

WESTERN AUSTRALIAN YEAR BOOK

No. 14 - 1975

W. M. BARTLETT

DEPUTY COMMONWEALTH STATISTICIAN AND GOVERNMENT STATISTICIAN

AUSTRALIAN BUREAU OF STATISTICS

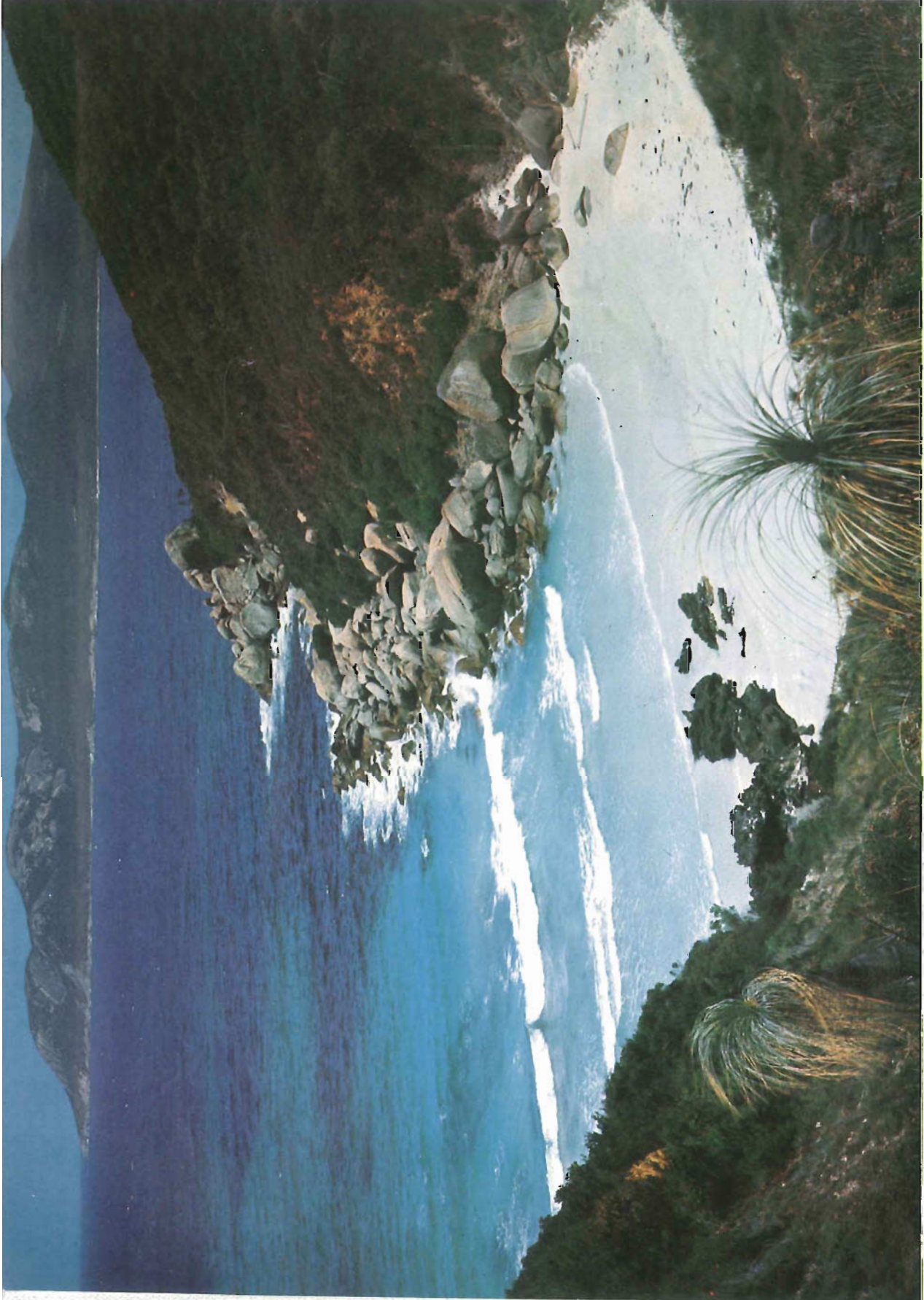
WESTERN AUSTRALIAN OFFICE

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TWO PEOPLES BAY

Two Peoples Bay, on the south coast of Western Australia east of Albany, was named in 1803. The name is believed to have resulted from the meeting of the French expedition under the command of Commodore Nicolas Baudin with the crew of the American vessel 'Union'. The three ships of the expedition explored the Western Australian coast between 1801 and 1803 and the bay subsequently appeared on French charts as 'Port des Deux Peuples'.

Photograph by courtesy of Department of Tourism

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PREFACE

This is the fourteenth issue of the new series of the *Western Australian Year Book*. The old series, originally published for the year 1886 and discontinued in 1905, developed from the Blue Books of the Colonial Office, London, which contained the earlier statistical records of Western Australia.

The Year Book provides a general description of Western Australia and includes authoritative information on almost every aspect of life in the State. Together with chapters on social and economic progress, the Year Book includes information on government, geography and climate, vegetation and fauna. Considerable use is made of statistical tables to supplement the descriptive text and where appropriate, diagrams and graphs are also included for illustrative purposes. Each chapter contains the latest information available at the time of manuscript preparation. More recent information is given, in some cases, in the *Appendix*.

Because of the time required for editing and printing the Year Book, later data on a particular topic will often be available in mimeographed publications or on request to the appropriate section of this Office. More detailed statistics on matters treated generally in the Year Book are available in the several publications comprising *Statistics of Western Australia*. The reader is referred to the complete list of publications of the Western Australian Office which is provided at the back of this Book.

The reader's attention is drawn to the information service and library facilities provided by this Office, where all the publications of the Australian Bureau of Statistics are available for reference. Businessmen, manufacturers, primary producers, government authorities, students and the public generally are invited to make full use of these services.

I express my appreciation to the many government officials and others for their part in the preparation of material for this Year Book and to those organisations which made available blocks or photographs used in the illustrations. Special thanks are due to the Editor of Publications (Mr J. E. Gowdy, B.Ec. (Hons.)), other officers of the Bureau and the Government Printer and his staff for their contribution to the Year Book project.

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Deputy Commonwealth Statistician
and
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1 September 1975.

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GENERAL MAP OF WESTERN AUSTRALIA (inside back cover)

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Hospital and Nursing Home Benefits (para. 3)

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CONVERSION TO METRIC UNITS OF MEASUREMENT

The object of the *Metric Conversion Act 1970*, as stated in section 5, is 'to bring about progressively the use of the metric system of measurement in Australia as the sole system of measurement of physical quantities'. Accordingly, quantity data originally expressed in imperial units in this publication are now (as far as possible) expressed in metric units of measurement. The factors which have been used in converting figures from imperial units to metric units (and the abbreviations used for the metric units) are shown below. In each case, the imperial unit is *multiplied* by the factor given.

<i>Imperial unit</i>	<i>Conversion factor</i>	<i>Metric unit</i>	
acre	0.404686	hectare	(ha)
cubic yard	0.764555	cubic metre	(cu m)
fine ounce	0.0311035	kilogram	(kg)
gallon	4.54609	litre	(l)
gallon	0.00454609	cubic metre	(cu m)
hundredweight	50.802345	kilogram	(kg)
inch	25.4	millimetre	(mm)
lb	0.45359237	kilogram	(kg)
mile	1.609344	kilometre	(km)
miles per hour	1.609344	kilometres per hour	(km/h)
ounce	28.349523	gram	(g)
proof gallon	2.5958	litre alcohol	(l al)
square foot	0.092903	square metre	(sq m)
square mile	2.589996	square kilometre	(sq km)
super. foot	0.002359714	cubic metre	(cu m)
therm	105.506	megajoule	(MJ)
ton	1.016047	tonne	(t)

CITATION OF ACTS

Acts of the Australian Parliament are cited in *italics* with the relevant years shown in roman type, e.g. *Conciliation and Arbitration Act* 1904-1975.

Acts of the Western Australian Parliament are cited in *italics* throughout, with a comma preceding the date, e.g. *Local Government Act Amendment Act, 1975*.

ROUNDING OF FIGURES

Many of the figures appearing in the tables have been rounded (to thousands or, in some cases, millions), without making those adjustments which would be needed to make the rounded figures add to the rounded total. It is for this reason that figures do not always add to the totals shown in the tables.

Percentages appearing in the tables have been corrected to the first (or second) place of decimals without making those adjustments which would be necessary to make the percentages so expressed add to precisely 100.

AREA AND COASTLINE OF AUSTRALIA

The area of the States and Territories and the length of the coastline of Australia were determined in 1973 by the Division of National Mapping of the Department of Minerals and Energy by manually digitising these features from the 1:250,000 map series of Australia. Consequently, only features of measurable size at this scale were considered. About 60,000 points were digitised at an approximate spacing of 0·5 kilometres and these points were joined by chords as the basis for calculation of areas and coastline lengths by computer.

The approximate high water mark coastline was digitised and included all bays, ports and estuaries which are open to the sea. In these cases, the shoreline was assumed to be where the seaward boundary of the title of ownership would be. Rivers were considered along similar lines but the decisions were rather more subjective, the digitised line being across the river where it appeared to take its true form. In mangroves, the shoreline was assumed to be on the landward side.

Areas and lengths of coastline determined by the foregoing methods are given in the following table. The Division of National Mapping is also progressively revising areas of local government authorities but has not yet completed this work. For this reason, areas given for Statistical Divisions, as in the table on page 563, do not add to the total area shown for the State.

State or Territory	Present area	Percentage of total area	Length of coastline (a)
	sq km		kilometres
New South Wales	801,600	10·43	1,900
Victoria	227,600	2·96	1,800
Queensland	1,727,200	22·48	7,400
South Australia	984,000	12·81	3,700
Western Australia	2,525,500	32·87	12,500
Tasmania	67,800	0·88	3,200
Northern Territory....	1,346,200	17·52	6,200
Australian Capital Territory	2,400	0·03	(b)
AUSTRALIA	7,682,300	100·00	36,800

(a) These measurements are broadly on a ' direct ' basis but, even so, they must be regarded as approximate only. (b) Australian Capital Territory, Jervis Bay area included in New South Wales.

AUSTRALIAN BUREAU OF STATISTICS ACT 1975

From 1 January 1974 the Bureau of Census and Statistics became known as the Australian Bureau of Statistics.

The change in title was embodied in the *Australian Bureau of Statistics Act 1975* which formally established a Bureau to be known as the Australian Bureau of Statistics. The Act also established the office of Australian Statistician, with the functions, powers and duties expressed by the *Census and Statistics Act 1905-1973*.

The functions of the Bureau, as enunciated in the Australian Bureau of Statistics Act, are as follows:

- ' (a) to constitute the central statistical authority for the Australian Government and, by arrangements with the Governments of the States, provide statistical services for those Governments;
- (b) to collect, compile, analyse and disseminate statistics and related information;
- (c) to ensure co-ordination of the operations of official bodies in the collection, compilation and dissemination of statistics and related information, with particular regard to—
 - (i) the avoidance of duplication in the collection by official bodies of information for statistical purposes;
 - (ii) the attainment of compatibility between, and the integration of, statistics compiled by official bodies; and
 - (iii) the maximum possible utilization, for statistical purposes, of information, and means of collection of information, available to official bodies;
- (d) to formulate, and ensure compliance with, standards for the carrying out by official bodies of operations for statistical purposes;
- (e) to provide advice and assistance to official bodies in relation to statistics; and
- (f) to provide liaison between Australia, on the one hand, and other countries and international organizations, on the other hand, in relation to statistical matters.'

A Council, to be known as the Australian Statistics Advisory Council, was also established by the Act which provided that the functions of the Council 'are to advise the Minister and the Statistician in relation to—

- (a) the improvement, extension and co-ordination of statistical services provided for public purposes in Australia;
- (b) annual and longer term priorities and programs of work that should be adopted in relation to major aspects of the provision of those statistical services; and
- (c) any other matters relating generally to those statistical services.'

CHAPTER I—COLONISATION, EARLY SETTLEMENT AND EXPLORATION⁽¹⁾

COLONISATION AND EARLY SETTLEMENT

Directly the intention of the Imperial Government to establish the Swan River Settlement became known, a proposal was, on 4 November 1828, made by a syndicate consisting of the following gentlemen—Mr Thomas Peel, Sir Francis Vincent, Bart., Mr Edward W. H. Schenley and Colonel T. Potter Macqueen, M.P., to send out and settle in the neighbourhood of the Swan River 10,000 of His Majesty's subjects from England, Ireland and Scotland and to find them in provisions and every other necessity usually allowed to emigrants; also to bring to the settlement 1,000 head of horned stock and to arrange for three small vessels to subsequently run between Sydney and Swan River, as occasion might require; the undertaking to be completed within four years. In payment of their expenses, estimated at £30 per head of the emigrants brought over, they expressed their willingness to take free grants of land, at a valuation of 1s 6d per acre, and they further promised to provide proper surveyors for the purpose of locating to every male not less than 200 acres of land from the quantity they were to receive. The object of the proposed settlement was stated in the following words:

‘It is well known that the soil of Swan River, from its moist state, is better adapted to the cultivation of tobacco and cotton than any other part of Australia. Both of these articles are intended to be cultivated upon a large scale; as also sugar and flax, with various important articles of drugs for which the climate is peculiarly adapted to their growth.

The undersigned are satisfied, that should they succeed in sending home to the mother country that produce which at this moment the Government are indebted to powers which it would be their policy to suppress, were they in condition so to do, they will have forwarded not alone the views of His Majesty's Government, but effected a national good which neither time nor circumstances can erase from the annals of British history.

Their grazing operations will go very extensively into the rearing of horses for the East India Trade, with the most important establishment of large herds of cattle and swine, for the purpose of supplying His Majesty's or other shipping with salt provisions, as the proximity of salt mines, of the best description, holds out a great inducement towards its success.’

Owing to the delay which occurred in the Colonial Office in coming to a mutually satisfactory arrangement as regards the terms upon which the immense free grant of land asked for was to be made, three members of the syndicate withdrew from it, leaving only Mr Thomas Peel who, on 28 January 1829, again addressed the Colonial Office, stating that he was desirous of carrying on and completing the project by himself on the terms

⁽¹⁾ Reprinted, with minor editing, from the *Western Australian Official Year Book*, 1905 (Old Series). To preserve the historical nature of the text and maintain the verbatim reproduction of the excerpts of letters or reports quoted, references to imperial measures have been retained rather than insert the current metric equivalent. Similarly, monetary amounts appear in their original form in preference to existing decimal currency. Current equivalents in metric measures and decimal currency are shown on pages xii and 313, respectively.

contained in a letter from the Colonial Office to the syndicate as originally composed, dated 6 December 1828, which read as follows:

'I am directed by Secretary Sir George Murray to acquaint you, in answer to your memorial dated the 14th of last month, that the terms upon which the free grants of land will be made in the proposed settlement of Western Australia are those contained in the paper, a copy of which I enclose. His Majesty's Government, however, are desirous that the experiment should not be made, in the first instance, upon a very large scale, on account of the extensive distress which would be occasioned by a failure in any of the objects expected from the undertakings; and they therefore consider it their duty to limit the grant which you request to a maximum of one million of acres. Half a million of these will be allotted to you as soon as possible after the arrival of the first vessel taken out by you, which may contain not less than four hundred persons of both sexes, in the proportions of not less than five female to six male settlers; and if you shall have covered this grant by investments, in accordance with the enclosed terms, before the expiration of the year 1840 the remaining half-million will be allotted to you by degrees, as fresh importations of settlers and capital shall be made, in accordance with the terms already mentioned. But in order that you may suffer no ultimate loss by any reasonable retardation of your investments, His Majesty's Government intend that the allowance of forty acres for every £3 invested shall not be reduced on your second half-million of acres, although your claim to such second half-million may not arise before the expiration of next year, which is the period limited to other settlers applying for free grants. But they will reserve your claim at the original rate of 1s 6d per acre until the expiration of the year 1840, after which time no part of your grant will be held binding upon which the whole required sum of 1s 6d per every acre shall not have been actually invested. A convenient allotment of land will be reserved for the town and harbour, for public buildings, and for the accommodation of future settlers; and a priority of choice to the extent of one hundred thousand acres will be allowed to Captain Stirling, whose surveys and reports of the coast have led to the formation of the settlement. The remaining land will be chosen by the settlers in the order of their arrival; those who arrive together drawing lots for the priority of choice.'

The enclosure was a copy of the old terms of settlement on the Swan River, worded as follows:

'Although it is the intention of His Majesty's Government to form a settlement on the western coast of Australia, the Government do not intend to incur any expense in conveying settlers, or in supplying them with necessaries after their arrival.

Such persons, however, as may be prepared to proceed to that country, at their own cost, before the end of the year 1829, in parties comprehending a proportion of not less than five female to six male settlers, will receive grants of land in fee simple (free of quit rent) proportioned to the capital which they may invest upon public or private objects in the Colony to the satisfaction of His Majesty's Government at home, certified by the Superintendent or officer administering the Colonial Government, at the rate of forty acres for every sum of £3 so invested, provided they give previous security; first, that all supplies sent to the Colony, whether of provisions, stores, or other articles which may be purchased by the capitalists there, or which shall have been sent out for the use of them or their parties on the requisition of the Secretary of State, if not paid for on delivery in the Colony, shall be paid for at home, each capitalist being to be held liable in his proportion, and, secondly, that

in the event of the establishment being broken up by the Governor or Superintendent, all persons desirous of returning to the British Islands shall be conveyed to their own home at the expense of the capitalists by whom they may have been taken out. The passages of labouring persons, whether paid for by themselves or others, and whether they be male or female, provided the proportion of the sexes before mentioned be preserved, will be considered as an investment of capital, entitling the party by whom any such payment may have been made to an allowance of land at the rate of £15, that is, of two hundred acres of land for the passage of every such labouring person over and above any other investment of capital.

Any land thus granted which shall not have been brought into cultivation or otherwise improved or reclaimed from its wild state, to the satisfaction of Government, within twenty-one years from the date of the grant, shall, at the end of the twenty-one years, revert absolutely to the Crown.

All these conditions with respect to free grants of land, and all contracts of labouring persons and others, who shall have bound themselves for a stipulated term of service, will be strictly maintained.

It is not intended that any convicts, or other description of prisoners, be sent to this new settlement.

The government will be administered by Captain Stirling, of the Royal Navy, as Civil Superintendent of the Settlement; and a Bill, in the nature of a civil charter, will be submitted to Parliament in the commencement of its next session.' (Dated 5 December 1828.)

It is worthy of note that, when shortly after new regulations were drawn up, only ten years were allowed under these for bringing land into cultivation.

Invested capital, according to the regulations, was to comprise:

1. Stock of every description;
2. All implements of husbandry and other articles applicable to the purposes of the productive industry, or necessary for the establishment of the settler on the land where he is to be located;
3. The amount of any half-pay or pension received from Government.

Under the word 'persons', it was distinctly understood no children under ten years of age were to be included.

Selection licences were granted to settlers on proof of value of property imported, but the fee simple could not be obtained until proof was given that the sum of 1s 6d per acre had been expended in the cultivation of the land or in other solid improvements.

All 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 would be liable to the payment of 6d per acre into the public chest; and should the land, at the end of a further seven years, still remain in an unimproved state, it was then to revert absolutely to the Crown.

After the year 1830 fresh conditions were to be made as to the disposal of land.

The tempting offer made by the Home Government of grants of land, large and small, in proportion to the amount of property introduced, attracted many holders of capital, the consequence being that extensive tracts of the best land were granted to purely speculative persons.

As regards Mr Thomas Peel, it remains to be stated that he failed to carry out the greater portion of his contract, the very first emigrants whom he brought out giving him endless trouble by desertion and otherwise, so that years passed in litigation and vain efforts at settlement. Finally he made a formal application to the Governor, on 25 September 1834, for a grant of land of 250,000 acres on conditions of general improvement. In compliance with this request he was granted, on 25 November following, the fee simple of the land

subsequently known as Cockburn Sound Location No. 16, 'in consideration of certain location duties performed to the satisfaction of Governor Stirling'.

The first vessels to sail for the Swan River Settlement were H.M.S. 'Sulphur', having on board a detachment of the 63rd regiment of Light Infantry, and the hired transport 'Parmelia', which carried the emigrants and the principal part of their belongings. Leaving England on 13 or 14 February, they arrived in the Colony on 8 June and 2 June 1829, respectively.

The following is a list of the passengers who embarked on board the 'Parmelia'.

Names	Designations	Ages of children	Names	Designations	Ages of children
Capt. Stirling, R.N.	Lt Governor		Mr James Drummond	Agriculturist	
Mrs Ellen Stirling	his wife		Mrs Sarah Drummond	his wife	
Andrew Stirling	their son	3 years	Thomas Drummond	their son	18 years
William Stirling	his nephew		Jane Drummond	daughter	16 years
George Mangles	Stock Superintendent		James Drummond	son	15 years
George Eliot		11 years	John Drummond	son	13 years
Thomas Blakey			Johnson Drummond	son	9 years
Sarah Blakey	servants to Lt Governor		Euphemia Drummond	daughter	3 years
John Kelly			Elizabeth Gamble	servant	
Elizabeth Kelly			Mr Charles Simmons	Surgeon	
Mr P. Brown	Col. Secretary		Mr Tully Daly (a)	Asst Surgeon	
Mrs Caroline Brown	his wife		Mrs Jane Daly	his wife	
MacBride Brown	their son	2 years	Jessie Jane Daly (a)	their daughter	8 years
Ann Brown	daughter	6 months	Joseph T. Daly	son	6 years
Richard Evans	servants to Brown		Henry John Daly	son	4 years
Margaret McLeod			Edward N. Daly	son	2 years
Mary Ann Smith			Eliza Rose Daly	daughter	2 months
Mr James Morgan	Storekeeper		Jas. Elliott	servants to Daly	
Mrs Rebecca Morgan	his wife	12 years	Patrick Murphy		
Rebecca Morgan	their daughter	11 years	Alex. Fandam	Cooper	
James Morgan	son		Mary Fandam	his wife	
Ann Shipsey			William Hoking	Artificer	
Commander M. J. Currie, R.N.	Harbour Master		Mary Hoking	his wife	
Mrs Jane Currie	his wife		Jno. Hoking	their son	14 years
Frederick Ludlow	servants to Currie		Wm Hoking	son	12 years
Mildred Kitts Ludlow			Mary Hoking	daughter	10 years
Jane Fruin			Thos Hoking	son	8 years
Mr John S. Roe	Surveyor		David Hoking	son	6 years
Mrs Matilda Roe	his wife		Charles Hoking	son	2 years
Charles D. Wright			Thos Davis	Smith his wife	
Mr Henry C. Sutherland	Asst Surveyor		Catherine Davis		
Mrs Ann Sutherland	his wife		Jno. Davis	their son	3 years
Mr W. Shilton	Clerk to Col. Secretary		Charlotte Davis	daughter	2 years
			John Davis	his nephew	13 years
			James C. Smith	Boatbuilder	
			Sarah Smith	his wife	

(a) Drowned in Table Bay (Cape of Good Hope), on 25 April 1829.

Closely following the 'Sulphur' and 'Parmelia', a number of vessels arrived, rapidly adding to the little band of settlers and introducing the livestock necessary for colonisation. [A list of these vessels with brief details of their cargoes and number of passengers carried is given in the *Appendix*. Ed.]

Reporting on the progress of the Colony, in a despatch dated 20 January 1830, Sir James Stirling mentions that two townsites had been laid out, one to be named Perth and the other Fremantle; and that the country extending between the sea and the mountains fifty miles southward from Perth had been thrown open for location.

As regards the composition of the population of the early settlement, he complains that, whilst 'amongst the heads of families there is a great majority of highly respectable

and independent persons, there is in the working class a great variety', some having been carefully selected, but the greater part being the outcasts of parishes recommended to their employers by parish officers and possessing habits of the loosest description, the natural consequence being great inconvenience to their masters and endless trouble to the authorities. He had, therefore, been obliged to appoint a magistracy and a body of constables to maintain order, since which drunkenness and similar evils had been less frequent.

Another source of trouble was that many of the settlers were persons entirely unprepared for the hardships inseparable from initial colonisation, whose consequent disappointment and discouragement had created and spread a feeling of depression and general despondency amongst their fellows. From this depression the active and stout-hearted were gradually recovering and there was no reason to take a gloomy view of the future; but it would be necessary to contradict the reports of 'certain individuals who have seen only the sea beach, and have stated broadly that there is no good soil' to be found in the Colony.

The climate, it is said, was proving 'favourable to health in an uncommon degree'.

Amongst other items of interest, it is mentioned that a decent place of worship had been erected, owing principally to the energy of the Venerable Archdeacon Scott, a visitor to the Colony.

It was proposed to establish towns on the Murray River, on Cockburn Sound and on the Swan, at the site of the present town of Guildford.

Commenting on the stock and the prospects of the settlement in this direction, it is stated that 'the country as it is will certainly sustain a considerable number' of cattle, horses and sheep, 'as there is both food and water at the present season (January), the driest and worst of the year'. Attention is also drawn to the fact that the class of stock introduced was particularly good.

The rivers and coasts abounded in fish and offered facilities for fish-curing and the establishment of a whale fishery, as 'the coast is visited between the months of May and November by a multitude of whales'. The boat-building industry was being vigorously pursued and already forty boats had been built for transport purposes on the river. A statement in the report, which reads curiously at the present time, is that workmen had not been able to work between the hours of 10 a.m. and 3 p.m. during the months of December and January, on account of the heat.

The following interesting statistical information is added:

Since 1 June 1829, twenty-five ships had arrived and there were then 850 persons resident and 440 non-residents in the settlement. The value of the capital, etc. introduced, for which land was claimed, amounted to £41,550; land had already been allotted to the extent of 525,000 acres, the locations actually effected numbering thirty-nine; and, finally, there were in the settlement horned cattle to the number of 204, horses 57, sheep 1,096 and hogs 106.

In a further despatch of 18 October 1830, it is stated that 'the progress of the settlement, although not unopposed by many adverse circumstances, had been as rapid as could have been expected or desired', as 'a greater increase would have probably been disadvantageous to the welfare of the settlement whilst struggling in its infancy'. Unfortunately, 'although no doubt existed as to the salubrity of the climate and country, much sickness had been experienced and deaths in consequence had been very numerous'. These, however, are attributed to 'circumstances of a temporary nature attendant on the commencement of a colony'.

Exploration of the country and coast had been carried on as far as means available had admitted.

The natives in general had been harmless, except in two cases, one being in Perth, where, in May 1830, an affray occurred which led to the military being called out; whilst in the Murray district they had been so repeatedly troublesome—in one instance a young man having been murdered at the entrance of the Murray River—that a military guard had to be placed there.

Up to 31 December 1830, there had arrived in the Colony as nearly as can be reckoned, without counting the detachment of troops and their families in the 'Sulphur', 'Norfolk' and 'James Paterson', about 1,767 persons, with stock as follows: horses 101, cattle 583, sheep 7,981, pigs 66, goats 36 and a variety of poultry, including turkeys, ducks, geese, fowls and pigeons, and also a few dogs.

The value of the property introduced upon which land was claimed between 1 September 1829 and 30 June 1830, amounted to £73,260 8s 3½d, equal, at 1s 6d per acre, to 976,805 acres of freehold land, whilst miscellaneous property inapplicable to the improvement of land had been imported to the value of £21,021 2s 7d, making a total value of £94,281 10s 10½d.

To show how rapidly and prodigally all the best land was taken up, a late arrival wrote, on 12 November 1830, just five months after the first settlement of the Colony: 'The only land available for present purposes is on and near the banks of the rivers (*viz.*, the Swan and Canning). All this is now allotted on both sides of each river, almost to their source'; and, writing again on 8 December in the same year, he said 'All the lands up the Swan and Canning have been long since granted, but some of the grantees have left the Colony, and their lands may be resumed by the Government if not occupied at the expiration of the year.'

There being no made roads, and the bush tracks consisting solely of dry, heavy sand, water carriage was the one means of transport for produce and the only way to obtain land, in an accessible position, suitable for farming purposes, was for the recent arrival to take over a portion of a block already granted, guaranteeing to the owner to perform sufficient location duties on the part taken to secure the whole grant, when the remainder of the property in all probability was left permanently unimproved.

Many of the early arrivals were persons totally unqualified for a settler's life, especially as the pioneers of a new settlement.

Arriving also as they did during the most inclement season of the year, exposed to the elements and utterly unaccustomed to encounter the hardships and privations incident to their new life, in most cases totally ignorant of agriculture and unused to poverty and isolation, there is little wonder that the first reports which reached their friends in England were of a gloomy and discouraging description.

Numerous persons, indeed, left the Colony in disgust, but retained possession of the immense tracts of land granted to them; so that those who arrived afterwards were unable to obtain land in favourable localities and the population was in this way thinly scattered over a wide area, the best of the land being unprofitably locked up.

Gradually, also, it was discovered that the expectations entertained as to the fertility of the soil had been far too sanguine; food became scarce and pastoral and agricultural operations languished from want of capital to stock and till the lands. Sheep and cattle went blind or dropped dead in a mysterious way, from eating a (at that time unknown) poison plant and at last it became apparent that the infant settlement could only with great difficulty support itself independently of extraneous aid. On the top of all this came serious troubles with the natives—life was threatened, houses were robbed, crops rooted up and stock speared; and the abandonment of the Colony was at one time seriously contemplated.

But the settlers as a body struggled manfully on, maintaining (to quote Governor Stirling's despatch to Sir George Murray, G.C.B., the then Secretary of State for the Colonies), 'a cheerful confidence in the qualities of the country and a general belief in its future prosperity'.

A few years later, in a despatch of 29 August 1836, a suggestion is made that experiments on a limited scale should be encouraged in the northern parts of the Colony in the production of cotton and sugar, through the instrumentality of Bengalese or Chinese labour, the success of which, it is stated, would mean that 'Great Britain might render herself in a short time independent of the United States and other foreign slave-holding countries for her supply of cotton, the regular importation of which, at low prices, has become indispensably necessary to the daily support of a large portion of her population'.

With such an abundant extent of country applicable and available for the production of sugar, cotton and other inter-tropical products and possessing from its geographical position the advantage of being readily able to secure the class and mass of labour required, it is argued that, given only the transport facilities for obtaining the necessary supplies and labour, with the aid of skill, capital and the benefit of British protection, the sugar or cotton grower, if once successfully established, might defy competition even with those countries which still employed slave labour and, possibly, by thus rendering slavery unprofitable, eventually assist towards its extinction.

The condition of the Colony about that time is graphically described (Despatch No. 218 of 15 October 1837) in a statistical report forwarded to the Colonial Office, which contained full particulars concerning its geography and other natural characteristics, a brief census of its population and much other useful and interesting information.

The discovery of copper ore by Captain King in the vicinity of Camden Bay is mentioned as being not unlikely to lead to other important mineralogical discoveries.

Governor Stirling's opinion of the capabilities of the soil, based upon personal observation and experience, is neither over sanguine nor yet wholly unfavourable and is perhaps best given in his own words:

'The surface of the country generally is covered with those substances which are technically called earths, in contradistinction to soils. Of the latter, as far at least as relates to those of a vegetable origin, a very small portion exists, and that only on moist grounds. The extreme drought of the climate and the summer conflagrations appear to prevent the growth of succulent plants, as well as any great accumulation of soil from decayed vegetation. But although the country is not remarkable for richness of soil, it is favourable in other respects to farming purposes. In its natural state there is scarcely any part which does not produce some description of plant, and its defects appear to be of that class which art, aided by climate, will be enabled hereafter to overcome Upon a general view of that portion of the territory which has fallen within my own knowledge, I am under the necessity of saying that a very large portion of its surface, extending probably to three-fifths of the whole, is poor and comparatively unprofitable, and unlikely to be cultivated, or to yield any return except in timber, until a dense population and low wages, aided by abundance of cattle, bring it into use.

The best districts at present known are those on the Avon, the Hotham, the Williams, Arthur, Beaufort, and South-East River, together with the portions of country adjacent to the Swan, the Murray, the Harvey, Brunswick, Preston, Capel, and Vasse.

It is to be remembered, however, that these remarks apply only to the very small part of this vast country which has been as yet explored, and that in the progress of settlement circumstances are continually arising to give value to lands, which, while wages are high and roads wanting, are not of the slightest value.'

He again calls attention to the possibilities of the northern parts of the Colony for sugar and cotton growing, but points out that 'Experiments in these branches of industry are, however, beyond the means of the numbers of the colonists at present', adding that he ventured to anticipate 'that the estimation of the Colony in the eyes of the public will be gradually enhanced the longer this peculiarity in its natural qualifications is considered and examined.'

The following are some of the more important particulars which are further contained in the report:

The number of town allotments granted in Perth to 30 June 1837 was 422; that of suburban allotments, 15; miles of fencing completed, 35, valued at £5,600; the number of houses built, about 350, valued at £30,000; the value of suburban improvements was estimated at £4,000, that of gardens at £2,000, of mills at £3,000 and of public works at

£15,000. A similar valuation of Fremantle public and private property amounted to a total of £28,000. The aggregate of the corresponding amounts for Guildford, Albany, Augusta, Kelmscott, York, Peel Town, Busselton and Kings Town, together with Perth and Fremantle, was about £93,000. The population of Perth numbered 590, that of Fremantle 387, of Swan River District 524, of Canning River District 41, York 65, Plantagenet 170, Murray 17, Augusta 32 and Vasse 21; in addition to these there were the military who, with their womenfolk and children, numbered 185; the total population therefore numbered 2,032. Of the non-military population, 506 were married and 1,341 single. The total of 2,032 comprised 914 males over fourteen years of age, 368 males under fourteen years, 430 females over fourteen and 320 females under fourteen. The total population in 1832 had been 1,510 and the increase was mostly due to the excess of births over deaths. The deaths during the preceding twelve months had been at the rate of 1 in 200. Of the adult male population no less than 449 were engaged in agricultural pursuits. At the end of 1836 there had been about 1,380 acres under wheat, the total land in crop being about 2,100 acres. Sheep numbered 8,528, horned cattle 829, horses 216, pigs 819 and goats 1,286. The wheat produced during the year amounted to 22,104 bushels. The estimated value of improvements on rural grants was £75,000. The total number of acres granted to 30 June 1837 was 1,524,004. The exports during the year amounted to £6,720, of which £2,400 represented wool and £3,200 oil, mostly probably the product of the whale fishery. The total wealth of the Colony was estimated at £360,000, producing, with the labour of the community, after deducting its subsistence, a clear annual accumulation of capital to the extent of £72,000. The revenue of the Colony for the year was £4,586. As regards labour, the wages for general labourers were about 5s per day, but artificers earned from 8s to 10s. Labour was still scarce and, although the Colony was self-supporting and money seemed to be abundant, the apparent wheat-growing, wine-growing, and fruit-growing capabilities of the soil could not as yet be taken advantage of to any great extent, on account of the difficulty experienced in obtaining suitable workmen. That money was abundant was proved by the fact that a joint-stock bank which had been recently established, discounting bills at 12½ per cent per annum and allowing depositors an interest of 5 per cent, was principally working with deposits to the value of £4,000 and had so far only had occasion to call up £1,250 of its nominal capital of £10,000. The public expenditure for the year ended March 1837 had been £10,753, whilst the payments in connection with the troops, provisions, etc. amounted to £11,022. It was foreseen that considerable expenditure would be necessary in the near future, there being as yet practically no made roads. Perth and Fremantle town lots were then sold at the rate of £5 per acre. In 1832 the sale of rural Crown land had come into operation and in 1834 this had been made applicable to town allotments. During the first three years of the settlement, property in livestock, implements, provisions, apparel, furniture, etc. had been imported to the value of about £120,000. Since then, it was estimated, such importation had been increased by about £100,000, whilst the probable value of re-exported property was £20,000. The total outlay of the Crown to 31 March 1837, on behalf of the Swan River Settlement, had been £145,167. It was adduced as proof of a fairly satisfactory moral condition of the population that, during the eight years of the Colony's existence, not a single sentence of death had been required to be passed. As a further indication of progress it was mentioned that, in addition to the *Government Gazette*, two newspapers were in existence—one, the *Perth Gazette*, having already existed some years, whilst the other, the *Swan River Guardian*, had been established in 1836, 'as the friend of the people and the corrector of abuses'.

For a time the Colony continued to progress steadily, if slowly. Its development was once more, however, retarded by the discovery of the rich goldfields of Victoria, and again it seemed probable that it would be entirely deserted. Happily, however, for the Swan River Settlement, the goldfields of the eastern Colonies subsequently ceased to possess the extraordinary fascination they formerly did and Western Australia, at the turn of the century, with extensive goldfields of her own, her vast area of agricultural and pastoral lands, her timber, and numerous other undeveloped resources, offered an attractive prospect for the capitalist or the industrious and thrifty immigrant.⁽¹⁾

(1) See *Appendix* for reference to additional information in earlier issues of the Year Book.

EXPLORATION IN WESTERN AUSTRALIA

In 1829, from 17 November to 30 November, Mr Alexander Collie and Lieutenant William Preston, R.N., explored the country along the coast from Cockburn Sound to Geographe Bay.

On 15 December Dr J. B. Wilson, R.N., made an exploration of the country near King George Sound and discovered the River Denmark.

In 1830, on 22 March, Lieutenant J. S. Roe, R.N., Surveyor General, started on an exploring expedition in the vicinity of Cape Naturaliste, Port Leschenault and between the Collie and Preston Rivers.

On the 29th of the same month Governor Stirling and Captain Currie explored the vicinity of Cape Leeuwin and determined on the site of Port Augusta.

From 31 July to 15 August, Ensign R. Dale (63rd Regiment) explored the country to the east of the Darling Range.

From 6 September to 22 September, Lieutenant Erskine explored from Perth to the east of the Darling Range and, in the same month, Captain J. Molloy was exploring in the neighbourhood of the Blackwood River.

From 28 October to 7 November, Mr R. Dale made a second exploration east of the Darling Range. Leaving Kelmscott and passing Mount Dale, he struck the Avon, which river he followed up to the site of the present town of York. Having explored the country as far east as Mount Caroline (longitude 117° 29' E.) he turned south and recrossed the Avon, returning by his former route.

From 23 November to 12 December, Lieutenant W. Preston, R.N., in a hired cutter named the 'Colonist', explored the coast north of Fremantle as far as latitude 28° 45' S., a little above Geraldton.

From 7 December to 13 December, Mr R. Dale traced the course of the Helena River.

In 1831, during the month of January, Captain Bannister travelled overland from Perth to King George Sound and Mr W. K. Shenton undertook an expedition to Port Leschenault to explore the Collie River.

On two occasions, in March and in December, M. J. G. Bussell traversed the country between the Swan River and Port Augusta.

In April, Lieutenant Preston made an excursion in a whaleboat to Point d'Entrecasteaux and thence by land to the Murray River.

From 20 April to 4 May, Mr Alexander Collie explored the country to the north of King George Sound.

Starting on 20 September, Mr R. Dale examined the country fifty miles to the north and south of Mount Bakewell.

On 20 December, Surveyor R. Clint commenced an exploration of the mountain range north and east of Porongurup.

During this year, Mr J. S. Roe and Sir James Stirling in H.M.S. 'Sulphur' were occupied in surveying the south coast.

In 1832, during the month of February, Mr A. Collie explored the country between Albany and French River and in May he further explored the country near King George Sound.

In 1833, during March, Mr F. Whitfield traced the Helena River to its source and in July Mr Alfred Hillman, surveyor, explored the country between Albany and Nornalup Inlet.

In 1834, during January, Mr G. F. Moore traced the Swan River to its junction with the Avon.

In September, Mr Thomas Turner traced the Blackwood River to its source.

In October, Mr H. G. Smith explored the country between Greenmount and the town-site of Northam.

In 1835, from 6 January to 26 January, an exploration of the Hotham and Williams Rivers was made by Mr A. Hillman.

In February, Mr J. S. Roe examined the country between the headwaters of the Kalgan and Hay Rivers.

In April, Mr G. F. Moore made an excursion to the northward of the Swan River.

From 4 October to 8 November, Mr Hillman explored the country lying between Kelmescott and the Williams River, and thence to the Avon River.

From 19 October to 20 November, Sir James Stirling with Mr J. S. Roe and a party made the overland trip to King George Sound from Perth, returning via York.

In 1836, Mr G. F. Moore made two journeys: one, in the early part of the year, to the northward of the Swan River, led to the discovery of the Moore River; the other, to the eastward and northward of Northam, opened a new tract of grazing and agricultural land within sixty miles of the Swan. In this latter trip, which commenced on 30 May, he was accompanied by Messrs Peter Brown and G. Leake.

During the month of May, Lieutenant H. W. Bunbury, 21st Fusiliers, explored the country between the mouths of the Dale and Williams Rivers.

From June to September, Mr A. Hillman was employed in surveying a road from Albany towards Perth.

Between 20 October and 23 October, Mr H. W. Bunbury crossed from Pinjarra to the Williams River.

From 2 October to 11 November, Mr J. S. Roe led an expedition to the north and east of Perth, to explore the tableland which lies in that direction. Although he reached Lake Brown, near the western boundary of the present Yilgarn goldfield, the only discovery he made worthy of note was that of the salt lakes, which were subsequently found to form a marked feature of the plateau.

In 1837, an expedition in charge of Captain George Grey and Lieutenant Lushington was sent out from England under instructions dated 16 June 1837 from Lord Glenelg (then Secretary of State for the Colonies) to proceed in H.M.S. 'Beagle', commanded by Captain Wickham, either to the Cape of Good Hope or Swan River and there to procure a small vessel to convey the party and stores to the most convenient point in the vicinity of Prince Regent River where, after due examination of the country in the immediate neighbourhood, they were to take such a course as would lead in the direction of the great opening behind Dampier's land, from whence they were to use every exertion to penetrate to the Swan River, proceeding in a direction parallel to the unknown coast and, necessarily, crossing every large river that flows from the interior towards that side of the continent. The objects of the expedition were specified as follows: to gain information as to the real state of north-western Australia, its resources and the course and direction of its rivers and mountains; to familiarise the natives with the British name and character; to search for and record all information regarding the natural productions of the country and all details that might bear upon its capabilities for colonisation or the reverse; and to collect specimens of natural history. The original party consisted, besides Grey, of Lieutenant Lushington (9th Foot); Mr Walker, a surgeon and naturalist; and Corporals Coles and Auger, of the Royal Sappers and Miners. At the Cape the schooner 'Lynher' (140 tons) was chartered and on 13 October 1837, the exploring party, now increased to twelve men, with a large quantity of stores and livestock, seeds and plants, sailed for Hanover Bay on the north-west coast of Australia, where it arrived on 3 December following. Whilst the schooner proceeded to Timor for horses, Grey employed the time in exploring the country in the vicinity of Hanover Bay, forming a garden, collecting specimens and building sheds for the stores. On 9 December he hoisted the British flag and went through the ceremony of taking possession of the territory in the name of Her Majesty. About a fortnight after the arrival of the ponies, on 30 January, a start was made and, after varied experiences caused by the heat, the rain, the difficulties of transport and a certain amount of trouble with the natives, in an encounter with whom, on 11 February, Grey was very severely wounded in the hip, the expedition, on 2 March, discovered a large river, which was named the Glenelg. Hampered though he was by his wound, the incessant and heavy rain, and the difficulties of transport through the alternately rugged and marshy country, Grey, at length, on 31 March, reached and named the Stephen Range in latitude 16° 0' 45" S. and longitude 125° 11' E. On the return of Lushington, who had proceeded about eighteen miles farther in

advance and who reported the country utterly impassable for horses on account of the steepness of the hills, Grey, owing to his personal ill-health, the heavy mortality amongst his ponies, the unfavourable season and the reduced state of his stores, decided to return to the 'Lynher' on his old tracks. On 4 April, therefore, the party started on its homeward march. Reaching the schooner on 15 April, Grey found H.M.S. 'Beagle', with Captain Wickham on board, lying in Port George the Fourth, awaiting the arrival of Mr Stokes, who was absent exploring the coast between there and Collier Bay. Thence he sailed for the Isle of France, where he safely arrived on 17 May. Grey was most enthusiastic in his description of the commercial importance of three such fine harbours as Port George the Fourth, Hanover Bay and Camden Sound and waxed eloquent over the beauty and fertility of portions of the country which he passed through and stated that, in addition to its pastoral capabilities, the cultivated productions for the growth of which the soil and the climate seemed best adapted were cotton, sugar, indigo and rice.

During January 1839, while occupied in searching for a settler named Mr George Eliot, who had been lost in the bush for three weeks, but who eventually made his way to Port Augusta, Grey explored the country between the Williams and Leschenault.

From 17 February to 21 April 1839, Grey explored the country between Shark Bay and Perth, finding excellent country for mineral, pastoral and agricultural purposes. Starting on the first mentioned date, he sailed from Fremantle for Shark Bay in the American whaler 'Russel' (Captain Long). His party, twelve in number, was composed of Mr Walker, surgeon; Mr Frederick Smith; Corporals Auger and Coles (sappers and miners); Thomas Rushton, sailor; H. Wood and C. Wood, seamen; Clotworthy, Stiles and Hackney, volunteers; and Kaiber, an intelligent Swan River native. The object of the expedition was twofold: to examine the undiscovered portions of Shark Bay and to make excursions to such a distance inland as circumstances might render convenient. On 25 February, they disembarked on Bernier Island where a provision depot was formed. In launching the whale boats with the intention of examining the coast to the southward in the hope of finding water, there being none on the island, one was completely destroyed in the surf, the half-ton of stores contained in her being lost. Grey had fortunately, however, taken the precaution to provide a spare boat and on 28 February, in the two remaining boats, which each contained half a ton of stores, the party examined Dorre Island for water; but misfortune still pursued them, for in a violent hurricane at night both boats were driven ashore and everything in them, except the salt provisions, was destroyed. After spending some time repairing them, the mainland was reached and water obtained; and on 8 March, coasting to the northward, Grey discovered the Gascoyne River. Landing at the foot of a range of hills ('Lyell's Range') nine miles north of the Gascoyne, they were so determinedly attacked by natives that firearms had to be used. Weatherbound here until 20 March, they then proceeded to Bernier Island, where the main stock of provisions had been left; but the hurricane which had detained them at the Gascoyne had destroyed everything except one cask of salt meat and half a cask of flour. Grey then decided to attempt at once to reach Swan River in the whale boats. Leaving Bernier Island on 22 March, he carefully examined the southern shores of Shark Bay. Point Greenough was noted and named and at a little inlet near Cape Lesueur the boats were beached to avoid a hurricane. At Dirk Hartogs Island another narrow escape was experienced and in attempting a landing at Gantheaume Bay both boats were caught in the breakers and rendered absolutely useless, leaving the party no other resource than to walk back to Perth, a distance of 300 miles, with only 20lb of flour and 1lb of salt meat for each man. The few instruments absolutely necessary for taking observations, etc. were carefully apportioned amongst the members of the party, of whose faithful care of them Grey makes special mention. The plan first adopted was to walk slowly for one hour and then to halt for ten minutes, when the men rested and their leader entered in his notebook the observations taken during the progress. The men had foolishly encumbered themselves with salvage from the wreck of the boats and, weary though they were, all Grey's entreaties failed to induce them to relinquish their worthless loads.

Thick scrub and gravelly tableland alternated with stony hills and limestone valleys. The dry beds of many streams were crossed. One place they passed Grey considered the

most thickly populated (native) district he had ever seen and that it had been inhabited for many years was evidenced by the fact that for three and a half miles the ground was perforated with the holes made by the natives in digging up the edible warran root (a species of yam). Mr Walker here suggested a halt for a day or two so that the men could refresh themselves with this native food, but Grey wisely refused, although the idea appealed strongly to the indolent and worn-out members of the party. Hostility was again experienced from another tribe of natives, but the firing of a gun over their heads sufficed.

A river and estuary, named the Hutt, were discovered near the point where, according to Grey, the geological formation of the north-western and south-western portions of the continent become associated, whilst the flora was so made up of reproductions of both that it was impossible to say which predominated. Here some of the party became unmanageable; they either could not or would not realise the desperate nature of their situation and insisted upon short marches and long rests. Grey, fully sensible of the danger of delay, again vainly entreated them to abandon the useless lumber they were carrying. The Bowes River was discovered and named and a chain of mountains, observed twenty-five miles from their route, was called the Victoria Range, Grey honouring the whole district, from its exceeding fertility, with the name of the Province of Victoria. The Buller and Chapman Rivers were crossed. Near the latter river one of the men decided to throw in his lot with the natives and purposely dropped behind. A whole day was wasted in following up his tracks, but when found his inclination to remain with the natives had disappeared. Although the natives made no friendly advances, they exhibited no hostility. After the Greenough River was crossed, the men again refused to travel and water at the same time becoming difficult to find, Grey, with Auger, Coles, Hackney, Henry Wood and Kaiber, proceeded to make a thorough search, providentially discovering a spring at the foot of a hill which he called Water Peak. After a short rest they returned with a plentiful supply to their companions, who had encamped near the dry bed of another river which Grey called the Irwin.

They were now, Grey calculated, about 190 miles from Perth and none of the party had more than six or seven pounds of flour left, whilst he himself had but one and a half pounds of flour and one pound of arrowroot, which he was obliged to share with Kaiber, who had nothing left. In seven days they had made but seventy miles and, as the men were daily becoming weaker and more disinclined to march, Grey decided to push on with a few picked companions to Perth, whence assistance could be sent back to the others. Grey selected Auger, Coles, H. Wood, Hackney and Kaiber to accompany him, but a serious difficulty now arose with Mr Walker who flatly refused to encumber himself with Captain King's chart of the coast for use on his journey. This was fortunately, however, settled by Smith making as accurate a copy as circumstances permitted, which Walker consented to take. A rendezvous was fixed to which assistance was to be sent to Walker's party at Goon-ma-rarup, on the Moore River, fifty-five miles to the north of Perth, which Smith had visited with Grey during a former expedition. Walker, it was settled, should proceed along the coast till he reached the Moore River, where Grey would arrange for another party to meet him. On 10 April, Grey started, leaving behind Walker, Smith, Rushton, C. Wood, Stiles and Clotworthy with everything which he thought would be really useful to them. Grey's course was impeded at the outset by thick bush. Then for about fifteen miles a scrubby plain was traversed, when they came upon the river named the Arrowsmith; halting here for two hours, they observed some natives digging for roots, whom Grey mentions as being the most northern tribe he had seen wearing the kangaroo-skin cloak. On 12 April, fifty miles had been covered. On the morning of the 13th, Grey found that during the night a rat had eaten more than half of the last damper, leaving him only three tablespoonfuls of arrowroot and the uneaten morsel of damper; this, too, had to be shared with the native.

On the 14th, thirty-one miles more had been traversed, including the Gairdner's Range. Fourteen miles from this range they crossed a river which Grey named the Hill; here Kaiber found a native store of By-yu (or *Zamia*) nuts, some of which were taken. After passing, on 16 April, the dry bed of a river named the Smith, water failed and, the men becoming weak and enfeebled from hunger and thirst combined, it was with the greatest difficulty they could drag themselves along and at last were driven, in their agony, to resort to the most

revolting resource of thirst. Grey, unable to bear the distressing sight, taking only his native and his gun, made a long but fruitless search. Directing Kaiber to take him back to the party he, after a time, discovered that he was being misled and it was only on his threatening to shoot him that the native ultimately led him back to the camp. Grey now informed his men that it was his intention to proceed slowly to the south and not to halt until he dropped or reached water. All superfluous articles were cast aside and, staggering on, they came upon a small hole of liquid mud in a swamp which quickly revived them all. Grey also shot a cockatoo, half of which he divided between himself and Kaiber, retaining the remainder for future emergencies. The next day they struck a river in which were numbers of *unios* or freshwater mussels, whilst Kaiber, to whom *unios* were 'tabu', received the remainder of the cockatoo. Rain now fell in torrents, rendering a fire impossible and for two days, in the absence of any protection, their sufferings from cold and wet were intense. On the third day they fell in with a party of natives, who at once recognised Grey and gave them food and informed them that they were but a day's journey from Perth. Grey, who was anxious to send assistance to their comrades left with Mr Walker, at daylight next morning started for Perth, accompanied by Imbat, one of his new friends, reaching there at mid-day on 21 April. He at once waited on the Governor and arrangements were made for a party to leave within a few days. In the evening the remainder of Grey's portion of the party arrived. On 23 April, Lieutenant Mortimer, of the 21st Regiment, and Mr Spofforth with four soldiers, left Perth and in two days reached the Moore River. For two days they searched its banks in vain and then, pursuing a straight course about twenty-five miles farther north, they came upon another river where a depot was formed, whence detours were systematically made in various directions, during one of which Charles Wood was found by Mr Spofforth lying on the beach asleep. Wood stated that much disorder and discontent had prevailed amongst the men, who frequently left the beach and wandered inland to procure water and food; and that, dissatisfied with the slow progress made and the many deviations from the route Grey had directed them to take, he had quitted the party and, by more strictly following Grey's injunctions, was found by Mr Spofforth.

After vainly endeavouring to find the five remaining persons, Mortimer, at the end of a fortnight, was compelled through want of provisions to return to Perth, which was reached on 6 May. Early next morning the Surveyor General, Mr J. S. Roe, accompanied again by Mr Spofforth, four men, two native youths and five horses, left to continue the quest. On 9 May, two days after the departure of Mr Roe's party, Mr Walker arrived in Perth alone. He gave a brief account of what had befallen them after Grey had left. They started at dawn on the morning of 11 April but, coming to the thick belt of bush mentioned by Grey, they returned to the beach where they halted, Water Peak Hill being then distant from them about fifteen miles. In the three days following they made only about twenty-six miles. On April 15, they marched twenty miles, the longest distance they travelled in one day. Wood left them on 21 April.

On 2 May, Mr Walker left them to attempt to reach Fremantle and from there send a boat to their relief. After Mr Walker's departure they fortunately discovered a cask of water washed up on the beach and succeeded in catching a few fish, but for several days they made no distance. Mr Smith, it appears, gradually became exhausted and one evening lay down on the bank, saying he could go no further. The next morning Rushton went back to help him, but was unable to find him, as he would appear to have crawled up into the bush, a short distance from the track and there died on May 16. Four days after his death the rest were picked up by Mr Roe a few miles from Kadjelup, the men having been then three days without water and four days without food.

On 18 May, Smith's body was found and buried by a soldier and the native, Warrap, in a sandhill near the shore about seventy-six miles north of the Swan River.

Mr Roe's party, in ignorance of Walker's arrival, examined the coast from the mouth of the Moore River to within twelve miles of Perth for traces of him when, on 22 May, they were met by a police constable, who informed them that he had already safely reached Perth.

Soon after Grey's reports had been placed before the authorities, Mr George Fletcher Moore was sent to examine the coastal districts in the neighbourhood of Moresby Range. His opinion of the locality was favourable and he gave the explorer's name to the port south of Point Moore, calling it Port Grey. The harbour to the north of the point, which was found to be the better of the two, was shortly afterwards visited by Captain Stokes in the Government schooner 'Champion' and received its present name of Champion Bay.

In 1837, from 4 April to 29 April, Sir James Stirling examined the country between Perth and Kojonup.

Between 30 November and 15 December, Messrs W. K. Shenton and Richard Dale made an excursion to the Collie and Brunswick Rivers.

During the period 1838-41, Captains Wickham and Stokes, in H.M.S. 'Beagle', began and completed an important series of coastal surveys on the north-west coast, discovering the Fitzroy and Adelaide Rivers.

In 1838, from 15 January to 25 May, an unsuccessful search was made for a channel supposed to connect Roebuck Bay with Buccaneer's Archipelago. King Sound was discovered and named and a favourable report was given of the country in the vicinity.

In 1840, between 4 April and 27 September, they examined the Houtman Abrolhos, discovered good anchorage at Champion Bay and carefully surveyed Dampier's Archipelago from Barrow Island to the Forrestier Group.

In 1841, with Captain Wickham invalided, the command of the 'Beagle' devolved upon Stokes and on 24 September he sailed from Coepang, in Timor, to complete the survey of the north-west coast south of Roebuck Bay left unfinished by King. He found the coast destitute of good anchorages or important rivers, of a low sandy character, occasionally relieved by red sandstone cliffs or projections, but rising and improving as it approached Bedout Island. On 23 November, the 'Beagle' returned to the Swan River. In the same year, from 12 December to 16 December, a trip was made by Stokes to ascertain the exact position of Port Grey, which he found to be almost identical with Champion Bay and he also explored the surrounding country previously reported upon by Captain Grey.

In January 1839, Sir James Stirling examined the country in the Vasse district.

In 1840, from 9 January to 26 January, Mr D. Dring, in the 'Champion', made a voyage from the Swan River to discover the mouth of the Hutt River, or an anchorage near it.

From 10 January to 15 January, Mr H. M. Ommanney, Assistant Surveyor, examined the Capel and Preston Rivers.

In February and March, the Kojonup district and the country between there and Albany, was explored by Assistant Surveyor Hillman and Mr William Nairne Clark.

In that same year, Mr John Scully, with a party consisting of Mr Drummond and others, explored the country in the vicinity of the Moore River, naming the Victoria Plains.

In 1841, from 31 January to 27 July, a journey which ranks amongst the greatest feats of human endurance, was accomplished by Mr Edward John Eyre.

In an attempt, begun in the previous year, to cross overland from Adelaide to Western Australia, this explorer had been foiled, chiefly by want of water. Having sent back the majority of his party, he started from Fowlers Bay, South Australia, with one companion, Baxter, and a black boy named Wylie, to reach King George Sound or perish in the undertaking. A short distance south-west of Eyre's Patch (126° E. longitude), two natives who were accompanying them murdered Baxter at night and stole the greater part of their provisions. Eyre and his black boy were left to accomplish a journey of some hundreds of miles through an unknown country with forty pounds of flour and four gallons of water. This they succeeded in doing after undergoing the severest hardships. This journey of Eyre's, being the first successful attempt to cross from South Australia to the new Colony in the West, was of considerable geographical importance. It may be mentioned here that this enterprise would probably have never been concluded but for their happy meeting with, and kind treatment by, Captain Rossiter, of the French whaler 'Mississippi', who rendered them every assistance and kindness when reduced to the last extremity of hunger, thirst and fatigue. This providential encounter occurred some three weeks' march from Albany.

In the month of February, Mr William Nairne Clark made an expedition in a whale-boat from Albany to Deep River, Nornalup Inlet and Point d'Entrecasteaux, discovering immense jarrah and karri forests. Mr Clark, in his journal, comments on the value of his timber discoveries and also on the fact that the whole of the whale fisheries were in the hands of the American whalers, of which he says that 'upwards of 150 sail, averaging about 300 tons each, are off the coast in the whaling season'.

In December, Governor Hutt, accompanied by Mr J. S. Roe and Captain Stokes, made an overland journey from Fremantle to the new settlement of Australind.

In 1842, during January, Mr R. H. Bland traversed the country between the Vasse and Albany.

In the same year Mr H. Landor made an excursion to the south-east of Beverley, and reported superior grazing country of great extent and richness.

In January 1843, Messrs Landor and Lefroy made a short exploration to the south-east of York and Beverley, in search of a large inland sea mentioned by the natives. Passing the headwaters of the Hotham and Williams Rivers, they discovered some lakes, for the most part salt, but reported that they had failed to find favourable country of any large extent.

In 1844, during December, the colonial schooner 'Champion', under the command of Lieutenant Helpman, accompanied by Mr J. Harrison, civil engineer, was again despatched by Governor Hutt to take observations in the neighbourhood of Gantheaume Bay, at the mouth of the Murchison River. His report confirmed Stokes' observations as to the general character of the country.

In 1845, during May, Assistant Surveyor A. C. Gregory made an excursion down the Blackwood River and a similar one to the east of Kojonup and down the Gordon River in April of the following year.

In 1846, Mr A. C. Gregory, accompanied by his two brothers, Messrs Frank T. and Charles Gregory, visited the salt lake region of the interior. Starting from Bolgart Springs, a large extent of swampy country was traversed and a range of granitic hills, supposed to be the watershed of the coast streams, was discovered. Turning to the westward to examine the rivers reported by Grey, they found at the head of one of these, the Irwin, several seams of coal.

In 1848, between 9 September and 12 November, Mr A. C. Gregory, with party, examined the Murchison and Gascoyne districts and found a galena lode in the bed of the Murchison River.

In December, Governor Fitzgerald, accompanied by the last-named explorer, examined the new mineral discovery and named it the Geraldine mine. On this journey he was spear-ed by the blacks but, notwithstanding, retained his lead of the expedition.

On 14 September, Mr J. S. Roe commenced the longest and most celebrated of those journeys which have led to his being styled by some historians 'the father of Australian explorers'.

Starting from York, he reached the Pallinup in October, and steering east, crossed several good streams. Then succeeded dense scrub, dry watercourses and salt lakes, till the Bremer Range was reached. No better country could be seen from the Fitzgerald Peaks at an altitude of 1,000 feet, so Roe retreated towards the coast and only stopped to halt at Russell Range (latitude 33° 27' S.) after being deprived of water for three days and nights. On his return journey extensive deposits of brown coal were found at the Fitzgerald River. The expedition reached Perth on 2 February 1849, having explored 1,800 miles of the Colony and discovered a valuable stretch of timber country.

In 1854, a party under the charge of Mr R. Austin, Assistant Surveyor, was sent by Governor Fitzgerald to examine the country north and east of the settled districts, with a view to the discovery of minerals or navigable water and to seek pastoral and agricultural land in the Gascoyne district. In this expedition, which left Mombekine, near Northam, on 10 July and passed Lake Cowcowing, a considerable tract of the salt-marsh district to the north-east was traversed and examined and several mountains and salt lakes discovered; but, his horses having been destroyed by the poisonous box-plant, Austin was compelled to make for the coast at Shark Bay, the appointed rendezvous.

At Mount Magnet a halt was made and the surrounding country examined. Almost as soon as the Murchison had been crossed, the party commenced to suffer terribly from want of water and, after many fruitless attempts to proceed towards their desired destination, were compelled to retreat to the river, having penetrated to longitude $115^{\circ} 16' \text{ E.}$, latitude $26^{\circ} 15' \text{ S.}$ Following the Murchison down, they arrived at the Geraldine mine on 20 November. Austin in his report to the Government indicated the existence of four fresh-water streams of considerable size coming from the north-east and shedding into the Murchison. He also stated that the belt of country around Mounts Kenneth and Magnet and in the neighbourhood of Lake Austin, was probably 'one of the finest goldfields in the world'.

In 1856, Mr A. C. Gregory made his well-known journey from the Northern Territory along Sturt Creek, tracing it as far as Termination Lake (Gregory's Salt Sea, latitude $20^{\circ} 16' \text{ S.}$, longitude $127^{\circ} 31' \text{ E.}$) in the north-east district of Western Australia. Finding no visible outlet for the waters of this sea, he returned to his camp on the Victoria and resumed his previous exploration of that river. During this trip, the Denison Plains to the south of the subsequent Kimberley goldfield were discovered.

