number of persons constituting a factory to four. Another Royal Commission sat in 1895, resulting in the Act of 1896, which dealt with the matters previously untouched, and the system of regulation was carried on by the Act of 1900 and the complete codification of the law in 1905.

Similar conditions were found to prevail in other States. New South Wales and Queensland adopted regulative measures in 1896 and subsequent years, and South Australia in 1894, 1900, and 1906; Western Australia followed suit in 1902 and 1904. Tasmania adopted the Victorian Act of 1873 in 1884, with a small extension in 1905, and a Royal Commission in 1907 reported the desirability of legislation.

The same remarks apply in a general way to the condition of employés in shops.

3. Limitation of Hours.—(i.) *Factories.* As already remarked, the adoption of the eight hours' system for adult males has generally been the outcome of the representations made by the trade unions. Except in New Zealand, there is no general legislation to enforce the principle, although there is now a general recognition of it. A week of forty-eight hours is the usual working week. The larger unions, however, have lately moved for a *net* day of eight hours, with Saturday half-holiday, no loading of other week days being permitted by way of compensating for the Saturday afternoon. Under this scheme there are, for five days, equal divisions for periods of labour, recreation, and rest, and four hours' work on Saturday, making a working week of forty-four hours. In the majority of occupations, forty-eight hours weekly is the recognised limit of work. On the establishment of Wages Boards and Arbitration Courts, in the States where those institutions exist, the authorities thus created adopted the rule as part of their determinations and awards wherever it seemed reasonably practicable. In some technical and specialist trades, a lower maximum has been fixed, such for example, as the type-setting machine operators in Victoria, for whom the maximum has been fixed by the Wages Board at forty-two hours weekly. Reasonable provision is made by Statute or award for work performed outside the scheduled hours. Organisations of employés, however, oppose overtime in any industry until all the operatives in that industry are working full time.

In the case of women and children there has been very general enactment in the States of the forty-eight hours' limit, and in addition, the maximum periods of continuous labour, and the intervals of cessation therefrom, have been prescribed in all the States. Tasmanian factories' legislation deals exclusively with females and young persons. New Zealand has fixed a weekly maximum of forty-five hours for females and boys under 16. The first enactment of the forty-eight hours' limit in Australia was in 1873, when the Parliament of Victoria fixed that period for women and girls in factories.

(ii.) *Shops.* All the States, excepting Tasmania, have statutes containing provisions respecting the hours during which shops may be kept open for business. These provisions, in effect, not only limit the hours during which shop-hands may be employed, but apply also where the shops are tended by the proprietor alone and by himself and family, with, however, certain exceptions, such as exist in the State of Victoria. In that State shops wherein not more than one assistant, whether paid or not, is employed, are per-

mitted to remain open for two hours a day longer than other shops of the same class. The object of this is to relieve the hardship which exists for such persons, for example, as widows who are wholly dependent for a livelihood upon the casual trade of small shops. In New South Wales, Victoria, Queensland, South Australia, and Western Australia the closing time of shops, except those specially exempted, is 6 p.m. on four days of the week, 10 p.m. on one day (except 9 p.m. in South Australia), and 1 p.m. on one day—thus establishing a weekly half-holiday. In Western Australia the opening hour is fixed at 8 a.m. In addition to fixing the closing hour, the total daily and weekly working hours are delimited in the case of women and children.

(iii.) *Hotels, etc.* Establishments, the opening of which in the evening is presumably necessary for public convenience—such as hotels, restaurants, chemists' shops, etc.—are required to remain open for longer hours or are permitted to do business during hours prohibited in other establishments.

(iv.) *Half-holidays.* The provisions of the early closing laws differ somewhat in each State, but the main objects, namely, the restriction of long hours of labour, are throughout identical. Formerly, in some of the States, there were, and there are still in others, provisions making the early closing of a business, or the selection of a day for a half-holiday, dependent upon the option of the majority of the business people concerned, or upon the local authority. The anomalous results of the system whereby shops on one side of the street bounding two municipalities were open, when those upon the other side were closed, led to the introduction of the compulsory system, whereby the hours of business are absolutely fixed by statute. In Queensland, the day of the weekly half-holiday is fixed for Saturday. In Victoria the Saturday half-holiday will become compulsory on 1st May, 1909, and there is a strong movement throughout the Commonwealth in favour of closing on the afternoon of that day. In Western Australia, nevertheless, the Government has lately abandoned the compulsory Saturday half-holiday in favour of an optional Wednesday or Saturday, as in other States.

(v.) *Exempted Trades.* The hours for shops exempted from the general provisions of the Acts are also prescribed, and special holidays are provided for carriers.

4. Other General Conditions of Labour.—Measures for the protection of life, health, and general well-being of the worker, tabulated hereunder, exist in most of the States. Though in some instances founded upon English legislation, they are also in many cases peculiar to Australia. Despite experience and continued amendment they have not even yet attained to a settled form. Of the Australian States, Victoria has the most complete system of industrial legislation, and other States are gradually adopting the Victorian statutes, either *en bloc* or with amendments suggested by local conditions. Western Australia has followed very closely the legislation of New Zealand, where also the measures for the amelioration of the industrial conditions are enforced by law.

5. Administration of Factories and Shops Acts.—The provisions of Factories and Shops Acts and of the Early Closing Acts in some of the States are consolidated under a single Act, but in others are separate enactments. The chief provisions of the principal Acts for registration, administration, record-keeping, etc., are set out in the following summary:—

- (a) Factories are defined to be places where a certain number of persons are employed in making or preparing goods for trade or sale, or in which steam or other power is employed. In some States the employment of a Chinese, in some of any Asiatic, constitutes the place a factory.
- (b) A Minister of the Crown administers the Act in conjunction with a Chief Inspector of Factories. Inspectors of both sexes visit the factories with full powers of entry at all reasonable hours by day or night, to inspect certifi-

cates, documents, records, etc., under the Acts, examine persons found there, and generally to ascertain if the provisions of the Acts are complied with.

- (c) Registration of factories before occupation is obligatory. Description of premises and statement of the work to be done must be supplied, and a certificate of suitability of premises obtained.
- (d) A record of all employés, giving the names, age, wages, and work of each under a certain age (18, 20, 21, etc.) must be kept and filed in the Chief Inspector's office.
- (e) Names and addresses of district inspectors and certifying medical practitioners must be posted; also the working hours, the holidays, and the name, etc., of the employer.
- (f) Records of out-work must be kept, containing the names and remuneration of workers, and stating the places where the work is done. Out-workers are required to register.
- (g) Places in which only the near kin of the occupier are employed are generally exempt from registration.
- (h) Meals may be prohibited in workrooms, etc. In some States occupiers are required to furnish suitable mealrooms.
- (i) The employment in factories of young children is forbidden, and medical certificates of fitness are required in the case of young persons under a certain age. Special permits, based on educational or other qualifications, may be issued for young persons of certain ages.
- (j) Guarantees of an employé's good behaviour are void unless made with the consent of the Minister.
- (k) Persons in charge of steam engines or boilers must hold certificates of service or competency.
- (l) Provision safeguarding against accident is made for the fencing off and proper care of machinery, vats, and other dangerous structures. Women and young persons are forbidden to clean machinery in motion or work between fixed and traversing parts of self-acting machinery while in motion. Notice of accidents must be sent to the district inspector. (Dangerous trades are generally under the administration of Boards of Health.)
- (m) Provision is made for the stamping of furniture, in order to disclose the manufacturer, and whether it is made by European or Chinese labour.
- (n) Minimum wage provisions are inserted. Premiums to employers are forbidden.
 - o Sanitation and ventilation must be attended to, and fresh drinking water supplied. Separate and adequate sanitary conveniences for each sex are required.
- (p) Shopkeepers are required to provide proper seating accommodation for female employés. (In some States this is the subject of special legislation.)
- (q) Wide powers of regulation are granted to the Executive and large penalties imposed, including a penalty by way of compensation to any person injured or the family of any person killed through failure to fence machinery and other dangerous structures.

6. **Registered Factories.**—The number of establishments registered under Factories Acts is shewn below, and is of interest as indicating the extent to which the Factories Acts apply:—

FACTORIES REGISTERED UNDER ACTS, 1907.

| State. | No. of Registered Factories. | Numbers Employed. | | |
|--------------------------|------------------------------|-------------------|----------|---------|
| | | Males. | Females. | Total. |
| New South Wales | 3,559 | 46,026 | 20,841 | 66,867 |
| Victoria | 5,003 | 42,457 | 29,511 | 71,968 |
| Queensland | 1,711 | 14,048 | 6,388 | 20,436 |
| South Australia | 1,557 | 15,748 | 5,147 | 20,895 |
| Western Australia | 596 | 5,615 | 1,853 | 7,468 |
| Tasmania | ... | ... | ... | ... |
| Commonwealth | 12,426 | 128,894 | 63,740 | 187,634 |

7. **Mining Acts.**—Mining Acts regulate the working of mines. The employment underground of females and of boys under fourteen years is prohibited. No boy under eighteen years may be employed as lander or bracceman at any plat or landing place; no lander, bracceman, underground worker, or man in charge of motive power may be employed more than eight hours a day. A large number of scientific provisions for the protection of the lives and health of miners are also inserted in the Acts. Engine-drivers must hold certificates of competency. Persons may be licensed to certify to the condition of boilers. Provision is made to enable injured persons or the relatives of persons killed to recover damages if the injury or death results from a breach of the regulations above referred to. Inspection of mines is fully provided for. Sunday labour is forbidden.

8. **Other Acts.**—The British *Employers' Liability Acts*, and in some States the *Workmen's Compensation Act 1897*, have been adopted. In some States the provisions of the former are extended to seamen. Other legislation regulating conditions of labour has been enacted by the States. The British *Conspiracy and Protection of Property Act (38 and 39 Vic., c. 86)* has been adopted. Servants' registry offices are placed under administrative control, and the rates of commission chargeable are fixed by regulation. Power is given to workmen to attach moneys due to a contractor who employs them in order to satisfy a claim for wages, such wages being made a first charge on moneys due to a contractor. Workmen are given a lien for wages over material whereon they are working, even if it becomes part of other property. This is in addition to the common law lien, which ceases when possession of the property is parted with. Workmen's wages are protected from attachment. In Victoria, provision is made for the compulsory resumption of suburban lands to provide workmen's homes.

9. **General Results of Industrial Legislation.**—The results of the legislation described must be sought in the Reports of the Inspectors of Factories of the several States. Generally speaking, the perusal of these reports and of the reports of Royal Commissions which have enquired into the working of the Acts, affords satisfactory evidence that they have, on the whole, effected their objects.

10. **Comparative Statement of Factories Law in Australia and New Zealand.**—The tables which follow shew at a glance the chief provisions of the Factories and Shops Acts in the Commonwealth and in New Zealand.

COMPARATIVE VIEW OF LEADING FEATURES OF THE LAW

| HEADING. | NEW SOUTH WALES. | VICTORIA. | QUEENSLAND. |
|--|--|---|--|
| Acts. | Factories and Shops 1896. | Factories and Shops 1905 (2) " " 1907 " " 1909 | Factories and Shops 1900. " " 1908. Wages Boards 1908. |
| Application of Acts— Limitations. | Only in districts proclaimed by the Government. Not applicable where all the workers are members of the same family. Not applicable to woolsheds, dairies, or ships. Governor may exempt any factory or class of factory in any district. | Only in cities, towns and boroughs, but may be extended. Not applicable to dairying, agricultural, horticultural, viticultural and pastoral occupations. Not applicable to laundries attached to religious and charitable institutions. | Only in area proclaimed by Governor-in-Council. Not applicable to prisons, reformatories, dairies, ships, mines, agricultural buildings, and domestic workshops. Governor may exempt partially or wholly any factory or class of factories in a given district. |
| Definition of Factory— By Nos. Employed | Four or more. | Four or more. | Two or more (including occupier). |
| " Asiatics " | Any Chinese. | One Chinese | One Asiatic. |
| " Power used " | Steam or mechanical. | Steam or mechanical. | Steam or mechanical. |
| " Special classes included " | Bakehouses, laundries, dye-works. | Bakehouses, laundries, dye-works, quarries, clay-pits. | Bakehouses, laundries. |
| Administration. | Minister of Labour. | Minister of Labour. | Home Secretary. |
| Inspectorate. | Inspectors with full powers of entry, examination and enquiry. | Inspectors with full powers of entry, examination and enquiry. | Inspectors with full powers of entry, examination, and enquiry. |
| Registration. | Seven days' prior notice. | Fourteen days' prior notice Annual re-registration. | Seven days' prior notice. |
| Outwork. | Occupier of factory to keep record, shewing places where work done and rates of payment. | Occupier to keep record of description, quantity, remuneration, and names of out-workers. Out-workers must register. | Sub-contractors' premises subject to factory regulations. Occupier to keep records shewing places, description, and quality of work; nature and amount of remuneration paid. Out-workers must register. Sub-letting forbidden. |
| Hours of Work. | Adult males—not enacted. Females and young persons—see separate table. | Adult males—not enacted. Females and young persons—see separate table. | Adult males—not enacted. Females and young persons—see separate table. |
| Meals in Workroom. | Minister may forbid while work is going on; he may require provision of a suitable eating-room. | Forbidden while work going on, unless Inspector permits. Forbidden if dangerous trade conducted. | Minister may forbid meals being taken in factories; he may require provision of suitable eating room. |
| Employment of Women & Children. | See separate table. | See separate table. | See separate table. |
| Sanitary, Health and Safety Provisions. | Factories to be clean, wholesome, and well ventilated. Over-crowding forbidden. Unhealthy persons under sixteen may be suspended from daily work. Avoidance of infection prescribed. Factories to be thoroughly cleaned once in fourteen months. Bakehouses not to be used as sleeping places. Seats to be provided for females. Proper necessary precautions to be taken against fire. | Factories to be clean, wholesome, and well ventilated. Over-crowding forbidden. Factories to be thoroughly cleaned once in fourteen months. Factories and bakehouses not to be used as sleeping places. Wet spinners must be protected. Efficient fire escapes to be provided, and fire appliances kept ready. | Factories to be kept clean, wholesome, and well ventilated. Over-crowding forbidden. Suspension of work by unhealthy persons may be enforced. Avoidance of infection prescribed. Fresh drinking water to be provided. Factories to be thoroughly cleaned once in twelve months. Bakehouses not to be used as sleeping places. Seats to be provided for females. Proper necessary precautions to be taken against fire. |
| Dangerous Machinery | Must be fenced. Employment of women and boys forbidden. | Must be fenced. Employment of women and boys forbidden. | Must be fenced. |
| Minimum Wage— Per week | ... | 2s. 6d. No premium is to be demanded from female apprentices and improvers. | 2s. 6d. No premium is permitted from apprentices. |

RELATING TO FACTORIES IN AUSTRALIA AND NEW ZEALAND.

| SOUTH AUSTRALIA. | WESTERN AUSTRALIA. | TASMANIA. | NEW ZEALAND. |
|---|--|---|--|
| Factory 1894. " 1900. " 1904. " 1906. " 1908. | No. 22 of 1904. " 44 " 1904. | Employment of Women and Children in Workrooms and Factories 1884. Do. 1903. Do. 1905. | Factories Act 1901. " " 1902. " " 1905. " " 1906. |
| In places determined by the House of Assembly. Not applicable to domestic servants and agricultural and pastoral pursuits. | In districts proclaimed by Governor-in-Council. Not applicable to mines, dairies, ships, prisons, reformatories, domestic (other than Asiatic) workshops. Governor may exempt any factory. | Whole State, where women and children are employed. | ... |
| Anyone. | Six or more. One Asiatic. Steam or mechanical. Bakehouses, laundries. | One woman, young person, or child. | Two or more. One alien Asiatic. Steam or mechanical. Bakehouses, laundries. |
| Minister of Industry. | Minister of Commerce and Labour. | ... | Minister of Labour. |
| Inspectors with full powers of entry, examination and enquiry. | Inspectors with full powers of entry, examination and enquiry. | Inspection by Police and Health officers. | Inspectors with full powers of entry, examination and enquiry. |
| Twenty - one days' prior notice. | Prior notice. Annual re - registration if Asiatics employed. | ... | Prior notice. |
| Occupier to keep record. Out - workers to register names and addresses. | Occupier to keep record of names and addresses, and quantity and description of work done. Sub-letting forbidden. | ... | Occupier to keep record shewing names and addresses of out - workers, quality and description of work done, and the nature and amount of remuneration. Sub-contracting in textiles forbidden. |
| Adult males—not enacted. Females and young persons—see separate table. | Adult males—not enacted. Females and young persons—see separate table. | ... | Males, over 16: Maximum, forty-eight hour weekly. Overtime of adult males not regulated. Females and young persons—see separate table. |
| Minister may forbid meals in factories carrying on noxious trades; he may require provision of suitable eating-room. | Forbidden for women and boys, except with Inspector's written permission. | Employment during meal hours forbidden. | Forbidden for women and boys. |
| See separate table. | See separate table. | See separate table. | See separate table. |
| Factories to be kept wholesome, clean, and well ventilated. Over-crowding forbidden. Factories to be thoroughly cleaned once in fourteen months. Adequate protection to be made against fire. | Factories and connected yards to be clean, wholesome, and well ventilated. Over-crowding forbidden. Unhealthy persons may be forced to suspend work. Goods, clothing, etc., to be disinfected where necessary. Fresh drinking water to be provided. Thorough cleaning to be regularly done. Bakehouses not to be used as sleeping places. Efficient fire escapes to be provided, and other necessary protection to be made against fire. | Factories must be warned and ventilated. Seats to be provided for saleswomen. | Factories to be clean, wholesome, and properly ventilated. Overcrowding forbidden. Unhealthy persons may be forced to suspend work. Goods, clothing, etc., to be disinfected where necessary. Pure drinking water to be provided. Factories to be cleaned once in fourteen months. Bakehouse not to be used as sleeping place. Satisfactory provision for women and boys to be made against wet and steam. Efficient fire escapes to be provided. |
| Must be fenced. Employment of children under sixteen may be forbidden. | Must be fenced. Any machine may be prohibited by Inspector as dangerous. Employment of females and boys forbidden. | ... | Must be fenced. Any machine may be prohibited by Inspector as dangerous. |
| 4s. No premium is to be paid by female apprentices. | ... | ... | 5s. No premium in respect to employment is to be paid. |

FACTORIES ACTS.—AUSTRALIA AND NEW ZEALAND.

| HEADING. | NEW SOUTH WALES. | VICTORIA. | QUEENSLAND. |
|---|--|--|---|
| Acts Application of Acts | As in preceding table | As in preceding table | As in preceding table |
| * Ordinary Age of Admission to Factory | 14 | 13 | 14 |
| Maximum Working Hours of Women and Young Persons | Per week | Females and boys under 16, 48 hours | Females and boys under 16, 48 hours |
| | „ day | ... | Do., 10 hours |
| | Maximum hours of continuous labour | Females and boys under 18, 5 hours | Females and boys under 18, 5 hours |
| | Interval | Do., ½ hour | Do., ½ hour |
| Prohibited Hours of Work | Girls under 18, 7 p.m. to 6 a.m. Boys under 16, 7 p.m. to 6 a.m. | Girls under 16, 6 p.m. to 6 a.m. Boys under 14, 6 p.m. to 6 a.m. Females, after 9 p.m. | Girls under 18, 6 p.m. to 6 a.m. Boys under 18, 6 p.m. to 6 a.m. |
| Overtime—Limitation—Per day | Three hours | Three hours | Three hours |
| „ week | Three days | One day | { Two consec'tive dys. Fifty-six hrs per wk. not to be exceeded |
| „ year | Thirty days | Ten days | Forty days |
| Continuous | | | |
| Overtime Pay | One and a-half ordinary rate | One and a-half ordinary rate | One and a-half ordinary rate, but never below 6d. per hour |
| Prohibition of Employment after Childbirth | 4 weeks | ... | ... |
| Restrictions and Prohibitions of Employment affecting Women and Young Persons in Dangerous Trades | Type-setting | Young persons under 16 | Boys and girls under 14 |
| | Dry grinding and match dipping | Young persons under 16 | Boys and girls under 16 |
| | Manufacture of bricks and tiles | Girls under 18 | Girls under 16 |
| | Making and finishing of salt | Girls under 18 | Girls under 16 |
| | Melting or annealing of glass | Boys under 16; girls under 18 | Boys under 14; girls under 18 |
| | Silvering of mirrors by mercurial process; manufacture of white lead | Boys and girls under 18 | Young persons under 18 |
| | Cleaning of machinery in motion, and mill gearing | All females; boys under 18 | All females; boys under 18 |
| | Charge of lift | All females; boys under 16 | ... |

* The ages given are those at which admission to factory labour is unrestricted. In some States younger children are admitted if having passed school standards, or by special permit from the Minister.

RESTRICTIONS REGARDING WOMEN AND YOUNG PERSONS IN FACTORIES.

| SOUTH AUSTRALIA. | WESTERN AUSTRALIA. | TASMANIA. | NEW ZEALAND. |
|---|---|--|---|
| As in preceding table | As in preceding table | As in preceding table | As in preceding table |
| 13 | 14 | 13 | 16 |
| Females and boys under 16, 48 hours Do., 10 hours | Females and boys under 14, 48 hours Do., 8½ hours | ... Females, 10 hours Boys and girls under 14, 8 hours Women and boys and girls under 18, 5 hrs. Children, 4 hours Females and young persons, 1 hour | † Females and boys under 16, 45 hours Do., 8½ hours |
| Do., 5 hours | Do., 5 hours | | Do., 4½ hours |
| Do., 1 hour | Do., ¾ hour | | Do., ¾ hour |
| Females, after 9 p.m. | Females, 6 p.m. to 8 a.m. | ... | Females, 6 p.m. to 8 a.m. |
| Boys under 16, after p.m. | Boys under 14, 6 p.m. to 7.45 a.m. | ... | Boys under 16, 6 p.m. to 7.45 a.m. |
| ... } Nine hours per week 100 hours | Three hours Two consecutive days Thirty days | In jam factories in January, February, March & December, young persons and children may work 9 hours per day | Three hours Two consecutive days Thirty days Four hours, with half-hour interval Five-fifths ordinary rate |
| Five-fourths ordinary rate | ... | ... | |
| ... | 4 weeks | ... | 4 weeks |
| ... | Girls under 15 | ... | Girls under 15 |
| ... | ... | ... | Young persons under 16 |
| ... | Girls under 16 | ... | Girls under 16 |
| ... | Girls under 16 | ... | Girls under 16 |
| ... | ... | ... | Girls under 18 |
| ... | All females; boys under 18 | ... | Females; boys under 18 |
| All females; boys under 16 | All females; boys under 18 | ... | ... |
| All females; boys under 16 | Females under 21; boys under 16 | ... | ... |

† In woollen mills in New Zealand females and boys under 16 may work slightly longer hours.

COMPARATIVE VIEW OF LEADING FEATURES OF THE LAW

| HEADING. | | NEW SOUTH WALES. | VICTORIA. | QUEENSLAND. |
|--------------------------------------|--|--|--|--|
| Acts | | As for factories | As for factories | As for factories |
| Maximum Hours of Employment— } Males | | ... | ... | ... |
| Maximum Hours of Employment | Females and Boys { per week per day | Girls under 18, boys under 16, 52 hours Girls under 18, boys under 16, 9½ hours (except 1 day, 11½ hours) | Females and boys under 16, 52 hours Females and boys under 16, 9 hours (except 1 day, 11 hours) | Females and boys under 16, 52 hours Females and boys under 16, 9½ hours (except 1 day, 11½ hours) |
| | Maximum continuously Interval | All females : 5 hours All females : ½ hour | Females and boys under 16, 5 hours Females and boys under 16, ½ hour | ... ... |
| Overtime { per day per year |  | ... ... | ... ... | 3 hours 40 days |
| General closing time | | 4 days, 6 p.m. ; 1 day, 10 p.m. ; 1 day, 1 p.m. | 4 days, 6 p.m. ; 1 day, 1 p.m. ; 1 day, 10 p.m. | 4 days, 6 p.m. ; 1 day, 10 p.m. ; Saturdays, 1 p.m. |
| Exemption from closing time | | Certain shops | Businesses concerned with drugs and edibles, also hair- dressers and pawnbrokers | Certain exempted shops |
| Seats in Shops | | 1 to 3 females | 1 to 3 assistants | 1 to 3 females |

§ 3. Legislative Regulation of Wages and Terms of Contract.

1. **General.**—Two systems, based upon different principles, exist in Australia for the regulation of wages and general terms of contracts of employment. A "Wages Board" system exists in New South Wales, Victoria, Queensland, and South Australia, and an Arbitration Court in Western Australia. In New South Wales, Industrial Arbitration Acts of 1901 and 1905 instituted an Arbitration Court. This court expired on 30th June, 1908, having delivered its last judgment on the previous day. Wages Boards were substituted under the Industrial Disputes Act 1908. There is also the Arbitration Court of the Commonwealth, which has power, however, to deal only with matters extending beyond the limits of a single State.

2. **Wages Boards.**—This system was introduced in Victoria by the Factories and Shops Act of 1896. The original Bill made provision only for the regulation of the wages of women and children, but was afterwards amended in Parliament to extend the system to adult operatives of both sexes.

The Act of 1896 made provision for the regulation of wages only in the clothing and furniture trades and the bread-making and butchering trades. By an Act of 1900 the operations of the Act were extended to include all persons employed either inside or outside a "factory" or workroom—see sec. 4, i. (a)—in any trade usually carried on therein. This section is now in the Act of 1905. An Act of 1907 extended the system to trades and businesses not connected in any way with factories, making provision for the appointment of Wages Boards for shop employes, carters and drivers, persons employed

RELATING TO SHOPS IN AUSTRALIA AND NEW ZEALAND.

| SOUTH AUSTRALIA. | WESTERN AUSTRALIA. | TASMANIA. | NEW ZEALAND. |
|---|--|---|--|
| Act in aid of early closing, 1900 " " " 1901 " " " 1902 " " " 1903 | No. 24 of 1902 No. 1 of 1904 No. 52 of 1904 | ... | Shops and Offices 1904 " " " 1905 |
| ... | 56 hours per week | ... | 52 hours per week |
| Boys and girls under 16, 52 hours | All persons, 56 hours per week | ... | Females and boys under 18, 52 hours |
| Boys and girls under 16, 9 hours (except 11 hours on 1 day) | ... | ... | Females and boys under 18, 9½ hours |
| ... | { One hour interval between noon and 3 p.m. If open after 6.30 p.m., 1 hour for tea } | ... | ... |
| ... | ... | ... | ... |
| 3 hours 40 days | 3 hours 12 days per half-year | ... | 3 hours 30 days |
| 4 days, 6 p.m. ; 1 day, 9 p.m. ; 1 day, 1 p.m. | 4 days, 6 p.m. ; 1 day, 10 p.m. ; 1 day, 1 p.m. (Opening hour not earlier than 8 a.m.) | ... | 4 days, 6 or 7 p.m. ; 1 day, 9 p.m. ; 1 day, 1 p.m. |
| Certain classes of shops | Shops such as hairdressers, newsagents, and those sell- ing drugs and edibles | ... | Shops concerned with sale of food |
| ... | 1 to 3 women | Sitting accommoda- tion for saleswomen | Reasonable sitting accom- modation for females |

in connection with buildings or quarrying, or the preparation of firewood for sale or the distribution of wood, coke, or coal. It is proposed to extend the system to mines, provision to do so being made in the Mines Bill introduced into Parliament.

The regulation is effected by a Board, called a Special Board, to distinguish it from the Board of Health. Boards for the regulation of wages in the trades specified in the Act of 1896 are appointed as a matter of course, and by the Executive other Boards are appointed only if a resolution for appointment be passed by both Houses of Parliament. A Board consists of from four to ten members, who must be or have been at a recent time prior to appointment engaged in the trade concerned. Employers and employes are equally represented. If one-fifth of the employers or employes object to a representative nominated for them they may elect a representative. Originally the Board was elected in the first instance, but the difficulty of compiling electoral rolls led to the adoption of the present system, which has proved satisfactory. The Furniture Board is nominated outright owing to the preponderance of Chinese. An independent chairman, nominated by the Board, is appointed by the Executive. A Board holds office for three years.

The Board has power to determine the lowest wages, prices, or rates to be paid to persons or classes of persons coming within the Act for wholly or partly preparing, manufacturing, or repairing articles, and for other services rendered, and may fix special rates for aged, infirm, and slow workers.

The Board fixes the hours of work and may limit the number of "improvers" to be employed (usually done by prescribing so many to each journeyman employed.) There is no power in Victoria to limit the number of apprentices employed. Such a power exists in South Australia. The Board fixes the wages of apprentices and improvers according

to age, sex, and experience, and may fix a graduated scale of rates calculated on the same basis. Apprentices bound for less than three years are improvers, unless the Minister sanctions a shorter period of apprenticeship on account of previous experience in the trade. The Minister may sanction the employment of an improver over twenty-one years of age at a rate proportionate to his experience. Out-workers in the clothing trade must be paid piece rates. Manufacturers may, by leave of the Board, fix their own piece rates, if calculated upon the average wages of time workers as fixed by the Board.

Licenses for twelve months to work at a fixed rate lower than the minimum rate may be granted by the Chief Inspector of Factories to persons unable to obtain employment by reason of age, slowness, or infirmity. Licenses are renewable.

Determinations remain in force till altered by a Board or the Court of Appeal. These determinations apply to all cities and towns and such boroughs as the Executive determines, and the Executive may also apply them to any shire within ten miles of a city or town, or beyond that distance, if the shire council petitions to that effect. (Similar provisions are in force in other States.)

The children of an employer are exempt from a determination.

The Executive may direct a Board to fix out-workers' rates and the rates payable in allied trades. Boards are given the power to fix wages to be paid to persons employed on repairs.

Penalties are fixed for the direct or indirect contravention of determinations, the obedience to which is ascertained by examination of the records of wages, etc. (Sec. 4, *i. a.*)

A Court of Appeal, consisting of a Supreme Court Judge, has power to review determinations of the Boards. The Court may appoint assessors to assist the Judge.

The Acts fix an absolute weekly minimum wage, and the evasion of this provision in the case of females employed in the clothing trade by charging an apprenticeship premium is prevented by the prohibition of all such premiums in that particular case. This absolute minimum provision does not exist in New South Wales.

South Australia adopted the Wages Board system in 1900, 1904, and 1906, but the first-mentioned Act was rendered inoperative owing to the disallowance by Parliament of the regulations necessary for carrying it into effect. The Act of 1904 revived the Wages Board system in respect to women and children employed in clothing and whitework trades. The action of this statute was paralysed by a decision, the effect of which was to prevent the fixing of a graduated scale of wages as is done by the Victorian Boards. The necessity for some protection to the persons intended to be benefited by these statutes was urged in the annual reports of the Chief Inspector of Factories, but, until 1906, without effect. Many employers, however, voluntarily complied with the Boards' determinations, though these were without legal force. The system has been brought into full operation by the Act of 1906, which preceded the Victorian Act of 1907, in extending the system to other than factory trades, and is of a still wider scope than the Victorian Act.

It may be noted that the Boards of Conciliation, appointed in England under the Conciliation Act 1897, appear to correspond to the Australian Wages Boards in a remarkable degree, and not in any way to the Arbitration Courts of Australia, inasmuch as they are appointed for each trade or calling, and not to adjudicate generally upon any cases which come before them.

3. The Arbitration Court System.—(i.) Acts in force. The following is a general account of the main features of the Compulsory Arbitration laws of Australia. A few important divergences between the Acts are noted. The New South Wales Acts expired on 30th June, 1908.

The Acts in force at the close of the year 1907 were as follows:—

South Australia: The Conciliation Act 1894.