In 1857, Mr F. T. Gregory ascended the Murchison River to complete the survey of its unexamined portions.

In 1858, Captain H. M. Denham, in H.M.S. 'Herald', assisted by Lieutenant J. Hutchison, surveyed the portion of Shark Bay lying south of Dampier Reef, including the Sound now called by his name.

During the same year, a land expedition under Mr F. T. Gregory was sent out for the purpose of exploring and reporting on the Gascoyne and Shark Bay Districts. Leaving the Geraldine mine on 16 April, Gregory followed the Murchison River to the neighbourhood of Mount Gould and, the intervening country having been crossed, reached the headwaters of the Gascoyne. Tracing that river down to its mouth, he returned by a route somewhat similar to his outward one and reported that there were several large tracts of good and well-watered land, suitable for pastoral purposes, to be found in the Gascoyne District. This proved a much needed encouragement to the settlers in the Colony. Mr J. B. Roe, a son of the Surveyor General, accompanied Mr Gregory on this expedition.

The year 1861 also was one important in the history of the settlement of the Colony, when other large tracts of country, hitherto considered useless, were added to its pastoral districts.

Mr F. T. Gregory was sent to report on that part of the country lying inland from the north-west coast, which had previously been unfavourably reported upon by King and Stokes. From 10 May to 17 October, with Nickol Bay as his base of operations, he was occupied in exploring the back country near the headwaters of the Ashburton, Fortescue, DeGrey and Oakover Rivers. All these rivers were discovered and named by him and he also discovered several large areas, notably in the vicinity of Nickol Bay, which were suitable for pastoral purposes.

From 3 July to 23 August, Messrs B. D. Clarkson, C. E. and A. Dempster, and C. Harper were engaged in exploring the country east of Northam and successfully penetrated the dense scrub and salt-lake country previously supposed to be impassable. They reached Mount Kennedy and traversed a great portion of the district which now forms the Yilgarn Goldfield. Georgina Range was the furthest point reached and here the country had considerably improved, the soil being rich and the grass excellent.

In July of this year and in June 1865, Captain E. A. Delisser, a squatter, made excursions from Fowlers Bay, in South Australia, into the south-east corner of Western Australia. He went in a north-west direction from the head of the Bight and, after suffering somewhat from want of water, reached a district covered with grass and saltbush, which he described as excellent for grazing purposes. His opinion of this district was subsequently confirmed by Mr A. Mason and other travellers.

In 1863, Messrs C. C. Hunt and Ridley landed at the DeGrey River and explored the country touched on by F. T. Gregory.

In the same year, from 7 May to 31 July, Mr Henry Maxwell Lefroy was in charge of an expedition organised for the purpose of exploring the district east of York and discovering country suitable for sheep-farming.

It was partially successful in its object, as it enabled the leader to report the existence of good land for agricultural purposes. Lefroy said, however, that no settlement could take place till wells had been sunk, owing to the absence of surface water. He traversed a large portion of the present Coolgardie goldfields and reached $122^{\circ} 3' \text{ E.}$ longitude.

In 1864, on 5 July, Messrs B. D. Clarkson, Chas. Harper and L. Lukin left Doodlakine, about 110 miles east by south of Toodyay, for the purpose of discovering pastoral lands to the north and east. They encountered country somewhat similar to that met with in 1861 and, having reached latitude $30^{\circ} 15' \text{ S.}$, longitude $120^{\circ} 20' \text{ E.}$ without finding it at all suitable, they returned, reaching their starting point on 18 August.

In the same year, Mr C. C. Hunt left York on 10 July for the purpose of exploring the country to the eastward. His trip is of importance, as he passed over the present site of Coolgardie and reached longitude $121^{\circ} 55' \text{ E.}$ (in the vicinity of the Hampton Plains). Owing to want of water he was compelled to return to the neighbourhood of Lake Lefroy, but reported that the land further out was much better than that nearer York. This journey of 400 miles was made between the 31st and 32nd parallels of latitude and its result was disappointing. Mr Hunt, two years afterwards, made an almost similar trip to the Hampton Plains. From 12 September to 27 September, Mr A. Dempster made a trip from the Gage River, near Esperance, to the Dundas Hills via Fitzgerald Peaks and reported that a stock route to the north could be opened without much difficulty. In November of the same year, Mr E. T. Hooley failed to find one between Champion Bay and the Gascoyne. During this year also, Mr Robert Austin visited the Glenelg River and reported favourably on the country in its vicinity.

About the year 1865, Mr Trevarton C. Sholl made an exploration to the south of Camden Harbour. In this journey he visited the Glenelg Basin, ascended and named Mount Page, discovered the Berkelman River, crossed the Harding Range in the face of almost insuperable difficulties and reported a large tract of good pastoral country.

In 1866, from 10 January to 28 February, Assistant Surveyor James Cowle explored the country between Roebuck Bay and Port Walcott and reported three million acres of country known to be fit for grazing purposes and improving considerably inland from the coast.

In this year also (16 April to 10 November) Mr E. T. Hooley made a more successful attempt to open up a stock route to the north-west, journeying as he did in safety from Champion Bay to Port Walcott and back. During the year (1866) Mr R. J. Sholl and his son, Mr Trevarton C. Sholl, were responsible for the conduct of several expeditions from Roebourne to examine the country lying around the headwaters of the Harding, Ashburton, Sherlock and Fortescue Rivers. They were successful in demonstrating the suitability of the land for pastoral purposes and opening up this practically unknown district for settlement.

On 6 May 1866, Mr J. Logue sent out a party from Camden Harbour, under the leadership of Mr A. McRae, for the purpose of exploring the country southward. On the 10th, after crossing well-grassed level plains, in places the grass being so strong that the horses had as much as they could do to wade through it, they reached a river. They found it a fine stream 150 yards wide, running north by west. The banks were about twenty feet high and the current ran about two miles per hour. The next day they saw fifteen or twenty natives burning the grass for pigeons' eggs. The aborigines, who were unarmed, were very much alarmed and tried to hide themselves in the long grass. The party started on the return trip that afternoon and reached Camden Harbour on 16 May.

Mr McRae reported that 'the country possessed all the advantages of a good sheep country, except that it was low, and perhaps too far north. The principal timber was the white and flooded gum and two kinds of wattle; the baobab also grew in great luxuriance'.

A period of some years then elapsed in which little or nothing was done in the way of further exploration; but, three years after Hunt's second journey to the Hampton Plains, the first of that memorable series of explorations undertaken by Mr (later Sir) John Forrest and his brother Alexander, which have proved so important to the Colony, was concluded.

In 1869, from 15 April to 6 August, Mr John Forrest, then a surveyor in the employ of the Western Australian Government, made a short expedition to Lake Barlee. Although unsuccessful in finding good land available for pastoral or agricultural settlement, he obtained a reliable survey of a great deal of country hitherto unknown and withdrew one more district from the unexplored regions of the Colony.

The expedition was also barren of results with regard to its main object, the unravelling of the mystery in which the fate of the lost Leichardt's party is involved, but succeeded in penetrating eastward to a considerable distance beyond Mount Margaret, reaching latitude $28^{\circ} 41' \text{ S.}$, longitude $122^{\circ} 50' \text{ E.}$

In 1870, the same explorer, accompanied by his brother, made his well-known journey from Perth to Adelaide via Eucla.

Leaving Perth on 30 March, a south-easterly course was taken to Esperance Bay, where the 'Adur', a hired schooner, was to meet them with supplies and render any further assistance she could. From Esperance Bay an easterly stretch of 130 miles brought them to Israelite Bay and on 30 May the little band of explorers started afresh. Striking inland from the coast, which had been closely followed since leaving Esperance, want of water compelled a forced march to longitude $126^{\circ} 24'$, where Eyre had marked a supply. Thence the leader made a flying trip northwards and reported the country there to be good grazing land, but without permanent water. The schooner having arranged to meet them at Port Eucla, on 24 June, they left their oasis and, after a necessarily hurried journey, throughout which their horses suffered somewhat severely from thirst, reached Eucla safely, but greatly exhausted by the hardships *en route*.

After a short trip inland, Forrest left Eucla on 14 July and, passing through South Australian territory from that date, reached Adelaide safely on 27 August 1870, having accomplished the journey, which had taken Eyre twelve months, in less than five. This was possible owing to the greater facilities which the later expedition commanded and Forrest was enabled to give a more impartial verdict as to the nature of the country passed through. In so far as this affected Western Australia it was distinctly cheering, for although Eyre's opinion of the waterless nature of the country traversed was confirmed, yet the district inland from the coast, hitherto supposed to be a sandy desert, was found by Forrest (between 126° and 129° E. longitude) to be beautifully grassed, with water procurable in some places at moderate depths. To use the explorer's own words, 'If water could be procured on the tableland, it would be the finest pastoral district of Western Australia.'

In 1871, Mr A. Forrest took charge of an expedition to the eastward in search of new pastoral country. Owing to a late start, he and his party were compelled to make for the coast when they had reached latitude 31° S. , longitude $123^{\circ} 37' \text{ E.}$ This course led them to Mount Ragged and thence proceeding westerly they returned to Perth via Esperance, having gone out 600 miles and discovered a considerable tract of good country, much of which was subsequently taken up and stocked.

In 1873, during April, Mr William Christie Gosse, Deputy Surveyor General of South Australia, setting out from Alice Springs Telegraph Station, attempted to make the overland journey to Perth. He returned to his starting point in December, having failed to get through owing to the arid nature of the country. He, however, entered Western Australia near the Tomkinson Mountains and examined the country in the vicinity, also that near the Cavenagh and Barrow Ranges, thus acquiring a geographical knowledge of some hundreds of miles of new country. His furthest westerly position was in longitude $126^{\circ} 59' \text{ E.}$, to the south of the Barrow Range.

A more successful attempt was made in the same year, between 15 April and 29 December, by Major Peter Egerton Warburton in his journey from the McDermot Ranges in South Australia to the headwaters of the Oakover River.

Although he reached the west coast and penetrated a district never before examined by white men, little was learned from his experiences. The expedition was provided with camels, but owing to constant delays provisions fell short and sickness came. Warburton thereupon determined to push through as rapidly as possible, travelling by night; and thus, fleeing 'as it were for their lives westward over the Sahara', the members of the expedition were too much occupied to notice carefully the character of the districts traversed. What

opinion they did form was unfavourable, as the country was reported to be a sterile one, in which horses could not possibly exist and in which nothing was visible in the way of permanent watercourses. On this journey were found the Joanna Springs, since invested with melancholy interest in connection with the Calvert expedition, as the appointed rendezvous which the ill-fated explorers, Wells and Jones, failed to reach. Warburton's route throughout lay between the 20th and 22nd parallels of latitude south.

In 1874, on 18 March, shortly before Major Warburton's arrival in Perth, Mr John Forrest, accompanied by his brother Alexander, left that city to attempt the solution of the same problem which had engaged the attention of the two last-named explorers—the nature of the interior of the Colony—and to ascertain, if possible, whether a route to the advanced settlements of South Australia was practicable. According to official instructions he was to 'obtain information concerning the immense tract of country from which flow the Murchison, Gascoyne, Ashburton, DeGrey, Fitzroy, and other rivers falling into the sea on the western and northern shores of this territory'. Upon reaching the tropics, Forrest's further course was to be discretionary. Leaving Yuin on 14 April, and striking the Murchison River, they followed it as far as the Robinson Range; thence struck south-east to Mounts Bartle and Russell and north-east by the Kimberley (believed to be the watershed of the Murchison) and Frere Ranges, till they reached Weld Springs, where an unlimited supply of clear fresh water was found. The land had so far proved good, and in places—such as the basin of the Upper Murchison—admirably adapted for grazing purposes, but as soon as they had quitted their position at Weld Springs (about longitude 122° E.) a succession of waterless stretches of spinifex country was encountered which would have proved fatal to the expedition's purpose but for the timely discoveries of small supplies of the precious liquid—notably at Alexander Spring. They were now within a hundred miles of Gosse's furthest west and were pursuing an easterly course; so, under ordinary circumstances might have been expected to reach known country in a few days; but so great was the dearth of water that a return on their own track became a serious contingency and it was only owing to the foresight and perseverance of their leader that this catastrophe was avoided. After passing over more spinifex country and several rocky ranges, they at last reached permanent water at Barlee Springs and found themselves in a neighbourhood already traversed by Giles and Gosse, halting, in fact, at Fort Mueller, one of the former explorer's depots. From this point to the end of their journey their previous difficulties recurred, but to a greatly modified extent and the whole party reached the Peake Telegraph Station on 27 September and Adelaide on 3 November. Necessity, in several instances, had shaped their course. First, in Western Australia, owing to want of water, they were prevented from penetrating as far to the north as had been desired; afterwards, when they had crossed the border, a combination of causes, including a hot, dry season, bad country, short provisions and exhausted animals, changed Forrest's intention of exploring to the south.

Whilst his report as to the chances of settlement in the spinifex region was distinctly unfavourable, with perhaps an exception in favour of patches similar to those in the neighbourhood of Mount Moore and Lake Augusta, still Forrest gave a most cheering account of the land on the Murchison beyond the then settled districts of the Colony.

It will be seen what a disadvantage he laboured under compared with Warburton and Gosse. But even thus handicapped, he only the more exhibited his ability as an explorer; for whilst Warburton, equipped with camels, hurried across the Continent, losing fifteen out of seventeen beasts, Forrest not only saved a dozen of his eighteen horses but, travelling slowly and making careful notes, was able to give a full and valuable report on the character of the country through which he had passed and, in the words of a well-known historian, 'concluded one of the most remarkable journeys on record'.

Contemporaneously with these expeditions of Forrest, Warburton and Gosse, a series of journeys was being made by a man who must always rank high amongst the noteworthy explorers of this State.

Ernest Giles had determined to accomplish a task which had baffled many explorers—the examination and opening up of the supposed desert of Central Australia, but it was not until his third attempt that he was successful. His journey must rank next to Forrest's

as the most remarkable of similar attempts, for he not only succeeded in crossing from Adelaide to Perth, but completed the circuit by returning overland to South Australia via the Murchison and accomplished this in about twelve months' actual travelling time.

Being provided with horses only during his previous two expeditions, he failed in the former one even to reach the border, and in the second (1873-74) penetrated the desert country in two directions, only to be driven back to South Australia through lack of water. On his journey to and from Fort Mueller, no serious mishap befell him or his party, which consisted of Alfred Gibson, William Henry Tietkins and James Andrews, but in the flying trip during which he sighted the Alfred and Marie ranges his companion Gibson succumbed to the perils of the desert now known by that ill-fated explorer's name.

In 1875, on Giles' third expedition, he was, through the generosity of Sir Thomas Elder, equipped with camels and effectually proved their superiority over horses as desert-voyagers by accomplishing with them, comparatively easily, what his most strenuous efforts with horses had previously failed to achieve.

The party, in addition to the leader, consisted of W. H. Tietkins, Jesse Young, Alexander Ross, Peter Nicholls and Saleh, the Afghan camel-driver, and two natives—Jimmy Nanthona and Tommy Oldham.

Leaving Port Augusta on 23 May, they reached Boundary Dam, in Western Australia, during August. So far the journey had proved easy, but as soon as they plunged into the Great Victoria Desert, which extends some hundreds of miles towards the west, they began to undergo the usual hardships of travellers in such districts. When nearly exhausted by a waterless stage of 325 miles, they reached Queen Victoria Springs. After a short rest here, a course north-east of the present Coolgardie goldfield was taken and water was found at Ularring. The remainder of the journey was uneventful and, steering westward, they reached Mount Churchman and eventually Tootra, an out-station of Messrs Clunes, in the vicinity of Lake Moore. At Perth, which was entered on 18 November, they received a hearty welcome, having travelled 2,575 miles in about five months. During this expedition nothing special in the way of country suitable for settlement was discovered.

After a few weeks' rest in Perth, the return journey was begun on 13 January 1876, its first stage being to Northampton, via Geraldton.

Giles' object in this expedition was not only to reach the Alfred and Marie Ranges which he had seen on his 1874 journey and to connect with his route of that year, but also to ascertain how far the terrible Gibsons Desert extended to the west. Having passed the headwaters of the Murchison and Gascoyne, they reached Mount Labouchere and on 10 May encamped on the upper portion of the Ashburton. A subordinate excursion was then made from Grand Junction Depot northward to Ophthalmia Range and Mount Robinson, on the border of the tropics. The head of the Ashburton was reached, 350 miles from its mouth and it was thus proved to be one of the most important rivers in the Colony.

They entered Gibsons Desert on 1 June, having resumed their journey eastwards and from the 12th to 18th of that month suffered intensely from want of water, a stretch of 230 miles being traversed without it. Soon afterwards the Alfred and Marie Ranges and later on the familiar Rawlinson Mountains came in sight, whence, passing through South Australian territory, the Peake Station was reached on 23 August, a most formidable and hazardous journey having been completed with great expedition. Giles was now able to thoroughly substantiate the views of those explorers and geographers who had described the greater part of the interior of Australia as a sandy desert unfit for settlement. In performing these journeys he added greatly to the knowledge of the country traversed and exhibited great skill as an explorer.

In 1876, Messrs Phillip Saunders and Adam Johns, residents of the Northern Territory, crossed, on a gold prospecting tour, from Roebourne to the overland telegraph line. Passing through the Kimberley district, they failed to discover its auriferous nature, but reported on good pastoral country in that neighbourhood.

In 1879, between 25 February and 6 October, Mr Alexander Forrest crossed from the De Grey River to Daly Waters Station on the overland Adelaide-Port Darwin telegraph

line. Leaving Beagle Bay, he proceeded east to King Sound and thence up the Fitzroy, which he followed for some distance and found it to be deep and rapid. Failing to penetrate the rugged passes of the Leopold Range, he was reluctantly obliged to go round it and, proceeding up the valley of the Margaret River, discovered the well-watered Nicholson Plains, which he speaks of as the ' finest part of Western Australia that I have seen '.

An easterly course having been taken, the Ord River was then met with and its neighbourhood seemed likely to repay a thorough examination; but, with sick companions and provisions falling short, the only course open was to steer for the telegraph, still 300 miles away, which Forrest succeeded in reaching after much suffering from thirst.

This trip was a highly successful one, as he found some of the most valuable country in the northern part of Western Australia, which was subsequently stocked with cattle and sheep and where large mineral wealth awaited development.

In 1883 and the following year, Mr John Forrest, accompanied by Surveyors J. S. Brooking, H. F. Johnston, G. R. Turner and G. J. Walsh, landing at Roebuck Bay, examined a large portion of the Kimberley Division. He proceeded from La Grange Bay to Fitzroy River, examined the intermediate country carefully as far as St George's Range and found that it consisted mainly of rich elevated grassy plains with abundance of water. Round the lowest part of the Ord River the country was ascertained to be a fertile alluvium clothed with rich luxuriant grass. The surveyors attached to this expedition made accurate surveys of large portions of the district, traversing the Fitzroy, Margaret, May, Lennard and Richenda Rivers. Mr E. T. Hardman also accompanied this party and collected data which enabled him to prepare a valuable geological map.

In 1883, Messrs W. J. O'Donnell and W. Carr-Boyd, exploring the country from the overland telegraph line in the direction of Roebourne, were fortunate in finding good country in the Kimberley; and in 1884 a second expedition was undertaken by Mr W. J. O'Donnell and party from the Katherine Telegraph Station to the same district.

In 1883, Mr E. T. Hardman, the Government Geologist, reported indications of auriferous country in the Kimberley district and shortly afterwards the first payable gold in Western Australia was discovered in that district by Messrs Chas. Hall and P. Slattery.

In 1884, an unfortunate expedition was undertaken by Mr H. Stockdale, an experienced bushman, from Cambridge Gulf, in order to explore the country in its vicinity.

From the Gulf southwards, he traversed well-watered and diversified country till Buchanan Creek was reached. Having formed his depot there, he hoped to make further explorations, but owing to certain irregularities which had occurred in his absence on a flying trip, he was compelled to start immediately for his destination, the overland telegraph line between Adelaide and Port Darwin, and later to abandon, at their own request, two of his companions, whom he left provided with all necessities and to whom a relief party was despatched immediately upon his arrival at the telegraph station. This and subsequent search parties failed, however, to discover any traces of the ill-fated men.

In the same year Mr H. F. Johnston, with Mr G. R. Turner as second in command and Mr E. T. Hardman as geologist, continued the triangulation and feature surveys from Mount Pierre, on the Fitzroy, to the junction of the Negri and Ord. The course taken lay for a considerable distance south of Mr A. Forrest's route in 1879 and led to the discovery and naming of the Mary and Elvire Rivers and numerous watercourses, Halls Creek being also found, upon which is situated the present townsite of that name, the one-time headquarters of the East Kimberley Goldfield. Mr Hardman made an extensive geological examination of the country traversed and reported very favourably on the auriferous character of the district, his report being important as directing attention to the Kimberley Goldfields.

In 1885, Mr H. F. Johnston, with Mr C. Y. Nyulasy as second in command, landed at View Hill, Cambridge Gulf and connected that port by triangulation with the work of 1884. The course of the Ord was accurately mapped and discovered to be wholly in Western Australian territory. The positions of the Bow, Fraser and Behn Rivers were also ascertained.

In 1887, the discovery of colours of gold at Moujakine led to the organisation of the ' Settlers' Association ' which, with Government aid, fitted out a party, under the leadership

of Mr Bernard Colreavy, to explore the country to the eastward of Newcastle and Northam. They penetrated the country as far as the Yilgarn Hills, a distance of fully 200 miles.

About the same time, a party under the leadership of Mr H. Anstey, while prospecting in the same section, found rich specimens of gold-bearing quartz at Eenuin, which led to the more careful examination of the Golden Valley and Southern Cross districts.

In 1888, Mr Geo. T. Simpson, M.E., during the month of June made a journey to the Hampton Plains on behalf of a private syndicate. He met with and reported on good country in the district, plenty of water and fair timber being found there.

In 1888-89, the headwaters of the Gascoyne and Ashburton were explored by Mr Ernest Favenc, a well-known Queensland explorer and historian. Setting out from Geraldton for the Upper Gascoyne, he crossed over to the headwaters of the Ashburton in the north and discovered three important tributaries of that river, the Cunningham, Jackson and James, all running through magnificent pastoral country.

In 1889, on 14 March, Mr W. H. Tietkins set out from Alice Springs to examine the hitherto unknown country to the north and west of Lake Amadeus. Entering Western Australia near the Tropic of Capricorn, late in May, he discovered and named the Kintore Range, 1,500 feet high, to the north-east of Lake Macdonald, and ascended Mount Leisler. On the 31st of the same month he left for the lake and, its circuit having been practically completed, the Bonython Ranges were discovered to the south-east. On his return journey, Tietkins passed through sixty miles of country supposed to be contained in the area of Lake Amadeus, but no vestige of this great natural feature could be seen, although the lake was subsequently found in another direction.

In 1890, Mr F. Newman, a Swede, travelled from Fraser's Range north-east to Queen Victoria Springs, calculated to be 135 miles distant. He described the latter part of the intermediate country as poor and covered with spinifex and stunted mallee.

The same year Mr W. P. Goddard was sent by a private syndicate to report on the country to the north-east and east of Lake Lefroy and, in doing so, explored several districts previously unexamined. His most easterly position was in longitude 124° 30' E. (which was reached on 12 September), the creek called by his name and which is probably connected with the Ponton River in wet seasons being discovered *en route*. About the same time the districts around Lake Lefroy and between that and Southern Cross were surveyed by Mr Goddard.

In 1891, Mr Lindsay, the leader of the expedition fitted out by Sir Thomas Elder to complete the exploration of Australia—more especially the western colony—left Warrina on 2 May. Shortly after crossing the border, Mr Leech was despatched on a fruitless trip northwards to search for traces of the ill-fated Gibson, who had perished some seventeen years previously.

The expedition then proceeded via Fort Mueller to Mount Squires where water was obtained. Thence a south-west course was taken across the unknown Block A to Queen Victoria Springs. In latitude 29° 20' S., 270 miles from Mount Squires, the eastern edge of good pastoral country was touched. Upon reaching the springs they were found to be dry and the intended further exploration from them as a base had to be abandoned, the party having to push on to Fraser Range. This hasty trip through the desert from Mount Squires represented the only useful work done so far.

Lindsay reported that when about half-way to the Range they passed a good country of rich red soil producing good stock bushes, but all extremely dry. A belt of country 'worthy the attention of prospectors' was also met with.

Having rested for some time at the Range, they set out to examine, if possible, the western side of the desert they had just traversed, but want of water compelled them to take an extreme westerly course, via Mount Monger, to the Murchison, passing through country mostly covered with miserable thicket on a sandy soil with granite outcrops. On 1 January 1892, they reached their destination, where the majority of the members left the expedition and their leader was recalled to Adelaide. In his absence a flying trip was taken by Mr L. A. Wells into the district known as Block A, lying between Giles' 1876 and Forrest's 1874 tracks. Starting practically from the depot at Welbundinum, he completed his examination of practically the whole block in about six weeks—between 23 February and 4 April.

In this expedition he travelled 834 miles, discovered some fine ranges and hills, a large extent of pastoral and some auriferous country, but no permanent surface water. The total area explored in the two expeditions was 80,000 square miles and the total mileage covered 2,745 miles.

In 1895, Mr J. H. Rowe traversed the heads of the Gascoyne and Ashburton Rivers and the country south of the Ophthalmia Range and mapped a fair extent of pastoral country, besides discovering some good waters.

In 1896, Mr C. A. Burrows explored the country in latitude 15° 30' W. of Cambridge Gulf to Mount Bradshaw and named the Drysdale and Carson Rivers.

In the same year, on 16 July, Mr L. A. Wells, chief of the Calvert Exploration Expedition, started from Lake Way to examine the country between the East Murchison and Fitzroy Rivers.

Adopting a north-easterly course, a depot was formed in latitude 25° 54' S., longitude 122° 20' E., excellent waterholes and fair country existing in the neighbourhood. The period between 10 August and 8 September was occupied in a flying trip north-east through Mount Bates, on a dry stage of 200 miles, till a good well was found in latitude 23° 23' S. and longitude 124° E., whence a return was made via Giles' 1876 route. Leaving the depot finally on 14 September, the party at length reached Separation Well. Thence travelling along the meridian of Joanna Springs and subsequently upon reaching that point, north-north-east, it struck the Fitzroy River, a little north-west of Mount Tuckfield, on 6 November, a distance altogether from Mount Bates of 500 miles. Most of this was the usual spinifex and sand ridge country and the last 300 miles were almost destitute of camel feed or water—in fact they were compelled to abandon five beasts and had the greatest difficulty in saving the others.

At Separation Well Messrs C. F. Wells and G. Lindsay Jones were, on 11 October, sent on to examine the country bearing west-north-west for eighty or 100 miles, and thence north-east to cut their leader's track about thirty or forty miles south of Joanna Springs. On his arrival at the rendezvous six days later than had been expected, not finding the two men, Mr L. A. Wells naturally concluded that they had arrived previously and been compelled to push on to the Fitzroy. The fate of the unfortunate men was subsequently ascertained, their bodies being found by Wells some months afterwards fourteen miles west-south-west from the Springs. Their journal disclosed the fact that, being unable to proceed owing to the heavy nature of the country, they retraced their steps and, striking the expedition's track, followed it northwards, only to perish from want of water about 15 November.

As soon as the news that two of the party were missing reached Perth, energetic efforts were put forth by the Western Australian Government and on 19 December, Mr W. F. Rudall left Braeside Station on the Oakover River in charge of an expedition to follow up the river and its branch, the Davis, thence striking eastward to cut the tracks of the missing men.

After leaving Christmas Pool some distance south-east of Mount Macpherson, Rudall, guided by blacks, came upon a camp into which footsteps, supposed to be those of the persons sought, were traceable. Here, unfortunately, all tracks were lost and he was reluctantly obliged, through his camels failing him, to return to his starting-point. He immediately organised a second trip, but after strenuous though fruitless efforts, the party engaged on this expedition also were driven back owing to the insuperable difficulties encountered. Rumours, supplied by natives, of straying camels, etc. having reached Rudall, it was considered wise to make a further search to the south of the Oakover River and, accordingly, on 7 February 1897, he again set out. The course of the river being followed for some distance, the latitude of the Tropic of Capricorn was reached and in longitude 120° 10' E. the bodies of two men, supposed to have been murdered by natives, were discovered. Returning via Roy Hill Station to Nullagine, a report of the find was sent to Perth; but, after due consideration and medical examination, it was decided that the remains were not those of the missing explorers and a final attempt was made to solve the mystery surrounding the fate of the two men. Rudall, leaving Braeside Station on 9 April, visited Separation Well and attained a point sixty miles south of Joanna Springs before returning to Braeside, which was finally reached on 23 June. Although these journeys proved

unsuccessful in their object, it cannot be said that the work was fruitless, since Rudall had travelled over an area of 23,000 square miles and had obtained a large amount of information not previously possessed concerning the physical features of the country examined.

In 1896, from 17 June to 13 September, Mr A. Mason, a Government Officer, was engaged in examining the south-eastern district of the Colony, lying between Kurnalpi and Eucla, into portions of which rabbits were supposed to have penetrated. He claimed to have discovered some millions of acres of some of the finest pastoral and agricultural country in the world, but reported a very poor supply of surface water. This important belt of land lay between 125° E. longitude and the South Australian border and south of about 30° S. latitude. These plains were partly examined by Sir John Forrest during his 1870 overland trip to Adelaide and both he and Captain Delisser in 1865 spoke of them in terms somewhat similar to those used by the later explorer.

In the same year an expedition was sent, under the auspices of the South Australian Government, from Oodnadatta to Coolgardie, to open up, if possible, a stock route between the two places.

The leader, Hübbe, entered the Colony near Mount Hinckley, below 26° S. latitude and, keeping to the south of that parallel, followed Forrest's 1874 route through Barlee Springs as far as Mount Allott and thence south-west by Ernest Giles' Range, travelled to Lake Wells. The remainder of the journey by De La Poer Range and Mackenzie's Well, where a good supply of water was obtained, to Menzies and Coolgardie, was through comparatively well-known country. He arrived at the latter place in August and left some time afterwards, returning via Eucla to South Australia. Fair water was found in several places, *e.g.* Mount Aloysius, but the same spinifex country which had harassed Forrest so much was met with throughout, with the exception of small patches of better country found near the South Australian border and during the latter part of the journey.

On 20 July, an expedition equipped and led by the Hon. David Carnegie, left civilisation at Doyle's Well, some fifty miles south of Lake Darlôt, to strike across the continent in a north-north-easterly direction in the hopes of finding gold-bearing or pastoral country in the great desert lying between latitudes 19° and 28° S. and longitudes 122° and 129° E., which hitherto had only been crossed from east to west or *vice versa*. Travelling over a long stretch of dry country, during which journey the camels were without water for thirteen and a half days, they reached a soakage forty-five miles south-south-west of Alexander Spring which afforded water. Proceeding on past the Spring, which was dry, a few low sandstone ranges and hills were found and, occasionally in the valleys, belts of bloodwood and a few shrubs edible to camels; but most of the country was a continuous waste of sand ridges. From latitude 20° 40' to latitude 19° 20' S., these were again broken by occasional high tablelands and sandstone cliffs, from which small creeks ran into the sand, fine rock-pools, such as Godfrey's Tank, being found at their heads. On the outgoing trip, the only permanent water—Helena Spring—was found in latitude 21° 20' S. in limestone formation. Within fifty miles of Halls Creek one of the party, Mr Charles Stansmore, lost his life through a gun accident. On reaching that township on 6 December, Mr Carnegie heard of the disaster to the Calvert Expedition and at once offered his assistance, but relief parties had already been despatched.

After a badly-needed rest, the expedition left Mr Stretche's cattle station in the beginning of April 1897 and travelled down the Sturt Creek to its junction with Gregory's Salt Sea, in which were found numbers of wild fowl and fish. Following thence a generally southerly direction parallel to the border, sand ridges commenced about latitude 20° 30' S. and continued in almost unending monotony so far south as the Rawlinson Range. A range of considerable size, the Stansmore, was found in about latitude 21° 30' S. but neither auriferous nor pastoral country appeared to exist in its vicinity. Thence a southerly course was taken to the eastern end of Lake Macdonald. The sand ridges in this district were so frequent that in eight hours' travelling eighty-six of them were passed over. From here a southerly and south-westerly course was taken past the Rawlinson Range, till the outward (1896) track was struck near Alexander Spring. Much needed water was found in the bed of Blyth Creek and a welcome fall of rain filled the spring itself. Crossing Lake Wells and cutting the Erlistoun Creek near its head, the first auriferous country seen since

leaving Halls Creek was met with. From this a course was shaped through Lake Darlôt to Coolgardie which was reached in August, the expedition having travelled 3,000 miles in eight months.

No permanent water was found after leaving Sturt Creek and the impracticability of a direct stock route being opened between Kimberley and the North Coolgardie fields was proved beyond question. It was, moreover, clearly shown that the desert traversed, with the possible exception of small and isolated patches, contained no auriferous country.

In 1897, from May to October, Mr Hugh Russel was engaged on a gold prospecting tour. From Crawford's camp, sixty miles north-north-east of Mount Margaret, a course was steered via Mount Shenton to Mount Squires, the journey being mostly over desert country. The whole district in this neighbourhood, including the Barrow, Warburton and Cavenagh Ranges, was carefully examined but little good country discovered. Returning on his outward track, no water was found from Melango Creek to Kirkpatrick's Well, which stage occupied thirteen and a half days.

1896 to 1898. On 1 April 1896, Mr 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. His party consisted of one white man, six Queensland blacks, and sixty-seven horses, nine of which belonged to his white companion, who accompanied him as far as Roebourne.

The Ord River was struck in about latitude $16^{\circ} 37' S.$, and followed up to Halls Creek. An attempt was made from here to find a track through the desert to the head of the Oakover River, but had to be abandoned and a course made for Derby along the Fitzroy River. From Derby, Mr Hann went on with his party to Broome, Condon and Roebourne. After replenishing his stores at this latter place, he followed the Fortescue River to its head and thence north-east to Nullagine. From here Mr Hann made a trip to the eastward into the desert where he met Mr Rudall, who was searching for the lost members of Wells' expedition.

So far, Mr Hann's trip had been barren of results and the loss of horses was so great that, on his arrival at Derby, he was about to return to Queensland when he met Police Inspector Ord, who advised him to try the Leopold Ranges for gold. This he decided to do and a start was made for Mount Broome with six Queensland blacks, thirty-one horses and two dogs. Great trouble was experienced in crossing the Leopold Ranges on the west side of Mount Broome, but an examination of the country to the north and east for about thirty miles so satisfied Mr Hann that he decided to at once return to Derby and take up land in the district just visited.

On his leaving Derby, Inspector Ord joined the party and the River Adcock, which had been explored and named on the first trip, was followed down to its junction with the Fitzroy River. A high and impassable range running north-east and south-west of the river on its south-east side was named Sir John Range and a lofty table-topped mountain to the north of the Adcock-Fitzroy junction, was called Mount Brennan. Blacks here were very numerous. The Fitzroy River was then followed up to an impassable gorge 200 feet deep with precipitous sides, which was named Sir John Gorge. To get round the range, the course was altered to north-west, where splendid cattle country was noticed and then to the south-east.

A fine river from the north-north-west was struck here, which forms a junction with the Fitzroy River, about a half-mile above Sir John Gorge. This river was named the 'Phillips' by Mr Hann, but the name was afterwards altered by the Surveyor General to the 'Hann River'. On this river, four miles above its junction with the Fitzroy, a tree marked by Mr Robert Buttons ^{RB}/₄₄ was discovered. Ten miles above the junction the river was a quarter of a mile wide and splendidly adapted for watering stock; clear, running water, low banks, no bogs, the margin solid sand and the stream opening up every now and then into large water-holes, all of which were found to be full of crocodiles, a harmless species, about six feet to eight feet long, living principally on fish. Travelling about twenty miles up this stream, a small lake was found on the right bank of the river. The lake was three miles in circumference and very deep and was named 'Gladstone Lake'.

On the lake and river, geese, ducks, waterhen and many other kinds of game were in abundance.

The whole country was found to be intersected with rivers, creeks and lagoons, the timber on the river consisting mainly of coolibah, box, plum, gum, magnificent bloodwood, bauhinia, kurrajong, and baobabs. One of the latter trees was measured and found to be forty-five feet in diameter and rose perpendicularly to a height of 100 feet.

In 16° 45' S. latitude, the Hann River takes a northerly course and runs through gorges into a rough range of hills which were named the 'Caroline Ranges'. About twenty-five miles west from here a large creek was met with and called the 'Charnley'; the travelling was exceedingly rough and the horses were in a bad state for want of shoes. In the Charnley some bream were caught and the river was then followed down through very rough country to an impassable gorge cut through a range of high basalt hills. This range was named 'Edkins'. It was covered with immense stones as slippery as glass. A new kind of palm was discovered here, with a succulent head which formed a splendid vegetable something akin to cabbage.

The Leopold Ranges were again crossed by means of a pass at the head of the Barker River, near Mount Hart. Mr Hann was of opinion that a good dray road could be made over the ranges at this point. Natives were very numerous throughout this country, but very wild and unapproachable. They were without covering of any kind whatever, but iron implements were discovered in their camps. The last described exploration was carried out in June, July and August 1898. To quote Mr Hann's own words, he 'never saw better watered country in' his 'life'.

In 1901, during the month of April, the Government despatched a well-equipped party under the leadership of Mr F. S. Brockman, with Mr Charles Crossland as second in command, to explore the extreme northern end of the State lying between the 17th and 14th parallels of latitude and west from the 128th meridian. That the investigation of the resources of the country might be complete, the party was accompanied by Mr Gibb Maitland, the Government Geologist, and an assistant geologist and Dr F. M. House, as Naturalist.

To use Mr Brockman's own description of his trip: 'Leaving the port of Wyndham on 9 May, the party proceeded in a southerly direction, following the course of a previously unexplored river (named the Chamberlain) to the 17th parallel and proceeded thence westerly, principally over high sandstone tablelands, to the Charnley River, which had been explored and named by Mr F. Hann, in 1898. Mr Hann's position of this river and the neighbouring features were found to be geographically accurate. The party then traced the Charnley and Isdell Rivers westerly from Hann's exploration to their respective points of exit in tidal waters. They also traced the course of the Sale River and tributaries (discovered by Mr T. C. Sholl in 1865, but placed too far south by him) and the course of the Glenelg River (discovered by Sir George Grey in 1837 and also previously shown in error of latitude). They discovered and traced the course of the Calder River, and the headwaters of the Prince Regent River; located the positions of the tidal waters extending inland from Collier and Doubtful Bays and generally investigated the country lying to the south-west and south-east of the main watershed, which is situate about the 16th parallel of latitude, and to the westward of the 126th meridian. From the northern fall of this watershed the Roe River was traced from its source to its exit into the tidal waters of Prince Frederick Harbour. The Moran River was discovered and its course between the same points traced. The headwaters of the King Edward River were discovered at the watershed and this river was again picked up in about latitude 15° 15' and its course traced northerly to its exit into Napier Broome Bay. Portions of the shores of Admiralty Gulf, Vansittart and Napier Broome Bays were closely examined with a view to selecting a suitable port for the district. The Drysdale was traversed from its mouth (on the 14th parallel of latitude) to the main watershed previously referred to on the 16th parallel. At the same time a sufficient number of points on the Carson River were located to enable that stream to be mapped with approximate accuracy. The Durack River was traced from the 17th parallel of latitude to its entrance into the tidal waters of Cambridge Gulf. The whole of the country drained by the rivers already enumerated was investigated as closely

as practicable in an exploration of this description, all high points met with being ascended and short excursions being made at right angles to the main line of travel wherever practicable. The exploration was completed on 20 November by the arrival of the leader and his party at the Pentecost River, at a point previously fixed by him on 18 May.

The practical results of the expedition consist of the discovery of a large area (six million acres) of basaltic pastoral country covered with blue grass, Mitchell and kangaroo grasses and many varieties of top feed, lying principally in the neighbourhood of the Charnley, Calder, Sale, Roe, Moran and Carson Rivers, with some extensive areas in addition situate on the Drysdale and in smaller patches in the neighbourhood of the Durack and its tributaries. In addition, the existence of suitable ports and routes of access to enable this country to be utilised for stock-raising were ascertained. Many objects of scientific interest amongst the flora and fauna of the district were discovered and brought back by the party. A few aboriginal weapons and implements and a large number of photographs of curious cave paintings were obtained. A considerable amount of information was also obtained with regard to the numbers, habits and distribution of the aborigines of the country.'

In the same year, 1901, a preliminary examination of the country between Kalgoorlie and Eucla was made by Mr John Muir, the Inspector of Engineering Surveys, in connection with the proposed transcontinental railway. The object of the expedition was to obtain further information regarding the tract of country lying between the Coolgardie Goldfields and the South Australian border south of the 31st parallel of latitude, with a view, in the first place, of determining the probable cost of constructing a railway through that country and secondly, of ascertaining the nature and resources of the country proposed to be crossed.

Muir took with him three months' supply of provisions, eleven carrying camels and five riding camels. The latter were required to explore the outlying country for as great a distance as possible on both sides of the line followed by the main caravan and to search the surrounding country for water. Two were utilised on one side of the line of march and two on the other side; the fifth was kept as a reserve.

The expedition left Kanowna on 16 May, followed the north-west side of the lake country as far as Kurnalpi and from there turned south-east to Cardinia, a granite rock lying about fifty miles east of Bulong, which was reached on 23 May. Here the camels were given a four days' spell, while Muir examined the country westwards towards Bulong and two members of the party were sent ahead to see what the Jumannia water supply was like. A move was made to the latter place on the 28th and thence the expedition proceeded to Goddard's Creek, about sixty miles further on, two men again being sent ahead to examine the prospects of finding water.

While the caravan followed slowly the camel pad made by the advance party, Muir examined the country for about ten miles on either side of the line of march. On the 31st the two men were met, who brought news that they had discovered a soak. On 2 June the creek was reached, the camels having been five days without water. Later on a dozen or more similar soaks were discovered, but the supply in every instance was very limited. Mr C. H. Babington, who was Mr Muir's chief assistant, found a good soak some twelve miles down the creek and the main caravan was moved on to it on 4 June.

Muir meanwhile, with two men, three camels and a week's provisions, went north to examine the country, having been informed that frequent rumours were heard from the natives of the existence of a 'big water' never yet seen by white men, but supposed to be situated twenty or thirty miles east or south-east of Victoria Springs. Having, however, continued his excursion for over fifty miles without finding any water, he returned to camp on 8 June. On 10 June, the country in the neighbourhood of the camp was explored and, as a result of this examination, the camp was shifted on 11 June to a soak nine miles eastward in the bed of the creek. Babington, who had been exploring ahead of the expedition, here rejoined the party and reported that water was obtainable thirty miles down the creek.

Another exploration northward for water, commenced on the 16th, proved as fruitless as the former one and on the 21st Muir returned to the main camp on Goddard's Creek. Babington unfortunately had been equally unsuccessful to the eastward. The leader of

the expedition therefore decided to make for Eyre, about 150 miles to the south-east. On the morning of 25 June, the main caravan started for Yayouldle Rock, Babington, who was in charge, being instructed that, failing to find water there, he was to proceed to Eyre. On the same date, Muir himself, with one man and two camels, started to examine the country along the probable course of the railway. Being unable to find any water, he also proceeded to Yayouldle Rock, which he reached on 1 July and where a small supply of water was found. On the following day he climbed the hills in the neighbourhood to look for the main caravan; on returning to camp he found Babington waiting for him there, who informed him that the caravan was some twenty or thirty miles on the road to Eyre. With all despatch Muir then pushed on to the latter place, reaching there on 3 July and finding that the main party had arrived on the previous evening.

From Eyre he sent the main caravan to Mundrabilla Station on the coast about 100 miles further eastward, where water could be relied upon, while he himself, with two men, started out to work the inland country. He left Eyre on 6 July and after travelling seventy miles north, went eastward 100 miles and next thirty miles southward to Mundrabilla. Nothing of any moment occurred on this trip worth particularising and, on reaching Mundrabilla on the 14th, he found that the camel train had arrived the previous day and that Babington, with one man, had gone on a previously arranged special trip, sixty miles out, in a northerly direction.

On the 17th Muir left, with one man and two camels, to examine the remaining portion of the line, from a point about thirty miles north of Mundrabilla, to Eucla, the main caravan travelling to the latter place along the coast. Muir arrived at his destination on the 19th, the caravan arriving on the 20th. On the 29th the return journey was begun. About fifty miles north from the coast, the westward course commenced, in latitude 31° S. At Wadalynia Rock, on 12 August, a splendid water supply was found and on the 16th another still more plentiful. Goddard's Creek was reached on the 20th and Bulong on the 29th. The total distance travelled was about 1,100 miles. The country traversed was mostly waterless, though well grassed and timbered, game—kangaroos, emus and turkeys—being fairly plentiful in the vicinity of the rock-holes.

In August and September 1901, Mr F. H. Hann examined the country between Southern Cross and Ravensthorpe, crossing the tracks of Captain Roe (1848). He experienced considerable difficulty owing to the absence of water. One of the principal results of this expedition was that the extensive salt lakes to the northward of Bremer Range, named Johnston Lakes, were added to the map.

In April 1903, Mr Hann left Laverton to explore the country to the eastward of that place. After an absence of thirteen weeks, he returned to the starting point, and reported the discovery of a practicable stock route to the Warburton Ranges.

On leaving Laverton, an easterly course was kept as far as the 126th meridian, thence northerly to the Townsend Range which was reached on 30 June.

A fortnight was spent in the examination of the country to the northward and west to Elder Creek. Mr Hann reported it to be well watered and splendid pastoral country, containing upwards of a million acres. Mineral indications were noticed, whilst natives were also observed to be numerous amongst the ranges.

On the homeward journey only slight deviations were made from the outward route, Laverton being reached on 8 August.

In 1904, on 13 June, the same explorer left Laverton with five Government camels and three horses, having in view a more extended examination of the country visited by him in the previous year. The Warburton Ranges were reached on 25 July. Thence a course was steered for the west end of the Rawlinson Ranges. From 5 August to 30 August, the country to the north and east of these ranges was examined and some valuable topographical and physiographical information obtained as far eastward as the State boundary.

From Gordon Springs Hann, much against his will, was compelled to return, as his supplies were running short and a direct route was taken for Laverton, which was reached on 2 October. As a result of the trip he was able to state his firm conviction as to the practicability of opening up, as a stock route, his track from Laverton to the border.

CHAPTER II—PHYSICAL FEATURES, CLIMATE, FLORA AND FAUNA

Part 1—Physical Features and Geology

Contributed by

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The development of any country depends on its natural resources and the industry of its people, and there can be few more important investigations for any country than those dealing with the productive capacity of its territory. Natural resources—be they power, mineral, or soil resources—are dependent entirely on the climate, physical features and geology. Looking at the pattern of development of Western Australia we see that for nearly seventy years after the foundation of the Swan River Colony in 1829 agricultural production barely kept pace with the requirements of the small population. The discovery of gold in the 1890s, however, led to a period of rapid expansion and Western Australia became one of the major gold-producing areas of the world, and with this increase in mining production there was a corresponding expansion of the agricultural and pastoral industries. We are now experiencing an expansion of our secondary industries. Today, with the realisation of the base metal mineral potential of Western Australia—the proven deposits of iron ore, nickel, bauxite, black sands, oil and natural gas and the high probability of further discoveries—we are in another period of unprecedented development. The mineral discoveries of recent years in Western Australia have stimulated the mining industry not only in Western Australia but throughout the whole of Australia. The Western Australian mineral discoveries of the late 1960s have been accompanied by a corresponding increase in our secondary industries and the opening up of formerly sparsely populated areas, particularly in the Pilbara. Western Australia has, to date, been deficient in power resources, but this deficiency will probably be remedied by the discovery of large natural gas reserves near the southern margin of the North-West Shelf. In each of these phases of development we can see the dominating influence of the geological environment so that geology, from being relatively unknown and the Cinderella of the sciences, has now become known to all.

The nature of the rocks underlying any region is one of the major factors controlling topography, soil, and mineral resources. The latter is self-evident. The soil, on which we are so dependent, was formed by the weathering of the underlying rocks and many of its characters are due to the parent rock material. Much research has been carried out into trace element deficiencies in soils and the application of the new knowledge has produced astounding results as far as land utilisation is concerned. At first sight it would seem fantastic to think of the underlying rocks being in any way responsible for malnutrition of stock, but when it is demonstrated that the malnutrition is due to the lack of some minor element in the fodder which is due to its deficiency in the soil, a deficiency which, in its turn, is due to the absence or relative absence of such elements from the parent rocks from which the soil was derived, the significance of the geological environment becomes evident. Topography which is important in connection with land utilisation, water conservation, power (hydro-electric) resources, and in affecting climate, soil erosion, coastal erosion, transport routes, harbours, and so on is also dependent to a great extent on the nature and structure of the underlying rocks.

It is appropriate therefore that we should consider here the physical features and geology of Western Australia since they, together with the climate, are the primary controls of our soil, mineral, water and power resources, on which our existence and future development are entirely dependent.

PHYSICAL FEATURES

In the broadest way this State can be divided into two physical regions: (i) a tableland (the *Great Plateau*) in various stages of dissection occupying the whole of the interior of the State; (ii) a low-lying narrow strip (the *Coastal Plains*) running almost continuously along the coast from near Albany to Broome. A third physical region, the *Scarplands*, separating the Coastal Plains from the Great Plateau, may be distinguished. This, although only a narrow belt, is a significant one in the southern part of the State because of its importance in connection with the water conservation schemes on which the metropolitan area, the mining fields in the vicinity of Kalgoorlie, the intervening agricultural and pastoral districts, the irrigation areas on the coastal plains south of Perth, and more recently the wheat belt along the Great Southern Railway, are dependent.

The Great Plateau

The Great Plateau which occupies more than 90 per cent of the area of the State varies considerably in elevation. In its highest parts (in the North-West) it attains a height of approximately 1,200 metres above sea-level. The greater part is, however, below the 600-metre contour and its average elevation is of the order of 300 to 450 metres above sea-level. Although there is this considerable variation in level the changes are so gradual that the plateau character of the country is not obscured and for the most part it may be regarded as having a vast, gently undulating surface. Occasional hills (monadnocks, which are remnants of a previous cycle of erosion) rise above the general surface of the plateau.

The Great Plateau may be conveniently subdivided into an area of exterior drainage (where there are definite rivers which flow to the sea), an area of interior drainage (where such water as flows passes into inland basins), and two areas of no surface drainage but which, if they had drainage, would belong to the exterior drainage system. The area of exterior drainage can be marked out by connecting the source of the streams which flow to the sea and if this is done it will be seen that the width of the exterior drainage belt varies considerably. Thus in the Kimberley and North-West Divisions some of the rivers are hundreds of kilometres long, but in the south-west part of the State many of them are comparatively short. The areas of no surface drainage are in the north of the North-West Division along the Eighty Mile Beach from the mouth of the De Grey River to the north of Broome, and on the Nullarbor Plain in the south-eastern corner of the State. The remainder of the country forms the interior drainage area.

In the area of exterior drainage the dominant feature of the extreme south-west and the northern part of the plateau is a reticulate pattern of rather deeply-incised watercourses. In the southern part of the State these deeply-incised watercourses where they pass from the plateau to the coastal plains are of great significance (as has already been mentioned) in connection with water supply schemes. Elsewhere in the State the marginal portion of the Plateau is drained by rivers that flow to the sea only at times of exceptional rainfall and, speaking in the most general way, have courses at right angles to the coast.

The area of interior drainage is arid and practically riverless. Small creeks run from the higher parts of the country but they either disappear on the extensive flats or reach the shallow basins which are termed salt or 'dry' lakes, the term 'dry' being used since these so-called lakes are free from water except after fairly heavy or long-continued rain. These 'lakes' are generally elongated, narrow, and often winding salt-encrusted flats arranged in long, more or less connected streams. After heavy rain they are covered with a thin layer of water and, after unusually heavy rain, water has been known to flow southwards from one to another of the 'lakes' of a string, except towards the western margin of the plateau where the drainage is to the west. It is evident that these elongated 'lakes' are the remnants of an old river system developed during a more humid period. The salt lakes are of some economic significance since, on the evaporation of the water, common salt and other substances such as gypsum are deposited on the floor of the lake. The gypsum, which crystallises earlier than the common salt, is generally blown from the damp surface of the dried-up lake and deposited as dunes of 'seed gypsum' on the

leeward (eastern) side of the lake. These dunes are utilised, for example at Lake Seabrook north of Yellowdine, as a source of gypsum for plasters. Common salt, which separates later, forms a crust on the floor of the lake when it has been completely dried up and such salt deposits are exploited, for example at Lake Lefroy near Widgiemooltha. In a few of the Western Australian salt lakes significant deposits of alunitic clay have been discovered which have been worked as a source of potash, such as at Lake MacLeod, north of Carnarvon.

Over a large portion of the interior drainage part of the Great Plateau there are extensive sand-plain soils overlying a hard laterite ('ironstone') layer, which is of the order of up to four and a half metres in thickness, below which lies an intensely weathered zone from which most of the nutrient elements so important for plant growth have been leached. These more recent geological formations will be discussed in the section of this Part dealing with geology, but we may note here the significance of this lateritic profile (sandy soils near the surface, 'ironstone' about a metre below, and completely kaolinised rocks still deeper) so far as soil fertility is concerned. This lateritic profile is the result of long-continued weathering processes which have resulted in almost complete leaching of the valuable nutrients and as a result soils developed in any part of this profile are generally very poor in character. It is only where erosion has cut through the lateritic profile and still younger soils have been formed by weathering of the underlying rocks that the better soils are found. As has been mentioned, however, with recent studies of trace element deficiencies much can be done with these 'light' soils by the addition of small quantities of suitable trace elements such as copper and molybdenum.

The areas of no surface drainage include the Eucla Division and portions of the Eastern Division of the State. This area is occupied largely by horizontal or nearly horizontal limestones of the Nullarbor Plain and the drainage here is sub-surface in character through subterranean streams and caverns in the limestone. The Nullarbor Plain is an extensive monotonously level plain standing at a height of about 180 metres above sea-level. The Western Australian part of the Nullarbor Plain is bordered to the south by a narrow coastal plain but further east, at the head of the Great Australian Bight, in South Australia, this coastal plain is absent and the southern edge of the Plain is truncated by cliffs which rise almost sheer for sixty to 120 metres above sea-level.

The hills of the Great Plateau are of two kinds, ridged and table-topped. In the southern half of the State the ridged hills, a few of which rise as much as 450 metres above their surroundings, are generally elongated in a NNW. direction, reflecting in their trend the structure of the underlying rocks. The table-topped hills are seldom more than sixty metres above the general level. They are capped with a sub-horizontal layer of laterite ('ironstone') and bounded by low cliffs, in many places undercut, which are known in Western Australia as 'breakaways'. The table-topped hills are relics of erosion of a former laterite-covered peneplain (the *Darling Peneplain*) which was uplifted in Pliocene times to form the Darling Plateau and has subsequently been subjected to erosion under semi-arid conditions. The ridged hills on the other hand are elongated monadnocks which, being cored by resistant rocks such as jasper bars, withstood erosion and so rise above the general level of the remnants of the laterite-covered Darling Plateau.

The Great Plateau slopes down very gradually to the south and west. The downward slope to the south is interrupted by a narrow broken chain of rugged hills, the Stirling and Mount Barren Ranges which rise to heights of from 300 to 1,100 metres above sea-level. The western margin of the Plateau is, in the south, formed by the 'Darling Range' which, being merely the dissected margin of the Plateau, is much better called the *Darling Scarp*. This Darling Scarp is clearly defined between latitudes 31° 30' S. and 33° 30' S., i.e. between Moora and Donnybrook, but it is difficult to recognise farther north or south. In the Kimberley Division the mountain ranges are the relics of erosion between the deeply-incised rivers and in this region the highlands of the Plateau terminate abruptly along a steep, deeply-indented coastline.

The Coastal Plains

Bordering the Great Plateau are the Coastal Plains which vary in width. The *Swan Coastal Plain* which extends from the neighbourhood of Perth to near Busselton averages about twenty-four kilometres in width and is divisible into the following belts: a narrow band of moving sand dunes along the coast; a zone, averaging five or six kilometres wide, of sandy limestone which rises in places to heights of thirty to sixty metres above sea-level; a zone five or six kilometres wide of loose sand fixed by vegetation; and, abutting against the Scarp which forms the western margin of the Plateau, a zone of clayey soils of about the same width. A strip of low plain extends along the coast at intervals as far north as King Sound and coastal plains of some width occur near Port Hedland and Exmouth Gulf. A narrow plain fronts the cliffs of the Great Australian Bight for some distance and also occurs in other places along the south coast.

The coastline of Western Australia, some 12,500 kilometres in length, is broken by capes between Wyndham and Broome, between Port Hedland and Shark Bay, and between Cape Naturaliste and Israelite Bay. The intervening parts are comparatively featureless.

It has only been possible here to briefly outline the principal physical features of Western Australia and for a fuller description of the physiography of this State the reader should consult J. T. Jutson's 'Physiography (Geomorphology) of Western Australia' (*Geol. Surv. West. Aust. Bull.* 95).

GEOLOGY

More than two-thirds of Western Australia is occupied by the ancient Australian Precambrian Shield which is composed of a complex of igneous, metamorphic and sedimentary rocks formed more than 600 million years ago. Most of our mineral deposits of economic importance, except coal, oil, natural gas and water and superficial deposits such as lateritic iron ore and bauxite deposits and black sand and other alluvial accumulations, occur in these Precambrian rocks. The remainder of the State is occupied by sedimentary basins in which Palaeozoic and later sediments are developed. It is in these younger sedimentary basins that artesian water, coal, oil and natural gas are likely to occur. Finally there are the still younger superficial deposits—laterites, salt-lake deposits, and soils on which much of the economy of this country depends. It will be convenient therefore, in outlining the geology of the State, to consider it under the three main headings:

- (a) The Precambrian basement;
- (b) The sedimentary basins;
- (c) The superficial deposits.

The distribution of the solid rocks (omitting superficial deposits) is shown in the accompanying map (see page 33).

The Precambrian Basement

This includes the Archaean and Proterozoic rocks. The Archaean is a complex of crystalline igneous and metamorphic rocks, dominantly granites and gneisses with minor amounts of schistose metamorphosed acid and basic volcanics and sedimentary formations. In places, particularly in the North-West and Kimberley Divisions, this Archaean complex is overlain unconformably by sedimentary and volcanic rocks of Proterozoic age which do not exhibit the extensive metamorphism so characteristic of the older Archaean complex. The time-boundary between the younger Precambrian (Proterozoic) and older Precambrian (Archaean) is approximately 2,200 million years ago. Within the different areas occupied by the Precambrian rocks the same generalised sequence can be distinguished.

In the Kimberley the oldest rocks are metamorphosed igneous and sedimentary rocks intruded by granite and carrying in places auriferous and base metal ore deposits, and these are overlain by un-metamorphosed sediments with basic igneous intrusives. The Precambrian age of all these rocks is evidenced by the fact that in the East Kimberley they are overlain by sedimentary rocks containing fossils of Cambrian age. This is the only area in



PLATE I—INAUGURATION OF MURDOCH UNIVERSITY

The Governor-General, Sir John Kerr, sets in place a survey marker officially inaugurating Murdoch University on 17 September 1974, the centenary of the birth of Sir Walter Murdoch after whom the University is named.

Murdoch University, the second university to be established in Western Australia and the eighteenth in Australia, is established under the provisions of the *Murdoch University Act, 1973*.

Photograph by courtesy of Murdoch University

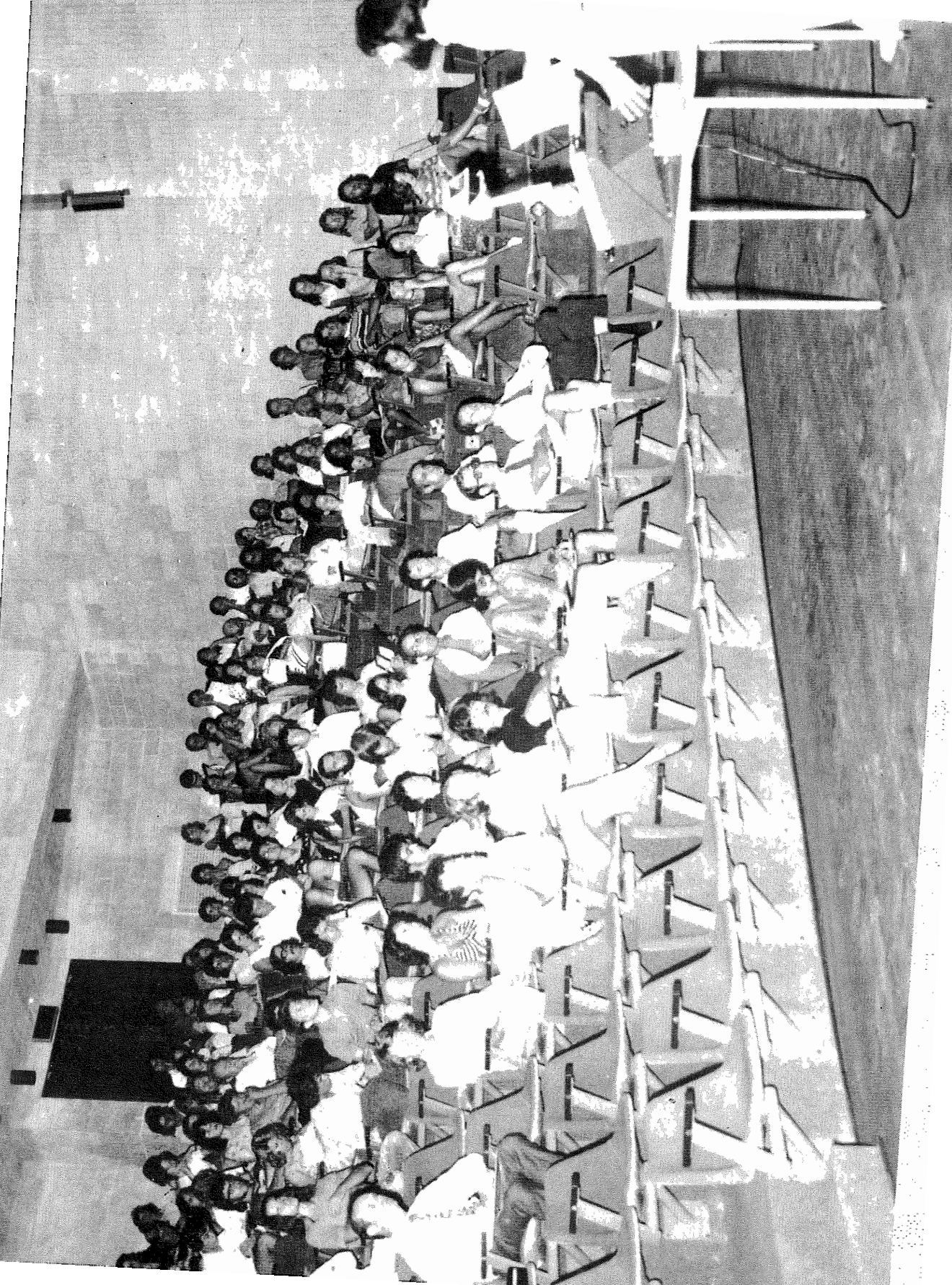


PLATE 2—INAUGURAL LECTURE AT MURDOCH UNIVERSITY

Teaching commenced at Murdoch University on 3 March 1975 when more than 600 foundation students began the first semester after taking part in Orientation Week. The historic occasion of the first lecture given at the university is illustrated overleaf.