Western Australia: The Industrial Conciliation and Arbitration Act 1902.

New South Wales: The Industrial Arbitration Acts 1901 and 1905.

Commonwealth: The Commonwealth Conciliation and Arbitration Act 1904.

(ii.) *Significance of Acts.* In Victoria in 1891, and in New South Wales in 1892, Acts were passed providing for the appointment of Boards of Conciliation, to which application might be made voluntarily by the contending parties. The awards of the Boards had not any binding force. Boards were applied for on but few occasions, their lack of power to enforce awards rendering them useless for the settlement of disputes.

The first Australian Act whereby one party could be summoned before, and, presumably, made subject as in proceedings of an ordinary court of law to the order of a court, was the South Australian Act of 1894. Its principles have been largely followed in other States, but it proved abortive in operation and in many respects is superseded by the Wages Board system already described. Western Australia passed an Act in 1900, repealed and re-enacted with amendments in 1902, New South Wales followed in 1901. A bill introduced into the Tasmanian Parliament in 1903 was rejected by the Upper Chamber. The Commonwealth Act, passed in 1904, applies only to industrial disputes extending beyond the limits of a single State.

(iii.) *Industrial Unions.* The Arbitration Act, made to encourage a system of collective bargaining and to facilitate applications to the court, and to assure to the worker such benefits as may be derived from organisation, virtually creates the Industrial Union. This, except in New South Wales, is quite distinct from the trades union; it is not a voluntary association, but rather an organisation necessary for the administration of the law. Industrial unions (or "organisations," as they are styled in the Commonwealth Act) may be formed by employers or employes. They must be registered, and must file annual returns of membership and funds. Unions of employers must have a minimum number of employes. In New South Wales and Western Australia the minimum is 50, under the Commonwealth Act 100. All unions of employes must possess the following qualifications:—In New South Wales the union must be a trade union of branch thereof, or be an association of unions; in Western Australia a membership of 15, and by the Commonwealth Act a membership of 100 is required. The union rules must contain provisions for the direction of business, and, in particular, for regulating the method of making applications or agreements authorised by the Acts. In Western Australia rules must be inserted prohibiting the election to the union of men who are not employers or workers in the trade, and the use of union funds for the support of strikes and lockouts; a rule must also be inserted requiring the unions to make use of the Act. *The Commonwealth Act forbids the employment of funds for political purposes.*

(iv.) *Industrial Agreements.* Employers and employes may settle disputes and conditions of labour by industrial agreements, which are registered and have the force of awards. They are enforceable against the parties and such other organisations and persons as signify their intention to be bound by an agreement.

Failing agreement, disputes are settled by reference to the court. This consists of a judge of the Supreme Court of the State, or, in the case of the Commonwealth, of the High Court. In the States, he is assisted by two "members," who are chosen by and are appointed to represent the employers and employes respectively. Technical assessors may be called in to sit with and to advise the court.

Cases are brought before the court either by employers or employes. The consent of a majority of a union voting at a specially summoned meeting is necessary to the institution of a case; the Commonwealth Act requires the certificate of the Registrar that it is a proper case for consideration.

The powers of the court are both numerous and varied; it hears and makes awards upon all matters concerning employers and employes. The breadth of its jurisdiction may be gathered from the Commonwealth definition of industrial matters. The definition includes the principal matters dealt with by the Acts in a concise form. "Industrial matters" includes all matters relating to work, pay, wages, reward, hours, privileges, rights, or duties of employers or employes, or the mode, terms, and conditions of employ.

ment or non-employment; and in particular, without limiting the general scope of this definition, includes all matters pertaining to the relations of employers and employes, and the employment, preferential employment, dismissal or non-employment of any particular persons, or of persons of any particular sex or age, or being or not being members of any organisation, association, or body, and any claim arising under an industrial agreement."

(v.) *Powers of Court.* The court may fix and enforce penalties for breaches of awards, restrain contraventions of the Acts, declare any practice or regulation to be a "common rule" of the trade, and define the limits of its observation (the Commonwealth Court has power to mitigate the hardships of the common rule), hear objections to it, and exercise all the usual powers of a court of law.

The court may prescribe a minimum rate of wage; it may also (except in Western Australia as regards employment) direct that preference of employment or service shall be given to members of unions. An opportunity is offered for objection to a preference order, and the court must be satisfied that preference is desired by a majority of the persons affected by the award who have interests in common with the applicants.

The Commonwealth Court is to bring about an amicable agreement, if possible, to conciliate and not to arbitrate, and such agreement may be made an award.

All parties represented are bound by the award, and also all parties within the ambit of a common rule or (in the case of Western Australia) giving adherence. The court possesses full powers for enforcement of awards.

In Western Australia there is also a system of Boards of Conciliation, consisting of representatives of employers and employes. They may make awards, which are binding if not challenged within a month after being filed. As a matter of fact, they are almost invariably appealed from, and the tendency is to go direct to the court.

The States have included their railway and tramway employes, and also the employes of certain other public bodies under the Acts; the section of the Commonwealth Act giving the Commonwealth Court power over State employes has been declared unconstitutional by the High Court.¹

(vi.) *Miscellaneous.* The Commonwealth and Western Australian Acts absolutely forbid strikes and lockouts. The New South Wales Act specifically forbids them prior to or during the pendency of a case, leaving events after the award to be dealt with by the court. Protection is afforded to officers and members of unions against dismissal merely on account of such officership or membership, or on account of their being entitled to the benefit of an award.

It has been settled by the High Court that an Arbitration Court cannot direct—

- (a) That non-unionists seeking employment shall, as a condition of obtaining it, agree to join a union within a specified time after engagement;
- (b) That an employer requiring labour shall, *ceteris paribus*, notify the secretary of the employes' union of the labour required.²

4. **The "New Protection."**—The wide difference between the development in the several States of the Commonwealth of the regulation by State institutions of the remuneration and conditions of the workers, has given rise to a desire on the part of the Commonwealth Government to secure uniformity throughout Australia by any suitable and constitutional action on the part of the Commonwealth. The provisions of States wages laws vary considerably. In New South Wales, Victoria, and Western Australia, some experience has been gained of their working. The Wages Board system

1. Federated Amalgamated Railway, etc., Employes v. N.S.W. Railway, etc., Employes (4 C.L.R. 488).

2. Trolly, etc., Union of Sydney and Suburbs v. Master Carriers' Association of New South Wales. (2 C.L.R. 509.)

is new in South Australia and Queensland. Tasmania is without legislation. The desirability of uniformity has, as already mentioned, been recognised by the New South Wales Arbitration Court, which (conversely to the last-mentioned cases) refused the Bootmakers' Union an award which would increase the wages of its members to amounts exceeding those paid in Victoria in the same trade, the express ground of the refusal being that New South Wales manufacturers would be handicapped by the payment of a higher rate of wage than that prevailing in Victoria. This attitude cannot be made effective by the Arbitration Court of the Commonwealth, which has jurisdiction only over industrial disputes extending beyond the limits of any one State.

The opinion has been expressed that a manufacturer who benefits by the Commonwealth protective tariff should charge a reasonable price for the goods which he manufactures, and should institute a fair and reasonable rate of wage and conditions of labour for his workmen.

The above view is known as the "New Protection," a phrase which, though novel, is already firmly established in Australian economic discussions; and the statutes referred to immediately hereinafter are the expression thereof.

By the Customs Tariff 1906, increased duties were imposed upon certain classes of agricultural machinery, notably the "stripper-harvester," a machine invented in Australia, which has, to a great extent, replaced the "reaper and binder and thrashing machine" in the harvesting of wheat. By the same Act it was enacted that the machines scheduled should not be sold at a higher cash price than was thereby fixed, and that if that price should be exceeded, the Commonwealth Executive should have power, by reducing the Customs duties imposed by the Act, to withdraw the tariff protection.

By the Excise Tariff Act 1906 (No. 16 of 1906), an excise of one-half the duty payable upon imported agricultural machinery was imposed upon similar machinery manufactured in Australia. But it was provided that the latter should be exempt from excise if the manufacturer thereof complied with the following condition, namely, that the goods be manufactured under conditions as to the remuneration of labour, which—

- (a) Are declared by resolution of both Houses of the Commonwealth Parliament to be fair and reasonable;
- (b) Are in accordance with the terms of an industrial award under the Commonwealth Conciliation and Arbitration Act 1904;
- (c) Are in accordance with the terms of an industrial agreement filed under the last-mentioned Act;
- (d) Are, on an application made for the purpose to the President of the Court, declared to be fair and reasonable by him or by a judge of a State court or a State industrial authority to whom he may refer the matter.

By the Excise Tariff Act 1906 (No. 20 of 1906), excise duties are imposed in respect of spirits, and it is provided that if any distiller (i.) does not, after the Act has been passed a year, pay his employes a fair and reasonable rate of wages per week of forty-eight hours or (ii.) employs more than a due proportion of boys to men engaged in the industry, the Executive may on the advice of Parliament impose an additional duty of one shilling per gallon on spirits distilled by that distiller.

Exemptions have been claimed by the manufacturers of agricultural machinery in South Australia, New South Wales, Victoria, and Tasmania. These were granted in the two first-mentioned States in consequence of an agreement entered into between the employers and employes. In Victoria, "this whole controversial problem with its grave social and economic bearings" (to quote the words of the President of the Court) was discussed in a lengthy case upon the application for exemption by Victorian manufacturers, now widely known as the "Harvester Case," and in the report of that case may be found the legal interpretation of the Acts under consideration. The exemptions claimed were refused, and the court after discussing the meaning of the words "fair and reasonable" defined them by laying down what it considered to be a scale of fair and reasonable wages.

The High Court has, however, pronounced that the legislation under these Excise Acts is unconstitutional as being an extension of Federal action beyond the powers granted, and a usurpation of the ground reserved to the States.

The Bounties Acts 1906 and 1907 make provision for the encouragement of certain Australian industries by the payment to producers of certain moneys allotted by the Act upon the production of the commodities specified. The Act also provides for the refusal or reduction of a bounty, if the production of a commodity is not accompanied by the payment to the workers employed in that production of a fair and reasonable rate of wage.

§ 4. Operation of the Wage-regulating Laws.

1. **System of Wages Boards.**—Wages Boards are appointed upon the application of either employers or employées. The grounds usually alleged by the former are that their business is hampered by "unfair" competitors, who pay only a sweating wage; by the latter, that they are sweated or are entitled to a consideration of their wages, by reason of the prosperity of the trade in which they are engaged.

2. **Wages Boards.**—There were at the end of 1907 fifty-one special Boards in existence in Victoria and eight in South Australia. Some of the Boards, however, of then recent appointment, had not made any determination. The following table shews the position of trades in relation to the Boards:—

WAGES BOARDS, 1907.

| Total Number of Distinct Trades carried on in Registered Factories. | | Total Trades under Boards. | Total Factories Regist'r'd | Total Employés | Total Employés under Wages Boards. | Percentage under Boards. | Number of Determinations. |
|---|-----|----------------------------|----------------------------|----------------|------------------------------------|--------------------------|---------------------------|
| Victoria ... | 152 | 51 | 5,003 | 71,968 | 56,994 | 80% | 48 |
| S. Australia ... | 78 | 24 | 1,557 | 20,895 | 5,496 | 26% | 10 |

The following table shews for Victoria the number of convictions for disobedience to determinations of Boards (not including overtime working):—

| 1901. | 1902. | 1903. | 1904. | 1905. | 1906. | 1907. |
|-------|-------|-------|-------|-------|-------|-------|
| 34 | 33 | 41 | 39 | 27 | 52 | 43 |

3. **Mode of Constituting Special Boards and of Appointing Members.**—The following statement is taken from the Report of the Chief Inspector of Factories, Victoria, for 1907. It is interesting, in view of the very general movement throughout Australia towards the constitution of Wages Boards. The method is not precisely the same in the different States, but that of Victoria is given as being the State in which the system was first introduced, and has had most remarkable development:—

"The constitution of a Board, and the appointment of the members of a Board, involve two distinct procedures. Before a Special Board is constituted, it is necessary that a resolution in favour of such a course should be carried in both Houses of the Legislature. It is usual for the Minister administering the Factories Act to move that such a resolution should be passed. He may be induced to adopt such a course, either by representations made by employers and employées, or by employées alone, or by the reports of the officers of the department. The reasons alleged by employers for desiring a Board are, usually, unfair competition; and those by employées, low wages, and often the employment of excessive juvenile labour. If the Minister is satisfied that a case has

been made out, he will move the necessary resolution in Parliament, and when such resolution has been carried, an Order-in-Council is passed constituting the Board. The Order indicates the number of members to sit on the Board. The number of members must not be less than four nor more than ten. The Minister then invites, in the daily press, nominations for the requisite number of representatives of employers and employés. These representatives must be, or have been, employers or employés, as the case may be, actually engaged in the trade to be affected. All that is necessary is, that the full names and addresses of persons willing to act should be sent in. Where there are associations of employers or employés, it is not often that more than the necessary number of nominations are received. In any case, the Minister selects from the persons whose names are sent in, the necessary number to make up a full Board. The names of persons so nominated by the Minister are published in the *Government Gazette*, and unless within twenty-one days, one-fifth of the employers, or one-fifth of the employés, as the case may be, forward a notice in writing to the Minister that they object to such nominations, the persons so nominated are appointed members of the Board by the Governor-in-Council. If one-fifth of the employers or employés object to the persons nominated by the Minister—and they must object to all the nominations, and not to individuals—an election is held under Regulations made in accordance with the Act. Shortly stated, employers have from one to four votes, according to the size of the factories carried on, as regards the election of employers, but as regards Special Boards for shops, each employer has only one vote; and each employé in the trade, over eighteen years of age, has a vote for the election of representatives of employés. The Chief Inspector conducts such elections, the voting is by post, the ballot papers being forwarded to each elector. Within a few days of their appointment, the members are invited to meet in a room at the office of the Chief Inspector of Factories, and a person (always a Government officer, and usually an officer of the Chief Inspector's department), is appointed to act as secretary. The members must elect a chairman within fourteen days of the date of their appointment, and if they cannot agree to a chairman, he is appointed by the Governor-in-Council. The times of meeting, the mode of carrying on business, and all procedure, is in future entirely in the hands of the Board. Vacancies in Special Boards are filled on the nomination of the Minister without any possibility of either employer or employé objecting. The same course is observed as regards all appointments of members of the Furniture Board. The result of the labours of a Board is called a "Determination," and each item of such determination must be carried by a majority of the Board. It will be seen that, unless employers and employés agree, a full attendance of the Board is required, as, in case of a difference of opinion, the chairman decides the matter, and he has only one vote, the same as any other member of the Board. When a determination has been finally made, it must be signed by the chairman, and forwarded to the Minister of Labour. The Board fixes a date on which the determination should come into force, but this date cannot be within thirty days of its signature by the chairman. If the Minister is satisfied the determination is in form, and can be enforced, it is duly gazetted. In the event of the Minister considering that any determination may cause injury to trade, or injustice in any way whatever, he may suspend same for any period, not exceeding six months, and the Board is then required to reconsider the determination. If the Board does not make any alteration, and is satisfied that the fears are groundless, the suspension may be removed by notice in the *Government Gazette*. This power is not, however likely to be used by the Minister, as provision is now made by which either employers or employés may appeal to the Court of Industrial Appeals against any determination of a Board. This Court consists of any one of the judges of the Supreme Court, sitting alone, and the Judges arrange which of them shall for the time being constitute the Court. An appeal may be lodged (a) by a majority of the representatives of the employers on the Special Board; (b) a majority of the representatives of employés on the Special Board; (c) any employer or group of employers, who employ not less than 25 per cent. of the total number of workers in the trade to be affected; or, (d) 25 per cent. of the workers in any trade. The Court has all the powers of a Special Board, and may alter or amend the determination in any way it thinks fit. The decision of the Court is final, and cannot be altered by the Board,

except with the permission of the Court, but the Court may, at any time, review its own decision. The Minister has power to refer any determination of a Board to the Court for its consideration, if he thinks fit, without appeal by either employer or employé. The decision of the Court is gazetted in the same way as the determination of the Board, and comes into force at any date the Court may fix. The determinations of the Board and the Court are enforced by the Factories and Shops Department, and severe penalties are provided for breaches of determination. No proceedings for breaches of the determination can be taken by any one without the sanction of the Department. Any employé, however, may sue an employer for any wages due to him under any determination, notwithstanding any contract or agreement expressed or implied to the contrary."

The Court of Appeal in Victoria has heard five appeals from determinations of Boards. In one case the decision was upheld, in three cases decisions were reversed or amended, in one case the Board, unable to come to a determination, referred the matter to the Court, which exercised its power of fixing a proper wage where the average wage paid by employers did not afford a living wage.

4. **Effect of Acts.**—The question whether the operation of the Acts has bettered the monetary position of the operative may be answered in the affirmative. Starting from the lowest point, the provision of an absolute minimum wage per week has stopped one form of gross sweating. Another case is that of the "white-workers" and dressmakers; with these the lowest grade was the "outworkers," who were pieceworkers. In some branches of the Victorian trade, in 1897, the wages paid to outworkers for all classes of certain goods were only from one-third to one-half the wages paid in the factories for low-class production of the same line of stuff. By working very long hours the outworker could earn ten shillings per week. The average wage of females in the clothing trade in 1897 was ten shillings and tenpence per week; there were, however, in that year 4164 females receiving less than one pound per week, and their average was eight shillings and eightpence. It was almost a revolution when a minimum wage of sixteen shillings per week of forty-eight hours was fixed by the Board, when pieceworkers' rates were fixed to ensure a similar minimum, and when outworkers were placed on the level of pieceworkers. Many employers refused to continue to give out-work and took the workers into the factories on time work. The sanitary conditions required were far more healthy than could exist in the poorer class of dwellings. The evidence of South Australian reports discloses similar facts in that State.

5. **Change of Rate of Wage.**—The following table shews the change of affairs in these trades:—

WAGES OF FEMALES IN CLOTHING TRADES, VICTORIA, 1897 and 1907.

| Year. | Class. | Females Employed in the Dress, Mantle, and Under-clothing Trade. | | Females Employed in the Shirt Trade. | | | |
|-------|---|--|------------------|--------------------------------------|-------------------|----------------------|---------------|
| | | Number | Average Wage. | Number. | Average Wage. | | |
| 1897 | 16 yrs. and over receiving under £1 per wk. | 4,164 | £ s. d. 0 8 8 | 435 | £ s. d. 0 12 3 | | |
| | " " £1 and over ... | 593 | 1 9 1 | 144 | 1 3 10 | | |
| 1907 | Females Employed in ... | Dress and Mantle Trade. | | Shirt Trade. | | Underclothing Trade. | |
| | | Number. | Average Wage. | Number. | Average Wage. | Number. | Average Wage. |
| | Females at minimum wage and over ... | 2,581 | £ s. d. 1 1 2 | 245 | s. d. 19 11 | 585 | s. d. 19 3 |
| | Pieceworkers ... | 158 | 0 17 0 | 746 | 16 11 | 218 | 17 0 |

The above trade, the sweating* in which is world-wide, is taken as an example, and corresponding results may be obtained in any State, according as there is or is not a regulative law. In Tasmania, where no such law exists, the scale of wages may be gathered from the fact that in clothing factories females of three and five years' service, and of twenty to twenty-six years of age, receive twelve shillings per week.

It may be stated generally that some of the most prosperous trades in Victoria, e.g., the boot trade, have been longest under the Acts.

§ 5. Operation of the Arbitration Acts.

1. **New South Wales and Western Australia.**—In New South Wales eighty-six agreements were registered under the Industrial Arbitration Act 1901, and two under the Industrial Disputes Act 1908. These affect 1157 employers and nearly 38,000 employes. In Western Australia thirty-four agreements were registered up to the end of 1906; ten in 1907, and ten in 1908, making a total of fifty-four. The estimated number of employers affected was 619; of employes, 15,946. The courts have been kept extremely busy. In New South Wales, up to the end of 1908, 252 industrial disputes were filed, 130 awards were made, and the balance of the disputes were settled, withdrawn, or, for some other reason, removed from the list. Fifteen industrial agreements were made "common rules," but these are ineffective in consequence of a legal decision. Fifty-five awards have been made "common rules." There have also been 648 summonses for breaches of awards. In Western Australia 252 industrial disputes were, up to the end of 1908, filed; seventy-one awards were made, and forty-five breaches of awards were proved before the court. There have been a certain number of labour troubles in New South Wales since the passing of the Act, and several instances of cessations of work have been reported. In the majority of instances the strikes were by small bodies of men and were usually soon settled.

§ 6. Other Commonwealth Legislation affecting Labour.

1. **Constitutional Power.**—By sec. 51 of the Commonwealth of Australia Constitution Act power is conferred upon the Parliament of the Commonwealth to make laws respecting, *inter alia*—

- (xix.) Naturalisation and aliens.
- (xxiii.) Invalid and old-age pensions.
- (xxvii.) Immigration and emigration.
- (xxxv.) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State.

(2.) **Legislation.**—(i.) A special appropriation was made by Parliament (Act No. 18 of 1908), whereby an Invalid and Old-age Pensions Fund was created; and the payment of pensions as from the 1st July, 1909 (or such earlier day as is fixed by Parliament) is enacted by another statute (No. 17 of 1903).

(ii.) One of the first Acts of the Commonwealth was the *Pacific Island Labourers Act 1901*, which prohibited the importation of further Kanaka labour for sugar plantations and provided for the deportation of those already in the State.

(iii.) *The Immigration Restriction Acts 1901 and 1905* prohibit the immigration of any persons who are unable to comply with certain educational conditions. The effect of this Act is to exclude Asiatic and other coloured peoples from Australia.

(iv.) *The Contract Immigrants Act 1905* defines a contract immigrant as an immigrant to Australia under a contract or agreement to perform manual labour in Australia. The contract must be in writing and must be made by or on behalf of a resident

in Australia. Its terms must be approved by the Minister of External Affairs before the admission of the immigrant. It must not be made in contemplation of, or with a view of affecting an industrial dispute. The Minister must be satisfied that there exists a difficulty of obtaining a worker of equal skill and ability in the Commonwealth, but this last provision does not apply to contract immigrants who are British subjects either born in the United Kingdom or descended from persons there born. The terms of the contract must offer to the immigrant advantages equal to those of local workers. Domestic servants and personal attendants accompanying their employers to Australia are excluded from the operation of the Act. Contract immigrants not complying with the above conditions are excluded from Australia.

During the year 1907, 972 contract immigrants were admitted into the Commonwealth, of whom 731 were British, 107 were Spaniards, 80 Scandinavians, 41 Austrians, and 13 Germans. Out of this total 912 were agricultural labourers introduced for the Queensland sugar industry, viz., 571 by the Queensland Government and 341 by the Colonial Sugar Refining Company. The labourers for the sugar plantations included all the Spaniards, Scandinavians, and Austrians, and 684 out of 731 British. The remaining 47 British and the 13 Germans were required for various industries.

(v.) *The Sugar Bounty Act 1905* and the *Bounties Act 1907* make the payment of the bounty contingent on the goods having been grown or produced by white labour.

(vi.) Part VII. of the *Trade Marks Act 1905*, providing for the registration of marks by any individual Australian worker or association of Australian workers for the purpose of indicating that the articles to which it is applied are the exclusive production of the worker or of members of the association—an adaptation of the American "union label"—has been held by the High Court to be constitutionally *ultra vires*. The Court made an order forbidding the Registrar to keep a workers' register.

SECTION XXVIII.

DEFENCE.

§ 1. Military Defence.

1. **Historical Outline.**—(i.) *Introductory.* For many years after the establishment of colonies in Australia, there was no military training of the general body of citizens, nor even of a selection from out that body, as is the case to-day. Military needs up to 1870, viz., for fifteen years after the grant of responsible government, were met by detachments of Imperial troops. Colonists, however, had not left out of consideration the need for an efficient system of self-defence, and the early establishment of volunteer forces in times of emergency and stress, have now found fruition under the Commonwealth, since the aim of Australians is to make the continent self-contained in the matter of defence.

(ii.) *New South Wales.* Until the year 1870 the main defence of Australia consisted of the garrisons of British troops quartered in the leading cities. In the convict days the Imperial soldiery was maintained principally as a convict guard, and for policing the penal settlements. In 1801 a corps of volunteers, designated the "Loyal Association," was formed, in response to an invitation from the Governor, from among the settlers and the civil officials, to meet any French attack upon the colonies, the possibility of which was suggested by the frequent rumours of war between France and England. The members of the association were generally victualled at the public cost.

In 1803, the strength of the New South Wales corps being then 569 of all ranks, news reached the colony that war had been declared. The Governor summoned the inhabitants to a muster, and a defence corps, for service in case of invasion, was raised.

The period of the Napoleonic wars was one of alertness in the colony, but with the cessation of hostilities, the active service of the volunteers seems to have come to an end. In 1854, the year of the Russian war, a volunteer force was enrolled in Sydney, under the authority of the Act 18 Vict. No. 8. This corps consisted originally of one troop of cavalry, one battery of artillery, and six companies of foot, called the 1st Regiment of New South Wales Rifles; but with the termination of the Crimean war, the volunteers practically ceased to exist. A second force was enrolled in 1860, consisting of one troop of mounted rifles, three batteries of artillery, and twenty companies of infantry, with a total strength of 1700. In 1862 the Mounted Rifles gave place to more artillery. In 1868 the military force was reorganised under the Volunteer Regulation Act of 1867, a grant of 50 acres of land being given for five years' efficient service. Under this enactment a large force was maintained. 1870 saw the withdrawal of the Imperial troops. "Regular" troops were not immediately raised, and for some months the responsibility for home defence rested upon the volunteers. In 1870 a regular defence force was enrolled, comprising one battery of artillery and two companies of infantry. In the following year the latter were disbanded. In 1874 the land orders for volunteers were abolished, and a direct system of "partial payment" introduced. In 1876 the "permanent" artillery was strengthened by a second battery, and in the following year by a third. 1877 saw the augmentation of the Engineers' Corps, established as a "volunteer" body 10 years earlier, by a torpedo and signalling corps; in 1890 a

second field company was added. In 1878 a further reorganisation of the volunteers took place. In 1881 the Commissariat and Transport Corps was raised, designated Army Service Corps later. The Act of 1867, as amended in 1878, continued in force till the transfer of the troops to the Commonwealth. A corps of naval artillery volunteers was raised in 1882, and was followed a few years later by numerous bodies of military reserves, of all the principal arms; but all these "volunteers" were gradually disbanded, or merged in the "partially-paid" forces.

The cavalry regiment, known as the N.S.W. Lancers, was first raised in 1885 as a volunteer reserve corps, under the name of the Light Horse; but in 1888 the men were merged in the "partially-paid" troops, under their present designation. They provided their own horses and equipment—uniform and arms being supplied by the Government. Unlike the Lancers, the Mounted Rifles were directly enrolled in 1889 as a "partially-paid" body, and were strengthened by the inclusion of a large part of the Light Horse. An unpaid reserve of four batteries of field and garrison artillery was raised in 1885, but two of these were disbanded in 1892, and the others merged in the "partially-paid" force forming a second field battery. Unpaid infantry reserves were also raised in 1885. These were gradually weakened, and many of the men were formed into reserve rifle companies, the remainder in 1892 being absorbed by the 1st, 2nd, 3rd and 4th regiments, whose establishments were at the same time raised from eight to ten companies. At the end of the same year the rifle companies were disbanded, and civilian rifle clubs formed.

The "permanent" force was extended in 1888 to include corps of submarine miners and mounted infantry; but the latter ceased to exist in 1890, and a fourth battery was added to the artillery, while in the following year a "permanent" medical staff corps evolved out of the "volunteer" army medical corps, which had been raised in 1888.

In 1892 the "partially-paid" infantry absorbed many members of the older infantry reserves. Two years later, it was further strengthened by the absorption of the senior cadets from the public schools. Improvement in organisation and administration were further developed in 1895-6, by the addition of an Army Service Corps and Ordnance Store Corps and a Veterinary department to the establishments, and by the elaboration of arrangements necessary to mobilisation for war.

"Volunteers" were again instituted in 1895. The Scottish Rifles, followed by the Irish, the St. George's, and the Australian Rifles, were raised. In 1897 the First Australian Volunteer Horse and the Railway Volunteer Corps were added, as also was a "National Guard," consisting of old volunteers and men who had seen service. In 1899 the Defence Force Rifle Association was incorporated under regulations approved by the Government. In the same year the Railway Corps was disbanded, and in 1900 the Australian Horse came under the "partially-paid" system. The volunteer forces were strengthened during that year by the addition of the Canterbury Mounted Rifles, Civil Service Corps, and Drummoyne Volunteer Company. The Army Nursing Service Reserve was also established in connection with the Army Medical Corps. It consisted of 26 nursing sisters possessing the highest nursing qualifications and training.

The actual strength of the military forces of New South Wales on 31st December, 1900, was 505 officers and 8833 men, made up as shewn in table hereinafter.

In addition, there were on the same date a reserve with 130 officers and 1908 of other ranks, and civilian rifle clubs with 1906 members.

(iii.) *Victoria.* Soon after separation from New South Wales the war between Russia, and the allied forces of England, France, and Turkey led to the formation, in 1854, under the authority of an Act for volunteer corps in Victoria (18 Vict., No. 7) of the Melbourne Volunteer Rifle Regiment, later known as the Victorian Volunteer Artillery Regiment, with an establishment of 2000 men. In 1860 the volunteers in the colony took over the garrison duties of the Imperial troops, who were ordered to New Zealand, the actual strength in the year named being 4002. Reorganisation was effected in 1863, and two years later the Volunteer Act (28 Vict., No. 266) authorised the raising of a force comprising various arms of the service. On the withdrawal of the detachment of Imperial troops formerly stationed in the colony, the Discipline Act 1870

(34 Vict., No. 389) was enacted, instituting a paid artillery corps. If otherwise eligible, the men of this corps were drafted into the Police and Penal Departments as vacancies arose. In the first four years of the system 190 artillerymen were transferred to the civil branch. From the establishment of the "permanent" force the whole expenditure on military services has been borne by the State.

The "volunteer" force, as originally constituted, comprised cavalry, artillery, engineers, and infantry, with a torpedo and signal corps. At the end of 1871 the "permanent" artillery numbered 119 of all ranks, one only holding a commission. The volunteers and naval brigade consisted of 136 officers and 3663 other ranks, a total of 3799.

The years ensuing saw steady development in military matters. The permanent forces were at all times kept in a high state of efficiency, and the volunteers strove to emulate them in matters of training and discipline. The establishment of both the professional and civil soldiery was gradually increased. Buildings and fortifications were constructed and maintained, garrison and field guns and guns of position were purchased and made available, and the dismounted services were armed with rifles.

In 1876 effect was given to many of the recommendations of a Royal Commission appointed in 1875. Sea and coast defence began to be undertaken, and regular drills and camps of exercise for all arms were instituted shortly afterwards. In the year named the strength of the forces was 3736 of all ranks, including 136 permanent artillery.

Still greater changes in the system of Victorian defence were made in 1883 and 1884. The volunteer force was disbanded, and corps of paid "militia" were raised in lieu and enrolled under the Discipline Act 1883 (47 Vict., No. 777), which came into operation on 3rd December of that year. A large number of the volunteers were drafted into the paid militia, and granted continuity of service. A Ministry of Defence was constituted and a Council of Defence created, a special appropriation of £110,000 a year for five years being made. Officers from the active list of the Imperial navy and army were engaged for terms of service in the colonial forces to carry out the necessary discipline and instruction. The naval force was also considerably augmented. In 1887 the strength was 4189 of all ranks, including 268 permanent soldiers.

In 1890 the laws relating to defences and discipline were consolidated under the Defences and Discipline Act 1890 (54 Vict., No. 1083). This Act formed the principal law under which the forces were maintained until the enactment of the Defence Act 1903 by the Federal Parliament. A further appropriation of £145,000 was, on the expiration of the previous one, provided for naval and military purposes for two and a-half years, viz., from 1st July, 1899, to 31st December, 1901. The engaging of officers from the Imperial navy and army for terms of service was continued. Colonial officers were sent to England for special courses of instruction, and a scheme was arranged, with the consent of Home authorities, for sending selected officers of both arms of the defence force for courses of instruction in the Imperial service. The Admiralty gave permission for officers of the colonial navy to serve on board H.M. ships on the station, granting acting commissions so as to enable them to undertake responsible duties. The total defence establishment for 1891-2, fixed at 7360, was reduced in 1895 to 4901, but again increased in 1899 to 5885.

Rifle clubs were established in 1883 for the encouragement of rifle practice. Members were allowed to obtain rifles and ammunition at reduced rates, and were given free railway travelling for rifle practice and matches. Shortly after inauguration, the clubs were divided into six districts, and members in each district were required to meet once a quarter for practice in field firing. An annual allowance was made to the clubs for each effective marksman, the money being devoted to the maintenance of ranges and purchase of ammunition.

The regiment of Mounted Rifles was established in all the districts of Victoria. To cover the cost of uniform, and for incidental expenses, an effective and capitation allowance was made, and a small payment was granted by way of compensation for attendance at the annual camps of training; otherwise the corps was a "volunteer" one. Certain

articles of equipment were furnished by the Government, recruits on being passed into the ranks getting rifles, accoutrements, and horse-gear (except saddle) free. A minimum of twelve daylight drills annually, and a course of musketry, was prescribed for all members, and engagement was for three years with privilege of re-engagement.

An infantry volunteer regiment (the Victorian Rangers) was also raised in extra-metropolitan places. Effective and capitation allowance, and compensation for loss of time by reason of attendance at camp, were granted also to the Rangers.

The outcome of the encouragement of drill and rifle-shooting in the schools was the formation, in the year 1884, of Cadet Corps. These were authorised in any school in detachments of not less than twenty. The Government supplied rifles (principally Francotte breech-loaders) and provided ammunition at reduced rates. Corps were raised in all districts in the larger schools. Instructors of the militia and volunteers were permitted, in their spare time, to drill the cadets, payment of 2s. 6d. being allowed for each parade. Annual camps, largely attended, were held generally in the spring. In Melbourne, and in the principal inland towns, classes for instruction of cadet officers were conducted, which were regularly availed of by masters and teachers.

To form a link between the school cadets and the militia a battalion of Senior Cadets was established, and consisted chiefly of boys who had left school and engaged in regular occupations in life. All the work was voluntary, and arms and accoutrements were supplied by the Government. An effective allowance was made to assist the boys in the purchase of clothing.

The depression and consequent retrenchment in the last decade of the nineteenth century seriously affected the Defence Department, but efficiency was never sacrificed.

The strength of the Victorian Defence Force on the eve of Federation was as follows:—Officers, 301; other ranks, 6034; the details being as shewn in table hereinafter.

(iv.) *Queensland.* Steps were almost immediately taken, upon the separation of the Colony of Queensland from New South Wales in 1859, to provide for defence. A troop of mounted rifles was raised in March, 1860. The service was voluntary and the force quickly increased, infantry and cavalry, subsequently supplemented by artillery, being formed of "volunteers." Grants for efficiency and a capitation allowance, with free issue of ammunition, were obtained from the Government; and orders granting fifty acres of land were available upon completion of five consecutive years of service. In 1876 the total strength was 415. The Volunteer Act of 1878 provided for the raising of a force for defence, and many citizens entered upon useful and regular training. In 1880 the total strength was 1219 of all ranks.

But the volunteer system here, as elsewhere in Australia, was superseded. In 1883, a Military Committee of Inquiry, appointed to consider the basis of service, reported against the system as lacking in cohesion and discipline, and in 1884 the Volunteer Act was repealed. All male inhabitants within specified ages, and with certain exceptions, were liable to serve. A small permanent corps was authorised, and the formation of partially-paid militia and volunteer corps was provided for. Under the new system the force was greatly augmented, and a higher degree of efficiency was reached. Subsequent legislation crystallised the defence system of the colony. The total strength on 31st December, 1900, was 4028, made up as shewn in table hereinafter.

(v.) *South Australia.* The first attempt at military organisation in Adelaide dates back to 1854, when a Militia Act authorised the Governor to call out a force of 2000 men between 16 and 46 years of age. The power, however, was not exercised. The Acts of 1859 and 1860 provided for the establishment of volunteer forces, but in 1865 all previous Acts were repealed, and under a new enactment the calling out of not fewer than 540 and not more than 1000 men was authorised, with pay at the rate of 5s. a day. In 1867 the artillery were given a slightly higher rate. In 1877 the possibility of war with Russia acted as a stimulus in defence matters; 1000 men were raised under the existing legislation, and Imperial officers and drill instructors were obtained from England for purposes of instruction, discipline, and organisation.

A National Rifle Association was inaugurated in the following year, and rifle companies were formed. An Act of the year authorised the formation of a small "permanent" force, but it was only in 1882, under an amendment of the Act of 1878, that such force, consisting of one officer and 20 men, was raised. Three years after its formation the numbers were augmented.

In 1881-2, Acts were passed which allowed the paid volunteers to be raised to a maximum of 1500, and authorised a reserve without limit of numbers. In 1882 the force numbered 1880—1680 infantry and 200 artillery.

In 1886, by further legislation, the paid volunteers were styled "militia," the rifle companies became the "volunteer" force, and a militia reserve was also provided for. At the end of 1889 the strength of the "permanent," "militia," and "volunteer" force was 2720 of all ranks. Minor alterations were made in 1890 and 1895.

The strength on 31st December, 1900, was—officers of active and reserve forces, 135; other ranks, 2797, made up as shewn in table hereinafter.

(vi.) *Western Australia.* The first "volunteer" force in Western Australia was raised in 1861, under Local Ordinance 25 Vict., No. 3. By the Volunteer Force Regulation Act 1883, the local forces were placed under the military law of Great Britain in time of war, but with certain reservations. In 1889 the "volunteer" force numbered 603 of all ranks. In 1890 an increase in establishment to 712 was made. It consisted then of eight corps, of which two were field artillery and six were infantry. Attached to two of the infantry corps were 60 mounted infantrymen. For each efficient volunteer, a capitation grant of £1 10s. per annum was made. To attain efficiency, a volunteer had to attend 12 parades in the year, and complete a musketry course.

Other "volunteer" corps were formed under the provisions of an Act of 1894, and a small unit of "permanent" artillery was added. The "partially-paid" system was introduced in 1896-7. Cadet corps were formed at Perth and Fremantle, and the establishment of the Perth and Fremantle batteries were substantially increased.

Shortly before Federation, a "volunteer" reserve force was formed of persons who had served in the Imperial army, navy, or auxiliary force, or in the military forces of a colony. Six drills a year were required of each member, and an annual allowance of 10s. was made. Membership was restricted to persons under 60 years of age.

The strength of the Western Australian forces on 31st December, 1900, was—135 officers and 2561 other ranks, the details being as shewn in table hereinafter.

(vii.) *Tasmania.* Leaving out of consideration the presence of British military detachments during the early days of Tasmania, no really military local force was organised till 1859, when two batteries of "volunteer" artillery, and twelve companies of "volunteer" infantry were raised. In 1867 the infantry companies were disbanded, and the artillery increased by one battery.

The withdrawal of the Imperial force in 1870, and the simultaneous withdrawal of the volunteer vote, left the colony totally destitute of defence. It was not till 1878 that a remedy was applied, another "volunteer" force being enrolled in that year. In 1882 the strength of this force was 634 of all ranks.

Active forces, of a strength not exceeding 1200 in time of peace, were authorised under an Act of 1885, the services of existing volunteer corps being retained.

Eight years later, an additional "auxiliary" force of a total peace strength of 1500 was authorised.

At the end of 1896 the total strength of the Tasmanian force was 1399, of whom 966 belonged to the "auxiliary" force, and about 200 to the Tasmanian and Launceston Rifle Regiments.

Consolidation of these three units was effected in 1898, the new corps consisting of three battalions, forming the Tasmanian Infantry Regiment.

The strength on 31st December, 1900, was—113 officers and 1911 of other ranks, made up as shewn in table hereinafter.

(viii.) *Defence Works and Fortifications.* Fortifications have been erected for the defence of the principal coast cities of the States, and, in the case particularly of Sydney

and Melbourne, heavy armaments have been erected at the port entrances and other points of vantage. It is difficult to determine the total cost of defence works. Large sums have been spent out of loans in each State except Western Australia, but from 1872 to 1899 Victoria did not expend loan moneys on defence construction.

(ix.) *Fortification of Strategic Points.* For some time prior to 1890 the necessity of fortifying certain points on the Australian coast, at the joint expense of the colonies, was considered. Important trade routes are commanded by Albany, on King George's Sound, in Western Australia, and by Thursday Island, in Torres Strait. Hobart and Port Darwin were also regarded as strategic ports which should be fortified. As the result of a military commission, appointed by the Imperial and the different Australian Governments, which visited the places named, defences were erected at King George's Sound, one-fourth of the cost being borne by Western Australia, the remaining three-fourths by New South Wales, Victoria, Queensland, and South Australia, on a population basis. Equipment was supplied by the Imperial Government, and Western Australia provided the garrison and exercised general superintendence. Fortifications at Thursday Island were also erected, New South Wales, Victoria, Queensland, and Western Australia contributing to the cost of maintenance according to their respective populations. Owing to the formation of a harbour at Fremantle, the Imperial authorities now consider it should be the only fortified port in Western Australia. The whole question of fortification and rearmament is being considered by the Commonwealth Government.

(x.) *Summary.* The earliest settlements in Australia were made by British officers in charge of transported convicts, in the oversight of whom they were assisted by detachments of Imperial troops. The forces who were sent from the centre of Government to maintain order and discipline in the outlying parts of the Empire, were either specially raised and enlisted for the purpose, as in the case of the New South Wales corps, or were sent to their colonial destinations in the ordinary routine of their military service. Prior to the withdrawal of the last British troops from Australia, attempts had been made to organise local forces on a volunteer basis. In 1854 an effort was made which evinced considerable determination on the part of the colonists—engendered, evidently, by the fear of aggression likely to result from the Russian war. But the cessation of hostilities removed the cause for anxiety, and the volunteer movement seems to have passed into abeyance. Even in these early years, however, the need for a Federal system of defence was recognised by the thinking men of the community, and at last the federation of the Australian States—with its eminent advantages for effective defence—was consummated. In the sixties the Continental wars kept before statesmen the need of preparation for war, and the fact that in Australia the position of affairs was neither unobserved nor misunderstood is shewn by the raising—this time on a more lasting basis—of a volunteer force. Again, too, there was a determined effort to federalise defence, culminating in the proposals of 1870. In the year named, the Franco-German war, and the withdrawal of the last Imperial regiment from Australia, resulted in a definite basis for colonial defence being settled. Small detachments of permanent soldiery were instituted, to act generally as a nucleus about which the citizen soldiery should be shaped, and, generally, to look after the forts and defence works, which had then begun to be erected. The volunteer movement was enthusiastically taken up; many loyal colonists devoted their leisure to drill and training. No payment was made for loss of time, but arms and accoutrements, and sometimes uniforms, were furnished by Government. Reward for five years' service frequently took the shape of grants of land. In 1877 the possibility of another Russian war gave a stimulus to the movement, and establishments were increased. A few years later, as the result of rumours of war, consequent upon French activity in the New Hebrides, and of the reports of highly-qualified military experts who were specially employed to report on the condition of the defences, the "volunteer system" was abandoned, and the "militia," or "partially-paid" forces were brought into existence. The move towards federation is again noticeable, a very important convention being held in 1881. It was held that the "volunteer" system had failed. While many zealous men gave their whole energies to their training, some joined

apparently without serious motive, and consequently failed to acquire those essential ideas of discipline necessary no less in citizen than in professional soldiery. Citizen forces were not thereby doomed, however, for the provision of a small annual allowance—generally £10 or £12 for the gunner or private, with a sliding scale for higher ranks—together with arms, accoutrements, ammunition, and all military necessities, free, enabled the “militia” system to be inaugurated, and as it was begun, so practically it has remained to the present day. Reductions in the above rates of pay were found to be necessary, and the lower rates have been continued under the Federal Government. “Volunteer” corps have again been raised, and the “permanent” forces have been continued in the Public Service.

(xi.) *Strength of States' Defence Forces immediately prior to Federation.* The establishment and strength of the military forces of the several States on 31st December, 1900, immediately prior to federation, was as follows, cadets, reservists, and rifle club members being excluded :—

**ESTABLISHMENT AND STRENGTH OF MILITARY FORCES OF STATES,
31ST DECEMBER, 1900.**

| State. | Establishment. | | Strength. | |
|--------------------------|----------------|--------------|-----------|--------------|
| | Officers. | Other Ranks. | Officers. | Other Ranks. |
| New South Wales | 549 | 9,295 | 505 | 8,833 |
| Victoria | 394 | 6,050 | 301 | 6,034 |
| Queensland | 310 | 5,035 | 291 | 3,737 |
| South Australia | 141 | 2,847 | 135 | 2,797 |
| Western Australia | 140 | 2,553 | 135 | 2,561 |
| Tasmania | 131 | 2,605 | 113 | 1,911 |
| Commonwealth | 1,665 | 28,385 | 1,480 | 25,873 |

The strength of the various arms is shewn in the following table, permanent being distinguished from “militia,” or “partially-paid,” and “volunteers” :—

STRENGTH OF THE VARIOUS ARMS, 31st DECEMBER, 1900.

| Arms. | N.S.W. | | Victoria. | | Q'land. | | S. Aust. | | W. Aust. | | Tas. | | TOTAL. | |
|---------------------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|
| | Officers. | Other Ranks. | Officers. | Other Ranks. | Officers. | Other Ranks. | Officers. | Other Ranks. | Officers. | Other Ranks. | Officers. | Other Ranks. | Officers. | Other Ranks. |
| Permanent— | | | | | | | | | | | | | | |
| Staff | 19 | 98 | 14 | 58 | 15 | 57 | 14 | 5 | 2 | 8 | 3 | 9 | 67 | 235 |
| Field and Garrison | | | | | | | | | | | | | | |
| Artillery | 18 | 429 | 12 | 272 | 7 | 214 | 1 | 23 | 2 | 31 | — | 15 | 40 | 984 |
| Engineers and other | | | | | | | | | | | | | | |
| units | 5 | 70 | 1 | 32 | — | — | — | — | 2 | 2 | — | — | 8 | 104 |
| Militia and Volunteer— | | | | | | | | | | | | | | |
| Cavalry and Mounted | | | | | | | | | | | | | | |
| Rifles | 88 | 1,695 | 52 | 1,033 | 53 | 741 | 33 | 621 | 32 | 799 | 5 | 91 | 263 | 4,980 |
| Field Artillery | 10 | 121 | 14 | 277 | 13 | 138 | 4 | 101 | 12 | 174 | — | — | 53 | 811 |
| Garrison Artillery | 27 | 441 | 37 | 901 | 17 | 212 | 9 | 165 | 2 | 66 | 13 | 197 | 105 | 1,932 |
| Infantry | 242 | 5,382 | 136 | 3,193 | 145 | 2,189 | 58 | 1,786 | 71 | 1,451 | 83 | 1,549 | 735 | 15,550 |
| Engineers and other | | | | | | | | | | | | | | |
| units | 96 | 597 | 35 | 268 | 41 | 186 | 16 | 96 | 12 | 30 | 9 | 50 | 239 | 1,227 |
| | 505 | 8,833 | 301 | 6,034 | 291 | 3,737 | 135 | 2,797 | 135 | 2,561 | 113 | 1,911 | 1,480 | 25,873 |

2. **Land Defence of Federated Australia.**—(i.) *Assumption of Control by Commonwealth.* The Commonwealth of Australia Constitution Act of 1900 empowered the Commonwealth to legislate with respect to “the naval and military defence of the Commonwealth and of the several States, and the control of the forces to execute and “maintain the laws of the Commonwealth,” and vested the command-in-chief of the Commonwealth forces in the Governor-General, authorising him to proclaim a date, after the establishment of the Commonwealth, for the transference of the Defence Department from each State. This transfer was effected in March, 1901, when the State Ministry for Defence, one of the seven departments of the Executive Council of the federation, took over the control of the whole of the forces of the States.

(ii.) *The System of Administration.* Up to 12th January, 1905, the administration of the Commonwealth military forces was by means of a general officer commanding and a headquarters staff. On the date named, a Council of Defence, to deal with questions of policy, and a Military Board, to supervise the administration of the forces, were constituted. The main objects aimed at under the new system are (1) to establish continuity in defence policy; (2) to maintain a continuous connection between parliamentary responsibility and the control and development of the defence forces, the Minister being in constant and effective touch with his department; (3) to establish continuity of administrative methods by the creation of a continuous board; (4) the separation of administration from executive command, so as to develop the independence of district commands, and by giving scope to independent thought and initiative, make practicable a larger measure of decentralisation, and, more particularly, to make possible the ultimate development of a citizen force; (5) to maintain, on a uniform basis, the efficiency of the forces, by continuous and searching inspection by, and independent report from, an officer who, as Inspector-General, is appointed to report upon the results of the administration of the forces, the efficiency of the troops, the system of training, the equipment, the preparedness for war, and the state and condition of all defence works.

The military system of the Commonwealth is made up of—

- (a) Permanent Forces which include
 - Administrative and Instructional Staff.
 - The Royal Australian Artillery Regiment.
 - Small detachments of—
 - Royal Australian Engineers.
 - Australian Army Medical Corps.
 - Australian Army Service Corps.
- b) Citizen Forces, comprising
 - Militia Forces of all arms.
 - Volunteer Forces (infantry).
 - Reserve Forces.

The Royal Australian Artillery Regiment practically provides the garrison for certain naval strategic positions and other defended ports, and maintains the forts, guns, stores, and equipment in connection therewith. The other permanent detachments are to form a nucleus, each in its own arm, for instruction and administration of the citizen forces.

The forces of the Commonwealth are organised into—

- (a) Field Force.
- (b) Garrison Troops.

The field force consists of five Light Horse brigades, two infantry brigades, and four mixed brigades, and its duties are to undertake the defence of the Commonwealth as a whole, and to act as reserve to the garrison troops. The garrison troops find the necessary garrisons for the defended ports.

The reserves consist of (a) officers who, having passed through a certain period or course of training, have retired from active service, and (b) members of rifle clubs.

attested under the Defence Acts. Rifle club members are required each year to fire a prescribed musketry course, a capitation allowance being paid to clubs for each member classed as efficient. Rifle clubs would furnish a means of bringing the active forces up to war strength in time of national emergency.

(iii.) *The Military Forces under the Federation.* The position of the military forces under the Commonwealth is shewn in the following table:—

STRENGTH OF MILITARY FORCES, 1901 to 1908.

| State. | 1901. *1/3/01. | 1902. 1/8/02. | 1903. 30/6/03. | 1904. 30/6/04. | 1905. 30/6/05. | 1906. 30/6/06. | 1907. 30/6/07. | 1908. 30/6/08. |
|-----------------------|-------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| C'wth Headquarters | ... | 26 | 25 | 26 | 23 | 21 | 21 | †26 |
| New South Wales ... | 9,772 | 9,350 | 8,190 | 7,285 | 7,450 | 7,641 | 7,501 | 7,665 |
| Victoria ... | 7,011 | 6,771 | 6,070 | 5,734 | 5,858 | 6,146 | 6,235 | 6,568 |
| Queensland ... | 4,310 | 3,199 | 2,889 | 2,830 | 2,877 | 3,011 | 2,979 | 3,176 |
| South Australia ... | 2,956 | 2,214 | 1,911 | 1,699 | 1,842 | 1,962 | 1,888 | 1,935 |
| Western Australia ... | 2,283 | 1,845 | 1,469 | 1,254 | 1,235 | 1,522 | 1,625 | 1,611 |
| Tasmania ... | 2,554 | 2,199 | 1,850 | 1,052 | 1,214 | 1,645 | 1,662 | 1,650 |
| Total ... | 28,386 | 25,604 | 22,404 | 19,880 | 20,499 | 21,948 | 21,911 | 22,631 |

* Date of Commonwealth taking over the military forces from States.

† Includes Headquarters Australian Intelligence Corps (Militia), numbering 3.

(iv.) *Strength of the Various Arms.* The numbers of the different arms of the service on the 30th June, 1908, were as follows:—

ARMS OF THE COMMONWEALTH DEFENCE, 1908.

| | | | | | |
|------------------------|--------|---|-----|---|--------|
| Militia Staff ... | 41 | Army Service Corps | 288 | Pay Department, Rifle Ranges, Rifle Clubs, Officers, etc. | 57 |
| Light Horse ... | 5,062 | Army Medical Corps | 618 | | |
| Field Artillery ... | 1,216 | Army Nurs'g Service | 90 | | |
| Garrison Artillery ... | 2,189 | Veterinary Dept. ... | 12 | | |
| Engineers ... | 757 | Ordnance Dept. ... | 151 | | |
| Infantry ... | 11,568 | Administrative and Instructional Staff | 307 | | |
| Intelligence Corps | 11 | | | Grand Total ... | 22,631 |
| Corps of Signallers | 264 | | | | |

(v.) *Classification of Land Forces.* The following table shews the classification and strength of the land forces in each State, including rifle clubs and cadets, on the 30th June, 1908:—

CLASSIFICATION OF LAND FORCES, 1908.

| Branch of Service. | Central Adm'n's'n. | New South Wales. | Victoria. | Q'land. | South Aust. | West'n Aust. | Tas. | Total. |
|-----------------------------|-----------------------|------------------------|-----------|---------|----------------|-----------------|-------|---------|
| Permanently employed ... | 23 | 504 | 413 | 261 | 63 | 69 | 46 | 1,379 |
| Militia ... | 3 | 5,244 | 4,998 | 2,751 | 1,312 | 909 | 937 | 16,154 |
| Volunteers ... | — | 1,917 | 1,157 | 164 | 560 | 633 | 667 | 5,098 |
| Rifle Clubs ... | — | 12,640 | 21,775 | 6,225 | 4,186 | 4,344 | 1,205 | 50,375 |
| Cadets ... | — | 8,244 | 10,231 | 4,644 | 2,428 | 2,139 | 1,505 | 29,191 |
| Unattached List of Officers | — | 53 | 118 | 60 | 44 | 20 | 41 | 336 |
| Reserve of Officers ... | — | 168 | 124 | 104 | 32 | 12 | 13 | 453 |
| Chaplains ... | — | 28 | 27 | 13 | 4 | 18 | 10 | 100 |
| Grand total ... | 26 | 28,798 | 38,843 | 14,222 | 8,629 | 8,144 | 4,424 | 103,086 |

§ 2. Naval Defence.

1. **Historical Outline.**—(i.) *States' Naval Forces.* The naval forces of Australasia prior to Federation derived their character and organisation from the local conditions of the colonies in which they were raised.

(ii.) *New South Wales.* New South Wales, being the base of the Imperial Navy, was fairly well assured as regards naval protection. Mainly with the view of reinforcing the vessels of the Royal Navy on the station, a Naval Brigade of seamen was raised, a large proportion being made up from time-expired petty officers and men of the Royal Navy. It was designed not only to serve as a reinforcement for the navy, but also to make up casualties and man any auxiliary ships, or take part in any expedition in which additional naval personnel would be of great service. To continue its naval character the *Wolverine*, an old composite or wooden corvette, late the flagship on the station, was made over to the New South Wales Government for exercise and training of the Naval Brigade, but this vessel was never fully equipped or commissioned. The officer commanding the naval forces was not an officer of the regular forces, but of the Civil Service, and the *Wolverine* was manned only on holidays and at Christmas or Easter time, and was rarely under way. Beyond the grant of the *Wolverine* and after that period—particularly after the arrival of the auxiliary squadron under the agreement—there was no recognition of this force by the Royal Naval authorities to the extent of its inclusion in any scheme of naval work or operations. In 1885 two torpedo boats were built in Sydney, and manned by the naval force, permanent officers and men being appointed for instruction and command and care of vessels and machinery. The *Wolverine* was sold for breaking up in 1889, but no other vessel was provided to take her place. The Naval Brigade, however, steadily increased in strength, and several companies of Naval Artillery Volunteers were added to it prior to Federation. The officer commanding the Naval Artillery Volunteers was in command of the torpedo boats. The strength of the New South Wales naval force stood at 614 at date of Federation, though, for lack of vessels in which to serve and exercise, this force had lost much of its sea character, and some sections had been merged in the land defence.

(iii.) *Victoria.* The Victorian force dates from the sixties. Local conditions dictated the character of this force. There was practically no permanent stationing of Royal Navy vessels in Victorian waters. The Heads were not fortified, and the large expanse of Port Phillip and Hobson's Bay open to foreign cruisers called for a service thoroughly naval in character for its defence. In June, 1885, the following vessels belonged to the Victorian Government, viz.:—*Nelson*, wooden frigate; *Cerberus*, ironclad; *Victoria* and *Albert*, gunboats; *Childers*, *Nepean*, and *Lonsdale*, torpedo boats; and there were also five auxiliary armed steamers. In 1892 the *Countess of Hopetoun*, first-class torpedo boat, was obtained. This force was considerably reduced in 1893. The gunboats were withdrawn then, and thus the best vessels for sea training were disposed of. This force was maintained at an annual cost of £27,000 up to 1900. Soon after Federation it was reduced to an annual expenditure of £19,000.

iv.) *Queensland.* The Queensland naval forces were established about 1884 on the advice of the Imperial authorities. Gunboats were built for the defence of all bays, rivers, or roadsteads against the "merchant cruiser" of the volunteer fleet order, then deemed the most probable enemy. Two gunboats, each of 360 tons, and armed each with one 8-inch and one 6-inch B.L. gun, with four light Q.F. or machine guns, the *Gayundah* and the *Paluma*, were commissioned. The *Gayundah* was maintained in commission with a full complement by the Queensland Government, the *Paluma* by the Admiralty for surveying service. There were also obtained for defence one second-class torpedo boat and one picket boat, and in addition there were guns for service in river defence, mounted on steam barges belonging to the Marine Department. Queensland, in addition to providing gunboats, had followed the example of New South Wales,

and organised companies of a Naval Brigade at the main ports, and, as in New South Wales, there was an excess of men over facilities for training, and the force was reduced in 1893. The gunboats were put out of commission, and the whole naval force reduced. Expansion followed on improved prosperity, and in 1899 and 1900 the Queensland naval forces were raised to a total of 784. The retrenchment following upon Federation reduced the force to practically its present strength.

(v.) *South Australia.* South Australia initiated a system of naval defence in 1884 with the advice of the Imperial authorities. The recommendations of Sir W. Jervois, then Governor of South Australia, an expert in defence and military engineering, took shape in the provision of the *Protector*, a small but heavily-armed cruiser, specially designed for service in the territorial waters of South Australia. This vessel was permanently commissioned with a three-fifths complement, and exercised in every way as a ship of war of the Royal Navy. At the time of her arrival (as was also the case with the Victorian and Queensland gunboats) her armament was in advance of any carried by the vessels of the Royal Navy on the station, which were all still armed with M.L. guns of short range. The naval force of South Australia also included a reserve of from 100 in 1886 to 200 in 1900 for raising the complement of the *Protector* and all subsidiary war services. In 1893 the *Protector* was placed in commission in reserve, and the permanent crew and officers, excepting only a commander, chief engineer, and instructional staff, were retrenched.

(vi.) *Western Australia and Tasmania.* Tasmania had no naval force or vessel other than a second-class torpedo boat, laid up for many years, and finally transferred to South Australia. Western Australia has had no naval force whatever.

2. **The Naval Agreement with the British Government.**—(i.) *The Original Compact.* The naval defence of Australasia and its trade is entrusted primarily to ships of the Imperial Navy, maintained under an agreement entered into between the British Government and the Governments of the Commonwealth and New Zealand, and at their joint charge. This agreement was embodied in Acts passed by the several Legislatures some ten years prior to Australian federation. According to its terms, a naval force, additional to the vessels of the Australian Naval Station, which were to be maintained at their normal strength, was to act as an auxiliary squadron. It consisted of five fast third-class cruisers and two torpedo gunboats, and its special function was the protection of the floating trade in Australasian waters. The agreement was made for ten years, and was then, or at the end of any subsequent year, to be terminable only upon two years' notice being given. On its termination, the vessels were to remain the property of the Imperial Government. Three cruisers and one gunboat were to be kept continuously in commission, and the remainder in reserve in Australasian ports, but ready for commission whenever occasion might arise. The vessels were to remain within the limits of the Australasian station, and were to be employed, in times of peace or war, within such limits, in the same way as the Sovereign's ships of war, or employed beyond those limits only with the consent of the Colonial Governments.¹ The first cost of the vessels was paid out of Imperial funds, but the Colonial Governments paid interest on the prime cost at 5 per cent. (up to a maximum of £35,000 per annum), and a sum not exceeding £91,000 for annual maintenance of the vessels, or a total annual contribution of £126,000. In times of emergency or actual war, the cost of commissioning and maintaining the three vessels kept in reserve during peace, was to be borne by the Imperial

1. The boundaries of the Australasian station were thus defined:—North—On the north from the meridian of 95° east, by the parallel of the 10th degree of south latitude to 130° east longitude; thence northward on that meridian to the parallel of 2° north latitude; and thence on that parallel to the meridian of 136° east longitude; thence north to 12° north latitude and along that parallel to 160° west longitude. West—On the west by the meridian of 95° east longitude. South—On the south by the Antarctic circle. East—On the east by the meridian of 160° of west longitude.

Nothing in the agreement was to affect the purely local naval forces which had been, or might be, established in the colonies for harbour and coast defence. Such local forces were to continue to be paid for entirely by the colony, and to be solely under its control.

Government, and, in every respect, the vessels were on the same status as the ships of war of the Sovereign, whether in commission or not. The officers and men of those in commission were subject to a triennial change. The tenth annual contribution, which was payable in advance on 1st March, 1900, apportioned on a population basis, was as follows:—New South Wales, £37,973; Victoria, £32,749; New Zealand, £21,304; Queensland, £13,585; South Australia, £10,439; Western Australia, £4816; Tasmania, £4776.

(ii.) *The Agreement of 1903.* The agreement was not dissolved by the union of six of the contracting colonies, but its renewal, with some alterations, was embodied in the Naval Agreement Act of 1903, the Parliament of New Zealand also assenting. The present agreement provides that the force shall be made up of one first-class armoured cruiser, two second-class cruisers, four third-class cruisers, four sloops, and a Royal Naval Reserve of 25 officers and 700 seamen and stokers. One of the ships is to be kept in reserve, three are to be partly manned for drill purposes for training the Royal Naval Reserve, and the remainder are to be kept in commission and fully manned. Australians are, as far as possible, to man the three drill ships and one other vessel, but they are to be officered by Royal Navy and R.N. Reserve officers. Eight nominations for cadet-ships are to be given annually in the Commonwealth and two in New Zealand. One half of the annual cost of maintenance is to be borne by the colonies—five-sixths of the half (but not exceeding £200,000) by Australia, and one-sixth (but not exceeding £40,000) by New Zealand. The agreement, like the earlier one, is for ten years. By a subsequent arrangement the strength of the squadron was established at one first-class armoured cruiser, three second-class cruisers, and five third-class cruisers. Three sloops were recalled as having no war value, but usually one is on the station surveying.