The campus covers 242 hectares of land about thirteen kilometres south of the Perth city centre and eight kilometres east of Fremantle.

Photograph by courtesy of Murdoch University



PLATE 3—LANDSCAPING IN THE NARROWS INTERCHANGE
PERTH

To beautify the Narrows interchange west of the city centre, plans were developed for an integrated landscaped parkland with three ornamental lakes—one of them 305 metres long, a waterfall, a system of scenic walks linked by four pedestrian tunnels, and a pedestrian bridge at Mount Eliza connecting the footpath system with that of King's Park.

Depicted is a section of the area with buildings of the western part of the city block in the background.

Photograph by courtesy of the Department of Industrial Development

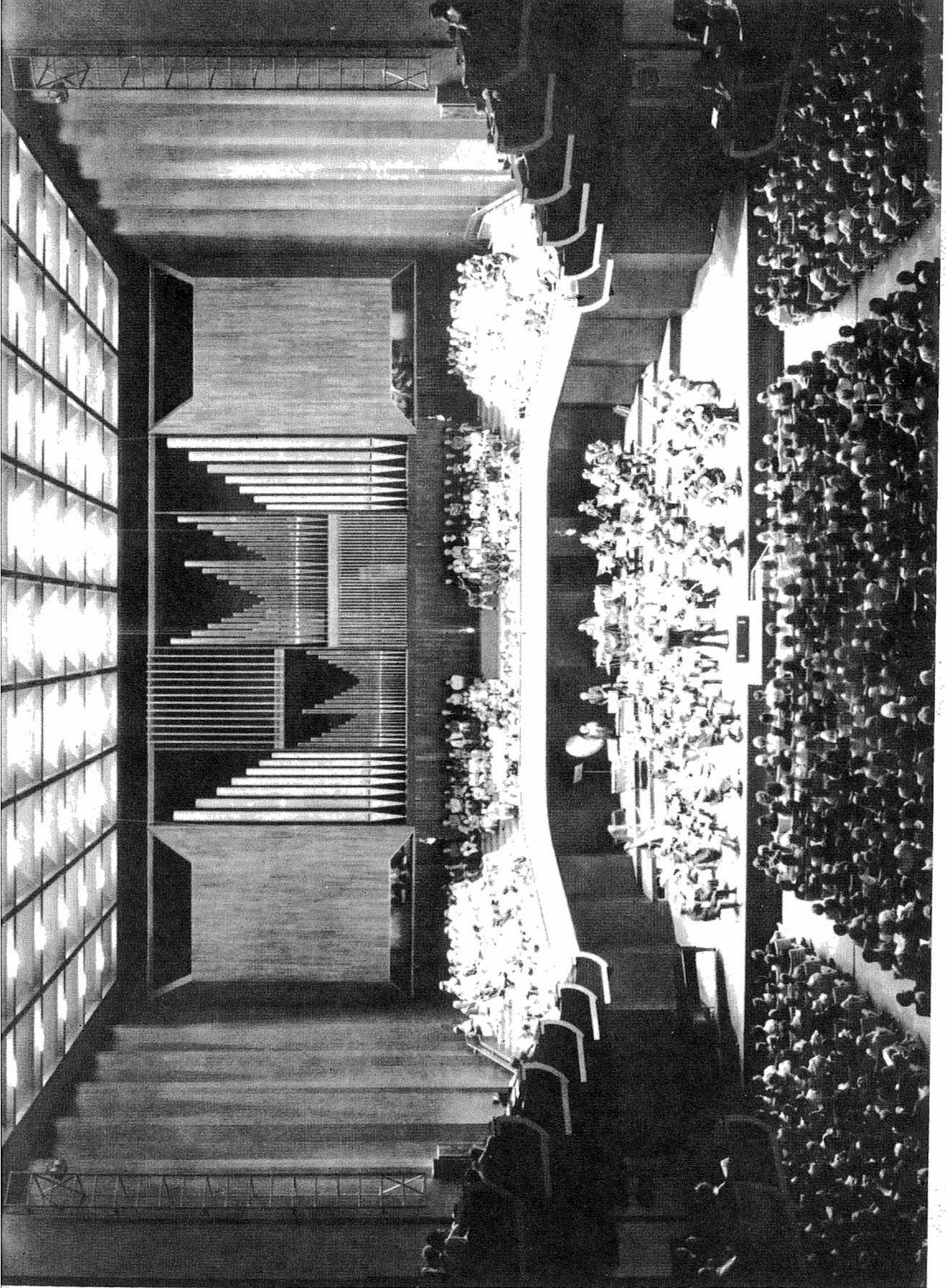
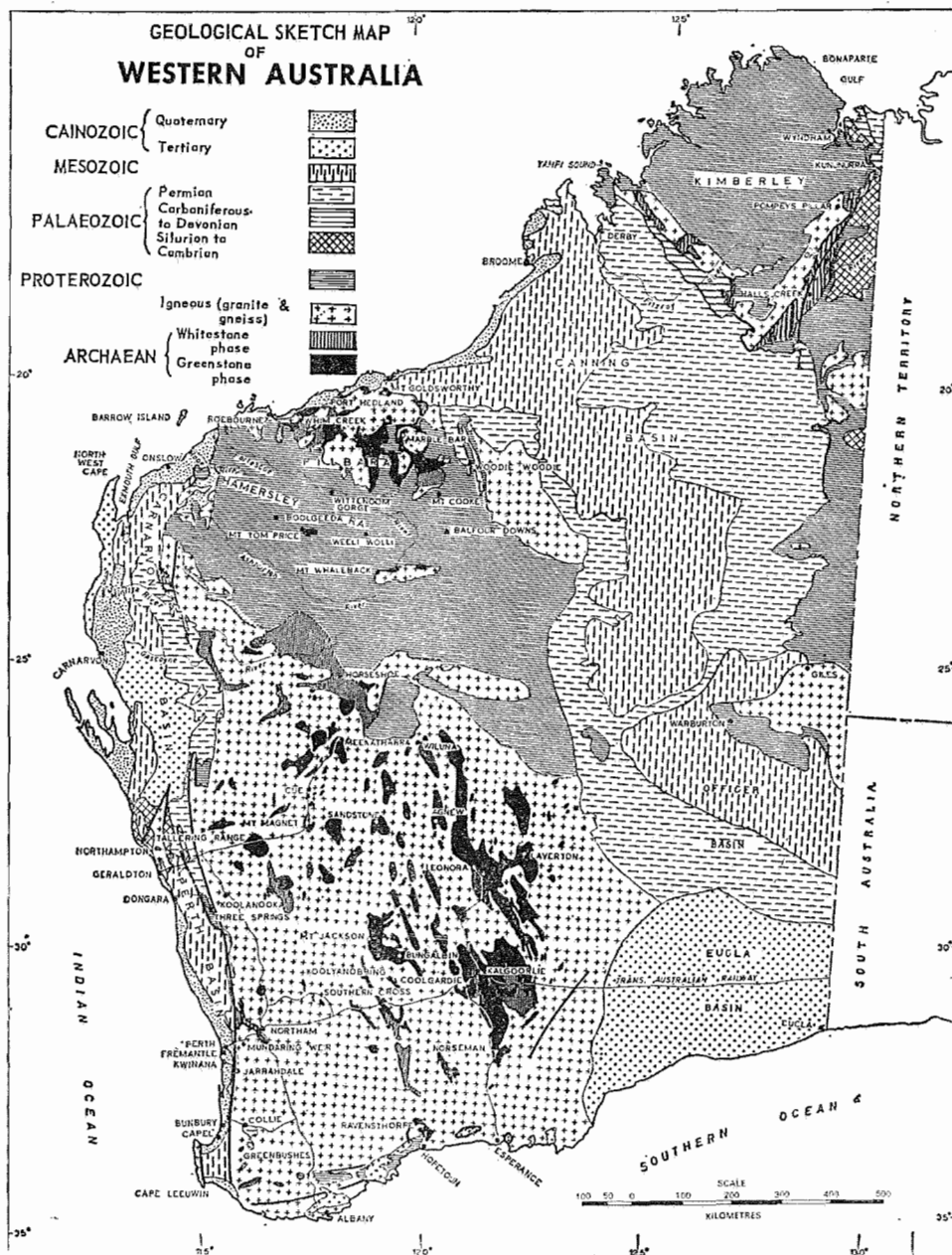


PLATE 4—THE PERTH CONCERT HALL

The Perth Concert Hall was officially opened on 26 January 1973 by the then Governor-General, Sir Paul Hasluck, and the first public concert was held on the same date. Seating in the Concert Hall will accommodate 1,727 patrons.

Photograph by courtesy of the Department of Industrial Development



GEOLOGICAL MAP OF WESTERN AUSTRALIA

(from Clarke, Prider and Teichert, 'Elements of Geology for Western Australian Students', by courtesy of University of Western Australia Press)

Western Australia where the Precambrian age of the rocks of this crystalline complex can definitely be proved on stratigraphical evidence alone. In the southern part of the State we find a similar sequence of crystalline schists with intrusive granites and by lithological correlation (which is not a very sound method) we assume that they are Precambrian although they cannot actually be traced through from the Kimberley. We do know that in the Carnarvon Basin these gneisses, schists and granites are older than the Devonian, which unconformably overlies them, and in the Perth Basin they are older than the Permian. During recent years the Precambrian age of these rocks has been confirmed by actual age determinations based on the decay of radioactive elements which occur in them. This work indicates that the bulk of the massive granitic intrusions of the southern part of the State and in the Pilbara crystallised from a molten state some 2,700 million years ago. Some, however, such as those in the vicinity of Albany and along the south coast, are much younger, being emplaced approximately 1,100 million years ago.

The Precambrian sequence in the North-West Division appears to be the most complete that is present in Western Australia and, from oldest to youngest, is as follows.

The *Warrawoona Succession*, which consists mainly of greenstones and green schists which were, prior to the intense folding and metamorphism to which they were subjected after deposition, basaltic lavas and tuffs with interbedded chemically deposited secondary rocks (jaspilites or banded iron formations) in the upper part of the sequence. These jaspilites have been the protores of important iron-ore deposits such as those of Mount Goldsworthy. The Warrawoona Succession is overlain by a succession (the *Mosquito Creek Succession*) of sedimentary rocks which have also been intensely folded and metamorphosed to various types of platy-structured schists, slates and quartzites. Both the Warrawoona and Mosquito Creek Successions are invaded by granitic igneous rocks emplaced approximately 2,700 million years ago and both carry auriferous ore-bodies possibly genetically related to the intrusive granites. End-stage products of these granites are the very coarse-grained pegmatites which are important carriers of tantalum (in tantalite), beryllium (in beryl), lithium (in spodumene and lepidolite), and tin (in cassiterite). All of these rocks in the North-West Division—the Warrawoona and Mosquito Creek Successions and the granites intrusive into them—are therefore of Archaean age and have been called the *Pilbara System*. Still younger sedimentary rocks such as conglomerates, sandstones, shales and banded iron formations with interbedded basic igneous rocks, were deposited unconformably on the highly-folded, granite-intruded Pilbara System. This thick succession consists of a number of distinct groups. The three lower groups (the *Fortescue*, *Hamersley* and *Wyloo Groups*) are of Lower Proterozoic age as the youngest (the Wyloo Group) is intruded by granite aged approximately 1,700 million years. The two upper groups (the *Breshnahan* and *Bangemall Groups*) are of Middle and Upper Proterozoic age, respectively. Of these Proterozoic rocks the Hamersley Group is most important economically since most of the iron-ore deposits of the Hamersley and Ophthalmia Ranges occur within, or have been derived from, the thick jaspilites (banded iron formations) within this group. Except in occasional narrow belts marginal to the Archaean blocks, the Proterozoic rocks have not suffered the intense folding that affected the older rocks and consequently they are generally flat-dipping to horizontally bedded un-metamorphosed sediments. Such sediments cover very extensive areas in the North-West (see Geological Map of Western Australia on page 33) and they are similar in many respects to the flat-dipping Proterozoic sediments which cover the plateau country of the North Kimberley. The final episode in the Precambrian history of the North-West was the intrusion of dolerite dykes and sills into all of the earlier rocks.

Coming to the southern half of the State we find a similar sequence to that in the North-West. In the part of the Precambrian Shield extending south of latitude 26° S. the oldest rocks that are recognised are the greenstones of the various gold-mining fields which occur in comparatively narrow belts elongated in a general NNW. direction (see map, page 33). These greenstones, which are for the most part metamorphosed basaltic lavas, contain interbedded ultrabasic lavas and jaspilites and are overlain by metamorphosed sedimentary rocks (generally referred to as whitestones). This System of rocks is the *Kalgoorlie-Yilgarn System*. From the mining point of view it is most important since

the auriferous ore deposits of the main mining fields are confined to it, as are the known nickel deposits. It also contains, in the jaspilites, important iron-ore deposits such as those of Koolyanobbing in the Yilgarn. It appears to be the equivalent of the Pilbara System of the North-West. After the formation of the Kalgoorlie-Yilgarn rocks they were intensely compressed into tightly closed folds with NNW.-trending axes. During this period of intense earth-movement approximately 2,900 million years ago granite magma concordantly intruded these older rocks or alkaline solutions permeated them, converting them into granitic gneisses which occupy the bulk of the southern half of Western Australia. Subsequently, at about 2,700 million years ago, granite magma was again intruded as in the North-West, so the Kalgoorlie-Yilgarn System in the southern half (the Yilgarn Block) of the State appears to be the equivalent of the Pilbara System of the Pilbara Block. This completes the Archaean sequence. The Proterozoic is represented by a narrow strip of slightly altered, steeply-dipping sedimentary rocks along the Darling Scarp, flat-dipping sediments on top of the older crystalline rocks of the western part of the Yilgarn Block as at Watheroo, Yandanooka and the Billeranga Hills near Morawa, and the metasedimentary rocks of the east-west Stirling and Mount Barren Ranges along the south coast. Proterozoic igneous activity is represented by Early Proterozoic layered complexes and Late Proterozoic basic dykes. The former, aged 2,420 million years, take the form of basic-ultrabasic layered complexes, such as the large east-west dykes of the Norseman-Laverton greenstone belt which have some prospects for the occurrence of nickel and chrome deposits. The latter are dolerite dykes which, like those in the North-West, intruded all of the Precambrian rocks about 550 million years ago. They occur throughout the Precambrian Shield but are most abundant near its western margin where some are quarried and crushed for road metal.

Putting together the information available throughout the State, we conclude that the oldest rocks found in Western Australia belong to the older part of the Archaeozoic Era. It is a great succession of rocks, generally much metamorphosed, which is called the Kalgoorlie-Yilgarn System in the southern part of the State and the Pilbara System in the North-West region. In the early part of Kalgoorlie-Yilgarn (Pilbaran) times there was much volcanic activity which took the form of eruptions of ultrabasic, basic and intermediate lavas, tuffs, and breccias. Many of the basic lavas, as judged from the pillow structures they contain, were submarine extrusions. These volcanic rocks were penetrated, shortly after their extrusion, by intrusions from the same magma; similar events must be occurring now in the interior of great volcanic masses like Etna or Hawaii. In later Kalgoorlie-Yilgarn times, the dominant process was sedimentation, so that the earlier volcanic rocks, with the minor associated bands of sediment, became overlain by a great thickness of sandy and clayey sediments. These sediments must have been derived from some land mass composed of rocks of pre-Kalgoorlie-Yilgarn age but this, possibly the oldest of all rock assemblages, has apparently not yet been found in Australia or any other part of the World.

After the accumulation of these older Archaean lavas and sediments came a period of intense earth-movement during which the rocks were, in most places, closely folded and regionally metamorphosed. The folding was accompanied by widespread granitic intrusions, some of which consolidated into primary gneisses whereas others soaked into the pre-existing rocks, penetrating them along bedding planes, joints, and other fractures, and so forming hybrid granitic gneisses by granitisation.

Where they were not affected by this First Granite Invasion, the volcanic rocks of the Kalgoorlie-Yilgarn and Pilbara Systems were regionally metamorphosed, in some places very strongly into dark-coloured schists, in others only very slightly. Similarly, the sedimentary rocks of the Kalgoorlie-Yilgarn and Pilbara Systems, where they have escaped the first granite invasion, *i.e.* have not been granitised, are in some places but slightly regionally metamorphosed, in others they are converted into various types of schist and quartzite.

All the Archaean rocks described above were invaded by the 'Younger' Granite, which, unlike the 'Older' Granite, formed well-defined intrusions many of which are stocks, though smaller offshoots from the same magma, in the form of 'porphyry dykes',

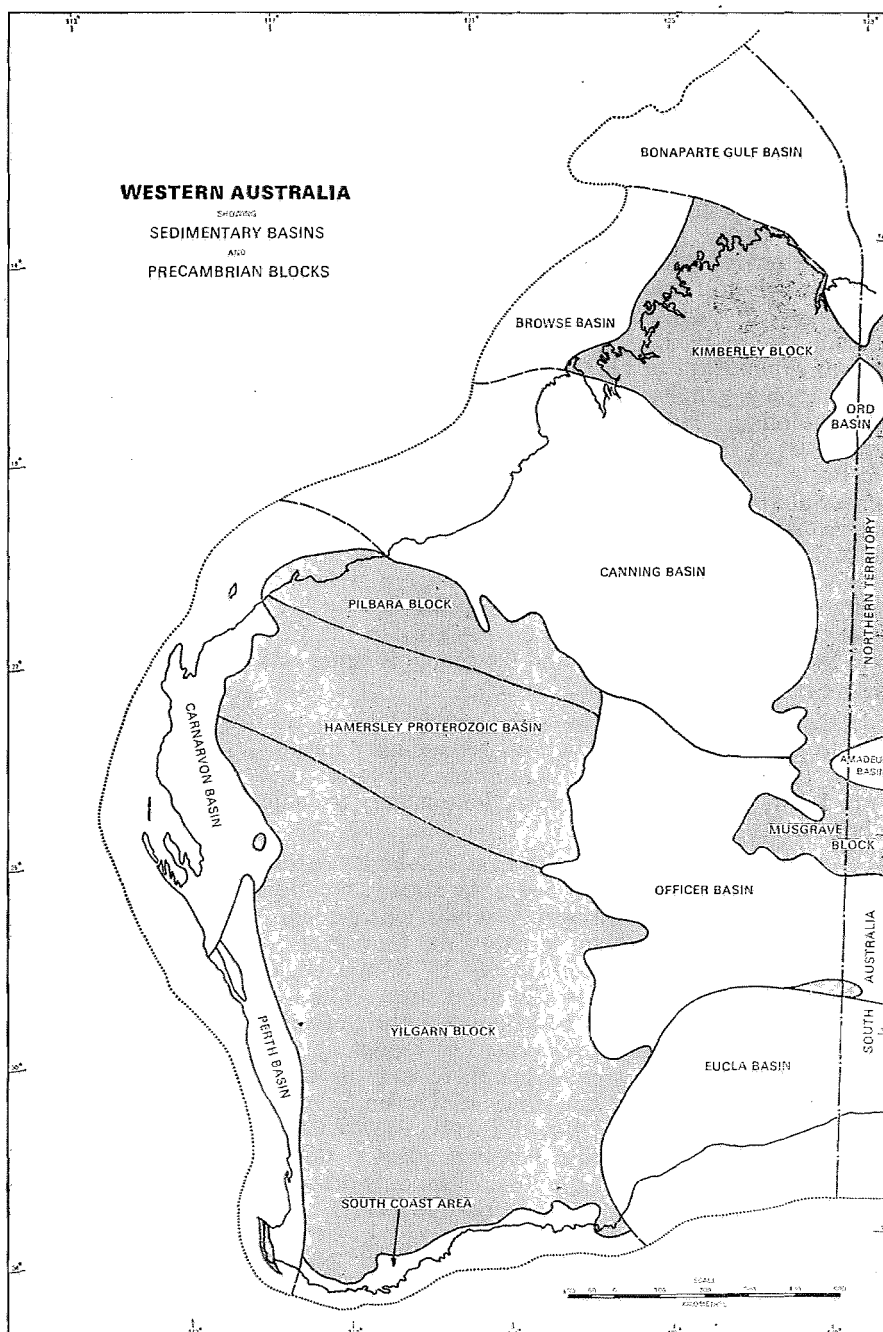
occur at nearly every mining centre. These events occurred after the folding but before Proterozoic times. Any of the Archaean rocks in Western Australia may contain ore-bodies yielding gold and other minerals of economic value. It seems likely that many of these ore-deposits were formed at the time of the Second Granite Invasion which, from radioactive age determination studies, occurred about 2,700 million years ago. Important iron-ore deposits occur in the Archaean rocks at many localities, for example at Mount Goldsworthy in the Pilbara, Talling Peak in the Yalgoo Goldfield, and Koolyanobbing, Bungalbin and many other localities in the North Yilgarn. These are all banded ironstone deposits which are interbedded with the basaltic lavas and sedimentary rocks of early Archaean age. In many places there are important manganese deposits associated with these banded iron formations. A rich nickel deposit discovered in ultrabasic Archaean rocks at Kambalda near Kalgoorlie in 1966, has now become an important source of nickel. Base metal ore deposits, such as nickel, cobalt and chromium, are generally associated with ultrabasic igneous rocks. Ultrabasic rocks are intrusive into or interbedded with the older Archaean volcanic and metasedimentary rocks of the Kalgoorlie-Yilgarn System in the country between Norseman and Laverton and, following the discovery of important nickel deposits at Kambalda and Scotia in the vicinity of Kalgoorlie and Mount Windarra near Laverton, these areas are being carefully examined to assess their prospects for nickel and other base metal deposits.

Finally, in Proterozoic times we had the deposition, under shallow-water conditions, of conglomerates, sandstones, shales and banded iron formations and another period of volcanic activity yielding basaltic lava flows. Other than in a few narrow belts these rocks have not suffered the intense earth movements which affected the older rocks, and so are practically un-metamorphosed. Important blue asbestos deposits in these rocks have been exploited at Wittenoom Gorge in the Hamersley Range of the West Pilbara. The asbestos deposits occur in banded ironstone formations which also contain large iron-ore deposits. The well-known iron-ore deposits of Cockatoo and Koolan Islands in Yampi Sound, which have been exploited since 1951, are metasedimentary deposits of Late Proterozoic age. Although the Proterozoic rocks cover extensive areas in the northern parts of the State they have largely been stripped off the southern half by erosion. The final episode in the Precambrian history of this State was the widespread intrusion of dolerite dykes approximately 550 million years ago. Small lead and copper deposits are closely associated with these dolerite intrusions in the Northampton Mining Field, where the discovery of a lead deposit at Geraldine in 1848 led, in 1852, to the first metal mining operations in Western Australia.

The Sedimentary Basins

There are five major post-Proterozoic sedimentary basins in Western Australia and the adjoining continental shelf as shown in the accompanying map—the *Bonaparte Gulf Basin* in the north-east part of the Kimberley Division extending into the Northern Territory, the *Canning Basin* of the West Kimberley, the *Carnarvon Basin* of the North-West, the *Perth Basin* extending from lat. 29° S. to lat. 33° S. and the *Eucla Basin* occupied by the Nullarbor Plain. All of these basins have offshore extensions as shown in the map on page 37. Large areas of the Central Division are covered by sediments of the *Amadeus Basin* of Central Australia and the shallow *Officer Basin*. In addition to these major basins there are smaller basins such as that at Collie and scattered areas where sediments, which are dominantly lacustrine in nature, have been deposited. In these sedimentary areas we find sediments ranging from Lower Palaeozoic to Pleistocene in age. These sediments of Palaeozoic and later age are, as a rule, less disturbed than those of Precambrian times and many are abundantly fossiliferous. Therefore, there is a sure means of correlating formations even in widely separated places, and so our knowledge of the history of these sedimentary areas is more detailed than in the much altered, highly folded, unfossiliferous Precambrian rocks of the basement.

Apart from the superficial deposits the economic significance of these basins is confined to their possibilities for the occurrence of artesian water, coal, oil and natural gas. A prime requisite for the occurrence of artesian and sub-artesian water is the occurrence



POST-PROTEROZOIC SEDIMENTARY BASINS AND PRECAMBRIAN BLOCKS OF WESTERN AUSTRALIA
(PRECAMBRIAN AREAS STIPPLED)

of interbedded strata of varying porosity and permeability. These conditions are met in a number of the sedimentary basins in Western Australia and the development of the pastoral industry in the arid or semi-arid parts of these basins has been largely dependent on the occurrence of artesian water. In the metropolitan area, artesian bores are an important source of water supplies. Coal deposits are also confined to areas of sedimentary rocks and occur in the Permian rocks of two of the minor basins, namely the *Collie* and the *Irwin River Basins*, and in the Lower Jurassic sediments of the Perth Basin (at Eneabba, where a seam thirty metres thick has been found at a depth of 1,800 metres in a borehole sunk in search for oil, and is indicated in shallow shot-holes in the Hill River area). Up to 1966 the coal deposits of the lacustrine Permian beds of the Collie Basin constituted the only power source in Western Australia, since oil of commercial significance had only then been proved and the gently undulating topography combined with low rainfall make the hydro-electric resources insignificant. So far as oil is concerned the first occurrence of flow oil in Australia was encountered in Rough Range Bore No. 1, in the Carnarvon Basin, late in 1953. This discovery of flow oil resulted in an increase in the rate of geological exploration of all the major sedimentary basins. The results of extensive geological mapping, geophysical surveys and exploratory drilling for oil have to date been rather disappointing. However, a commercial field was proved at Barrow Island off the north-west coast in 1966. Other oil occurrences have been located at various localities in the Perth Basin, e.g. in the vicinity of Dongara and this indicates the presence of suitable source material and conditions for oil formation and preservation. Moreover, oil search drilling operations have located some widely-spaced important finds of natural gas at Dongara and Gingin in the Perth Basin, and North Rankin and Goodwyn in the offshore part of the southern Canning Basin. The Dongara gasfield is now being exploited for the metropolitan area of Perth and the industrial areas further south. The possibilities of locating other commercial oilfields and gasfields in the Carnarvon, Canning and Perth Basins are by no means exhausted and the search is being actively continued both on land and offshore in the continental shelf area.

A detailed description of the sedimentary formations of different ages, from the Cambrian to the Recent, in the various sedimentary basins has been set down in 'The Stratigraphy of Western Australia' (*Journal Geological Society of Australia*, volume 4, part 2, pp. 1-161, 1958). It is proposed here merely to indicate the main features of the various basins.

The *Bonaparte Gulf Basin*, in the East Kimberley, extends into the Northern Territory and offshore below the Timor Sea. As already mentioned, this and the nearby Ord Basin are the only basins in Western Australia where rocks of proved Cambrian age are exposed. On Western Australian territory the Cambrian rocks extend as a narrow belt along the interstate border between lat. 16° 15' S. and lat. 18° 30' S., reaching westward from the border for twenty-four to 120 kilometres. The Cambrian consists of basalts at the base of the sequence, overlain by Middle Cambrian fossiliferous limestones, shales and sandstones. There is a small development of sandstones which are considered to be of Lower Ordovician age, following which there is a big time gap and the next youngest formations are sandstones and limestones of Upper Devonian and Lower Carboniferous age. Upper Carboniferous and Lower Permian formations are absent, the next marine transgression being in the Middle Permian when a thick sequence of conglomerates, sandstones, and limestones was deposited. The only other sedimentary rocks in this basin are freshwater sediments (siltstones, marls and cherts containing freshwater fossils) of late Tertiary age.

The *Canning Basin* (formerly named the Desert Artesian Basin), in the West Kimberley, extends from the coast between Derby and the De Grey River in a south-easterly direction almost to the 128° meridian. The north-east or Fitzroy part of this basin consists of a comparatively narrow and shallow section (the Lennard Shelf) flanking the Precambrian land mass to the north, and a deep trough (the Fitzroy Trough) estimated, from aeromagnetic geophysical surveys, to contain a thickness of the order of 600 metres of sedimentary strata ranging in age from Ordovician to Triassic. It was in this area that bores seeking oil were first drilled in Western Australia, following the discovery

in 1919 of traces of oil in a water bore on Gogo Station. The larger Canning Desert portion, the South Canning Basin, is covered by a relatively thin Mesozoic and Permian sequence, but geophysical work followed by some deep drilling has indicated that there are deep depressions in this area, the deepest of which is the Kidson Sub-basin, which has a basement approximately 6,000 metres below the surface.

The oldest Palaeozoic sediments in the Fitzroy portion of the basin are richly fossiliferous limestones of Ordovician age outcropping near Price's Creek. These are overlain by Devonian reef limestones, sandstones and conglomerates, followed by Carboniferous sandy limestones. These in turn are followed by a thick Permian sequence of sandstones (of marine glacial origin deposited from floating ice), fossiliferous calcareous shales and limestones, and Upper Permian fossiliferous ferruginous siltstones and sandstones. All of these formations dip gently in a general south-westerly direction towards the centre of the basin but these regional dips are interrupted by local folding. Shale and sandstone beds of Triassic age occur in the Fitzroy Trough section of the basin. The youngest rocks in this area are igneous extrusive lava flows and intrusive sheets, dykes, and volcanic necks which have been found intruding all rocks of the sequence from the Precambrian granitic basement to the youngest sediments (Triassic) present. These igneous rocks, from direct geological evidence, are of post-Triassic age, and radioactive age determinations made in 1959 indicate that they were intruded 180 million years ago (*i.e.* in Jurassic times). This is one of the two areas in the whole of Western Australia where post-Cambrian igneous activity is known. It is interesting to note the occurrence of a small lead deposit in Devonian limestone at Narlarla in the Napier Range. This is the *only* primary metallic ore deposit of post-Proterozoic age known in Western Australia and it may be genetically related to the Jurassic igneous activity or may have been deposited from sea water by organisms during Devonian times.

In the Canning Desert section of the basin the Palaeozoic rocks are not well exposed and the greater part of this portion of the basin (where not obscured by superficial unconsolidated sands) is occupied by Mesozoic sediments ranging in age from Lower Jurassic to Lower Cretaceous. The deep depressions in the floor of the South Canning Basin are filled with Palaeozoic sediments as proved by the first deep oil test well (Kidson No. 1) which was abandoned at 4,431 metres in Lower Ordovician limestone. There is no evidence in the entire basin of any marine transgression after Lower Cretaceous times.

The basin extends some 320 kilometres offshore to the coral islands of the Rowley Shoals where some wells have been sunk in the search for oil. Drilling in search of oil and gas was commenced in 1967 with Ashmore Reef Well, but there were no discoveries in the first ten wells drilled until 1971, when Scott Reef No. 1, approximately 400 kilometres north-west of Derby proved to be a major gas/condensate discovery. Subsequently, up to the present, there have been a number of major gas/condensate/oil strikes, mainly in the south-western end of the offshore Canning Basin north of the producing oil field of Barrow Island. The existence of commercial natural gas fields has now been proved, and exploratory work is continuing, directed towards discovery of further gasfields and oilfields.

The *Carnarvon Basin* (formerly called the North-West Artesian Basin) has been the most intensively studied of the major sedimentary basins in Western Australia. It extends along the west coast from Onslow near the mouth of the Ashburton River as far south as the mouth of the Murchison River, the maximum width of the basin being 200 kilometres at the latitude of Carnarvon. In this basin the eastern portion up to eighty kilometres wide is occupied by a thick sequence of marine Palaeozoic sedimentary rocks ranging in age from Middle Devonian to Upper middle Permian, all of which have a westerly regional dip. The estimated maximum thicknesses of the Palaeozoic strata are:

Permian	....	....	....	4,015 metres
Carboniferous	....	....	....	765 metres
Devonian	....	....	....	1,560 metres

This Palaeozoic sequence which consists of fossiliferous Devonian limestones and sandstones, Carboniferous limestones and Permian marine glacial beds, limestones, sandstones, and shales, is almost entirely marine in origin. In the Carnarvon Basin we

have the only wholly marine Permian sequence in Australia, and without doubt *one of the thickest marine Permian sequences in the world.*

No rocks of Silurian age were known from the western half of the Australian continent until 1957 when a bore sunk by West Australian Petroleum Pty. Ltd. at Dirk Hartog Island in Shark Bay encountered limestones of Silurian age underlain by sandstones which are now correlated with the reddish sandstones which outcrop in the lower reaches of the Murchison River.

To the west the Permian rocks are unconformably overlain by Cretaceous sandstones, shales, marls and limestones attaining a total thickness of 600 metres. It is the basal formation, the *Birdrong Sandstone*, of the Cretaceous sequence that is the oil sand encountered in Rough Range Bore No. 1. Another Cretaceous formation, the Windalia Formation, is one of the important oil reservoirs of the Barrow Island Oilfield. The Cretaceous rocks outcrop in a north-south belt averaging eighty kilometres wide between the Palaeozoic and Precambrian rocks on the east and the Tertiary limestones to the west. The only other Mesozoic formation exposed at the surface in this basin is a Jurassic sandstone eight metres thick. However, a deep well (Cape Range No. 2) drilled in search of oil at Exmouth Gulf, after passing through the base of the Cretaceous at 1,130 metres, entered the Lower Jurassic which extended to the depth of 4,624 metres at which the bore was discontinued, thus proving a thickness of at least 3,494 metres of Lower Jurassic strata in this area. It is apparent that there is a marked thickening of the Mesozoic formations from east to west in this area. The westernmost belt of the Carnarvon Basin is occupied by Tertiary strata, mainly limestones, which are well exposed in the Rough and Cape Ranges of the Exmouth Gulf area. These limestones, which range from Lower Miocene to Pliocene in age, total 365 metres in thickness and are discontinuously overlain by Pleistocene and Recent beds approximately 135 metres thick. Marine Tertiary sediments which are so well developed along the western margin of the basin extend as a thin discontinuous formation unconformably over the Permian beds of the eastern part of the basin, indicating that in Upper Eocene times the sea transgressed practically the whole of the Carnarvon Basin.

The sedimentary rocks of the Carnarvon Basin were affected by earth movements at various times. Even the youngest of the Tertiary rocks have been thrown into gentle folds which are significant so far as the search for oil is concerned because, in addition to having suitable conditions for the formation and preservation of oil, suitable structures are necessary for its concentration into local areas (oil 'pools'). So far as structure is concerned, the general picture of the Carnarvon Basin is the gentle westerly regional dip of the Palaeozoic sediments of the eastern half of the basin and the gentle dome and basin folding of the western half.

The *Perth Basin* (formerly called the Coastal Plain Artesian Basin) is a narrow elongated basin on the western border of Western Australia extending from Geraldton in the north to Cape Leeuwin in the south. At Geraldton it is forty-eight kilometres wide and is flanked both to the west and east by Precambrian crystalline rocks (mainly gneisses). The maximum width of the basin is approximately eighty kilometres at Watheroo and it narrows again to the south being approximately forty-eight kilometres wide in the sunkland between Busselton and Augusta. At this southern end it is again flanked both to the east and west by Precambrian rocks. The surface of the basin is mostly covered by Recent sands but occasional outcrops of rocks as old as the Permian occur in places. The only evidence available regarding the structure, thickness and age of the sediments in the basin is that provided by geophysical surveys, some deep bores sunk in the search for oil and a number of water bores up to 730 metres deep in the metropolitan area. Gravity surveys indicate that there is a very considerable thickness of sediments, perhaps exceeding 9,000 metres, and it is probable that in this basin we have a complete succession from the Younger Proterozoic (*Cardup Group*), which outcrops along the Darling Scarp, to the Recent sands. Other than the Proterozoic of the Darling Scarp, the oldest sediments exposed are the gently folded Permian marine sediments of the *Eradu* and *Irwin River Basins* at the north end of the main basin. The Permian sediments of the Irwin River area have a total thickness of 1,200 metres and vary from marine glacial beds at the base (as in the Carnarvon and Can-

ning Basins) through fossiliferous marine shales and limestones to lacustrine sandy sediments with coal seams in the upper part of the sequence. Marine and continental Jurassic limestones and sandstones outcrop east of Geraldton and Jurassic beds, overlain by Cretaceous chalks and greensands, occur near Gingin and Dandaragan. In the southern part of the Perth Basin the oldest rocks exposed (if we except the Permian of the separate minor *Collie Basin* which is situated well to the east of the Darling Scarp in a glacially-gouged trough) are the Cretaceous *Donnybrook Sandstones*.

In the vicinity of Perth, artesian bores to a maximum depth of 730 metres expose a sequence varying from Jurassic sandstone at depth, through Cretaceous and Paleocene shales. The *King's Park Shale* of Paleocene (older Tertiary) age is overlain by Pleistocene aeolian sandstones of the *Coastal Limestone Formation*, the base of which is approximately thirty metres below sea-level. There is therefore a big gap in the succession here between the Paleocene and Pleistocene. Many boreholes have been sunk in the north-central part of the basin in the course of oil search operations. Boreholes near the coast (at Jurien Bay and Beagle Ridge) struck Precambrian crystalline basement rocks at comparatively shallow depths of 1,024 metres and 1,481 metres. The sediments thicken further inland, as evidenced by the increasing depth to the Precambrian basement in Cadda No. 1 (2,744 metres), Woolmulla No. 1 (2,810 metres) and Arrowsmith No. 1 (3,420 metres). Very thick sedimentary sequences have been disclosed by Eneabba Bore No. 1 (which bottomed in Lower Triassic at 4,179 metres) and Gingin No. 1 (in Lower Jurassic at 4,544 metres). Some deep wells have been drilled to the south of Perth, namely Pinjarra No. 1 which bottomed in Upper Triassic sandstone at 4,572 metres; in the far south (near the south coast), Sue No. 1 which encountered Precambrian granulites at 3,054 metres; near Perth, Cockburn No. 1 which was abandoned at 3,054 metres in Lower Jurassic sandstone; Whicher No. 1, near Busselton, which reached a depth of 4,653 metres in Permian sandstone before being abandoned; and Blackwood No. 1, abandoned at 3,334 metres in Permian sediments. The first offshore well in the Perth Basin (Quinns No. 1), spudded in on 10 October 1968 at a location approximately thirty-two kilometres north of Rottnest Island, was drilled to a depth of 2,209 metres without finding hydrocarbons. Some oil was found in a second offshore well (Gage Roads No. 1), drilled to a depth of 3,660 metres, approximately fourteen kilometres north-west of Rottnest Island.

Oil search operations in the Perth Basin have led to the discovery of significant oil and gas in the vicinity of Dongara near the northern end of the Basin and gas at Gingin, about eighty kilometres north of Perth. These discoveries, now proved as gasfields, are supplying natural gas to the metropolitan area and industrial areas south as far as Pinjarra. The other materials of economic significance in the Basin are coal, artesian water, limestone from the Pleistocene Coastal Limestone which is used as a source of lime and as building stone ('Cottesloe Stone'), and sand for building material. In addition, the Coastal Limestone contains picturesque caves of tourist attraction such as those of Yanchep, Yallingup and Margaret River.

The only evidence of igneous activity in the Basin is the Cretaceous basalt of the sunland between Bunbury and Cape Gosselin on the south coast.

Very little is known about the structure of this basin. It is bounded to the east by a large fault or monoclinial fold. The evidence available indicates that the main structural character of the deeper part is a regional dip to the east (of 15° to 20°) traversed by north-south trending faults with down-throws to the west. There is an unconformity (Upper Jurassic to Lower Cretaceous) at a depth of approximately 600 metres above which the Cretaceous and Tertiary sediments are almost horizontal.

The *Eucla Basin* occupying the Nullarbor Plain, in the south-eastern corner of the State is occupied at the surface by marine fossiliferous Middle Tertiary (Miocene) limestones with a marginal belt of Lower Tertiary (Eocene) limestones. The Tertiary rocks lie on sandstones and shales of probable Cretaceous age, which in turn overlie the Precambrian crystalline rocks. Little is known of the details of the stratigraphy and structure of the Eucla Basin since the beds are very flat-lying and have only been penetrated by water bores in a few places such as Madura near the coast and Loongana on the Trans-Australian Railway. The Madura bore is artesian but bores along the Trans-Australian Railway

have only yielded sub-artesian water (*i.e.* the water will rise under pressure only part of the way to the surface). The oil prospects of this basin are poor because of the comparatively small thickness (600 metres) of the sediments and the absence of suitable folded structures to form oil traps.

The Collie Coal Basin. Of the minor basins and isolated occurrences of post-Proterozoic sediments, Collie, since it is the only operating coalfield in Western Australia, is the only one which will be considered here. It is situated approximately 160 kilometres SSE. from Perth, and has an area of about 260 square kilometres. Actually it is made up of two basins separated by a sub-surface granitic ridge. It is composed of sandstones and shales with interbedded coal seams and is surrounded by Precambrian rocks. The coal measures, of Permian age, are of the order of 600 metres in thickness of which approximately forty metres is coal. The actual contact between the Permian coal measures and the Precambrian granitic basement has nowhere been seen at the surface but has been encountered in deep drill holes in various parts of the Basin. Such drill holes reveal that Permian mudstone containing granite pebbles lies on an ice-planed surface of the Precambrian granitic rocks. This suggests that the Collie Basin, formerly considered to be a block of the Permian downfaulted into the Precambrian basement, is actually a glacially-gouged trough formed by terrestrial glaciation in the Permian and since filled with Permian lacustrine sediments. Coal occurs at three horizons and the seams, which average two metres in thickness, persist over fairly long distances. From the associated plant fossils these coal measures appear to be comparable in age with those of the upper part of the Permian sequence at the Irwin River near the northern end of the Perth Basin. There is another similar basin, containing Permian coal measures, the *Wilga Basin*, of about fifty square kilometres extent, approximately thirty-two kilometres SSE. of Collie. There may be other small glacially-gouged Permian basins in the southern part of the State, which are yet unknown.

The Superficial Deposits

Over a great part of the State fresh rock outcrops are comparatively sparse. Most of the country is covered by highly-weathered rocks, laterite, drift sand, soils, and, in the salt lake country, by thin evaporite deposits.

Laterite. In the southern half of the State the remnants of the Darling Plateau are covered by a thin layer up to three to five metres thick of a reddish-brown rock composed of spherical pebbles tightly or loosely cemented together by a lighter-coloured earthy matrix. This material in its poorly consolidated state is popularly referred to as 'iron-stone gravel' and when strongly cemented as 'ironstone'. This rock, called laterite, although it covers large areas, is purely superficial and wells or bores sunk in it pass within about a metre into highly weathered country rock which may extend down for distances up to thirty metres before encountering fresh unweathered rock. This laterite crust and the underlying highly weathered country rock were developed on a gently undulating surface during a period of warmer, more humid, climatic conditions. These tropical conditions probably existed in Late Tertiary (Pliocene) times when a great part of Western Australia had been reduced by long-continued erosion to a peneplain lying close to sea-level, or soon after, when this peneplain had been uplifted to form the *Darling Plateau*. This uplift, judged by the elevation of the laterite-capped hills and the occurrence of fossiliferous marine Eocene sediments 270 metres above sea-level at Norseman, was of the order of 300 metres. On the Great Plateau, remnants of this Darling Plateau are evidenced by the table-topped hills so characteristic of much of the Plateau country. The significance of the laterite profile and the soils developed from the laterite and associated weathered rocks has already been mentioned. Economically, the laterite is important for road-making materials and in a few places (such as Wundowie) as an iron ore. The main constituents of the laterite are the insoluble products of intense rock weathering—iron oxide, alumina and silica. In many places the alumina content is sufficiently high to call them bauxite. Bauxites are the main source of aluminium, and the bauxitic laterites of the Jarrahdale area in the Darling Range near Perth are being exploited as aluminium ore.

The mid-Tertiary land surface of the southern half of Western Australia on which the laterite profile was developed at a time when this country was subjected to a tropical climate extends into the northern part of the State. In the Hamersley Iron Province of the North-West Division this old land surface truncated the Lower Proterozoic banded iron formations of the Hamersley Group. At and below this old land surface, (the *Hamersley Surface*) which can be traced without tectonic break from sea-level to elevations of 1,200 metres, there was a secondary concentration of the iron of the Lower Proterozoic rocks resulting in extensive rich iron-ore deposits which make this area one of the richest iron provinces in the World.

In the far south-west of the State sub-surface hard pan formations consisting of ferruginous sandstone are a potential source of low-grade iron ore.

Soils and drift sands. Western Australia, an area of 2,525,500 square kilometres extending from lat. 13° 44' S. to lat. 35° 08' S., although having little variety in its broad physical features, has very considerable variation in climates from the tropical areas of summer rainfall in the north through a central and inland province of low rainfall to the temperate areas of winter rainfall in the south. Moreover, throughout this enormous area there is very considerable variation in the nature of the country rocks. The nature of the soils developed is dependent on these two factors—climate and parent rock—so it will be apparent that there will be very considerable variation in the soils over this extensive area. L. J. H. Teakle has recognised the following major soil zones of Western Australia:

1. Grey, yellow and red podsolised, or leached, soils of the temperate sclerophyll forests.
2. Red-brown earths of the eucalyptus-acacia woodlands.
3. Grey and brown calcareous, solonised soils of the low rainfall eucalyptus woodlands—('mallee' soil zone of Prescott).
4. Red and brown acidic soils of the acacia semi-desert scrub—mulga, etc.
5. Brown acidic soils of the spinifex semi-desert steppes of the North-West.
6. Pinkish-brown calcareous soils of the Nullarbor Plain desert shrub steppes.
7. Pinkish-brown calcareous soils of the acacia semi-desert scrub, mallee and salt bush-blue bush zone.
8. Brown soils of the tropical woodlands, savannahs and grasslands.
9. Red sands of the central desert sandhills—spinifex with desert acacias, desert gums and mallees (*Eucalyptus spp.*).

Each of these major soil zones may be subdivided into one or more soil regions and the reader is referred to a paper 'A Regional Classification of the Soils of Western Australia', by L. J. H. Teakle (*Jour. Soc. West. Aust. XXIV*, pp. 123-95) for details concerning the soil characteristics of these various zones and regions.

There are considerable areas of Western Australia covered by drift sand which may be in the form of parallel red sand dunes or, in the southern part of the State, extensive sandy plains. The latter have been generally considered to be residual from the weathering of granite. These sand plains are often underlain by lateritic material and they probably represent the leached zone of the laterite profile. The youngest of the drift sand deposits are the coastal sand dunes.

Coastal sand deposits are of considerable economic importance. At various places along the south and west coasts there are beach sand deposits in which there is a natural concentration of heavy minerals such as zircon, monazite, xenotime, rutile and ilmenite. Such deposits are at present being exploited at Capel and Bunbury for their ilmenite content, which is valuable because of its low chrome content. The other heavy minerals such as zircon, monazite and xenotime are also being exported overseas. Similar deposits have been discovered at Eneabba (approximately thirty-two kilometres inland at 240 kilometres north of Perth)—deposits which have been evaluated and are now being exploited

Salt lake deposits. These, together with the coastal sand deposits, represent the youngest of the geological formations developed—indeed they are in course of formation

at the present time. They are evaporite deposits resulting from the evaporation of lake waters in the areas of internal drainage. Soluble salts produced by rock weathering are leached out by rain and running water and transported by streams to these lakes. During the long dry summers most of these lakes dry up and the soluble salts are deposited, yielding accumulations of gypsum and common salt. In a few of these inland lakes hydrated potassium aluminium sulphate (alunite), which is a valuable source of potash for fertilisers, has been formed but its actual mode of formation has not yet been satisfactorily explained.

Valuable potash reserves occur at Lake MacLeod, north of Carnarvon. This 2,000-square kilometre coastal lake contains brines rich in potash salts which are the last salts to crystallise on the evaporation of sea water, saturating the mud of the lake floor. It is expected that these deposits, which will be Australia's only domestic source of potash, will soon come into production.

Solar salt (sodium chloride) is at present being produced at several localities in the North-West, such as Port Hedland, Exmouth Gulf and Shark Bay, where a combination of low-lying flat topography and shallow marine embayments (such as Useless Loop in Shark Bay) with hot dry climate resulting in high evaporation are the ideal conditions for crystallisation of sea water salts. The production of such solar salt is expected to amount to 2 million tonnes annually. In localities such as Shark Bay, where the waters are abnormally saline, other rocks—limestones—are in course of formation. The Shark Bay area has proved a very fruitful area for research on the formation of various limestones and the information being derived from the study of these presently forming rocks has helped in the interpretation of the significance of such deposits which formed in past geological times.

Conclusion

From the foregoing summary of the geology of Western Australia we see that, although nowhere do we find the complete geological succession, somewhere in the State there are deposits representative of every Period. The geological history of Western Australia begins with the basaltic igneous activity of the Early Archaean some 3,000 million years ago, followed by sedimentation, intense mountain building activity and associated granitisation and granite intrusions. In post-Archaean times there is a record of sedimentation throughout all the main geological periods. Igneous activity ceased in the Lower Palaeozoic and only re-occurred during the late Mesozoic, yielding the basaltic lavas of the far South-West and the volcanic rocks of the West Kimberley. By mid-Tertiary times much of Western Australia had been reduced by denudation to a gently undulating peneplain land surface on which, under tropical climatic conditions, there was an extensive development of laterite which in places constitutes valuable bauxite and iron-ore deposits. Geological processes are continuing and at the present day rocks and soils are still in the process of formation.

The Mineral Deposits

In the foregoing pages mention has been made in various places of the mineral deposits on which the development of Western Australia has been so dependent. These deposits are directly related to the geology—the nature of the rocks and their structural relationships—of the areas in which they occur. One would not, for example, look for coal, oil or natural gas in the crystalline Precambrian Shield, nor for gold or nickel deposits in the sedimentary basins that have been described. Moreover, in spite of the fact that the nickel deposits occur in Older Precambrian rocks, not all of these rocks are potential hosts for nickel deposits—they are only likely to occur in the ultrabasic rocks which constitute a very small fraction of 1 per cent of the Older Precambrian rocks. The tabulated statement on page 45 summarises the sequence of events represented in the geological history of Western Australia and the mineral deposits associated with each. This table, read in conjunction with a geological map of any area, will indicate the economically important deposits which could possibly occur in that particular geological environment.

GEOLOGICAL EVENTS AND MINERAL DEPOSITS IN WESTERN AUSTRALIA

Era	Main geological events	Economic mineral deposits
CAINOZOIC	15. Weathering and erosion (Present day)	Beach sand deposits, salt, gypsum, sands and clays, peat, alluvial deposits (gold, tin, etc.)
	14. Sedimentation (Pleistocene and Recent)	Ilmenite and other black sand minerals, limestone
	13. Peneplanation (mid-Tertiary) and laterite formation	Bauxite Iron and manganese ores Alluvial tin and gold Clays
	12. Sedimentation (older-Tertiary)	Artesian water
MESOZOIC	11. Sedimentation (with basalt outflows in Cretaceous)	Artesian water Oil and gas Coal Basalt for aggregate stone
PALAEOZOIC	10. Sedimentation, earth movements, periods of erosion	Coal Oil and gas
PROTEROZOIC	9. Basic igneous intrusions	Road metal (blue metal) Lead, zinc and copper
	8. Sedimentation and minor granitic magma intrusions	Iron ore (of Yampi Sound)
	7. Chemical sediments (banded iron formations)	Iron ore and blue asbestos (in Hamersley Basin)
ARCHAEAN	6. Pegmatite and quartz vein formation from end-stages of granitic intrusions	Tin, tantalum, tungsten, beryllium, lithium minerals Gold and silver in early Archaean country rocks (1 and 2)
	5. Intrusion of granitic magma (2,700 million years ago)	Aggregate and building stone
	4. Granitisation—conversion of all pre-existing rocks into granitic rocks Contemporaneous with intense folding, fracturing and metamorphism of pre-existing rocks	Aggregate and building stone
	3. Intrusion of basic magma forming stratiform layered basic/ultrabasic igneous complexes	Nickel, copper and chromium in ultrabasic rocks
	2. Sedimentation with minor periods of volcanic activity	
	1. Eruption of submarine basaltic lavas and chemical deposition of banded ferruginous cherts	Iron ore

Current Geological Investigations in Western Australia

While much is known about the geology and mineral resources of Western Australia, there is still much to be learned. The foregoing summary account of the geology of Western Australia is based on work carried out in the past, which has increased in tempo during the last decade because of the discovery of important oil, gas and metal-bearing mineral deposits.

At present, geological work in Western Australia is being carried out by the following bodies.

1. The Geological Survey Branch of the Department of Mines of Western Australia, which is engaged in regional geological mapping, special investigations of varied character concerned with groundwater resources, mineral deposits, and engineering geology problems, and problems arising daily, which require geological advice to the public. The major results of the Geological Survey's operations are published annually in the Annual Report of the Department.

ment of Mines of Western Australia, in *Bulletins* issued at irregular intervals and in four-mile scale geological maps with explanatory notes, which are also issued at irregular intervals.

2. The Geology Department of the University of Western Australia. Research projects are undertaken by members of staff and research students, varying from mapping and petrological-mineralogical projects concerned with the Precambrian rocks which make up the greater part of the State and their associated ore deposits, through petrological and palaeontological work on rocks from the various sedimentary basins, to studies of present-day marine sedimentation. The results of such investigations are published in various scientific periodicals, both in Australia and overseas.
3. Oil exploration companies. Such companies have carried out geological and geophysical surveys of the various sedimentary basins and some offshore areas, and are presently engaged in deep-drilling programmes. Attention is now being given to drilling in the offshore continental shelf areas of the Canning and Perth Basins.
4. Mineral exploration companies. Following the discovery of important nickel deposits at Kambalda and Scotia near Kalgoorlie, and, subsequently, at Mount Windarra near Laverton, and other localities, many Australian and overseas exploration companies are engaged in base metal exploration, particularly in the Norseman to Laverton belt of Precambrian greenstones.

The continued efforts of these institutions and exploration companies are daily adding much to our knowledge of the geology of the western third of the Australian continent.

Seismicity of Western Australia

It had been generally considered that Western Australia was a stable block free of seismic activity in the form of earthquakes but this idea was shattered by the occurrence, on 14 October 1968, of a major earthquake centred near Meckering, 135 kilometres inland from Perth. This earthquake completely wrecked the town and most farm houses in the vicinity; alarmed numerous residents of Perth; caused minor damage to many buildings in the Perth Metropolitan Area; was felt within a radius of about 640 kilometres; and made people realise that Western Australia was not as stable as was previously thought. Other earthquakes, such as the Meeberrie earthquake of 29 April 1941 (the most severe earthquake yet recorded on the Australian continent), have tended to pass without much notice since they either occurred in less densely populated areas or were of low intensity. Records show (according to Everingham in a report of the Bureau of Mineral Resources, Geology and Geophysics, *Seismicity of Western Australia*) that there were forty-seven Western Australian earthquakes of local magnitude greater than 3.5 (Richter scale) recorded in the period August 1959 to June 1965, and 210 less intense earthquakes during the same period.

Most of the recorded minor earthquakes have originated in the Yandanooka-Cape Riche belt of country about 480 kilometres long by forty-eight kilometres wide, which lies just within the western margin of the crystalline Precambrian Shield. Indeed, all except five of the 210 recorded minor earthquakes of the period 1959 to 1965 originated in this narrow belt which is parallel to the regional geological structure of the older Precambrian rocks of the southern half of Western Australia. It was in this belt, at Meckering, that the severe earthquake of 14 October 1968 had its origin.

The major fault structure of Western Australia is the Darling Fault which forms the western margin of the Precambrian Shield and the eastern margin of the Perth Basin. It extends meridianally from the south coast for some 965 kilometres. It is considered that the total west block downward movement on this fault has been of the order of 9,000 metres to 12,000 metres. In spite of the fact that there is a major negative gravity anomaly over the Perth Basin causing this region to be isostatically unbalanced, no earthquakes have been recorded which originated on this fault—indeed there is no geological evidence of any movement on the Darling Fault for at least 1 million years. The October 1968 movement on

the Meckering Fault indicates that the Precambrian Shield is in a state of compression and would support a hypothesis that the Darling Fault, instead of being a westerly-dipping structure with downthrow to the west as commonly thought, is more probably an easterly-dipping compression structure with the east (continental) block thrust up over the Perth Basin. This would explain the observed stability of the Perth Basin which should, according to the gravity measurements, be a very unstable area. Instead of rising, as it should because of the major negative gravity anomaly, it is being held down by the overthrust continental block.

As has been indicated, the Meckering earthquake has drawn attention to the possibility of earthquake occurrence in south Western Australia and for the necessity to consider this factor when designing large structures. Calculations have been made from records during the period 1960 to 1969 to give an approximate idea of the order of earthquake frequency in the south-west corner of the State. These have indicated that an earthquake of magnitude greater than 6.5 would occur once every fifty years, and one of magnitude greater than 5.5 every ten years, but these figures are thought to be pessimistic because records kept since 1840 suggest a lower average frequency and the data used for these calculations are swamped by the foreshocks and aftershocks of the Meckering earthquake.

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Chapter II—continued

Part 2—Climate and Meteorology ⁽¹⁾

(Contributed by the Western Australian Regional Office of the Bureau of Meteorology)

Western Australia is the largest State in the Commonwealth, extending from latitude 13° 44' S. to 35° 08' S., and from longitude 113° 09' E. to 129° E. It stretches a distance of about 2,400 kilometres in a north-south direction and about 1,600 kilometres west-east. A little more than one-third of the State lies within the tropics, while the remainder extends southward to the temperate zone.

Because of its large size and its latitudinal position, Western Australia has entirely different climates in its northern and southern parts, while in the central regions there is a gradual change from the tropical climate of the north to the typical Mediterranean climate of the south.

Most of the State is a plateau between 300 and 600 metres above mean sea-level and there are no outstanding mountain ranges. Where the edge of the plateau forms the Darling Range along the southern part of the west coast, it exerts a marked influence on the rainfall, causing a rapid increase from the coastal plain to the higher land. Elsewhere the effect of topography is less marked and its main influence is seen in the general decrease of rainfall with increasing distance from the coast.

PRESSURE SYSTEMS

Weather during the year is controlled largely by the movement of the anticyclonic belt (high pressure systems with anti-clockwise winds), which lies in an east-west direction across the continent for about six months of the year.

In winter this system moves northward, bringing clear skies with fine sunny days and easterly winds to the tropics. With this northward movement, westerly winds on the southern side of the anticyclones extend over the southern part of the State, bringing with them cool cloudy weather and rain. In mid-winter the northern fringe of the 'Roaring Forties' extends to Western Australia and there are frequent westerly gales in the south coastal belt.

These westerly winds are maintained by a series of depressions (low pressure systems with clockwise winds), which move eastward well south of the Western Australian coast, and others which originate in the Indian Ocean and move south-eastward past Cape Leeuwin. The extent to which westerlies affect the State depends largely on the intensity and the position of these depressions.

Towards the end of winter the anticyclonic belt moves southward, and the westerlies are confined more to the lower south-west and the south coastal districts. By summer the anticyclonic belt has moved so far south that its axis is off the south coast and easterly winds prevail over most of the State.

During this summer period the midday sun is at a high elevation in the tropics and the continual heating leads to the development of a monsoonal depression over this region. Wind circulation round this system causes easterlies on its southern or inland side, but in the coastal districts north-east from Onslow, and in parts of the Kimberley, westerlies prevail. Winds in both the north and the south of the State are then in the opposite direction to those prevailing during the winter.

As the sun moves northward again the anticyclonic belt follows it. The monsoonal depression over the tropics dissipates and westerlies again gradually extend northward to the southern part of the State.

(1) See *Appendix* for reference to additional information in earlier issues of the Year Book.

During the northern 'Wet' season (from about December to March), occasional cyclones, known locally as 'willy willys', bring strong winds and rain to the tropics. They originate generally in the Timor Sea or off the north-west coast and often move first in a south-westerly direction parallel to the coast and later in a south-easterly direction.

They frequently move inland between Broome and Onslow but occasionally travel further westward before curving to the south-east and moving inland over the west coast. Others fade out at sea without ever crossing the coast. Those that move inland usually commence to dissipate soon after crossing the coast, but occasionally they move right across the State, passing into the Southern Ocean and moving off towards Tasmania.

These storms are often extremely violent and have on occasions almost completely wrecked towns on the north-west coast, while a cyclone which struck a pearling fleet off the Eighty Mile Beach in 1887 caused the loss of twenty-two vessels and 140 lives.

However, despite the damage which they cause, the storms are of great benefit to the pastoral regions on account of the heavy and widespread rain which generally accompanies them. The heaviest fall ever recorded in one day in Western Australia, 747 millimetres, was received at Whim Creek from a cyclone in 1898.

RAINFALL

The moist rain-bearing winds in this State are in general from a westerly direction. The easterlies, having come from the dry inland parts of Australia, usually bring fine weather and clear skies.

Because of this the highest rainfall occurs in the winter months in the south of the State, and in the summer months in the north. In between these areas there is a gradual change from one rainfall regime to the other.

From the map on page 53, which shows the wettest six-monthly period of the year, it can be seen that the summer rainfall area extends southward from the Kimberley to the Trans-Australian Railway, where there is a rapid change to the winter rainfall regime of the south coast. However, the difference between summer and winter totals decreases southward, and the southern part of this region is one of almost uniform average rainfall.

Proceeding northward from the winter rainfall area of the south-west of the State, the wet period occurs earlier during the year. Across a belt Carnarvon-Menzies-Eucla, there is a more rapid change, and this belt divides the winter rainfall area from that which receives most of its rain in the first six months of the year. Further north, the change is more gradual but continuous and in the Kimberley most of the year's rainfall is received in the summer months which, in the southern parts of the State, are the driest of the year.

The mean annual rainfall for Western Australia is shown on the map on page 54.

The following table shows the average rainfall and number of wet days, the highest and lowest monthly totals, and the highest daily fall for various centres.

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS

(Stations are arranged from north to south in three groups: Coastal, Wheat Belt and Other Inland)

Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL													
<i>Wyndham</i> —													
Rainfall —Average (mm)	196	166	119	26	8	5	4	0.6	2	11	46	110	694
Highest (mm)	717	523	447	515	88	120	133	21	35	85	142	292	1,431
Lowest (mm)	13	14	0	0	0	0	0	0	0	0	0.8	7	365
Highest one day (mm)	308	150	318	440	63	113	86	11	35	57	85	97	440
Wet days—Average number	13	11	9	3	1	1	0	0	0	2	6	10	56
<i>Broome</i> —													
Rainfall —Average (mm)	159	144	101	30	21	23	4	3	1	0.8	13	77	577
Highest (mm)	827	599	599	259	178	247	59	95	22	10	278	368	1,094
Lowest (mm)	3	2	0	0	0	0	0	0	0	0	0	0	142
Highest one day (mm)	356	303	270	181	88	73	24	37	21	7	140	172	356
Wet days—Average number	9	9	7	2	2	2	1	0	0	0	1	5	38

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

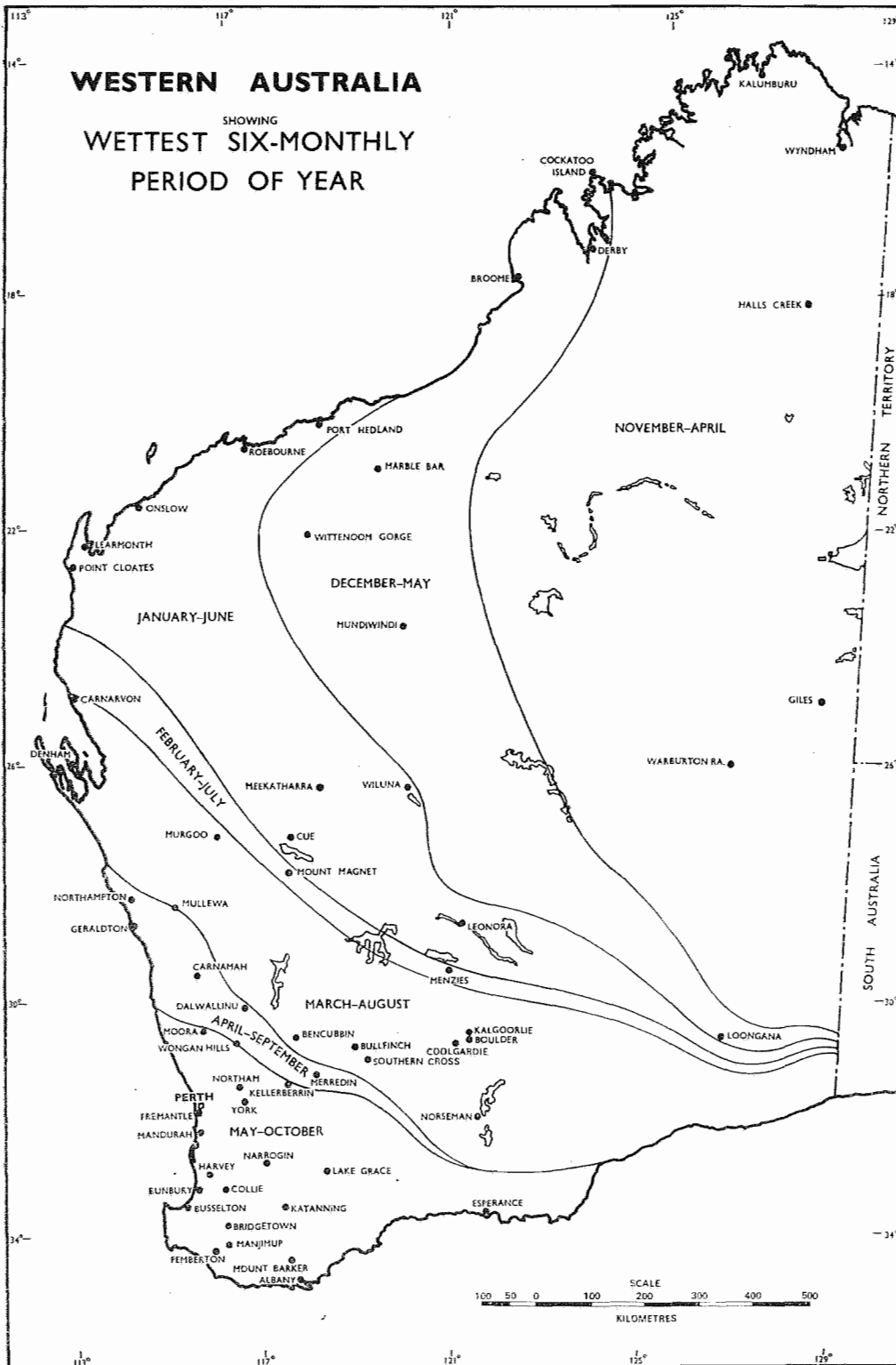
Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
<i>COASTAL—continued</i>													
<i>Port Hedland—</i>													
Rainfall—Average (mm)	53	64	85	27	26	29	11	9	1	2	3	17	327
Highest (mm)	500	364	436	278	222	177	98	148	25	33	85	260	1,020
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	32
Highest one day (mm)	152	130	283	110	162	142	47	92	22	32	77	229	283
Wet days—Average number	4	3	4	1	2	2	1	1	0	0	0	1	21
<i>Roebourne—</i>													
Rainfall—Average (mm)	64	64	65	33	30	30	13	5	1	0.8	2	9	317
Highest (mm)	368	325	408	552	225	309	135	98	40	30	30	129	1,060
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	3
Highest one day (mm)	231	169	262	291	168	117	135	44	23	29	17	97	291
Wet days—Average number	3	4	3	1	2	3	1	1	0	0	0	1	23
<i>Onslow—</i>													
Rainfall—Average (mm)	25	46	52	21	46	43	18	9	1	0.6	2	3	267
Highest (mm)	261	539	415	279	259	183	221	107	25	15	56	61	998
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	14
Highest one day (mm)	158	356	283	157	117	111	76	62	17	11	30	38	356
Wet days—Average number	2	3	3	2	4	4	2	2	0	0	0	1	24
<i>Carnarvon—</i>													
Rainfall—Average (mm)	10	19	17	15	38	60	39	18	6	4	1	4	231
Highest (mm)	156	183	132	164	203	220	151	90	24	50	19	123	619
Lowest (mm)	0	0	0	0	0	1	2	0	0	0	0	0	68
Highest one day (mm)	91	112	119	50	72	103	60	49	16	26	8	119	119
Wet days—Average number	1	2	2	2	5	7	6	5	2	1	1	1	35
<i>Geraldton—</i>													
Rainfall—Average (mm)	6	8	13	24	70	120	94	66	31	18	7	4	461
Highest (mm)	96	117	169	116	328	328	205	242	105	85	40	32	855
Lowest (mm)	0	0	0	0	4	34	18	8	0	1	0	0	240
Highest one day (mm)	79	82	94	69	78	87	51	93	43	49	36	21	94
Wet days—Average number	1	2	2	5	10	14	14	12	8	6	3	1	80
<i>Perth—Bureau—</i>													
Rainfall—Average (mm)	8	11	20	46	124	186	174	139	82	55	21	14	881
Highest (mm)	55	166	145	149	308	476	425	318	199	200	71	81	1,338
Lowest (mm)	0	0	0	0	14	55	61	12	9	1	0	0	508
Highest one day (mm)	44	87	77	67	76	99	76	74	47	50	39	47	99
Wet days—Average number	3	3	4	8	14	17	18	18	14	12	6	4	121
<i>Bunbury—</i>													
Rainfall—Average (mm)	10	11	24	46	129	186	173	127	81	55	25	14	881
Highest (mm)	86	103	91	175	266	411	417	301	201	195	84	80	1,365
Lowest (mm)	0	0	0	0	10	73	49	21	0	7	0	0	484
Highest one day (mm)	56	86	66	61	81	120	94	67	58	39	52	26	120
Wet days—Average number	3	3	4	8	14	18	20	17	14	11	6	4	124
<i>Albany—</i>													
Rainfall—Average (mm)	23	23	40	73	122	137	146	129	104	81	40	31	949
Highest (mm)	217	161	166	234	290	293	269	285	202	187	170	117	1,393
Lowest (mm)	1	0	3	5	44	40	52	50	20	14	5	2	637
Highest one day (mm)	88	57	90	74	104	72	57	52	63	47	78	60	104
Wet days—Average number	9	8	11	15	19	20	23	22	18	17	12	10	183
<i>Esperance—</i>													
Rainfall—Average (mm)	18	20	28	45	82	101	108	97	71	55	28	23	676
Highest (mm)	133	120	125	176	179	273	240	185	175	146	145	81	1,002
Lowest (mm)	0	0	0	2	20	28	24	19	11	13	0	0	438
Highest one day (mm)	70	39	44	126	52	106	55	59	116	45	51	71	126
Wet days—Average number	5	5	7	10	15	15	17	16	13	12	7	6	129
<i>Eucla—</i>													
Rainfall—Average (mm)	15	19	20	26	30	30	23	24	19	19	16	14	255
Highest (mm)	95	182	127	205	89	154	62	82	85	74	114	116	433
Lowest (mm)	0	0	0	0	0	2	3	2	0.6	0.6	0	0	112
Highest one day (mm)	54	115	51	41	33	36	26	31	40	33	28	49	115
Wet days—Average number	3	4	5	7	9	10	9	9	8	6	5	4	79

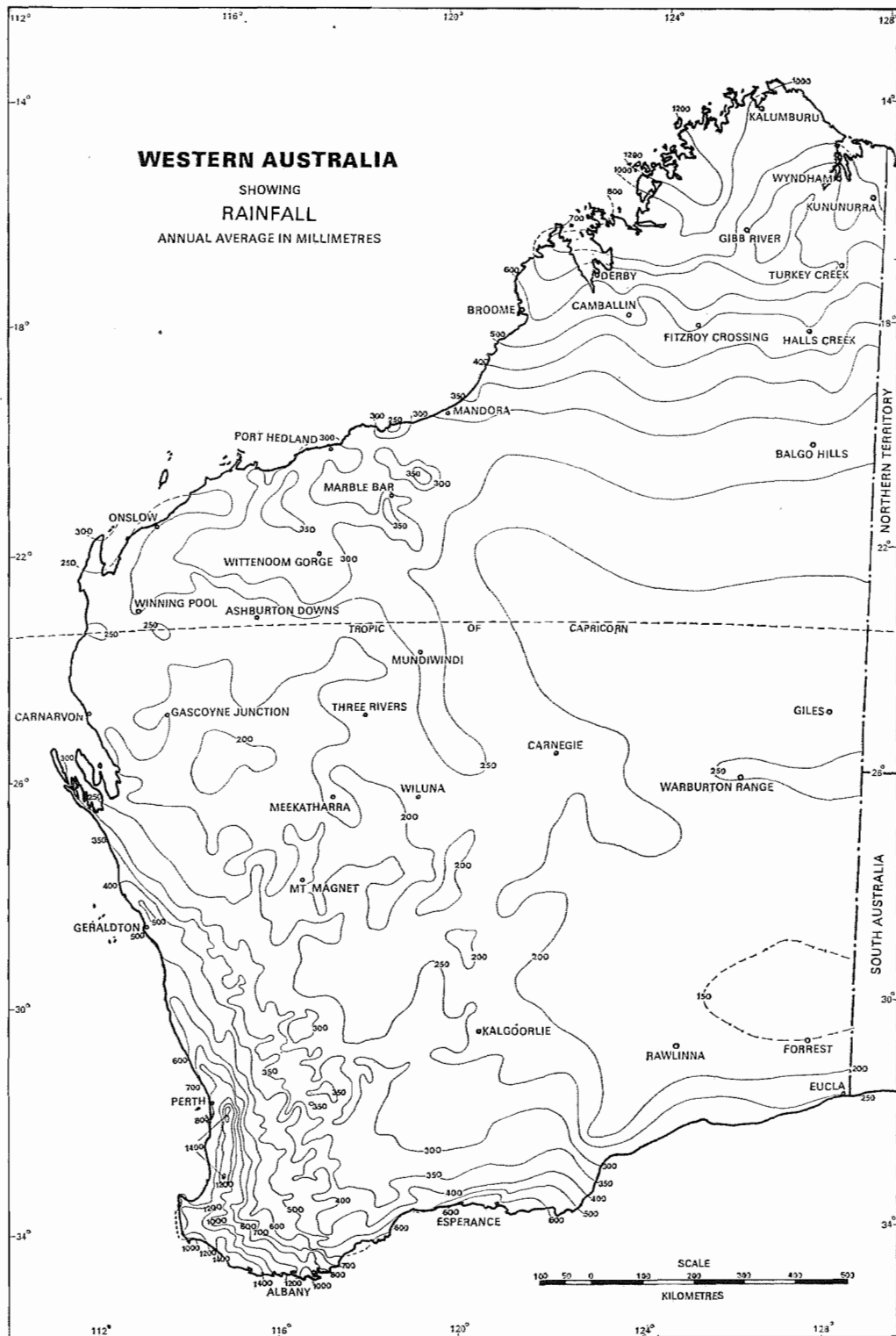
RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
WHEAT BELT													
<i>Carnamah</i> —													
Rainfall—Average (mm)	11	15	22	22	52	85	71	54	29	18	10	9	398
Highest (mm)	103	103	180	107	170	231	188	192	84	73	91	56	782
Lowest (mm)	0	0	0	0	2	21	13	12	0.6	0	0	0	204
Highest one day (mm)	97	60	153	89	74	61	43	66	33	40	71	50	153
Wet days—Average number	2	2	3	5	8	13	13	11	8	6	3	2	77
<i>Wongan Hills</i> —													
Rainfall—Average (mm)	11	14	21	22	52	80	71	52	27	20	10	10	390
Highest (mm)	70	110	166	81	188	220	175	131	97	66	43	58	675
Lowest (mm)	0	0	0	0	0.2	22	8	8	2	0	0	0	161
Highest one day (mm)	69	80	81	62	63	70	41	34	37	36	30	57	81
Wet days—Average number	2	2	3	5	8	12	13	11	8	6	3	2	72
<i>Kellerberrin</i> —													
Rainfall—Average (mm)	11	14	23	21	43	60	55	42	26	19	11	13	338
Highest (mm)	87	127	152	109	106	163	123	100	76	77	68	67	661
Lowest (mm)	0	0	0	0	0	15	10	3	2	0.2	0	0	172
Highest one day (mm)	52	108	103	58	40	53	38	40	24	43	33	57	108
Wet days—Average number	2	2	4	5	9	12	13	11	8	6	3	2	77
<i>Southern Cross</i> —													
Rainfall—Average (mm)	15	20	25	21	34	40	38	29	19	15	13	12	281
Highest (mm)	113	137	169	128	119	183	107	88	106	79	74	72	575
Lowest (mm)	0	0	0	0	0	5	11	0.6	0	0	0	0	118
Highest one day (mm)	63	84	61	44	55	43	36	30	52	55	51	40	84
Wet days—Average number	3	3	4	5	7	10	11	9	6	5	3	2	67
<i>Merredin</i> —													
Rainfall—Average (mm)	12	12	23	22	41	54	54	39	25	20	12	12	326
Highest (mm)	93	80	161	114	132	150	126	86	86	75	69	92	564
Lowest (mm)	0	0	0	0	1	6	9	1	0	0.8	0	0	130
Highest one day (mm)	66	66	83	60	49	59	46	34	45	27	37	49	83
Wet days—Average number	2	2	3	5	8	12	12	10	7	5	3	2	73
<i>Northam</i> —													
Rainfall—Average (mm)	8	12	20	23	58	85	86	62	36	25	10	9	434
Highest (mm)	56	190	189	84	148	233	221	170	129	100	41	66	711
Lowest (mm)	0	0	0	0	1	10	20	3	3	0	0	0	194
Highest one day (mm)	38	116	126	75	65	57	56	38	46	47	32	50	126
Wet days—Average number	2	2	3	6	11	15	16	14	11	8	4	2	93
<i>Wandering</i> —													
Rainfall—Average (mm)	9	14	22	34	81	123	117	95	64	44	18	14	635
Highest (mm)	56	244	122	121	195	368	324	270	192	129	65	106	1,050
Lowest (mm)	0	0	0	0	11	25	34	14	8	1	0	0	297
Highest one day (mm)	49	138	104	51	61	85	69	53	46	43	48	63	138
Wet days—Average number	3	3	5	7	13	17	18	16	14	11	6	4	116
<i>Narrogin</i> —													
Rainfall—Average (mm)	9	16	23	30	65	93	91	69	48	34	15	13	506
Highest (mm)	69	237	128	126	152	300	243	185	121	123	77	95	741
Lowest (mm)	0	0	0	0	10	25	25	16	7	2	0	0	268
Highest one day (mm)	50	115	114	63	68	71	81	42	37	35	38	50	115
Wet days—Average number	2	3	4	6	11	14	15	14	11	9	4	3	95
<i>Katanning</i> —													
Rainfall—Average (mm)	11	16	25	31	62	82	78	63	47	38	20	17	490
Highest (mm)	87	225	134	162	148	214	174	173	123	114	90	74	782
Lowest (mm)	0	0	0	0.6	7	21	22	13	4	4	0	0	272
Highest one day (mm)	64	126	70	106	59	70	46	44	37	50	55	55	126
Wet days—Average number	3	4	5	7	13	17	18	16	13	10	6	4	115
OTHER INLAND													
<i>Halls Creek</i> —													
Rainfall—Average (mm)	132	118	66	17	9	6	7	3	4	13	32	75	482
Highest (mm)	578	373	369	164	167	71	80	56	53	104	200	230	1,068
Lowest (mm)	5	3	0	0	0	0	0	0	0	0	0	3	214
Highest one day (mm)	211	130	174	147	61	31	36	52	31	36	50	91	211
Wet days—Average number	11	10	6	2	1	1	1	1	1	3	6	9	52

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
<i>OTHER INLAND—continued</i>													
<i>Marble Bar—</i>													
Rainfall —Average (mm)	71	75	51	20	24	26	12	5	1	4	9	34	332
Highest (mm)	310	235	389	241	149	165	134	34	24	116	61	243	742
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	71
Highest one day (mm)	146	121	305	136	91	105	63	32	24	84	60	150	305
Wet days—Average number	7	7	4	2	2	2	2	1	1	0	2	4	33
<i>Mundiwindi—</i>													
Rainfall —Average (mm)	44	44	45	22	22	22	8	8	4	8	11	25	263
Highest (mm)	321	325	267	180	121	205	70	53	61	93	71	160	816
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	26
Highest one day (mm)	132	71	175	60	56	123	43	39	34	53	58	114	175
Wet days—Average number	6	5	5	3	3	3	2	2	1	1	3	4	38
<i>Warburton Range—</i>													
Rainfall —Average (mm)	22	29	22	20	19	20	10	10	4	10	18	23	207
Highest (mm)	177	149	180	110	91	99	54	72	25	48	83	95	691
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	35
Highest one day (mm)	58	78	101	77	41	42	22	35	24	18	47	61	101
Wet days—Average number	4	3	3	3	3	3	2	2	1	2	3	4	35
<i>Meekatharra—</i>													
Rainfall —Average (mm)	31	28	38	22	26	29	15	15	4	4	8	11	231
Highest (mm)	214	134	209	138	131	135	64	77	36	26	78	104	516
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	49
Highest one day (mm)	88	84	103	109	77	56	34	40	34	21	82	69	109
Wet days—Average number	3	3	4	3	4	5	5	3	1	1	2	2	38
<i>Laverton—</i>													
Rainfall —Average (mm)	25	23	33	24	25	24	14	13	7	8	14	15	225
Highest (mm)	142	144	122	204	124	126	66	85	67	50	152	135	453
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	66
Highest one day (mm)	75	87	67	47	62	40	33	41	44	49	91	71	91
Wet days—Average number	3	3	4	3	5	5	4	4	2	2	3	3	41
<i>Kalgoorlie—</i>													
Rainfall —Average (mm)	16	21	27	21	27	26	22	23	11	17	14	16	241
Highest (mm)	204	314	166	103	87	77	56	81	84	80	70	65	458
Lowest (mm)	0	0	0	0	0	0	2	0	0	0	0	0	121
Highest one day (mm)	96	178	71	69	43	38	26	31	25	6	44	37	178
Wet days—Average number	3	3	4	4	5	6	7	6	4	4	3	3	51
<i>Rawlinna—</i>													
Rainfall —Average (mm)	15	16	19	18	19	19	13	15	11	13	11	15	184
Highest (mm)	210	123	85	114	81	130	53	155	85	63	81	117	497
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	79
Highest one day (mm)	100	73	47	58	31	38	25	66	72	31	65	49	100
Wet days—Average number	2	3	3	3	5	5	5	4	3	3	3	3	41
<i>Collie—</i>													
Rainfall —Average (mm)	14	14	26	50	131	196	190	146	104	71	28	17	987
Highest (mm)	77	178	105	183	263	474	440	414	248	213	89	81	1,466
Lowest (mm)	0	0	0	4	15	58	52	31	14	2	0.6	0	604
Highest one day (mm)	57	106	84	63	62	91	69	73	58	49	36	3.2	106
Wet days—Average number	4	3	5	10	17	20	22	20	17	14	8	5	146
<i>Manjimup—</i>													
Rainfall —Average (mm)	20	19	34	64	139	185	181	151	110	82	45	26	1,056
Highest (mm)	81	117	138	194	269	332	320	323	257	166	121	78	1,762
Lowest (mm)	0	0	0.6	9	26	86	43	49	24	9	3	0	650
Highest one day (mm)	46	44	89	77	79	83	50	54	59	43	49	32	89
Wet days—Average number	5	5	7	11	17	20	21	20	16	14	10	7	154
<i>Pemberton—</i>													
Rainfall —Average (mm)	21	17	45	88	160	215	228	169	123	94	57	41	1,258
Highest (mm)	147	88	132	213	338	373	397	399	218	194	158	96	1,752
Lowest (mm)	1	1	3	10	36	118	130	84	49	13	6	3	801
Highest one day (mm)	64	34	79	81	79	63	71	46	41	53	56	41	81
Wet days—Average number	6	6	8	13	17	20	22	20	18	16	12	9	167
<i>Mount Barker—</i>													
Rainfall —Average (mm)	22	24	38	57	86	102	106	93	83	73	41	30	755
Highest (mm)	179	178	128	234	243	209	261	173	157	160	155	87	1,099
Lowest (mm)	1	0.8	4	4	16	43	22	33	18	16	3	1	429
Highest one day (mm)	105	72	49	139	69	52	72	66	44	54	64	44	139
Wet days—Average number	8	7	10	13	17	20	21	20	18	16	11	10	171





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Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL—continued													
Port Hedland—													
Temperature:													
Mean max., °C	34.6	34.8	35.2	34.1	30.1	26.8	26.3	27.9	30.5	32.1	34.0	34.6	31.7
Mean min., °C	26.3	26.2	25.3	21.8	17.6	14.4	13.1	14.7	16.9	20.1	23.1	25.3	20.4
Highest max., °C	47.2	46.5	43.3	45.0	38.3	34.4	34.3	35.7	38.9	43.3	45.0	47.8	47.8
Lowest min., °C	15.6	20.0	19.3	12.8	8.3	5.7	5.6	6.9	7.2	13.9	15.6	19.4	5.6
No. of days 32.2°C and over	28.1	25.9	29.6	24.3	8.2	0.3	0.4	4.3	15.3	20.5	23.3	27.7	207.9
No. of days 37.8°C and over	8.8	6.1	13.7	4.4	0.0	0.0	0.0	0.0	0.3	4.3	7.4	10.7	55.7
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Roebourne—													
Temperature:													
Mean max., °C	38.2	38.3	36.9	34.4	30.1	26.3	26.1	27.7	32.0	34.7	38.1	38.7	33.5
Mean min., °C	26.2	26.3	25.2	21.4	17.8	13.6	13.0	14.2	16.4	19.2	22.9	24.8	20.2
Highest max., °C	47.8	46.7	45.2	43.2	37.8	34.3	32.8	36.1	41.6	45.0	45.8	47.6	47.8
Lowest min., °C	19.2	12.8	17.2	14.3	8.2	4.4	5.0	6.7	8.9	12.8	9.4	11.7	4.4
No. of days 32.2°C and over	29.8	26.3	27.9	24.1	7.2	0.2	0.2	3.3	15.2	23.3	28.1	30.5	216.1
No. of days 37.8°C and over	17.7	15.0	15.9	4.7	0.0	0.0	0.0	0.0	0.8	5.9	16.2	19.4	95.6
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Onslow—													
Temperature:													
Mean max., °C	35.8	35.8	35.2	33.3	29.1	25.6	25.2	26.7	29.5	31.6	34.2	35.2	31.4
Mean min., °C	23.4	23.7	23.1	19.5	15.7	12.5	10.8	11.9	13.8	16.1	19.1	21.4	17.6
Highest max., °C	47.7	48.3	46.4	43.8	38.3	32.2	32.3	35.3	38.3	44.6	46.1	47.5	48.3
Lowest min., °C	15.8	16.6	14.7	10.0	5.6	2.9	3.1	4.4	5.5	7.4	10.0	12.5	2.9
No. of days 32.2°C and over	25.8	24.1	27.8	16.7	2.8	0.1	0.0	0.8	5.2	13.3	19.1	25.2	160.9
No. of days 37.8°C and over	9.1	7.0	8.8	1.5	0.0	0.0	0.0	0.0	0.2	2.0	5.7	9.8	44.1
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carnarvon—													
Temperature:													
Mean max., °C	30.7	31.2	30.5	29.1	25.7	23.2	22.1	22.8	24.1	25.2	27.4	29.0	26.8
Mean min., °C	22.3	22.4	22.0	18.8	14.9	12.2	10.9	11.9	14.0	16.2	18.8	20.7	17.1
Highest max., °C	46.7	45.8	44.9	41.0	38.0	32.3	30.4	32.3	36.2	40.3	42.8	45.0	46.7
Lowest min., °C	14.4	16.2	13.8	8.3	6.0	2.8	2.8	3.6	5.6	8.9	10.2	14.1	2.8
No. of days 32.2°C and over	8.0	9.8	11.3	7.0	0.4	0.0	0.0	0.1	0.9	2.1	2.5	3.6	45.7
No. of days 37.8°C and over	3.4	3.8	3.7	1.3	0.0	0.0	0.0	0.0	0.4	0.5	0.9	14.0	14.0
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geraldton—													
Temperature:													
Mean max., °C	29.2	29.6	28.7	26.9	23.4	20.9	19.8	20.4	21.9	23.1	25.8	27.8	24.8
Mean min., °C	19.1	19.2	18.3	16.1	13.8	12.1	10.9	11.2	11.7	13.0	15.6	17.4	14.8
Highest max., °C	47.7	46.4	44.3	39.4	34.8	28.8	27.7	31.6	35.8	40.3	42.7	45.0	47.7
Lowest min., °C	8.9	10.6	8.3	5.4	3.7	0.8	0.8	1.7	1.8	3.3	6.7	7.7	0.8
No. of days 32.2°C and over	8.2	9.8	9.8	3.9	1.1	0.0	0.0	0.0	0.1	1.3	4.9	5.0	44.1
No. of days 37.8°C and over	3.4	3.5	2.1	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.9	1.8	12.1
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.4
Perth—													
Temperature:													
Mean max., °C	29.4	29.7	27.7	24.4	20.6	18.1	17.2	17.8	19.3	21.1	24.5	27.3	23.1
Mean min., °C	17.6	17.7	16.4	14.0	11.5	9.9	8.8	9.0	10.1	11.4	13.8	16.0	13.1
Highest max., °C	43.7	44.6	41.3	37.6	32.4	27.6	24.7	27.8	32.7	37.3	40.3	42.3	44.6
Lowest min., °C	9.2	8.7	7.7	4.1	1.3	1.6	1.2	1.9	2.6	4.2	5.6	8.6	1.2
No. of days 32.2°C and over	8.8	8.2	5.5	1.2	0.0	0.0	0.0	0.0	0.0	0.3	2.2	5.6	31.8
No. of days 37.8°C and over	1.6	1.8	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	5.0
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2
Bunbury—													
Temperature:													
Mean max., °C	27.8	27.7	26.1	23.6	20.1	17.8	16.9	17.3	18.6	20.1	23.6	26.1	22.1
Mean min., °C	15.1	15.1	13.9	12.0	10.4	9.2	8.4	8.6	9.3	10.2	12.2	13.8	11.5
Highest max., °C	41.2	40.1	38.3	33.9	28.7	25.1	22.3	24.2	28.8	33.6	37.7	38.6	41.2
Lowest min., °C	5.6	5.2	4.1	2.6	0.1	0.6	2.2	0.6	1.1	0.6	4.0	3.6	2.2
No. of days 32.2°C and over	4.2	3.2	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.1	10.5
No. of days 37.8°C and over	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.1	0.4	0.3	0.2	0.3	0.3	0.0	0.0	1.6
Albany—													
Temperature:													
Mean max., °C	23.2	23.4	22.4	21.3	18.8	16.8	16.1	16.5	17.6	18.7	20.7	22.2	19.8
Mean min., °C	14.7	14.9	14.2	12.5	10.4	8.8	7.9	8.1	9.1	10.0	12.0	13.6	11.3
Highest max., °C	41.7	44.8	40.8	37.7	35.2	24.6	23.1	27.2	30.6	36.2	41.1	41.1	44.8
Lowest min., °C	5.7	5.0	3.7	4.2	1.7	1.7	0.1	1.3	1.1	2.3	4.8	5.1	0.1
No. of days 32.2°C and over	0.8	0.3	0.9	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.9	4.0
No. of days 37.8°C and over	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—continued

Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL—continued													
<i>Esperance—</i>													
Temperature:													
Mean max., °C	24.8	25.3	24.1	22.3	19.7	17.6	16.7	17.5	19.1	20.2	22.2	23.6	21.1
Mean min., °C	15.5	15.7	14.9	12.4	10.2	8.2	7.4	7.6	8.8	10.2	12.4	14.2	11.4
Highest max., °C	47.2	44.1	43.6	38.9	33.1	27.2	26.0	31.5	35.6	39.9	42.2	44.4	47.2
Lowest min., °C	4.9	4.9	3.9	3.1	1.7	0.0	-0.6	-0.8	1.3	1.0	3.3	4.4	-0.8
No. of days 32.2°C and over	3.1	3.1	2.6	0.8	0.1	0.0	0.0	0.0	0.1	0.6	1.6	2.5	14.5
No. of days 37.8°C and over	1.2	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.8	3.8
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.1	0.8	0.9	0.5	0.2	0.0	0.0	0.0	2.5
<i>Eucla—</i>													
Temperature:													
Mean max., °C	25.7	25.8	25.3	23.8	21.4	18.7	18.1	19.4	21.2	22.7	23.7	25.0	22.6
Mean min., °C	16.9	17.2	16.1	13.5	10.4	8.0	6.8	7.3	8.8	11.1	13.6	15.4	12.1
Highest max., °C	50.7	48.9	44.4	41.4	35.8	33.3	32.1	34.9	40.0	43.1	46.7	49.3	50.7
Lowest min., °C	7.2	6.6	4.6	4.4	0.6	-2.2	-2.2	-1.6	-0.6	-0.3	2.8	3.3	-2.2
No. of days 32.2°C and over	3.0	3.0	4.0	2.0	1.0	0.0	0.0	0.0	1.0	4.0	4.0	4.0	26.0
No. of days 37.8°C and over	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	3.0	12.0
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.0	1.0	3.0	2.0	0.0	0.0	0.0	0.0	6.0
WHEAT BELT													
<i>Carnamah—</i>													
Temperature:													
Mean max., °C	35.4	35.2	31.9	27.9	22.3	19.6	17.9	19.4	22.0	25.5	29.6	32.7	26.6
Mean min., °C	17.5	17.6	15.8	13.3	9.8	8.5	7.1	7.0	7.5	9.7	12.6	15.1	11.8
Highest max., °C	45.6	45.6	43.9	38.9	34.4	27.8	27.8	29.4	35.1	40.0	43.1	44.1	45.6
Lowest min., °C	5.1	6.9	6.7	1.7	1.1	0.0	0.6	0.7	1.0	1.1	2.3	6.7	0.0
No. of days 32.2°C and over	23.8	22.2	18.7	6.5	0.0	0.0	0.0	0.0	0.6	3.5	8.8	16.8	100.9
No. of days 37.8°C and over	12.2	9.4	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	5.9	33.4
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.1	0.5	0.8	0.8	0.3	0.0	0.0	0.0	2.5
<i>Wongan Hills—</i>													
Temperature:													
Mean max., °C	33.7	32.4	31.1	25.8	19.6	16.9	15.8	16.6	20.3	23.1	26.8	29.8	24.3
Mean min., °C	17.3	17.2	16.2	13.1	9.2	7.3	5.4	5.4	7.6	8.8	11.1	13.9	11.1
Highest max., °C	44.4	43.9	42.5	37.0	31.8	23.4	24.6	26.4	32.4	37.5	40.1	44.2	44.4
Lowest min., °C	8.8	9.5	5.6	2.8	1.2	0.6	0.1	-0.3	0.2	1.7	4.3	5.3	-0.3
No. of days 32.2°C and over	18.3	15.5	14.5	2.7	0.0	0.0	0.0	0.0	0.0	1.0	5.2	10.7	67.9
No. of days 37.8°C and over	6.7	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.7	13.9
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.2	0.8	2.5	2.7	1.1	0.0	0.0	0.0	7.3
<i>Kellerberrin—</i>													
Temperature:													
Mean max., °C	33.9	33.5	30.2	26.2	20.7	17.4	16.3	17.8	21.2	24.5	29.4	32.5	25.3
Mean min., °C	16.4	16.3	14.9	11.2	8.1	6.4	5.3	5.5	6.6	8.8	12.5	14.9	10.6
Highest max., °C	46.1	46.7	44.4	39.2	35.6	26.9	24.4	28.1	36.5	39.4	43.1	45.0	46.7
Lowest min., °C	7.2	6.1	4.8	1.1	-2.2	-3.1	-3.3	-2.4	-1.1	0.3	1.7	5.6	-3.3
No. of days 32.2°C and over	19.9	16.7	11.3	2.7	0.2	0.0	0.0	0.0	0.2	1.8	8.5	15.0	76.3
No. of days 37.8°C and over	6.9	5.5	1.8	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.4	4.6	20.4
No. of days 2.2°C and under	0.0	0.0	0.0	0.1	2.4	4.6	7.4	7.0	3.4	0.6	0.0	0.0	25.5
<i>Southern Cross—</i>													
Temperature:													
Mean max., °C	34.6	33.9	30.6	26.1	20.8	17.2	16.5	18.2	22.2	25.4	30.3	33.5	25.8
Mean min., °C	16.8	16.8	14.7	10.9	7.3	5.3	3.9	4.6	6.2	8.8	12.8	15.5	10.3
Highest max., °C	46.1	47.2	44.4	39.6	33.3	27.5	26.7	29.9	34.8	39.3	43.4	45.9	47.2
Lowest min., °C	5.6	5.6	3.4	-1.1	-3.3	-4.3	-5.0	-3.9	-3.3	-0.8	2.0	4.9	-5.0
No. of days 32.2°C and over	21.5	17.3	12.7	3.2	0.0	0.0	0.0	0.0	0.4	2.7	10.6	18.5	86.9
No. of days 37.8°C and over	9.1	7.2	2.5	0.1	0.0	0.0	0.0	0.0	0.0	0.1	2.0	6.4	27.4
No. of days 2.2°C and under	0.0	0.0	0.0	0.6	2.4	7.1	8.6	9.6	3.5	0.4	0.0	0.0	32.2
<i>Merredin—</i>													
Temperature:													
Mean max., °C	33.8	33.1	29.9	25.1	20.0	16.7	15.6	17.1	20.7	24.1	28.5	31.7	24.7
Mean min., °C	16.8	16.7	15.2	11.6	7.9	6.2	4.7	4.6	5.8	8.3	12.1	14.9	10.4
Highest max., °C	45.0	44.4	43.1	38.8	34.2	27.4	25.2	27.9	33.7	39.2	41.7	44.5	45.0
Lowest min., °C	7.5	6.1	5.1	-1.2	-3.9	-2.8	-3.7	-3.4	-2.5	-1.2	0.6	5.0	-3.9
No. of days 32.2°C and over	19.8	16.1	10.6	1.7	0.0	0.0	0.0	0.0	0.1	1.5	7.1	14.0	70.9
No. of days 37.8°C and over	6.2	5.0	1.4	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.7	3.5	17.0
No. of days 2.2°C and under	0.0	0.0	0.0	0.4	1.4	4.2	6.5	8.7	4.2	0.8	0.0	0.0	26.2
<i>Northam—</i>													
Temperature:													
Mean max., °C	33.8	33.5	30.3	26.2	20.8	17.5	16.6	17.7	20.6	23.4	28.7	32.0	25.1
Mean min., °C	17.1	17.1	15.4	11.8	8.5	6.5	5.4	5.8	7.2	9.1	12.8	15.6	11.0
Highest max., °C	46.2	46.7	43.9	39.4	35.1	27.2	24.4	28.0	34.6	39.4	44.1	45.6	46.7
Lowest min., °C	7.3	7.5	5.5	0.6	-2.7	-3.9	-2.1	-1.1	-0.9	0.4	3.0	5.6	-3.9
No. of days 32.2°C and over	20.2	17.3	11.7	3.2	0.1	0.0	0.0	0.0	0.1	1.3	7.1	15.0	76.0
No. of days 37.8°C and over	7.3	5.9	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1	4.5	21.3
No. of days 2.2°C and under	0.0	0.0	0.0	0.2	1.1	4.7	5.5	6.2	2.0	0.2	0.0	0.0	19.9

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—continued

Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
WHEAT BELT—continued													
<i>Wandering—</i>													
Temperature:													
Mean max., °C	31.3	30.7	27.8	23.8	18.8	15.8	15.1	15.8	18.3	20.9	26.1	29.4	22.8
Mean min., °C	13.6	13.3	12.0	8.6	6.4	4.7	3.9	4.1	5.2	6.6	9.4	11.9	8.3
Highest max., °C	45.6	43.8	41.9	36.1	33.2	25.0	22.1	26.1	30.0	36.9	39.7	42.8	45.6
Lowest min., °C	3.3	2.8	0.6	2.2	5.6	5.7	4.4	3.9	2.8	2.2	1.7	1.7	5.7
No. of days 32.2°C and over	15.2	12.0	9.3	1.3	0.0	0.0	0.0	0.0	0.0	0.4	2.3	7.4	47.9
No. of days 37.8°C and over	3.7	2.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	8.0
No. of days 2.2°C and under	0.0	0.0	0.0	1.3	7.9	9.8	9.9	9.5	9.4	5.3	1.0	0.3	54.4
<i>Narrogin—</i>													
Temperature:													
Mean max., °C	30.8	30.1	27.2	22.9	18.1	15.1	14.3	15.2	17.8	20.7	25.6	28.8	22.2
Mean min., °C	13.6	13.6	12.4	10.1	7.6	6.2	5.1	5.1	5.8	6.9	9.5	11.7	8.9
Highest max., °C	43.7	42.8	40.9	35.6	32.2	26.2	21.2	24.9	30.4	37.8	39.7	43.2	43.7
Lowest min., °C	4.3	3.9	3.3	0.0	1.4	2.2	2.7	2.7	3.1	1.7	0.0	1.8	3.1
No. of days 32.2°C and over	11.5	9.0	4.3	0.6	0.0	0.0	0.0	0.0	0.0	0.2	2.6	7.2	35.4
No. of days 37.8°C and over	2.1	1.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.9	5.3
No. of days 2.2°C and under	0.0	0.0	0.0	0.4	2.4	3.8	6.6	6.5	6.9	3.4	0.9	0.1	31.0
<i>Katanning—</i>													
Temperature:													
Mean max., °C	30.0	29.5	26.3	22.9	18.2	15.4	14.4	15.3	17.8	20.4	25.3	28.2	22.0
Mean min., °C	13.5	13.6	12.6	10.2	8.1	6.4	5.5	5.6	6.5	7.6	10.1	12.1	9.3
Highest max., °C	43.8	44.6	41.7	35.7	32.3	24.1	21.7	31.1	30.6	37.8	41.1	43.3	44.6
Lowest min., °C	5.0	3.3	1.7	0.6	1.1	2.1	3.9	2.2	1.2	0.6	1.7	3.1	3.9
No. of days 32.2°C and over	12.3	7.5	5.3	1.1	0.0	0.0	0.0	0.0	0.0	0.3	2.0	5.9	34.4
No. of days 37.8°C and over	2.6	1.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	5.2
No. of days 2.2°C and under	0.0	0.0	0.0	0.2	1.8	3.6	4.4	4.5	2.8	1.1	0.2	0.0	18.6
OTHER INLAND													
<i>Halls Creek—</i>													
Temperature:													
Mean max., °C	36.4	36.1	35.3	33.5	29.8	27.0	26.7	29.9	33.7	36.8	38.1	37.5	33.4
Mean min., °C	24.1	23.4	21.8	17.2	13.3	10.3	8.7	11.2	15.0	20.8	23.4	24.2	17.8
Highest max., °C	44.3	43.8	41.9	39.9	37.2	35.0	34.0	37.8	40.2	42.8	43.7	44.2	44.3
Lowest min., °C	15.2	12.2	11.0	7.2	2.4	0.2	1.1	0.4	3.0	8.9	11.7	12.1	1.1
No. of days 32.2°C and over	28.5	24.8	29.1	22.7	9.5	0.8	1.3	7.3	23.2	29.2	29.7	29.0	235.1
No. of days 37.8°C and over	17.8	8.5	9.6	1.6	0.0	0.0	0.0	0.0	0.7	12.7	17.6	19.2	87.7
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.0	0.0	0.0	0.0	0.0	1.1
<i>Marble Bar—</i>													
Temperature:													
Mean max., °C	41.2	40.8	39.4	36.1	31.1	27.2	27.0	29.9	34.3	37.8	41.1	41.9	35.7
Mean min., °C	26.1	25.9	24.9	20.8	16.3	12.6	11.3	13.7	16.5	20.4	24.0	25.6	19.8
Highest max., °C	49.2	48.3	46.7	45.0	39.4	33.9	35.0	37.2	42.6	45.6	47.2	48.3	49.2
Lowest min., °C	18.9	13.9	15.3	11.1	5.6	1.1	2.2	3.9	5.6	10.0	14.4	17.2	1.1
No. of days 32.2°C and over	30.3	26.5	28.8	26.0	10.1	0.5	0.8	7.3	22.6	26.3	30.0	30.5	239.7
No. of days 37.8°C and over	27.9	22.1	18.9	8.8	0.2	0.0	0.0	0.0	2.0	12.6	24.2	28.7	145.4
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.0	0.0	0.0	0.0	1.0
<i>Mundiwindi—</i>													
Temperature:													
Mean max., °C	38.1	37.1	34.4	30.4	25.4	21.3	21.1	23.7	28.4	31.9	35.7	37.7	30.4
Mean min., °C	23.1	22.6	20.6	15.7	10.7	6.3	5.2	7.2	10.7	14.8	19.3	21.8	14.8
Highest max., °C	44.6	44.4	42.3	40.6	36.4	29.8	30.6	37.2	37.2	41.4	43.3	44.4	44.6
Lowest min., °C	13.9	12.8	9.4	3.9	1.7	4.4	5.3	3.6	1.7	3.3	7.8	11.7	5.3
No. of days 32.2°C and over	29.3	25.3	25.4	11.6	0.6	0.0	0.0	0.4	5.6	15.9	25.3	29.1	168.5
No. of days 37.8°C and over	20.3	15.7	10.2	0.2	0.0	0.0	0.0	0.0	0.0	1.3	9.8	19.9	77.4
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.6	5.6	7.3	3.7	0.2	0.0	0.0	0.0	17.4
<i>Warburton Range—</i>													
Temperature:													
Mean max., °C	36.7	36.1	33.6	28.6	23.1	20.6	20.1	22.3	26.9	30.0	32.9	36.1	28.9
Mean min., °C	22.1	21.4	19.9	14.8	9.7	6.4	5.6	7.2	10.6	13.9	17.6	20.8	14.2
Highest max., °C	46.6	46.9	43.4	40.4	33.3	32.3	31.7	34.3	39.9	42.7	44.4	46.3	46.9
Lowest min., °C	10.0	9.1	9.6	1.8	1.1	2.6	4.1	2.2	1.1	4.1	7.2	9.4	4.1
No. of days 32.2°C and over	26.0	23.0	22.0	7.0	0.0	0.0	0.0	0.0	6.0	13.0	19.0	26.0	142.0
No. of days 37.8°C and over	16.0	13.0	9.0	1.0	0.0	0.0	0.0	0.0	0.0	2.0	3.0	14.0	63.0
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	1.0	4.0	6.0	5.0	0.0	0.0	0.0	0.0	16.0
<i>Meekatharra—</i>													
Temperature:													
Mean max., °C	38.0	37.6	34.4	29.8	24.4	20.3	19.7	21.8	25.9	29.3	33.8	36.8	29.3
Mean min., °C	22.8	22.8	20.8	16.1	11.4	7.9	6.7	8.1	10.6	13.8	18.2	21.1	15.0
Highest max., °C	45.0	45.6	43.1	40.1	34.7	29.4	27.2	31.7	36.1	39.4	42.8	43.5	45.6
Lowest min., °C	14.4	12.3	11.2	7.8	0.6	3.1	0.0	1.1	1.1	4.6	6.1	11.1	3.1
No. of days 32.2°C and over	28.8	24.3	21.7	9.8	0.3	0.0	0.0	0.1	1.8	8.3	17.9	25.6	138.6
No. of days 37.8°C and over	18.6	13.7	6.2	0.3	0.0	0.0	0.0	0.0	0.0	0.4	3.5	10.6	53.3
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.2	0.9	1.3	0.1	0.0	0.0	0.0	0.0	2.5

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
OTHER INLAND—continued													
<i>Laverton—</i>													
Temperature:													
Mean max., °C	35.8	35.0	31.8	27.3	22.1	18.3	17.8	20.1	24.6	27.8	32.0	34.9	27.3
Mean min., °C	20.4	20.1	18.0	13.8	9.4	6.4	5.2	6.5	9.6	12.6	16.6	19.3	13.2
Highest max., °C	46.1	46.1	44.4	40.0	35.0	30.2	30.1	33.9	36.8	40.6	43.9	45.6	46.1
Lowest min., °C	10.0	7.5	6.1	2.8	-0.9	-2.8	-4.2	-2.8	-1.1	2.2	4.4	10.0	-4.2
No. of days 32.2°C and over	24.0	20.0	15.0	5.0	0.0	0.0	0.0	0.0	2.0	7.0	16.0	23.0	112.0
No. of days 37.8°C and over	12.0	10.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	5.0	10.0	42.0
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	1.0	4.0	6.0	4.0	0.0	0.0	0.0	0.0	15.0
<i>Kalgoorlie—</i>													
Temperature:													
Mean max., °C	34.0	33.9	30.2	25.8	21.2	17.6	16.9	18.9	23.1	26.1	30.2	32.8	25.9
Mean min., °C	17.9	18.0	16.3	12.9	9.4	6.9	6.1	6.6	9.0	11.5	14.6	16.8	12.2
Highest max., °C	45.8	46.1	43.9	39.2	33.3	27.7	27.2	30.6	35.6	39.7	43.7	45.0	46.1
Lowest min., °C	8.4	8.9	5.3	2.8	1.4	-0.6	-1.1	-1.7	-0.2	-0.8	3.4	7.8	-1.7
No. of days 32.2°C and over	18.8	12.9	10.8	2.9	0.1	0.0	0.0	0.0	0.4	2.9	7.4	14.8	71.0
No. of days 37.8°C and over	7.5	4.3	2.7	0.3	0.0	0.0	0.0	0.0	0.0	0.1	1.3	3.9	20.1
No. of days 2.2°C and under	0.0	0.0	0.0	0.1	0.3	1.8	3.9	3.6	0.3	0.0	0.0	0.0	10.0
<i>Rawlinna—</i>													
Temperature:													
Mean max., °C	32.2	32.1	29.1	25.6	21.8	18.5	17.9	19.6	23.6	26.1	29.1	31.6	25.6
Mean min., °C	14.9	15.1	14.3	11.2	8.0	5.3	4.1	5.1	7.4	9.7	12.3	14.2	10.1
Highest max., °C	47.8	46.4	44.4	40.0	35.0	31.3	29.4	33.9	39.3	41.7	44.6	45.7	47.8
Lowest min., °C	5.6	5.0	6.1	1.7	0.0	-1.6	-2.3	-3.2	-0.2	0.7	2.4	5.1	-3.2
No. of days 32.2°C and over	14.8	10.8	10.3	2.8	0.5	0.0	0.0	0.0	1.7	3.6	7.9	13.3	65.7
No. of days 37.8°C and over	6.8	3.5	3.2	0.2	0.0	0.0	0.0	0.0	0.1	0.8	2.5	5.7	22.8
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	1.2	3.5	5.3	4.4	0.8	0.2	0.0	0.0	15.4
<i>Collie—</i>													
Temperature:													
Mean max., °C	30.2	29.8	26.9	23.5	18.8	16.3	15.4	16.1	18.2	20.4	25.1	28.3	22.4
Mean min., °C	13.1	12.7	11.4	8.4	6.1	4.7	3.9	4.3	5.8	7.4	9.8	11.7	8.3
Highest max., °C	44.4	43.4	40.8	36.7	30.4	24.4	22.8	26.1	30.3	36.3	38.8	41.6	44.4
Lowest min., °C	3.2	1.8	0.2	-1.3	-2.2	-4.0	-3.9	-3.2	-2.2	-0.6	0.3	1.7	-4.0
No. of days 32.2°C and over	13.0	11.3	8.0	1.2	0.0	0.0	0.0	0.0	0.0	0.3	2.1	5.7	41.6
No. of days 37.8°C and over	2.2	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1	5.5
No. of days 2.2°C and under	0.0	0.0	0.1	0.8	5.3	7.8	7.9	6.6	5.9	1.8	0.3	0.1	36.6
<i>Manjimup—</i>													
Temperature:													
Mean max., °C	25.7	26.3	23.8	20.8	17.1	15.2	14.1	14.8	16.3	18.2	21.7	24.1	19.8
Mean min., °C	12.1	12.2	11.7	10.3	8.1	6.9	5.8	6.1	6.5	7.9	9.6	11.0	9.0
Highest max., °C	41.7	40.6	38.9	33.3	29.2	22.2	21.7	24.7	28.1	33.3	37.4	38.8	41.7
Lowest min., °C	5.6	4.4	3.3	1.7	1.1	0.6	-2.8	-1.1	-0.6	0.6	1.7	4.4	-2.8
No. of days 32.2°C and over	5.7	4.3	3.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.0	16.1
No. of days 37.8°C and over	0.3	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7
No. of days 2.2°C and under	0.0	0.0	0.0	0.1	0.5	1.3	2.3	3.2	2.1	0.1	0.0	0.0	9.6
<i>Pemberton—</i>													
Temperature:													
Mean max., °C	25.9	25.8	23.9	20.5	17.6	15.6	14.4	15.3	16.4	18.1	21.0	23.3	19.8
Mean min., °C	13.0	13.4	12.7	10.7	9.1	8.2	6.9	6.8	7.2	8.1	9.9	11.6	9.8
Highest max., °C	41.1	39.4	38.9	33.9	28.3	22.2	21.1	25.6	28.3	30.6	35.0	37.8	41.1
Lowest min., °C	4.4	4.4	3.9	2.8	0.0	1.1	0.0	-1.1	-0.3	1.7	2.1	3.9	-1.1
No. of days 32.2°C and over	3.9	2.8	2.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.1	12.2
No. of days 37.8°C and over	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.2	0.7	1.3	1.6	0.9	0.2	0.0	0.0	4.9
<i>Mount Barker—</i>													
Temperature:													
Mean max., °C	25.6	25.7	23.4	20.9	17.2	14.9	14.0	14.8	16.6	18.5	21.8	24.1	19.8
Mean min., °C	12.3	12.4	11.9	10.3	8.2	6.7	5.6	5.8	6.7	7.7	9.6	11.2	9.1
Highest max., °C	43.9	43.6	40.6	36.0	32.2	24.3	21.1	25.0	29.3	35.6	39.4	42.9	43.9
Lowest min., °C	1.7	3.9	3.6	2.2	0.6	0.0	-2.2	-1.3	-0.6	0.6	1.1	1.1	-2.2
No. of days 32.2°C and over	4.3	4.0	2.5	0.4	0.0	0.0	0.0	0.0	0.0	0.1	1.0	2.8	15.1
No. of days 37.8°C and over	0.8	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	2.2
No. of days 2.2°C and under	0.0	0.0	0.0	0.1	0.3	1.5	3.5	3.3	1.9	0.4	0.0	0.0	11.0

THUNDERSTORMS

Thunderstorms are most frequent along the Kimberley coast where they occur during the 'Wet' season but are practically unknown in the 'Dry'. In the remainder of the tropics they occur over roughly the same period but the season is a little shorter and the storms less frequent.

In most of the State south from the tropics thunderstorms are most frequent in the summer months but in the south-west they are more uniformly distributed and in many places in coastal districts they are most frequent in winter.

The winter storms are often accompanied by hail which, however, is usually not heavy enough to cause any damage. Hail accompanying summer storms can be much heavier, and occasionally damages ripening crops in the wheat belt. Both winter and summer thunderstorms may be accompanied by severe squalls, but these are infrequent.

EVAPORATION

Except in the lower south-west, evaporation from a free water surface exceeds the annual rainfall, and in a large proportion of the State it is more than ten times greater than the rainfall.

It is least in the winter months, amounting in July to less than twenty-five millimetres in the far south-west, and to about 200 millimetres in the northern tropics. In January, when evaporation is highest, it totals about 130 millimetres on the far south coast and reaches 350 millimetres in the East Gascoyne and North-Eastern Meteorological Districts. Further north, evaporation is reduced by the moister air over the tropics at this time of the year.

The map on page 60 shows average annual evaporation throughout the State.

GROWING SEASON

Less moisture is required to sustain plant life when evaporation is low than when it is high, and the minimum amount required can be related to evaporation from a free water surface.

That part of the year during which rainfall is greater than this minimum amount (the 'effective rainfall'), may be taken as the *growing season*. The map on page 62 shows the length of this season in the agricultural area of the State. It is based on average monthly rainfall and effective rainfall, the latter being calculated from the formula $P = 0.54 \times E^{0.7}$ (after Prescott), where P is effective rainfall and E is evaporation (both in millimetres per month).

METROPOLITAN CLIMATE

Perth has more sunshine and a greater number of clear days during the year than any other State capital city. It also has the wettest winter, the driest summer, and is the windiest of the capital cities. The highest temperature on record for Perth is 44.6°C (8 February 1933) and the lowest 1.2°C (7 July 1916).

CLIMATOLOGICAL DATA—PERTH BUREAU OF METEOROLOGY

(For other data relating to Temperature and Rainfall see preceding tables)

Month	Wind				Temperature				Relative humidity (Saturation = 100%)		Sun- shine	Cloud (proportion of sky covered)	Evapora- tion	
	Prevailing direction		Speed		Highest in sun	Lowest terrestrial	Mean	At 3 p.m.	Mean daily amount	Mean of readings at 9 a.m., 3 p.m. and 9 p.m.				Mean amount
	9 a.m.	3 p.m.	Aver- age	High- est										
Number of years of observations	30 (a)		30 (a)	58	63	76	30 (a)		30 (a)	30 (a)	30 (a)			
January	E.	SSW.	km/h	km/h	°C	date	°C	date	%	%	hours	%	mm	
February	ENE.	SSW.	17.5	81	80.7	22/1914	4.2	20/1925	53	43	10.4	29	263	
March	E.	SSW.	17.2	87	78.7	4/1934	4.3	1/1913	52	43	9.8	31	219	
April	ENE.	SSW.	16.2	113	75.0	19/1918	2.6	(b)	57	46	8.8	35	191	
May	NE.	WSW.	13.7	101	69.4	8/1916	-0.7	26/1960	60	48	7.5	42	117	
June	N.	NW.	13.5	119	63.3	4/1925	-3.9	31/1964	68	58	5.7	54	71	
July	N.	NW.	13.5	129	57.5	9/1914	-3.4	27/1946	72	63	4.8	59	46	
August	NNE.	W.	14.2	137	56.2	13/1915	-3.8	30/1920	73	63	5.4	56	45	
September	N.	WNW.	15.1	156	62.8	29/1921	-3.0	18/1966	71	60	6.0	56	60	
October	ENE.	SSW.	15.1	109	67.5	29/1916	-2.7	(c)	64	57	7.2	49	87	
November	SE.	SW.	16.1	105	71.8	19/1954	-1.2	16/1931	64	54	8.1	48	137	
December	E.	SW.	17.2	101	75.0	30/1925	-1.1	1/1968	57	47	9.6	39	194	
Year—	E.	SSW.	17.7	103	76.0	11/1927	3.3	29/1957	54	46	10.4	32	246	
Average....	E.	SSW.	15.6	.....	.....	.....	.....	.....	62	52	7.8	44	.....
Extremes	.....	.....	.....	156	80.7	22/1/14	-3.9	31/5/64	.....	.....	.....	.....	.....
Total .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,676

(a) Standard 30 years' normal (1911-1940).
8 September 1952 and 6 September 1956.

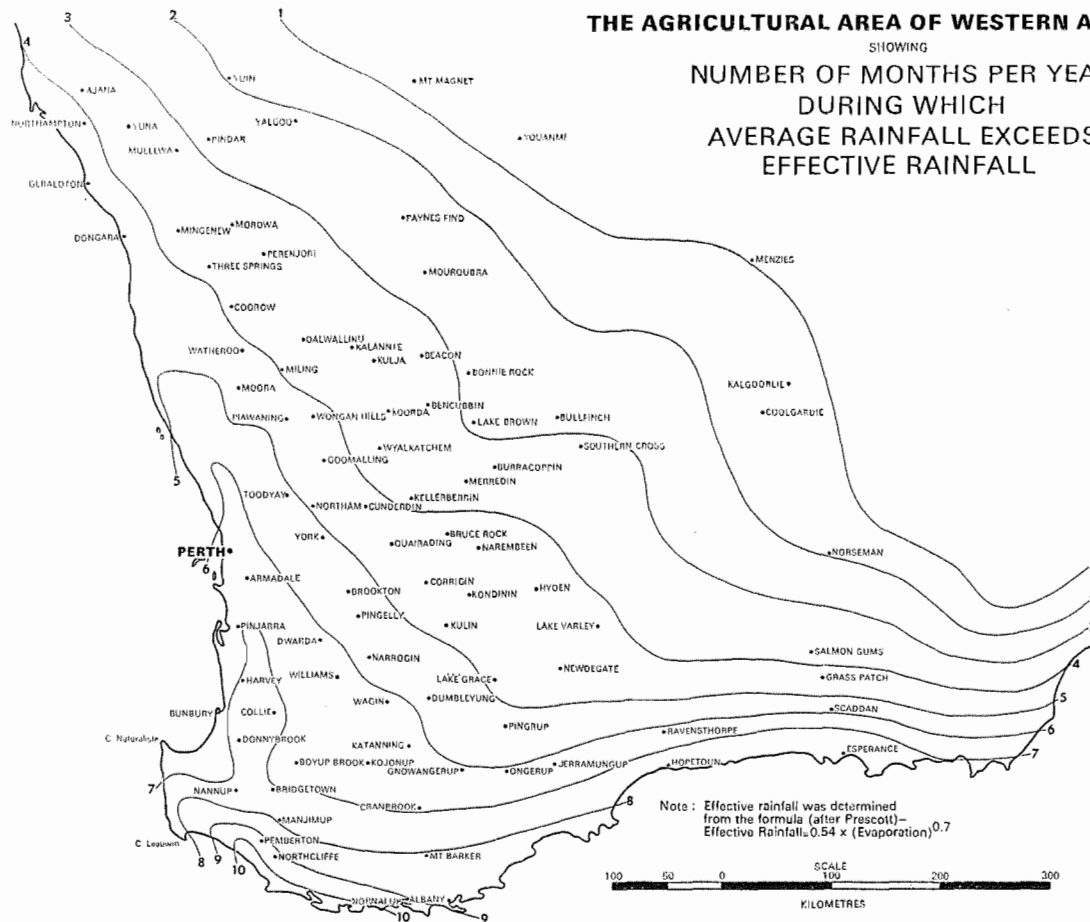
(b) Recorded on 8 March 1903 and 16 March 1967.

(c) Recorded on

THE AGRICULTURAL AREA OF WESTERN AUSTRALIA

SHOWING

NUMBER OF MONTHS PER YEAR
DURING WHICH
AVERAGE RAINFALL EXCEEDS
EFFECTIVE RAINFALL



SNOW

Snow has been known to fall as far north as Wongan Hills, but it is only in the southern districts that it occasionally lies on the ground. It is seen on top of the Stirling Range for a short time nearly every winter, but elsewhere is very infrequent and of negligible importance.

INTERSTATE COMPARISONS

In general, humidity and rainfall are lower in Western Australia than in corresponding places in eastern Australia. The following table shows average rainfall, mean humidity and temperature for groups of reporting stations at approximately the same latitude. The stations have been selected in such a way that, in each pair, one is on the west coast and the other on the east coast or, where a pair relates to inland stations, each station is situated at about the same distance from the coast. The group appearing last in the table has been included to provide a comparison between observations at Albany, the most southerly town in Western Australia, and those at places elsewhere in Australia at about the same latitude. The height above mean sea-level is also given for each station.

INTERSTATE COMPARISONS—RAINFALL, HUMIDITY, TEMPERATURE

Reporting station	Height above mean sea- level	Average rainfall		Relative humidity (a)		Average daily mean temperature	
		May to October	November to April	May to October	November to April	May to October	November to April
	metres	mm	mm	%	%	°C	°C
Bunbury	5	761	127	77	70	13.9	19.7
Sydney, New South Wales	42	547	591	66	69	14.6	20.7
Perth	19	768	122	69	55	14.6	21.6
Newcastle, New South Wales	34	522	510	70	74	14.8	20.9
Kalgoorlie	380	131	115	58	48	14.4	23.6
Cobar, New South Wales	251	149	171	59	46	13.5	24.0
Geraldton	4	407	61	67	62	16.8	22.8
Brisbane, Queensland	42	305	713	66	69	17.4	23.7
Wiluna	518	82	167	50	35	15.8	27.2
Charleville, Queensland	294	157	299	55	46	16.2	26.4
Carnarvon	5	165	66	63	63	18.6	25.2
Bundaberg, Queensland	14	276	800	73	74	18.1	24.3
Mundibindi	561	70	210	39	30	17.2	28.0
Longreach, Queensland	187	100	295	50	50	18.7	27.9
Onslow	4	113	124	55	56	20.7	28.3
Mackay, Queensland	11	292	1,312	78	80	19.3	25.4
Port Hedland	8	85	234	50	59	22.6	29.6
Townsville, Queensland	22	139	954	66	73	22.1	26.8
Derby	16	42	604	51	65	24.9	30.3
Innisfail, Queensland	7	911	2,623	85	85	20.9	25.6
Wyndham	7	29	648	43	59	27.2	31.1
Cooktown, Queensland	5	205	1,519	76	78	23.9	27.3
Albany	13	730	225	76	73	13.2	17.9
Adelaide, South Australia	43	366	169	64	45	13.6	20.9
Swan Hill, Victoria	70	200	132	70	54	11.9	21.0
Canberra, Australian Capital Territory	560	301	291	72	61	14.2	17.8

(a) Saturation = 100%.