3. **The Naval Defence of Federated Australia.**—(i.) *Proposals for an Australian Navy.* The question of the complete assumption, by federated Australia, of every branch of defence for the continent has been mooted. It has been felt that Australia should consider the question of taking full responsibility for the defence of her ports and dock-yards, and the protection of coastal trade. The floating trade of the Commonwealth amounts to £170,000,000 per annum, and obviously its protection is vitally necessary. It has also been suggested that the only way in which attack can be met with advantage is on the seas surrounding our coasts. Fortress artillery would render no such adequate protection, for beyond the range of its batteries, ports could be sealed to traffic by the most insignificant enemy, while a fleet of any considerable dimensions could cause the sea trade to be annihilated.

These considerations have been controverted by the Imperial Defence Committee, whose views have been summarised as follows:—

- (i.) The British fleets guarantee Australia against invasion in force.
- (ii.) They guarantee against attack by any considerable squadron of armoured vessels.
- (iii.) The exigencies of war may require the withdrawal of the Australian Imperial Squadron.
- (iv.) Australia cannot be guaranteed against attack by unarmoured commerce raiders up to four in number, but the losses they would inflict would not be of more than secondary importance.

The two latter elements, viz., possible withdrawals, and the absence of guarantee of protection under certain conditions, have raised the question whether, even though the damage inflicted by a small fleet would have little or no effect on the ultimate issue, and be but of secondary importance, such damage would not be of serious consequence to Australia. This has led to a discussion whether Australia should possess her own navy, or at least such naval war material as would ensure the principal lines of sea communication being kept open; or if not, ensure her ports being fully defended.

The Commonwealth Government has now determined to start the building of an Australian navy, and in March, 1908, contracted with Messrs. Denny Brothers and Fairfield for the construction of two torpedo boat destroyers, to cost £81,500 each; one vessel to be delivered in fourteen months, the other in fifteen months from the date of signing the contract. A vessel of the same kind, to be ready for shipment in twelve months, is also to be delivered in Australia in sections, at a cost of £72,500, for local completion.

In connection with the construction of these vessels, it is proposed to send from twelve to twenty selected Australian workmen, to be trained in the yards of the successful tenderers.

(ii.) *The Naval Forces under the Federation.* Prior to 1905 a naval officer commanding administered the naval forces. On 12th January of that year the Council of Defence was established to deal with all questions of policy, and the Naval Board, then first constituted, took over the administration of the Commonwealth naval forces. Continuity of policy and administration are thereby believed to be ensured; whilst efficiency and uniformity are provided for in the scheme of inspection and report by an officer who, as Director of Naval Forces, is appointed to deal with the training of the *personnel*, and the condition of the *materiel*, of naval forces and works.

The following table shews the strength of Commonwealth naval forces on 30th June, 1908:—

STRENGTH OF COMMONWEALTH NAVAL FORCES, 1908.

| Branch of Service. | New South Wales. | Victoria. | Queensland. | South Australia. | Total. |
|--------------------------|------------------|-----------|-------------|------------------|--------|
| Permanently Employed ... | 4 | 115 | 52 | 37 | 208 |
| Partially-paid ... | 305 | 232 | 342 | 118 | 997 |
| Total ... | 309 | 347 | 394 | 155 | 1,205 |

In addition to the above there were naval volunteer cadets numbering 200 in New South Wales, 201 in Victoria, 126 in Queensland, and 64 in South Australia—a total of 591.

(iii.) *Harbour Defences.* The vessels for harbour defence obtained by the several colonies prior to federation, and now remaining, are:—

COMMONWEALTH NAVAL FORCES, VESSELS, 1908.

| Description. | Name. | State. |
|------------------------------------|---------------------------------|-----------------|
| Iron armour-plated turret ship ... | <i>Cerberus</i> ... | Victoria |
| Steel cruiser ... | <i>Protector</i> ... | South Australia |
| Steel gun vessel ... | <i>Gayundah</i> ... | Queensland |
| " " ... | <i>Paluma</i> ... | " |
| First-class torpedo boat ... | <i>Countess of Hopetoun</i> ... | Victoria |
| " " ... | <i>Childers</i> ... | " |
| Second-class torpedo boat ... | <i>Nepean</i> ... | " |
| " " ... | <i>Lonsdale</i> ... | " |
| " " ... | <i>Mosquito</i> ... | Queensland |
| " " ... | ... | South Australia |
| Torpedo launch ... | <i>Gordon</i> ... | Victoria |
| " " ... | <i>Midge</i> ... | Queensland |

The *Gayundah* and *Protector* are utilised for the sea-training of the Naval Militia.

§ 3. Expenditure on Defence.

1. **Expenditure, 1901-2 to 1908-9.**—The following table gives the expenditure of the Department of Defence from 1901-2 to 1907-8, and the estimate for 1908-9:—

EXPENDITURE ON DEFENCE, 1901-2 to 1908-9.

| Branch or Department. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. | 1908-9 Estimate |
|--|----------------|----------------|----------------|----------------|----------------|------------------|-------------------|--------------------|
| | £ | £ | £ | £ | £ | £ | £ | |
| Central Administration ... | 11,717* | 19,747 | 19,128 | 20,716 | 18,832 | 19,246 | 21,934 | 24,768 |
| Naval Forces ... | 67,277 | 44,736 | 40,988 | 43,370 | 45,753 | 50,200 | 54,069 | 63,531 |
| Military Forces ... | 586,323 | 517,364 | 458,963 | 490,731 | 500,379 | 535,182 | 577,627 | 625,483 |
| Royal Reception ... | 9,738 | 1 | 111 | ... | ... | ... | ... | ... |
| Rent, Repairs, & Maintenance | 26,516 | 22,796 | 24,551 | 23,923 | 29,721 | 27,378 | 32,023 | 43,177 |
| Additions and New Works ... | 2,640 | 5,537 | 16,259 | 26,213 | 33,556 | 35,171 | 47,122 | 85,620 |
| Defence Arms, Equipme't, &c | 50,681 | 16,527 | 96,983 | 174,046 | 138,077 | 159,988 | 143,950 | 48,260 |
| Audit Office ... | 446* | 1,422 | 929 | 789 | 765 | 810 | 809 | 1,001 |
| Pensions & Retir'g Allowances | ... | 934 | 670 | 712 | 907 | 974 | 974 | 1,008 |
| Supervision of Public Works by State Officers ... | 48 | 275 | 956 | 740 | 659 | 521 | 700 | 1,072 |
| Naval Agreement ... | 104,969 | 104,965 | 196,226† | 153,358 | 200,025 | 200,000 | 200,000 | 200,000 |
| Miscellaneous ... | 863 | 32,576 | ... | ... | 1,671 | 6,325 | 5,536 | 8,761 |
| Total ... | 861,218 | 766,880 | 855,764 | 934,598 | 970,345 | 1,035,795 | 1,084,744† | 1,102,681 |

* Portion of year only. † Includes portion paid in advance on account of 1904-5. ‡ In addition, the sum of £250,000 was paid into trust funds for harbour and coast defence.

2. **Expenditure Compared with Various Countries.**—The total expenditure on defence and the expenditure per inhabitant, according to the latest available estimates, are, in the countries indicated, as follows:—

EXPENDITURE ON DEFENCE—VARIOUS COUNTRIES.

| Country. | Year. | Army. | Navy. | Total. | Per Inhabitant. | |
|---------------------|--------|------------|------------|------------|-----------------|----|
| | | £ | £ | £ | s. | d. |
| Great Britain ... | 1908-9 | 27,459,000 | 32,319,000 | 59,778,000 | 27 | 1 |
| Germany ... | 1908-9 | 40,000,000 | 12,990,000 | 52,990,000 | 17 | 4 |
| France ... | 1908 | 31,081,000 | 12,876,000 | 43,957,000 | 22 | 5 |
| Italy ... | 1907-8 | 9,085,000 | 4,937,000 | 14,022,000 | 8 | 4 |
| Austria-Hungary ... | 1907 | 14,766,000 | 2,222,000 | 16,988,000 | 7 | 2 |
| Switzerland ... | 1908 | 1,582,000 | — | 1,582,000 | 9 | 2 |
| Russia ... | 1907 | 39,623,000 | 10,842,000 | 50,465,000 | 9 | 5 |
| Spain ... | 1908 | 6,303,000 | 1,878,000 | 8,181,000 | 8 | 6 |
| Norway ... | 1907-8 | 745,000 | 269,000 | 1,014,000 | 8 | 9 |
| Sweden ... | 1908 | 2,252,000 | 928,000 | 3,180,000 | 12 | 0 |
| Denmark ... | 1908-9 | 733,000 | 438,000 | 1,171,000 | 9 | 0 |
| Holland ... | 1907-8 | 2,295,000 | 1,532,000 | 3,827,000 | 13 | 6 |
| Belgium ... | 1908 | 2,284,000 | — | 2,284,000 | 6 | 4 |
| United States ... | 1906-7 | 24,515,000 | 20,891,000 | 45,406,000 | 10 | 9 |
| Canada ... | 1905-6 | 1,145,000 | — | 1,145,000 | 4 | 0 |
| Australia ... | 1908-9 | 839,150 | 263,531 | 1,102,681 | 5 | 3 |

§ 4. The Training of Officers, Etc.

1. **Instruction and Exchange.**—For some time officers and non-commissioned officers of the Imperial Army have not been engaged as instructors for the military forces of the Commonwealth; but in August, 1905, arrangements were made for the mutual exchange of permanent officers between the Commonwealth and England, India, and Canada. Three officers were exchanged in 1906, three in 1907, and three in 1908. At the same time the practice which has existed for some years of sending officers and non-commissioned officers to England for instruction has been continued, and this year two officers and four non-commissioned officers of the permanent forces will be sent. In addition, in 1908, four officers of the militia forces have been sent to India for instruction.

2. **Inspector-General's Conference with the War Office.**—Major-General Hoad, C.M.G., Inspector-General of the Commonwealth Military Forces, proceeded to England in August, 1908, to confer with the War Office with regard to the exchange of officers and the formation of a General Staff in the Commonwealth. He also took advantage of his visit to attend the principal military manœuvres in England.

§ 5. The Cadet System.

1. **School Cadets.**—Many years before the consummation of Australian federation the systematic military training of lads had been instituted in the schools of the colonies, and the cadet system had attained considerable development. The Commonwealth Government has made arrangements with the various Departments of Education so that boys attending school shall be afforded facilities for drill by their teachers, and regular instruction by the Cadet Instructional Staff of the military forces. The strength of the cadets has increased rapidly, and under the recently-introduced system great expansion is expected. The strength on the 30th June, 1908, was as shewn below.

2. **Senior Cadets.**—Senior cadet battalions are authorised for boys leaving school, and these form a connecting link between the schoolboy soldiers and the citizen forces, the strength on the 30th June, 1908, being as shewn below.

3. **Mounted Cadets.**—Mounted cadet corps have also been formed in various parts of the Commonwealth, the members supplying their own uniforms, mounts, and horse-gear, and being trained in troop and squadron drill by instructors appointed for that purpose. Their organisation is distinct from the educational establishments, but they are under similar conditions as regards drill and discipline. It is hoped that this corps will form a useful recruiting ground for the mounted branches of the service.

The strength of the Commonwealth cadets, school, senior, and mounted, was on 30th June, 1908, as follows:—

STRENGTH OF COMMONWEALTH CADETS, 1908.

| | N.S.W. | Victoria. | Q'land. | S.A. | W.A. | Tas. | Total. |
|--------------------|--------|-----------|---------|-------|-------|-------|--------|
| School cadets ... | 5,959 | 6,863 | 3,691 | 1,956 | 1,633 | 1,251 | 21,353 |
| Senior cadets ... | 2,218 | 3,232 | 953 | 472 | 506 | 232 | 7,613 |
| Mounted cadets ... | 67 | 136 | ... | ... | ... | 22 | 225 |
| Total ... | 8,244 | 10,231 | 4,644 | 2,428 | 2,139 | 1,505 | 29,191 |

4. **Naval Cadets.**—Naval cadets have also been organised. Generally the instruction, given voluntarily by members of the naval forces, aims at embracing all branches of a seaman's training.

5. **Boys' Brigades.**—In addition, boys' brigades have been instituted in connection with various societies. These have not as yet come under direct Governmental control, and it is not intended that they should do so. The idea of the originators of the movement appears to be to keep the lads together in their leisure time, turning it to profitable account, and inculcating the principles of self-restraint and discipline, while at the same time preparing them for the sterner duties of citizenship.

§ 6. Commonwealth Defence Legislation.

1. **The Defence Acts of 1903 and 1904.**—(i.) *General Provisions of the Acts.* The defence of Australia at the present time is enacted and prescribed by the Defence Acts of 1903 and 1904 of the Federal Parliament. Many of the provisions are merely enabling, empowering the Governor-General to arrange for the efficient defence of the Commonwealth, and to appoint officers to responsible positions and to commissioned ranks generally. The defence force is declared to consist of the naval and military forces of the Commonwealth, divided into "permanent" and "citizen" forces, the former consisting of persons bound to continuous service for a term, the latter of persons not so bound, and divided into "militia," who are paid, and "volunteers," who are not ordinarily paid, for their services. Members of rifle clubs duly sworn, and enrolled persons who have done active service, make up the reserve forces. In time of peace, enlistment is voluntary. In time of war, the citizen forces may be called out by the Governor-General, who must state his reason for so doing, and communicate the fact to Parliament. Members of the naval forces may be called upon to serve outside the Commonwealth, but those of the military forces are not liable for such service. The forces may be used for the protection of the States from domestic violence. Command in time of war may be given to the Commander of any portion of the King's regular forces, or of the King's naval forces. For training, and in war, the naval forces may be placed on board ships of the navy of the Australian station. The Army Act (Imperial) is to apply to the Commonwealth military forces, and the Naval Discipline Act (Imperial) to the Commonwealth naval forces, while on active service, except where those Acts are inconsistent with the Commonwealth Defence Acts. Regulations, however, may prescribe that any provisions of the Imperial Acts named shall not apply. Provision is to be made out of the Consolidated Revenue Fund for families of men killed or incapacitated while on service.

Male inhabitants between 18 and 60 years of age are liable to serve in time of war, Parliament being informed of the occasion if in session, and being summoned within ten days if not. Persons the doctrines of whose religion forbid them to bear arms or perform military service may be exempted.

Naval and military cadet corps are also established—to consist of schoolboys over 12 years of age, and youths between 14 and 19 not attending school. They are not liable for active service.

The construction and maintenance of vessels, building and equipment of forts, laying of mines, institution of arms and ammunition factories, the acquisition of artillery and rifle ranges, and the performance of all acts for efficient defence and protection, are provided for. Railways and tramways are to carry troops when required. In time of war, the control of these services may be assumed by an officer duly authorised, and vehicles and boats may be impressed, and troops billeted and quartered. Heavy penalties are decreed for unlawfully giving information as to defences, or unlawfully

obtaining same; and for supplying inferior provisions, material, equipment, etc. Information required under the Act is to be correctly given. Persons required to enlist are to do so, and are to take the oath or affirmation prescribed, and no person is to procure or aid desertion or to harbour deserters. Obstructing drill, personating, sketching fortifications and works or trespassing in them, or even being, with the intention of graphic representation, in their vicinity with drawing or photographing materials, etc., is forbidden. The uniform of the defence force, or colourable imitation of it, is not to be worn by persons not members of the force, and no contempt is to be brought on the uniform. The convening of courts-martial, and the appointment of officers to constitute them, is with the Governor-General, and he may confirm or remit their sentences. The composition and procedure are to be those in force in the King's regular army and navy. Corps moneys, arms, accoutrements, clothing, etc., are, for legal reasons, vested in commanding officers, who, for any good cause, may disrate or discharge any sailor or soldier of the citizen forces, the disrated or discharged person being given an opportunity to shew cause against it. The right to volunteer for service beyond the Commonwealth is conserved. No inducement is to be given to any person to enlist or engage in any naval or military force, the raising of which has not been authorised. In the arrest of deserters, the civil police are to assist.

An exhaustive body of regulations has been drawn up under the authority of the Act, and the details of service by members of the forces are set out therein. These, having been notified in the Government Gazette, have the force of law. Rates of pay for the permanent and militia forces have been fixed; the conditions of leave of absence and furlough, the mode of complaint by officers and men and of the redress of grievances, and the method of convening courts of enquiry and courts-martial, have been defined. Other matters dealt with are the preservation of the public safety during naval and military practice, payment of reasonable compensation for loss, injury, or damage caused by military impressment or service, the quartering and billeting of soldiers in time of war, the establishment and conduct of canteens, and the fixing, within certain defined limits, of penalties for breaches of the regulations. The standing orders define the duties of the members of the Military Board, District Commandants and staffs, Commanding and Regimental Officers. In addition, the following matters are regulated, viz.:—The allotment of duties of brigade and regimental staffs, soldiers' accounts, messing and cooking, orderlies, garrison and regimental duties, compliments by guards, salutes, correspondence and routine, regimental and company books, military training and schools of instruction, medals and decorations, veterinary duties, ordnance, stores, requisitions, issue of arms and ammunition, and military books and forms.

The Governor-General, under the powers conferred upon him by the Acts, has appointed an Inspector-General of the Military Forces, a Director of the Naval Forces, District Commandants, and commissioned officers generally. In the first appointment of officers, preference is accorded to persons who have served in the ranks. Promotions of officers are generally subject to passing the prescribed examinations, but distinguished service, or marked ability and gallantry in active service, may be permitted to gain promotion without examination. A Council of Defence, and Boards of Military and Naval Administration have been constituted. A Reserve of Officers has been formed, and also an Unattached List, whence officers may be employed for duty with any corps or with the staff. The authority of the Act to establish a Naval and Military College has not yet been availed of, but a Chair of Military Science has been endowed by the University of Sydney, and an officer of the general staff has been appointed Director of Military Science. Reference is made hereinafter to the course of instruction. It is hoped that now not only soldiers will be enabled to perfect themselves in the duties of their profession, but that the influence of the teaching will pervade all classes of the community, and enable them to speak and vote more effectively, because with greater knowledge, when defence matters come up for consideration.

(ii.) *Regulations for Efficiency.* Under the regulations certain requirements for efficiency are set out for members of the militia forces, inefficient being discharged. The principal of these requirements are :—Attendance at the annual camps of training; completion of a course of “field training” in the special duties of the arm to which the member is attached; attendance at District Commandants’ inspections; and the performance during the year of an allotted amount of drill, generally 12 days or equivalent. In the case of specialist corps the efficiency requirements are greater. Camps, inspections, musketry, and field-training parades count for efficiency, and two half-days or four nights are regarded as equivalent to a day. For volunteers, the parades required for efficiency are eight half-days and ten nights. The attendance of militia and volunteer forces at the camps in 1907-8 is shewn in the accompanying tables :—

ATTENDANCE OF MILITIA AND VOLUNTEER FORCES AT CAMPS OF CONTINUOUS TRAINING, 1907-8.

| Arm. | Establishment as per Estimates. | Actual Strength at date of Camp. | Actual Number in Camp. | Percentage of Attendance in Camp to Strength. |
|-----------------------------------|---------------------------------|----------------------------------|------------------------|---|
| Light Horse | 5,734 | 5,112 | 4,365 | 85 |
| Field Artillery | 1,353 | 1,083 | 998 | 92 |
| Garrison Artillery | 1,617 | 1,460 | 1,285 | 88 |
| Engineers | 752 | 656 | 597 | 91 |
| Infantry—Militia | 6,971 | 6,659 | 5,954 | 89 |
| Corps of Signallers | 284 | 266 | 251 | 94 |
| Army Service Corps | 275 | 266 | 245 | 92 |
| Army Medical Corps | 735 | 579 | 525 | 91 |
| Total Militia | 17,721 | 16,081 | 14,220 | 88 |
| Infantry—Volunteers | 5,838 | 4,911 | 2,757 | 56 |
| Total | 23,559 | 20,992 | 16,977 | 81 |

The numbers classed as “efficient” for the year 1907-8 were as follows :—

EFFICIENTS (MILITIA AND VOLUNTEER FORCES) ON 30th JUNE, 1908.

| Force. | Strength on 30th June, 1908. | Efficients. | Percentage of Efficients to Strength. | Non-Efficients. |
|---------------------|------------------------------|---------------|---------------------------------------|-----------------|
| Militia | 15,870 | 13,424 | 85 | 2,446 |
| Volunteers | 4,969 | 3,991 | 80 | 978 |
| Total | 20,839 | 17,415 | 84 | 3,424 |

§ 7. General Questions of Defence.

1. **Proposed Schemes.**—There have been before the public various proposals for securing the efficient defence of Australia. One aims at enforcing courses of compulsory drill on all males, on their attaining 18 years of age, the training to be conducted on lines somewhat similar to those at present in vogue for the militia and volunteers, attendance on certain nights throughout the year, with daylight parades on the afternoons of the weekly half-holiday (*e.g.*, Saturday and Wednesday), and on whole days as specially arranged. Another proposal makes the cadet system compulsory throughout the Commonwealth, and seeks to attain its end by elementary military training in school life. In connection with these and other propositions the figures of male population of the Commonwealth are of interest. The estimated number of males available for training as cadets, taken as those between the ages of 12 and 18 (at which latter age they are eligible for membership of the citizen forces) was, on 31st December, 1907, 276,000. That of males at the best period for military service, taken as those between 18 and 35, was 636,000; while between 35 and 60, there were 547,000 males. The figures in more detail are as follows :—

MALE POPULATION AT CERTAIN AGES, 31st DECEMBER, 1907.

| Age. | Estimated Male Population. | Age. | Estimated Male Population. | Age. | Estimated Male Population. |
|---------------------|----------------------------|---------------------|----------------------------|----------------------------|----------------------------|
| 12 and under 13 ... | 50,000 | 18 and under 19 ... | 41,000 | 35 and under 40 ... | 171,000 |
| 13 " 14 ... | 48,000 | 19 " 20 ... | 41,000 | 40 " 45 ... | 142,000 |
| 14 " 15 ... | 47,000 | 20 " 21 ... | 40,000 | 45 " 60 ... | 234,000 |
| 15 " 16 ... | 45,000 | 21 " 25 ... | 157,000 | | |
| 16 " 17 ... | 45,000 | 25 " 30 ... | 182,000 | | |
| 17 " 18 ... | 41,000 | 30 " 35 ... | 175,000 | Total, 35 to 60 ... | 547,000 |
| | | | | | |
| Total, 12 to 17 ... | 276,000 | Total, 18 to 34 ... | 636,000 | Total, 12 and under 60 ... | 1,459,000 |

2. **Defence Policy.**—On the 13th December, 1907, in the House of Representatives, the Prime Minister of the day outlined a defence scheme, and on 29th September, 1908, the Minister of Defence introduced in the same Chamber a bill to give effect to that part of it which deals with compulsory training. The leading points are summarised as follows :—

Australia is no longer outside the area of the world's conflicts, and the enormous annual war expenditure of modern nations must therefore be considered. The great wealth of Australia demands a state of preparedness for war, if only to preserve peace. The question of defence, as seen by Australia, falls naturally into three parts. The first relates to the command of the high seas, the next to the protection of our coasts, and the last to our power to hold our own territory against invaders.

The British Empire depends on the navy as its first line of defence, and, because of her long coast line, Australia is deeply concerned in this. Dependence on the Imperial navy must therefore continue, the whole defence of the sea and its control being a matter for the British Government and the British navy. The present Naval Agreement is unsatisfactory, and in lieu thereof a contribution in kind was proposed, *viz.*, a naval force, Australian in character. It was intended to raise this force, the officers and men being engaged here under the same conditions as in the Royal Navy, or obtained after they have

served in the Royal Navy, to serve on our local vessels for the usual term on this station, and then to pass into other ships of the Royal Navy to continue their training elsewhere. They would remain members of the navy in every sense, recruited and serving under its laws. They would be paid in Australia at Australian rates of pay. The ships would fly the White Ensign and the Southern Cross, and be altogether Australian in cost and in political control, as to their movements and stations; in everything else they would be part of the British Navy. The whole control, both in peace and war, would be in the Commonwealth, but if in time of danger it chose to place its flotilla under the command of the admiral on this station, as would probably be the case, it would then pass wholly under his control for the time being. The annual cost to the Commonwealth was estimated at £100,000, and the remainder of the present subsidy would be applied to submarines or destroyers. The Australian Squadron would be an addition, although part of the Royal Navy, for which Australia would become a recruiting ground. It was intended that docks and fitting establishments should also be maintained, coaling facilities provided, and arrangements made for a supply of coal and naval stores for His Majesty's ships.

For local defence it was proposed to build vessels absolutely under Australian control, and with a sphere limited to Australian waters. This flotilla was to consist of submarines and torpedo boat (coastal) destroyers, three of the former and two of the latter being acquired annually for three years. The scheme proposed to give two submarines for New South Wales, two for Victoria, two for Queensland, one perhaps at Thursday Island, and one each for South Australia, Western Australia, and Tasmania; and one torpedo boat destroyer for the chief harbour of each State. If after three years the protective force were considered insufficient, additions would be made to it according to the most modern and up-to-date principles. In addition, lights and armaments for the shore forts would be installed. Ammunition was also to be purchased.

Regarding land defences, the militia is numerically weak, there being only 22,000 regularly drilled soldiers in the permanent, militia, and volunteer forces. Only one male in every 112 was undergoing drill and military experience, and that generally for but a short period. The annual cost of this was £800,000. Numerically our force was regarded as too weak, and financially as too expensive. The Government proposed a system of training, according to which every young man in the Commonwealth should be required to serve each year for at least sixteen days in the National Guard, during his nineteenth, twentieth, and twenty-first years, instruction, continuous and practical, being imparted in local camps. Each of the present militia units was to expand to three National Guard units, and the whole of the present militia was to be absorbed, being required to supply officers and non-commissioned officers to train the new levies. The Guard ordinarily was not to receive pay for its service, but for the longer training necessary in special corps a reasonable allowance was to be made. Appreciation and recognition of long service undertaken voluntarily was a special feature of the scheme. After the three years' training, it was proposed to keep the men in touch with what is being done, by attending occasionally, if only for a short time, at camps with the National Guard. The age of exemption from the reserves was to be forty years. It was intended that the uniform, accoutrements, mountings, fittings of ordnance, etc., whenever possible, should be locally made, and an ammunition factory established.

A school of permanent expert instruction was proposed to train the officers, by lectures and examinations, in the latest principles of military science, and the latest lessons of military history. The system of temporary exchanges of officers with England, India, Canada, and South Africa, was to be continued, and officers and non-commissioned officers were to be sent abroad for training.

The estimates of cost for each of the first three years are :—

DETAILS OF ESTIMATED EXPENDITURE.

| Items. | 1st Year. | 2nd Year. | 3rd Year. |
|---|----------------|----------------|----------------|
| | £ | £ | £ |
| Central Administration | 23,000 | 23,000 | 23,000 |
| Headquarters of Military Districts | 15,000 | 15,000 | 15,000 |
| Ordnance Department | 22,000 | 22,000 | 22,000 |
| Permanent Troops | 85,000 | 65,000 | 50,000 |
| Instructional Staff | 46,000 | 46,000 | 46,000 |
| Accounts and Pay Department | 6,000 | 6,000 | 6,000 |
| Rifle Range Staff | 3,000 | 3,000 | 3,000 |
| Total—Permanent Services | 200,000 | 180,000 | 165,000 |
| NATIONAL GUARD: Training— | | | |
| Pay, including Militia retained... .. | 93,000 | 80,000 | 90,000 |
| Clothing, etc. | 90,000 | 90,000 | 90,000 |
| Camps and Schools of Instruction | 39,000 | 68,000 | 85,000 |
| Central School | 5,000 | 5,000 | 5,000 |
| Ammunition annually expended | 20,000 | 40,000 | 60,000 |
| Total | 247,000 | 283,000 | 330,000 |
| Arms | 100,000 | 100,000 | 100,000 |
| Accoutrements, etc. | 75,000 | 75,000 | 75,000 |
| Stores, general contingencies, etc. | 32,000 | 28,000 | 24,000 |
| Field Artillery, guns, and reserve ammunition | 50,000 | 50,000 | 50,000 |
| Ammunition, reserve for rifles | 30,000 | 30,000 | 30,000 |
| Works and buildings | 29,000 | 29,000 | 29,000 |
| Repairs, maintenance, and rents | 26,000 | 21,000 | 16,000 |
| Total | 342,000 | 333,000 | 324,000 |
| Grand Total, excluding Rifle Clubs and Cadets... | 789,000 | 796,000 | 819,000 |

The total military and naval expenditure works out thus:—

GRAND TOTALS INCLUDING CAPITAL EXPENDITURE).

| Items. | 1st Year. | 2nd Year. | 3rd Year. |
|--|------------------|------------------|------------------|
| | £ | £ | £ |
| Military (including new special defence provision) ... | 1,097,000 | 1,021,000 | 1,074,000 |
| Naval Agreement | 200,000 | 200,000 | 200,000 |
| Local Naval Forces... .. | 60,524 | 60,524 | 60,524 |
| New naval expenditure | 357,070 | 414,140 | 471,210 |
| Presumed unexpended balance | ... | ... | ... |
| Total | 1,714,594 | 1,695,664 | 1,805,734 |

This table includes expenditure on cadets, rifle clubs, etc., and capital spent upon fixed defences, factories, and works.

The cost of the new system would not be much greater than under the present system, and it was hoped that camp life and healthy rivalry in outdoor military occupations would

not only serve as a great disciplinary power, but become a potent factor in fostering the best national spirit. It was calculated that the establishment under the new proposals would be 83,000, always in training, supplemented each year by about 30,000, an equal number passing to the reserve. In the eighth year over 200,000 men would be available, fully armed, equipped, and organised for the defence of the Commonwealth. The cadet movement was to be largely expanded, and rifle clubs to receive an increased subsidy. The term of compulsory service in the National Guard was to be reduced for those who had passed through and qualified in the cadet service, and rifle clubs recruited from those who have fulfilled their obligation of service in the Guard.

The ministry which took office in November, 1908, (Prime Minister, the Honourable Andrew Fisher, M.P.), has modified the policy above outlined, but at the time of going to press authoritative details were not to hand.

§ 8. Relation to the Empire.

During the New Zealand wars many colonists served with the British forces, their service generally being purely as individuals. At the outbreak of the war, the *Victoria*, a steam sloop of 450 tons register, with an armament of seven 32-pounders, and a crew of 95, a large percentage of whom had been in the Royal Navy, was offered by the Government of Victoria to the Imperial authorities for service in the New Zealand waters. The offer was accepted, and the vessel proceeded to Auckland, calling *en route* at Hobart, where she took on board part of the 40th Regiment (Imperial). The *Victoria* was employed continuously in transport and various operations along the coast until the termination of the war. In 1835 a field battery, an infantry battalion, and an ambulance corps, numbering in all 770, with 218 horses, left New South Wales to take part in the Suakin campaign. Lord Wolseley's despatch of 15th June, 1885, reads:—"The result was so satisfactory that I trust the noble and patriotic example set by New South Wales may, should occasion arise, be followed by other colonies."