AIR POLLUTION AND THE WEATHER

Although the total discharge of contaminants into the atmosphere in a given area remains relatively constant from day to day, the degree of pollution will vary widely. The observation that smoke is dissipated much more quickly and thoroughly on some days than on others is a direct result of differences in the weather.

Just as a river or stream is able to absorb a certain amount of pollution without the production of undesirable conditions, the atmosphere can also absorb a certain amount of contamination without bad effects. The dilution of air contaminants is a direct result of atmospheric turbulence. Consider a single source such as an industrial chimney. The plume of pollutants issuing from the chimney is obviously greatly affected by the wind. The stronger the wind, the greater the dilution; in a given interval, doubling the wind speed spreads the pollutants over double the volume. If the wind flow were perfectly smooth, the polluted air would travel downwind in a thin tube. However, the wind never blows perfectly smoothly; both the speed and direction fluctuate in a random manner. These are features of the phenomenon of turbulence, a characteristic of all natural motion. The effect of turbulence on the plume is to disperse it over a cone-shaped region many times greater in volume than if the flow were smooth. It is evident then that the greater the turbulence, the greater the spread of pollution from a given source.

Turbulence arises from two main causes. The first is the presence of obstacles such as trees, buildings, or fences on the surface over which the wind blows. These give rise to wind shears and eddies similar to those seen on the surface of a river flowing swiftly over a rocky bed or past the piers of a bridge. The second cause of turbulence is the vertical stability of the air. The temperature in the atmosphere normally decreases with increasing height. When the atmosphere is unstable, the temperature decreases rapidly with height and any parcel of air set in motion vertically will continue to rise spontaneously. Air will thus move freely from one level to another and any pollutants will be spread throughout a large volume.

However, under stable conditions the temperature decreases slowly with height. Turbulence and the vertical spread of pollutants is inhibited. In the extreme case, the air temperature, instead of decreasing with height, actually increases in a layer of limited depth. There is then said to be a temperature inversion. This inversion is a layer of extreme stability and the vertical interchange of air is almost completely damped out.

Inversions are of two main types—namely surface or subsidence inversions.

A surface inversion forms on calm nights when the sky is clear; the ground is cooled by the radiative loss of heat to the cloudless sky. The air near the ground is in its turn cooled and an inversion is established. The effect of such an inversion is often seen in Perth when a garden bonfire burns slowly on a still evening, particularly in the autumn months. The smoke is confined within the inversion layer. Cooling may continue throughout the night and under these conditions the inversion will become quite deep, of the order of a few hundred metres. If the air is moist, fog or mist often forms. Visibility will be reduced both as a result of the fog and the trapped smoke particles. On the average a surface inversion is formed on one in every three mornings in Perth, being more prevalent in spring and autumn.

By contrast, a subsidence inversion is formed when an anticyclone or high becomes established over a broad area. In these circumstances the base of the inversion will be at an upper level, varying between 1,500 and 2,000 metres in the case of Perth. There may be some vertical interchange of air in the levels below the inversion but the inversion itself acts as a 'lid' trapping the pollutants beneath it. As Perth's weather is controlled by the movement of the so-called subtropical high pressure belt, a subsidence inversion is a frequent feature of the vertical temperature structure.

Summing up, unstable conditions and associated gustiness lead to a rapid dispersion of pollution particles with moderate or low concentrations spread throughout an extensive volume of air—thus there is little pollution hazard. Stable conditions and in particular, inversions, lead to slow dispersion with high concentrations over a limited region.

The effects of different stability regimes on the emission from elevated chimney stacks are shown on page 65. Figure 1 (a) shows the plume form under unstable conditions. The plume is dispersed throughout a large volume. Figure 1 (b) illustrates the case of a subsidence inversion 'lid' trapping the particles in the layer close to the ground, whilst in figure 1 (c) the top of the surface inversion is below the top of the chimney and particles emitted from the stack remain in the upper levels and are well dispersed.

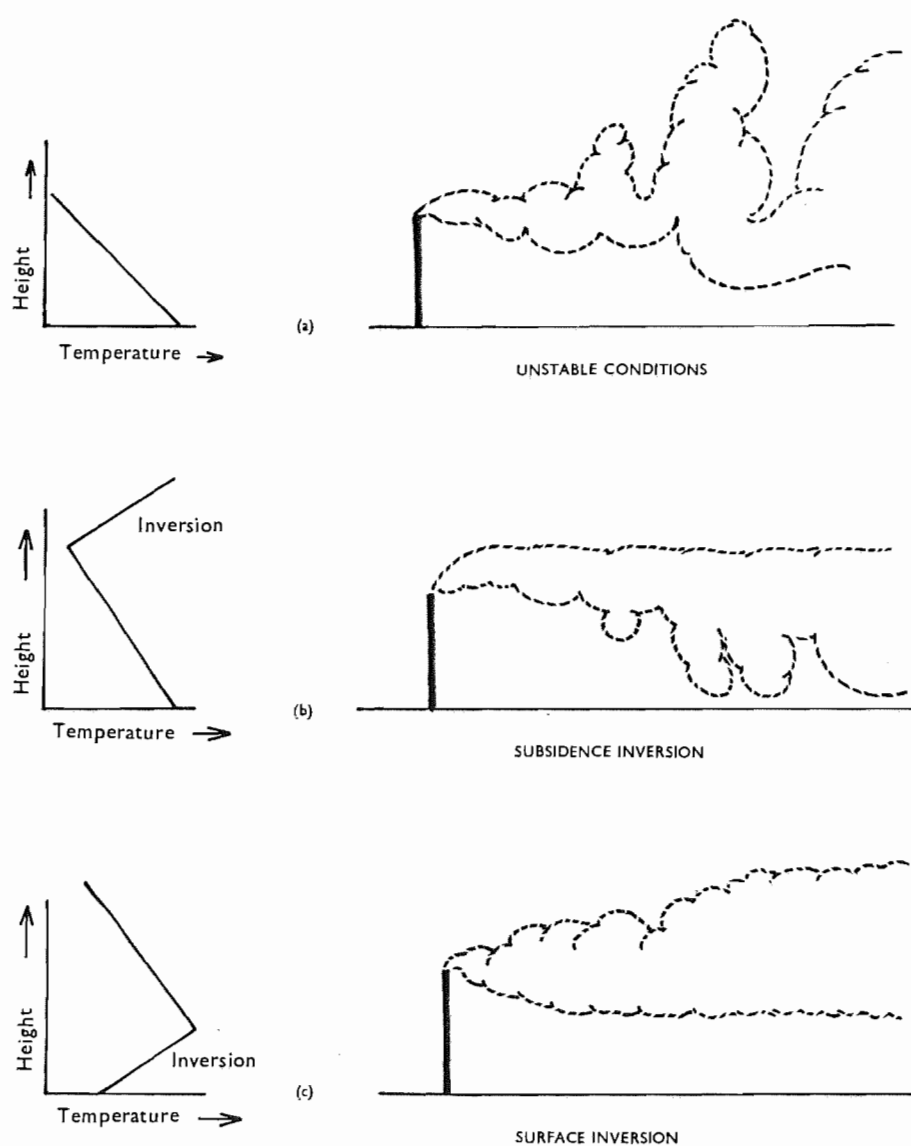


FIG. 1, THE DISPERSION OF SMOKE FROM AN ELEVATED SOURCE UNDER VARYING CONDITIONS OF ATMOSPHERIC STABILITY

Chapter II—continued

Part 3—The Vegetation of Western Australia⁽¹⁾

With an Account on the Conservation of the Flora

Contributed by T. E. H. Aplin

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The flora of Western Australia consists of about 6,500 flowering plants (angiosperms), 15 cycads and conifers (gymnosperms) and 50 ferns. The families of flowering plants which characterise the flora are also widespread throughout Australia, e.g. Myrtaceae, Proteaceae and Leguminosae. The Stylidiaceae, Goodeniaceae and Epacridaceae, which are poorly represented outside Australia, are well developed in Western Australia. The five families which are endemic to Western Australia are entirely restricted to the South-West Province. These are the Cephalotaceae, Eremosynaceae, Emblingiaceae, Ecdeiocoleaceae and Anarthriaceae. Other large groups of plants (below the level of family) which are almost wholly endemic to this State are the *Chloanthoideae* (Verbenaceae), *Prostantheroideae* (Lamiaceae), *Persoonieae* and *Banksieae* (Proteaceae) and *Epacrideae* (Epacridaceae). The *Chamelaucioideae* (Myrtaceae), although not strictly endemic, has a high percentage of species restricted to Western Australia.

The State of Western Australia occupies about one-third of the continental land-mass of Australia and lies south of the equator between latitudes 13° and 35°. One-third of the State lies within the tropics, while the remainder extends into the temperate zone. Climatically, Western Australia shows a marked variation from a predominantly summer rainfall pattern in the north to a characteristically Mediterranean-type winter rainfall pattern in the south. Between these two rainfall systems is a large region whose climate is characterised by the extreme variability of the rainfall both annually and seasonally.⁽²⁾ The vegetation of Western Australia, in general terms, is determined by these varying climatic patterns, although local changes in geology, soils, topography and drainage may affect the structure and/or the floristic composition of plant communities. The delineation of the present day vegetation also reflects the past tectonic and climatic history of the Australian continent.

The development of the so-called pan-Australian mesophytic flora, which include the tropical broad-leaved genera *Cinnamomum* and *Tristania*, the more temperate genera *Dacrydium*, *Podocarpus*, *Araucaria*, *Nothofagus* and *Phyllocladus* and the typically Australian genera *Eucalyptus*, *Casuarina*, *Callitris* and *Banksia*, began in the early Tertiary era. It is generally accepted that in the Palaeozoic era the Australian continent was united with the continents of Africa, Antarctica, India and South America in a once common land-mass known as Gondwanaland. During this period these continents had a common flora as exemplified by the *Glossopteris* elements. In the late Neocomian period (Early Cretaceous), rifting between India (with Africa and South America) and Australia (with Antarctica) was initiated. In Eocene times (Early to Mid-Tertiary), sea-floor spreading between Australia and Antarctica commenced and for the first time the southern coasts were warmed by the entering Indian Ocean. The Australian continental block was thus isolated at about the time the pan-Australian flora began to develop. The northward drift of the continent brought the Australian block into contact with the Asian block in the middle Miocene period (Late Tertiary), and allowed the entry of a different flora, the 'Indo-Malayan' flora.

⁽¹⁾ See *Appendix* for reference to additional information in earlier issues of the Year Book.

⁽²⁾ See Part 2 of Chapter II—*Climate and Meteorology*.

The degree of endemism and diversification in the south-western flora, which had its origin in pre-Miocene times, was brought about largely by the isolation caused by the late Eocene and Miocene seas which inundated the Nullarbor Shelf. Another factor that contributed to the diversification of the flora was the laterisation that occurred in the Tertiary period, with the subsequent dissection of the lateritic landscape causing fragmentation of a once continuous flora. The significance of the flora of Western Australia, with regard to relict floral and morphological characters, is dealt with in the section *Conservation of the Flora* on pages 78-80.

Formations and Alliances

The classification of vegetation involves the grouping of similar structural units and the grouping or classification of the floristic components present in all strata of plant communities that form part of the vegetation.

In a survey of major plant communities of Australia and Papua New Guinea for the Conservation of Terrestrial Communities Section of the International Biological Programme (I.B.P./C.T.) a structural classification scheme was devised. This scheme, produced by Australian plant ecologists and freed from previous conceptions of the Australian Vegetation, was considered to be easy to understand and to use in the field in Australia. The classification of plant communities involved a simple two-dimensional table using the variables height/life form of the tallest stratum, and the projective foliage cover of the tallest stratum. Major structural formations recorded in Australia are summarised in the following table and further divisions based on height classes and projective foliage cover can be instituted. The nature of the understorey provides logical subdivisions to the formations.

PLANT COMMUNITIES—MAJOR STRUCTURAL FORMATIONS

Life-form and height of tallest stratum	Projective foliage cover of tallest stratum, as per cent	Description	The table of Plant Communities on page 67 should include the following details.	
			Shrubs under 2m	ADDENDUM
Trees over 30 m	70-100 30-70 10-30 under 10	High closed forest High open forest High woodland High open woodland	70-100 30-70 10-30 under 10	Closed heath Open heath Low shrubland Low open shrubland
Trees 10-30 m	70-100 30-70 10-30 under 10	Closed forest Open forest Woodland Open woodland		
Trees under 10 m	70-100 30-70 10-30 under 10	Low closed forest Low open forest Low woodland Low open woodland		
Shrubs over 2 m	70-100 30-70 10-30 under 10	Closed scrub Open scrub High shrubland High open shrubland		
Herbs	70-100 30-70 10-30	Closed herbland, tussock sedgeland, etc. Herbland, tussock grass land, etc. Open herbland, tussock sedgeland, etc.		
Hummock grasses	10-30 under 10	Hummock grassland Open hummock grassland		

To include floristic detail, the following three categories are often used to define subdivisions within a structural formation.

1. *Alliance*—A series of climax plant communities which have (i) the same structural characteristics, (ii) related species as dominants in the uppermost stratum, and (iii) possibly the same or related species in the understorey.
2. *Association*—A series of climax plant communities which have (i) the same structural characteristics, (ii) the same species as dominants in the uppermost stratum, and (iii) possibly different floristic composition in the understorey.
3. *Society*—A series of climax plant communities which have (i) the same structural characteristics, (ii) the same species as dominants in the uppermost stratum, and (iii) the same species prominent in the lower strata.

High open forest and high woodland are represented by *E. diversicolor* (Karri), *E. marginata-E. calophylla* (Jarrah-Marri) and *E. gomphocephala* (Tuart) alliances, all in the South-West Province.

The forest formations are represented by *E. Marginata-E. calophylla* and *Agonis flexuosa* (West Australian Peppermint) alliances in the South-West; and by *E. tetradonta-E. miniata* (Darwin Stringybark-Woolly Butt), *E. tectifica-E. grandifolia* (Grey Box-Cabbage Gum) alliances in the Northern Province. Woodland and open woodland formations are represented by *E. loxophleba* (York Gum), *E. wandoo* (Wandoo), *E. salmonophloia* (Salmon Gum), *E. occidentalis* (Swamp Yate), *E. astringens* (Brown Mallet), *E. cornuta* (Yate), *E. rudis-Melaleuca* spp. (Flooded Gum-Paper Bark) and *Casuarina obesa* (Swamp Sheoak) alliances in the South-West; by *E. torquata-E. lesouefii* (Coral Gum-Goldfields Blackbutt), *E. dundasii* (Dundas Blackbutt) and *E. transcontinentalis-E. flocktoniae* (Morrell-Merri) alliances in the Ereman; and by *E. camaldulensis* (River Red Gum), *E. tectifica-E. grandifolia*, *E. tetradonta-E. miniata*, *E. latifolia* (Round-leaf Bloodwood), *E. papuana* (Ghost Gum), *E. polycarpa-E. apodophylla* (Long-fruited Bloodwood-White Bark), *E. microtheca* (Coolabah) and by *Terminalia* spp., *Melaleuca* spp. and *Adansonia gregorii* (Baobab) alliances in the Northern Province.

The low forest formations are represented by *Melaleuca lanceolata-Callitris preissii* (Rottnest Teatree-Rottnest Cypress Pine), *E. platypus-E. spathulata-E. annulata* (Moort-Swamp Mallet-Open-fruited Mallee), *Agonis juniperina* (Warren River Cedar), *Banksia menziesii-B. attenuata-Casuarina fraserana-E. todiana* (Menzies Banksia-Slender Banksia-Fraser's Sheoak-Coastal Blackbutt), *E. falcata*, and *B. prinotes* (Acorn Banksia) alliances in the South-West. Low woodland and low open woodlands are represented by *E. erythrocorys* (Illyarrie), *Casuarina huegeliana* (Rock Sheoak) and *Banksia* spp. alliances in the South-West; by *E. brevifolia* (Snappy Gum), *E. pruinosa* (Silver-leaf Box), *E. dichromophloia* (Red-barked Bloodwood), *E. argillacea* (Kimberley Grey Box), *E. microtheca*, *Grevillea striata* (Beefwood), *Lysiphyllum cunninghamii* (Bauhinia) and *Melaleuca* spp. (Paper Bark) alliances in the Northern Province; and by *E. gongylocarpa* (Desert Gum), *E. kingsmillii* (Kingsmill's Mallee), *Casuarina decaisneana* (Desert Sheoak) and *Acacia sowdenii* (Myall) alliances in the Ereman Province.

The scrub formations are represented in the South-West Province by *Acacia rostellifera-A. cyclops-A. cochlearis*, *Agonis* spp., *Pultenaea reticulata*, *Melaleuca huegelii*, *M. globifera*, *E. foecunda* (White Mallee), *Acacia* spp.-*Casuarina* spp.-*Melaleuca* spp. (Woodjil-Tamar-Broombush) and mixed Proteaceae-Myrtaceae alliances; and by *Melaleuca thuyoides*, *Melaleuca uncinata* and *Acacia aneura* (Mulga) alliances in the Ereman Province. High shrubland formation include *Actinostrobus arenarius* (Sandplain Cypress Pine), *Banksia ashbyi-B. sceptrum*, *B. baxteri*, *B. speciosa* (Showy Banksia), *E. redunca-E. uncinata* (Black Marlock-Hook-leaf Mallee), *E. tetragona* (Tallerack), *Grevillea eriostachya-G. didymobotrya-G. leucopteris* and *B. hookerana-Xylomelum angustifolium* (Banksia-Sandplain Woody Pear) alliances; and by *Acacia* spp.-*Cassia* spp.-*Eremophila* spp., *E. kingsmillii*, *E. youngiana* (Large-fruited Mallee), *A. victoriae*, *A. pyriformis*, *A. pachycarpa-Grevillea wickhamii*, *Acacia lysiphloia-Acacia* spp., and *A. aneura* alliances in the Ereman Province.

Heath formations are restricted to the South-West Province and are made of mixed communities in which the families Proteaceae, Myrtaceae, Epacridaceae, Xanthorrhoeaceae

and Leguminosae are well represented. The genera *Dryandra*, *Banksia*, *Hakea*, *Casuarina*, *Xanthorrhoeae* (Blackboy or grass tree), *Leptospermum*, *Kunzea* and *Melaleuca* usually dominate the heath communities. Low shrubland formations are dominated by chenopodiaceous shrubs. The most important alliances are *Kochia sedifolia* (Blue Bush), *Atriplex* spp. (Saltbush) and *Arthrocnemum* spp. (Samphire), which are well represented in the Ereman Province.

The hummock grasslands are dominated by species of *Triodia* and *Plectrachne*. These genera, commonly called Spinifex, grow outwards leaving the centre senescent or dead. This formation is found in the Ereman Province. Tussock grasslands are dominated by species of *Astrelba* (Mitchell Grass), *Bothriochloa-Chrysopogon* (Blue Grass-Ribbon Grass), *Iseilema* (Flinders Grass) and by *Themeda* (Kangaroo Grass) alliances with *Sehima* (White Grass), *Heteropogon* (Spear Grass), *Cymbopogon* (Scent Grass), *Sorghum* (Wild Sorghum) and *Aristida* (Three-awn Grass) usually seen only under woodland formations. Fringing grasslands include *Coelorhachis*, *Arundinella* (Reed Grass) and *Imperata* (Blady Grass). These formations are restricted to the Northern Province. Sedgelands are represented in the South-West Province by communities in which the families Juncaceae, Cyperaceae, Restionaceae and Anarthriaceae are prominent.

Other plant communities, recorded in edaphic complexes, include coastal dune vegetation, halophytic communities, swamp communities, lithic complexes and aquatic complexes. Each of these complexes may be unimportant in terms of area, but are of significance in providing the habitat for particularly interesting plants, e.g. *Cepholotus*, *Byblis*, *Drosera*, etc.

Botanical Provinces and Districts

The vegetation of Western Australia has been sub-divided into three Botanical Provinces. The areas that these provinces occupy, is determined largely by climatic pattern. Within each province are smaller regions, known as Botanical Districts, in which the structure and floristics of the vegetation are determined partly by climate and partly by geology and soils. The boundaries of these provinces and districts are shown on the map on page 74.

The *Northern Province*, or Tropical Zone, is characterised by a dry monsoonal climate. The rainfall received in the summer months ranges from less than 500 mm to over 1,250 mm per annum. The annual mean maximum temperature is over 30°C. The evaporation rate ranges from 2,000-2,500 mm per annum.

The vegetation formations consist of grassy *Eucalyptus* open forests and woodlands. The major components are 'Australian' elements, with 'Indo-Malayan' elements as minor components. The latter are usually found in special habitats such as streamlines or scarpa. Some important 'Indo-Malayan' genera are *Ficus* (Moraceae), *Barringtonia* (Lecythidaceae) and *Terminalia* (Combretaceae).

The *Hamm* botanical district, commonly referred to as the Kimberley Plateau, consists of a series of sandstone, shale, quartzite and volcanic rocks of Lower Proterozoic age. The topography varies from a rolling to hill landscape to a very rugged dissected plateau. Saline mud flats are present along estuaries.

On the volcanic rocks and shales, on gently undulating to hilly topography, the woodland and open woodland formations consist mainly of *E. tectifica-E. grandifolia* alliance. The *E. tectifica* sub-alliance is restricted to the volcanic soils while the *E. grandifolia* sub-alliance is developed on the shales and sandstones. *E. latifolia* and *E. papuana* alliances characterise the flats and levee soils. These alliances and sub-alliances include a number of plant associations. Each association is characterised by one or more *Eucalyptus* species. The understorey layers consist of a sparse low tree or high shrubland layer and a dense to moderately dense grassland layer. Small tree genera include *Cochlospermum*, *Terminalia*, *Atalaya* and *Erythrophloeum*. Grass genera include *Bothriochloa*, *Sehima*, *Chrysopogon*, *Sorghum*, *Heteropogon* and *Themeda*.

On the sandstone and quartzite rocks, ranges and hogbacks, the woodland, open woodland and low open woodland formations are mainly made up of *E. tetradonta-E.*

miniata alliance. In this alliance, which is characterised by *Eucalyptus* species, the *E. tetradonta* sub-alliance is found mainly in the northern high-rainfall region while the *E. phoenicea-E. ferruginea* (Gnainggar-Rusty Bloodwood) sub-alliance is its southern lower-rainfall counterpart. *Callitris intratropica* (Northern Cypress Pine) forms pure stands on deep red sands. The *E. dichromophloia* sub-alliance is found on skeletal sands in rugged sandstone areas. The small tree/shrub layer in the *E. tetradonta-E. miniata* alliance includes the genera *Petalostigma*, *Grevillea*, *Gardenia*, *Persoonia*, *Buchanania*, *Ventilago*, *Planchonia*, *Eugenia*, *Brachychiton*, *Terminalia*, *Acacia*, *Jacksonia* and *Melaleuca*. The grass storey is dominated by *Plectrachne pungens*, together with *Sorghum* and *Aristida*. Flats and levees usually carry a *E. polycarpa-E. apodophylla* alliance, while the very steep scarps carry a *Brachychiton* spp.-*Terminalia* spp.-*E. confertiflora* variable woodland.

Other alliances and associations found in the Hann botanical district are *Terminalia* sp.-*Bothriochloa* spp.; woodland and grassland communities, on soils of heavy texture; *E. brevifolia*, *E. argillacea* and *Melaleuca viridiflora* associations on podsolics, over shales and sandstones; fringing communities of *E. camaldulensis* and *Terminalia* spp.-*Ficus* spp.-*Melaleuca* spp.; and mangrove communities on the estuarine mud flats.

The Ord botanical district, known as the Ord-Victoria region, extends into the Northern Territory. There are three distinct sub-regions in the Western Australian portion, the Cambridge Gulf lowlands, the Ord River basin and the Halls Creek ridges. The geology ranges from Quaternary alluvia, through Permian, Devonian-Carboniferous and Cambrian-Ordovician sediments to Proterozoic and Archaean metamorphic rocks.

The alluvial flood plains of the Ord River system carry a tall grass formation including the genera *Bothriochloa*, *Astrebula*, *Chrysopogon*, *Sorghum* and *Ophiurus*. Frontage woodlands carry a *E. papuana* alliance. *E. tetradonta-E. miniata* alliance occurs mainly on lateritic areas or on acid rocks. *E. tectifera-E. grandifolia* alliance occurs more commonly on soils formed on basic rocks, or shales and limestones. Low open woodlands of *E. pruinosa* association are the low-rainfall counterparts of the *E. tectifera* woodlands and occur on soils derived from basic rocks. *E. brevifolia* association is generally seen on skeletal soils on acid rocks, and also on many other soils. Low open woodlands of *Terminalia* spp. alliance occur on cracking clay soils formed on volcanics and limestone. Tussock grasslands with *Astrebula*, *Bothriochloa*, *Chrysopogon* and *Panicum* occur on high-level plains of Tertiary alluvia. The rugged hilly country of the Halls Creek ridges carries *E. brevifolia* and *E. pruinosa* low open woodland associations over *Triodia intermedia*. The gently undulating plains with calcareous soils carry arid short grass communities of *Enneapogon* (Bottle Washers), *Aristida* and *Sporobolus*. These areas have suffered severe wind and gully erosion and have in recent years been resown to the alien *Cenchrus ciliaris* (Buffel Grass). Low open woodlands of *E. argillacea* are present on red soils on basic rocks (limestone dolomites and volcanics).

The Fitzroy botanical district, sometimes known as Fitzroyland, is a region in which a great thickness of gently folded sedimentary rock, of Palaeozoic and Mesozoic age overlies a Precambrian basement of crystalline rock. The basement outcrops along the north and east of the basin.

The up-land regions consist of low hills and stoney plains with granite domes, gneiss hills, schist ridges and gently sloping sandy plateaux. The vegetation formations consist of low open woodland formations of *Eucalyptus* species with a hummock grassland ground layer. The main alliance of *E. brevifolia* is represented by a number of associations. One noteworthy association is *Grevillea pyramidalis*. The hummock grassland layer consists of the genera *Triodia* and *Plectrachne* in almost pure stands of species. A short grass ground storey with *Enneapogon* and *Aristida* may be seen on the interfluvies and hill-foot slopes to the south-east. The drainage floors usually carry low open woodland formations of *E. dichromophloia* and *E. tectifera* alliances. The grass layer includes the genera *Chrysopogon*, *Sehima*, *Sorghum* and *Bothriochloa*.

Rocky limestone areas and shallow calcareous soils are characterised by *Triodia wiseana* hummock grassland. The *Adansonia gregorii* open woodland association is largely restricted to rugged limestone country, although *A. gregorii* may be found associated with other species, e.g. with *E. dichromophloia* and *E. perfoliata* (Twinleaf Bloodwater) on granite

tors or domes to the north. *E. dichromophloia*, *Grevillea striata* and *Lysiphyllum cunninghamii* low open woodland alliances occur on the outcrop plains over the gently folded sandstone, shale and limestone. These may be linearly oriented along strike lines and associated with *Acacia*, *Atalaya*, *Ventilago* and *Dolichandrone*. Cracking clay plains on the sedimentary rocks carry tussock grasslands of *Astrebla*, *Bothriochloa* and *Chrysopogon*. The tributary alluvial plains of the Fitzroy River consist mainly of *Grevillea striata* and *Lysiphyllum cunninghamii* low woodland with *Triodia* and *Chrysopogon*. The stable and active flood-plains carry *Astrebla* and *Chrysopogon-Bothriochloa* tussock grasslands, with *Acacia suberosa* as an important associate, and *E. papuana* and *E. microtheca* woodland alliances. Lining the main channels are *E. camaldulensis-Terminalia platyphylla* fringing communities. Coastal flats have fringing mangrove forests. Open grasslands of *Xerochloa* spp. occur on the margins of saline influence.

The *Dampier* botanical district consists of extensive sand plains. Surface drainage is lacking in most areas. The dominant layer in the vegetation is composed of *Acacia*, the more important species being *A. tumida*, *A. eriopoda*, *A. pachycarpa*, *A. holosericea* and *A. monticola*. *E. dichromophloia* and *E. zygophylla* make up the tallest stratum of the low woodland formation containing these *Acacia* species. Other tree genera include *Gyrocarpus*, *Atalaya*, *Hakea*, *Grevillea*, *Lysiphyllum*, *Persoonia* and *Erythrophloeum*, with the occasional *Adansonia*. In the high rainfall area, a woodland formation of *E. miniata* alliance is present. This alliance also has a strong layer of *Acacia* shrubs. In this district *E. tetradonta* is not associated with *E. miniata* as it is in the Hann and Ord botanical districts. The grass ground storey is predominantly *Plectrachne pungens-Chrysopogon* spp. Shallow valleys, pans and depressions, which may be up to five kilometres wide, carry woodlands of *E. polycarpa*, *E. tectifera*, *E. microtheca* and *Melaleuca* spp. alliances, with various tall grasses. The saline coastal flats carry *Sporobolus virginicus* and *Arthrocnemum* spp. communities.

The *Ereman Province*, which lies between the predominantly summer and predominantly winter rainfall patterns of the north and the south-west, respectively, is intermediate in character. The rainfall, which over most of the province is less than 400 mm per annum, is received either from extensions of summer rainfall southward or from northern extensions of the southern winter systems. The vegetation of the province varies from woodland, high shrubland, low shrubland to hummock grassland. Eleven botanical districts have been broadly recognised, seven of them in the desert area.

The *Fortescue* botanical district, usually placed in the Northern Province, consists of the Pilbara block. This district is intermediate in character between the Northern and the Ereman Provinces. It consists of granite plains to the north and west, rising gently inland to a capping of basalt in the Chichester Range and beyond this to the dolomite and jaspilite of the Hamersley Range. The vegetation of the narrow coastal strip carries grasslands of *Eragrostis* and *Eriachne* and low open shrublands of *Acacia translucens-A. inaequilatera* alliance. *Acacia pyrifolia* high open shrubland alliance is present on granite and basalt soils. The *Acacia* alliances have a strongly developed *Triodia pungens* hummock grassland ground layer. The high shrubland *A. aneura* alliance is found along the major valleys and southern flanks of the Hamersley Range. A sparse shrub layer and a short grass ground flora composed of *Eragrostis* (Love grass), *Eriachne* (Wanderrie grass) and *Aristida* characterise these communities. On the Proterozoic rocks of the Hamersley Range the characteristic vegetation is a low open woodland formation, with *E. brevifolia* alliance. The hummock grassland ground layer is composed of *Triodia wiseana*.

The *Ashburton* and the *Austin* botanical districts are separated by the prevailing rainfall patterns. The former, with its rainfall more likely to occur in summer, and the latter, with its rainfall more likely to occur in winter, both carry extensive high shrubland formations of *A. aneura* alliance but, whereas the northern alliance is associated more with grass genera such as *Aristida*, *Eragrostis*, *Eriachne*, *Panicum*, *Brachiaria*, *Triodia* and *Setaria*, the southern alliance is associated more with genera such as *Danthonia*, *Eremophila*, *Kochia*, *Bassia*, *Helipterum*, *Cephalopterum*, *Velleia*, *Swainsona* and other herbaceous annuals. The *A. aneura* alliance consists of a number of sub-alliances and associations. These include the *A. aneura-Eremophila leucophylla*, *A. aneura-E. fraseri*, *A. aneura-A. tetragono-*

phylla, *A. aneura*-*A. craspedocarpa*, *A. aneura*-*A. sclerosperma*, *A. aneura*-*A. linophylla*, *A. aneura*-*Callitris huegelii*, *A. xiphophylla*-*A. grasbyi* and *A. sclerosperma*-*A. ramulosa* sub-alliances. The latter two are prominent in the Carnarvon Basin. *E. kingsmillii* is also associated with *A. aneura*, and with a hummock grassland ground layer. *Kochia pyramidata* is associated with *A. aneura* on saline alluvial plains. Other woody genera that are prominent in the *A. aneura* alliance are *Hakea*, *Grevillea*, *Atriplex*, *Frankenia*, *Plagianthus*, *Heterodendron* and *Brachychiton*. The upper margins and floors of pans and salt lakes in the Austin district carry an *Arthrocnemum* spp. alliance. Fringing these flats are *Melaleuca uncinata* communities. The drainage channels are fringed by *E. camaldulensis* and *E. microtheca* alliances.

The Canning, Mueller, Keartland, Carnegie, Giles and Helms botanical districts comprise what was once called the Carnegie botanical district. These make up the desert region of Western Australia.

The Canning and Mueller districts contain extensive areas of high shrubland with several species of *Acacia* dominating. Scattered trees of *Eucalyptus* sp. (Desert Bloodwood) are present on the dunes. *E. pachyphylla* and *E. odontocarpa* are prominent in the north-eastern sector, while woodlands of *Casuarina decaisneana* are also of local importance there, in the interdunes. The ground layer of hummock grassland include *Triodia* and *Plectrachne*. *Grevillea wickhamii* and *Acacia monticola* are dominant on stoney rises. Low trees of *E. pruinosa*, *E. brevifolia*, *E. setosa* and *E. microtheca* occur at a very low density.

The Keartland district has a noticeable abundance of *Thrytomene maissonneuvii* and other Myrtaceae in the high shrubland formation. The Desert Bloodwood is present on the dunes, together with *Plectrachne schinzii*. *A. aneura* is of local importance, on small hills and mesas, with *Triodia pungens*.

The Carnegie district carries extensive areas of *A. aneura*, with *Danthonia* and seasonal ephemerals. On the rises of the lateritic plains hummock grasslands of *Triodia basedowii* and high shrublands with *E. kingsmillii* merge in with the *A. aneura* which tend to thin out. Desert Bloodwood, *Casuarina decaisneana*, and *E. microtheca* become more local in distribution, while *Plectrachne schinzii* is increasingly replaced by *Thrytomene maissonneuvii* southwards.

The Giles district consists of ranges with sandhill country between them, somewhat similar to the Carnegie district. On the ranges the high shrubland is made up predominantly of *Acacia* spp. including *A. aneura*, with *Eromophila*, *Hakea*, *Grevillea* and *Eucalyptus* as co-dominants in some areas. *Callitris columellaris* is locally dominant. *Triodia basedowii* and *Plectrachne melvillei* form the hummock grassland ground layer. The *A. aneura* alliance, prominent on basalt soils, has a ground flora of seasonal ephemerals and scattered *Eremophila* and *Cassia*.

The Helms district contains extensive areas of *A. aneura* alliance. A high shrubland formation characterised by *E. youngiana* alliance is also well developed. Associated with the shrubland community are other tall shrubs such as *Hakea*, *Acacia*, *Melaleuca*, *Grevillea* and other *Eucalyptus* species. Patches of open woodland of *E. gongylocarpa* are restricted apparently to areas where the sand is deeper. The hummock grass associated with *E. youngiana* and *E. gongylocarpa* is *Triodia basedowii*.

The Eucla botanical district, commonly referred to as the Nullarbor Plain, is dominated by a low shrubland formation of *Kochia sedifolia*. *Atriplex*, *Stipa* and seasonal ephemerals are well represented. Towards the margin a low open woodland of *Acacia sowdenii* alliance, with a low shrubland understorey of *Kochia* and *Atriplex*, becomes more and more evident. Along the coastal strip low woodlands of *Eucalyptus* spp. and *A. sowdenii* alliances are to be seen on the ridges and flats, respectively.

The Coolgardie botanical district marks the transition from the South-West Province to the Ereman Province, from the Eucalyptus zone to the Acacia zone. In this district a high degree of variability occurs within Eucalyptus and Acacia. It is thought that this variability may have been due to climatic oscillations known to have occurred since the Pleistocene period, thus making many of the 'species' of recent origin. The vegetation is a mosaic of woodland and shrubland formations. The woodland formations

include *E. salmonophloia*, *E. transcontinentalis*-*E. flocktoniae*, *E. torquata*-*E. lesouefii*, *E. dundasii*-*E. longicornis* and *E. brockwayi* alliances. Shrubland formations include *Grevillea eriostachya*-*G. didymobotrya*-*G. excelsior*, *Eucalyptus foecunda*, *E. eremophila* and other mallee or shrub eucalypts, *Acacia* spp.-*Casuarina* spp.-*Melaleuca* spp. and *Acacia aneura* alliances. Salt lakes and salt pans are associated with halophytic communities of *Arthrocnemum* and *Atriplex* alliances.

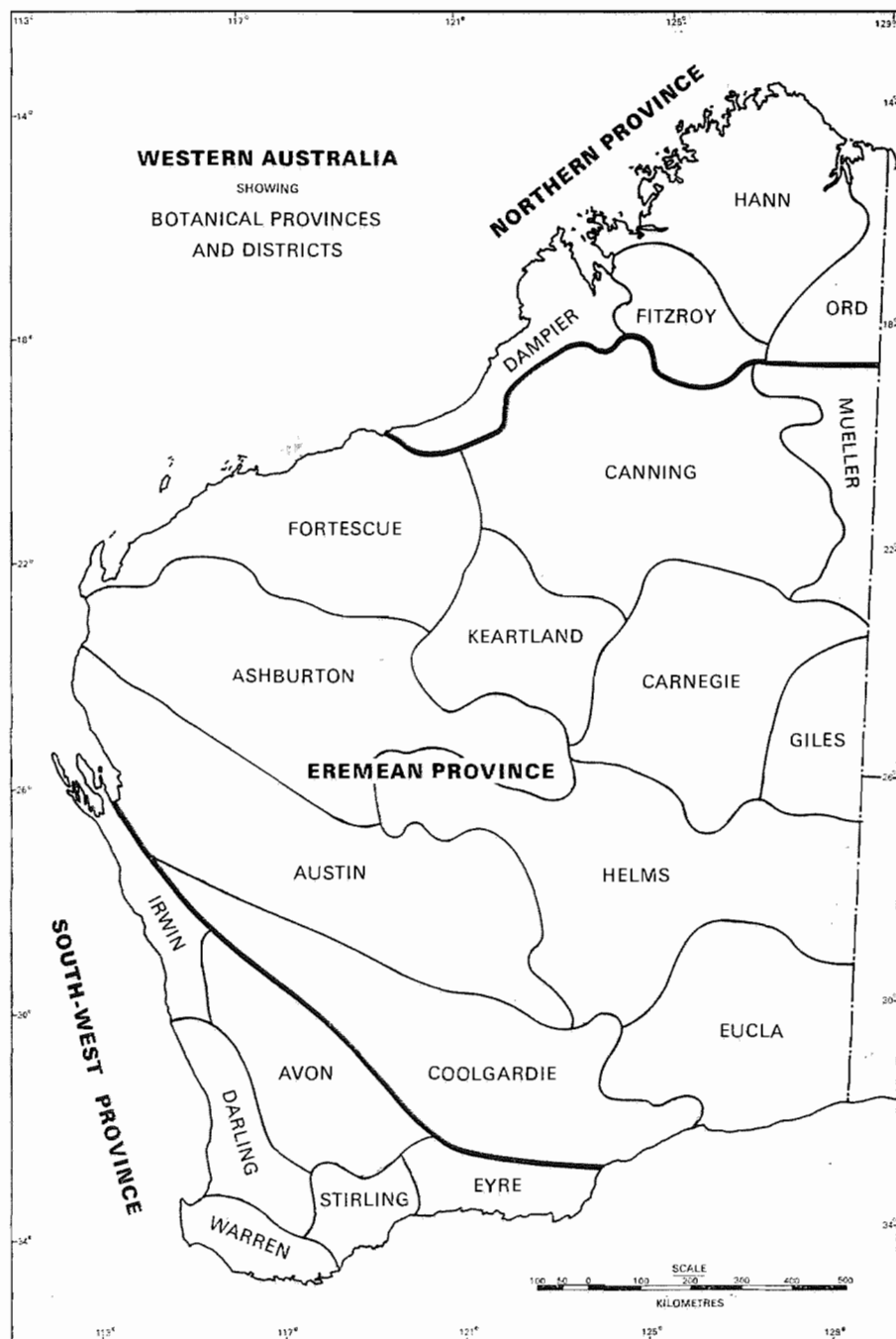
The *South-West Province*, which receives its rainfall in winter and has a warm to cool temperate climate, has a high degree of endemism in its flora. The degree of endemism is most powerfully expressed in the cusps of its triangular-crescentic area particularly in the high shrubland and heath formations found to the north of the Hill River and to the east of the Fitzgerald River. Large areas of this province have been altered greatly by man and contain a high proportion of the naturalised alien species recorded in the State.

The *Warren* botanical district, which occupies the extreme south-western corner of Western Australia, has an annual rainfall in excess of 1,000 mm. The main vegetation formations are the high open forest, on granite soils represented by *E. diversicolor* alliance; open forest, on lateritic soils represented by *E. marginata*-*E. calophylla* alliance; low forest and scrub of *Agonis flexuosa* on extensive coastal dunes; also on sand dunes, heaths, with *Jacksonia horrida*-*Acacia decipiens*; and sedgelands of *Evandra aristata*-*Anarthria* spp. in waterlogged areas. Seasonally flooded areas may also carry a *Melaleuca preissiana* low forest alliance. Small patches of *E. cornuta* woodland are to be seen on dune sands, and more extensively to the north-east. *E. wandoo* woodlands occur along the north-eastern boundary of this district. Other species associated with the alliances include *E. jacksonii* and *E. guilfoylei* with *Banksia grandis*, *B. littoralis*, *Casuarina decussata*, *Agonis flexuosa* and *A. juniperina* as understorey trees and a dense high shrub layer of *Trymalium*, *Chorilaena*, *Hovea elliptica*, *Acacia pentadenia*, *Albizia* and *Pteridium*, (in *E. diversicolor* alliance) and *E. patens*, *E. megacarpa* and *E. rudis* with *Banksia grandis*, *B. littoralis*, *Casuarina fraserana*, *Persoonia longifolia*, *P. elliptica*, *Nuytsia floribunda* and *Xylomelum occidentale* as understorey trees and a low shrub heathlike groundlayer (in *E. marginata*-*E. calophylla* alliance).

The *Darling* botanical district, which occupies the south-west coastal region, has a rainfall in excess of 625 mm. There are two major sub-divisions to the district, the Perth basin, overlying sedimentary rocks of Cretaceous to Quaternary age and the Archaean Shield.

In the Perth basin the narrow strip of Recent or Pleistocene sand dunes carry scrub or low forests of *Agonis flexuosa* alliance at the southern edge, with *Acacia rostellifera*-*A. cyclops*-*A. cochlearis* alliance and sand dune complex over most of its length. Inland and parallel to the coastal dune system is a narrow belt of coastal limestone hills, the natural habitat of the *E. gomphocephala* woodland alliance. This alliance has an understorey tree layer of *Banksia grandis* and *Agonis flexuosa*, with a sparse shrub layer. The greater part of the Perth basin is mantled with aeolian sands. The northern sector carries a low forest formation of *Banksia menziesii*-*B. attenuata*-*Casuarina fraserana*-*E. todtiana* alliance, with a heath understorey, and smaller areas of *B. prionotes* alliance; the southern part is dominated by a *E. marginata*-*E. calophylla* open forest or woodland alliance, with a heath understorey, and smaller areas of *Banksia* low forest. Poorly drained swampy areas carry *Casuarina obesa* low forest alliance; *Actinostrobus pyramidalis* (Swamp Cypress Pine) is of local significance. Swamp and fen formations are made up of complex communities of sedgeland. Watercourses in the district are fringed by a *E. rudis*-*Melaleuca* spp. alliance.

The Archaean Shield in the Darling district is a laterite capped plateau dissected by young streams to form steep sided valleys. An open forest formation of *E. marginata*-*E. calophylla* alliance characterises the lateritic erosional and deep depositional surfaces, with *E. wandoo* alliance restricted to the heavier pediment soils. The understorey layers of the *E. marginata*-*E. calophylla* alliance resemble those in the same alliance in the Warren district. The *E. wandoo* understorey layer has a more open character. This alliance which in its most highly developed state fringes the eastern boundary of this district is more widely distributed in the Avon botanical district.



The Irwin botanical district, for the most part, overlies sedimentary rocks from Silurian to Quaternary age, with smaller areas of Precambrian metamorphics. This district contains one of the two floristically important cusps of the South-West Province. At the northern extremity, the Irwin district consists of red and yellow sands underlain by Mesozoic sediments. The high shrubland formation is made up of *Acacia linophylla*-*A. brachystachya*, *Grevillea eriostachya*-*G. didymobotrya*-*G. leucopteris*, *Eucalyptus eudesmoides* (Mallalie) and *E. oldfieldii* (Oldfield's Mallee) alliances. Low woodlands of *Banksia ashbyi*-*B. sceptrum* and *B. prionotes* occur on deep sands. Open heath formations of Proteaceae, Myrtaceae, and Leguminosae occur in areas where the sand is shallow or where a lateritic crust is present. These formations vary considerably in floristic composition.

On the metamorphic rocks, the vegetation on residual flat tops and plateau surfaces carry low forests of *B. prionotes* alliance with heath on the lateritic surfaces. A woodland formation of *E. loxophleba* alliance dominates the loamy valley soils, now extensively used for farming. This alliance is associated with a high shrub layer of *Acacia acuminata* (Raspberry Jam) and a herbaceous ground layer composed of *Stipa*, *Neurachne* and seasonal ephemerals. *E. salmonophloia* alliance is locally significant only in the eastern part of the district.

The vegetation of the coastal dune system is an extension of the Darling district. The limestone hills in the Irwin district carry low woodlands of *E. erythrocorys*. Poorly drained areas and small lakes carry or are fringed by *Casuarina obesa* and *E. rudis*-*Melaleuca* spp. alliances.

The central to southern portions of the Irwin district are characterised by the so-called 'sand plains'. These carry low woodlands of *Banksia menziesii*-*B. attenuata*-*E. todiana* and *B. prionotes* alliances particularly on the deeper sands. *E. lanepolei* (Salmon White Gum) and *E. accedens* (Powder Bark Wandoo) are of local significance, on heavy clay soils. In areas of deep dissection, the valleys carry woodlands of *E. wandoo* and *E. calophylla* alliances. Heath formations cover most of the elevated regions. The heath communities vary in composition, depending upon the depth of sand and the presence of laterite, and some may eventually develop into high shrubland communities with long-term fire protection. Proteaceae, Myrtaceae and Leguminosae are dominant components, while on laterite hills *Xanthorrhoea reflexa* and *Dryandra* spp. become very conspicuous. *Banksia hookerana* alliance is locally significant north of the Arrowsmith River. High shrubland communities with *Grevillea eriostachya*-*G. didymobotrya*-*G. eriostachya*, *Lambertia multiflorus* (Native Honeysuckle) and *Actinostrobos arenarius* alliances are also significant in the sandplain region.

The Avon botanical district, which covers most of the so-called wheat belt, is now for the most part cleared, of native vegetation, for farming.

On the eastern edge of the Darling district, on the low hilly to hilly terrain, with hard acidic yellow mottled soils, the pediments of early erosional cycles, the woodland formation consists of *E. wandoo* alliance. *E. marginata*-*E. calophylla* alliance occur on soils which tend more to ironstone gravels with a sandy matrix. The *E. wandoo* alliance is associated with *E. accedens*, and with *E. astringens* which commonly occur on lateritic breakaways. In the southern portion *E. gardneri* (Blue Mallet) and *E. falcata* (White Mallet) are more commonly seen on the breakaways, while *E. cornuta* woodland alliance replaces the *E. wandoo* woodland alliance. The *E. wandoo* woodland has a very open low shrub layer. Poisonous plants of the genera *Gastrolobium* and *Oxylobium* are commonly seen in this woodland formation. On granite outcrops, a vegetation complex reflects the succession of colonisation by algae and lichen to shrublands with *Leptospermum* and eventually to climax communities of woodland of *Casuarina huegeliana* alliance, which occur on sandy or gritty soils over one metre in depth.

On the hard neutral red soils, of the river valley systems, which represent further erosional cycles, the woodland formation is represented by the *E. loxophleba* alliance, with *Acacia acuminata* as its main associate. *A. acuminata* tends to merge with the *E. wandoo* alliance, particularly as the soils become sandy or gritty. In the southern portion *E.*

occidentalis alliance replaces the *E. loxophleba* alliance. *E. occidentalis* woodlands occur also on the clay soils of swamps or seasonal shallow lakes.

Extensive areas of *E. salmonophloia* woodland alliance are found in the hard alkaline yellow soils further to the east, on valley plains and terraces. *E. salmonophloia* woodland has an open mixed low shrub understorey with *Kochia* and *Atriplex* dominating in more saline soils. Other trees associated with this alliance are *E. salubris* (Gimlet), *E. longicornis* (Red Morrell) and *E. melanoxydon* (Black Morrell).

Forming a mosaic with the woodland formations are the low woodland and shrubland formations developed on the plateau areas, on sandy yellow earths containing ironstone gravel and over mottled or pallid-zoned clays. The *B. prionotes* woodland alliance and *Acacia* spp.-*Casuarina* spp.-*Melaleuca* spp. and *Grevillea eriostachya*-*G. didymobotrya*-*G. leucopteris* shrubland alliances occur on yellow sand. *Dryandra* spp. and mixed Myrtaceae, Proteaceae, Leguminosae and Epacridaceae heath alliances occur on laterite or shallow sand over laterite. Other shrubland formations include *E. eremophila* (Horned Mallee), *E. oldfieldii* (Oldfield's Mallee), *E. drummondii* (Drummond's Gum), *E. pyriformis* (Pear-fruit Mallee) and other mallee or shrub eucalypt alliances. *E. macrocarpa* (Mottlecuh) shrubland occurs on deep sand.

The salt lakes, remnants of once extensive river systems, carry *Casuarina obesa* and *Melaleuca* spp. low woodland alliances on the fringes with low shrubland formations of *Arthrocnemum* spp. alliance in the old watercourses. *E. sargentii* (Salt River Mallet) and *E. kondininensis* (Stocking Tree) grow on saline soils.

The Stirling botanical district, which includes the Stirling and Mount Barren Ranges, together with the Eyre district form the second of the two floristically important cusps of the South-West Province.

The Stirling district, which lies at the edge of the Archaean Shield where it abuts into the Proterozoic metamorphics of the Albany-Esperance block, consists largely of sediments of middle and late Eocene age, at one time mantled by a lateritic crust, which is represented in the present landscape by narrow ironstone gravel ridges and erosional scarps along the northern edge.

The Stirling and Mount Barren Ranges which rise abruptly out of an otherwise predominantly undulating landscape are composed of hard Proterozoic metasedimentary rocks. The ranges carry closed heath and scrub formations of mixed Myrtaceae, Proteaceae, Leguminosae and Epacridaceae alliance. They are noted for their diversity in the flora and their conspicuous endemic or near endemic species. Woodlands of *E. marginata*-*E. calophylla*, *E. wandoo* and *E. cornuta* occur on the lower slopes and valleys of the Stirling Range.

Over a large area of the Stirling district, the vegetation is made up of high shrubland formations with shrub or mallee eucalypts dominating. *E. tetragona*, *E. redunca*-*E. uncinata*, *E. gardneri*-*E. nutans* and *E. eremophila*-*E. oleosa* alliances form a mosaic over the area, the former on the undulating upper slopes and rises nearer the coast. Patches of mixed heath of Proteaceae, Myrtaceae and Leguminosae are present. The heath vegetation merges into and forms the understorey of the high shrubland communities. Low forests of *E. platypus*-*E. gardneri*-*E. falcata* alliance occur locally on scarp slopes.

Woodland formations of *E. occidentalis*, *E. loxophleba* and *E. salmonophloia* alliances occur along drainage lines and loamy slopes and flats. The former alliance is favoured by higher rainfall and winter wet sites and is often seen on or around clay pans. Salt lakes are covered by or fringed by low shrubland formations of *Arthrocnemum* spp. and *Atriplex* spp. alliances. A scrub formation of *Melaleuca* spp. alliance may also be present.

The littoral fringe of the coastal plain is made up of a chain of granite bosses with drift sand between them. *Acacia rostellifera*-*A. cyclops*-*A. cochlearis* and *Agonis flexuosa* scrub alliances are present with the sand dune and granite lithic complexes. *Banksia baxteri* and *B. attenuata*, as well as *Lambertia inermis* (Chittick), are dominant on the drift sand, inland, with *E. marginata* and *E. cornuta*, the latter restricted to interdunal flats.

The Eyre botanical district, which is virtually a continuation of the Stirling district is covered for the most part with shrubland formations. *E. tetragona* alliance gives way to

Banksia speciosa-*Lambertia inermis* and *Nuytsia floribunda* as the soils become sandier, while inland *E. eremophila*-*E. oleosa* and *E. redunca*-*E. uncinata*-*E. forrestiana* alliances occur over extensive areas. *E. redunca*-*E. uncinata* occur also on broad valley slopes. To the east *E. tetragona* is replaced by *E. incrassata*, while a *E. cooperana* (Many-flowered Mallee) alliance is found on limestone soils at the extreme southern end of the Nullarbor Plain, near the Russell Ranges.

Open heath of mixed Proteaceae, Myrtaceae and Leguminosae alliance forms mosaics with high shrubland communities and provide the understorey layer for the latter. The Russell Ranges, which are similar to the Stirling and Mount Barren Ranges, carry a heath and scrub formation.

The coastal granite bosses and intervening drift sand carry the usual sand dune and granite lithic complexes. Scrub is made up of *E. platypus* var. *heterophylla*-*E. angulosa* and *A. cyclops*. Coastal swamps carry a *Melaleuca* spp. alliance. Inland granite rocks carry a lithic complex.

The principal woodland alliance is *E. occidentalis*, along water courses and associated with clay pans. *Arthrocnemum* spp. alliance is found in and around salt lakes.

The naturalised flora of Western Australia which now make up so much of the landscape of the South-West Province is composed of elements from many parts of the world. These plants have in some instances been deliberately introduced, others have been introduced by accident. Some species have been introduced on more than one occasion and several variants may be present. The more successful species originate from areas of similar climate, and in the absence of disease and insect attack, which in their native habitat would keep them in check, are able to disseminate at an alarming rate. South Africa and the Mediterranean Region provide most of the successful alien species found in the South-West Province.

Grasses of importance are represented by the genera *Bromus* (Brome Grass), *Lolium* (Rye Grass), *Hordeum* (Barley Grass), *Avena* (Oats), *Aira* (Silver Grass), *Briza* (Blowfly Grass), *Poa* (Winter Grass) and *Vulpia* (Silver Grass) from Southern Europe, and *Eragrostis* (Love Grass), *Ehrharta* (Veldt Grass) and *Rhynchelytrum* (Red Top) from South Africa. Pasture legumes from southern Europe include *Trifolium* (Clover), *Medicago* (Medic, Lucerne), *Lupinus* (Lupin), *Ornithopus* (Serradella), *Vicia* (Vetch) and *Lotus* (Birdsfoot Trefoil). *Psoralea pinnata* (African Scurf Pea) from South Africa is a shrubby weed.

The weed flora of Western Australia is composed largely of alien species. Very few native species have become weeds in this State. The ubiquitous composite *Cryptostemma calendula* (Cape Weed) originates from South Africa, as do *Arctotheca*, *Berkheya*, *Osteospermum*, *Gorteria*, *Cotula* and *Ursinia*. Naturalised European composites include *Carthamus* (Saffron Thistle), *Hypochoeris* (Flat Weed), *Carduus* (Slender Thistle), *Inula* (Stinkwort), *Lactuca* (Lettuce), *Erigeron* (Fleabane), *Centaurea* (Cockspur Thistle) and *Cirsium* (Spear Thistle). The Brassicaceae, significant as crop weeds, comprise *Raphanus* (Radish), *Brassica* (Turnip), *Rapistrum* (Turnip Weed) and *Sinapis* (Charlock). *Carrichtera annua* (Ward's Weed) is widely naturalised in the Eucla district. All these are of European origin. The South African Iridaceae are represented by genera such as *Homeria* (Cape Tulip), *Watsonia*, *Gladiolus*, *Moraea*, *Ixia* and *Sparaxis* and were introduced in the first instance as garden subjects. *Echium* (Paterson's Curse) (Boraginaceae) was another garden introduction, while *Rubus* (Blackberry) (Rosaceae), a woody species, was introduced for its fruit. *Oxalis* (Sour sob) (Oxalidaceae), from South Africa, is common in vineyards and orchards, while the family Polygonaceae is represented by *Rumex* (Dock) and *Emex* (Double Gee), weeds of wide habitat. The latter, introduced as a spinach from South Africa, is now extremely widely distributed in the South-West and Ereman Provinces. Also widely distributed but more localised in occurrence is *Argemone* (Mexican Poppy) (Papaveraceae), with origins in North America. *Prosopis* (Mesquite) (Mimosaceae) and *Parkinsonia* (Ceasalpinaceae) from the Americas, and *Calotropis* (Asclepiadaceae) from Africa, are weedy shrubs or small trees naturalised in the tropics.

In addition to the naturalised alien species which now exceed 600 in number, there are hundreds of species of plants under cultivation in Western Australia. These include field crops (cereal, legumes and oil seeds), horticultural plants (fruit, vegetables and garden

subjects) and forest trees. Other species are being deliberately introduced for particular purposes, e.g. the reclamation of waste land and saline areas.

As Man's activities further impinge upon the natural ecosystems and as more and more alien plants become naturalised in this State, so will the effect of these plants species be more widely felt in the natural environment. It is essential to have information on the biology of alien species so that proper management measures can be applied to maintain harmony within our natural ecosystems.

Conservation of the Flora

The establishment, revocation and purpose of reserves fall into two main categories. There are those Acts which allow the Government to set aside reserves for public purposes, which give them varying degrees of permanence, and which make provision for their control and management. These include the Land Act, the Parks and Reserves Act, the Native Flora Protection Act and the Fauna Conservation Act. Acts which give power to authorities to permit land or water to be taken from reserves and to be used for certain other specified purposes include the Public Works Act, the Forests Act, the Mining Act, the Petroleum Act, and the Town Planning and Development Act.

Under the Land Act the Governor may by proclamation reserve Crown lands for a number of public purposes and also classify these as either 'A', 'B' or 'C'. Purposes of reservation include 'fauna', 'flora' and 'public recreation', and any particular reserve can have several purposes. A Class 'A' reserve can be revoked only by an Act of Parliament but the Governor, by notice in the *Government Gazette of Western Australia*, may cancel or amend the boundaries of any reserve not classified 'A'.

The Parks and Reserves Act provides for the appointment of Boards for the control and management of parks and reserves vested in the Crown. The National Parks Board of Western Australia administers sixty-three National Parks and other reserves, totalling 1,770,784 hectares in area (30 June 1974). Currently there is no legislation relating specifically to the management of National Parks.

The Fauna Conservation Act is primarily designed to give protection to certain species of vertebrate fauna. All reserves under the Land Act, for which one of the purposes is fauna conservation, are deemed by the Fauna Conservation Act to be 'Fauna Sanctuaries'. These reserves are vested and controlled by The Western Australian Wild Life Authority, the statutory chairman of which is the Director of Fisheries and Wildlife. It is obvious that the conservation of flora is of vital importance in these fauna reserves.

The Native Flora Protection Act, administered by the Conservator of Forests, protects all native flora on all Crown lands, State Forests and lands reserved for public purposes under the provisions of the Land Act within the South-West and Eucla Divisions, and flora in all parts of the State that are reserved under the provisions of the Land Act for the protection of indigenous flora and fauna. A number of genera in the Northern Province are totally protected, e.g. *Cycas*, *Adansonia* and *Pandanus*. Under the Forests Act licences may be issued for commercial exploitation of flora in the State Forests.

The rationale for an adequate network of reserves to conserve the flora and fauna has been presented in many ways. Given that it is desirable that other organisms be given the opportunity to survive, how best can their conservation be achieved? The ecosystem, in any one place, is in a dynamic state. Their species composition is continually undergoing change. This change, and the distribution of species within the ecosystem, is not random but is highly complex with intergrading variations, and with limits that are difficult to define. Any assessment of the adequacy of a reserve to conserve the plant or animal communities it contains must take into account the dynamics of the ecosystem and, until detailed studies have been made, must remain largely subjective. Reserves of over 4,000 hectares in area appear to have a relatively good chance of achieving their conservation objectives. Smaller reserves and roadside verges are of great value for the conservation of particular plant species and small animals, and also provide the means by which the public and tourists gain an acquaintance with the native flora and fauna. With increased pressure on land use in other directions, urban, rural or forestry, each reserve, large or small, will be

essentially an 'island' of the original landscape. Ecological pressures from adjacent man-made ecosystems need to be buffered against. External treatments which could alter the composition of reserves include alien plant and animal species, fertilisers, pathogens, pesticides and indiscriminate burning.

In the I.B.P./C.T. survey on the conservation status of plant communities it was shown that, of 218 alliances listed for Western Australia, only 2 per cent were well conserved, 49 per cent were moderately to reasonably conserved, while 49 per cent were poorly conserved or not conserved at all in National Parks, Reserves and Crown land deemed suitable for the conservation of major plant communities. The survey also showed that there were twenty-eight reserves over 4,000 hectares in area in the South-West Province and eleven and four, respectively in the Ereman and the Northern Provinces. The figures also include Crown land not yet reserved, but considered to be suitable for conservation areas. The reserves mentioned in the following text are some of the more important for the conservation of flora.

Walpole-Nornalup National Park contains representatives of the *E. diversicolor* high forest alliance.

Stirling Range, Fitzgerald River and Cape Arid National Parks contain a great diversity of species, many of which are endemic to the south coastal region or to the ecosystems within each park.

The *Cape Le Grand National Park*, also noted for its range of endemic species, conserves areas of the granite ecosystem of the south coast.

Kalbarri National Park, in the northern cusp of the south-western crescentic-triangle, is another important conservation area for the highly diverse species composition of the vegetation and the high degree of endemism in the flora.

Badgingarra, Moore River, Nambung and Watheroo National Parks and the *Green Head and Capamauro Swamp* flora reserves, which occur in the Perth Sedimentary Basin, collectively provide suitable conservation areas for floristically rich woodland, shrubland and heath communities of the region.