In 1899 the outbreak of war with the Boers led to the several colonies offering contingents. This service was continued when, on 1st March, 1901, the control of the defence forces passed over to the Commonwealth. Besides the troops officially organised many Australians served as individuals in the campaign. The following table shews the strength of the military contingents sent at various times from Australia to South Africa:—

STRENGTH OF MILITARY CONTINGENTS SENT FROM AUSTRALIA TO SOUTH AFRICA.

| State. | State Troops at State Expense. | | | State Troops at Imperial Expense. | | | Commonwealth Troops. | | | Grand Total. | | |
|-------------------|--------------------------------|--------------|---------|-----------------------------------|--------------|---------|----------------------|--------------|---------|--------------|--------------|---------|
| | Officers. | Other Ranks. | Horses. | Officers. | Other Ranks. | Horses. | Officers. | Other Ranks. | Horses. | Officers. | Other Ranks. | Horses. |
| New South Wales | 160 | 3,217 | 3,135 | 76 | 1,308 | 1,443 | 78 | 1,271 | 1,294 | 314 | 5,796 | 5,872 |
| Victoria ... | 47 | 751 | 830 | 77 | 1,569 | 1,877 | 69 | 1,052 | 1,118 | 193 | 3,372 | 3,825 |
| Queensland ... | 39 | 694 | 868 | 73 | 1,346 | 1,603 | 37 | 699 | 736 | 149 | 2,739 | 3,207 |
| South Australia | 20 | 326 | 258 | 46 | 644 | 696 | 23 | 467 | 490 | 89 | 1,437 | 1,444 |
| Western Australia | 18 | 331 | 269 | 34 | 540 | 608 | 15 | 291 | 306 | 67 | 1,162 | 1,183 |
| Tasmania ... | 6 | 173 | 58 | 17 | 358 | 422 | 13 | 290 | 303 | 36 | 821 | 783 |
| Total ... | 290 | 5,492 | 5,418 | 323 | 5,765 | 6,649 | 235 | 4,070 | 4,247 | 848 | 15,327 | 16,314 |

There were, in addition, several special service officers attached, at the request of the colonial Governments, to the British forces, whose service with the Imperial troops was with the view of aiding the development of the Commonwealth forces, particularly in regard to the routine and administration of troops on service.

The Home Government also accepted the offer of contingents from Australia on the outbreak of the Boxer rebellion in China. Naval volunteers were furnished by New South Wales and Victoria, and South Australia equipped a gunboat for the Imperial service. The strength of the New South Wales contingent was 260, that of the Victorian 200, of all ranks.

§ 9. Military Education.

Following upon the endowment by the Sydney University of a Chair of Military Science, a curriculum, to extend over a period of three years, commenced in March, 1907. The courses of lectures are open to attendance by the public upon payment of the prescribed fees, but members of the University Scouts are permitted to attend without fee, and officers of the citizen forces at half fees. The curriculum consists of individual courses of instruction, each terminating with an examination. Completion of the curriculum entitles the student to a diploma in military science, and students not completing it may receive certificates for any courses in which they have given satisfaction.

The courses for the first year are Military History and Science I and Elementary Military Engineering. In the former subject ten lectures are given in military history and ten in strategy, and in the latter there are ten lectures with five days' practical instruction. In the second year the subjects are Military History and Science II and Military Topography. The former comprises ten lectures in military history and ten in Imperial defence. In topography ten lectures and seven days' practical instruction make up the course. The subjects for the third year are Military History and Science III and Military Law and Administration. Ten lectures in military history are joined with ten in tactics to make up the former, while there are twenty lectures in the latter course.

The lectures for diploma are given at the Sydney University during Lent and Trinity terms. Short continuous courses of instruction in military subjects for the benefit of officers of the permanent and citizen forces are also arranged, the lectures being delivered during Michaelmas term.

§ 10. The Defence Forces of New Zealand.

In 1840 New Zealand became a British colony by cession of the Maori chiefs. The natives have generally shewn themselves well disposed to the colonists, but in 1845-8 and 1860-70 there were native wars, in which, however, many of the clans fought for the colonial Government. Colonists joined with the Imperial troops in the campaign that began in 1845. In that year a Militia Ordinance was enacted, and 300 men were enrolled at Auckland and Wellington. The necessity of keeping trained bodies of men in case of continued resistance was acknowledged by the act of the Home Government in sending soldiers, not to be kept constantly under arms and in receipt of pay, but to maintain themselves on land granted them for settlement, being in readiness for military service if occasion arose. October, 1847, saw the arrival of the first detachment of this military colony. Garrison duty was performed for a few days each year. The grant was a cottage on an acre of land to each soldier, to become, on the completion of seven years' service, his own property, with the right to purchase five additional acres at a low price. This force ultimately rose to 500 men, and the scheme was successful. The corps of New Zealand Fencibles was also constituted about the same time from discharged soldiers resident in the colony, and was approximately of the same strength as the military settlement.

The outbreak of the Waitara war in 1860 revealed a state of military unpreparedness. Martial law was proclaimed, and volunteer forces raised to fight in conjunction with the

Imperial troops. After a short peace, hostilities were renewed with increased vigor and over a wider area. All available Europeans were called out for training or active service. In addition to the troops raised in New Zealand, a body of military settlers was enrolled, principally in Australia—for service in New Zealand. The terms of enrolment provided that on the termination of the war, the men were to be located on the frontier, with a grant of 50 acres each. About 1600 colonists also assisted the Imperial troops in transport and convoy duties. Before the completion of the war, the Imperial troops were removed. Owing to differences between the Home and Colonial Governments as to the conduct of the war, the latter declared its readiness to undertake its own defence. Orders were accordingly issued for the withdrawal of the Imperial troops, and most of them went home during 1866, though it was 1870 before the last regiment left the colony. The New Zealanders set about finishing the war. In 1867 it languished, and the combined forces were reduced to 3600, including 1700 military settlers. Quickened again into life, the insurrection necessitated the upkeep of an organised force. At first the only available body was the armed Constabulary corps, raised a few months before the fresh outbreak of 1868. With the increased activity of the disturbances, this body was increased to a strength of 1000 men, and designated the "Field Force." With the aid of other local forces and allied natives, the rebellion was quelled, and a lasting peace established. The Constabulary or Field Force was gradually reduced in strength, and after various changes it was separated from the Police Force and organised as a permanent artillery unit by the Defence Act 1886. This Act repealed previous laws relating to the militia and volunteers. The Defence Amendment Act of 1900 gives the Governor power to establish an Imperial reserve, drawn from any branch of the forces, for service outside, as well as within, the colony. Under the Acts of 1886, 1900, 1906, and 1907 the defence forces of the Dominion are constituted. In 1882 the strength of the forces maintained was 7367—made up of 732 cavalry, 907 artillery, 380 engineers, and 5348 infantry. The colony furnished 150 (approximately) officers and 4850 men for the South African war.

The Royal New Zealand Artillery, a permanent force, and auxiliary units of various arms, make up the military forces of the Dominion. Administration and control is in the hands of the Council of Defence. The following table gives the strength of the various corps on 29th February, 1908:—

| | | |
|--|--|--------|
| HEADQUARTERS AND DISTRICT STAFFS 64 | Mounted Rifles | 3,923 |
| PERMANENT— | Infantry, Cycle, and Signalling Corps | 6,118 |
| Royal N.Z. Artillery (including Electric Light sections) ... 307 | Field Hospital and Bearer Corps | 215 |
| VOLUNTEERS— | Garrison Bands | 141 |
| Field Artillery 361 | Battalion Bands | 308 |
| Naval and Garrison Artillery ... 1,001 | Grand total trained | 12,877 |
| Engineers 439 | | |

In addition there are the following:—Unattached officers, 151; reserves, 215; medical staff, 165; veterinary staff, 12; defence cadets, 3153; and rifle club members, 3369. The grand total of the defence forces is therefore 19,947.

The following table gives the military expenditure of New Zealand from 1900-1 to 1907-8:—

MILITARY EXPENDITURE, NEW ZEALAND, 1900-1 to 1907-8.

| Year | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Expenditure | £156,218 | £250,478 | £292,081 | £221,959 | £239,333 | £195,028 | £167,818 | £176,426 |

Enlistment for three years in a volunteer corps is decreed for all cadets in the Civil Service, on their attaining the age of 18 years.

SECTION XXIX.

PAPUA (BRITISH NEW GUINEA).

§. 1. Situation and Settlement.

1. **Geographical Situation of New Guinea.**—New Guinea, frequently described as the largest island in the world, lies to the north-east of Australia, between $0^{\circ} 25'$ and $10^{\circ} 40'$ S. latitudes, and between $130^{\circ} 50'$ and $150^{\circ} 35'$ E. longitudes. Its area is estimated as exceeding 300,000 square miles, the greatest length being 1490 miles and the greatest breadth 430 miles.

2. **Discovery.**—The island was probably sighted by Dabreu in A.D. 1511. The first visit by Europeans was apparently either that by the Portuguese Don Jorge de Meneses on his way from Goa to Ternate in 1526, or that by the Spaniard Alvaro de Saavedra in 1528. In 1606 Torres, having parted company with De Quiros at New Hebrides, sailed, on his way to the Philippines, through the strait which separates the island from Australia, and which now bears his name.

3. **Colonisation.**—Little progress was made for many years in settlement or exploration. First the Portuguese, and afterwards the Dutch, who to a great extent replaced them as the principal European traders in the East, seem to have jealously excluded other traders and adventurers, and to have kept the knowledge of their discoveries to themselves. The coasts were visited by Roda, Schouten, Lemaire, Tasman, Dampier, Torres, Bougainville, and Cook; but the difficulties of navigation, the savagery of the islanders, and the tempting fields for enterprise in the more temperate regions further south, diverted the energy of traders and voyagers. Forrest describes a voyage by himself in 1774. In 1793, New Guinea was annexed by two commanders in the East India Company's service. Since that date the Dutch have made extensive surveys of the western portion, and the British and Germans have occupied and colonised the eastern.

4. **Partition.**—These three powers have agreed to the partition of New Guinea, each having suzerainty over islands adjoining its own territory. The whole of the portion west of the 141st degree of latitude, comprising about 150,000 square miles, or nearly half the island, belongs to the Dutch. The eastern half is divided in almost equal portions between Great Britain and Germany, the area possessed by each (with adjacent islands) being about 90,000 square miles. The Dutch colony forms part of the residency of Ternate in the Moluccas, and has not been extensively developed. The German protectorate, where considerable political and commercial development has taken place, includes the northern part of the eastern half of the mainland, known as Kaiser Wilhelm's Land, and the large islands of the Bismarck Archipelago and the Solomon Group, as well as nearly 200 smaller islands. The south-eastern portion of New Guinea, nearest Australia, is British, and a dependency of the Commonwealth of Australia.

§ 2. Papuan Development.

1. **Australian Dependency of Papua.**—Surveys of the east coast of New Guinea by Stanley, Yule, Blackwood, Moresby, and others, brought home to Queensland, and to Australia generally, the danger to her commerce which would result from foreign possession of the islands and coasts opposite to Cape York, and from a hostile holding of the entrance to the splendid waterway inside the Barrier Reef. The mainland opposite the shores of Queensland east to the 141st meridian was therefore annexed by that colony in 1883; but the action was disallowed by the British Government. In 1884, however, a British protectorate was authoritatively proclaimed by Commodore Erskine over the region lying between the 141st meridian as far as East Cape, with the adjacent islands as far as Kosman Island. In the year following an agreement with Germany fixed the boundaries between the possessions of the two countries, and to Great Britain was assigned the portion now known as Papua, lying between the extreme limits of 5° and 12° S., and 141° and 155° E. The British protectorate was subsidised by Queensland, New South Wales, and Victoria, and lasted till 4th September, 1888, when it was proclaimed a possession of the Empire. Its constitution was then that of a Crown colony, in association, however, with Queensland. Administration was in the hands of a Lieutenant-Governor, aided by an executive and a legislative council, and advised by a native regulation board. Port Moresby, on the south coast, was made the headquarters of the official establishment; a supreme court was established there, and magisterial courts in the districts; and an armed native constabulary force, numbering 185 in 1907, under a European officer, was instituted for the maintenance of order.

2. **Annexation by Commonwealth.**—The territory was transferred from Queensland to the Commonwealth by proclamation on 1st September, 1906, under the authority of the Papua Act (Commonwealth) 1905. It is now under the administration of the Commonwealth, but not included within it.

3. **Physical Characteristics.**—The British territory of Papua lies wholly within the tropics. The northernmost point touches 5° S. latitude; its southernmost portion, comprising Sudest and Rossel Islands, lies within 11° S. and 12° S. latitude. The length of Papua from east to west is upwards of 800 miles; towards either end the breadth from north to south is about 200 miles, but about the centre it is considerably narrower. The length of coast-line is computed at 3664 miles—1728 on the mainland and 1936 on the islands. The total area is about 90,540 square miles, of which 87,786 are on the mainland and 2754 on the islands. From the eastern end of the territory rises a chain of mountains, which forms a great central ridge and attains its greatest altitude, as it extends westwards, in the Owen Stanley Range, the highest points of which are Mount Victoria (13,200 feet), Mount Scratchley, the Wharton Range, and Mount Albert Edward. The western end of the Possession is for nearly 300 miles generally low and swampy for some distance along the coast. The whole territory is well watered. The great mountains and a great portion of the lower country are covered with forest. The islands are mountainous, and, with the exception of the low coral islands of the Trobriand Group, part of Murua, and a few others of small dimensions, principally of volcanic formation. The highest is Goodenough Island, 8000 feet. The largest rivers of the mainland flow into the Gulf of Papua. The Fly River, with its tributaries, drains an extensive area of the territory of the Netherlands, as well as the British. Its length in British territory is about 620 miles, and it is navigable by a steam launch for over 500 miles. Other important rivers are the Turama and the Purari. There are many excellent harbours.

4. **Productions.**—The chief native industries are the manufacture of pottery, canoes, fishing nets, mats, shell ornaments, stone implements, and decorated gourds, and the

growth and preparation of sago. Gold mining, bêche-de-mer and pearl-shell fisheries, and copra, are industries which engage the attention of Europeans. Extensive plantations of cocoanut palms exist. Tortoise-shell in small quantities is collected. Rubber is a promising industry, and large areas are being planted. Gutta-percha is obtained from species of *Palaquium*, which grow on the hills. There are considerable forest areas, yielding a large variety of valuable timbers. Small quantities of ebony and sandalwood are exported. Sugar-cane, sago, palms, and cotton plants also are indigenous, and of good quality. Trade is exclusively with Australia.

§ 3. Population.

The total white population of Papua on 30th June, 1908, was 711, made up of 511 adult males and 124 adult females—adults being persons over 16 years of age. In addition, there were 41 male and 35 female children. It is not possible to make a reliable estimate of the number of natives, owing to the fact that much of the interior country is unexplored. It is generally assumed to be somewhere between 400,000 and 500,000 souls.

§ 4. Statistical Summary.

1. Revenue and Expenditure.—The revenue and expenditure, under principal heads, are given below; also a summary covering a period of eleven years:—

| REVENUE OF PAPUA, 1907-8. | | | | EXPENDITURE OF PAPUA, 1907-8. | | | |
|---------------------------------------|-----|---------|--|---------------------------------|-----|---------|--|
| | | | | | | | |
| £ | | | | £ | | | |
| Customs receipts ... | ... | 18,206 | | Lieutenant-Governor, Civic list | ... | 2,185 | |
| Judicial fines and fees ... | ... | 396 | | Government Secretary's Dept. | ... | 1,407 | |
| Land sales and leases ... | ... | 571 | | Treasury & Postal Department | ... | 2,655 | |
| Registration and survey of land | ... | 8 | | Magistrates ... | ... | 4,737 | |
| Liquor licenses ... | ... | 230 | | Armed Native Constabulary ... | ... | 3,259 | |
| Fishing licenses ... | ... | 82 | | Gaols ... | ... | 2,152 | |
| Pearl buyers' licenses ... | ... | 300 | | Lands Department ... | ... | 2,971 | |
| Timber licenses ... | ... | 74 | | Medical ... | ... | 1,350 | |
| Mining receipts ... | ... | 634 | | Vessels and boats ... | ... | 8,143 | |
| Postage receipts ... | ... | 2,340 | | Department of Agriculture, | | | |
| Native labour fees ... | ... | 616 | | Mines, and Works ... | ... | 4,871 | |
| Sanitary fees ... | ... | 74 | | Miscellaneous ... | ... | 3,158 | |
| Printing office fees ... | ... | 27 | | Special hospitals ... | ... | 598 | |
| Miscellaneous receipts ... | ... | 1,670 | | Supplementary and unforeseen | ... | 11,039 | |
| S.S. <i>Merrie England</i> , refunds | ... | | | | | | |
| and earnings ... | ... | 541 | | | | | |
| Insurance, loss of <i>Merrie Eng-</i> | ... | | | | | | |
| <i>land</i> launch ... | ... | 250 | | | | | |
| | | | | | | | |
| Total ... | ... | £26,019 | | Total ... | ... | £48,525 | |

REVENUE AND EXPENDITURE OF PAPUA, 1897-8 to 1907-8.

| Item. | 1897-8. | 1898-9. | 1899-1900. | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-----------------|---------|---------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| Revenue ... | 10,281 | 11,683 | 13,835 | 15,115 | 16,868 | 19,107 | 22,327 | 19,274 | 20,236 | 21,813 | 26,019 |
| Expenditure ... | 23,153 | 24,443 | 23,601 | 32,089 | 38,467 | 37,577 | 35,492 | 36,534 | 38,350 | 45,335 | 48,525 |

2. **Imports and Exports.**—The value of imports and exports for eight years is shewn in the table below. In 1906-7 the importation was very large, while the exports were below the average. The figures for 1907-8 shew great trade development:—

VALUE OF IMPORTS AND EXPORTS OF PAPUA, 1900-1 to 1907-8.

| | 1900-1. | 1901-2. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
|-------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | £ | £ | £ | £ | £ | £ | £ | £ |
| Imports ... | 71,618 | 70,817 | 62,367 | 77,631 | 67,188 | 79,761 | 87,776 | 94,061 |
| Exports ... | 49,659 | 68,300 | 62,881 | 75,506 | 76,435 | 80,290 | 63,756 | 80,616 |
| Total trade | 121,277 | 139,117 | 125,248 | 153,137 | 143,623 | 160,051 | 151,532 | 174,677 |

The principal articles of import are foodstuffs, which in 1907-8 reached a total value of £33,440. The chief other imports in that year were:—Drapery and clothing, £9300; hardware and ironmongery, £10,774; tobacco and cigars, £7653; wine, spirits, and beers, £2297; building material, £1902; and machinery, £1966. In each of the seven years under review gold has formed considerably more than half the value of the total export. In 1907-8 the value of this metal exported reached £52,837. Other principal exports were:—Copper ore, £2497; béche-de-mer, pearls, pearl and turtle shell, £5115; copra, £7515; sandalwood, £6346; rubber, £483; and natural history specimens, £3661.

3. **Postal and Shipping.**—Considerable development has been shewn in means of communication, the postal returns, and the tonnage of vessels cleared at Papuan ports, having lately largely increased.

POSTAL STATISTICS OF PAPUA, 1900-1 to 1907-8.

| Year. | Letters. | | Packets. | | Newspapers. | |
|------------|-----------|-------------|-----------|-------------|-------------|-------------|
| | Received. | Despatched. | Received. | Despatched. | Received. | Despatched. |
| 1900-1 ... | 21,372 | 19,558 | 1,020 | 1,503 | 18,191 | 4,723 |
| 1901-2 ... | 25,471 | 25,980 | 1,507 | 2,002 | 19,558 | 5,089 |
| 1902-3 ... | 28,251 | 26,863 | 1,735 | 1,366 | 30,711 | 7,878 |
| 1903-4 ... | 27,266 | 27,668 | 2,839 | 2,429 | 35,640 | 8,130 |
| 1904-5 ... | 32,653 | 32,675 | 8,678 | 2,369 | 40,885 | 9,798 |
| 1905-6 ... | 38,273 | 40,120 | 7,221 | 2,656 | 41,014 | 10,489 |
| 1906-7 ... | 49,541 | 41,086 | 7,487 | 2,581 | 38,374 | 12,846 |
| 1907-8 ... | 53,118 | 47,521 | 6,655 | 3,157 | 44,052 | 12,674 |

In addition there were 1370 parcels received and 501 despatched in 1907-8.

SHIPPING—FOREIGN-GOING VESSELS CLEARED AT PORTS OF PAPUA, 1902-3 to 1907-8.

| Nation-ality. | Vessels. | | | | | | | | | | | |
|---------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| | Number. | | | | | | Tonnage. | | | | | |
| | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. | 1902-3. | 1903-4. | 1904-5. | 1905-6. | 1906-7. | 1907-8. |
| British | 225 | 268 | 258 | 207 | 217 | 243 | 50,890 | 97,240 | 82,894 | 40,503 | 106,561 | 127,108 |
| German | ... | ... | 10 | 16 | 16 | 20 | ... | ... | 26,666 | 64,480 | 52,618 | 56,664 |
| Total... | 225 | 268 | 268 | 223 | 233 | 263 | 50,890 | 97,240 | 109,560 | 104,983 | 159,177 | 183,772 |

§ 5. Land Tenure.

1. **Method of Obtaining Land.**—(i.) *The Land Laws.* The broad principles upon which the land laws of Papua are based are:—(a) No land can be alienated in fee simple; (b) the rental of the land leased is assessed on the unimproved value of the land, and is subject to reassessment at fixed periods.

(ii.) *Agricultural Lands.* The terms upon which the land may be leased are exceedingly easy to the settler. He can obtain a leasehold of the best class of agricultural land for any period up to ninety-nine years on the following conditions:—

- (a) Upon making application a small deposit fee, ranging from £1 to £10, according to the area, is payable. This is returned to the applicant if he accepts the lease he has applied for.
- (b) No survey fees are charged to the lessee, and no fee is charged for the preparation or registration of the lease.
- (c) If the lease is for more than thirty years the rent payable is determined at 5 per cent. per annum of the unimproved value of the land, but no rent is payable for the first period of ten years, and no more than sixpence per annum an acre during the second period of ten years.
- (d) The unimproved value of the land is to be appraised every twenty years during the currency of the lease, and the land determined accordingly, but if on any appraisal the rent is raised by more than one-third, the lessee may disclaim the lease, and is thereupon entitled to receive compensation for his improvements.

The compulsory improvement conditions attached to agricultural leases are as follow:—

- (a) One-fifth must be properly planted with some approved plants within five years.
- (b) Two-fifths within ten years.
- (c) Three-fourths within twenty years.
- (d) During the remainder of the term three-fourths of the suitable land must be kept properly planted. Provided always that, if at any time during the first five years of a lease it appears to the Land Board that reasonable efforts are not being made to fulfil the improvement conditions, they may recommend the Lieutenant-Governor to cancel the lease, and thereupon it shall be lawful for the Lieutenant-Governor, by notice in the *Gazette*, to cancel the lease accordingly.

All agricultural lands which have not been alienated by the Crown have been assessed under Section 13 of the Land Act at an unimproved value of 5s. per acre.

All pastoral lands have been assessed at 1s. per acre unimproved value.

This appraisalment definitely fixes all land rentals for twenty years as follows:—

Agricultural land (Class A).—first ten years, free; second ten years, 3d. per acre per annum.

Pastoral leases (Class B).—First ten years, free; second ten years, 25s. per 1000 acres.

If during the second twenty-year period of the lease the appraisalment is increased by more than one-third of the existing rental, the lessee may disclaim the lease, and is entitled to receive compensation for his improvements.

(iii.) *Pastoral Lands.* Pastoral land, suitable for cattle and horses, can be obtained in easily accessible positions. All these lands are well watered and clothed with blady kangaroo, crowfoot, couch, and scurvy grasses. The carrying capabilities of this land are estimated at forty head of cattle to the square mile. Five head of cattle, horses, asses, mules, or fifty head of sheep or goats, per square mile must be on the land within five years. Within ten years these numbers must be increased to ten head of big cattle or 100 sheep or goats to the square mile, and the land must be kept stocked to this extent for the remainder of the lease.

SECTION XXX.

MISCELLANEOUS.

§ 1. The Regulation of Immigration into Australia.

1. **Pre-Federal Restrictions.**—(i.) *Alien Races.* The several States of Australia had regarded it as desirable, long prior to Federation, to impose certain restrictions upon the admission of persons wishing to become inhabitants of those States. The influx of Chinese into the States, for example, was limited by stringent statutes, and later general Acts were passed in some of the States which had the effect of restricting the immigration of other—principally Asiatic—races.

(ii.) *Undesirable Immigrants.* Further restrictions were placed upon the admission of persons who were undesirable as inhabitants, either for medical or moral reasons, or who were likely to be an economic burden upon the community.

2. **Powers and Legislation of the Commonwealth.**—(i.) *Constitutional Powers.* By Chap. I., Pt. V., Sec. 51, xxvii. and xxviii. of the Commonwealth Constitution Act the Parliament of the Commonwealth is empowered to make laws with respect to immigration and emigration and the influx of criminals. (See page 49 herein).

(ii.) *Legislation.* The powers specified have now been exercised, and the laws passed in pursuance thereof supersede the State laws above referred to.

The first Act passed was the Immigration Restriction Act 1901, which contained provisions restricting the immigration of the classes of persons mentioned above. The clauses restricting the immigration of persons under contract were, however, repealed, and the Contract Immigrants Act 1905 was substituted therefor. (See page 58 herein.)

The Immigration Restriction Act of 1905 amends certain parts of the Act of 1901, and the immigration of alien races and undesirable persons is now regulated by the two Acts, viz., those of 1901 and 1905. This last applies only to immigrants under contract or agreement to perform manual labour in Australia. The admission of such persons is permitted if the contract is in writing, is made by or on behalf of some person named, who must be resident in Australia, and approved by the Minister. Such approval will not be given if the contract is made with the view of affecting an industrial dispute or if the remuneration and other terms are not as advantageous to the contract immigrant as those current for workers of the same class at the place where the contract is to be performed.

There is an additional provision where the proposed immigrant is not a British subject born in the United Kingdom or descendant of such a person. In such case it has to be proved that there is a difficulty in the employers obtaining in the Commonwealth a worker of at least equal skill and ability.

In case of infraction of the law it is provided that the contract is absolutely void and the immigrant and employer are both liable to penalties, and the employer is also liable to pay the immigrant until he obtains employment, or, at the option of the immigrant, to provide expenses for his return to the country whence he came.

The above matter is referred to also herein in connection with industrial legislation.

3. **Prohibited Immigrants.**—(i.) *Provisions of the Acts.* Persons comprised in the following classes are prohibited from entering the Commonwealth, viz.:—(a) Any person

who fails to pass the dictation test; that is to say, who fails to write out not less than fifty words of a language prescribed by regulation when dictated to him by an officer administering the Act. (b) Any person likely to become a charge upon the public. (c) Any idiot or insane person. (d) Any person suffering from an infectious or contagious disease. (e) Any person who has been convicted of an offence, other than a mere political offence, and has been sentenced to imprisonment for one year or longer and has not served his sentence or received a pardon. (f) Any person undesirable for moral reasons.

Regarding (a) it may be stated that the Act of 1901 provided for the dictation of not less than fifty words of a European language. The Act of 1905 provided for the retention of this test until regulations be passed prescribing the languages to be employed. No such regulations have yet been made, and the provision of the Act of 1901 is therefore *de facto* still in force. It may be stated that the dictation test is not and never has been imposed upon persons of European race.

(ii.) *Exemptions.* To these restrictions there are the following exemptions, viz.:— (a) Any person holding an exemption certificate. (b) Members of the King's regular land and sea forces. (c) The master and crew of any public vessel of any Government. (d) The master and crew of any other vessel landing during the stay of the vessel in a Commonwealth port; but before the ship can obtain her outward clearance the crew must, at the demand of an officer administering the Act, be mustered, and if any member of the crew be missing, and would otherwise, in the opinion of the officer, have been a prohibited immigrant, then such person is deemed to be a prohibited immigrant, and until the contrary be proved, to have entered the Commonwealth contrary to the Act. (e) Any Commissioner of, or other person accredited from, the Imperial or any other Government.

(iii.) *General Provisions.* An immigrant may be required to pass the dictation test at any time within a year after he has entered the Commonwealth.

A prohibited immigrant within the meaning of (a) above may, at the discretion of an officer, be allowed to enter the Commonwealth, or to remain within it, upon depositing £100 and within thirty days either obtaining an exemption certificate or departing from the Commonwealth; in either case the deposit is returned.

The punishment for breach of the Act by a prohibited immigrant is imprisonment for six months and deportation in addition, if so ordered.

4. **Liability of Shipmasters and Others.**—The master, owners, agents, and charterers of a vessel from which a prohibited immigrant enters the Commonwealth are jointly and severally liable to a penalty not exceeding £100 for each entrant. The vessel may be detained as security, but may be released upon the giving of a bond with two sureties for the payment of any penalties; the vessel may be seized and sold in default of payment of penalties. The master, owners, agents, and charterers may be required to provide a return passage for the prohibited immigrant, and to pay for his maintenance during his detention prior to deportation. Masters of vessels are authorised to prevent such a person from landing and to obtain any necessary assistance.

5. **Agreements with other Countries.**—Arrangements may be made with the Government of any country regulating the admission into Australia of the subjects or citizens of such country, such subjects being not, during the subsistence of the arrangement, required to pass the dictation test.

Persons who have resided either continuously or from time to time in the Commonwealth for a period of five years in the whole, and who are about to depart from it, being persons who, if they return, would be prohibited immigrants, may obtain a certificate of exemption entitling them to return.

Certificates of exemption are granted by the Minister of External Affairs, whose department administers the Act.

6. **Statistics.**—The following tables shew the number of persons who desired but were not permitted to land, those who were allowed to land, and the nationality of the persons admitted :—

**PERSONS ADMITTED OR REFUSED ADMISSION TO COMMONWEALTH UNDER
PROVISION OF IMMIGRATION RESTRICTION ACT, 1902 to 1908.**

| Year. | Persons Admitted who Passed Education Test. | Persons Admitted without Passing Education Test. | Persons Refused Admission. |
|----------|---|--|----------------------------|
| 1902 ... | 33 | 45,468 | 653 |
| 1903 ... | 13 | 44,117 | 152 |
| 1904 ... | 1 | 48,317 | 117 |
| 1905 ... | 3 | 47,940 | 106 |
| 1906 ... | Nil | 57,646 | 53 |
| 1907 ... | Nil | 71,988 | 62 |
| 1908 ... | 1 | 75,670 | 108 |

NATIONALITY OF PERSONS ADMITTED, 1902 to 1908.

| Nationality. | 1902. | | 1903. | | 1904. | | 1905. | | *1906. | *1907. | 1908. | |
|--------------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|---------------|---------------|------------|
| | Without Test. | With Test. | Without Test. | With Test. | Without Test. | With Test. | Without Test. | With Test. | Without Test. | Without Test. | Without Test. | With Test. |
| EUROPEANS-- | | | | | | | | | | | | |
| Austrians ... | 647 | ... | 809 | ... | 930 | ... | 683 | ... | 691 | 651 | 736 | ... |
| Belgians ... | 14 | ... | 20 | ... | 20 | ... | 25 | ... | 33 | 64 | 45 | ... |
| British ... | 35,330 | ... | 35,061 | ... | 39,026 | ... | 39,975 | ... | 47,396 | 60,172 | 64,374 | ... |
| Danes ... | 52 | ... | 94 | ... | 103 | ... | 125 | ... | 259 | 280 | 227 | ... |
| Dutch ... | 45 | ... | 30 | ... | 26 | ... | 43 | ... | 91 | 94 | 120 | ... |
| French ... | 1,011 | ... | 1,390 | ... | 2,076 | ... | 1,402 | ... | 1,866 | 1,685 | 1,546 | ... |
| Germans ... | 1,162 | ... | 1,028 | ... | 823 | ... | 926 | ... | 1,330 | 1,909 | 1,911 | ... |
| Greeks ... | 268 | ... | 210 | ... | 194 | ... | 121 | ... | 240 | 202 | 296 | ... |
| Italians ... | 1,181 | ... | 793 | ... | 814 | ... | 734 | ... | 839 | 992 | 902 | ... |
| Poles ... | 9 | ... | 8 | ... | 9 | ... | 13 | ... | 5 | 6 | 22 | ... |
| Portuguese ... | 4 | ... | 5 | ... | ... | ... | 2 | ... | 3 | 6 | 5 | ... |
| Rumanians ... | 10 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 12 | ... |
| Russians ... | 100 | ... | 148 | ... | 122 | ... | 157 | ... | 293 | 388 | 319 | ... |
| Scandinavians ... | 221 | ... | 382 | ... | 320 | ... | 281 | ... | 776 | 1,173 | 825 | ... |
| Spaniards ... | 32 | ... | 53 | ... | 27 | ... | 35 | ... | 32 | 86 | 57 | ... |
| Swiss ... | 55 | ... | 20 | ... | 79 | ... | 63 | ... | 68 | 78 | 78 | ... |
| Turks ... | 12 | ... | 13 | ... | ... | ... | 3 | ... | 8 | 6 | 4 | ... |
| Europeanst ... | 1,121 | ... | ... | ... | 7 | ... | 17 | ... | 18 | 29 | 112 | ... |
| AMERICANS-- | | | | | | | | | | | | |
| N. Americans ... | 471 | ... | 561 | ... | 563 | ... | 603 | ... | 867 | 889 | 687 | ... |
| S. Americans ... | 6 | ... | 6 | ... | ... | ... | ... | ... | 12 | 15 | 10 | ... |
| Negroes ... | 5 | 2 | 10 | ... | 13 | ... | 15 | 1 | 4 | 9 | 4 | ... |
| Frnch Creoles ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| West Indians ... | 3 | 5 | 7 | 3 | 6 | ... | 3 | 1 | ... | 13 | 23 | ... |
| ASIATICS-- | | | | | | | | | | | | |
| Afghans ... | 9 | ... | ... | ... | ... | ... | 7 | ... | 3 | 9 | 15 | ... |
| Arabs ... | 1 | ... | ... | ... | ... | ... | 3 | ... | ... | 8 | 3 | ... |
| Burmese ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Chaldeans ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Chinese ... | 1,336 | ... | 986 | ... | 847 | 1 | 1,269 | ... | 1,134 | 1,424 | 1,771 | ... |
| Cingalese ... | 15 | ... | 8 | 2 | 9 | ... | 15 | ... | 6 | 12 | 10 | ... |
| East Indians ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Eurasians ... | ... | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| Filipinos ... | 98 | 1 | 37 | ... | 54 | ... | 74 | 1 | 120 | 57 | 27 | ... |
| Hindoos ... | 66 | 6 | 48 | 2 | 461 | ... | 146 | ... | 75 | 129 | 74 | ... |
| Japanese ... | 513 | 8 | 558 | 1 | 461 | ... | 251 | ... | 366 | 521 | 555 | ... |
| Javanese ... | 3 | ... | ... | ... | 75 | ... | 62 | ... | 52 | 1 | ... | ... |
| Kurds ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Malays ... | 321 | ... | 526 | ... | 469 | ... | 289 | ... | 436 | 370 | 230 | ... |
| Syrians ... | 43 | 4 | 43 | 1 | 39 | ... | 51 | ... | 66 | 58 | 45 | ... |
| OTHER RACES | | | | | | | | | | | | |
| Maoris... .. | ... | ... | ... | 1 | ... | ... | 1 | ... | 2 | 8 | 48 | ... |
| Mauritians ... | 5 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 3 | ... |
| Pacific | | | | | | | | | | | | |
| Islanders ... | 1,176 | 1 | 1,098 | ... | 193 | ... | 98 | ... | 156 | 121 | 89 | ... |
| Papuans ... | 93 | ... | 145 | ... | 552 | ... | 415 | ... | 368 | 493 | 430 | ... |
| St. Helena | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Blacks ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... |
| Unspecified ... | 25 | ... | 20 | ... | 20 | ... | 33 | ... | 32 | 30 | 14 | 1 |
| Total ... | 45,468 | 33 | 44,117 | 13 | 48,317 | 1 | 47,940 | 3 | 57,646 | 71,988 | 75,670 | 1 |

* No persons were admitted after passing the test in either of the years 1906 or 1907.

† Not specified.

§ 2. Patents, Copyrights, Trade Marks, and Designs.

1. Devolution of Jurisdiction upon the Commonwealth.—Prior to the establishment of Federation, and for a few years thereafter, each Australian State possessed independent jurisdiction in respect of patents, copyrights, trade marks, and designs, and had in nearly all cases enacted its own laws governing them. Any person, therefore, who desired to protect a patent, copyright, trade mark, or design had necessarily to incur the trouble and expense of making six separate applications—one in each State. The Commonwealth Constitution Act conferred upon the Federal Parliament power to legislate respecting these matters. (See page 48 hereinbefore).

The State Acts, though in general based upon the Imperial Statutes dealing with these subjects, were not wholly governed by them. The Commonwealth Acts, both in regard to principle and practice, have the same general foundation, but in some respects have been modified and brought into line with the totality of Australian experience.

2. Patents.—The first Commonwealth Patents Act was passed in 1903, and was amended in 1906. (See page 58 hereinbefore.) Under these Acts, which are administered by a "Commissioner of Patents," the power of the States to grant patents was abolished, and their functions in that respect were transferred to the Commonwealth. A single Commonwealth patent now gives throughout the Commonwealth that protection which formerly could only be obtained by procuring a patent in each State. The rights of State patentees are in all cases reserved to them. A holder of a State patent in force may obtain, for a period not exceeding the unexpired time thereof, a Commonwealth patent for the invention comprised in the State patent. Any State may, however, be excepted from the patent if the Commissioner of Patents is satisfied that the invention either (a) is not novel, (b) has been made the subject of a pending application, or (c) has been published in such State. Comparatively small fees, totalling £8, are now sufficient to obtain for an inventor protection throughout the Commonwealth, and the only renewal fee (£5) is payable before the expiration of the seventh year of the patent.

(i.) *Applications for Patents.* Any of the following persons may make application for a patent:—(a) The actual inventor. (b) His assignee, agent, attorney, or nominee. (c) The actual inventor or his nominee jointly with the assignee of a part interest in the invention. (d) The legal representative of a deceased actual inventor or of his assignee. (e) Any person to whom the invention has been communicated by the actual inventor, his legal representative, or assignee (if the actual inventor, his legal representative or assignee is not resident in the Commonwealth). An application for a patent must be for one invention only, and must be made in the form prescribed, and lodged by being left at or sent by post to the Patent Office at Melbourne. It must be accompanied by either a provisional or a complete specification. The application must contain a declaration in the prescribed form setting out the facts relied on to support the application, and must be signed by the applicant and attested by a witness.

(ii.) *Term for which Granted.* The term for the duration of every patent is limited to fourteen years from the date of application. A patent ceases if the patentee fails to pay the renewal fee within the prescribed time. If in any case, however, by accident, mistake, or inadvertence a patentee fails to pay the renewal fee within the prescribed time, he may, on application to the Commissioner and on payment of the prescribed fees, obtain an extension of the time for not more than one year.

(iii.) *Opposition to Grant of Patent.* Within three months of the advertisement of the acceptance of a complete specification any person may give notice at the Patent Office of opposition to the grant on any of the following grounds:—(a) That the applicant has obtained the invention from the opponent. (b) That the invention has not been communicated to the applicant by the actual inventor (if the actual inventor is not resident within the Commonwealth). (c) That the invention has already been patented in the Commonwealth. (d) That the complete specification describes an invention other

than that described in the provisional specification, and that the opponent has applied for a patent for such other invention in the interval between the leaving of the provisional and complete specifications. (e) Want of novelty. (f) Prior publication.

The case is heard and decided by the Commissioner, from whose decision an appeal lies to the High Court or the Supreme Court.

(iv.) *Additional Patents and Amendments.* An important feature of the Patents Act of 1903 was that special provisions were made for granting patents to a patentee in respect of any improvement on his invention. Such patents are called "additional patents," and are granted for the unexpired term of the original patent, the amount of the fee for an additional patent being half that for an ordinary patent.

Amendments to specifications by way of disclaimer, correction, or explanation may be allowed on request to the Commissioner, provided that the specification, if amended as requested, does not claim an invention substantially larger than or different from the original invention. Any person may oppose an amendment on giving notice of opposition at the Patent Office.

(v.) *Revocations of Patents and Compulsory Licenses.* Revocation of a patent may be obtained by petition to the High Court or the Supreme Court of a State. A petition must be presented by either (a) the Attorney-General or person authorised by him, (b) any person alleging that he was the actual inventor or that the patent was obtained from him by fraud, or (c) by any person alleging that he had publicly used, made, or sold within the Commonwealth before the date of the patent anything claimed by the patentee as his invention.

A compulsory license to work a patent in the Commonwealth, or a petition for revocation of a patent, may be granted upon proof by any person interested that the reasonable requirements of the public with respect to the invention have not been satisfied. The Act also contains provisions regarding the remedies for infringement of patents.

(vi.) *International Protection of Patents.* The Patents Act of 1903 contained provisions under which the international arrangements for the protection of patents contained in the Imperial Acts could be made applicable to the Commonwealth by order of the King-in-Council. The necessary proclamation was issued by the Imperial Government as regards England and Australia on the 1st February, 1907, and as regards all other countries in the International Convention on the 5th August, 1907. British and foreign inventors are now, therefore, if they apply in Australia within twelve months of their original application, entitled to receive a patent for their inventions in priority to other applicants, and such patent has the same date as the date of the application abroad. Corresponding arrangements have also been made by the Commonwealth with New Zealand.

(vii.) *Patent Attorneys.* Any person on passing the prescribed examination, and on paying a fee of £5, may be registered by the Commissioner as a patent attorney. A solicitor may practise as a patent attorney without passing the prescribed examination and without being registered as a patent attorney.

(viii.) *Applications Filed, Provisional Specifications Accepted, and Letters Patent Granted, 1901 to 1908.* The numbers of individual inventions in respect of which applications were filed in the Commonwealth during each year from 1901 to 1908, inclusive, were as follows:—

NUMBER OF INVENTIONS FOR WHICH APPLICATIONS FILED, 1901 to 1908.

| Date ... | States Patents Acts. | | | | Commonwealth Patents Acts. | | | | |
|--------------|----------------------|--------|--------|--------------------------|----------------------------|-------|-------|-------|-------|
| | 1901. | 1902. | 1903. | 1904, to 1st June. | 1904, From 13th Feb. | 1905. | 1906. | 1907. | 1908. |
| Applications | 1,610* | 1,933* | 1,772* | 345* | 2,243 | 2,685 | 2,743 | 2,903 | 2,840 |

* Approximate.

From the 13th February, 1904, to the 1st June, 1904, applications were made both under the States and the Commonwealth Acts.

The subjoined table shows the number of provisional specifications accepted and the number of patents granted in each State and in the Commonwealth from 1901 to 1908, inclusive. Under the Commonwealth Patents Act of 1903 these functions ceased to be exercised by the States, and were transferred to the Commonwealth Patent Office on the 1st June, 1904:—

**PROVISIONAL SPECIFICATIONS ACCEPTED AND LETTERS PATENT GRANTED,
1901 TO 1908.**

| State. | States Patents Acts. | | | | Commonwealth Patents Acts. | | | | |
|--------|----------------------|-------|-------|--------------------------|----------------------------|-------|-------|-------|-------|
| | 1901. | 1902. | 1903. | To 1st June, 1904. | From 1st June, 1904. | 1905. | 1906. | 1907. | 1908. |

PROVISIONAL SPECIFICATIONS ACCEPTED.

| | | | | | | | | | |
|----------|-------|-------|-------|-----|-----|-------|-------|-------|-------|
| N.S.W. | 319 | 476 | 388 | 74 | ... | ... | ... | ... | ... |
| Vic. ... | 403 | 533 | 557 | 115 | ... | ... | ... | ... | ... |
| Q'land | 171 | 238 | 207 | 32 | ... | ... | ... | ... | ... |
| S. Aus. | 169 | 219 | 228 | 35 | ... | ... | ... | ... | ... |
| W. Aus. | 137 | 216 | 208 | 41 | ... | ... | ... | ... | ... |
| Tas. ... | 70 | 132 | 152 | 17 | ... | ... | ... | ... | ... |
| Cwlth. | 1,269 | 1,814 | 1,740 | 314 | 782 | 1,628 | 1,498 | 1,579 | 1,681 |

LETTERS PATENT GRANTED.

| | | | | | | | | | |
|----------|-------|-------|-------|-----|-----|-------|-------|-------|-------|
| N.S.W. | 717 | 795 | 704 | 96 | ... | ... | ... | ... | ... |
| Vic. ... | 699 | 797 | 680 | 83 | ... | ... | ... | ... | ... |
| Q'land | 422 | 479 | 395 | 52 | ... | ... | ... | ... | ... |
| S. Aus. | 417 | 442 | 458 | 82 | ... | ... | ... | ... | ... |
| W. Aus. | 356 | 379 | 380 | 61 | ... | ... | ... | ... | ... |
| Tas. ... | 272 | 279 | 259 | 35 | ... | ... | ... | ... | ... |
| Cwlth. | 2,883 | 3,171 | 2,876 | 409 | ... | 1,097 | 1,739 | 1,402 | 1,630 |

In the above table the figures given for each State shew the number of provisional specifications accepted or of patents granted in each State. The total for the Commonwealth for each year up to the 30th June, 1904, does not, therefore, shew the number of separate inventions, as specifications may have been accepted or patents granted for the same inventions in any number, from one to six, of the States. On the other hand the figures given under the Commonwealth Acts represent separate inventions for the whole Commonwealth.

(ix.) *Revenue of Patent Office.* The revenue of the Commonwealth Patent Office for each year since its creation to the end of the year 1908 is shewn in the subjoined table. Particulars as to the revenue of the State Patent Offices for previous years are not available:—

REVENUE OF PATENT OFFICE, 1904 to 1908.

| Particulars. | 1904. | 1905. | 1906 | 1907. | 1908. |
|--|--------------|---------------|---------------|---------------|---------------|
| | £ | £ | £ | £ | £ |
| Fees collected under States Patents Acts ... | 3,181 | 5,567 | 6,233 | 3,746 | 2,016 |
| " " " Patents Acts 1903 to 1906 | 2,459 | 13,379 | 14,667 | 13,612 | 14,166 |
| Receipts from publications ... | ... | 102 | 134 | 155 | 146 |
| Petty receipts ... | 19 | 37 | 43 | 34 | 32 |
| Total ... | 5,659 | 19,085 | 21,077 | 17,547 | 16,360 |

3. **Copyright.**—Prior to the establishment of Federation the copyright legislation enacted by all the States except Tasmania, throughout which State Imperial legislation governed local productions, was based upon and closely followed the English law of copyright, differing, however, in some cases therefrom as to the periods for which a copyright was granted. Only local publications were affected by it. A colonial law did not affect the rights of authors and artists where copyrights were acquired outside the colony. The Imperial statutes governed copyright in those colonies which had not passed a local copyright law.

(i.) *Copyright Acts.* The first Commonwealth Act was passed in 1905 (see page 58 herein). It follows English legislation even more closely than the State Acts. It deals with literary, musical, dramatic, and artistic copyrights, and applies only to Australian publications. It may be applied to foreign publications by registration of them under it.

(ii.) *Principal Features.* The principal feature of the Australian Act is that it provides the same term of copyright and performing right for all publications under the above heads, namely, the life of the author and seven years thereafter, or forty-two years from publication, whichever be the longer. Every book published in Australia for which copyright is claimed must be printed from type set up or from plates or negatives made in Australia. With respect to lectures, it is provided that the author shall be the first owner of the lecturing right, and that he may prevent publication of a report of the lecture by giving notice at the beginning of the lecture, or by a conspicuous written notice on the entrance door or in the lecture-room stating that reporting is prohibited. The author of an article first published in a periodical to which it was contributed for valuable consideration retains the copyright in the article, but may not republish it until one year after the end of the year in which it was first published. The owner of the copyright in a book may be compelled to translate it, or to permit translation, if it be not translated within ten years of publication. The person ordering a photograph for which consideration is paid is the owner of the copyright in it.

An important and novel feature of the Copyright Act is that provision is made whereby the owner of the copyright in any book or artistic work, or his agent, may by notice in the prescribed form, require any person to deliver up to him any printed reproduction of the book or work, and similarly the owner of the performing right in a musical or dramatic work, or his agent, may forbid the performance of the work in infringement of his right, and may require any person to refrain from performing or taking part in the performance of the musical or dramatic work specified. Any person failing to observe the requirements of any notice served under these provisions is liable to a penalty of £10.

(iii.) *Registration.* Registration is a necessary preliminary to an action for infringement, but copyright exists independently of registration. The Commissioner of Patents has been appointed "Registrar of Copyrights."

Proceedings for the rectification of the register may be taken before the Supreme Court of any State.

In the matters of copyright the Commonwealth possesses the privileges conferred upon each signatory of the Berne Convention.

Particulars of applications for registration of copyrights and of the revenue derived therefrom are given in paragraph 6 hereof.

4. Trade Marks.—The remarks made concerning the unification of the patent system of the Commonwealth apply equally to trade marks. Under the Trade Marks Act 1905, which came into force on the 2nd July, 1906, the Commissioner of Patents is appointed to act also as “Registrar of Trade Marks.” There are two trade marks, viz., the “Workers’ Trade Mark” and the “Commonwealth Trade Mark,” for which special provisions are contained in the Act; the provisions regarding the former of these two Trade Marks have, however, been held to be unconstitutional (see p. 1074 *ante*). The latter may be registered in respect of all goods specified by a resolution passed by both Houses of Parliament that the conditions as to remuneration of labour in connection with their manufacture are fair and reasonable.

(i.) *Essential Particulars of Trade Marks.* A registrable trade mark must consist of essential particulars with or without additional matter. The essential particulars must be one or more of the following:—(a) A name or trading style of a person printed, impressed, or woven, in some particular and distinctive manner; (b) a written signature of the person applying for registration thereof or of some predecessor in his business; (c) a distinctive device, mark, brand, heading, label, or ticket; (d) one or more invented words; (e) a word or words having no reference to the character or quality of the goods, and not being a geographical name used or likely to be understood in a geographical sense. The additional matter which may be added must be either (a) any letters, words, or figures or (b) any combination of letters, words, or figures or any of them.

(ii.) *State Registrations.* State registrations cease to be in force at the expiration of fourteen years from the date of the Commonwealth Act, if the registration has not previously expired. Commonwealth registration of a State registered mark may be effected, and the fact of its registration in a State prior to the coming into force of the Commonwealth Act, may entitle the registered proprietor in the State to Commonwealth registration, notwithstanding the existence of defects which might be ground for refusal of an original application for Commonwealth registration.

(iii.) *Duration of Registration and General Provisions.* The registration of a trade mark is for a period of fourteen years, but may be renewed from time to time. International and intercolonial arrangements for the protection of trade marks may be made in a manner similar to that provided for the protection of patents. Registration may be opposed by any person lodging a notice of opposition at the Trade Marks Office within three months after the advertisement of the application. International arrangements for the protection of Australian trade marks were made by proclamation issued on the 1st February and on the 5th August, 1907 (see paragraph 2 (vi.) *ante*).

5. Designs.—The Designs Act of 1906 came into operation on the 1st January, 1907. Under this Act a Commonwealth Designs Office has been established and the Commissioner of Patents appointed “Registrar of Designs.”

(i.) *Registration.* Any new and original design which has not been published in Australia before the lodging of an application for its registration may be registered in respect of all or any of the articles enumerated in the classification contained in the regulations, which comprise jewellery, paperhangings, carpets, floor-cloths, lace, hosiery, millinery, wearing apparel, textile fabrics, bookbinding, and articles composed wholly or chiefly of a variety of solid substances. After an application for the registration of a design has been lodged the design may be published and used without prejudice to the validity of the registration.

(ii.) *Duration of Copyright in Designs.* The registration takes effect as from the date of the lodging of the application, and, subject to the provisions of the Act, remains in force for a period of five years from that date. The owner of a registered design must, within two years after registration, use the design in Australia, and if he fails to do so the copyright ceases. If, however, such design is used in any manufacture abroad the above period is limited to six months.

(iii.) *General.* The Act also contains provisions regarding the remedies for infringement of designs and the rectification of the register. Arrangements for the international and intercolonial protection of copyright in designs were made by the same proclamation referred to above with regard to patents and trade marks.

6. Applications for Copyrights, Trade Marks, and Designs.—The following table gives particulars of copyright, trade mark, and design applications received and registered under the Commonwealth Acts during the years 1907 and 1908:—

COPYRIGHT, TRADE MARK, AND DESIGN APPLICATIONS RECEIVED AND REGISTERED UNDER COMMONWEALTH ACTS, 1907 and 1908.

| Year. | Copyrights. | | | | Trade Marks. | Designs. |
|--------------------------|-------------|-----------|---------------|--------|--------------|----------|
| | Literary. | Artistic. | International | Total. | | |
| APPLICATIONS RECEIVED. | | | | | | |
| 1907 ... | 372 | 346 | 7 | 725 | 2,065 | 176 |
| 1908 ... | 479 | 581 | 46 | 1,106 | 1,580 | 155 |
| APPLICATIONS REGISTERED. | | | | | | |
| 1907 ... | 227 | 208 | ... | 435 | 1,395 | 77 |
| 1908 ... | 382 | 359 | 21 | 762 | 3,150 | 180 |

The following table shows the revenue of the Copyright, Trade Mark, and Design Office during the years 1907 and 1908:—

REVENUE OF COPYRIGHT, TRADE MARK, AND DESIGN OFFICE, 1907 and 1908.

| Particulars. | 1907. | | | | | 1908. | | | | |
|---------------------------------|--------------|--------------|---------|---------------|--------|--------------|--------------|---------|---------------|--------|
| | Copy-rights. | Trade Marks. | Designs | Publi-cations | Total. | Copy-rights. | Trade Marks. | Designs | Publi-cations | Total. |
| | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| Fees collected under State Acts | ... | 183 | ... | ... | 183 | ... | 40 | ... | ... | 40 |
| Fees collected under Cwth. Acts | 112 | 6,228 | 133 | 76 | 6,549 | 152 | 7,243 | 128 | 82 | 7,605 |
| Total ... | 112 | 6,411 | 133 | 76 | 6,732 | 152 | 7,283 | 128 | 82 | 7,645 |

In addition to the applications for copyright received and registered under the Commonwealth Act, as specified in the first table of this paragraph, certain applications for registration of copyrights under State Acts were received and registered. The following table gives particulars of such applications for the years 1907 and 1908:—

APPLICATIONS FOR REGISTRATION OF COPYRIGHT UNDER STATE ACTS, 1907-8.

| Year. | N.S.W. | | Victoria. | | Queensland. | | S. Australia. | | W. Australia. | | Tasmania. | |
|--------------------------|-----------|-----------|-----------|-----------|-------------|-----------|---------------|-----------|---------------|-----------|-----------|-----------|
| | Literary. | Artistic. | Literary. | Artistic. | Literary. | Artistic. | Literary. | Artistic. | Literary. | Artistic. | Literary. | Artistic. |
| APPLICATIONS RECEIVED. | | | | | | | | | | | | |
| 1907 ... | .. | 4 | 2 | 19 | .. | .. | .. | 1 | 1 | .. | .. | .. |
| 1908 ... | 4 | 2 | 3 | 7 | .. | .. | .. | 1 | .. | .. | .. | .. |
| APPLICATIONS REGISTERED. | | | | | | | | | | | | |
| 1907 ... | .. | 4 | 2 | 19 | .. | .. | .. | 1 | 1 | .. | .. | .. |
| 1908 ... | 4 | 2 | 3 | .. | .. | .. | .. | 1 | .. | .. | .. | .. |

§ 3. Old-age Pensions.

1. **General.**—A system for providing for the relief of the aged poor by some means which did not involve the stigma associated in so many minds with the idea of charitable aid, and which, while protecting the recipients from actual want, still left to them as large a degree of freedom as possible, has long been sought for by economists, statesmen, and social reformers. The difficulties surrounding a satisfactory solution of the question are numerous and great, and various schemes have been propounded with the object of overcoming them. Two of the principal objections which have been urged against the introduction of a general system of old-age pensions are—

- (i.) its costliness.
- (ii.) its tendency to induce thriftlessness.

The former is undoubtedly a serious difficulty, since in any normally constituted population the number of persons aged say sixty-five years and upwards will represent about 5 per cent. of the total population, and the provision of the sum required to pay to these a sum which would provide the pensioners with even the barest necessities of life would be a very considerable burden upon the State Treasury. To limit this amount various suggestions have been made, of which probably the most effective have been those which provide, the one for a contribution to the pension fund by the pensioner during his earlier years, and the other by a reduction of the amount of pension payable to those in receipt of income from other sources. The former of these is the principle which has been acted upon in the scheme in operation in Germany, while the latter is that which underlies the schemes in vogue in the Commonwealth and New Zealand as well as in that recently introduced in the United Kingdom.

The objection which has sometimes been raised to the payment of old-age pensions on the score of the tendency to thriftlessness thereby induced is one which, in Australia, at all events, is not accorded much weight, the general feeling being that the number of cases in which the prospect of a pension of, say, 10s. per week from sixty-five onwards would lead to thriftlessness in earlier years, is so small as to be practically negligible.

2. **Introduction of Old-age Pensions into Australia.**—At the present time systems of old-age pensions are in force in three of the States, viz., New South Wales, Victoria, and Queensland, while an Act providing for the payment of old-age pensions throughout Australia was passed by the Commonwealth Parliament on 10th June, 1908, and comes into force on 1st July, 1909. The credit of introducing old-age pensions into the Southern Hemisphere, however, belongs not to the Commonwealth, but to her sister dependency, the Dominion of New Zealand, where pensions have been payable since 1st April, 1898. The first State of the Commonwealth to make provision for the payment of old-age pensions was Victoria, whose legislation on the subject came into operation on 18th January, 1901. Later in the same year, viz., on 1st August, 1901, the pension system of New South Wales came into force, while in the case of Queensland old-age pensions became payable from 1st July, 1908.

3. **Rates of Pension Payable.**—In Victoria, under the Acts which came into force on 18th January, 1901, the maximum rate of pension was fixed at ten shillings per week, but later in the same year, under an Act which came into operation on 7th December, 1901, the rate of pension was reduced to eight shillings per week and the claims in connection with all existing pensions had to be reheard, and children of pensioners, when proved to be able to contribute towards the pension, were compelled to do so. In 1907, however, a further amendment was passed, in virtue of which the rate of pension was again raised to ten shillings per week.

In New South Wales the maximum rate of pension has remained as originally fixed, viz., ten shillings per week, except in the case of husband and wife living together, when

each receives seven shillings and sixpence per week. In Victoria and Queensland no distinction is made between the rates for married and single persons.

In Queensland the maximum amount of pension payable is ten shillings per week.

4. **Pension Age.**—In all three of the States the general age at which the right to a pension accrues is sixty-five, but in the case of New South Wales and Victoria provision is made for the payment of a pension at an earlier age under special circumstances. Thus in New South Wales a pension is payable at ages sixty to sixty-four on satisfactory evidence of physical incapacity through sickness or injury, but is not payable at those ages on account of senile debility. In Victoria a pension is payable at any age on satisfactory evidence of permanent disablement or ill-health caused by the applicant having been engaged in mining or any unhealthy or hazardous occupation.

5. **Length of Residence.**—In New South Wales the applicant for a pension must be a resident of, and must have resided in, the State continuously for the twenty-five years immediately preceding the date on which he establishes his claim. Occasional absence, however, for periods not amounting in all to more than two years, will not invalidate a claim, and the absence of a seaman while serving on board a vessel trading to and from the State is also admissible. In Victoria the applicant must be a resident of the State, and must have so resided for at least twenty years prior to his application. During the time from which these twenty years commenced to run he must not have been absent for more than five years, and during the five years immediately preceding the date of his application he must have resided continuously in the State. In Queensland the applicant must be residing in that State at the date on which his claim to a pension is made, and must have so resided, whether continuously or not, for at least twenty years. Residence in Queensland during the five years immediately preceding the date of his application must have been continuous.

6. **Evidence of Character of Applicant for Pension.**—In all the States the recipients are required to be of good moral character, and imprisonment for extended periods will, in the cases of New South Wales and Victoria, operate as a disqualification. Thus in New South Wales imprisonment for four months during the period of twelve years, or for five years during the period of twenty-five years prior to an application, will disqualify; while in Victoria imprisonment for six months during the five years immediately preceding an application, or imprisonment at any time for three years and upwards for any offence, will prevent a claim from being recognised.

7. **Limitations in respect of Income and Property.**—With a view to restricting the pensions to persons actually needing assistance, provision is made in all the States for reducing the payment when the applicant already possesses income or property above a given amount. In New South Wales the pension is diminished by £1 per annum for every £1 of income above £26 in the case of a separate pensioner, and for every £1 above £19 10s. in the case of husband and wife living together, and by £1 for every £15 of property owned by the pensioner in either case. In Victoria the pension is diminished by one shilling per week for every shilling earned over two shillings per week, and by sixpence per week for every £10 of property other than furniture and personal effects to the value of £25. In Queensland the pension is diminished by £1 per annum for every complete pound of annual income above £26, and also by £1 per annum for every complete £15 of net capital value of accumulated property. The maximum income that may be received, inclusive of pension, is, therefore, £52 per annum in New South Wales and Queensland and £31 4s. per annum in Victoria, and the maximum amount of property that may be held is £389 in New South Wales, £159 in Victoria, and £259 in Queensland. In Victoria the possession of money above the amount of £10 acts as a disqualification.

8. **Number of Pensioners.**—The following table furnishes particulars of the number of old-age pensioners in New South Wales and Victoria at the end of the years 1900-1. to 1907-8:—

NUMBER OF PERSONS IN RECEIPT OF OLD-AGE PENSIONS AT END OF YEAR.

| Year. | New South Wales. | Victoria. | Total. |
|--------|------------------|-----------|--------|
| 1900-1 | ... | 16,275 | 16,275 |
| 1901-2 | 13,957 | 14,570 | 28,527 |
| 1902-3 | 22,182 | 12,417 | 34,599 |
| 1903-4 | 20,905 | 11,609 | 32,514 |
| 1904-5 | 20,438 | 11,209 | 31,647 |
| 1905-6 | 21,402 | 10,990 | 32,392 |
| 1906-7 | 21,465 | 10,732 | 32,197 |
| 1907-8 | 21,685 | 11,288 | 32,973 |

It will be seen that during the past four years the number of pensioners has varied but slightly, the total at 30th June, 1908, representing an increase of only 459 on that at 30th June, 1904. The number in New South Wales increased during that period by 780, while the number in Victoria decreased by 321. At the Census of 31st March, 1901, the number of persons in New South Wales aged sixty-five years and upwards represented 3.44 per cent. of the total population of that State, while in Victoria the corresponding percentage was 5.52. Assuming these percentages to hold good for 30th June, 1908, the number of persons in these two States aged sixty-five and upwards may be stated approximately as—New South Wales, 54,300; Victoria, 69,300. On this basis the number of persons in receipt of old-age pensions in New South Wales on 30th June, 1908, represented 40 per cent. of the total number in the State on that date aged sixty-five years and upwards, while in Victoria the corresponding percentage was 16½. It is probable that the numbers aged sixty-five and upwards given above are somewhat underestimated, especially in the case of New South Wales, and that in consequence the percentage in receipt of pension is slightly overstated. The error involved is, however, probably not large.