The *Dryandra* and *Julimar State Forests* are important areas for *E. wandoo* and northern *E. marginata-E. calophylla* alliances. The small (less than 4,000 hectares) *Tutanning* reserve is an area of considerable value as it contains several elements of now rare plant communities, once widely distributed in the wheat belt.

The Ereman Province contains the *Chichester Range* and *Hamersley Range National Parks*, the *Barlee Range, Nullarbor Cliffs* and *Bernier and Dorre Island* reserves, the *Bremer Range, North Nullarbor, Mount Manning, Dampier Archipelago, Queen Victoria Spring* and *Lake Disappointment* areas of vacant Crown land, recommended as being suitable for setting aside as conservation areas. These areas collectively include a number of the representative plant communities of the Province and, in the face of biological and other pressures, are becoming increasingly important conservation areas.

The Northern Province contains the *Prince Regent River* and *Point Coulomb* reserves and the *Drysdale River* and *Napier-Oscar Range* Crown land areas. These areas contain many representative plant communities of the Province.

The reliability of information for most of the areas set aside or considered suitable for conservation in Western Australia is generally poor to fair. Very few areas have been biologically surveyed in detail.

The I.B.P./C.T. survey highlighted the number of rare and endangered plant species in Western Australia. These were categorised into (i)—probably extinct (number in this category=7); (ii)—endangered, only small stands remain, under adverse conditions (46); (iii)—rare, population requires constant monitoring (45); (iv)—depleted, population originally widespread but now reduced in area, requires constant monitoring (15); (v)—species known only from original collection, more information required on their distribution and status (321); (vi)—species of geographical importance, with a disjunct or isolated distribution (18).

Plant taxonomists and morphologists cannot entirely agree, among themselves, on the evolutionary relationships of angiosperms. However, certain floral and morphological

characters are considered to be primitive or to have developed at a very early stage in the evolution of the angiosperm. Primitive floral characters are seen in 27 relict genera in Western Australia (17 in the South-West Province, 12 in the Ereman Province and 16 in the Northern Province). They include *Cycas*, *Macrozamia*, *Callitris*, *Casuarina*, *Hibbertia*, *Emblingia*, *Codonocarpus*, *Persoonia*, *Clematis* and *Pandanus*. Relict species which have retained primitive morphological characters number 234 for the State. A large proportion of these are found in the South-West Province. One hundred and nine species are present in the Stirling botanical district. Many endemic genera are represented, e.g. *Isopogon*, *Adenanthos*, *Stirlingia*, *Synaphea* and *Franklandia* (Proteaceae) and *Andersonia*, *Sphenotoma*, *Cosmelia*, *Lysinema*, *Coleanthera* and *Conostephium* (Epacridaceae). *Thysanotus* (Liliaceae) and *Stylidium* (Stylidiaceae) which, although not strictly endemic to, are most richly represented in the State.

The I.B.P./C.T. survey set guidelines for future action on conservation. These include a detailed biological survey of plants, animals and ecosystems, the incorporation of at least one reasonably large sample of each major ecosystem into a network of conservation areas, a temporary stay both in further land development of semi-natural areas and further alienation of Crown land until assessments can be made as to what additional conservation areas are required, the consultation of experts from State and Federal bodies to ensure that all rare and unique plants and animals are included in and adequately catered for biologically in the conservation network, and the careful preparation of management plans based upon existing and continuing research on ecological conservation.

The Report by the Western Australian sub-committee of the Australian Academy of Science Committee on National Parks recommended that a number of large areas that were considered to include representative communities of natural wildlife and of scenic types be set aside as National Parks or equivalent reserves. The report also referred to the increasing public interest in conservation issues and, resultant upon this, the many new reserves created over recent years in the State. The Environmental Protection Authority, through its Conservation through Reserves Committee, is reviewing and updating the Report of the Academy of Science.

Once it is accepted that all living communities, ecosystems and landscapes be allowed to survive, the concept of a network of conservation areas, managed scientifically, should be unstintingly supported and encouraged. Covering a wide range of interests, aesthetic, educational, recreational and functional, these conservation areas represent rare and precious examples of our original heritage.

FURTHER SOURCES OF INFORMATION ON THE VEGETATION AND FLORA OF WESTERN AUSTRALIA

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Chapter II—continued

Part 4—The Fauna of Western Australia

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DISTRIBUTION

Terrestrial Vertebrates

An observer who looks carefully at the fauna of a large land mass like the Australian continent will soon discover that its animals are not distributed uniformly throughout it. He will find that groups of species which are characteristic of some places are missing from others. This is because the distribution of animals results both from their response to the physical (*i.e.* ecological) conditions of their environment (and these are not uniform from place to place), and from their past histories. For example, the presence of routes along which a species could have moved in the past, and of barriers which would have made its movement from one place to another impossible, decide whether any species could have reached a particular locality by today. But whether it has persisted there until today depends upon local conditions having been suitable for it.

The relationship between the distribution of a species and the character of its environment may be demonstrated dramatically and most easily by comparing the distribution of animals with that of climate, and in particular with its components of temperature, rainfall and the time of the year at which rain falls. In Western Australia many species lie within one or other of the boundaries of two rather different climatic regions. These are the South-West with its regular and plentiful rainfall during cold winters, and the Kimberley with regular, plentiful rainfall during hot summers. The remainder of the State receives intermittent and unreliable rainfall in quantities which vary widely; some parts of this area (*e.g.* the Pilbara) receive their small amount of rain principally in the summer and other parts (*e.g.* the Nullarbor) in the winter.

An analysis of most of the Western Australian groups of vertebrate animals shows that they can be referred to three faunal assemblages characteristic of these climatic regions. These assemblages are called *faunas* and have been named by zoogeographers *Bassian* which, in this State, is the fauna characteristic of the South-West; *Torresian* which, in this State, is characteristic of the Kimberley; and *Eyrean* which is the fauna which occupies the land between. While the composition of a fauna is, generally speaking, characteristic of the area in which it occurs, the occurrence of a particular species in a fauna does not mean that it will not be found in another because each of the faunas has several elements which are sufficiently wide in their requirements for them to occur as 'foreigners' in the faunas of neighbouring regions. Examples of these are the species with predominantly Torresian populations (and apparently histories of origin) which are found today in the otherwise Eyrean fauna of the Pilbara district of the North-West; and various Eyrean species which occur in the Bassian fauna of the South-West.

Among the birds the sharpest faunal break is between the Torresian fauna of the Kimberley division and the Eyrean fauna of the Pilbara. The Kimberley is the headquarters in Western Australia of the Scrub Fowl (*Megapodius freycinet*), the Fruit Pigeons (Ptilinopinae), Lorikeets (*Trichoglossus* and *Psitteuteles*), the White Cockatoo (*Cacatua galerita*) and most of the Grass Finches. The Torresian species which penetrate further southwards include the Brolga (normally only to Onslow), White-breasted Wood Swallow (to Shark Bay), and the Brown Honeyeater (right through to the South-West).

Among mammals there seem to be a few truly Torresian species in Western Australia. Examples would be the Fruit Bats or Flying Foxes (*Pteropus* and *Macrogllossus*), the Little Rock Wallaby (*Peradorcas concinna*), the Jungle or River Wallaby (*Macropus agilis*) and the Antelope Kangaroo (*Macropus antilopinus*). On the whole most of the mammal species which occur in the Kimberley seem to be characteristic of that part of the Eyrean fauna inhabiting the country which receives intermittent rainfall during the summer.

Even among birds, the boundary between the majority of the Eyrean species and the bulk of the Bassian species is less well defined than that which separates Eyrean and Torresian faunas as there is a good deal of overlapping. For example, the line which separates the woodland eucalypts and the mulga, the so-called 'mulga-eucalypt line', is the extreme limit of most Bassian species, though many do not range inland beyond a line connecting Geraldton, Moora, Northam and the Stirling Range. The mulga-eucalypt line separates, to quote an example, the main distributions of the Grey Kangaroo (Bassian) and the Red Kangaroo (Eyrean). This line is the northern limit of other well known Bassian species such as the Red Wattle Bird.

The South-West of the State has representatives of many well known Bassian species also found in south-eastern Australia. These include among birds, the Brush Bronzewing, White-tailed Black Cockatoo, Western Rosella, Scarlet Robin, Yellow Robin, Southern Emu-Wren, Silvereye, White-naped Honeyeater, Western Spinebill, New Holland Honeyeater and Red-eared Firetail. Among mammals there are the Pigmy Possum, the Wambenger, the Grey Kangaroo, the Tammar Wallaby, the Brush Possum and various dunnarts (marsupial mice, *Sminthopsis*). Among frogs there are various *Crinia* and *Heleioporus inornatus* and *australiacus*; and fishes such as *Galaxias* and *Nannoperca*. However, there has been an extensive intermingling of Eyrean and Bassian elements in the South-West on a scale not paralleled in south-eastern Australia. In the South-West we have a blend of faunas in the sclerophyll forests which, though essentially Bassian in character, contain such Eyrean intrusives as the Purple-crowned Lorikeet, the Twentyeight Parrot, the Rufous Tree-creeper, the Western Warbler, the Banded Blue Wren and the Red-tipped Diamond-bird.

It must be recognised also that the distribution of animals that we see today may be a very recent pattern, and subject to continual fluctuation. Studies of fossil pollen in the South-West suggest there have been fluctuations in the relative abundance of Jarrah, Marri and Karri trees over the last few thousand years. Even more marked fluctuations in vegetation may have been produced by climatic changes accompanying glaciation and deglaciation in high latitudes and altitudes over the past 2 million years. Marked changes in vegetation would usually be accompanied by changes in fauna. We know that the Marsupial Wolf or Tiger (*Thylacinus*), the Koala (*Phascolarctos*) and other marsupials, some of them now extinct throughout their ranges in Australia, once lived in the South-West, and it is possible that climatic changes were responsible for their vanishing from that area of Western Australia.

Climatic alterations, on a minor scale, are constantly going on. In the past half-century, or longer, there has been a considerable change in northern Europe, Asia and America, an amelioration in some parts and a drying-up in others, with widespread effects on the distribution of animals. Something similar appears to have been taking place in Western Australia. Many dry-country bird species, of the Eyrean faunal assemblage, have made notable extensions of range into the south-west corner. These include the Galah, Little Corella, Budgerygah, Smoker Parrot, Crested Pigeon, Black-faced Woodswallow, Crested Bell-bird, Blue-and-white Wren, Black-throated Butcher-bird and Little Crow. The records of local naturalists, who keep district lists of local birds and mammals over a period of years, are very useful sources of data for plotting these changes. Frequent Museum surveys will provide more positive information.

In some cases distribution changes due to natural causes may be masked or modified through the alterations of habitat due to settlement. These habitat changes act to the detriment of woodland birds but favour open-country species (like pipits and plovers).

Coastal Marine Fauna⁽¹⁾

The nature of the coastal waters varies from the warm mangrove-lined mud flats of the north to the clean sandy bays and cool crystal-clear waters of the south. The types of coastal marine habitats depend on the range of tide, the exposure to oceanic swells, the sediments carried off the land by wind or river and some local biological activities such as reef coral or algal building. There is a gradual change in water temperature, salinity and other physical characteristics of the sea as one moves along the long Western Australian coastline of 12,500 kilometres; these changes reflect the nature of the adjacent water mass modified by local effects such as occur in large and small embayments, near river mouths or behind protecting headlands. The coastal waters may be divided into the following broad zones:

1. North: from the Western Australian-Northern Territory border to Cape Leveque with very broken coastline, a high tidal range, high runoff from well vegetated hinterland and no exposure to heavy oceanic swell.
2. North-north-west: from Cape Leveque to Cape Keraudren with eighty miles of low beach, a high tidal range, little regular runoff from desert sands which are blown into the sea by the 'South-East Trades'.
3. North-west: from Cape Keraudren to North West Cape with an indented coastline, moderate tidal range, irregular runoff from some mountains and desert sands.
4. West-north-west: from North West Cape to Kalbarri with some high cliffs, a deep embayment (Shark Bay), moderate tidal range, irregular low runoff from little vegetated desert hinterland and exposure to the south-west oceanic swell. A barrier coral reef, unique in Western Australia, runs southward from North West Cape for nearly 160 kilometres.
5. West-south-west: from Kalbarri to Cape Naturaliste with fairly smooth low white sandy coastline and some limestone headlands; rainfall moderate with little runoff from coastal sands, water clear; tidal range low, offshore coastal reefs give some protection to the coast from the south-west swell.
6. South-west: from Cape Naturaliste to Israelite Bay with broken headland and surf beach formations, high south-west swell exposure, low tidal range, many inlets and low-volume river discharges.
7. South-east: from Israelite Bay to the Western Australian-South Australian border with smooth coastal outline of beaches and some cliffs, modified exposure to south-west swell, low tidal range and low rainfall runoff.

Certain coastal marine areas are special in the sense that they represent either a transition (*i.e.* rapid change of character) between two adjacent zones or possess unique features found in such combinations nowhere else on the coast. Examples of such special places are the coastal waters in the Broome to Derby region, around North West Cape, in Exmouth Gulf, in Shark Bay, the Perth metropolitan beaches (including Cockburn Sound), around Cape Naturaliste and around Cape Leeuwin.

The islands and reefs off the coast are also regarded as special because of their marine faunal peculiarities; for example, the Houtman Abrolhos, the Monte Bellos, the Rowley Shoals, the North West Cape Barrier Reef and the Recherche Archipelago.

The marine fauna of the north coast is distinct from that of the south coast although a few species do occur in both regions. The northern fauna is regarded as part of the Indo-West Pacific fauna, and the southern fauna of Western Australia as part of the southern Australian fauna. Some species of both these faunas extend and overlap along the west coast and there are several species which are endemic to this region only. One of these is the Western Australian commercial rock lobster *Panulirus cygnus* and another is the Western Australian commercial jewfish *Glaucosoma hebraicum*.

Fauna of Inland Waters⁽²⁾

The inland waters are of many types and possess very varied faunas. They may be divided into four main ecological groupings: (1) the rivers of the Kimberley Division;

(1) Written in collaboration with Dr R. W. George. (2) Written in collaboration with Dr E. P. Hodgkin.

(2) the river systems of the North-West from the De Grey to the Murchison; (3) the streams, swamps, and lakes of the south-west corner; and (4) the temporary waters of the dry inland represented by two widely different habitats, (i) freshwater claypans and soaks (including man-made dams) and (ii) the salt lakes.

Marked seasonality characterises river flow in the Kimberley Division because of the alternation of regular summer rain with winter drought. The river pools and many isolated springs support an extensive fauna of fish, insects, molluscs and other animals, many of which show close affinities with the aquatic fauna of Asia and the Indo-Malay Archipelago.

The rivers of the North-West from the De Grey to the Murchison flow only intermittently, and between times of flood the fauna must survive in widely separated spring-fed pools in river beds. These pools, like those at Millstream Station on the Fortescue River, are often of striking beauty. Their fauna is relatively sparse as compared with the richer assemblages in the Kimberley rivers, the most conspicuous elements being a few fish species and a freshwater tortoise (*Chelodina steindachneri*) which is confined to the region.

The permanent hill streams of the South-West have a diverse arthropod fauna. Most of these are insects but, in addition, there are several species of freshwater crayfish in slower-running parts—Marron (*Cherax tenuimanus*) occur in permanent streams of deep water; Jilgie (*C. quinquecarinatus*) in shallow permanent water; Koonac (*C. preissi*) make burrows in the mud of swamps. A species of a closely related group, the so-called 'land-crabs' (*Engaewa*), has been recently discovered in the swamps of the South-West. The freshwater mussel *Westralunio carteri* is confined to the streams of the South-West. Most rivers stagnate and may become saline in summer; they are reduced to chains of large or small pools to which the fauna is restricted. The small transparent prawn *Palaeomonetes* is often abundant in these pools. Shallow permanent lakes and swamps near the coast also have a fairly varied insect fauna, among which certain species of dragonflies are particularly abundant; at times there are enormous numbers of *Daphnia* and related small crustaceans.

The inland freshwater claypans are characterised by an interesting ephemeral fauna, mainly of phyllopod Crustacea. The most conspicuous is the large shield shrimp (*Triops australiensis*) but a variety of fairy shrimps (Anostraca and Conchostraca) occur also. The eggs of these creatures survive for years in the dried mud and development is rapid when the claypans fill after occasional rains.

The most conspicuous animals in the waters of the salt lakes are the brine shrimps (*Artemia* and *Parartemia*), which at times build up to such high population densities as to attract large flocks of Banded Stilts, which breed only in certain of the inland salt lakes. The Salt Lake Snails *Coxiella* reach their greatest diversity and abundance in the South-West saline lakes.

THE COMPOSITION OF THE FAUNA

The fauna of Western Australia includes representatives of all major phyla of the Animal Kingdom and individuals range in size from the Blue Whale (*Balaenoptera musculus*), the largest mammal that has ever lived, to minute single-celled protozoa which cannot be seen without a microscope. No estimate can be made of the number of species, and probably the number of species of insects alone out-numbers all the rest by a comfortable margin. Here we have not attempted to describe all phyla. The vertebrates are given fairly full treatment because they are obvious and familiar animals to most of us. The insects (mostly those of economic importance) are dealt with in Part 5 of this Chapter, and the remaining phyla are treated in a few paragraphs which confine themselves to groups of interest.

THE VERTEBRATE FAUNA

Mammals

Unlike the birds and reptiles, wild mammals are not frequently seen in most parts of Western Australia. This is because most of the species are small and secretive and appear

only at night. However, there are exceptions and, as any traveller in inland and northern parts of the State can attest, kangaroos of one species or another can often be seen in large numbers during daylight hours.

Most species of mammals have distinct ecological preferences which allow them to be categorised into one or other of the three main faunal groups which are described earlier in this Part under the heading *Distribution*. For example, in the kangaroo family, the Tammar Wallaby (*Macropus eugenii*), the Quokka (*Setonix brachyurus*), and the Brush Wallaby (*Macropus irma*) are found only in the South-West or on certain isolated islands off the coast. Of these, the Brush Wallaby is closely related to the South Australian Toolache Wallaby (*Macropus greyi*) and the Tammar to the Flinders Island Wallaby and the now extinct St Peter Island Wallaby of South Australia. The most familiar kangaroo of the dry country with unreliable rainfall is the Red Kangaroo or Marloo (*Megaleia rufa*), while in the summer-rainfall country of the Kimberley Division we find such species as the Jungle Kangaroo or River Wallaby (*Macropus agilis*), the Little Rock Wallaby (*Peradorcas concinna*) and the Northern Nail-tailed Wallaby or Karrabul (*Onychogale unguifera*). In addition to the species which sort out in this convenient way, there are others which are widely distributed and in fact occur as members of all three faunal assemblages. The most familiar members of the family which do this are the Euro or Biggada (*Macropus robustus*), the Boodie (*Bettongia lesueur*), and the Rock Wallaby (*Petrogale penicillata*). Of these, the Euro may still be found anywhere in suitable local habitats from the Kimberley to the South-West and inland across the South Australian border. At one time this was true also of the Boodie and the Rock Wallaby which, however, are today unfortunately absent from much of their former range.

So far, only the kangaroos have been mentioned but, in fact, representatives of all three major divisions of the mammals (*i.e.* monotremes, marsupials and placentals) occur in the State.

The egg-laying monotremes are represented by the Echidna (*Tachyglossus aculeata*), sometimes called Spiny Anteater or Porcupine. This curious and completely inoffensive animal is not uncommon in the country around Perth and it even appears on occasions in densely-settled suburban areas. In drier districts, its diggings, made in its search for insects, are familiar around rocky hills and breakaways.

Marsupials, or pouched mammals, occur in great variety in Western Australia. The kangaroos and wallabies, already mentioned, are the herbivorous members of the group. These animals are the Australian evolutionary equivalent of the antelopes, deer, and horses of the other continents and there is often an extraordinary similarity in structure between members of the kangaroo family and these other herbivores. These similarities extend even to such details as the physiology and shape of the stomach and other organs of digestion. The reproductive systems of marsupials and their physiology have also long been of great interest to biologists because they differ from those of other animals. For example, it is now known that in the Quokka, and some other wallabies, the adults mate again immediately after the birth of the 'joey'. The embryo which is the product of this second mating does not develop immediately but is held in a dormant state in the female system. However, if the first young joey is lost from the pouch, this dormant embryo immediately begins to develop and a second joey is produced after a minimum period of time.

In Western Australia the kangaroos and wallabies are all terrestrial (there are no tree kangaroos), and even their arboreal relatives, the phalangerids, are few in number as compared with other parts of Australia. The Brush Possums, the Pigmy Possums and the Ring-tails have Western Australian representatives, but the Koalas and the striped Possums are absent, and of the four species of flying possums of eastern Australia only one (*Petaurus breviceps*) occurs in Western Australia and that only in the Kimberley Division. Although the species of possums in Western Australia are few in number, there are some unique forms which are of great interest. One of these is the rare Scaly-tailed Possum (*Wyulda*) of the Kimberley; unlike other Australian possums this animal has a hairless scaly tail and only twelve specimens of it are known. There is also the curious and rarely-seen

Honey Possum (*Tarsipes*) of the South-West. Wombats are known to have occurred in Western Australia around the turn of the century and were thought to be extinct until a small colony was rediscovered in 1965 near Caiguna in the Eucla Division.

Although the large carnivorous marsupials no longer live in the State, the smaller representatives of this group are still fairly common. There are two separate species of native-cats, a southern species (*Dasyurus geoffroii*) and a northern one (*Dasyurus hallucatus*), as well as many species of smaller carnivorous and insectivorous forms. One of the smaller members of this family, the Dibbler (*Antechinus apicalis*), one of our least-known marsupials and last recorded in 1884, was rediscovered during 1967 at Cheyne Beach near Mount Many Peaks on the south coast.

The remaining group of marsupials is that commonly called the bandicoot family. One of these, the Pig-footed Bandicoot (*Chaeropus ecaudatus*) is probably the State's rarest mammal, but it once occurred in the Nullarbor region where its remains have recently been discovered in caves and two living specimens of it were collected by John Gilbert in 1841 some miles to the north-east of Northam. No confirmed record has been made of the species in Western Australia since then. On the other hand another species of bandicoot, the Quenda, or Short-nosed Bandicoot (*Isodon obesulus*), is one of the commonest of marsupials. Its scratchings are common in country gardens and the little animal is often run over and found dead on roads. It lives largely on insects and, being nocturnal, it is seldom seen but it is nevertheless very common in many areas in the South-West.

The third main group of mammals is that of the higher mammals or placentals. Animals of this group occur in Western Australia in addition to the marsupials and the monotremes, and it always comes as something of a surprise to visitors (who generally have a strong preconception of Australia as a land in which all but introduced mammals and the Dingo are pouched mammals and monotremes) to learn that there are many species of Western Australian native placental mammals. In fact, if the seals, whales, and Dugong which occur around our coasts be counted, the species of native placental mammals outnumber the marsupial and monotreme species.

The composition of the mammal fauna is shown in the following table.

Kinds of wild mammals	Number of species occurring in Western Australia (a)	Kinds of wild mammals	Number of species occurring in Western Australia (a)
Monotremes	1	Introduced placentals—	
Marsupials	60	Rodents	5
Native placentals—		Land carnivores	2
Bats	23	Ungulates (Horses, Deer, Camels, etc.)	9
Rodents	24	Rabbits	1 17
Marine mammals:			— —
Seals (b)	2		
Dugong	1		
Whales	22		
Land carnivores—Dingo	1 73	TOTAL, ALL SPECIES	151
	—		—

(a) Total numbers of species are from *A Guide to the Native Mammals of Australia* by W. D. L. Ride. (b) Only resident seals are counted. Antarctic seals are occasionally 'shipwrecked' on southern coasts but these are clearly stragglers into the area.

Within Western Australia the best-established groups of native placental mammals, i.e. the bats and rodents, are distributed in much the same ecological manner as are the marsupials; some are dry country forms like *Leggadina hermannsburgensis*, the small mouse which builds mounds of pebbles on stony ridges^(a), others are predominantly animals of the wet tropics like the majority of the Fruit-bats or Flying Foxes (*Pteropus*

(a) It is suspected that these may be dew-traps.

and *Macroglossus*), while yet others are confined to the country of reliable winter rainfall in the South-West, e.g. the Southern Bush-rat (*Rattus fuscipes*). These native placental mammals are of great zoological interest because some of them, and in particular the native rats and mice, have been here for many millions of years and closely parallel (in adaptation to our stringent ecological conditions) their relatives in similar places in other lands. Thus, we have hopping-mice (*Notomys*), like miniature kangaroos, which are very similar in appearance and habits to the jumping-mice (*Zapodidae*) of the American and Eurasian dry-lands, and the jerboas (*Dipodidae*) of Africa; but it must be emphasised that the jumping specialisations of our own hopping-mice have evolved quite independently within Australia.

Some of our native placental mammals are economically important. Until 1963 a shore-based Western Australian fishery at Carnarvon depended upon the migrating groups of Humpback Whales (*Megaptera novaeangliae*) which move along the western coast between their feeding grounds in Antarctic waters and their breeding places in the tropics. Unfortunately, immoderate exploitation of the stocks (especially the breeding stock) had so reduced the population that it was in danger of extermination and the shore-based fishery collapsed. Another whale fishery, at Albany, is dependent upon Sperm Whales (*Physeter catodon*). The catching of Southern Fur-seals (*Arctocephalus doriferus*), formerly lucrative, is now no longer permitted. The Dugong (*Dugong dugon*) was once an important source of food for the natives of the coastline from Shark Bay to the Northern Territory. The Dingo (*Canis familiaris dingo*) has probably not been in Australia for as long as the other native mammals, and may well have entered with the Australoid people who were ancestral to our present Aborigines. In some parts of the State the Dingo is a major problem to the pastoral industry because of its attacks on livestock.

The preceding table also shows that there is a large number of introduced species as well as native mammals. These are now a part of the wild mammal fauna of Western Australia and all are placentals. Some of these species are also agricultural and pastoral pests and they have become so well entrenched in the environment that there is no doubt that any discussion of the mammalian fauna of the State must take them into account and mention should be made of some of them here. Red Deer (*Cervus elephas*) occur spasmodically in the South-West around Pinjarra, Waroona and Harvey. Camels (*Camelus dromedarius*) occur in large numbers and are distributed through the Eastern Goldfields up through the Pilbara and into the Kimberley. They have been declared vermin around Laverton, Nullagine, Port Hedland, and Halls Creek. Donkeys (*Equus asinus*) have a distribution very much like that of the camel and also occur generally throughout the Kimberley. Wild goats (*Capra hircus*) are ubiquitous in dry country but are mainly concentrated in the Murchison and the North-West. A small herd of Black-buck (*Antelope cervicapra*) occurs near Geraldton. Rabbits (*Oryctolagus cuniculus*) are widespread in Western Australia but are only of economic significance south of the Murchison. They are by no means the problem that they used to be, due largely to programmes of intensive rabbit extermination. Foxes (*Vulpes vulpes*), declared vermin, are also widespread but do not commonly occur north of the De Grey River, having only been reported spasmodically from the Kimberley Division. The domestic cat run wild (*Felis catus*) occurs commonly in the bush and is an efficient predator on native fauna. It became feral in the early days of settlement and soon spread throughout the Colony. The naturalist Keartland while a member of the Calvert Scientific Exploring Expedition in 1896, recorded that 'in the desert of North-West Australia' he saw a tabby cat at least 400 miles [644 kilometres] from the nearest house. Earlier still the ornithologist Tom Carter writing in 1887 from the Carnarvon district spoke of 'the domestic cat, which is found quite wild and of a large size all through the colony'.

Examination of the composition of the older mammal fauna of Western Australia, i.e. monotremes, marsupials, bats and native rodents, as set out in the following table, reveals that only one-eighth of all species recorded from the State today appear to occur only in Western Australia. The South-West contains by far the greatest number of endemic species.

ENDEMISM OF NATIVE MAMMALS TO WESTERN AUSTRALIA
(excluding marine mammals)

Group	All endemic and non- endemic species	Number of endemic species—			
		Total endemics	Endemics north of Fitzroy River	Endemics of South-West Land Division	Endemics of remainder of State
Monotremes	1	....	....	....	....
Native cats	23	5	1	2	2
Marsupial moles	1	....	....	....	....
Bandicoots.....	7	....	....	....	....
Possums	8	2	1	1	....
Wombats	1	....	....	....	....
Kangaroos and Wallabies	20	4	....	3	1
Rats	24	3	....	2	1
Bats	23	....	....	....	....
Dingo	1	....	....	....	....
Totals	109	14	2	8	4

Birds

The bird fauna of Western Australia consists of a selection of the species occurring in eastern Australia, with only a very minor development of endemic forms. All of these latter, except one (the Western Australian King Parrot, *Purpureicephalus spurius*), have a close and obvious affinity to other Australian forms. The quantitative relationship of the Western Australian bird fauna to that of Australia as a whole is indicated in the following table, which has been prepared on an ecological basis.

	Number of breeding species		Number of non-breeding visiting migratory species	
	Western Australia	Australia	Western Australia	Australia
Land birds	307	499	6	8
Inland water birds	51	52	33	42
Sea birds	25	38	33	55
Total	383	589	72	105

Representatives of most of the families and genera of Australian birds occur in this State. Notable absentees include the Cassowary (*Casuarus casuarinus*), Brush Turkey (*Alectura lathami*), several of the fruit-pigeons, the Crimson Rosella (*Platycercus elegans*), Lyre-bird (*Menura novaehollandiae*), several honeyeaters including the Regent (*Zanthomiza phrygia*), Apostle-bird (*Struthidea cinerea*), Cat-birds (*Ailuroedus*), Satin Bower-bird (*Ptilonorhynchus violaceus*) and Rifle-birds (*Ptiloris*).

Space is insufficient to detail all the forms occurring in Western Australia. Mention may be made only of some distinctive species and groups which are common and widely distributed.

The Emu (*Dromaius novaehollandiae*) is still numerous all over the State and is occasionally encountered in the Darling Range near Perth. Australia's only breeding species of penguin, the Fairy Penguin (*Eudyptula minor*), nests on islands off the southern and south-western coasts as far north as Carnac near Fremantle. The Mallee-fowl or Gnow (*Leipoa ocellata*) is still plentiful and, after a period of decline during which its disappearance was feared, it is now increasing in abundance. All of the widespread

species of Australian quails occur but owing probably to the scarcity of natural grasses in the south are not individually very numerous. Among the pigeons two species have shown notable recoveries in population strength. After a long period of scarcity the Common Bronzewing (*Phaps chalcoptera*) began a cycle of increase about 1936 and is still very abundant. The rare Flock Pigeon (*Histriophaps histrionica*) of the more arid country of the North-West and the far North has declined all over Australia and had not been recorded in this State since 1927 until 1958 when considerable flocks were observed in the Hamersley Range and the Fortescue River country. It has also reappeared in parts of the Kimberley Division.

A very distinctive member of the rail family is the Black-tailed Native Hen or Gallinule (*Tribonyx ventralis*). It is a creature of the drier country but is subject to violent fluctuations in numbers, when it is liable to invade the South-West in great strength. A famous occasion was in May 1833 when it overran the settlers' fields and gardens around Perth and did considerable damage to the crops. Similar irruptions took place in 1853, 1886, 1897 and 1919. Later invasions, such as those in 1952 and 1964, have been on a much more modest scale. Of the three Australian grebes the most plentiful is the Hoary-headed Grebe (*Podiceps poliocephalus*) which assembles in the winter in big flocks on the southern estuaries, including that of the Swan River.

In the petrel group there are five breeding species in local waters. The most numerous is one of the mutton-birds, the Wedge-tailed Shearwater (*Puffinus pacificus*) which nests on most islands between Carnac in the south and Sable Island, in the Dampier Archipelago, in the north. A second mutton-bird, the Fleshy-footed Shearwater (*P. carneipes*) nests between Cape Leeuwin and the Archipelago of the Recherche; it is a migratory species and in the winter months migrates to the north-western sector of the Indian Ocean. A similar trans-equatorial migrant is the White-faced Storm-petrel (*Pelagodroma marina*), a diminutive form rarely observed at sea. It nests often in vast aggregations on islands off the south coast and as far north as the Abrolhos. All of these species nest in the spring and summer months. The remaining two breed in the winter. The Great-winged Petrel (*Pterodroma macroptera*) shares the nesting islands off the south coast with the Fleshy-footed Shearwater in a sort of 'Box and Cox' relationship. The black and white Little Shearwater (*Puffinus assimilis*) has a wider nesting range, from the Recherche to as far north as the Abrolhos; in former times it nested at Parrakeet Island off Rottnest Island. In the winter months some twenty-two species of southern-breeding petrels visit local seas. They vary in size from the little Wilson Storm-petrel (*Oceanites oceanicus*), barely larger than a swallow, to the great Wandering Albatross (*Diomedea exulans*). The Wilson Storm-petrel 'winters' all along the Western Australian coast to the tropics and is a familiar sight around fishing boats in Shark Bay. The most common of the albatrosses is the Yellow-nosed Albatross (*Diomedea chlororhynchos*) and may be seen as far north as Point Cloates. The most familiar of these visitors is the dusky Giant Petrel (*Macronectes giganteus*). Ringing experiments have demonstrated that the birds seen here are first-year individuals making circumpolar flights round the Southern Hemisphere; marked birds found in the South-West had been ringed a few months previously in their nests at Heard Island, Macquarie Island, and islands in the South Orkneys in the South Atlantic.

All of the five species of Australian cormorants or shags occur locally. Despite complaints of their depredations on commercially important fish, investigations have cleared the birds of blame, though one species, the Black Cormorant (*Phalacrocorax carbo*), specifically identical with the Cormorant of Europe, does occasionally include edible fish in its diet. One marine species, the Pied Cormorant (*P. varius*), which enters the Swan River estuary and Peel Inlet, is mainly responsible for the guano deposits on the coastal islands. Deposits at Shark Bay were commercially exploited in the last century and at one stage, in 1850, a detachment of troops was stationed at The Quoin Bluff, Dirk Hartog Island, to ensure the collection of royalties. Pelicans in Western Australia, unlike those in eastern Australia, breed only on coastal islands and not on inland waters. Until recently the nearest breeding place to Perth, and presumably the origin of most of the Swan River Pelicans, was Pelican Island, Shark Bay. However, since 1962 a breeding colony has become established at Peel Inlet, Mandurah.

Fourteen species of terns are recorded for the southern parts of the State and three more for the Kimberley Division. Three of the seventeen are migrants from the Northern Hemisphere and ringed individuals of the European Common Tern (*Sterna hirundo*) and the Arctic Tern (*S. macrura*), marked in northern Europe, have been recovered near Fremantle. These birds must have reached our coast via the Cape of Good Hope. The Silver Gull (*Larus novaehollandiae*) is noteworthy for having two breeding seasons in the southern part of the State. On the islands at Safety Bay, for example, there is an egg-laying peak in the autumn and another in the spring.

The numerous Order of wading or shore-birds (sandpipers, dotterels, and plovers) includes a few locally-breeding species but the majority are migrants from the Northern Hemisphere, where they breed in the tundra zone of northern Asia. Though they frequent ocean beaches and estuaries, as well as swamps and lakes, they are listed in the category of 'inland water birds' in the table on page 89. Some twenty-five species of these birds, commonly called 'snipe' (though the true Snipe of eastern Australia, *Gallinago hardwickii*, does not occur in this State) migrate to Western Australia. In addition there are sixteen species of this Order which breed in Australia. One of them, the Red-capped Dotterel (*Charadrius alexandrinus*), is virtually identical with the rare Kentish Plover of England. Here it is very common and nests at Pelican Point on the Swan River. Another local breeder is the remarkable Banded Stilt or Rottnest Snipe (*Cladorhynchus leucocephalus*) which is an attractive inhabitant of the salt lakes of Rottnest Island. However, it nests only on the inland salt lakes. The nesting habits remained long unknown until colonies were discovered at Lake Grace and Lake King in 1930.

The Australian Bustard ('Wild Turkey', *Eupodotis australis*) is a magnificent bird which has been largely exterminated by shooters over much of south-eastern Australia and in the developed South-West of this State. It is not uncommon in sparsely-settled areas and individuals occasionally appear on the open coastal country quite near Perth. It has recently been demonstrated by ringing that the Straw-necked Ibis (*Threskionis spinicollis*) ranges between south-western Australia and northern and eastern Australia. Fledglings marked in the nests at Muchea have later been taken in the North-West, the Kimberley Division, Arnhem Land and near Orange (New South Wales).

The Brolga (*Grus rubicunda*) is a northern bird normally found as far south as Onslow, but some individuals may wander into the outer parts of the South-West as occurred in 1952. In the heron family a new bird has been added to the State list—the Cattle Egret (*Bubulcus ibis*), which appears to have colonised northern Australia from Indonesia and has now spread over much of eastern and Western Australia.

There are eighteen species of swans and ducks occurring in the State, one of the most remarkable, perhaps, being the Cape Barren Goose, which is now restricted to the islands of the Recherche Archipelago. Recent leg-ringing experiments have shown that the common and widespread Grey Teal (*Anas gibberifrons*) wanders indiscriminately all over Australia, its movements being influenced by availability of surface waters.

Though the Black Swan (*Cygnus atratus*) occurs all over Australia, and in fact is more plentiful in some of the other States, historical reasons give it a peculiar association with Western Australia. The bird was first recorded by Europeans in this State, by Antonie Caen, skipper of the Dutch ship 'Banda' in July 1636 off the north-west coast. The first specimens were captured on the Swan River by Willem de Vlaming in January 1697 and taken alive to Batavia, whence they astonished the scientific world. Vlaming named the river after them, and the first colonisation in 1829 was known as the Swan River Settlement. The bird became the emblem of the Colony and State, with the motto, *Cygnus insignis*. The birds do not, and probably never did, occur in the broadwaters of the Swan River estuary, but in the shallows at Lucky Bay and above Heirisson Island. During the 1890s the authorities imported birds from elsewhere in the State, and even from Victoria, and set them free, pinioned, in Perth Water, where they were an attraction in Mounts Bay when the old men's home was located near there.

The State is also well provided with hawks and eagles, twenty-four species being found within its limits. Most are harmless economically and the few that do take chickens and lambs are not serious depredators, though there is controversy on the role of the

Wedge-tailed Eagle (*Aquila audax*) which is, however, classified by the Agriculture Protection Board as vermin in certain districts in the central and north-west portions of the State.

There are not as many species of the parrot group in Western Australia as there are in eastern Australia but one species, the Western Australian King Parrot or Red-capped Parrot (*Purpureicephalus spurius*), is restricted to the South-West and has no near relatives elsewhere. The Twentyeight Parrot is a form of the Port Lincoln Parrot (*Barnardius zonarius*) and is common almost everywhere, being regularly present in King's Park, a natural reserve adjacent to the City of Perth.

The Kookaburra (*Dacelo gigas*), so common in the forests of the South-West, is not a Western Australian native but was introduced from eastern Australia by the Acclimatisation Board during January 1897. A similar species, however, the Blue-winged Kookaburra (*D. leachii*) occurs in the north, as far south as the Wooramel River. The Rainbow-bird (*Merops ornatus*) in the south is a strict migrant, arriving regularly in the first week in October. Local birds migrate to the north of the State, the wintering area being from the Gascoyne River northward, but some individuals cross the Timor Sea to the Indonesian islands. There are eleven cuckoo species in our area, the commonest being the Pallid Cuckoo (*Cuculus pallidus*) whose plaintive insistent note is heard soon after the winter rains set in.

In the great group of passerines, or song-birds (Order Passeriformes), the most celebrated is the Noisy Scrub-bird (*Atrichornis clamosus*), a primitive almost-flightless bird which until recently was believed to be the only Australian bird which had become extinct since white settlement. The last specimen was collected by the ornithologist A. J. Campbell at Torbay in 1889, but late in 1961 a surviving population was discovered at Two Peoples Bay east of Albany. Space is insufficient to deal in any detail with other members of this large Order. Throughout the State there are 172 species, of which 95 occur in the southern, settled parts and at least 33 are found in King's Park. A distinctive robin, the White-breasted Robin (*Eopsaltria georgiana*), occurs in the South-West. It is a relative of the yellow robins and is found in the dense coastal and forest thickets from Geraldton southward and east to Albany and the Porongurups. The Western Warbler (*Gerygone fusca*) is a sweet-voiced songster which may be heard in the street trees of Perth, the only Australian capital city in which it lives; in the other States the bird is an inland species. Another distinction of the Perth metropolitan area is that four species of blue-wren, a greater number of species than in the environs of any other capital city, have been noted there. One species, the Red-winged Wren (*Malurus elegans*), which used to live near the city, disappeared when Herdsman Lake was drained. The remaining species are the Splendid Wren (*Malurus splendens*), occasionally still seen in the University grounds; the Blue-and-white Wren (*Malurus leuconotus*) in the coastal dune scrubs, and the Causeway and Pelican Point samphire flats; and the Variegated Wren (*Malurus lamberti*) in the dune thickets. Honeyeaters are numerous, the largest, the Red Wattle-bird (*Anthochaera carunculata*), being a familiar bird in metropolitan streets and gardens. Most of the grassfinches are restricted to the Kimberley Division, where ten species are found. However, one of them, the widespread Zebra Finch (*Taeniopygia castanotis*), nests as near to Perth as Northam and York. Two bower-birds occur in the State. The Great Bowerbird (*Chlamydera nuchalis*) is confined to the Kimberley Division, but the Spotted Bowerbird (*C. maculata*) is found in the North-West and ranges south to the East Murchison country and Malcolm in the Eastern Goldfields.

In contrast with all other Australian States there are very few species of exotic birds established in Western Australia. (The same is true of the Northern Territory.) In the towns of the South-West two turtledoves are plentiful, the Indian (*Streptopelia chinensis*) and the Senegal (*S. senegalensis*). The Goldfinch (*Carduelis carduelis*), an escapee from aviaries, breeds freely in the Perth metropolitan area and around Albany. Recently another cage-bird escapee, the Red-browed Finch (*Aegintha temporalis*), an eastern Australian species, has established itself east of Kalamunda in the Darling Range near Perth. The Indian or Ceylon Crow (*Corvus splendens*) repeatedly arrives at Fremantle on ships from the Orient but the vigilance of officers of the Department of Agriculture and port officials

has led to the successful eradication of the unwanted immigrants. The House Sparrow (*Passer domesticus*) has been similarly kept at bay at Fremantle. This species did, however, make a temporary colonisation, from South Australia, in the vicinity of Eucla and Mundrabilla in 1917-18 but it failed to make any headway and disappeared from there.

Reptiles

In Western Australia the reptiles are represented by three major zoological groups or Orders. These are the Chelonia (four marine species of turtles and six of freshwater tortoises), Crocodilia (two of crocodiles) and the Squamata (sixty-two species of snakes and 159 of lizards).

The freshwater tortoises of Western Australia, like those of the rest of the continent, belong to the ancient group of side-necked tortoises. In most other parts of the world tortoises retract their heads straight backwards bending their necks in a vertical S-shaped curve. Australian tortoises, and certain others from South America, bend their necks sideways; this is believed to be an ancient character. Although the species of Western Australian tortoises are few, they are of great interest and their distributions are far from well understood. This is especially true of the species inhabiting the Kimberley. Freshwater tortoises do not seem to fall into simple faunal zone classifications. The common long-necked tortoise of the South-West, *Chelodina oblonga*, is closely related to the long-necked tortoise of the Kimberley Division, *Chelodina rugosa*. However, neither of the short-necked tortoises of the Kimberley Division, *Emydura australis* and *Elseya dentata*, is represented in the South-West. The river systems from the Irwin, in the Northern Agricultural Division to the De Grey in the northern Pilbara, have their own tortoise (*Chelodina steindachneri*), while a highly specialised short-necked tortoise (*Pseudemydura umbrina*) is apparently confined to a few square kilometres of winter swamps between Upper Swan and Bullsbrook to the north of Perth. Because of its vulnerability to extinction this last species is rigidly protected.

Marine chelonians also occur in large numbers around the coasts. The Green Turtle (*Chelonia mydas*), the species which is used for soup making, comes ashore to lay its eggs on the northern beaches. Attempts have been made in the past to exploit this species commercially but it is now protected. However, a non-profit organisation has been granted a licence on behalf of a group of Aborigines in the Kimberley region to take a specified number of eggs and day-old hatchlings. These will be raised by the Aborigines at a commercial Turtle farm at One Arm Point, north of Broome. A certain proportion will be liberated so that the wild stock will not be depleted.

Snakes and lizards are common and widespread throughout the State, and in numbers of obvious individuals they are probably surpassed among the vertebrates only by the birds. In the South-West, Bobtails (*Trachysaurus rugosus*) can often be seen crossing the roads at most times of the year, while the walker among coastal sand dunes on warm days cannot avoid noticing innumerable small dragon-lizards which move away from in front of him. In the southern part of the State the largest lizard which is at all common is the Goanna (*Varanus gouldi*). These are frequently between 0.9 and 1.2 metres in length. In northern areas the Perentie (*Varanus giganteus*) exceeds it in size. A few species are confined to the South-West and of these the most interesting are Mueller's Snake (*Rhinophlocephalus bicolor*), the Little Brown Snake (*Elapognathus minor*), the Black-Striped Snake (*Vermicella calonota*) and the Slender Snake Lizard (*Pletholax gracilis*) which is also one of our rarest species of lizard. An Eyrean species which never ceases to surprise the visitor is the terrible-looking Mountain Devil (*Moloch horridus*). This lizard is actually one of the most gentle and harmless of animals and lives exclusively on ants.

The snake fauna of the State is diverse and, like that of other parts of Australia, contains many venomous species, the best known being the Tiger Snake (*Notechis scutatus*), the Dugite (*Demansia affinis*), the Gwardar (*D. nuchalis*), the Death Adders (*Acanthophis antarcticus* and *A. pyrrhus*) and the Mulga Snake (*Pseudechis australis*).

The snakes and lizards are well described in Glauert's *Handbook of the Snakes of Western Australia* and *Handbook of the Lizards of Western Australia* (see bibliography at the end of this Part).

Because of the great distance of the Kimberley Division from centres of scientific research, insufficient is known of its snakes and lizards. As in the case of some of the smaller mammals, some endemic species of lizards have been described, but until much more scientific collecting and research has been done it will not be possible to evaluate such apparently-unique species. Some Kimberley species of lizard, e.g. the Frilled Lizard (*Chlamydosaurus kingi*), through being commonly illustrated in journals because of their bizarre appearance, have become familiar to the public.

Amphibia⁽⁴⁾

Unlike the other continents Australia has no newts or salamanders (Urodela) or worm-like gymnophionans (Apoda). However, frogs (Anura) are abundant.

The frogs of Western Australia fall into the same grouping (Bassian, Eyrean and Torresian) which was mentioned in the section on mammals. However, they lack the diversity of genera and species shown by other groups and only ten genera with about thirty species are known from south of the Tropic of Capricorn. Of these, two genera, *Metacrinia* and *Myobatrachus*, each with one species, are restricted to the South-West. Most of the other kinds of frogs are distinct from, but related to, species found elsewhere in Australia.

Since most of Western Australia is exceedingly dry it is of interest to note that frogs are common in these arid regions. Those species of *Heleioporus* which occupy marginal desert habitats overcome drought conditions by burrowing into the damp sub-soil. However, the arid-country species of *Neobatrachus* frequent clay soil where deep burrows are impossible and water can be lost. These species show no special capacity to endure greater water loss than *Heleioporus* species, but they do display an exceptional capacity for rapid replacement of water when water is present, as for example after thunderstorms. The water-holding frog, *Cyclorana platycephalus*, is found in inland and northern parts of the State. All 'desert' species retain an aquatic larval life, but this is much shorter than that of species in the well-watered parts of the State. The only species lacking aquatic larval development occur in the wetter South-West; these are *Myobatrachus gouldii*, *Metacrinia nichollsi* and *Crinia rosea*. *Myobatrachus gouldii* is the only species which exhibits any strong dietary preference and eats only termites (Isoptera).

Freshwater Fishes

The truly freshwater fish fauna of the southern part of the State is, by eastern Australian standards, an impoverished one and the species, with the exception of the freshwater catfish ('cobbler'), are diminutive in size. Most of the species are representatives of eastern Australian genera, such as the Pygmy Perch (*Nannoperca vittata*), Mountain Trout (*Galaxias truttaceus*), Black-striped Minnow (*G. pusillus*), and the Native Minnow (*G. occidentalis*). Others are more distinctive, with no near relatives in eastern Australia, such as the Nightfish (*Bostockia porosa*), the King River Perchlet (*Nannatherina balstoni*) and the newly-described scaled galaxiid (*Lepidogalaxias salamandroides*). There are several gobies (*Glossogobius suppositus* and *Lizagobius olorum*) and hardyheads (including *Atherinosoma edelensis*, *A. rockinghamensis*, *A. elongata* and *Craterocephalus cuneiceps*). A lamprey (*Geotria australis*) ascends the rivers to breed and has been recorded north to the Swan River system, but is more abundant in the streams emptying on the south coast. An eel (*Anguilla australis*) has been recorded from the South-West but it is not known whether it is native to the area or has been introduced.

The north-western rivers have a richer fish fauna. The most widespread species is the Spangled Perch (*Therapon unicolor*), a useful food fish which occurs in all rivers south to the Murchison. A large catfish (*Arius australis*) reaching 2.3 kg in weight, occurs in the systems south to the Fortescue. The Rainbow Fish (*Melanotaenia*), popular with aquarists occurs in the river systems of the Pilbara and the Kimberley. The remarkable Blind Gudgeon (*Milyeringa veritas*) and blind eel (*Anommatophasma candidum*) occur in wells and subterranean channels in the North West Cape area. The Kimberley Division has

(⁴) Written in collaboration with Prof. A. R. Main.

an even larger series of freshwater fishes. These include a catfish (*Neosilurus brevadorsalis*), various Bony Bream (*Nematolosa*), various perch-like fishes (*Therapon*), Gudgeons (*Carrassioys*) and two freshwater saw-fishes (*Pristis clavata* and *Pristiopsis leichhardtii*). There is also a freshwater eel (*Anguilla bicolor*) in these far northern waters.

Marine Fishes⁽⁵⁾

The marine fish fauna of Western Australia is probably richer in species than that of any other Australian State. This is because the fishes of the northern part of the State's very long coastline belong to the rich tropical Indo-Pacific fauna, while its southern fauna is a temperate one which includes many elements peculiar to Australian waters. The most up-to-date list of the species of Western Australian fishes, published in 1948, enumerates 740 species, but since that time collecting has revealed about 300 more. Even so, this figure is still far short of the total number which, it is suspected, will eventually be found to be in the neighbourhood of 2,000.

From this it can be seen that there is much to be learnt about fishes of Western Australia but it is probable that only a few of these species are confined to Western Australian waters. At present it seems that most of the fish occurring in the tropical part of the State are widely distributed, and species often range throughout the whole of the tropical Indian and Pacific Oceans, while the species which are found along the south coast usually occur also in the waters of South Australia, Victoria, Tasmania and southern New South Wales.

Between Cape Leeuwin and Shark Bay both northern and southern elements are found, the tropical element dominating as far south as the Houtman Abrolhos.

In addition to the widely-distributed tropical and southern elements, there are a number of species, between thirty and forty, which seem to be peculiar to Western Australia. It is necessary to be cautious here for two reasons. Firstly, because the Indo-Pacific fish fauna is, as a whole, poorly known and some fishes, at present only recorded from Western Australia, may actually have wider ranges. Secondly, our classification of fishes is still imperfect so that fishes which we regard as endemic to Western Australia may be known from some other region, but under different names. On the other hand there can be no doubt that at least a proportion of these species which we now believe to be endemic will prove to be confined to Western Australian waters.

In the following very incomplete review, a number of the more important and interesting families and species are listed.

Of the major groups, the Elasmobranchii (sharks and rays) are richly represented, with nearly eighty species, of which the most familiar are the Port Jackson Shark (*Heterodontus portusjacksoni*), the Carpet Shark or Wobbegong (*Orectolobus maculatus*) and the shark known locally as the Swan River Whaler (*Carcharhinus leucas*), which can be caught in the Swan River as far upstream as the Garratt Road Bridge. It occurs during the summer months and one non-fatal attack in the Swan River has been attributed to this species. The Port Jackson Shark, the Carpet Shark and the Swan River Whaler are regarded as harmless to man; of the dangerous species, the Tiger, the Whaler and the White Pointer are perhaps the best known. Four fatalities from shark attack have been recorded for Western Australia (in 1803, 1923, 1925 and 1967) and a few people are known to have been maimed. It may be said, however, that in Western Australia the danger of shark attack is low.

Most major families of bony fishes are represented, but only a number of the more interesting or familiar species can be mentioned here.

There are about ten species of true herring (Clupeidae), one of which, the Pilchard (*Sardinops neopilchardus*) will in future probably become of economic importance. The rather similar-looking *Amblygaster postera* seems to be confined to Western Australia. The State is particularly rich in sea-horses and pipe fishes, there being some twenty-five species. The most familiar of these is perhaps the leafy sea-horse (*Phyllopteryx foliatus*)

⁽⁵⁾ Contributed by Dr G. F. Mees.

which is often found on the beaches after storms. The so-called Sand Shark or Rat Fish (*Goniorhynchus greyi*), a peculiar fish and the sole representative of its family, deserves mention; it is fairly common off sandy coasts of the South-West. Though eels are represented by several families and over twenty species, only three are common in the South-West; the Snake Eel (*Ophisurus serpens*), a slender golden brown eel inhabiting sandy estuaries, which is often taken for a snake and referred to as the water snake; Woodward's Eel (*Gymnothorax woodwardi*), found on rocky shores, yellowish green with a network of grey lines; and the Conger Eel (*Conger wilsoni*), which normally is dark brown in colour.

Garfishes (Hemiramphidae) are common. Of their relatives the Long Toms (Belontiidae), only *Belone ciconia* is common in the South-West, the others being more tropical in distribution, though one of the northern species, *Belone hians*, has been found as far south as Rottnest Island.

Silversides and hardyheads (Atherinidae) are well represented and so are mullets (Mugilidae). Some representatives of these groups have been mentioned in the preceding section, which deals with freshwater fishes.

The family Serranidae, known as groper, rock cod, etc. are represented by nearly thirty species. The best known is the North-west Groper (*Epinephelus tauvina*) which attains a length of more than two metres. Most species have a very wide, mainly tropical, distribution, but *Epinephelus rankini* is only known from a restricted area round Onslow and must be looked upon as endemic to Western Australia. In temperate waters the preceding family is more or less replaced by the related Hypoplectridae.

Some small families, like the Australian Salmon (Arripidae), Whiting (Sillaginidae) and Snappers (Sparidae) are of great economic importance, though there are only a few species. On the other hand the Skipjacks (Carangidae) are one of the largest families of the State and comprise some thirty species. Another group which are also called Snappers (Lutjanidae) is prominent in the tropical part of the State. These are often referred to as North-west Snappers and should not be confused with the southern Snapper (*Chrysophrys unicolor*) which belongs to the Sparidae.

Coral fishes (Chaetodontidae) are richly represented, mainly along reefs in the tropics, but a number of species come down to the Houtman Abrolhos, and some even near to Perth. Most species have a very wide distribution in the Indo-Pacific, but one, *Chaetodon assarius*, has not been found outside Western Australia.

The Mackerel family (Scombridae), which includes mackerel, Spanish mackerel, tuna, bonito and albacore, is important both in tropical and temperate waters. The related marlins and swordfishes, well known to sporting fishermen, also occur in these waters.

Flatfishes (Heterosomata) occur in a great variety of species, and the same can be said of Parrotfishes and Wrasses (Scaridae and Labridae). All these groups are as yet very insufficiently known.

The stargazers and stonelifers are sluggish bottom fishes that deserve mention because of their unusual shape. One, *Ichthyoscopus barbatus*, occurs off the south-west coast and also in South Australia, and is regularly caught by anglers. Another species, *Ichthyoscopus insperatus*, a common fish of the north-west coast from Broome to Shark Bay, seems to be confined to Western Australia. The dragonets (Callionymidae), of which nine species have been recorded, are smaller, but their pretty appearance attracts attention, and one species, *Dactylopus dactylopus*, widely distributed in the Indo-Pacific, is regularly found off sandy beaches as far south as Rockingham.

Blennies (Blenniidae), weedfish (Clinidae), and gobies (Gobiidae) are small fishes of which there are many species; blennies are most plentiful in rockpools and on reefs in the tropics, while gobies are also found on sandy bottoms.

There are some twenty species of scorpion fishes known from the State, the most familiar of which are *Scorpaena sumptuosa* in the south, and the small *Scorpaena bynoensis* in the north; the first-mentioned species is also interesting in that, though it has been known for almost a century, it has never been recorded from outside Western Australia.

Of the closely-related Synancejidae, the feared stone fish, three species are known from the State, one of which, *Erosa daruma*, is apparently restricted to the North-West and is known from but two specimens. A related species occurs in Queensland and Japan.

Flatheads (Platycephalidae) are common in the temperate part of the State.

An interesting family is that of the angler fishes or toad fishes (Antennariidae). Their curious shape with the leg-like pectoral fins always excites attention. There are about a dozen species, two of which are endemic to the State. One of these is *Echinophryne glauerti* which is occasionally found washed up on City Beach.

Leatherjackets (Monacanthidae) are a large group distinguished by the rough leathery skin and a single large erectile spine on the nape. Some species, like *Chaetoderma penicilligera*, are common and of attractive appearance.

Of the blowfish family, the common Blowie (*Tetraodon (Spheroides) pleurogramma*) needs special mention; it is extremely plentiful off the coast at Fremantle and in the Swan River estuary. It is poisonous to eat and is greatly disliked by anglers who find that it greedily takes their bait. Fishes of this family contain a poisonous substance called tetraodontoxin and the celebrated navigator Captain James Cook was very ill after eating a blowfish in the course of a voyage in the Pacific in 1774. Boxfishes (Ostraciontidae) and porcupine fishes (Diodontidae) are related groups, each represented by a number of species.

Further information about the commercial fishes in Western Australian waters is given in the Fisheries section of Chapter VIII, Part 1—*Primary Production* where the principal species of edible fish are listed together with the quantities of each species caught. The section also contains additional information relating to whaling (see *Mammals* earlier in this Part).

THE INVERTEBRATE FAUNA(*)

The invertebrate fauna of Western Australia is large and varied, as one would expect in a third of a continent which extends from temperate to tropical zones and includes both coastal and desert areas. Rather than spread our descriptions too thinly over this enormous field we have restricted ourselves to a brief summary of the position in relation to a few selected groups in which work is being actively carried out.

Several invertebrate species are commercially exploited here, the most important being the marine crayfish or rock lobster (*Panulirus cygnus*) which supports an extensive export fishery. Others commercially important include several species of octopus, cuttlefish and squid, the Blue Swimming Crab ('Blue Manna', *Portunus pelagicus*), several species of prawns, two species of scallops (*Amusium balloti* and *Pecten modestus*), and three species of abalone. Pearl-shell was fairly extensively fished along the north-west coast but this fishery has now declined, the small quantity of pearl-shell now taken being used in the developing pearl-culture industry.

A summary of the terrestrial and freshwater invertebrate fauna and their ecology is given in Main's *Guide for Naturalists* (1968).

Echinodermata

The echinoderms of Western Australia have been shown by Clark (1946) to be derived from the tropical fauna to the north. About half of the species of northern Australia are widely distributed in the Indo-West Pacific region while the remainder are endemic to Australia. As one passes southward the proportion of endemic species rises until on the south-western coast nearly nine-tenths of the echinoderms are endemic to the region.

All five groups of echinoderms, feather stars (Criniodea), sea stars (Asteroidea), brittle stars (Ophiuroidea), sea urchins (Echinoidea), and sea cucumbers (Holothuroidea) are well represented. Eighty-five species of sea stars and fifty-five species of sea urchins are recorded from Western Australia including the continental shelf. The other groups have smaller number of species.

(*) Written with assistance from Drs R. W. George, E. P. Hodgkin, Barbara Y. Main and B. R. Wilson, Mr G. W. Kendrick and Mrs L. Marsh.

On the rocky and sandy shores of the South-West about twenty species of sea stars are common in shallow water. One of the most abundant is *Coscinasterias calamaria* which is widely distributed in the Southern Hemisphere. Sea urchins are represented by about twelve common species; on rocky shores the most abundant of these is *Heliocidaris erythrogramma* which has a southern Australian distribution.

There is abundant echinoderm fauna in Cockburn Sound, between Garden Island and the mainland south of Fremantle, where a variety of habitats supports twenty-five species of sea stars, ten of sea urchins and many brittle stars, feather stars and sea cucumbers. Mud eating species such as the sea star *Stellaster inspinus* and heart urchin *Echinocardium cordatum* are common in the deep basin of the Sound while several tropical species including the sea stars *Euretaster insignis* and *Echinaster varicolor* and the sea cucumber *Pentacta quadrangularis* are found in the reef and coral areas of the eastern shelf of the Sound. On the south coast, King George Sound has long been known as a rich collecting ground for echinoderms, but the fauna of other bays and inlets is much less well known.

Little is known of the echinoderm fauna of the northern coasts, and almost all that we do know comes from the publications of H. L. Clark (see bibliography at the end of this Part) who collected extensively in the Broome area and made smaller collections in other places. Near Broome, a wide variety of echinoderms was collected in his dredges and along the shore. In more recent years new collections have been made in the region but the specimens have not yet been studied.

The Crown of Thorns Starfish (*Acanthaster planci*) which feeds on living corals and has been responsible for extensive damage to coral reefs in other regions is known to occur off the north-west coast, but there are no records of plague populations. Specimens have been reported from Admiralty Gulf, Barrow Island, and the North West Cape area. In 1971 a fairly large population was discovered in the Dampier Archipelago; this is now being monitored and studied by a team from The Western Australian Museum, supported by a grant from the Commonwealth and Queensland Advisory Committee on Research into the Crown of Thorns Starfish.

Mollusca

The molluscan fauna of the Western Australian coastline has not been recently catalogued, but from the area within fifty-six kilometres of Fremantle 270 species of bivalves (Pelecypoda), and univalves (Gastropoda) are recorded. The smaller groups, chitons (Amphineura), octopus and cuttlefish (Cephalopoda) and tusk shells (Scaphopoda) are also represented.

Molluscs dominate the intertidal rocks of the west coast, especially chitons, periwinkles, and limpets; the limpets range from the very large *Patellanax laticostata* to the small *Notoacmea onychitis*. On the north-western coast, rock oysters (*Crassostrea tuberculata*) and barnacles are dominant intertidally. The oysters are fished for food on a small scale in places where extensive beds are uncovered at low tide.