9. Amount Paid in Pensions.—Since the inauguration of the old-age pensions schemes in the Commonwealth the total sum paid in this manner has amounted to no less than £5,105,817, of which New South Wales has provided £3,451,935 and Victoria £1,653,882. Details for the period are as follows:—

AMOUNT PAID TO OLD-AGE PENSIONERS.

| Year. | New South Wales. | Victoria. | Total. |
|--------|------------------|-----------|---------|
| | £ | £ | £ |
| 1900-1 | ... | 129,338 | 129,338 |
| 1901-2 | 436,183 | 292,432 | 728,615 |
| 1902-3 | 524,967 | 215,972 | 740,939 |
| 1903-4 | 503,133 | 205,183 | 713,316 |
| 1904-5 | 496,300 | 200,464 | 696,764 |
| 1905-6 | 489,095 | 189,127 | 678,222 |
| 1906-7 | 494,227 | 187,793 | 682,020 |
| 1907-8 | 503,030 | 233,573 | 736,603 |

In New South Wales the average pension paid during the year 1907-8 amounted to £23 6s. 3d., or approximately 8s. 11½d. per week, while the Victorian average for the same year was £20 13s. 10d., or about 7s. 11½d. per week.

10. Invalidity and Accident Pensions.—As already noted in paragraph 4, above, the Victorian old-age pension system makes provision for payments in case of permanent disablement or ill-health caused by engagement in mining or any unhealthy or hazardous occupation. The returns furnished, however, do not disclose the numbers and amounts of such pensions distinct from those relating purely to old-age. In New South Wales incapacity through sickness or injury at ages sixty to sixty-four was made a basis of claim

for old-age pension, and this principle was, by the Invalidity and Accident Pensions Act of 1907, considerably extended. The number of pension certificates issued under this Act during the six months from 1st January to 30th June, 1908, was 1906, and the amount paid in pension instalments during that period was £12,527. These figures are not included in those given above for old-age pensions.

11. **Cost of Administration.**—Owing to the differences in the methods of administration the cost involved in paying old-age pensions has throughout been much higher in New South Wales than in Victoria. This has to a large extent been due to the fact that in the former State a heavy charge is levied for commission on payment of pensions by the bank through which such payments are made, while in the latter the pensions are paid through the medium of the Post-office. Particulars of the cost of administration from 1900-1 onwards are given in the following table:—

COST OF ADMINISTRATION OF OLD-AGE PENSION SCHEMES, 1900-1 to 1907-8.

| Year. | New South Wales. | Victoria. | Total. |
|---------------|------------------|-----------|--------|
| | £ | £ | £ |
| 1900-1 | — | 711 | 711 |
| 1901-2 | 17,258 | 2,799 | 20,057 |
| 1902-3 | 20,567 | 2,185 | 22,752 |
| 1903-4 | 20,341 | 1,670 | 22,011 |
| 1904-5 | 22,040 | 1,682 | 23,722 |
| 1905-6 | 21,248 | 1,811 | 23,059 |
| 1906-7 | 20,949 | 1,890 | 22,839 |
| 1907-8 | 22,574* | 1,975 | 24,549 |

* Including invalidity and accident pension expenditure.

For the year 1907-8 the cost of administration in New South Wales represented no less than 4.38 per cent. of the amount actually paid in pensions, while in Victoria the cost of administration amounted to only 0.85 per cent. of the pension payments. Compared with the number of pensioners the cost of administration in New South Wales for 1907-8 represented nineteen shillings and fourpence per head, and in Victoria three shillings and sixpence per head. The total cost of administration since old-age pensions were introduced has been £159,700, of which New South Wales has paid £144,977 and Victoria £14,723. It may be mentioned that in New Zealand, for the year 1907-8, the cost of administration represented 2.22 per cent. of the amount actually paid in pensions, or ten shillings and ninepence per pensioner.

12. **Commonwealth Royal Commission on Old-age Pensions.**—On the 27th February, 1905, a Royal Commission, of which the Honourable Austin Chapman, M.P., was chairman, was appointed "to inquire within Australia into (a) the working of the Old-age Pension Acts of New South Wales and Victoria; (b) the probable cost and best means to be adopted for establishing old-age pensions for the Commonwealth; and (c) to continue the inquiry commenced by a Select Committee of the House of Representatives in relation to the said matters." Prior to the appointment of this Commission the Select Committee referred to had held six meetings, and had examined three witnesses. The Royal Commission visited each of the States of the Commonwealth, and examined sixty-four witnesses, their inquiries extending over thirty-six sittings, of which eleven were held in Melbourne, twelve in Sydney, five in Perth, three in Brisbane, two in Adelaide, two in Hobart, and one in Launceston. As the result of their inquiries the Commission made the following recommendations in their report, dated 16th February, 1906, and addressed to His Excellency the Governor-General:—

(i.) "That old-age pensions should be provided throughout the Commonwealth, and be paid out of the consolidated revenue.

(ii.) "That a bill for this purpose should be submitted by your Excellency's advisers for the early consideration of Parliament.

(iii.) "That the rate of pension should be fixed at a maximum of ten shillings per week, subject to any deductions hereinafter recommended.

(iv.) "That the qualifying age should be sixty-five years, but that it may be reduced to sixty where an applicant is permanently incapacitated for work.

(v.) "That a residential qualification should be imposed as follows:—

"In all cases a continuous residence in the Commonwealth of twenty-five years, provided—

(a) "that where the applicant is a native-born resident with an aggregate residence of at least fifty years in the Commonwealth such continuity shall not be deemed to be interrupted by absences totalling not more than six years; nor

(b) "that in all other cases such continuity shall not be deemed to be interrupted by absences totalling not more than three years.

(vi.) "That where otherwise qualified the following persons shall be eligible for an old-age pension:—

(a) "All natural-born British subjects of a white race.

(b) "All persons resident in the Commonwealth (not being Aboriginal natives of Australia, Asia, Africa, or the islands of the Pacific) who have been naturalised for a period of three years next preceding the date on which they make their pension claims.

(vii.) "That every pension granted should be held subject to review, amendment, suspension, and cancellation, at any time by the authorities clothed with power in that behalf.

(viii.) "That payment to pensioners should be made fortnightly.

(ix.) "That payments should be made through the Post-office.

(x.) "That the general administration should be by a Commissioner, responsible to a Minister of State. That a Deputy Commissioner be appointed for each State; the States to be divided into districts, and each district to have a registrar, to whom all applications should be made, and by whom pension claims should be prepared and placed before a police, stipendiary, or special magistrate for investigation. The magistrate should make recommendations to the Commissioner or a Deputy Commissioner with reference to the granting or rejection of applications. That, in the event of the rejection of any claim, an appeal should be allowed to the Minister. The magistrate should also have power at any time during the currency of a pension to recommend cancellation, amendment, or suspension. In all such cases there should be a right of appeal to the Minister. The power of granting, cancellation, or suspension should be given to the Commissioner or Deputy Commissioners.

(xi.) "That applications be heard in open court, provided that the magistrate have power, if he deem it advisable, to hear any case *in camera*; all evidence to be taken on oath.

(xii.) "That provision should be made to compel a husband, wife, or children, as the case may be, if in a position to do so, to contribute the amount of the pension.

(xiii.) "That if an applicant or a pensioner be proved to be of disreputable or intemperate habits, the magistrate should have power to recommend—

(a) "in the case of an applicant, that the application be refused, or granted conditionally on payment being made through an agent;

(b) "in the case of a pensioner, the forfeiture of one or more instalments, or that payment be made through an agent, or cancellation of the pension.

(xiv.) "That the yearly income of a pensioner from all sources, inclusive of pension, should not exceed fifty-two pounds per annum.

(xv.) "That the deduction on account of income from other sources be one pound for every pound over twenty-six pounds per annum.

(xvi.) "That the net capital value of accumulated property held by an applicant should not exceed £310.

(xvii.) "That the deduction on account of property should be one pound from pension, on every ten pounds of net capital value over fifty pounds, excepting where the property of an applicant consists of a home in which he permanently resides and which produces no income; then an exemption of £100 should be allowed.

(xviii.) "That the property of a pensioner at death should vest in the Registrar of Probates or the Curator of Intestate Estates, as the case may be, as officer acting for the Commonwealth Government, and the indebtedness on account of pension money paid should be liquidated therefrom in priority to all other claims.

"Pension money received from time to time should be a continuing charge on any land acquired by the pensioner before or after the receipt of the pension, notice of such charge to be recorded by the Registrar of Lands Titles as from the date of grant of pension.

(xix.) "That a penalty should be imposed for supplying an old-age pensioner with intoxicating drink."

13. Commonwealth Invalid and Old-age Pensions Act.—On the 10th June, 1908, an Act was passed by the Commonwealth Parliament to provide for the payment of invalid and old-age pensions. In this Act, which is to come into force on 1st July, 1909, or such earlier date as may be fixed by proclamation, provision is made for the payment of old-age pensions as from the commencement of the Act, and for invalid pensions as from a subsequent date to be fixed by proclamation.

The principles on which those provisions of the Act which relate to old-age pensions have been made are very similar to those underlying the Acts at present in force in New South Wales, Victoria, and Queensland. The age qualification for an old-age pension is the attainment under ordinary circumstances of sixty-five years, or in the event of permanent incapacitation for work, sixty years, while in the case of an invalid pension the applicant must be above the age of sixteen years and must be permanently incapacitated for work by reason of an accident or by reason of his being an invalid, and must not be in receipt of an old-age pension.

For an old-age pension twenty-five years' continuous residence in Australia is necessary, while five years' continuous residence is necessary to qualify for an invalid pension. Continuous residence is not considered as having been interrupted by occasional absences not exceeding in the aggregate one-tenth of the total period of residence. If a person can prove that during any absence from Australia his home was still in the Commonwealth, such absence will not be treated as affecting the continuity of his residence. The amount of pension payable is to be determined by the Commissioner or Deputy-Commissioner appointed under the Act, but must not exceed ten shillings per week in any case, nor be at such a rate as to make the pensioner's income, inclusive of pension, exceed one pound per week. Payments received by way of benefit from any registered friendly society, or, during illness, infirmity, or old-age, from any trade union, provident society, or other society or association are not, for the purposes of the Commonwealth Act, treated as income.

In cases where the pensioner has accumulated property the pension is subject to a deduction of £1 per annum for every complete £10 by which the net capital value of the property exceeds £50, except where the property includes a home in which the pensioner permanently resides, and which produces no income, in which case a net capital value of £100 is allowed prior to the pension deduction coming into operation. Accumulated property, whether in or out of Australia, to the value of £310 or upwards will disqualify for a pension, as will also the direct or indirect deprivation of himself of such property with the object of obtaining a pension. Residence in Australia at the time of the application, and during the payment of the pension, is essential in all cases, and provision is also made that in the case of an invalid pension the claimant must have been incapacitated whilst in Australia. An old-age pension will only be granted to a person

of good character, and an invalid pension will only be granted in cases where the claimant's relatives fail to adequately maintain him. Arrangements have been made for the appointment of a Commonwealth Commissioner of Old-age Pensions, and also for the appointment of a Deputy-Commissioner in each State. Provision is also made for the surrender of his certificate by a pensioner under any State Act, and the issue of a Commonwealth certificate in place thereof if the Deputy-Commissioner is satisfied that the State pensioner is entitled to a pension under the Commonwealth Act. It is stated to be probable that legislation will be introduced early in the forthcoming session of the Commonwealth Parliament to obviate the difficulty likely to arise in connection with the difference between the length of residence qualification in the Commonwealth Act and that in the State Acts.

14. **Estimated Cost of the Commonwealth Old-age Pension Scheme.**—In the last issue of the Year Book an estimate of the probable cost of the Commonwealth scheme was given, based largely upon the old-age pension experience of New South Wales taken in conjunction with the results of the Census of 31st March, 1901. The sum brought out as representing the probable cost if the New South Wales scheme had operated throughout the Commonwealth during the year 1906-7 was £1,580,000, including cost of administration. Since the passing of the Commonwealth Old-age and Invalid Pensions Act of 1908, the question has been further investigated in the Commonwealth Statistical Bureau, and an estimate based on the New Zealand old-age pensions experience taken in conjunction with the Australian Census results for 1881, 1891, and 1901 has been prepared. At the New Zealand Census of 29th April, 1906, the number of Europeans aged sixty-five and upwards was 40,788, and of this number 37,367 or 91.61 per cent. had been resident in the Dominion for twenty-five years. Similar statistics of length of residence in the Commonwealth are unfortunately not available, but by means of the age statistics of a Census and the estimated probabilities, at various ages, of surviving twenty-five years the number of persons possessing the requisite age and residence qualifications may be computed approximately for a point of time twenty-five years ahead of the date of the Census. It is clear, for instance, that in the year 1906 the only persons in the Commonwealth who would have the age qualification of sixty-five years and upwards, and the residential qualification of twenty-five years and upwards, would be those who were present at the Australian Censuses of 1881 and were then aged forty and upwards. On a similar basis estimates for the years 1916 and 1926 may be obtained from the Censuses of 1891 and 1901. These three sets of results have been computed actuarially, and the figures for intervening years have been supplied by systematic interpolation giving the following estimate.

ESTIMATED NUMBER OF PERSONS IN THE COMMONWEALTH, AGED SIXTY-FIVE YEARS AND UPWARDS, HAVING A RESIDENCE THEREIN OF TWENTY-FIVE YEARS AND UPWARDS, 31st DECEMBER, 1906 to 1926.

| 31st December | No. of Persons. | 31st December. | No. of Persons. | 31st December. | No. of Persons. |
|---------------|-----------------|----------------|-----------------|----------------|-----------------|
| 1906 | 156,000 | 1913 | 179,000 | 1920 | 218,000 |
| 1907 | 158,000 | 1914 | 184,000 | 1921 | 225,000 |
| 1908 | 161,000 | 1915 | 189,000 | 1922 | 232,000 |
| 1909 | 164,000 | 1916 | 194,000 | 1923 | 239,000 |
| 1910 | 167,000 | 1917 | 199,000 | 1924 | 247,000 |
| 1911 | 171,000 | 1918 | 205,000 | 1925 | 255,000 |
| 1912 | 175,000 | 1919 | 211,000 | 1926 | 264,000 |

With these figures it is possible to apply the New Zealand experience and obtain an estimate of cost for a series of years on the assumption that the general conditions of

the Commonwealth do not, upon the whole, differ materially from those of the Dominion of New Zealand.

The number of European pensioners in New Zealand on 31st March, 1906, was 11,915, and represented 31.89 per cent. of the number eligible on that date by age and length of residence. Applying this percentage to the numbers given above for the years 1909 to 1926, the probable average number of pensioners in the Commonwealth aged sixty-five and upwards for each of the financial years 1909-10 to 1926-7 is obtained as follows:—

ESTIMATED AVERAGE NUMBER OF COMMONWEALTH OLD-AGE PENSIONERS AGED SIXTY-FIVE AND UPWARDS, FOR EACH OF THE YEARS 1909-10 to 1926-7.

| Financial Year. | Pensioners 65 & Upwards. | Financial Year. | Pensioners 65 & Upwards. | Financial Year. | Pensioners 65 & Upwards. |
|-----------------|--------------------------|-----------------|--------------------------|-----------------|--------------------------|
| 1909-10 | 52,300 | 1915-6 | 60,300 | 1921-2 | 71,700 |
| 1910-1 | 53,300 | 1916-7 | 61,900 | 1922-3 | 73,900 |
| 1911-2 | 54,500 | 1917-8 | 63,500 | 1923-4 | 76,200 |
| 1912-3 | 55,800 | 1918-9 | 65,400 | 1924-5 | 78,700 |
| 1913-4 | 57,100 | 1919-20 | 67,300 | 1925-6 | 81,300 |
| 1914-5 | 58,700 | 1920-1 | 69,500 | 1926-7 | 84,200 |

The New Zealand old-age pension system provides for the payment of pensions only to persons aged sixty-five years and upwards, and does not, as in the case of the scheme provided under the Commonwealth Act, contain provision for payment under certain conditions to persons below that age.

The effect likely to be produced upon the cost of the scheme by including persons between the ages of sixty and sixty-five may be readily seen when it is noted that at the Commonwealth Census of 1901 there were 55 persons between the ages of sixty and sixty-five to every 100 persons above the age of sixty-five, so that, other things being equal, a system of old-age pensions for the Commonwealth, which recognised sixty as the general age at which a pension could be claimed, might be expected to cost no less than 55 per cent. more than one which placed the age at sixty-five. Even with the restrictions placed in the Commonwealth Act upon the granting of old-age pensions to persons below the age of sixty-five, the comparative largeness of the number between sixty and sixty-five must necessarily tend to considerably augment the number of pensioners. Taking as a guide the experience of New South Wales for the three years 1905-6, 1906-7, and 1907-8, it would appear that the number of pensioners between the ages of sixty and sixty-five would average about a ninth of the number at ages sixty-five and upwards. Assuming that a similar result would be obtained under the Commonwealth Act the average number of old-age pensioners of all ages for the years 1909-10 to 1926-7 would be as follows:—

ESTIMATED AVERAGE NUMBER OF COMMONWEALTH OLD-AGE PENSIONERS OF ALL AGES FOR EACH YEAR, 1909-10 to 1926-7.

| Financial Year. | Pensioners. All Ages. | Financial Year. | Pensioners. All Ages. | Financial Year. | Pensioners. All Ages. |
|-----------------|-----------------------|-----------------|-----------------------|-----------------|-----------------------|
| 1909-10 | 58,100 | 1915-6 | 67,000 | 1921-2 | 79,600 |
| 1910-1 | 59,200 | 1916-7 | 68,800 | 1922-3 | 82,100 |
| 1911-2 | 60,600 | 1917-8 | 70,600 | 1923-4 | 84,700 |
| 1912-3 | 62,000 | 1918-9 | 72,700 | 1924-5 | 87,400 |
| 1913-4 | 63,400 | 1919-20 | 74,800 | 1925-6 | 90,300 |
| 1914-5 | 65,200 | 1920-1 | 77,200 | 1926-7 | 93,600 |

The average number of old-age pensions payable in New Zealand during the year ended 31st March, 1908, was 13,413, representing a distribution to pensioners of £325,199, and a charge for administration of £7216. The average pension for the year was thus £24 4s 11d., while the average cost of administration was 10s. 9d. per pension, making a total annual charge of £24 15s. 8d. per pension. Assuming a similar charge to apply to the Commonwealth, the total cost of providing old-age pensions during the years 1909-10 to 1926-7 may be estimated as follows:—

ESTIMATED COST OF COMMONWEALTH OLD-AGE PENSIONS, 1909-10 to 1926-7, ON BASIS OF NEW ZEALAND EXPERIENCE.

| Financial Year. | Estimated Amount to be Distributed as Old-age Pensions | Estimated Cost of Administration. | Total Estimated Cost.* | Financial Year. | Estimated Amount to be Distributed as Old-age Pensions | Estimated Cost of Administration. | Total Estimated Cost.* |
|-----------------|--|-----------------------------------|------------------------|-----------------|--|-----------------------------------|------------------------|
| | £ | £ | £ | | £ | £ | £ |
| 1909-10... | 1,409,000 | 31,000 | 1,440,000 | 1918-9... | 1,763,000 | 39,000 | 1,802,000 |
| 1910-1 ... | 1,435,000 | 32,000 | 1,467,000 | 1919-20 | 1,814,000 | 40,000 | 1,854,000 |
| 1911-2 ... | 1,469,000 | 33,000 | 1,502,000 | 1920-1... | 1,872,000 | 41,000 | 1,913,000 |
| 1912-3 ... | 1,503,000 | 33,000 | 1,536,000 | 1921-2... | 1,930,000 | 43,000 | 1,973,000 |
| 1913-4 ... | 1,537,000 | 34,000 | 1,571,000 | 1922-3... | 1,991,000 | 44,000 | 2,035,000 |
| 1914-5 ... | 1,581,000 | 35,000 | 1,616,000 | 1923-4... | 2,054,000 | 45,000 | 2,099,000 |
| 1915-6 ... | 1,624,000 | 36,000 | 1,660,000 | 1924-5... | 2,119,000 | 47,000 | 2,166,000 |
| 1916-7 ... | 1,668,000 | 37,000 | 1,705,000 | 1925-6... | 2,189,000 | 49,000 | 2,238,000 |
| 1917-8 ... | 1,712,000 | 38,000 | 1,750,000 | 1926-7... | 2,270,000 | 50,000 | 2,320,000 |

* Invalid pensions not included.

To enable a reliable estimate to be made of the invalid pensions portions of the Commonwealth scheme tolerably complete statistics of permanent incapacitation are required. These, unfortunately, are not available, and, in consequence, any estimate of the cost of such pensions can be regarded as little more than a guess. Under similar provisions contained in the Invalidity and Accident Pensions Act of New South Wales, which, as before stated, came into operation on 1st January, 1908, it has been estimated, according to the New South Wales Auditor-General's report for 1907-8, that a sum of £75,000 would be required to meet the charges for pensions that will be claimed and granted during the year 1908-9. Assuming a similar result to hold for the Commonwealth as a whole, the cost of the Commonwealth invalid pension scheme for the year 1909-10 would be approximately £200,000, increasing in subsequent years probably in proportion to the population. On this basis, therefore, it would appear that the total cost of invalid and old-age pensions in the Commonwealth for the year 1909-10 will probably, if the invalid pension part be brought into operation early, be not less than £1,640,000.

15.—**Liability Undertaken in Granting Old-age Pensions.**—As an indication of the extent of the responsibility which an old-age pension scheme involves, it may be mentioned that in connection with the evidence tendered to the Commonwealth Commission on Old-age Pensions a computation was made of the total liability in respect of accrued pensions which the Commonwealth would have incurred if, at 31st March, 1901, the date of the Census, 39 per cent. of the persons aged sixty-five and upwards were entitled to pensions of ten shillings per week. The present value at that date of the liability so computed was £10,415,820. (See Minutes of Evidence of Royal Commission on Old-age Pensions, p. 80.)

§ 4. Local Option.

1. **General.**—The principles of local option as to the sale of fermented and spirituous liquors have been introduced into all the States of the Commonwealth except Western Australia, in which State the matter is under consideration in connection with a proposed amendment of the licensing laws.

2. **New South Wales.**—The Acts in force relating to local option in this State are the Liquor Amendment Acts 1905 and 1907. There were formerly two Acts which dealt with the subject, viz., the Licensing Acts 1882 and 1883, consolidated by the Liquor Act 1898. Under the Act of 1905, which came into force on the 1st January, 1906, the local option vote is to be taken in every electorate on the day fixed for the poll therein at each general election. The option with regard to licenses extends to publichouses, wineshops, and clubs, and the persons entitled to vote are those entered on the Parliamentary electoral rolls.

(i.) *Resolutions to be Submitted.* Except where resolution (c)—see below—has previously been carried, and is in force in an electorate, the following resolutions are to be submitted:—(a) That the number of existing licenses continue. (b) That the number of existing licenses be reduced. (c) That no licenses be granted in the electorate. Where resolution (c) has previously been carried the resolution to be submitted is:—(d) That licenses be restored in the electorate. Resolutions (a) and (b) are carried by a simple majority of the votes given, but neither resolutions (c) nor (d) will be carried unless at least three-fifths of the votes given are in favour thereof, whilst at least 30 per cent. of the number of electors on the rolls must vote for such resolution. If resolution (c) is not carried, the votes given in favour of that resolution are to be added to the votes given for resolution (b).

(ii.) *Effects of Resolutions.* The effects of carrying the resolutions are as follow:—If resolution (a) is carried, the number of licenses may not exceed the number at the time of taking the vote. If resolution (b) is carried, the number of licenses must be reduced, and may be reduced to three-fourths the number at the time of voting. If resolution (c) is carried, no licenses may be granted, renewed, or transferred. If resolution (d) is carried, licenses may be granted, renewed, and transferred, but so that the number of licenses is not greater than the number held when resolution (c) was carried, nor less than half such number.

For the purpose of effecting a reduction under resolution (b), a special court determines the reduction to be made in the number of existing licenses, and decides which premises are to be closed. The best conducted premises are given a preference over others. If resolution (c) is carried, it is to take effect at the expiration of three years from the date of the vote.

(iii.) *Local Option Votes, 1907.* The first local option vote under the Act of 1905 was taken at the general election on the 10th September, 1907. The following statement shews the number of electorates in which each of the resolutions was carried:—

NEW SOUTH WALES.—EFFECTS OF LOCAL OPTION VOTES, 1907.

| <i>Resolution</i> | (a) | (b) | (c) |
|--|-----|-----|-----|
| <i>Number of electorates in which carried</i> | 25 | 64 | 0 |

In one electorate (Allowrie) the Supreme Court decided that the vote was ineffective.

3. **Victoria.**—The Acts dealing with the subject of local option as to the sale of fermented and spirituous liquors in this State are the Licensing Acts 1890, 1906, and 1907. Other Acts, now repealed, which dealt with the subject are the Licensing Acts 1876, 1885, and 1888.

The last division of the Act of 1906 relates to the subject of local option, this division, however, does not come into force until the 1st January, 1917. In the meantime, in order to reduce the number of victuallers' licenses in Victoria, a Licenses Reduction Board is constituted.

(i.) *The Licenses Reduction Board.* Although the operations of this Board are not conducted in accordance with the principles of local option, the duties of the Board are, until the 31st December, 1916, after which date a system of local option comes into force under the Act of 1906, to reduce the number of licenses in existence and to award compensation according to the scheme provided for by that Act. The Board consists of three members at a salary of £800 per annum each, who may not engage in any business or employment other than the duties of their office as members of the Board. The first Board was appointed on the 21st May, 1907. A Compensation Fund has also been established under the Act, and is raised by means of a compensation fee at the rate of 3 per cent. on the value of liquor purchased by every licensed victualler. The owner of the premises is chargeable with two-thirds, and the tenant with one-third of the compensation fee. The total amount paid into the Compensation Fund was £48,233 for the year 1907, and £48,543 for 1908. When any reduction of licensed premises has been made, the remaining hotels, which will be benefited, are to bear a *pro rata* assessment to make up the amount of license fees lost. The maximum compensation, which is payable out of the Compensation Fund referred to above, is to be based on the results of the three years preceding the 31st December, 1906, in the case of owners, and of the three years preceding the 31st December, 1905, in the case of licensees. Up to the 31st December, 1908, 208 hotels had been closed by the Board, eighty-seven of this number having surrendered their licenses. Compensation was awarded in the case of 196 hotels, the total paid amounting to £99,177, or an average of £506 each. Certain of the compensation moneys, amounting to £6336, were made payable and have been paid in 1909 out of the fund for that year. Sixty-nine of these hotels were situated in the metropolitan district, while the remaining 127 were in country districts. In sixteen cases no claims for compensation were made by the licensees. Twelve cases for compensation in the country yet remain to be heard. The following table shews particulars of the operations of the Board up to the 31st December, 1908:—

VICTORIA.—OPERATIONS OF LICENSES REDUCTION BOARD, 31st DECEMBER, 1908.

| Particulars. | Licenses in December, 1906. | | | Hotels Deprived of Licenses | Compensation Awarded. | | Hotels Surrendered. | Compensation Awarded. | |
|----------------------|-----------------------------|-------------------|-------------------|-----------------------------|-----------------------|-----------|---------------------|-----------------------|-----------|
| | Number in Existence. | Statutory Number. | Number in Excess. | | Owner. | Licensee. | | Owner. | Licensee. |
| Metropolitan Country | 1,020 | 877 | 401 | 67 | £ 48,643 | £ 8,702 | 2 | £ 2,371 | £ 519 |
| | 2,440 | 1,622 | 976 | 54 | 20,253 | 3,519 | 85 | 13,657 | 1,513 |
| Total ... | 3,460 | 2,499 | 1,377 | 121 | 68,896 | 12,221 | 87 | 16,028 | 2,032 |

No reduction of any licensed premises is allowed in any licensing district in which the number of licensed premises is below the statutory number, but new licenses may, until 1917, be granted in such districts provided that a majority of the electors vote in favour of the increase, and that at least one-third of the number of electors on the roll record their votes.

(ii.) *Local Option Resolutions.* A local option vote of the electors is to be taken in every electoral district for the Legislative Assembly on the day fixed for the poll at each general election after the 1st January, 1917. The resolutions to be submitted, the majorities necessary, and the effects of carrying the resolutions are the same as specified in the case of New South Wales. Where any license existing before the 1st February, 1886, is cancelled as the result of a local option vote, the owner and licensee have each a claim to be paid out of the Compensation Fund, but only to the extent that such fund is from time to time available. If it appear to the Treasurer that there is not sufficient money in the fund to meet the claims, he may require every licensed victualler in Victoria to pay an additional compensation fee in order to satisfy the claims.

4. **Queensland.**—In Queensland the subject of local option is dealt with in Part VI. (sections 114 to 126) of the Licensing Act 1885. The provisions of that part of the Act may be applied in any municipality or division, or any subdivision of either, or in any other area which forms part of a municipality or division, and also forms part of one licensing district.

(i.) *Resolutions to be Submitted.* Any number, not less than one-sixth, of the ratepayers in an area may, by notice in writing, require the chairman of the local authority to take a poll of the ratepayers for or against the adoption of all or any of the following resolutions to have effect within the area, viz.:—(a) That the sale of intoxicating liquors be prohibited. (b) That the number of licenses be reduced to a certain number, specified in the notice, not less than two-thirds of the existing number. (c) That no new licenses be granted. The persons entitled to vote are those whose names are on the voters' roll or rate-book of the municipality or division of which the area forms part, as rated in respect of property within the area. Resolutions (b) and (c) may be carried by a simple majority, but resolution (a) cannot be carried unless "a majority of two-thirds of the votes recorded in respect of that resolution . . . is in favour of its adoption."

(ii.) *Effects of Resolutions.* If resolution (a) is adopted, it comes into force on the 30th June in the year following that in which the notice requiring the poll was given. If (b) is adopted, the licensing authority must restrict the total number of licenses and certificates granted or renewed to or within the number specified. If resolution (c) is adopted the licensing authority may not grant any new certificates for a licensed victualler's license or wine-seller's license.

(iii.) *Re-submission of Resolutions.* If resolution (a) is adopted, a poll may not be demanded again until after the expiration of three years from the date of adoption, and in such case a poll may be taken on resolution (a) only. If (b) is adopted, a poll may be again demanded on it or on the question of a further reduction, or on the adoption of the resolutions (a) or (c), but not until the expiration of two years after the last poll was taken. If resolution (c) is adopted, a poll may again be demanded on it or on resolutions (a) or (b), but not until the expiration of two years after the last poll was taken. If all the resolutions are rejected, a poll may not be demanded again until after the expiration of two years from the date of the last poll.

(iv.) *Resolutions Adopted, 1907.* At the end of the year 1907, resolution (a) was in force in three areas in Queensland, viz., the Tambourine shire, subdivision No. 3;

Tiaro shire, Bauple district ; and Inglewood shire (town of Silverspur). Up to the same date a poll as to resolution (b) had not been demanded in any area. The following statement shews the number of areas in which each resolution was either in force or precluded up to the 31st December, 1907 :—

QUEENSLAND.—NUMBER OF AREAS IN WHICH LOCAL OPTION RESOLUTIONS IN FORCE OR PRECLUDED FROM ADOPTION, 31st DECEMBER, 1907.

| Particulars. | Resolution (a). | Resolution (b). | Resolution (c). | Total. |
|---|--------------------|--------------------|--------------------|--------|
| No. of areas in which resolutions in force ... | 3 | 0 | 80 | 83 |
| No. of areas in which resolutions precluded from being put in force ... | 0 | 0 | 8 | 8 |
| Total ... | 3 | 0 | 88 | 91 |

The only resolution upon which a poll had been demanded within the metropolitan district (ten-miles radius) was resolution (c) ; this resolution is in force in thirty-three areas within the metropolitan district and has not been precluded in any area within that district.

5. **South Australia.** In this State the subject of local option is now regulated by Part V. of the Licensing Act 1908. Acts which formerly dealt with the subject were the Licensed Victuallers Amendment Act 1891, the Licensed Victuallers Further Amendment Act 1896, and the Local Option Act 1905.