Bivalves occur mainly on sandy and muddy bottoms such as those of Cockburn Sound and King George Sound, and along the north-western coast. They are less plentiful on the unstable sandy shores of the open western coast. The Golden-lipped Pearl-shell (*Pinctada maxima*) is the basis of a flourishing pearl-culture industry in the north of the State. This species is favoured because of the quality of the pearls produced and because of the speed with which the nacre or mother-of-pearl is laid down on the 'seeds'. Using techniques developed by the Japanese these seeds are inserted into the pearl-shell's flesh to produce spherical pearls, or between the flesh and the shell to produce half-pearls. The small pearl-shell which is so abundant in Shark Bay belongs to the species *Pinctada albina* which is widely distributed in the Indian and Pacific Oceans. It was formerly gathered for the natural pearls which, though small, are of a fine colour and texture.

An abalone fishery has been established in temperate waters. On the lower west coast the small Roe's or Western Black-lip abalone (*Haliotis roei*) is gathered. Along the southern coast east of Cape Leeuwin the larger Green-lip (*Schismotis laevigata*) and the Brown-lip abalone (*Haliotis conicopora*) are taken.

Many species of cowrie shells occur on the rocky shores of the north-west coast while a few species such as *Zoila friendii* and *Austrocypraea reevei* are confined to the south-western corner of the State. The north-west coast also has many endemic species of volute shells such as *Volutoconus hargreavesi*, *Amoria macandrewi* and *Amoria praetexta*.

Of the gastropods without visible shells two species are conspicuous in the fauna of the Fremantle area. One is the large sea-hare (*Aplysia gigantea*) with a small internal shell; it may be cast up on the beaches in large numbers after winter storms. The other is a nudibranch, with no shell at all, the colourful *Glossodoris westraliensis*, well known to visitors to Rottnest Island.

The non-marine molluscan fauna (terrestrial and aquatic) is not diverse. Conspicuous in the South-West are species of the pulmonate genus *Bothriembryon*, which are adapted to a wide variety of habitats from cool temperate rain forest to arid steppe. In the Kimberley, North-West, and arid regions generally the snail family Camaenidae predominates. Throughout the State there are also many other smaller and inconspicuous terrestrial snails and a small number of aquatic snails and bivalves.

Corals

In Western Australia the wide continental shelf off the north of the State has coral platform reefs, islands and several very large true atolls, the fauna of which is still largely unknown.

Coral growth is restricted on much of the north and north-west coast by turbidity due to the outflow of rivers, muddy shoreline and the large tidal range.

Fringing and barrier reefs with rich coral growth occur in the relatively clear water of offshore islands such as the outer islands of the Dampier Archipelago where thirty-six genera of reef building corals are so far known.

From North West Cape a barrier reef extends southwards for nearly 160 kilometres. It lies between 800 metres and five kilometres off the coast with deep water off its outer edge and a shallow lagoon inshore. There is a rich and luxuriant growth of corals along the outer edge and dense thickets of staghorn corals (*Acropora* spp.) in the lagoon.

The most southerly true coral reefs in the State are found at the Houtman Abrolhos which lie near the edge of the continental shelf off Geraldton in latitude 28-29°S. *Acropora*, one of the most important reef builders, flourishes at the Abrolhos, where the minimum sea temperature seldom falls below 19°C, but does not occur further south except in Pleistocene fossil beds at Rottnest Island.

A number of reef corals extend their range into the south-west of the State, sometimes forming massive colonies. At Rottnest Island *Pocillopora damicornis* makes attractive pink clumps in reef pools and large colonies form a reef-like structure at Parker Point. In the Fremantle region, including Rottnest Island and Cockburn Sound, thirteen genera of reef corals are found. They are particularly well developed in parts of Cockburn Sound despite minimum water temperatures sometimes falling below 14°C.

The coral fauna is attenuated southwards with six genera in Geographe Bay and two species extending along the south coast east of Albany. One of these, *Plesiastrea urvillei* occurs right along the south coast of Australia but does not range north of Geraldton on the west coast.

Crustacea

The most important commercial species of crustacean in Western Australian marine waters is the Western Rock Lobster or 'Cray', *Panulirus cygnus*. It occurs from North West Cape in the north to Hamelin Bay in the south. In the tropics five additional species of *Panulirus* occur; these are collectively referred to as 'Green Crays' (*Panulirus versicolor*, *P. ornatus*, *P. homarus*, *P. penicillatus* and *P. polyphagus*). On the southern coast occurs *Jasus novaehollandiae*, which is the commercial species of rock lobster (crayfish) in south-eastern Australia, but it is not of economic importance in this State.

Two species of Shovel-nosed Lobsters are sometimes taken in prawn trawls. *Thenus orientalis*, the Moreton Bay Bug, occurs in Exmouth Gulf and further north. *Ibacus peronii*, the Balmain Bug, lives in sandy silt along our south coast. Both species are

good eating. Offshore beyond the 180-metre depth limit of the Western Rock Lobster, lives a large spiny crab *Hypothalassia armata* which may develop into a commercial proposition.

The Swan River Prawn or School Prawn (*Metapenaeus dalli*) is taken by amateur and professional fishermen in the west coast estuaries by small hand-hauled nets. In the northern gulfs and bays larger prawns of the genus *Penaeus* and *Metapenaeus* are sought by large commercial prawn trawls for export. The present main centres are at Shark Bay, Exmouth Gulf and Nickol Bay and exploration of waters around the Kimberley Region is continuing. The main species are the Western King Prawn (*P. latisulcatus*), the Brown Tiger Prawn (*P. esculentus*) and the Banana Prawn (*P. merguensis*).

The Blue Swimming Crab (*Portunus pelagicus*), plentiful in the summer in the estuaries of the Swan River and at Mandurah, is one of the common commercial crabs of Australia.

Two common species of crab are the Rock Crab (*Leptograpsus variegatus*) and the Ghost Crab (*Ocypode convexa*). The Rock Crab scrambles among rocks and jetty piles of the west and south coasts, whereas the Ghost Crab digs spiral burrows at the edge of the beach and is endemic to the west coast.

Of the many other species of non-commercial crustaceans some groups have been recently monographed by scientific workers. These are the swimming crabs, mantis shrimps and pebble crabs.

Crustacea are also common in inland waters (see *Fauna of Inland Waters* earlier in this Part).

Spiders

Like most other invertebrate groups, the spiders are represented by a large number of genera and species and it is not possible at this stage to give an accurate picture of the relationships of the Western Australian fauna to the rest of Australia. Early work on the Western Australian spiders was restricted to the description and naming of species. Research now is centred on investigations of the biology of various species and the special adaptations of endemic forms to the particular conditions of the Western Australian environment. The most interesting of the spiders, when viewed from this aspect, are the burrowing groups, including primarily the Mygalomorphae ('trapdoor' spiders) and the Lycosidae (Wolf spiders). Some of these forms show special adaptations to semi-arid environments, to reduced food supply, and to flash-flooding, such adaptations being paralleled in many taxonomically unrelated genera. It is also of interest that some families, which in other parts of the world and in the wet forests of Australia are primarily web weavers and litter dwellers, are burrowers in the arid parts of Western Australia (and also in other dry parts of Australia). Such forms are essentially nocturnal and escape the unfavourable conditions of the day by remaining in their burrows and some species seal their burrows during the summer period.

Insects

The more important insect species occurring in Western Australia (particularly those of economic significance) are dealt with in Part 5 of this Chapter.

CONSERVATION OF THE FAUNA

In recent years the need to conserve the Western Australian fauna has received considerable publicity—this need has certainly never been greater than it is at present. In this State where new land has been brought into production for agriculture and the pastoral industry at a rate of approximately 405,000 hectares a year, and where the ever-increasing tempo of industrialisation and mining activity is obvious to all through its effect in increased population, the position of the native fauna is serious. This is because human introductions such as sheep and cattle, as well as the more direct effect of the plough and the scrub roller, are radically changing the environment, but also because an increase in human population has meant a higher level of utilisation of wild stocks such as ducks

(which form a basis for sport), kangaroos (which form a basis for a lucrative trade in pet meat and hides), and rock lobsters (which support the most valuable single Australian fishery).

From the early days of settlement in Western Australia, legal provisions were in existence under which land could be reserved but, in early years it was not realised that the preservation of habitat is basic to conservation and that protection of individuals against killing is of insignificant value except in specialised cases (see below). In the early days, protection was afforded to some game animals, such as kangaroos, to prevent them from being shot out, but it was not until land development became widespread in the South-West that the first real attempt was made to set aside a large permanent native fauna and flora reserve. This was in 1894 when 64,750 hectares were gazetted between Pinjarra, North Dandalup and the Bannister. Unfortunately, this reserve later became alienated.

From this early attempt at habitat conservation has grown a very conscious need for extensive reserves carefully sited and selected in order to provide security for a representative sample of all the major habitats throughout the State. In 1959, a committee of the Australian Academy of Science produced such a plan for Western Australia and this plan has provided in subsequent years the basis for a policy of land acquisition for this purpose by the two major bodies who control land for conservation, *i.e.* the National Parks Board and The Western Australian Wild Life Authority.

Outside the reserves, fauna gains its protection through the Fauna Conservation Act. This Act replaced an earlier Game Act of 1912-1913 which had the rather different primary purpose of providing some measure of protection for those species of native fauna shot or hunted for sport. Under the Fauna Conservation Act, all native vertebrate terrestrial fauna, except those species declared vermin or declared otherwise unprotected, are protected against being taken, hunted, or confined. Owing to the very complex relationship between many species and their environment, such protective legislation has only a very limited long-term conservative effect in areas of closer settlement or intensive agriculture. On the other hand, in pastoral and forest areas, and in unalienated Crown land not in fauna reserves, the legislation is much more valuable. The most important achievement of such protective legislation, however, is that it makes people conscious of the need to protect our native fauna and it is very likely that this educational function is its main justification except:

- (i) where animals occur on small islands or restricted places on the mainland in such numbers or in massed concentrations that they are vulnerable to destruction by man. Local examples are the Noisy Scrub-bird at Two Peoples Bay near Albany, sea birds in nesting concentrations on small islands, and island populations of mammals such as the Quokka on Rottnest or the various wallabies on Bernier and Dorre Islands in Shark Bay.
- (ii) where they are killed in the mass for commercial purposes, *e.g.* Humpback Whales, Fur Seals, Kangaroos;
- (iii) where they are killed for sport, *e.g.* the Bustard (Plains Turkey), ducks;
- (iv) where they are taken in very large numbers for zoos, circuses, or aviculture, *e.g.* finches and parrots.

In addition to its protective role, the Fauna Conservation Act establishes The Western Australian Wild Life Authority which is responsible for:

- (i) the initiation of conservation-oriented research in relation to the fauna;
- (ii) the acquisition, control, planning and management of an adequate system of sanctuaries (*i.e.* land reserved partly or entirely for the purpose of fauna conservation) including the preparation and implementation of working plans for each area; and
- (iii) advising the Minister for Fisheries and Wildlife in relation to fauna conservation generally.

In Western Australia today the only terrestrial native fauna subject to any marked degree of human predation are ducks, eagles, emus, kangaroos of three species (the Grey, the Red, and the Euro) and the dingo. Excepting for certain vermin species on which a bonus is payable, figures for the total annual number killed are not available and until they are, and details of population size and rate of stock recruitment are known, it will not be possible to say whether these species are in serious danger. At present, only the crudest methods (*i.e.* of observing abundance and then subjectively comparing this with previous experience) can be used to say whether it is necessary to apply protection to prevent a serious decline in numbers.

By contrast, the position of the marine fauna is very different. There, intensive work has been done on whale, fish and invertebrate stocks in past years. There has been some cause for alarm in connection with an apparently depleting rock lobster stock, but conservative measures have been developed, and there are very good grounds for belief that these have been successful. The great reduction of the population of Humpback Whales due to over-predation is a matter of considerable shame—it illustrates well the dilemma of an industry which is faced with the alternative of a low level of fishing over an indefinite period, or a highly lucrative but short period of exploitation as though the stock were not capable of regeneration (a procedure akin to a mining operation). In the case of the whaling industry in Western Australia the position was complicated by the fact that the stock was hunted both by the shore-based Western Australian fishery and by the international pelagic fleets operating in the Antarctic.

At present, our greatest need is information upon which to base proper conservative measures. Protective legislation, no matter how effective it is in protecting individuals, must not be regarded as effective in conservation unless measures to protect the environment are also taken. As a result, the authors believe that the stages of work most urgent at present to conserve the Western Australian fauna are as follows:

- (i) To complete the reservations of lands designated in the report of the Western Australian Sub-committee of the Australian Academy of Science.
- (ii) Recognising that these areas are designated upon the best available information as to habitat type, but not upon actual surveys of the fauna, the authors believe that the areas must now be given thorough biological surveys to ensure that populations of all Western Australian species of animals and plants are contained within them; and also to estimate, as far as possible, the sizes of the populations which they contain.
- (iii) To get under way an increased amount of long-term work on the biology of species which are suspected to be vulnerable. Through this work their particular requirements will be discovered and an endeavour can then be made to ensure that the reserves contain these requirements.
- (iv) To insist on proper monitoring for any annual crop taken from vermin or other species subject to human predation so that these populations can be maintained at the level consistent with the State's particular requirements, and yet to avoid their extermination.

In Western Australia, land development has not yet gone too far for the State to preserve a representative section of its fauna and flora for all time. The keys to this are habitat conservation, reserve management, and education in conservation thinking. Through these means, it will also be able to ensure that as much wild life as possible remains in altered environments as well. Indeed, if roadside verges, small township reserves and timber lots on farms are preserved, a surprisingly large number of native creatures will survive. The importance of these minor habitats, often regarded condescendingly by professional biologists who focus their attention on big reservations, cannot be sufficiently stressed. It is in these areas that the ordinary people and tourists gain an acquaintance with the native fauna and flora. Here man and animals will contrive to co-exist in intimate association with each other and so help to reinforce a popular sentiment for conservation.

Further data on Conservation will be found in publications listed on page 105.

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Chapter II—continued

Part 5—Entomology in Western Australia

With Particular Reference to Agriculture

(Contributed by the Biological Services Division of the Department of Agriculture)

The entomological field in Western Australia is so vast and the number of active workers on the subject so few that much still remains to be learned about the insects found in this State. A wide range of environmental conditions exists, from the tropical north to the temperate south, and the geographical isolation of the State has allowed the development of numerous endemic forms. As may be expected, the insect fauna of the Kimberley Division shows closer affinities with that of North Queensland than with the lower half of the State. The central desert, which reaches the coast to the south along the Great Australian Bight and to the north along the Eighty Mile Beach, forms an effective barrier discernible in the distribution of flora, mammals, insects and birds.

Owing to the limitations of space no attempt has been made to cover all the various insect orders which occur in the State, but the economic importance of various groups and their influence on major agricultural industries have been outlined, and some of the more outstanding forms of general interest have been mentioned.

CLASS INSECTA (Insects)

Order Collembola (Springtails)

The springtails include the lucerne flea (*Sminthurus viridis*) which was introduced into this State from eastern Australia in about 1910. It has spread to almost all the clover-growing areas in the South-West and is a very serious pasture pest. Partial control is exercised by the predatory bdellid mite (*Bdellodes lapidaria*).

Order Odonata (Dragonflies and Damselflies)

These insects are predatory in both the immature and adult stages and are usually regarded as beneficial creatures. However, they sometimes injure vegetable seedlings by ovipositing into furrow-irrigated crops. This has occurred mainly at Carnarvon where surface water is scarce and where irrigated plants are presumably mistaken for aquatic vegetation.

In order to survive in the diverse climatic conditions which exist in Western Australia, some members of the dragonfly group have developed the ability to breed in highly saline waters and to take advantage of ephemeral inland pools.

Orders Orthoptera, Mantodea, Blattodea, Phasmatodea (Grasshoppers, Locusts, Mantids, Cockroaches, etc.)

The grasshoppers and locusts are represented by a large number of different species. The most important pest form is the small plague grasshopper (*Austroicetes cruciata*). The normal habitat of this species lies roughly between the 200 millimetre and the 400 millimetre isohyets. For breeding it favours hard, bare soil and as extensive areas once utilised for wheat growing have now reverted to grazing, these uncultivated tracts periodically give rise to serious grasshopper swarms, which menace the adjacent wheat lands. The Australian

plague locust (*Chortoicetes terminifera*), so troublesome in other States, occurs in Western Australia but rarely as a plague species. In the Kimberley the yellow-winged locust (*Gastromargus musicus*), the migratory locust (*Locusta migratoria*) and the spur-throated locust (*Austracris guttulosa*) assume plague proportions, but in the southern agricultural districts they occur in the solitary phase only. The mantids (Mantidae) are represented by many different species. Their well-developed fore-limbs are admirably adapted for catching prey and, like their foliage-feeding relatives the phasmatids or leaf insects (Phasmatidae), their colouring harmonises remarkably with the sticks and leaves on which they rest. The cockroach fauna includes a large number of native species as well as several introduced forms. The commonest pest species is the cosmopolitan American cockroach (*Periplaneta americana*). Some large and quite colourful forms occur in the inland regions with the genus *Polyzosteria* well represented.

Order Isoptera (Termites)

The so-called white ant is a serious pest in all parts of the State. Earth-dwelling types occur mainly, and among the most important species may be cited the giant termite (*Mastotermes darwiniensis*) of the north and the widely distributed subterranean termite (*Coptotermes acinaciformis*). The large mounds of the spinifex termite (*Nasutitermes triodiae*) are characteristic of certain landscapes in the pastoral areas. Heavy annual losses are caused by termite damage and the use of such chemicals as dieldrin, aldrin, chlordane and creosote is recommended for the protection of timber structures.

Order Phthiraptera (Lice)

Indigenous species occur on birds and native mammals, and various introduced forms infest domestic poultry, horses, cattle and sheep.

Order Thysanoptera (Thrips)

This order is represented locally by a large number of native species as well as several introduced forms. The most serious native species is the plague thrips (*Thrips imuginis*) which may swarm in apple blossoms and seriously affect the crop setting.

Thrips tabaci, often called the onion thrips, is a carrier for the plant disease spotted wilt. Severe damage to tomato plants may result from this virus.

Order Hemiptera (Bugs, Aphids, Scale Insects)

This group contains a large number of pest species, many of them introduced. A serious vegetable pest is the green vegetable bug (*Nezara viridula*) which is partially controlled by an introduced wasp parasite, *Trissolcus basalus*. The native Rutherglen bug (*Nysius vinitor*) may at times swarm on vegetables and fruit trees, but seems less serious in this State than on the other side of the continent. The crusader bug (*Mictis profana*), so named because of the light-coloured St Andrew's cross on the back of the adult, feeds normally on acacias and other native plants, but it frequently invades cultivated areas and it may be troublesome to young citrus. The apple dimpling bug (*Campylomma livida*) is a native species which sometimes causes severe malformation of apples by feeding upon the very small developing fruit.

One native aphid (*Anomalaphis comperei*) has been recorded. The only two districts from which it has so far been collected are Albany and Karridale where it has been found infesting native peppermint (*Agonis flexuosa*). A point of interest about these occurrences is that the aphids were associated with a heavy Argentine ant infestation in the area. Since the removal of the ants no further aphids have been discovered.

Numerous introduced species occur as pests on vegetables, garden plants and fruit trees, e.g. *Myzus persicae* (peaches, potatoes, rape, etc.), *Toxoptera aurantii* (citrus), *Brevicoryne brassicae* (cabbages, cauliflowers, rape, etc.) and *Eriosoma lanigerum* (woolly aphid of apples). The cowpea aphid (*Aphis craccivora*) which carries a virus disease of subterranean clover known as 'stunt' has also been found attacking lupins.

Of the native coccids the gall-forming members of the genus *Apiomorpha* are among the most remarkable. The woody galls in which the female insects pass their days vary from minute structures to woody knobs the size of an apple. From an economic point of view, however, the various introduced scale insects demand most attention. Included in the list of pest species are the following:

San José scale (*Quadraspidiotus perniciosus*), which is a serious pest of apples.

Red scale (*Aonidiella aurantii*), which is found mainly on citrus but with a wide host range.

Brown olive scale (*Saissetia oleae*), which is found attacking citrus, stone fruits and garden shrubs.

White wax scale (*Gascardia destructor*), which is mainly a pest of citrus but also attacks many cultivated shrubs.

Soft brown scale (*Coccus hesperidum*), which has a wide host range but is of greatest importance on citrus.

Grass-crown mealybug (*Antonina graminis*), which is a widespread and troublesome pest causing damage to lawns particularly in warm parts of the State.

Order Coleoptera (Beetles)

This order is the dominant one among existing insects and is represented in Western Australia by many and varied forms. The carnivorous ground beetles (Carabidae) are widely distributed, one of the best-known species being the green carab beetle (*Calosoma schayeri*). The tiger beetles, of the sub-family Cicindelinae, are of interest not only because of the metallic colouration seen in many forms but because of their association with the inland salt-lakes. The larvae are subterranean and may be collected by digging on the lake margins.

The ladybirds (Coccinellidae) comprise a group of considerable economic importance and in addition to native species the State contains a number specially introduced to combat various scale insects and aphids. Among the best known of the introduced species are the mealybug ladybird (*Cryptolaemus montrouzieri*) and the common ladybird (*Leis conformis*). The larvae of *Cryptolaemus* are covered with a whitish material which makes the insect superficially resemble the mealybugs upon which it feeds. *Leis conformis*, in conjunction with the wasp parasite *Aphelinus mali*, plays an important role in combating the woolly aphid of apple trees. Destructive leaf-eating ladybirds belonging to the genus *Henosepilachna* were once found only in the northern parts of the State where they attack vegetables, especially pumpkins and melons. In 1956, specimens of *Henosepilachna* were collected in Perth. Since then they have become established in several suburban areas, but how the introduction occurred is not known.

The jewel beetles (Buprestidae) contain some of the most colourful beetles to be found anywhere in the world. Western Australia is particularly rich in species and at times the beetles may be found in large numbers on flowering mallee and sandplain flora. One of the most attractive is the metallic green *Stigmodera gratiosa*, and one of the largest is *Julodimorpha bakewelli*, measuring approximately seventy millimetres in length. Although the beetle larvae are wood borers, closely resembling the 'bardee' in appearance and habits, they are of little economic importance.

The cockchafers or scarabs (Scarabaeidae) are represented by a great diversity of forms. Several species may swarm on to flowering fruit trees and roses in the early summer and are popularly known as spring beetles. The bronze-coloured *Colymbomorpha lineata* is a common pest of apple trees during the blooming period and the saddle-backed beetle (*Phyllotocus ustulatus*) sometimes visits citrus blossoms in large numbers. An introduced species commonly known as the African black beetle (*Heteronychus arator*) has gained a firm footing in the State and is a troublesome pest of lawns and turf. It is also growing in importance as a pasture and vegetable pest. A native species of *Colpochilodes* has caused spasmodic damage to cereal crops and clover pastures in the southern portions of the State.

The longicorn beetles (Cerambycidae) are a group of wood-boring insects represented by a number of different species. They are often blamed for the death of forest eucalypts, although investigations have shown that heavy beetle infestations are usually secondary

and that healthy trees are seldom seriously affected by the beetles. The larval stage of this group is the so-called 'bardee', at one time prized by the Aborigines as food. They are not a pest of structural timber as they do not attack seasoned material.

The leaf beetles (Chrysomelidae) may superficially resemble ladybirds in general appearance as some of them are rounded and quite brightly coloured. Two species have been introduced into the State for the purpose of combating St John's Wort, a troublesome weed in some districts. *Chrysomela gemellata* and *C. hyperici* were originally introduced into Australia from the South of France and liberated in Victoria with very satisfactory results. The local colonies were obtained from the latter source and have become established in several districts. In some situations a reduction in St John's Wort can be attributed definitely to beetle activity, but in many areas the picture is obscure due to the extensive use of chemical sprays.

Common pest species in eastern Australia are the pumpkin beetles (*Aulacophora hilaris* and *Rhaphidopalpa palmerstoni*). These beetles are found in the north of the State but do not extend into the cooler latitudes.

The weevils (Curculionidae) are a very specialised group characterised by the presence of a rostrum or 'snout' which bears the mouth and antennae. The genus *Leptopius* contains a number of large greyish weevils, many of which breed in association with acacias. One of the best-known members of the family is the red-legged weevil (*Catasarcus asphaltnus*) which feeds on eucalypt foliage and may disfigure young street trees. The almost world-wide rice weevil (*Sitophilus oryzae*) is our principal pest of stored grain, but the granary weevil (*S. granarius*) also occurs. Two common orchard pests are the introduced apple weevil (*Otiorhynchus cribricollis*) and Fuller's rose weevil (*Pantomorus cervinus*).

Order Neuroptera (Lacewings)

This order contains a number of useful insects, for many of the neuropterous larvae feed upon scale insects and other pests. The family Myrmeleontidae has a number of large, rather dragonfly-like species, the larval stages of which build conical sand pits and are commonly known as ant lions. Amongst the most remarkable of the local lacewings are two members of the family Nemopteridae in which the hind wings are greatly modified. In the genus *Croce* they are long and thread-like and in the spoonwinged lacewing (*Chasmodon hutti*) they are spoon-shaped or paddle-shaped.

Order Diptera (Flies, Mosquitoes, etc.)

This group contains a vast number of species, many of which are of major economic importance.

The mosquitoes are well represented, the commonest species being the brown house mosquito (*Culex fatigans*) and the yellow-fever or dengue mosquito (*Aedes aegypti*). The latter species is the carrier for dengue fever in the northern portion of the State. The anophelines are represented by the widely distributed *Anopheles annulipes* and several much rarer forms. *A. annulipes*, together with *Aedes alboannulatus*, have played an important part in the spread of the rabbit virus *Myxomatosis*.

Of the introduced flies, those causing most trouble are the Australian sheep blowfly (*Lucilia cuprina*) and the Mediterranean fruit fly (*Ceratitis capitata*). The buffalo fly (*Haematobia exigua*) is a serious stock pest in the Kimberley Division of the State, but so far has not become established in the cattle areas of the south. It is believed to have originally reached Australia on buffaloes introduced from Asia.

The common house fly (*Musca domestica*) is widespread as is also the native bush fly (*Musca vetustissima*).

Insecticides such as DDT, dieldrin and the various organic phosphates gave outstanding control of various fly pests for several years. The widespread development of resistance in both house fly and blowfly populations has greatly complicated the matter, however, and drawn attention to the importance of preventive measures, such as sanitation in the case of house flies, and the Mules operation and crutching in the case of the sheep blowfly.

The March flies (Tabanidae) are well represented but, although their blood-sucking habits render them annoying, both to livestock and humans, they are not a serious pest.

Of the many useful flies may be mentioned the blowfly-like tachinids which parasitise caterpillars, grasshoppers and other pests and the bee flies (Bombyliidae) which parasitise the eggs of other insects. The maggots of the bombyliid fly (*Cryptomorpha flaviscutellaris*) are commonly found in the egg pods of the small plague grasshopper (*Austroicetes cruciata*).

Order Siphonaptera (Fleas)

A number of introduced as well as native fleas occur in this State. The rabbit stick-fast flea (*Echidnophaga myrmecobii*), found originally on native mammals, is a very common parasite of rabbits in the drier parts of the State. The poultry stickfast flea (*E. gallinacea*) closely resembles the former species but is mainly a pest of poultry and domestic animals. The oriental rat flea (*Xenopsylla cheopis*), the human flea (*Pulex irritans*) and the cat and dog fleas (*Ctenocephalides felis* and *C. canis*) are among the most important introduced species.

Order Lepidoptera (Moths, Butterflies, etc.)

The primitive swift moths (Hepialidae) are represented locally by a number of very beautiful forms. The larvae are wood borers but do not occur in sufficient numbers to constitute a serious forestry pest. Several large and striking members of the genus *Aenetus* occur in the lower South-West.

A group of small native moths of the family Pyralidae, sub-family Crambinae and commonly known as pasture webworm moths (*Hednota pedionoma*, *H. crypsichroa*, etc.) are serious pests of cereal crops (excepting oats) and grass pastures. Depredations are controlled by planting on clean fallow, but the recent trend towards ley farming has greatly favoured these pests.

A family of considerable interest to the orchardist is the Tortricidae, in which group are included the codling moth (*Cydia pomonella*) and the oriental fruit moth (*C. molesta*). Outbreaks of codling moth have occurred on a number of occasions but drastic eradication measures have so far prevented this major apple pest from becoming permanently established and have given Western Australia the distinction of being the only large apple-producing country where the moth is not a major problem. The oriental fruit moth has not recurred since eradication measures were taken against an outbreak in the Bickley Valley in 1952.

One of the best-represented families is the Noctuidae which contains several important pests. Included under this heading are the native budworm (or climbing cutworm) and the cotton bollworm (*Heliothis punctigera* and *H. armigera*), the cluster caterpillar (*Spodoptera litura*), the rough bollworm (*Earias huegeli*), the brown cutworm (*Agrotis munda*) and the southern armyworm (*Persectania ewingii*). The first four species are serious pests in the cotton areas of the north. The fruit-sucking moth (*Othreis materna*) also belongs to this group and causes heavy losses in citrus fruit grown around pastoral homesteads in the Kimberley and the North-West. In almost all cases where moths and butterflies are regarded as pests it is only the caterpillar stage which is destructive. The fruit-sucking moth, however, has a rasp-like proboscis capable of piercing orange and citrus skins and then sucking up the juice. Fortunately the creatures do not normally range to the citrus areas of the South-West.

One of the most remarkable members of the family Agaristidae is the whistling moth (*Hecatesia thyridion*). The male of this species is active just at sunset and makes a loud clicking noise during its fast circling flight.

Other common moth pests are the cabbage moth (*Plutella xylostella*), the potato moth (*Phthorimaea operculella*) and the apple looper moth (*Chloroclystis laticostata*).

The beautiful dryandra moth (*Carthaea saturnioides*) with its large eye spots on the wings superficially resembles the emperor moths. Its range is restricted to south-west Australia and the creature is much prized by collectors.

The butterfly fauna of the State lacks many large and showy forms. Some of the northern species such as *Hypolimnys bolina nerina* are quite colourful but the State has nothing to compare with the conspicuous and beautiful species found in the tropics of eastern Australia.

The blues (Lycaenidae) are well represented and the association of many larvae with ant nests renders the group a particularly interesting one.

The skippers (Hesperiidae) are relatively drab-coloured butterflies with strong powers of flight. Over twenty species are recorded from the State and some forms are endemic to the South-West.

Only one butterfly is of economic importance and that is the introduced cabbage white butterfly (*Pieris rapae*) which reached this State in 1943. It attacks cabbages, cauliflowers and related plants as well as one or two other strong-tasting herbs such as watercress. The butterfly belongs to the whites, or Pieridae, which group contains a number of native species. Several members of this family, including the introduced cabbage white, display extraordinary powers of flight and the native caper white (*Anaphaeis java teutonia*) has been observed to carry out mass migrations of remarkable proportions on the eastern side of the continent.

A rather showy butterfly which appears to have become established here recently, at least around the Perth area, is the wanderer or monarch (*Danaus plexippus plexippus*). This large orange and black butterfly has apparently reached Western Australia from the other States. The colourful larvae feed on certain noxious weeds such as the introduced narrow-leaf cotton-bush (*Asclepias fruticosa*).

Order Hymenoptera (Bees, Wasps, Ants)

The wood wasps and Sirex wasps (Siricidae) include several pests which have been established in New Zealand and Tasmanian pine forests. Imported timber has been fumigated from time to time following the location of infested material.

The sawflies (Tenthredinidae) are represented locally by a number of native forms. The larvae of the genus *Perga* may often be seen in caterpillar-like clusters amongst the foliage of eucalypts. An introduced sawfly, the pear and cherry slug (*Caliroa cerasi*), is a common pest on pear and plum trees. The smaller parasitic wasps (ichneumonids, chalcids and their allies) are well represented and play an important role in combating many insect pests. Some attack insect eggs while others parasitise caterpillars, aphids and scale insects, so that without their aid the problem of pest control would be even more difficult than at present.

The ant fauna (Formicidae) of the State is extremely varied. One of the best-known native species is the meat ant (*Iridomyrmex purpureus*) which often nests on gravel paths and roadsides. Among the most remarkable of the local ants may be listed *Camponotus inflatus*, the honey-pot ant of the interior, and *Myrmecia regularis* of the karri forest area which has the frog *Metacrinia nicholli* as a tolerated guest in its nest. The honey-pot ant derives its name from the fact that certain individuals in the nest store honey until their abdomens become inflated to the size of grapes. This honey is then regurgitated to other ants as required. These ants were once prized by the natives as a food delicacy.

Two important introduced ant pests are the Argentine ant (*Iridomyrmex humilis*) and the Singapore ant (*Monomorium destructor*). The Argentine ant was once widespread in the metropolitan area, Albany and Bunbury, with several other country outbreaks. The insect has been reduced in recent years, however, as a result of a large-scale control campaign. The scheme involved the spraying of all infested areas, with government-controlled labour, and a restriction on the movement of goods likely to spread the pest. Since the commencement of the campaign in 1954 some 24,000 hectares have been treated at a cost of approximately \$2 million.

The social wasps (Vespidae) were once known only from the northern portion of the State. About 1949, however, colonies of *Polistes variabilis* were located in various parts of the Perth suburban area and they have now extended to some of the orcharding districts in the Darling Range. How the introduction occurred is not known.

The burrowing wasps, including the sand wasps (Pompilidae), the flower wasps (Scoliidae) and solitary ants (Mutillidae) are well represented. The mutillids are, of course, not true ants but the wingless females bear a superficial resemblance to ants which is further accentuated by their ability to inflict a painful sting. The flower wasps are particularly numerous and winged males carrying wingless females are common around flowering plants in the early summer. Of the solitary ants the black and white *Ephutomorpha cribricollis* is the best known. Most of the wasps mentioned are beneficial, for they store caterpillars and other insects in mud nests and underground burrows to serve as food for the wasp grubs.

The majority of native bees are solitary forms although some, like the Colletidae, often choose a common site for nest burrowing and hundreds of tunnels may be located close to one another.

The leaf-cutting bees (Megachilidae) often attract notice from their habit of cutting circular pieces from rose leaves and other foliage for use in nest construction.

The only native social bees belong to the genus *Trigona* which does not occur in the southern portions of the State.

CLASS ARACHNIDA (Spiders, Mites, Ticks, etc.)

Creatures grouped under the above heading are, of course, not true insects and will be dealt with only very briefly. Several forms are of considerable economic importance, as for example the cattle tick (*Boophilus microplus*) and the fowl tick (*Argas persicus*). The cattle tick is confined to the Kimberley Division and its range corresponds roughly with that of the buffalo fly. The ornate kangaroo tick (*Amblyomma triguttatum*) is a common species. It is occasionally collected as an accidental parasite on domestic animals and man.

The most serious mite pest is the red-legged earth mite (*Halotydeus destructor*) which is very destructive to young legumes and other seedlings. It may be particularly troublesome on subterranean clover pastures. Other mites of importance to orchardists and market gardeners are the spider mites (Tetranychidae) which include such cosmopolitan species as the two-spotted mite (*Tetranychus urticae*) and the bryobia mite (*Bryobia rubrioculus*).

Spiders constitute a large group, most of which are useful on account of their insectivorous habits, although bites from some of the larger species may produce painful after-effects. The most dangerous local spider is the red-backed spider (*Latrodectus mactans hasselti*). This species, whose bite may even prove fatal, is easily recognised by the conspicuous red streak down the centre of the abdomen.

Scorpions of various kinds are widely distributed over the State and the larger ones may be able to inflict a painful sting. There is one record of a baby dying at Pemberton from the effects of scorpion venom but no other reports of serious after-effects are available and, generally speaking, the group is of little local importance.

FURTHER SOURCES OF INFORMATION

The difficulties confronting anyone trying to review in a few pages the entomological fauna of such a large State as Western Australia will be better appreciated if it is remembered that in the *Western Australian Year-Book* for 1898-99 the late A. M. Lea expressed the opinion that there were about 30,000 species of insects indigenous to this State. Many additions have been made in the last seventy-five years and one is faced with the problem of deciding which creatures warrant special mention and which must be excluded for lack of space. The general reader interested in consulting other short reviews of the local insect fauna is referred to A. M. Lea's article in the 1898-99 Year Book under the title of 'The Insects of Western Australia'; in the Year Book for 1900-01 the late H. M. Giles wrote 'A Glimpse of Western Australian Entomology'.

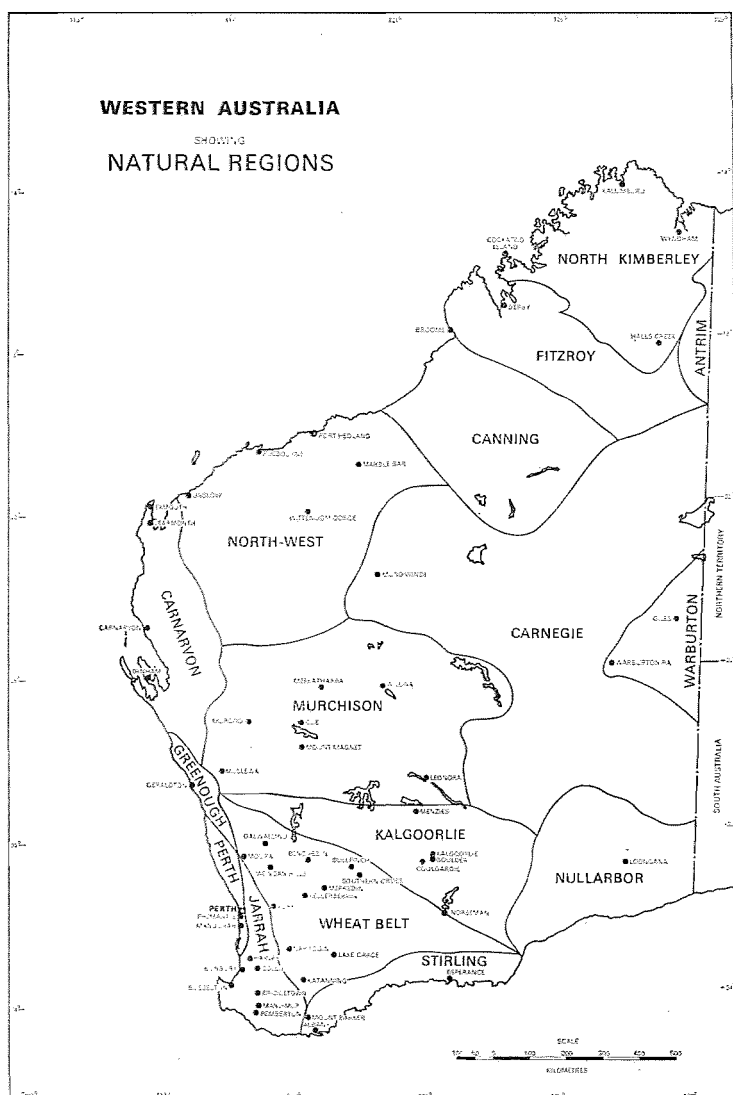
Additional references, which cover aspects of Australian entomology, were given in the Year Book for 1974 and in earlier issues.

Chapter II—continued

Part 6—Natural Regions

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The physical features, geology, climate, flora and fauna of Western Australia have been outlined earlier in this Chapter and the subdivision of the State into 'natural regions' may now be considered. A Natural Region is one clearly marked off from neighbouring regions by topographical, geological, climatic, or biological conditions, or by combinations of these, so that, as far as Man's activities are concerned, they have different economic possibilities.



CHARACTERISTICS OF THE NATURAL REGIONS OF WESTERN AUSTRALIA

The subdivision of Western Australia into Natural Regions (see map on page 113) has been described by E. de C. Clarke in *Jour. Roy. Soc. West. Aust.*, vol. XII, pp. 117-32. A summary of the characteristics of these different Natural Regions (reprinted by courtesy of the University of Western Australia Press from Clarke, Prider and Teichert: *Elements of Geology for Western Australian Students*) is given below.

NATURAL REGION	TOPOGRAPHY	GEOLOGY	RAINFALL	WATER SUPPLY (a)	VEGETATION, ETC.
ANTRIM (geographic)	Tableland	Cambrian sediments and lavas	Summer, monsoonal, 500 to 1,000 millimetres	Catchments, wells and artesian	Grassland and savannah
NORTH KIMBERLEY (geographic)	Dissected stony tableland	Younger Precambrian	Summer, monsoonal, 750 millimetres or more	Streams, springs, catchments	Luxuriant in valleys, sparse on tableland
FITZROY (chief river)	Very wide valleys and low hills	Palaeozoic (largely Permian)	Summer, monsoonal, 500 to 750 millimetres	Catchments and artesian	Grassland and savannah
CANNING (A. W. Canning, surveyor and explorer)	Sand ridges and table-top hills	Palaeozoic and Mesozoic	Summer, 375 millimetres or less	Springs, pools, artesian water? (undeveloped)	'Spinifex' (species of <i>Triodia</i>) and desert shrubs
CARNEGIE (David Carnegie, explorer)	Sand ridges and table-top hills	Mesozoic, Palaeozoic and Younger Precambrian	Variable and unreliable, probably about 125 millimetres	Catchments	'Spinifex' and desert shrubs
WARBURTON (Warburton Range)	Hills (some over 900 metres) separated by sandy country	Older Precambrian	Variable and unreliable, perhaps about 125 millimetres. Probably better than Carnegie Region owing to high hills	Catchments, some springs	'Mulga' (species of <i>Acacia</i>) and 'Spinifex'
NORTH-WEST (common usage)	Rugged hills. Rivers in well-defined valleys	Younger and Older Precambrian. Many economic minerals	Variable, unreliable, 375 millimetres or less	Wells, pools	'Spinifex', few shrubs and trees
MURCHISON (common usage)	Ridge hills and breakaways. Rivers in shallow beds. Salt 'lakes'	Older Precambrian. Economic minerals especially gold and nickel	Summer or winter, unreliable, 250 millimetres or less	Wells (potable groundwater)	'Mulga'. Eucalypts scarce except along rivers

KALGOORLIE ... (chief town)	... Less hilly than Murchison. Salt 'lakes'. No defined water-courses except salt lake system	Older Economic minerals especially gold and nickel	Mainly winter, unreliable, 250 millimetres or less	Catchments. Ground water too salty for use	Eucalypt forest, especially Salmon Gum (<i>E. salmonophloia</i>), Gimlet (<i>E. salubris</i>) and Red Morrel (<i>E. longicornis</i>)
WHEAT BELT ... (common usage)	... Same as Kalgoorlie Region	Older Precambrian, but few 'greenstones'	Winter, reliable, 250 to 500 millimetres	Similar to Kalgoorlie Region, but ground water potable in many places; therefore wells frequent	Eucalypt forest—Salmon Gum, Gimlet, and Morrel
JARRAH ... (chief timber)	... More dissected than Wheat Belt Region, especially near Darling Scarp	Like Wheat Belt Region but there is an extensive cuirass of laterite	Winter, reliable, 625 to 1,000 millimetres	Streams and springs	Forest of Jarrah (<i>E. marginata</i>), Wandoo (<i>E. Wandoo</i>), Karri (<i>E. diversicolor</i>) and Marri (<i>E. calophylla</i>)
CARNARVON ... (chief town)	... Elevated plain with table-top hills	Palaeozoic, Mesozoic, Tertiary and later	Summer or winter, very unreliable, about 250 millimetres	Artesian in many places. Catchments, pools	Sparse scrub in north, denser in south
GREENOUGH ... (river)	... Sandstone tableland	Mesozoic and older	Winter, 375 to 500 millimetres	Springs, wells and catchments	Scrub
PERTH ... (chief town)	... Coastal plain	Mesozoic and later	Winter, reliable, 500 to 875 millimetres	Springs, wells, artesian	Scrub, swamp and forest
STIRLING ... (prominent range)	... Undulating tableland with abrupt ranges	Siliceous Tertiary sediments with inliers of Younger and Older Precambrian	Winter, 375 millimetres or less	Catchments. Stream water generally too salty for use	Heath and swamp
NULLARBOR ... (geographic)	... Tableland, no hills	Calcareous Tertiary sediments	Winter, 250 millimetres or less	Catchments. Sub-artesian	Poor grassland

(a) 'Wells' refers to those that draw on ground water, but are not artesian. 'Catchments' refers to water collected on the surface—naturally in gnammas holes, artificially by conserving the run-off. 'Pools' refers to pools in watercourses and includes rock holes.

CHAPTER III—CONSTITUTION AND GOVERNMENT

Western Australia is one of the six federated sovereign States which, together with the Northern Territory and the Australian Capital Territory, constitute the Commonwealth of Australia. Thus, in addition to having its own Parliament and executive government, it is represented in the federal legislature. As well as government at the Federal and State levels, there is a third system, that of local government, which functions through City Councils, Town Councils and Shire Councils.

OUTLINE OF CONSTITUTIONAL DEVELOPMENT

A Legislative Council was established in Western Australia shortly after its foundation as a Crown Colony and sat for the first time in February 1832. The Council was non-elective and consisted of the Governor and four senior officials. In 1839, membership was increased to nine when the Governor nominated four unofficial members. Additional appointments were made from time to time until the dissolution of the nominee Legislative Council in 1870 with the inauguration of representative government as provided for in the Australian Colonies Government Act of 1850. This Act, which enabled the establishment of representative governments in other Australian Colonies, withheld the privilege from Western Australia until such time as the Colony should be able to defray all costs of government from its own revenues, and it was not until 1870 that it was felt that Western Australia was able to satisfy this condition. The new Legislative Council, elections for which took place in October of that year, consisted of twelve elected members, three nominees and three officials. The number of members of the Council was increased in 1874 to 21, of whom 14 were elected, in 1882 to 24, of whom 16 were elected and in 1886 to 26, comprising 17 elected members, 5 nominees and 4 officials.

Following the passage by the Legislative Council of a Constitution Act in 1889 and subsequent representations made in London by delegates sent from the Colony, responsible government was granted to Western Australia by an Imperial Act assented to on 15 August 1890. Provision was made for the establishment of a Parliament of two Houses, to be known as the 'Legislative Council' and the 'Legislative Assembly', to replace the old Council. Proclamation of responsible government was made in Perth on 21 October 1890 and election of the thirty members of the Legislative Assembly took place in November and December. The fifteen members of the Legislative Council were nominated by the Governor, as provided in the Constitution Act, and the Parliament was officially opened on 30 December 1890. The Constitution Act of 1889, while prescribing a Council which was originally nominative, contained a provision that, after the expiration of six years or on the population of the Colony reaching 60,000, the Council should become fully elective. The required population was attained in 1893 and an amendment to the Act in that year enabled the election of twenty-one members to the Legislative Council, and at the same time increased the Legislative Assembly to thirty-three members. By an amendment of 1899, membership of the Legislative Council was raised to thirty and of the Legislative Assembly to fifty. Provision was made for the Legislative Assembly to be increased to fifty-one members by the *Constitution Acts Amendment Act (No. 2), 1965*. The increase in numbers, however, did not become effective until the State general election in 1968.

On 1 January 1901, Western Australia and the five other Australian Colonies were federated under the name of the 'Commonwealth of Australia', authority for the union having been given by the Commonwealth of Australia Constitution Act which was passed by the British Parliament in 1900. By a provision of the Constitution Act the constituent parts of the Commonwealth previously designated 'Colonies' became known as 'States'. Under the Constitution, powers are divided between the Parliaments of the

Commonwealth and of the States by conferring power in respect of specific subjects on the Commonwealth either exclusively or jointly with the States, leaving the remaining powers to the States.

Procedure in both Federal and State Parliaments is based on British practice. The legislatures consist of the Sovereign, represented by the Governor-General of Australia or the Governor of the State, and the elected members. In the field of executive government the British 'Cabinet' system has also been adopted. The members of the Cabinets must hold seats in the legislature as elected members. The Cabinet is responsible to the Parliament and continues in office only while holding the confidence of the Parliament. All Cabinet Ministers are members of the Executive Council, the supreme group of advisers to the Crown, and the Cabinet thus provides the executive government of the Commonwealth or the State. The Executive Council is presided over by the Governor-General of Australia or the Governor of the State and at its meetings, which are formal and official in character, the decisions of the Cabinet are given legal form, appointments are made, resignations accepted, proclamations issued and regulations approved.

VICE-REGAL REPRESENTATION

The Governor-General of Australia

Under the Commonwealth Constitution, ultimate executive power is vested in the Crown and is exercised by the Governor-General as the direct representative of the Sovereign. Appointment to the office is made by the Crown after consultation with the Prime Minister of the Commonwealth. The present Governor-General is His Excellency Sir John Robert Kerr, K.C.M.G., K.St.J., who was sworn in on 11 July 1974. During the absence from Australia of the Governor-General it is usual for the senior among the State Governors to be appointed Administrator.

The Governor of Western Australia

The Governor of Western Australia is the personal representative of the Sovereign in the State and exercises the powers of the Crown in State matters. He is the titular head of the Government and performs the official and ceremonial functions attaching to the Crown. The last Governor of Western Australia, His Excellency Air Commodore Sir Hughie Idwal Edwards, V.C., K.C.M.G., C.B., D.S.O., O.B.E., D.F.C., was sworn in on 7 January 1974. He resigned as Governor on 2 April 1975. In the event of the Governor's absence from Western Australia the Lieutenant-Governor of the State is appointed Administrator. If there is no Lieutenant-Governor it is customary for the Chief Justice of Western Australia to be appointed Administrator. Commodore James Maxwell Ramsay, C.B.E., D.S.C., was sworn in as Lieutenant-Governor on 30 July 1974 and since that date has performed the functions of Administrator of the State during absences of the Governor.

The last Governor of Western Australia as a Colony was Lieutenant-Colonel Sir Gerard Smith, K.C.M.G., whose term of office expired on 29 June 1900 and the first Governor of the State was Captain Sir Arthur Lawley, K.C.M.G., who was sworn in on 1 May 1901. The names and dates of assumption of office of Governors, Lieutenant-Governors and Administrators from the foundation of the Colony are shown in the list below.

GOVERNORS, LIEUTENANT-GOVERNORS AND ADMINISTRATORS

Name and Office	Date of assumption of Office
Captain J. Stirling, R.N., Lieutenant-Governor	1828—30 December (a)
Captain F. C. Irwin, Lieutenant-Governor	1832—12 August
Captain R. Daniell, Lieutenant-Governor	1833—14 September
Captain P. Beete, Lieutenant-Governor	1834—11 May
Captain R. Daniell, Lieutenant-Governor	1834—24 May
Captain Sir James Stirling, Governor	1834—19 September

GOVERNORS, LIEUTENANT-GOVERNORS AND ADMINISTRATORS—*continued*

Name and office	Date of assumption of office
John Hutt, Esq., Governor	1839—3 January
Lieutenant-Colonel A. Clarke, K. H., Governor	1846—27 January
Lieutenant-Colonel F. C. Irwin, Governor	1847—12 February
Captain C. Fitzgerald, R.N., Governor	1848—12 August
A. E. Kennedy, Esq., Governor	1855—23 July
Lieutenant-Colonel John Bruce, Acting Governor	1862—20 February
J. S. Hampton, Esq., Governor	1862—28 February
Lieutenant-Colonel John Bruce, Acting Governor	1868—2 November
F. A. Weld, Esq., Governor	1869—30 September
W. C. F. Robinson, Esq., C.M.G., Governor	1875—11 January
Lieutenant-Colonel E. D. Harvest, Acting Governor	1877—7 September
Major-General Sir Harry St G. Ord, R.E., K.C.M.G., C.B., Lieutenant-Governor (b)	1877—12 November
Sir W. C. F. Robinson, K.C.M.G., Governor	1880—10 April
H. T. Wrenfordsley, Esq., Administrator	1883—14 February
Sir F. N. Broome, K.C.M.G., Governor	1883—2 June
A. C. Onslow, Esq., Administrator	1884—13 November
Sir F. N. Broome, K.C.M.G., Governor	1885—18 June
Sir Malcolm Fraser, K.C.M.G., Administrator	1889—21 December
Sir W. C. F. Robinson, G.C.M.G., Governor	1890—20 October
A. C. Onslow, Esq., Administrator	1891—21 September
Sir W. C. F. Robinson, G.C.M.G., Governor	1892—9 July
Sir A. C. Onslow, Administrator	1895—18 March
Sir Gerard Smith, K.C.M.G., Governor	1895—23 December
Sir A. C. Onslow, Administrator	1900—23 March
E. A. Stone, Esq., Administrator	1901—4 March
Captain Sir Arthur Lawley, K.C.M.G., Governor	1901—1 May
Sir Edward Stone, Administrator	1902—14 August
Admiral Sir Frederick Bedford, G.C.B., Governor	1903—24 March
Sir Edward Stone, Administrator	1909—23 April
Sir Gerald Strickland, K.C.M.G., Governor	1909—31 May
Sir Edward Stone, Administrator	1913—4 March
Major-General Sir Harry Barron, K.C.M.G., C.V.O., Governor	1913—17 March
Sir Edward Stone, K.C.M.G., Administrator	1917—27 February
Rt Hon. Sir William Ellison-Macartney, P.C., K.C.M.G., Governor	1917—9 April
Sir Francis Newdigate-Newdigate, K.C.M.G., Governor	1920—9 April
Sir Robert McMillan, Administrator	1924—17 June
Colonel Sir William Campion, K.C.M.G., D.S.O., Governor	1924—28 October
Sir Robert McMillan, K.C.M.G., Lieutenant-Governor and Administrator	1929—7 January
Colonel Sir William Campion, K.C.M.G., D.S.O., Governor	1929—7 May
Sir John Northmore, K.C.M.G., Administrator	1931—9 June
Sir John Northmore, K.C.M.G., Lieutenant-Governor and Administrator	1932—30 June
Hon. Sir James Mitchell, K.C.M.G., Lieutenant-Governor	1933—11 July
Hon. Sir James Mitchell, G.C.M.G., Governor	1948—5 October
Hon. Sir John Dwyer, K.C.M.G., Administrator	1951—1 July
Hon. Albert Wolff, Administrator	1951—7 August
Hon. Sir John Dwyer, K.C.M.G., Administrator	1951—28 August
Lieutenant-General Sir Charles Gairdner, K.C.M.G., K.C.V.O., K.B.E., C.B., Governor	1951—6 November
Hon. Sir John Dwyer, K.C.M.G., Lieutenant-Governor and Administrator	1963—27 June
Major-General Sir Douglas Kendrew, K.C.M.G., C.B., C.B.E., D.S.O., Governor	1963—25 October
Air Commodore Sir Hughie Edwards, V.C., K.C.M.G., C.B., D.S.O., O.B.E., D.F.C., Governor	1974—7 January

(a) Letter of Appointment issued 30 December 1828; first Commission granted 4 March 1831, from which date he became Governor and Commander-in-Chief. (b) Appointed Governor and Commander-in-Chief 30 January 1878.

THE FEDERAL PARLIAMENT

The legislative power of the Commonwealth is vested in a Federal Parliament which consists of Her Majesty the Queen (represented by the Governor-General), a Senate and a House of Representatives. Subject to the Constitution, the Federal Parliament is empowered to make laws concerning, among other things, defence, external affairs,

customs and excise, trade and commerce with other countries and among the States, taxation, borrowing of money on public credit, currency and coinage, banking, insurance, navigation, fisheries, quarantine, posts and telegraphs, census and statistics, immigration, naturalisation and aliens, copyrights and trade marks, bankruptcy, marriage, divorce and matrimonial causes, social services, and conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State. The Constitution provides that, when a law of a State is inconsistent with a law of the Commonwealth, the Commonwealth law shall prevail and the State law shall, to the extent of the inconsistency, be invalid.

The qualifications necessary for membership of the Federal Parliament and for voting at federal elections are described in the *Official Year Book of Australia*. Under the provisions of the *Commonwealth Electoral Act 1973*, which was proclaimed operative from 21 March 1973, the age qualification for enrolment, voting and candidature for federal parliamentary elections was lowered from twenty-one years to eighteen years.

The payment of allowances to Senators and Members of the House of Representatives is provided for in the Constitution and a superannuation scheme is established under the provisions of the *Parliamentary Retiring Allowances Act 1948-1973*.

The Senate

The Senate consisted originally of thirty-six members, six Senators being returned from each State. The Parliament is authorised by the Constitution to increase or decrease the number of members. The growth of the population since Federation having been such as to warrant a considerable enlargement of the Parliament, a Representation Act was passed in 1948 to provide for increased membership by raising from six to ten the number of Senators from each State. At the same time the alternative system of counting of votes in elections for the Senate was altered by the *Commonwealth Electoral Act* to one of proportional representation, a summarised description of which is given in the *Official Year Book of the Commonwealth of Australia*, No. 38, pages 82-3.

Members are elected on the basis of adult suffrage by the people of the State which they represent. As provided by the *Commonwealth Electoral Act 1918-1973*, enrolment as an elector is compulsory for all qualified persons except those who are aboriginal natives of Australia. Aborigines, although entitled to enrol, are not required to do so. Voting is compulsory for all enrolled persons in terms of an amendment of 1924 which operated for the first time at elections held on 14 November 1925. The term of office of a Senator is normally six years and commences on the first day of July following his election. One-half of the members retire at the end of every third year and are eligible for re-election.

Following the simultaneous dissolution of the Senate and the House of Representatives by a Proclamation made on 11 April 1974 by the Governor-General of Australia, general elections for the Federal Parliament were held on 18 May 1974. The following table shows the Western Australian membership of the Senate as a result of the election.

WESTERN AUSTRALIAN MEMBERS OF THE SENATE

Due to retire on 30 June 1976					Due to retire on 30 June 1979				
Name					Name				
Chaney, F. M. ....	.....	.....	.....	Lib.	Drake-Brockman, Hon. T. C., D.F.C.	.....	.....	.....	C.P.
Coleman, Ruth N. ....	.....	.....	.....	A.L.P.	Sim, J. P. ....	.....	.....	.....	Lib.
Durack, P. D. ....	.....	.....	.....	Lib.	Wheeldon, Hon. J. M. ....	.....	.....	.....	A.L.P.
McIntosh, G. D. ....	.....	.....	.....	A.L.P.	Willesee, Hon. D. R. ....	.....	.....	.....	A.L.P.
Walsh, P. A. ....	.....	.....	.....	A.L.P.	Withers, R. G. ....	.....	.....	.....	Lib.

A.L.P. = Australian Labor Party. C.P. = Australian Country Party.
Lib. = Liberal Party of Australia.

The House of Representatives

State membership of the House of Representatives is on a population basis with the proviso that each State shall have at least five members. The Constitution provides further that the number of members of the House of Representatives shall be, as nearly as practicable, double the number of Senators. With the enlargement of the Senate from thirty-six to sixty members, the membership of the House of Representatives was increased, from the date of the 1949 elections, from seventy-four to 121, not including a member for the Australian Capital Territory, which achieved representation for the first time at this election, and a member for the Northern Territory, which had been represented since 1922.

Western Australia's population growth had been such as to necessitate an increase in representation from five to eight, and this number was raised to nine in 1955 as a result of a redistribution following the Census of 30 June 1954. At the same time, the total number of members of the House of Representatives was increased to 122, excluding the two members for the internal Territories.

Consequent upon the population changes disclosed by the 1966 Census, a redistribution of the State electoral division boundaries was carried out in 1968 and the following representation in the House of Representatives became effective as from the general election held on 25 October 1969: New South Wales 45, Victoria 34, Queensland 18, South Australia 12, Western Australia 9, and Tasmania 5, the total number of members (excluding the members for the internal Territories) being increased from 122 to 123.

A redistribution of Western Australian electoral division boundaries was carried out in 1973, as a result of the population changes disclosed by the 1971 Census, and the State gained an additional seat in the House of Representatives. The tenth seat was named Tangney after Dame Dorothy Tangney, a former Labour senator for Western Australia. Representation of the Australian Capital Territory in the House was increased from one to two by the *Australian Capital Territory Representation (House of Representatives) Act 1973* and consequently the total number of members was raised to 127.

Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years, by the people of the electorate which they represent. As provided by the *Commonwealth Electoral Act 1918-1973*, enrolment as an elector is compulsory for all qualified persons except those who are aboriginal natives of Australia. Aborigines, although entitled to enrol, are not required to do so. Voting is on the preferential system and is compulsory for all enrolled persons in terms of an amendment of 1924 which operated for the first time at elections held on 14 November 1925.

Elections for the House of Representatives were held on 18 May 1974, following the dissolution of both Houses of Parliament referred to on page 119. The next table shows the Western Australian membership of the House of Representatives as a result of the elections.

WESTERN AUSTRALIAN MEMBERS OF THE HOUSE OF REPRESENTATIVES

Electoral division	Name	Political party	Electoral division	Name	Political party
Canning	Bungey, M. H.	Lib.	Moore	Hyde, J. M.	Lib.
Curtin	Garland, Hon. R. V.	Lib.	Perth	Berinson, J. M.	A.L.P.
Forrest	Drummond, P. H.	Lib.	Stirling	Viner, R. I.	Lib.
Fremantle	Beazley, Hon. K. E.	A.L.P.	Swan	Bennett, A. F.	A.L.P.
Kalgoorlie	Collard, F. W.	A.L.P.	Tangney	Dawkins, J. S.	A.L.P.

A.L.P. = Australian Labor Party.

Lib. = Liberal Party of Australia.

THE STATE PARLIAMENT

The Crown, represented by the Governor, and the Parliament, comprising a Legislative Council and a Legislative Assembly, constitute the legislature of Western Australia.

Executive government is based, as in the case of the Commonwealth and in other States, on the system which evolved in Great Britain in the eighteenth century and which is generally known as the 'Cabinet' system. The Cabinet consists of Ministers of the Crown chosen for the Ministry from members of Parliament belonging to the political party, or coalition of parties, which is in the majority in the Legislative Assembly. The Constitution requires that at least one of the Ministers be selected from members of the Legislative Council. In Western Australia, as in the other Australian States, the office of principal Minister is designated 'Premier'.

Since 1890, when responsible government was granted to Western Australia, there have been twenty-five separate Ministries as shown in the following table. No organised political party existed in the Colony until the formation of a Labour party in the 1890s. A Labour Ministry assumed office in 1904. As no previous Ministry had a specific party designation, the table has been annotated accordingly.

MINISTRIES FROM 1890

Name of Premier	Political party	Date of assumption of office	Duration		
			Years	Months	Days
Forrest	(a)	1890—29 December	10	1	17
Throssell		1901—15 February ....	....	3	12
Leake		27 May ....	....	5	25
Morgans		21 November ....	....	1	2
Leake		23 December ....	....	6	8
James	Labour	1902—1 July	2	1	9
Daglish		1904—10 August	1	....	15
Rason		1905—25 August ....	....	8	12
Moore		1906—7 May	4	4	9
Wilson		1910—16 September	1	....	21
Scaddan		1911—7 October	4	9	20
Wilson		1916—27 July ....	....	11	1
Lefroy		1917—28 June	1	9	20
Colebatch		1919—17 April ....	....	1	....
Mitchell		17 May	4	10	30
Collier	Nat. and C.P. (coalition)	1924—16 April	6	....	8
Mitchell		1930—24 April	3	....	....
Collier	Labour	1933—24 April	3	3	27
Wilcock		1936—20 August	8	11	11
Wise	Labour	1945—31 July	1	8	1
McLarty	L.C.L. and C.P. (coalition)	1947—1 April	5	10	22
Hawke		1953—23 February	6	1	10
Brand	L.C.L. and C.P. (coalition)	1959—2 April	11	11	1
Tonkin		1971—3 March	3	1	5
Court	Lib. and C.P. (coalition)	1974—8 April	Still in office (b)		

C.P. = Country Party. L.C.L. = Liberal and Country League (c). Nat. = Nationalist.