Under the Licensing Act of 1908 each electoral district for the House of Assembly is constituted a local option district, and each electoral district may be divided into local option districts by proclamation of the Governor. A quorum consisting of 500 electors, or one-tenth of the total number of electors, whichever be the smaller number, in any district may petition the Governor for a local option poll. The persons entitled to vote at the poll are those whose names appear on the electoral roll and who reside in the local option district. The option extends to (a) publicans' licenses, (b) wine licenses, (c) storekeepers' Australian wine licenses, (d) storekeepers' licenses, and (e) club licenses.

(i.) *Resolutions to be Submitted.* The following are the resolutions which are to be submitted, under the Act of 1908, at every poll :—(a) That the number of licenses be reduced. (b) That the number of licenses be not increased or reduced. (c) That the number of licenses be increased in the discretion of the Licensing Bench. Any one of the resolutions is carried by a majority of the valid votes recorded, If the votes recorded in favour of resolution (a) do not constitute a majority, such votes are to be added to the votes in favour of resolution (b). If the sum of the votes recorded in favour of resolutions (a) and (b) do not constitute a majority, such votes are to be added to those recorded in favour of resolution (c).

(ii.) *Effects of Resolutions.* As to each class of license of which there are not less than three licenses current within the local option district at the date of the poll, the first resolution is to be taken to mean that the number of licenses so current be reduced by one-third, and as to each class of license of which there are less than three current, the first resolution is to be taken as equivalent to the second resolution.

The constitution of special Benches consisting of three members, appointed by the Governor, is provided for in order to give effect to the first resolution. A special Bench also deals with resolutions for the reduction of licenses adopted before the passing of the Act of 1908, but not then given effect to.

(iii.) *Resolutions Adopted.* Under the Acts prior to that of 1908 resolutions to reduce the number of licenses had been adopted in nine districts, in four of which, however, the polls were subsequently declared void. Special Benches were appointed in January, 1909, to deal with the determinations of electors at polls taken in the local option districts of Port Adelaide, East Torrens, and Sturt. In accordance with the decisions of this Bench, twenty publichouses in the Sturt and East Torrens districts, and fifteen in the Port Adelaide district, were closed on the 25th March, 1909.

6. *Tasmania.*—In this State the subject of local option is dealt with in Part VI. (sections 72 to 84) of the Licensing Act 1902. Other Acts which formerly dealt with the subject, but now repealed, are the Licensing Acts 1889 and 1890, the Inn Keepers Relief Act 1894, and the Licensing Act Amendment Act 1898. Under the Act of 1902, opposition to the grant of a license may be made (i.) by any resident ratepayer, (ii.) by petition of ratepayers resident in the neighbourhood, or (iii.) by local option poll.

(i.) *Opposition by Resident Ratepayer.* Any ratepayer resident in the district in which a house in respect of which an application for an hotel or publichouse certificate is intended to be made is situated, may, by giving five days' notice to the clerk of Petty Sessions, oppose the grant of the certificate before the Licensing Bench. The objections which may be taken to the granting of a certificate for an hotel or publichouse license are as follows:—(a) That the applicant is of bad character; (b) that he has been convicted of certain specified offences; and (c) that the house in respect of which the application is made does not comply with the requirements of the Act. The objections which may be taken to the granting of a provisional certificate for an hotel license are:—(a) That the house does not comply with the requirements of the Act, and (b) that an hotel is not required in the neighbourhood.

(ii.) *Petition of Resident Ratepayers.* The ratepayers resident in the neighbourhood of a house in respect of which an application for a license is made may petition the Licensing Bench against the granting of such license. The neighbourhood referred to is defined as meaning a space within a radius of 200 yards from the front door of the house if within a city, within a radius of 500 yards if within a town, and within a radius of one mile if the house is not situate within a city or town. If the petition is directed against the granting of a provisional certificate, and is signed by a majority of the resident ratepayers, the bench must refuse to grant the certificate.

(iii.) *Local Option Poll.* Any number of ratepayers, not less than seven, resident in the neighbourhood of the house in respect of which a provisional certificate for an hotel license has been applied for, may require, by petition lodged with the Clerk of Petty Sessions, that a poll of the ratepayers resident in the neighbourhood be taken upon the question whether such provisional certificate be granted or not. If a majority of the votes taken be against the granting of the certificate the Licensing Bench must refuse to grant it.

Particulars as to operations under Part VI. of the Act are not available.

§ 5. Valuation of Commonwealth Production.

The want of uniformity in methods of compilation and presentation of Australian statistics renders it an extremely difficult task to make anything like a satisfactory valuation of the various elements of production. At present there is so little accurate statistical knowledge regarding such industries as forestry, fisheries, poultry, and bee-farming, that any valuation of the production therefrom can only be regarded as the roughest approximation. As a matter of fact complete information as to value of production in all States is available in regard to the mining industry alone, and even in this case adjustments have to be made before the returns are strictly comparable. Careful estimates have been made in some of the States in connection with the value of production from the agricultural and pastoral industries, and where such returns are not available estimates have been made which, it is believed, in the main give fairly accurate results. In the case of manufactories, however, only four of the States have in 1907 statistics of value of production, and it is obvious that approximations for States which do not collect the information, based on the results from those which furnish returns, are of very inferior value. A glance at the chapter dealing with the manufactories will shew the poverty of the statistics hitherto collected on this important field. While the difficulties in the way of obtaining adequate valuations for all classes of production are serious enough at the present time they are still more pronounced in seeking to obtain information as to values for earlier years, when the returns were far more incomplete. It must be clearly understood, therefore, that the values given in the succeeding tables are, in general, approximations only. With the adoption of the forms and methods of tabulation agreed upon at the Statisticians' Conference of 1906 it is hoped, however, that at no distant date fairly complete valuations will be available for all industries, and the returns collected in 1907 certainly shew a considerable improvement over those of previous years. In the meantime the figures quoted must be taken with all their limitations. The table hereunder shews the approximate value of the production from all industries during the year 1907:—

ESTIMATED VALUE OF PRODUCTION FROM INDUSTRIES, 1907.

| State. | Agriculture. | Pastoral. | Dairy, Poultry, & Bee-farming. | Forestry and Fisheries. | Mining. | Manufacturing. | Total. |
|-----------------|--------------|-----------|--------------------------------|-------------------------|---------|----------------|---------|
| | £1000 | £1000. | £1000. | £1000. | £1000. | £1000. | £1000. |
| N.S. Wales ... | 7,483 | 22,281 | 5,275 | 1,532 | 10,292 | 14,485 | 61,348 |
| Victoria ... | 9,481 | 9,259 | 5,912 | 705 | 3,087 | 11,768 | 40,212 |
| Queensland ... | 3,292 | 11,438 | 2,144 | 920 | 4,131 | 4,719 | 26,644 |
| South Aust. ... | 6,447 | 4,068 | 1,103 | 150 | 906 | 3,459 | 16,133 |
| West. Australia | 1,750 | 2,548 | 369 | 1,322 | 7,634 | 1,904 | 15,527 |
| Tasmania ... | 2,047 | 1,066 | 781 | 197 | 2,251 | 1,240 | 7,582 |
| C'wealth ... | 30,500 | 50,660 | 15,584 | 4,826 | 28,301 | 37,575 | 167,446 |

A glance at the figures in the above table will give some idea of the distribution of the great producing industries throughout the Commonwealth. Thus Victoria and New South Wales, as might naturally be expected, take the leading position in Agriculture, with South Australia and Queensland following. In Pastoral Production, New South Wales is easily first, with Queensland second. In Dairy-farming the positions are the same as in Agriculture, except that Queensland occupies third place and South Australia fourth,

while in Forestry and Fisheries, and in Mining, New South Wales and Western Australia occupy first and second place respectively. Manufactories on an extensive scale are at present practically confined to New South Wales and Victoria.

The total production from all industries was thus £167,446,000, equal to an average of £39 17s. 11d. per inhabitant.

In the next table will be found the value of production at decennial intervals since 1871, and for the year 1907. The figures for the Census years have been taken from "Australia and New Zealand," and, in view of what has been said in a previous paragraph, must be regarded as very rough estimates only:—

ESTIMATED VALUE OF PRODUCTION, 1871 to 1907.

| State. | 1871. | 1881. | 1891. | 1901. | 1907. | Develop- ment* since 1871. |
|-----------------------|--------------------|-------------------|--------------------|-------------------|---------------------|----------------------------------|
| | £1000. | £1000. | £1000. | £1000. | £1000. | |
| New South Wales ... | 15,379 | 25,180 | 36,740 | 38,954 | 61,348 | 4.0 |
| Victoria ... | 19,260 | 22,750 | 30,320 | 30,807 | 40,212 | 2.1 |
| Queensland ... | 3,995 | 10,200 | 14,274 | 16,933 | 26,644 | 6.7 |
| South Australia ... | 5,228 | 8,457 | 9,026 | 10,314 | 16,133 | 3.1 |
| Western Australia ... | 707 | 943 | 1,806 | 12,544 | 15,527 | 21.8 |
| Tasmania ... | 2,131 | 3,586 | 3,921 | 5,033 | 7,582 | 3.6 |
| Commonwealth ... | 46,700 | 71,116 | 96,087 | 114,585 | 167,446 | 3.8 |
| Average per head ... | £ s. d. 27 17 2 | £ s. d. 31 1 3 | £ s. d. 29 19 9 | £ s. d. 30 2 6 | £ s. d. 39 17 11 | 1.4 |

* Ratio of present production to that of 1871.

In connection with the high values, absolute and relative, shown by the year 1907, the fact must not be overlooked that this year was a particularly favourable one over the greater part of Australia, while wool, metals, and other articles of domestic production realised very high prices in British and foreign markets.

APPENDIX.

Recent information and returns which have come to hand since the various sections of this book were sent to press, are given below.

SECTION II.

DISCOVERY, COLONISATION, AND FEDERATION OF AUSTRALIA.

§ 5. The Constitutions of the States.

The Australian States Constitution Act 1907 amended the Australian Constitution Acts and expressly declared that the following Bills passed by the Legislature of any State of the Commonwealth must be reserved for the signification of His Majesty's pleasure thereon, viz., any Bill which:—(a) Alters the Constitution of the Legislature of the State or of either House thereof; (b) affects the salary of the Governor of the State; (c) or is, under any State Act, passed after the passing of the Australian Constitution Act 1842, or under any provision contained in the Bill itself, required to be reserved. (See also page 961 (ii.) *The State Governors.*)

SECTION IV.

POPULATION.

§ 4. Elements of Growth of Population.

3. **Net Immigration, p. 168.**—The following table gives particulars of net immigration for the year 1908:—

NET IMMIGRATION,* 1908.

| Particulars. | N.S.W. | Victoria. | Q'land. | S. Aust. | W.A. | Tas. | C'wlth. |
|---|---------|-----------|---------|----------|--------|--------|---------|
| Arrivals | 239,669 | 194,545 | 75,041 | 79,857 | 24,594 | 35,188 | 72,208 |
| Departures | 243,341 | 186,797 | 73,611 | 71,215 | 23,922 | 36,858 | 59,058 |
| Excess of arrivals over departures | —3,672 | 7,748 | 1,430 | 8,642 | 672 | —1,670 | 13,150 |

Note.—(—) signifies excess of departures over arrivals. * Figures for States represent Interstate and Oversea migration; those for Commonwealth represent Oversea migration only.

4. **Total Increase, p. 170.**—The following table gives particulars of the total increase in population for each State and for the Commonwealth during the year 1908:—

TOTAL INCREASE OF POPULATION, 1908.

| Particulars. | N.S.W. | Victoria. | Q'land. | S. Aust. | W.A. | Tas. | C'wlth. |
|---|--------|-----------|---------|----------|-------|--------|---------|
| Excess of births over deaths | 26,403 | 15,331 | 9,150 | 5,873 | 4,876 | 3,486 | 65,119 |
| Excess of arrivals over departures | —3,672 | 7,748 | 1,430 | 8,642 | 672 | —1,670 | 13,150 |
| Total increase | 22,731 | 23,079 | 10,580 | 14,515 | 5,548 | 1,816 | 78,269 |

Note.—(—) signifies excess of departures over arrivals.

§ 8. Enumerations and Estimates.

5. **Estimates of Population, pp. 177 to 181.**—The following table shows the estimated population of each State and the Commonwealth on the 31st December, 1908:—

| Particulars. | N S.W. | Vic. | Qld. | S.A. | W.A. | Tas. | C'wealth. |
|--------------|-----------|-----------|---------|---------|---------|---------|-----------|
| Males ... | 849,164 | 636,102 | 299,953 | 216,858 | 154,625 | 95,325 | 2,252,027 |
| Females ... | 742,509 | 635,072 | 252,392 | 190,321 | 112,486 | 90,499 | 2,023,279 |
| Total ... | 1,591,673 | 1,271,174 | 552,345 | 407,179 | 267,111 | 185,824 | 4,275,306 |

SECTION V.

VITAL STATISTICS.

§ 1. Births.

1. **Male and Female Births, p. 203.**—The total number of male and female births registered, and the birth rates in each State and in the Commonwealth, during the year 1908 were as follows:—

BIRTHS AND BIRTH RATES, 1908.

| Particulars. | N S.W. | Vic. | Qld. | S.A. | W.A. | Tas. | C'wealth. |
|-----------------|--------|--------|--------|-------|-------|-------|-----------|
| Males ... | 21,605 | 16,071 | 7,677 | 4,949 | 3,993 | 2,818 | 57,113 |
| Females ... | 20,853 | 15,026 | 7,153 | 4,841 | 3,762 | 2,797 | 54,432 |
| Total ... | 42,458 | 31,097 | 14,830 | 9,790 | 7,755 | 5,615 | 111,545 |
| Birth rates ... | 26.86 | 24.71 | 26.99 | 24.59 | 29.25 | 30.90 | 26.35 |

§ 2. Marriages.

1. **Marriages, p. 213.**—The following statement shows the number of marriages registered in each State and the Commonwealth, and the marriage rates per 1000 of the mean population, during the year 1908:—

MARRIAGES AND MARRIAGE RATES, 1908.

| Particulars. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|---------------------|--------|-------|---------|----------|----------|-------|-----------|
| No. of marriages | 12,641 | 9,335 | 4,009 | 3,122 | 2,012 | 1,432 | 32,551 |
| Marriage rates* ... | 8.00 | 7.42 | 7.30 | 7.84 | 7.59 | 7.88 | 7.69 |

* Number of marriages, not persons married, per 1000 of mean population.

§ 3. Deaths.

1. **Male and Female Deaths, p. 220.**—The number of deaths registered during 1908, and the death rates per 1000 of the mean population, are shewn in the following table:—

MALE AND FEMALE DEATHS AND DEATH RATE, 1908.

| Particulars. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|-----------------|--------|--------|---------|----------|----------|-------|-----------|
| Male ... | 9,298 | 8,816 | 3,500 | 2,106 | 1,800 | 1,112 | 26,632 |
| Female ... | 6,757 | 6,950 | 2,180 | 1,811 | 1,079 | 1,017 | 19,794 |
| Total ... | 16,055 | 15,766 | 5,680 | 3,917 | 2,879 | 2,129 | 46,426 |
| Death rates ... | 10.16 | 12.53 | 10.34 | 9.84 | 10.86 | 11.71 | 10.97 |

SECTION VI.

LAND TENURE AND SETTLEMENT.

§ 2. Land Legislation in Individual States.

1. **New South Wales, p. 267.**—(ii.) *Acts now in Force.* The Crown Lands Acts were further amended by the Crown Lands (Amendment) Act 1908, which came into force on the 1st. February, 1909, and which contains a number of important provisions as to the conversion of tenures.

(i.) *Conversion of Homestead Selections or Grants.* Under the amending Act any homestead selection or grant (see p. 290 *ante*) may be converted into (a) a conditional purchase lease, (b) a conditional purchase, or (c) a conditional purchase and conditional lease, but so that the area comprised in such lease does not exceed three times the area comprised in the conditional purchase. Any application for conversion must be accompanied by a provisional deposit of one shilling per acre of the area of a proposed conditional purchase, as part payment of a deposit of 5 per cent. on the capital value; any balance of the latter deposit must be paid within one month after the applicant has been called upon to do so.

(ii.) *Conversion of Settlement Leases.* Any settlement lease (see page 305) may be converted into an original conditional purchase or into an original conditional purchase and a conditional lease if the total area held by an applicant for conversion (exclusive of land under annual tenure) does not exceed an area which, in the opinion of the Board, would be sufficient for the maintenance in average seasons and circumstances of an average family. The area of the lease must not exceed three times the area of the conditional purchase.

If the total area held by an applicant for conversion (exclusive of land under annual tenure) exceeds such area, the conversion must be partly into an original conditional purchase and the balance into a conditional lease.

(iii.) *Conversion of Non-residential Conditional Purchases.* A non-residential conditional purchase (see p. 289) may be converted into an original conditional purchase, the term of ten years' residence commencing from the date of application for conversion. The term of compulsory residence is, however, reducible by any period (not exceeding five years) of continuous residence on the land by the holder up to and immediately preceding his application for conversion.

(iv.) *Conversion of Special Leases and Church and School Lands Leases.* The registered holder of any special lease for the purposes of access to water, agriculture, bee and poultry farming, dairying, dams, drainage, garden, grazing, irrigation, orchard, pig and poultry farm, residence, sugar-cane growing, tanks, tobacco-growing, or water con-

servation, or of any church or school lands lease, may apply to convert the same or part thereof into (a) a conditional purchase lease, (b) a conditional purchase, (c) a homestead selection, (d) a settlement lease, or (e) a conditional lease. An application for conversion must be accompanied by the prescribed deposit. The application is referred to the Board for inquiry and the Board reports to the Minister as to whether there is any objection to the granting of the application. If the Board recommends the granting of the application, it proceeds to appraise the capital value or price or rent of the land.

(v.) *Purchase of Residential Leases.* The holder of any residential lease (see p. 306) may at any time after the first five years of his lease apply to purchase his holding. The application must be accompanied by the prescribed deposit, and is referred to the Secretary for Mines, who, if he concurs therein, reports to the Board, which in turn reports to the Minister. The purchase price is fixed by the Board and must be paid within three months, or within such extended time as the Minister may allow, subject to the payment of interest at 5 per cent.

(vi.) *Limitation of Transfer.* Conditional purchase leases, conditional purchases, homestead selections, and settlement leases, and subdivisions of the same may not be transferred, except by way of mortgage, to a person who already holds under any tenure (other than annual tenure) an area greater than a "home maintenance area."

§ 8. Leases and Licenses.

4. *Queensland, p. 311.—Irrigation and Reclaimed Lands.* Under the Irrigation and Reclaimed Lands Act 1908, special provisions are made for granting perpetual leases of reclaimed lands. The Governor is authorised to proclaim irrigation areas, and the Commissioner for Crown Lands must cause the land included in any such area to be divided into blocks. Any block may contain not more than fifty acres of reclaimed land, and fifty acres of land considered by the Commissioner to be irrigable, and may also contain any area of other land. Each block is offered on perpetual lease, at a rent not less than a sum equivalent to 4 per cent. on the unimproved value of the land, plus the cost of reclaiming and of providing pumping and irrigation channels. For the first year only one-quarter of the fixed rent is payable, for the second year one-half, and for the third year three-quarters.

(i.) *Irrigation Boards.* When leases have been granted of not less than two-thirds of the blocks in any irrigation area, the Governor may constitute a Board to take over the control and management thereof from the Commissioner, who may advance loans to the Board, repayable with interest at 4 per cent. by twenty annual instalments, the first instalment to be paid at the expiration of five years from the date of advance. The Irrigation Boards are vested with wide powers and exercise within the irrigation areas all the duties and powers of District Councils.

(ii.) *Government Loans to Settlers.* Under Part V. of the Act a fund is to be constituted, to be called the Lessees of Reclaimed Lands Loan Fund, consisting of moneys provided by Parliament. Advances may be made by the Commissioner to assist lessees (a) in erecting or completing permanent buildings and in making improvements on their lands, and (b) in making improvements which permanently increase the capital value of the land, such as grubbing, fencing, constructing drains, wells, tanks, and the like. Advances for the first purposes (a) may not exceed one-half the cost to the lessee of the permanent buildings and improvements then subsisting on his block, and for the second purposes (b) may not exceed one-half the value of the improvements, while the total amount owing by any lessee may not exceed £125. Loans must be repaid with interest at 4 per cent. by twenty equal annual instalments, the first instalment to be paid at the expiration of five years from the date of advance. In cases of hardship the time may be extended by the Commissioner, the deferred payments carrying interest at 5 per cent.

§ 9. Closer Settlement.

5. **Queensland, p. 328.**—*The Special Agricultural Selections Acts.* The Special Agricultural Selections Act 1905 (which, although an amendment to the Acts of 1901 and 1904, is not administered by the Department of Public Lands, but by the Department of Agriculture), provides that the Secretary for Agriculture may extend financial aid to all or any of the members of a body of selectors of agricultural homesteads under the principal Act. By regulations made under this Act it is provided that applicants for aid must be married men who desire to engage in farming, but do not possess sufficient money. For each body of selectors there must be an overseer, who acts as manager of the general business of the body during such period as the Minister thinks proper. During such period each selector must be amenable to and must obey all lawful orders and decisions of the overseer, who also acts as arbitrator in all disputes between the settlers. The overseer must keep an advance account for each settler, shewing the amount of aid extended. This account must be debited with interest at 5 per cent. per annum. Railway fares for the settler and his family to the station nearest to the selection, as well as the rent and proportionate parts of the survey fees payable for the first and second years, may be debited to the advance account. Advances may also be made to each selector to a value not exceeding £80 for the purpose of buying rations and tools, and to a value not exceeding £60 for the purpose of buying stock and poultry. After the expiration of two years the selector must repay the amount of his debt, within a term of twenty-three years, by half-yearly instalments with interest at the rate of £3 7s. 4d. per cent.

8. **Tasmania, p. 332.**—The Closer Settlement Act 1906 was amended in 1908. Under the provisions of these Acts a lessee must improve his holding to a value equal to $2\frac{1}{2}$ per cent. on the capital value of the land in each of the first ten years of the term of his lease, and he must, within two years of the date of the lease, personally reside on his allotment during at least eight months of each of the following nine years.

Under the Amendment Act of 1908 the Minister is authorised to lease any allotment of land exceeding £1500, but not exceeding £4000 in value, exclusive of buildings. Any land acquired for the purposes of closer settlement not suitable for leasing may be sold by auction or private contract for cash or on credit.

SECTION VIII.

AGRICULTURAL PRODUCTION.

§ 4. Wheat.

1. **Progress of Wheat Growing, p. 382.**—The following table shews the estimated area under wheat and the prospective yields of wheat in each State and the Commonwealth for the season 1908-9:—

ESTIMATED AREAS UNDER WHEAT AND PROSPECTIVE YIELDS, 1908-9.

| Particulars. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|----------------------------------|------------|------------|-----------|------------|-----------|---------|------------|
| Estimated area Acres | 1,386,521 | 1,779,905 | 81,850 | 1,727,692 | 311,300 | 29,878 | 5,317,146 |
| Prospective yld. Bush. | 15,731,000 | 23,345,649 | 1,201,130 | 19,979,746 | 2,854,500 | 562,304 | 63,674,329 |
| Average yield per acre ... Bush. | 11.35 | 13.12 | 14.67 | 11.56 | 9.17 | 18.82 | 11.98 |

§ 20. Government Loans to Farmers.

6. **South Australia, p. 441.**—The Advances to Settlers on Crown Lands Act 1908 was assented to on 23rd December, 1908. Under this Act a Board, called the Advances to Settlers Board, was created. The Treasurer is authorised to set apart a sum not exceeding £200,000 in any one financial year for the purpose of loans to settlers. The

maximum amount which may be advanced to any one settler is £400, and for a period of five years following the date on which the advance is made the settler is required to pay interest at the rate of 5 per cent. per annum, payable half-yearly. At the expiration of that period it is provided that he must repay the amount advanced by fifty equal half-yearly instalments, together with interest at 5 per cent. on the balance outstanding. A rebate of 1 per cent. interest is allowed if the half-yearly payment is made within fourteen days of the date on which it falls due. Advances may be made on prescribed security for the purpose of making improvements on a holding, such as ring-barking, clearing, boring for water, etc., or for discharging a mortgage existing on a holding. The amount of the advance may not exceed a sum equal to fifteen shillings in the pound on the value of improvements already made, and may not exceed twelve shillings in the pound on improvements made if the land be mortgaged.

SECTION XI.

FISHERIES AND PISCICULTURE.

§ 4. Development of the Industry.

2. **Experiment and Culture, p. 488.**—(viii.) *Commonwealth Investigations.* Early in 1909 the Commonwealth fisheries investigation vessel *Endeavour* made a preliminary trip eastward of the continent, and reported on return a most successful cruise. Extensive fishing grounds were proved in the regions visited, and a large catch of fish obtained. Tasmanian waters are next to be explored by the *Endeavour*.

SECTION XII.

MINES AND MINING.

§ 2. Gold.

2. **Production of Gold at Various Periods, p. 494.**—The Australian gold yield for 1908 is shown in the subjoined table. The figures are open to final revision, but only to a slight extent:—

GOLD RAISED IN AUSTRALIA, 1908.

| Particulars. | N.S.W. | Victoria. | Qld. | S.A. | W.A. | Tas. | C'with. |
|--------------------|---------|-----------|-----------|--------|-----------|---------|------------|
| Quantity Fine ozs. | 224,792 | 676,005 | 461,359 | 9,162 | 1,648,505 | 60,712 | 3,080,535 |
| Value ... £ | 954,855 | 2,871,485 | 1,959,727 | 38,917 | 7,002,399 | 257,888 | 13,085,271 |

The quantity raised in New Zealand during the year 1908 was 471,790 fine ounces, valued at £2,004,035, making the total yield for Australasia 3,552,325 fine ounces, valued at £15,089,306.

SECTION XVII.

ROADS AND RAILWAYS.

§ 3. Tramways.

1. **General, p. 741.**—*Classification of Mileage open for Passenger Traffic.* The Leonora-Gwalia tramway in Western Australia, 2½ miles in length, is included in the 25½ miles of horse tramways, but should be specified separately under steam motive power. This makes the totals for the Commonwealth as follows:—Steam, 52¼ miles, and horse, 59¼.

5. **South Australia, p. 748.**—The first section of the Adelaide electric tramway system, comprising the Kensington and Norwood lines, was formally opened on the 9th March, 1909.

SECTION XVIII.
POSTS, TELEGRAPHS, AND TELEPHONES.

§ 4. Telephones.

2. **Telephone Rates, p. 791.**—A new system of telephone charges was approved by the Commonwealth Executive Council on the 19th March, 1909. The new regulations stipulate that from the 19th March, the new system shall apply immediately to all new subscribers and to existing subscribers "after a date to be specified in a notice to him, issued by the Postmaster-General." In practice this will mean at the end of existing contracts.

The new scale of rental charges is as follows:—

TELEPHONES.—NEW RENTAL CHARGES, MARCH, 1909.

| In Telephone Networks having a Population of— | Radius of Network with Main Exchange as Centre. | Minimum Annual Charge. | | |
|---|---|------------------------|--|---|
| | | For Exclusive Service. | For each Subscriber or Instrument on a Two-party Line. | For each Subscriber or Instrument on a Three or more party Service. |
| | Miles. | £ s. d. | £ s. d. | £ s. d. |
| From 1 to 10,000. ... | 5 | 3 0 0 | 2 10 0 | 2 0 0 |
| " 10,001 to 100,000 | 10 | 3 10 0 | 2 15 0 | 2 5 0 |
| " 100,001 upwards | 10 | 4 0 0 | 3 0 0 | 2 10 0 |

It is provided that for all effective calls originated the subscriber will be charged the following rates:—(a) For calls not exceeding 2000 half-yearly, two calls for one penny; and (b) for calls above 2000 half-yearly, three calls for one penny,

Another new regulation permits persons occupying offices in the same building, or occupying the same private residence, to subscribe jointly under one exchange number (in addition to rental as for one person at the respective rates prescribed) of £1 per annum for each additional subscriber. This fee covers the insertion of the additional subscriber's name in the telephone list. If additional instruments are required the subscribers must pay the rates prescribed for party lines.

SECTION XX.

STATE FINANCE.

§ 2. State Consolidated Revenue Funds.

(D) Principal State Taxes.

3. **Bills of Exchange and Promissory Notes, p. 833.**—The Stamps Act 1908, of Victoria, which came into force on 20th October, 1908, provides that no Stamp duty is chargeable or payable on bills of exchange of any kind whatsoever except those that are both drawn in, and payable in, Victoria.

3. **Income Tax, Victoria, p. 838.**—Under the Income Tax Act of 1908, a similar deduction of 20 per cent. on the income tax payable for the year 1908, applies also to the tax payable for the year ending 31st December, 1909.

5. **Income Tax, South Australia, p. 840.**—By the provisions of the Taxation Act Amendment Act 1908, the exemption from payment of Income Tax is increased to £200. A tax of £5 on every £100 received by foreign shipping companies is imposed under this Act.

SECTION XXV. GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

3. **The Cabinet and the Executive Government, p. 959.**—*South Australian Ministry.* The Hon. A. A. Kirkpatrick, formerly Chief Secretary and Minister of Industry, has been appointed Agent-General for South Australia in London. The Hon. F. S. Wallis, M.L.C., was sworn in as Chief Secretary on the 27th March, 1909.

7. **Powers and Functions of the Governor-General and of the Governors, p. 960.**—The names of the State Governors in April, 1909, were as follow:—

New South Wales: LORD CHELMSFORD, G.C.B., K.C.M.G.

Victoria: SIR THOMAS DAVID GIBSON-CARMICHAEL, BART., LL.D., K.C.M.G.

Queensland: SIR WILLIAM MACGREGOR, G.C.M.G., C.B.

South Australia: SIR DAY HORT BOSANQUET, K.C.B., G.C.V.O.

Western Australia: SIR GERALD STRICKLAND, K.C.M.G.

Tasmania: (Name of new Governor in place of Sir Gerald Strickland, K.C.M.G., not notified at time of going to press.)

§ 2. Parliaments and Elections.

Summary, p. 964.—The Victorian Adult Suffrage Bill, extending the franchise in Victoria to females, was reserved for signification of His Majesty's pleasure thereon, and received the Royal Assent on the 15th February, 1909.

SECTION XXVI. LOCAL GOVERNMENT.

§ 2. New South Wales.

1. **Development of Local Government Systems, p. 981.**—The Local Government Act 1906 was amended by the Local Government (Amending) Act 1908. Under the latter Act certain alterations are made as to the constitution, reconstitution, and division of local government areas, and the powers of the councils are enlarged both in respect to their primary functions and to the additional functions which may be acquired under the principal Act. A council must make a valuation of all ratable land at least once in every three years; in a municipality such valuation must be of the unimproved and improved capital value, and the assessed annual value; in a shire the valuation of the unimproved capital value is compulsory, and of the improved capital value and the assessed annual value optional.

SECTION XXVII. INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

§ 2. Laws Relating to Conditions of Labour.

Pages 1054 et seq.—In December, 1908, the *Minimum Wage Act* 1908 of New South Wales was assented to. A minimum wage of four shillings per week is prescribed. Males under sixteen years of age, and all females, are to be paid not less than threepence per hour for overtime.

In March, 1909, the *Metropolitan Saturday Half-Holiday Act* 1909, of Victoria, was passed. On and after 1st May, 1909, all shops except those specially exempted are to close on Saturdays at 1 p.m. The closing hour on Fridays is extended to 10 p.m.

In March, 1909, the *Factories and Shops Act* 1909, of Victoria, became law. The Act alters the definition of "child," as stated in the Act of 1905, from thirteen for all children to fourteen for males and fifteen for females. These are, therefore, the ordinary minima ages of admission to factories.

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