(a) No specific party designation. (b) At 31 December 1974. (c) The name of the Party was changed to *The Liberal Party of Australia (Western Australian Division)* Incorporated on 15 July 1968.

The Constitution Act of 1889 provided for a Ministry of five members. This number was increased to six by an amendment to the Act in 1896, to eight by another amendment in 1927, and to ten by the *Acts Amendment (Increase in Number of Ministers of the Crown) Act, 1950*. The present Ministry consists of twelve members, as authorised by the *Constitution Acts Amendment Act, 1965*. The names of the Ministers and the portfolios held by them following the elections of 30 March 1974 are shown in the next table.

The right to vote at parliamentary elections was extended to women by the *Constitution Acts Amendment Act, 1899* and membership of either House was provided for by the *Parliament (Qualification of Women) Act, 1920*. The first woman member of any Australian Parliament was Mrs Edith Dircksey Cowan, O.B.E., who was elected to the Legislative Assembly in March 1921 as member for West Perth. Mrs A. F. G. (later Dame Florence) Cardell-Oliver, M.L.A. for Subiaco, became the first woman Cabinet Minister in Australia when she joined the McLarty Ministry in 1947.

Payment of members was introduced in 1900 by a Payment of Members Act and a superannuation fund is established under the *Parliamentary Superannuation Act, 1970-1971*. The latter Act replaces the *Parliamentary Superannuation Act, 1948-1968* which came into operation on 1 January 1949.

THE MINISTRY FROM 8 APRIL 1974

Name of Minister	Title of office
Hon. Sir Charles Walter Michael Court, O.B.E., M.L.A.	Premier, Treasurer, and Minister Co-ordinating Economic and Regional Development
Hon. Walter Raymond McPharlin, M.L.A.	Deputy Premier, and Minister for Agriculture
Hon. Desmond Henry O'Neil, M.L.A.	Minister for Works, Water Supplies, and Housing
Hon. Neil McNeill, B.Sc. (Agric.), M.L.C.	Minister for Justice, and Leader of the Government in the Legislative Council
Hon. Raymond James O'Connor, M.L.A.	Minister for Transport, Police, Traffic, and Traffic Safety (a)
Hon. Graham Charles MacKinnon, M.L.C.	Minister for Education, Cultural Affairs, and Recreation
Hon. Matthew Ernest Stephens, M.L.A.	Chief Secretary, and Minister for Conservation and Environment, and Fisheries and Wildlife (a)
Hon. William Leonard Grayden, M.L.A.	Minister for Labour and Industry, Consumer Affairs, Immigration, and Tourism
Hon. Andrew Mensaros, M.L.A.	Minister for Industrial Development, Mines, Electricity, and Fuel and Energy
Hon. Edgar Cyril Rushton, M.L.A.	Minister for Local Government, and Urban Development and Town Planning
Hon. Keith Alan Ridge, M.L.A.	Minister for Lands, Forests, and North-West
Hon. Norman Eric Baxter, M.L.C.	Minister for Health, and Community Welfare

(a) Amended Title of Office as notified in the *Government Gazette of Western Australia* dated 20 December 1974.

The Legislative Council

The Legislative Council consists of thirty members, each of the fifteen electoral provinces into which the State is divided being represented by two members. Election is for a term of six years and one-half of the members retire every three years.

The qualifications of a candidate for election to the Legislative Council are that he or she shall be at least eighteen years of age, shall have resided in Western Australia for a minimum of one year, be a natural-born or naturalised British subject, and be enrolled or qualified for enrolment, as an elector. No person may hold office as a Member of the Legislative Council and a Member of the Legislative Assembly at the same time. A judge of the Supreme Court, the Sheriff of Western Australia, a minister of religion, an undischarged bankrupt, a debtor against whose estate there is a subsisting order in bankruptcy, or a person who has been attainted or convicted of treason or felony may not be elected to the Legislative Council. The qualifications for election as a member of the Legislative Council are thus identical with those necessary for election as a member of the Legislative Assembly. The qualifying age for a candidate for election to either House was reduced from twenty-one years of age to eighteen years of age under the provisions of the *Constitution Acts Amendment Act, 1973* which was proclaimed operative from 1 January 1974.

The *Electoral Act, 1907-1973* requires that to qualify for enrolment as an elector a person shall be at least eighteen years of age, be a natural-born or naturalised British subject, shall have lived in the Commonwealth of Australia for six months continuously, and shall have lived in Western Australia for three months continuously and in the district for which he claims enrolment for a continuous period of one month immediately preceding the date of his claim. The qualifying age for enrolment as an elector for both the Legislative Council and the Legislative Assembly was reduced from twenty-one years of age to eighteen years of age under the provisions of the *Electoral Act Amendment Act (No. 2), 1970*. The Act operated for the first time at the conjoint election for the Legislative Council and the Legislative Assembly held on 20 February 1971. A person is disqualified from enrolment if he is of unsound mind, has been attainted of treason, has been

convicted and is serving sentence for any offence punishable by imprisonment for one year or longer, is the holder of a temporary entry permit for the purposes of the *Migration Act* 1958-1973 (Commonwealth) or is a prohibited immigrant under that Act. Enrolment is compulsory under the *Electoral Act Amendment Act, 1964* for all qualified persons except those who are aboriginal natives of Australia. Aborigines, although entitled to enrol, are not required to do so. Voting at elections is on the preferential system and, as provided by the foregoing Act, is compulsory for all enrolled persons.

Under the *Electoral Districts Act, 1947-1965*, the State is divided into a Metropolitan Area, consisting of five electoral provinces, an Agricultural, Mining and Pastoral Area with eight provinces, and a North-West-Murchison-Eyre Area with two provinces. The names and boundaries of these fifteen electoral provinces, together with those of the fifty-one component electoral districts, were given in the 1969 issue of the Year Book. Changes in these boundaries were found necessary following an examination of the rolls prepared for the election of 20 February 1971 and, by proclamation dated 1 September 1971, Electoral Commissioners appointed under the Act were directed to wholly or partially redivide the State into electoral districts and electoral provinces in the manner provided by the Act.

The proposals of the Commissioners were published in an issue of the *Government Gazette of Western Australia* dated 21 January 1972. After considering objections submitted, the Commissioners made their final report on 1 June 1972. This report, together with maps showing the final recommendations of the Commissioners for the division of the State into electoral districts and for the adjustment of the boundaries of the electoral provinces, was published in the *Government Gazette of Western Australia* dated 14 June 1972. The electoral districts, as finally determined, contained within each province are listed below.

ELECTORAL PROVINCES AND ELECTORAL DISTRICTS

Electoral province	Component electoral districts	Electoral province	Component electoral districts
METROPOLITAN AREA			
Metropolitan	{ Cottesloe Floreat Nedlands Perth Subiaco	South Metropolitan	{ Cockburn East Melville Fremantle Melville
North Metropolitan	{ Balga Karrinyup Mount Hawthorn Mount Lawley Scarborough	South-East Metropolitan	{ Canning Clontarf South Perth Victoria Park Welshpool
North-East Metropolitan	{ Ascot Maylands Morley Swan		
AGRICULTURAL, MINING AND PASTORAL AREA			
Central	{ Avon Mount Marshall Narrogin	South-East	{ Boulder-Dundas Kalgoorlie Merredin-Yilgarn
Lower Central	{ Collie Katanning Warren	South-West	{ Bunbury Vasse Wellington
Lower West	{ Dale Murray Rockingham	Upper West	{ Geraldton Greenough Moore

ELECTORAL PROVINCES AND ELECTORAL DISTRICTS—*continued*

Electoral province	Component electoral districts	Electoral province	Component electoral districts
AGRICULTURAL, MINING AND PASTORAL AREA— <i>continued</i>			
South	{ Albany Roe Stirling	West	{ Kalamunda Mundaring Toodyay
NORTH-WEST-MURCHISON-EYRE AREA			
Lower North	{ Gascoyne Murchison-Eyre	North	{ Kimberley Pilbara

The composition of the Legislative Council as a result of the election of 30 March 1974 is given in the following table.

MEMBERS OF THE LEGISLATIVE COUNCIL
FROM 22 MAY 1974

Name	Political party	Electoral province
DUE TO RETIRE IN 1977 (a)		
Abbey, Hon. Charles Roy	Lib.	West
Baxter, Hon. Norman Eric	C.P.	Central
Dans, Hon. Desmond Keith	A.L.P.	South Metropolitan
Dellar, Hon. Stanley James	A.L.P.	Lower North
Elliott, Hon. Lyla Daphne	A.L.P.	North-East Metropolitan
Ferry, Hon. Victor Jasper, D.F.C.	Lib.	South-West
Griffith, Hon. Arthur Frederick	Lib.	North Metropolitan
Griffiths, Hon. Clive Edward	Lib.	South-East Metropolitan
Heitman, Hon. Jack	Lib.	Upper West
Leeson, Hon. Ronald Thomas	A.L.P.	South-East
McNeill, Hon. Neil, B.Sc. (Agric.)	Lib.	Lower West
Perry, Hon. Thomas Oswald	C.P.	Lower Central
Williams, Hon. Richard John Lloyd, B.A.	Lib.	Metropolitan
Withers, Hon. William Robert	Lib.	North
Wordsworth, Hon. David John	Lib.	South
DUE TO RETIRE IN 1980 (a)		
Berry, Hon. George William	Lib.	Lower North
Claughton, Hon. Roy Frederick, B.A.	A.L.P.	North Metropolitan
Cooley, Hon. Donald Walter	A.L.P.	North-East Metropolitan
Gayfer, Hon. Harry Walter	C.P.	Central
Knight, Hon. Thomas	Lib.	South
Lewis, Hon. Alexander Ashley	Lib.	Lower Central
MacKinnon, Hon. Graham Charles	Lib.	South-West
Masters, Hon. Gordon Edgar	Lib.	West
McAleer, Hon. Margaret	Lib.	Upper West
Medcalf, Hon. Ian George, E.D., LL.B.	Lib.	Metropolitan
Pratt, Hon. Ian George	Lib.	Lower West
Stubbs, Hon. Robert Henry Claude	A.L.P.	South-East
Thompson, Hon. Ronald	A.L.P.	South Metropolitan
Tozer, Hon. John Carmichael	Lib.	North
Vaughan, Hon. Grace Sydney	A.L.P.	South-East Metropolitan

A.L.P. = Australian Labor Party. C.P. = Country Party.
Lib. = The Liberal Party of Australia (Western Australian Division) Incorporated.

(a) Section 8 of the *Constitution Acts Amendment Act, 1899-1973* provides that a retiring member shall vacate his seat on 21 May in the year of retirement.

The Legislative Assembly

The following table shows the composition of the Legislative Assembly as a result of the election of 30 March 1974.

MEMBERS OF THE LEGISLATIVE ASSEMBLY AFTER GENERAL ELECTIONS OF 30 MARCH 1974

Name	Political party	Electoral district
Barnett, Michael	A.L.P.	Rockingham
Bateman, Thomas Henry	A.L.P.	Canning
Bertram, Ronald Edward, A.A.S.A.	A.L.P.	Mount Hawthorn
Blaikie, Barry Roy	Lib.	Vasse
Brand, Hon. Sir David, K.C.M.G.	Lib.	Greenough
Bryce, Malcolm John, B.A.	A.L.P.	Ascot
Burke, Brian Thomas	A.L.P.	Balga
Burke, Terence Joseph	A.L.P.	Perth
Carr, Jeffrey Philip	A.L.P.	Geraldton
Clarko, James George	Lib.	Karrinyup
Court, Hon. Sir Charles Walter Michael, O.B.E.	Lib.	Nedlands
Cowan, Hendy John	C.P.	Merredin-Yilgarn
Coyne, Peter Joseph	Lib.	Murchison-Eyre
Craig, Margaret June	Lib.	Wellington
Crane, Albert Victor	C.P.	Moore
Dadour, Gabriel Thomas, Dr	Lib.	Subiaco
Davies, Hon. Ronald	A.L.P.	Victoria Park
Evans, Hon. Hywel David, B.A.	A.L.P.	Warren
Evans, Hon. Thomas Daniel	A.L.P.	Kalgoorlie
Fletcher, Harry Arthur	A.L.P.	Fremantle
Grayden, Hon. William Leonard	Lib.	South Perth
Grewar, Geoffrey Royden, B.Sc. (Agric.)	Lib.	Roe
Harman, John Joseph	A.L.P.	Maylands
Hartrey, Thomas Augustine, B.A., LL.B.	A.L.P.	Boulder-Dundas
Hutchinson, Hon. Ross, D.F.C.	Lib.	Cottesloe
Jamieson, Hon. Colin John	A.L.P.	Welshpool
Jones, Peter Vernon	C.P.	Narrogin
Jones, Thomas Henry	A.L.P.	Collie
Laurance, Ian James, B.A.	Lib.	Gascoyne
May, Hon. Donald George	A.L.P.	Clontarf
McIver, Kenneth Finlay	A.L.P.	Avon
McPharlin, Hon. Walter Raymond	C.P.	Mount Marshall
Mensaros, Hon. Andrew	Lib.	Floreat
Moiler, James	A.L.P.	Mundaring
Nanovich, Michael	Lib.	Toodyay
O'Connor, Hon. Raymond James	Lib.	Mount Lawley
Old, Richard Charles	C.P.	Katanning
O'Neil, Hon. Desmond Henry	Lib.	East Melville
Ridge, Hon. Keith Alan	Lib.	Kimberley
Rushton, Hon. Edgar Cyril	Lib.	Dale
Shalders, Richard Steele	Lib.	Murray
Sibson, John	Lib.	Bunbury
Skidmore, John Edward	A.L.P.	Swan
Sodeman, Brian	Lib.	Pilbara
Stephens, Hon. Matthew Ernest	C.P.	Stirling
Taylor, Hon. Alexander Donald, B.A.	A.L.P.	Cockburn
Thompson, Ian David	Lib.	Kalamunda
Tonkin, Arthur Raymond, B.A., Dip.Ed.	A.L.P.	Morley
Tonkin, Hon. John Trezise	A.L.P.	Melville
Watt, Leon Harold	Lib.	Albany
Young, Raymond Laurence, F.C.A.	Lib.	Scarborough

SUMMARY

Australian Labor Party (A.L.P.)	22
Country Party (C.P.)	6
The Liberal Party of Australia (Western Australian Division) Incorporated (Lib.)	23

There are fifty-one members of the Legislative Assembly, each member representing one of the fifty-one electoral districts into which the State is divided for the purpose. Members are elected for the duration of the Parliament, which is limited to three years.

A candidate for election must have resided in Western Australia for twelve months, be at least eighteen years of age, be a natural-born or naturalised British subject, and be enrolled or qualified for enrolment, as an elector at Legislative Assembly elections. No person is qualified to be a Member of the Legislative Assembly if he is a Member of the Legislative Council, a Judge of the Supreme Court, the Sheriff of Western Australia, a minister of religion, an undischarged bankrupt, a debtor against whose estate there is a subsisting order in bankruptcy, or has been attainted or convicted of treason or felony.

The qualifications and disqualifications applying to enrolment as an elector of the Legislative Assembly are the same as those prescribed for electors of the Legislative Council and enumerated in the preceding section *The Legislative Council*. As provided by the *Electoral Amendment Act, 1919* enrolment is compulsory for all qualified persons except those who are aboriginal natives of Australia. Aborigines, although entitled to enrol, are not required to do so. Voting at elections is on the preferential system and is compulsory for all enrolled persons as provided by the *Electoral Act Amendment Act, 1936*.

ELECTIONS, ELECTORS ON ROLL AND VOTES RECORDED

The Federal Parliament

General elections for the Federal Parliament were held on 18 May 1974. The Australian Labor Party, led by the Honourable E. G. Whitlam, Q.C., was re-elected to office with a majority of five seats in the House of Representatives.

Australian Labor Party representation in the Senate as a result of the elections was increased from twenty-six to twenty-nine.

FEDERAL PARLIAMENT—ELECTORS ON ROLL AND VOTES RECORDED GENERAL ELECTIONS OF 18 MAY 1974

Electoral division	Electors enrolled	First preference votes recorded							Number of voters	
		Australia Party	Australian Labor Party	Liberal Party of Australia	National Alliance (a)	Western Australian Secessionist Movement	Independent and other	Informal	Total	Per cent of enrolled electors
HOUSE OF REPRESENTATIVES										
Canning	57,560	1,093	16,378	19,133	16,961	|	(b)	1,427	54,992	95.54
Curtin	66,988	728	24,016	33,267	3,051		700	1,460	63,222	94.38
Forrest	56,308	569	19,801	24,860	7,967	|	(b)	1,084	54,281	96.40
Fremantle	66,318	723	35,932	21,711	2,136		(b)	1,554	62,056	93.57
Kalgoorlie	53,035	555	22,925	19,072	2,520	(b)	487	1,216	46,775	88.20
Moore	60,680	752	21,220	20,279	14,889	|	(b)	1,322	58,462	96.34
Perth	65,922	411	33,786	22,529	2,487		539	2,077	61,829	93.79
Stirling	58,215	471	25,648	24,942	2,797	|	(b)	1,200	55,058	94.58
Swan	67,851	814	33,225	24,251	4,087		(b)	1,816	64,193	94.61
Tangney	60,243	900	28,176	23,196	3,430	|	(b)	1,419	57,121	94.82
Total, Western Australia	613,120	7,016	261,107	233,240	60,325		(b)	1,726	14,575	577,989	94.27

SENATE

Canning	57,560	185	15,953	17,520	14,124	748	770	5,692	54,992	95.54
Curtin	66,988	529	21,523	30,460	3,397	699	1,090	5,524	63,222	94.38
Forrest	56,308	140	18,261	20,703	7,995	830	745	5,607	54,281	96.40
Fremantle	66,318	306	30,112	20,865	2,797	521	746	6,709	62,056	93.57
Kalgoorlie	53,035	273	18,431	17,361	3,704	768	614	5,624	46,775	88.20
Moore	60,680	277	19,513	20,430	11,009	707	956	5,570	58,462	96.34
Perth	65,922	206	28,007	20,941	3,395	622	810	7,848	61,829	93.79
Stirling	58,215	262	23,294	22,342	2,574	509	818	5,259	55,058	94.58
Swan	67,851	261	29,139	22,909	3,534	479	872	6,999	64,193	94.61
Tangney	60,243	369	25,948	21,378	2,772	568	882	5,204	57,121	94.82
Total, Western Australia	613,120	2,808	230,181	214,909	55,301	6,451	8,303	60,036	577,989	94.27

(a) Formerly the Country Party of Western Australia and the Democratic Labor Party.

(b) No candidate.

**LEGISLATIVE COUNCIL AND LEGISLATIVE ASSEMBLY
CONJOINT ELECTION OF 30 MARCH 1974**

LEGISLATIVE COUNCIL							
Electoral area (a) and province	Electors on roll			Electoral area (a) and province	Electors on roll		
	Males	Females	Persons		Males	Females	Persons
Metropolitan Area—				Agricultural, Mining and			
Metropolitan	36,027	42,576	78,603	Pastoral Area (con-			
North Metropolitan	40,464	43,986	84,450	tinued)—			
North-East Metropolitan				South-East	11,745	10,364	22,109
tan	32,932	34,634	67,566	South-West	12,281	12,434	24,715
South Metropolitan	32,829	34,123	66,952	Upper West	11,809	10,841	22,650
South-East Metropolitan	41,636	45,585	87,221	West	16,900	16,973	33,873
Total	183,888	200,904	384,792	Total	102,301	97,656	199,957
Agricultural, Mining and				North-West-Murchison-			
Pastoral Area—				Eyre Area—			
Central (b)	11,712	10,726	22,438	Lower North	3,352	2,667	6,019
Lower Central	11,882	10,883	22,765	North	7,415	6,039	13,454
Lower West	13,847	14,033	27,880	Total	10,767	8,706	19,473
South	12,125	11,402	23,527	WHOLE STATE	296,956	307,266	604,222
Votes recorded—							
Formal							498,110
Informal					(c)	(c)	25,072
Total							523,182
Percentage of electors who voted (d)							89.93
Percentage of informal votes (e)							4.79

LEGISLATIVE ASSEMBLY							
Electoral area (a) and district	Electors on roll			Electoral area (a) and district	Electors on roll		
	Males	Females	Persons		Males	Females	Persons
Metropolitan Area—				Agricultural, Mining and			
Ascot	7,611	7,793	15,404	Pastoral Area (con-			
Balga	7,573	8,151	15,724	tinued)—			
Canning	10,612	10,768	21,380	Collie	3,953	3,760	7,713
Clontarf	7,786	8,889	16,675	Dale	5,246	5,455	10,701
Cockburn	8,498	8,710	17,208	Geraldton	3,984	4,058	8,042
Cottesloe	7,340	8,691	16,031	Greenough	3,878	3,404	7,282
East Melville	8,304	8,836	17,140	Kalamunda	4,553	4,801	9,354
Floreat	8,000	8,644	16,644	Kalgoorlie	3,738	3,352	7,090
Fremantle	8,170	8,394	16,564	Katanning	3,992	3,661	7,653
Karrinyup	9,979	10,465	20,444	Merredin-Yilgarn	3,927	3,425	7,352
Maylands	7,863	8,660	16,523	Moore	3,947	3,379	7,326
Melville	7,857	8,183	16,040	Mount Marshall (b)	3,665	3,222	6,887
Morley	9,129	9,489	18,618	Mundaring	4,261	4,263	8,524
Mount Hawthorn	7,509	8,244	15,753	Murray	4,154	4,192	8,346
Mount Lawley	7,558	8,729	16,287	Narrogin	4,042	3,750	7,792
Nedlands	6,987	8,689	15,676	Rockingham	4,447	4,386	8,833
Perth	7,187	7,883	15,070	Roe	4,246	3,716	7,962
Scarborough	7,845	8,397	16,242	Stirling	4,094	3,672	7,766
South Perth	7,060	8,428	15,488	Toodyay	8,086	7,909	15,995
Subiaco	6,513	8,669	15,182	Vasse	4,179	4,173	8,352
Swan	8,329	8,692	17,021	Warren	3,937	3,462	7,399
Victoria Park	7,866	8,775	16,641	Wellington	4,262	4,158	8,420
Welshpool	8,312	8,725	17,037	Total	102,301	97,656	199,957
Total	183,888	200,904	384,792	North-West-Murchison-			
Agricultural, Mining and				Eyre Area—			
Pastoral Area—				Gascoyne	2,025	1,776	3,801
Albany	3,785	4,014	7,799	Kimberley	2,401	1,951	4,352
Avon	4,005	3,754	7,759	Murchison-Eyre	1,327	891	2,218
Boulder-Dundas	4,080	3,587	7,667	Pilbara	5,014	4,088	9,102
Bunbury	3,840	4,103	7,943	Total	10,767	8,706	19,473
WHOLE STATE	296,956	307,266	604,222				
Votes recorded—							
Formal							516,399
Informal					(c)	(c)	21,966
Total							538,365
Percentage of electors who voted (d)							90.13
Percentage of informal votes (e)							4.08

(a) As defined in the *Electoral Districts Act, 1947-1965*. (b) Uncontested. (c) Not available. (d) Proportion of votes recorded to electors on roll in contested electoral provinces (Legislative Council) or contested electoral districts (Legislative Assembly). (e) Proportion of informal votes to total votes recorded.

The State Parliament

At the conjoint election for the Legislative Council and the Legislative Assembly held on 30 March 1974, the Liberal Party-Country Party alliance, led by the Honourable Sir Charles Court, O.B.E., was elected to office with a majority in the Legislative Assembly of seven seats.

The table on page 127 shows the number of electors enrolled in each Province and in each District in 1974. The numbers of formal and informal votes recorded throughout the State at the election are also shown.

It will be seen from the table that the number of electors enrolled in each District in the Metropolitan Area was approximately twice the number in each District in the Agricultural, Mining and Pastoral Area. This is accounted for by a requirement of the *Electoral Districts Act, 1947-1965* that the Electoral Commissioners, in determining the quota of electors for each District, should reckon every two electors in the Metropolitan Area as one elector, at the same time giving full representation to each elector in the Agricultural, Mining and Pastoral Area. The number of Districts in the North-West-Murchison-Eyre Area was fixed by the Act at four.

LEGISLATION DURING 1973

During the fourth session of the twenty-seventh Parliament, which lasted from 15 March to 24 May 1973, and from 7 August to 15 December 1973, the Western Australian legislature enacted 112 Public Statutes and, in addition, dealt with thirty-three Bills which were introduced but not passed.

The titles and a brief summary of the Acts passed by the State Parliament during 1973 (i.e. those enacted during the periods specified in the previous paragraph) are given below. The full text of the legislation enacted is contained in the volumes of *The Acts of the Parliament of Western Australia*, to which reference should be made if further details are required.

ACTS PASSED DURING 1973

No. of Act	Short title and summary
100	Aboriginal Affairs Planning Authority Act Amendment Act. Amends the <i>Aboriginal Affairs Planning Authority Act, 1972</i> .
12	Acts Amendment (Road Safety and Traffic) Act. Vests in the Department of Motor Vehicles the functions of licensing of motor vehicles, licensing of drivers of motor vehicles, and other matters. Establishes the Road Traffic Safety Authority. Amends the <i>Traffic Act, 1919-1972</i> , the <i>Local Government Act, 1960-1972</i> , the <i>Used Car Dealers Act, 1964</i> and the <i>Motor Vehicle Drivers Instructors Act, 1963</i> .
49	Adoption of Children Act Amendment Act. Amends the <i>Adoption of Children Act, 1896-1971</i> .
57	Aerial Spraying Control Act Amendment Act. Amends section 10 of the <i>Aerial Spraying Control Act, 1966-1970</i> .
33	Age of Majority Act Amendment Act. Amends section 5 of the <i>Age of Majority Act, 1972</i> .
67	Alumina Refinery (Worsley) Agreement Act. Authorises the execution on behalf of the State of an Agreement with Alwest Pty. Limited and Dampier Mining Company Limited relating to the establishment at or near Worsley of a refinery to produce alumina.
110	Appropriation Act (Consolidated Revenue Fund).
111	Appropriation Act (General Loan Fund).
73	Auction Sales Act. Amends and consolidates the law relating to auctioneers and sales by auction. Repeals the <i>Auctioneers Act, 1921-1972</i> and the <i>Sales by Auction Act, 1937</i> .
47	Broken Hill Proprietary Company's Integrated Steel Works Agreement Act Amendment Act. Amends the <i>Broken Hill Proprietary Company's Integrated Steel Works Agreement Act, 1960</i> by ratifying a variation agreement between the State and The Broken Hill Proprietary Company Limited and Dampier Mining Company Limited.
60	Censorship of Films Act Amendment Act. Amends section 12A of the <i>Censorship of Films Act, 1947-1971</i> .
55	Church of England (Diocesan Trustees) Act Amendment Act. Amends the <i>Church of England (Diocesan Trustees) Act, 1888</i> .
106	Clothes and Fabrics (Labelling) Act. Authorises the making of regulations relating to the marking or labelling of specified clothing, textiles or other fabric.
40	Coal Mine Workers (Pensions) Act Amendment Act. Amends section 2 of the <i>Coal Mine Workers (Pensions) Act, 1943-1972</i> .
104	Companies Act Amendment Act. Amends the <i>Companies Act, 1961-1972</i> .

ACTS PASSED DURING 1973—*continued*

No. of Act	Short title and summary
52	Constitution Acts Amendment Act. Amends sections 7 and 20 of the <i>Constitution Acts Amendment Act, 1899–1972</i> to reduce the qualifying age for a candidate for election to the Legislative Council or the Legislative Assembly from twenty-one years to eighteen years.
61	Co-operative and Provident Societies Act Amendment Act. Amends the <i>Co-operative and Provident Societies Act, 1903–1969</i> .
92	Dairy Industry Act. Amends and consolidates the law relating to the dairy industry and milk and dairy produce, and establishes the Dairy Industry Authority of Western Australia. Repeals the <i>Dairy Industry Act, 1922–1969</i> , the <i>Dairy Products Marketing Regulation Act, 1934–1937</i> and the <i>Milk Act, 1946–1971</i> .
81	Death Duty Act. Imposes duties upon the estates of deceased persons. Repeals the <i>Death Duties (Taxing) Act, 1934–1970</i> .
80	Death Duty Assessment Act. Relates to the imposition, assessment, and collection of duties on the estates of deceased persons. Repeals parts of the <i>Administration Act, 1903–1973</i> .
39	Dental Act Amendment Act. Amends section 51C of the <i>Dental Act, 1939–1972</i> .
5	Distressed Persons Relief Trust Act. Constitutes the Distressed Persons Relief Trust.
98	Door to Door (Sales) Act Amendment Act. Amends the <i>Door to Door (Sales) Act, 1964</i> .
14	Education Act Amendment Act. Amends sections 9B, 21E and 37A of the <i>Education Act, 1928–1972</i> .
15	Education Act Amendment Act (No. 3). Amends section 3 and repeals section 34A of the <i>Education Act, 1928–1972</i> .
59	Education Act Amendment Act (No. 4). Amends the <i>Education Act, 1928–1973</i> .
70	Electoral Act Amendment Act (No. 2). Amends the <i>Electoral Act, 1907–1970</i> .
29	Evaporites (Lake MacLeod) Agreement Act Amendment Act. Amends the <i>Evaporites (Lake MacLeod) Agreement Act, 1967</i> by ratifying a variation agreement between the State and Texada Mines Pty. Limited.
7	Fatal Accidents Act Amendment Act. Amends section 6 of the <i>Fatal Accidents Act, 1959</i> .
36	Firearms Act. Provides for the control and regulation of firearms and ammunition, and for the licensing of persons possessing, using, dealing with, or manufacturing firearms or ammunition. Repeals the <i>Firearms and Guns Act, 1931–1971</i> .
87	Fruit-growing Reconstruction Scheme Act Amendment Act. Amends the <i>Fruit-growing Reconstruction Scheme Act, 1972</i> by approving the supplemental agreement between the State and the Commonwealth.
3	Government Employees' Housing Act Amendment Act. Amends section 8 of the <i>Government Employees' Housing Act, 1964</i> .
94	Government Railways Act Amendment Act. Amends section 13 of the <i>Government Railways Act, 1904–1973</i> .
102	Health Act Amendment Act. Amends the <i>Health Act, 1911–1972</i> .
107	Hire-Purchase Act Amendment Act. Amends the <i>Hire-Purchase Act, 1959</i> . Establishes the Hire-Purchase Licensing Tribunal.
10	Hospitals Act Amendment Act. Amends sections 17 and 17A of the <i>Hospitals Act, 1927–1972</i> .
89	Housing Agreement (Commonwealth and State) Act. Approves the execution of the 1973 Housing Agreement between the State and the Commonwealth whereby the latter will provide financial assistance to the State for welfare housing purposes.
51	Housing Loan Guarantee Act Amendment Act. Amends section 7B of the <i>Housing Loan Guarantee Act, 1957–1972</i> .
99	Indecent Publications Act Amendment Act. Amends section 11 of the <i>Indecent Publications Act, 1902–1972</i> .
108	Industrial Arbitration Act Amendment Act. Amends the <i>Industrial Arbitration Act, 1912–1971</i> .
63	Industrial and Commercial Employees' Housing Act. Provides for adequate and suitable housing accommodation for certain industrial or commercial employees. Establishes the Industrial and Commercial Employees' Housing Authority.
68	Iron Ore (Cleveland-Cliffs) Agreement Act Amendment Act. Amends the <i>Iron Ore (Cleveland-Cliffs) Agreement Act, 1964–1970</i> by approving the second variation agreement between the State and Cliffs International Inc., Cliffs Western Australian Mining Co. Pty. Ltd., Mitsui Iron Ore Development Pty. Ltd., Robe River Limited and Mt. Enid Iron Co. Pty. Ltd.
50	Iron Ore (Murchison) Agreement Authorization Act. Authorises the execution on behalf of the State of an Agreement with Northern Mining Corporation N.L. relating to the exploration for and the development and treatment of iron ore.
13	Judges' Salaries and Pensions Act Amendment Act. Amends sections 2 and 6 of the <i>Judges' Salaries and Pensions Act, 1950–1972</i> .
44	Juries Act Amendment Act. Amends the <i>Juries Act, 1957–1972</i> .
26	Land Agents Act Amendment Act. Amends section 5A of the <i>Land Agents Act, 1921–1972</i> .
22	Land Tax Assessment Act Amendment Act. Amends section 8A and adds section 8E to the <i>Land Tax Assessment Act, 1907–1971</i> .

ACTS PASSED DURING 1973—*continued*

No. of Act	Short title and summary
8	Legal Contribution Trust Act Amendment Act. Amends sections 4, 13 and 39 of the <i>Legal Contribution Trust Act, 1967-1972</i> .
56	Legal Practitioners Act Amendment Act. Amends the <i>Legal Practitioners Act, 1893-1971</i> .
76	Liquor Act Amendment Act. Amends section 109 of the <i>Liquor Act, 1970-1972</i> .
112	Loan Act. Authorises the raising of \$66,100,000 by loan for the construction of certain public works and for other purposes.
21	Local Government Act Amendment Act (No. 2). Amends section 533 of the <i>Local Government Act, 1960-1972</i> .
74	Local Government Act Amendment Act (No. 3). Amends the <i>Local Government Act, 1960-1973</i> .
105	Local Government Act Amendment Act (No. 4). Amends the <i>Local Government Act, 1960-1973</i> .
97	Long Service Leave Act Amendment Act. Amends the <i>Long Service Leave Act, 1958-1964</i> .
28	Margarine Act Amendment Act. Amends the <i>Margarine Act, 1940-1952</i> .
27	Marine Navigational Aids Act. Authorises the Harbour and Light Department or a Port Authority to establish, alter or remove marine navigational aids. Requires the Department or Port Authority to maintain every such aid under its control.
66	Maritime Archaeology Act. Provides for the preservation on behalf of the community of the remains of ships lost before the year 1900, and of relics associated therewith.
77	Mental Health Act Amendment Act. Amends sections 3 and 48 and adds sections 37A and 57A to the <i>Mental Health Act, 1962-1972</i> .
19	Metric Conversion Act Amendment Act. Amends section 4 of the <i>Metric Conversion Act, 1972</i> and adds a Second Schedule to the Act.
83	Metric Conversion Act Amendment Act (No. 2). Amends section 4 of the <i>Metric Conversion Act, 1972-1973</i> and adds a Third Schedule to the Act.
69	Metric Conversion (Grain and Seeds Marketing) Act. Amends the <i>Bulk Handling Act, 1967-1972</i> , the <i>Seed Marketing Act, 1969-1973</i> , the <i>Marketing of Barley Act, 1946-1965</i> and the <i>Grain Pool Act, 1932-1966</i> to facilitate the use of the metric system in the marketing of grain and seeds.
93	Metropolitan (Perth) Passenger Transport Trust Act Amendment Act. Amends the <i>Metropolitan (Perth) Passenger Transport Trust Act, 1957-1966</i> .
103	Metropolitan Region Town Planning Scheme Act Amendment Act. Amends sections 7 and 28 and adds section 29A to the <i>Metropolitan Region Town Planning Scheme Act, 1959-1970</i> .
62	Mine Workers' Relief Act Amendment Act. Adds section 56B to the <i>Mine Workers' Relief Act, 1932-1964</i> .
1	Mining Act Amendment Act. Amends sections 42, 48 and 214 and repeals sections 23, 24 and 291 of the <i>Mining Act, 1904-1971</i> .
101	Motor Vehicle Dealers Act. Repeals the <i>Used Car Dealers Act, 1964</i> . Regulates dealing in motor vehicles and establishes the Motor Vehicle Dealers Licensing Board.
45	Motor Vehicle (Third Party Insurance) Act Amendment Act. Amends sub-section 4 of section 3R of the <i>Motor Vehicle (Third Party Insurance) Act, 1943-1972</i> .
37	Motor Vehicle (Third Party Insurance Surcharge) Act Amendment Act. Amends sub-section 2 of section 3 of the <i>Motor Vehicle (Third Party Insurance Surcharge) Act, 1962-1971</i> .
20	Murdoch University Act. Establishes and incorporates Murdoch University and provides for the government of the University.
65	Museum Act Amendment Act. Amends the <i>Museum Act, 1969</i> .
38	Nurses Act Amendment Act. Amends section 16 of the <i>Nurses Act, 1968-1970</i> .
46	Official Prosecutions (Defendants' Costs) Act. Amends the law relating to the payment of costs to defendants in official prosecutions.
53	Pay-roll Tax Act Amendment Act. Amends sections 3 and 4 of the <i>Pay-roll Tax Act, 1971</i> .
54	Pay-roll Tax Assessment Act Amendment Act. Amends section 7 of the <i>Pay-roll Tax Assessment Act, 1971</i> .
72	Perth Medical Centre Act Amendment Act. Amends section 12 and the Schedule and adds section 13A to the <i>Perth Medical Centre Act, 1966</i> .
18	Pre-School Education Act. Establishes the Western Australian Pre-School Education Board. Provides for the dissolution of the Kindergarten Association of Western Australia, Incorporated and for the discharge of the former functions of that Association. Provides for the maintenance and extension of pre-school education facilities and regulates the conduct of pre-school education centres.
82	Prevention of Pollution of Waters by Oil Act Amendment Act. Amends the <i>Prevention of Pollution of Waters by Oil Act, 1960-1967</i> .
35	Property Law Act Amendment Act. Amends section 3 and part VII of the <i>Property Law Act, 1969-1971</i> .

ACTS PASSED DURING 1973—*continued*

No. of Act	Short title and summary
17	Public Service Act Amendment Act (No. 2). Amends section 52 of the <i>Public Service Act, 1904-1972</i> .
86	Pyramid Sales Schemes Act. Prohibits the practices known as pyramid selling and referral selling.
71	Railway (Bunbury to Boyanup) Discontinuance, Revestment and Construction Act. Authorises the discontinuance of portion (about 2·83 kilometres) of the railway from Bunbury to Boyanup and revests in Her Majesty specified railway land. Authorises the construction of a new section of railway, about 2·354 kilometres in length, between Bunbury and Boyanup.
24	Railway (Coogee-Kwinana Railway) Discontinuance Act. Authorises the discontinuance of portion of the Coogee-Kwinana Railway with a total length of about 6·94 kilometres.
48	Railway (Kalgoorlie-Parkeston) Discontinuance and Land Revestment Act. Authorises the discontinuance of the Kalgoorlie-Parkeston Railway and revests in Her Majesty specified railway land.
95	Reserves Act. Alters the purpose of certain reserves and other lands. Repeals the <i>East Perth Public Hall Act, 1930</i> .
6	Resumption Variation (Boulder-Kambalda Road) Act. Limits specified resumptions for roads to a depth of 30·48 metres below the natural surface of the land.
88	Rural Reconstruction Scheme Act Amendment Act. Amends sections 3 and 5 and adds section 5A and a Second Schedule to the <i>Rural Reconstruction Scheme Act, 1971</i> .
9	Sale of Land Act Amendment Act. Amends section 17 of the <i>Sale of Land Act, 1970</i> .
11	Scientology Act Repeal Act. Repeals the <i>Scientology Act, 1968</i> .
25	Seed Marketing Act Amendment Act. Amends section 37 of the <i>Seed Marketing Act, 1969-1971</i> .
79	Special Holidays Act. Makes provision relating to certain days specified as special holidays.
41	State Electricity Commission Act Amendment Act. Amends sections 14 and 22 of the <i>State Electricity Commission Act, 1945-1973</i> .
91	State Housing Act Amendment Act. Amends section 66 of the <i>State Housing Act, 1946-1972</i> .
16	Superannuation and Family Benefits Act Amendment Act. Amends sections 83AB and 83B of the <i>Superannuation and Family Benefits Act, 1938-1970</i> .
75	Superannuation and Family Benefits Act Amendment Act (No. 2). Amends the <i>Superannuation and Family Benefits Act, 1938-1973</i> .
32	Supply Act. Grants supply of \$265 million for the year 1973-74.
2	Taxi-cars (Co-ordination and Control) Act Amendment Act. Amends the <i>Taxi-cars (Co-ordination and Control) Act, 1963-1970</i> .
64	Totalisator Agency Board Betting Act Amendment Act. Amends sections 20, 22 and 28 of the <i>Totalisator Agency Board Betting Act, 1960-1972</i> .
78	Tourist Act. Establishes a Tourist Advisory Council and repeals the <i>Tourist Act, 1959-1970</i> .
30	Town Planning and Development Act Amendment Act. Amends sections 2 and 3 of the <i>Town Planning and Development Act, 1928-1972</i> .
43	Trade Descriptions and False Advertisements Act Amendment Act. Amends the <i>Trade Descriptions and False Advertisements Act, 1936-1969</i> .
4	Traffic Act Amendment Act. Amends section 29 of the <i>Traffic Act, 1919-1972</i> .
58	University of Western Australia Act Amendment Act. Amends section 37 of the <i>University of Western Australia Act, 1911-1970</i> .
85	Unsolicited Goods and Services Act. Relates to the sending of unsolicited goods, the making of charges for directory entries and the rendering of certain unrequested services.
31	Weights and Measures Act Amendment Act. Amends the <i>Weights and Measures Act, 1915-1969</i> .
42	Western Australian Arts Council Act. Provides for the encouragement, fostering, and promotion of the practice and appreciation of the arts in Western Australia. Establishes the Western Australian Arts Council.
23	Western Australian Marine Act Amendment Act. Amends sections 8, 17 and 188 of the <i>Western Australian Marine Act, 1948-1972</i> .
109	Western Australian Marine Act Amendment Act (No. 2). Amends the <i>Western Australian Marine Act, 1948-1972</i> . Establishes the Western Australian Marine Act Manning Committee.
90	Wheat Delivery Quotas Act Amendment Act. Amends section 30 of the <i>Wheat Delivery Quotas Act, 1969</i> .
84	Wheat Industry Stabilization Act Amendment Act. Amends the <i>Wheat Industry Stabilization Act, 1968-1969</i> .
34	Wood Chipping Industry Agreement Act Amendment Act. Amends the <i>Wood Chipping Industry Agreement Act, 1969</i> by ratifying a variation agreement between the State and W.A. Chip & Pulp Co. Pty. Ltd. and Bunning Timber Holdings Ltd.
96	Workers' Compensation Act Amendment Act. Amends the <i>Workers' Compensation Act, 1912-1970</i> .

GOVERNMENT ADMINISTRATION

State Government

The Public Service of Western Australia operates under the *Public Service Act, 1904-1973* and consists of a number of branches of the Service established as Departments in accordance with regulations made under the Act. The departments are Agriculture, Audit, Chief Secretary's, Community Welfare, Crown Law, Industrial Development, Education, Electoral, Environmental Protection, Fisheries and Wildlife, Forests, Fuel and Power Commission, Labour and Industry, Lands and Surveys, Local Government, Medical and Health Services, Mental Health Services, Metropolitan Water Supply, Sewerage, and Drainage Board, Mines, Motor Vehicles, Police, Premier's, Public Health, Public Service Board, Public Works, State Government Insurance Office, State Housing Commission, State Taxation, Tourism, Town Planning, Treasury and the Workers' Compensation Board.

A number of other State Departments and Statutory Authorities, referred to as Instrumentalities, function under separate Acts although they very largely follow the conditions prescribed in the Public Service Act.

Establishment, abolition or re-organisation of departments are subject to the approval of the Governor.

A brief summary of the functions of each of the departments and principal State Instrumentalities established at 31 December 1971 was given in the 1972 issue of the Year Book.

Australian Government

A comprehensive guide to the organisation and functions of the Australian Government is given in the *Australian Government Directory*, including an outline of the activities of each Department of State together with similar information concerning Boards, Committees, Councils, Commissions and other Instrumentalities. A list of Australian Government Departments, the principal matters dealt with by each Department, and details of the statutes administered by the relevant Federal Minister are published from time to time in the *Australian Government Gazette* as, for example, in the issue dated 2 October 1974.

HISTORY OF STATE GOVERNMENT DEPARTMENTS

A short but reasonably comprehensive history of State Government Departments was commenced in the 1971 issue of the Year Book. The following article, the fifth in the series, presents the historical development of the Western Australian Department of Tourism which had its origins in a small office with a staff of two which opened in Perth on 4 August 1921 to deal with tourist enquiries. Departments dealt with in previous articles were the Public Works Department, the Education Department, the Police Department and the Premier's Department.

DEPARTMENT OF TOURISM

The establishment of the Western Australian Department of Tourism by an Act of Parliament assented to on 17 December 1973 and proclaimed on 18 January 1974 was the culmination of more than fifty years of State Government involvement in the development of tourism.

The first official State organisation set up to deal specifically with tourist enquiries was the Tourist and Publicity Bureau which commenced operations from premises at 62 Barrack Street, Perth on 4 August 1921. Mr S. J. Hayward was the first Director and he had a total staff of one—an assistant who acted as enquiry clerk and typist. Prior to the opening of this Barrack Street office, tourist-related activities were carried out by officers of the State Hotels and Immigration Departments.

At the outset, the operations of the Bureau covered a fairly limited field, the main activity being the issue of tickets for State Steamships and Railways round tours and the booking of accommodation at Caves House, Yallingup. Collections for the first full year of operations ended 30 June 1922 totalled \$18,100 and this was considered to be a most satisfactory beginning.

The activities of the Bureau increased steadily until in 1933 larger premises became necessary. Offices at 593 Hay Street, Perth adjoining the Town Hall and previously occupied by the State Savings Bank were taken over and opened for business on 21 August 1933.

During the first decade and a half of the Bureau's existence, the Railways carried almost all tourist and holiday traffic, but in 1936 a bus service providing Perth and environs tours, and also longer country tours, was inaugurated. These coach services proved extremely popular and became an important source of business for the Bureau. By 1951 almost 50,000 passengers per year were being carried by the various tourist coach companies.

In 1937, the Bureau headquarters were moved again, this time to 28-30 Forrest Place. One year later in 1938, the Bureau's first representative in the other States was appointed. Based in the Melbourne offices of the Victorian Government Tourist Bureau, this officer had the task of stimulating westwards tourist traffic.

Growth throughout the first eighteen years of the Bureau's existence was steady and continuous, and collections for 1938-39 of \$106,500 represented almost a 500 per cent increase on the first year's trading figures.

A break in this growth pattern was occasioned by the severe curtailment of tourist travel that followed the outbreak of World War II. In 1942, the Bureau's offices at Forrest Place were closed and a skeleton staff moved to a small room in the Treasury Building in Barrack Street. It was shortly after this that Mr S. J. Hayward retired on account of ill health.

With the cessation of hostilities in late 1945, new premises from which a completely reorganised Tourist and Publicity Bureau could operate were sought. A shop at 772 Hay Street was decided upon and it was remodelled and opened for business in March of 1946 with Mr R. H. Miller as the new Director of the Bureau.

The reaction to wartime austerity was such that there was a heavy demand in the immediate post-war years for all types of travel. Transport and accommodation shortages created difficulties but, in spite of these, tourist business in Western Australia boomed.

In 1949, the whole of the five-storey building at 772 Hay Street was taken over by the Government and the ground floor altered to provide public offices. In the spring of 1950, the Melbourne branch office of the Bureau which had been closed during the war years was re-opened. Subsequently, branch offices were established in Sydney (1953) and Adelaide (1960).

The years 1950 to 1959 were a period of continuing growth for the Bureau and annual collections increased steadily towards the million dollar mark. The private sector of the State's tourist industry expanded appreciably during this same nine-year period.

Growing awareness of the potential value and importance of tourism as an industry led to the introduction into Parliament during 1959 of the Tourist Act. This Act, which received assent on 30 October and was proclaimed on the last day of 1959, provided for the establishment of the Western Australian Tourist Development Authority.

The Act called upon the new Authority, consisting of eight members, to perform three main tasks. They were charged with publicising and developing the tourist industry within the State and with recommending to the Government payments from the tourist fund for or towards the improvement of tourist facilities. The Authority was also required under the terms of the Act to fill the vital role of promoting, assisting and co-ordinating the activities of people and organisations interested in the development of the tourist industry in the State.

Mr R. H. Miller was appointed Director of Tourist Development on 17 February 1960 and continued in this capacity until his retirement from the Public Service in 1971.

For the period 1959 to 1966 the Tourist Development Authority received a grant of \$150,000 annually from the State for the purpose of assisting in the development and establishment of tourist facilities. From 1966 the annual grant was increased to \$200,000.

The subsidy for approved tourist works was fixed at \$2 of Authority money for each \$1 of local contribution. The Metropolitan Area was at first excluded from the grants

scheme, but was subsequently brought into it on a \$1 for \$1 basis. Subsidies were restricted to projects referred to the Authority by the appropriate local government authority or by other recognised public organisations. Control and future maintenance of all approved projects were made the responsibility of the body making application for assistance.

In December 1960, the policy of the Authority was further amended to enable financial assistance to be given to major tourist projects within the Metropolitan Area to the extent of one-half of interest and principal repayments on loans that ran for fifteen years or longer. The development of Scarborough Beach (\$200,000) by the Shire of Perth and the Cottesloe Town Council's development of Cottesloe Beach (\$120,000), were two projects which received assistance as a result of this amendment.

Aware of the vital role played by country tourist bureaux in the development of tourism at district level, the new Authority adopted in 1959 a system of subsidies that at one and the same time encouraged greater local body participation in tourism and assured the bureaux of more realistic incomes. Under the system, contributions to a country tourist bureau by a local authority were matched \$1 for \$1 to an annual maximum of \$2,500 by the Tourist Development Authority. In addition, any other income a bureau had attracted a \$1 for \$2 subsidy to a maximum of \$1,500. To qualify, bureaux were required to maintain an office with sufficient staff to carry on the business of a community tourist bureau. In the first year of the Authority's operations, grants were made to six bureaux and totalled \$7,256. In the year ended 30 June 1974, under a formula that provided maximums that were higher in aggregate by \$1,500, grants to nineteen country bureaux amounted to \$74,426.

In 1961, in preparation for increased promotional activities in the other States, the Authority acquired new premises for its branches in Sydney (Martin Place), Melbourne (Royal Arcade) and in Adelaide (King William Street). Moreover, tourism in Western Australia was given a significant boost with the holding in Perth during 1962 of the British Empire and Commonwealth Games. The world-wide publicity engendered at that time has proved to be invaluable.

Increasing interest among South Australians in Western Australia as a holiday destination led in 1964 to the acquisition of more spacious premises in King William Street, Adelaide.

The sustained interest of the Government in tourist development was indicated in 1965 when subsidy money available to the Authority for the year was increased by one-third to \$200,000. In the five years prior to 1965 the Authority had allocated to approved tourist projects \$774,506; of this over \$300,000 had been spent on ocean and river beach development and \$245,332 on the establishment of caravan parks throughout the State. During the same five-year period, the Authority's annual collections had grown from \$892,522 in 1959-60 to \$1,935,748 in 1964-65, an increase of nearly 117 per cent.

Amendments to the *Licensing Act, 1911-1964* were made in the State Parliament during 1965 which empowered the Licensing Court to determine a minimum standard for hotels and also to determine a system of grading hotels into different classes according to the standard of service provided and the parts of the State in which they are located. As provided by the amending legislation, the Licensing Court subsequently established a system of grading in consultation with the Tourist Development Authority and assistance to hotel owners was authorised by the *Tourist Act Amendment Act, 1965*. This Act made provision for moneys to be made available to owners of hotels by way of loan for improvements to hotel accommodation and an initial fund of \$400,000 was set aside for this purpose.

By 1968 some sixty hotels had been inspected by the Licensing Court and thirty-one given star gradings. This number has since increased appreciably and at 30 June 1974 hotels with star gradings numbered 109. Loans for improvements funded through the Authority at the same date amounted to \$1 million.

In line with public concern in regard to environmental protection and in an effort to make even more attractive all parts of the State to the visiting tourist and traveller, the Authority in 1968 instituted a tidy towns competition. Prize money of \$3,500 was offered

with the proviso that it be used by the winner on approved tourist works. In 1969-70 the contest was held for a second time and since 1970 the continuing theme of tidiness has been taken up by the Keep Australia Beautiful Council (Western Australia) Inc. on which the Authority (now the Department of Tourism) is represented.

The continuing growth of the State's tourist industry and the need to plan effectively for future expansion made it apparent that a prime function of the Authority should be the gathering of reliable statistical information by means of visitor surveys. Such a survey was commissioned in 1968 by the Authority, the findings being published on 3 October 1969. The survey covered all points of tourist interest in the State, from approximately the 26th parallel northwards, taking in what is broadly known as the North-West and Kimberley regions. The survey report contained valuable information on which has been based the expansion of tourism in the northern part of the State and the development and encouragement of tourist bureaux and information centres.

During 1970 the Authority undertook, with the assistance of the local tourist bureau a visitor survey of the Busselton region. Another major survey was completed more recently covering the twin towns of Kalgoorlie/Boulder, and still others are either progressing or are under consideration. The expanding research activities of the Authority and subsequently of the Department of Tourism have been greatly assisted by the ready willingness of the private sector of the industry to co-operate.

With the retirement of Mr R. H. Miller in January 1971, Mr N. J. Semmens was appointed Director of the Authority. In October 1971, the organisational structure of the Authority was modified to improve the overall operating efficiency, to give greater emphasis to the marketing responsibilities of the Authority, and to provide effective control in the areas of accounting, administration and financial management.

During the period 1971-72, the Authority completed the initial organisation of a new and far-reaching programme of travel agency accreditation. Under this programme commissions on bookings to Western Australia are paid to all accredited agents. The invitation to join the new scheme was extended to established and reputable travel agents throughout Australia and at 30 June 1974 the Department had 330 accredited agents.

The year 1971 saw an increase of promotional activities in the international sphere with the Director of the Authority participating in the first Australian Travel Mission to Japan. Discussions were also held with the Hong Kong Tourist Board and, as a result of these, a presentation on Western Australia was made to the Pacific Area Travel Conference in Hong Kong in October.

In January of 1972, in order to service the growing needs of the tourist industry in the northern areas, the Authority appointed a Liaison Officer, North-West. The prime function of this officer is to assist with the promotion and expansion of tourist activities north of the 26th parallel of latitude. The appointment gave direct recognition to the special needs of the tourist industry in areas where distance is a major problem in the communication between organisations and persons involved in the development of tourist facilities and services. A second Liaison Officer whose immediate duties involved the servicing of tourist bureaux and committees to the south and east of Perth was appointed by the Department of Tourism in June of 1974.

During 1973, the Lake Argyle Tourist Village on the Ord River was opened to the public. Comprising an inn and accommodation units, caravan park, camping area and recreational facilities, the complex was established on land vested in the Authority by a private company which successfully tendered for the lease of the property. The establishment of the Village provided another notable tourist attraction in the Kimberley and opened up many possibilities for the promotion of travel into a part of the State previously relatively untouched in terms of tourist development.

The year 1973 also saw the completion of a major tourist promotional aid in the form of a computerised thirty-minute, multi-image, audio-visual presentation which was shown during the early part of 1974 to appreciative audiences in Perth and southern parts of the State. In September 1974, in conjunction with the airline Qantas and other private sector organisations, this presentation was shown to travel industry representatives on the western

seaboard of the United States of America. Cities covered in an intensive three-week tour were Honolulu, Seattle, San Francisco and Los Angeles.

With the proclamation on 18 January 1974 of the *Tourist Act, 1973* the Tourist Development Authority ceased to exist and was replaced by the Western Australian Department of Tourism. The Act also set up a thirteen-member Tourist Advisory Council for the purposes of promoting co-operation between the Department and the private sector of the tourist industry.

Under a chairman appointed from among the members by the Minister, this Council is required under the terms of the Act to meet not fewer than four times each year and is charged with the following functions:

- ‘(a) to advise the Minister on matters pertaining to tourism and on proposals to assist and develop the growth of tourism; and
- (b) to examine and report to the Minister upon any matters referred to the Council by the Minister, including applications for financial assistance.’

The chairman of the Tourist Advisory Council as at 30 June 1974 was the Director of Tourism, Mr N. J. Semmens.

THE JUDICATURE

The two major factors in the development of the Australian legal system have been its British origin and the Commonwealth Constitution of 1900. This statute, an Act of the Imperial Parliament in London, limited the legislative power of State Parliaments in some respects and created a federal legislature. Since 1942, however, the Imperial Parliament can legislate for Australia only at Australia's request. The sources of Australian law of today are, therefore, found in Commonwealth and State legislation, in some Imperial legislation, and in the common law. Independence of the judiciary is an essential part of the Australian legal system.

The following list shows members of the Western Australian judiciary at 31 December 1974.

Supreme Court of Western Australia

Chief Justice ....	....	The Honourable Sir Lawrence Jackson, K.C.M.G.
Senior Puisne Judge ....	....	The Honourable J. E. Virtue
Puisne Judges ....	....	The Honourable F. T. P. Burt
		The Honourable J. M. Lavan
		The Honourable J. L. C. Wickham
		The Honourable A. R. A. Wallace
		The Honourable R. E. Jones

The District Court of Western Australia

Chairman of Judges ....	....	His Honour Judge S. H. Good
Judges ....	....	His Honour Judge W. P. Pidgeon
		His Honour Judge D. C. Heenan
		His Honour Judge A. E. Kay
		His Honour Judge F. Ackland
		His Honour Judge V. J. A. O'Connor

Particulars of these and other Western Australian courts, and Commonwealth courts appear in Chapter V, Part 6 and Chapter X, Part 1.

OVERSEAS REPRESENTATION IN WESTERN AUSTRALIA

At 31 December 1974 there were nineteen countries represented in Western Australia by a consular agent, vice-consul, consul, or consul-general, as follows.

Austria—R. Holmes, Honorary Consul, 21 Howard Street, Perth 6000.

Belgium—S. Drake-Brockman, Honorary Consul, N.C.R. House, 231 Adelaide Terrace, Perth 6000.

- Britain—C. E. Dymond, C.B.E., Consul-General, A.N.Z. House, 84 St George's Terrace, Perth 6000.
- Denmark—J. C. Garnsworthy, Honorary Consul, 25 Henry Street, Fremantle 6160.
- Finland—R. C. Mattiske, Honorary Consul, 237 Murray Street, Perth 6000.
- Germany, Federal Republic of—P. R. Adams, Honorary Consul, 524 Hay Street, Perth 6000.
- Greece—E. P. Doukas, Consul, 132 Mounts Bay Road, Perth 6000.
- Guatemala—P. Smetana, Honorary Consul, 28 Warralong Crescent, Mount Lawley 6050.
- Italy—L. Pallotta, Consul, 18 Walker Avenue, West Perth 6005.
- Japan—M. Kataoka, Consul-General, 36 King's Park Road, West Perth 6005.
- Netherlands—M. N. B. Grace, Honorary Consul, 111 St George's Terrace, Perth 6000.
- New Zealand—R. M. Burrows, M.B.E., Consul, St George's Court, 16 St George's Terrace, Perth 6000.
- Norway—E. A. M. Wright, Honorary Consul, 193 Stirling Highway, Claremont 6010.
- Philippines—G. V. Mummery, Honorary Consul, 1095 Hay Street, Perth 6000.
- Portugal—C. G. Dudley, Honorary Vice-Consul, Mt Newman House, 200 St George's Terrace, Perth 6000.
- Sweden—H. Morgan, Honorary Consul, Market House, 849-51 Wellington Street, Perth 6000.
- Switzerland—R. H. Abplanalp, Honorary Vice-Consul, 29 Marie Way, Kalamunda 6076.
- United States of America—R. C. Foulon, Consul, Scottish Amicable Building, 246 St George's Terrace, Perth 6000.
- Yugoslavia—N. Zirojevic, Acting Consul, 24 Colin Street, West Perth 6005.

In addition, the Grand Duchy of Luxembourg is represented in Western Australia by the Consul for Belgium in respect of Trade. Other interests are in the charge of the Netherlands consular representative. Liechtenstein is represented by the Vice-Consul for Switzerland.

STATE REPRESENTATION OVERSEAS AND IN OTHER STATES

Western Australia has been represented in the United Kingdom by an Agent General since 1892, the first appointment to the post being that of Sir Malcolm Fraser. An Office is maintained at Western Australia House, 115 Strand, London, W.C.2. Its functions include the representation of all government departments which have business in Britain and Europe, the purchase of government stores and equipment, the attraction of migrants, the encouragement of overseas private investment in Western Australia, and the provision of various types of assistance to visitors from Western Australia. In addition, the Office acts as agent for the State Treasury and as a receiving agency for The Rural and Industries Bank of Western Australia. Western Australia's European Public Relations Office also operates from Western Australia House. The Agent General for Western Australia, Mr. J. A. Richards, is the personal representative in Britain of the State Premier.

The State is also represented in Japan, an Office being maintained by the Western Australian Government at Sankaido Building, 9-13 Akasaka, 1-CHOME, Minato-Ku 107, Tokyo.

Branches of the Western Australian Department of Tourism have been established in New South Wales at 92 Pitt Street, Sydney, in Victoria at 2 Royal Arcade, Melbourne, and in South Australia at 108 King William Street, Adelaide. In the Northern Territory the representative of the Department is the Northern Territory Government Tourist Bureau, located at 44 Smith Street, Darwin.

THE LOCAL GOVERNMENT SYSTEM

The function of local government in Western Australia is performed by a number of Councils (or, in special circumstances, by Commissioners appointed by the Governor) exercising powers conferred by the Parliament of the State. Each of the Councils consists of members elected by a local community and is responsible for the provision of many of the services necessary for the organisation and welfare of the community which it represents.

As early as 1838 an Act providing a measure of local government was passed and under its provisions the management and control of the town of Perth was vested in a body of trustees. The first elected Town Trust was constituted at Perth in 1842 under an Act of 1841 for the 'Improvement of Towns in Western Australia'. The Trust was dissolved in 1858 and replaced by a City Council, the town of Perth having been constituted a city when it became the seat of a Bishop in 1856.

Legislation was enacted in 1871 establishing Municipalities and Road Boards throughout the Colony. The existing Statute regulating the operations of the local authorities is the *Local Government Act, 1960-1974*, which is administered through a Department of Local Government by the Minister for Local Government. This Act consolidates the law relating to local government in Western Australia, and by its provisions the Municipal Corporations Act, the Road Districts Act and a number of other, less important, Acts were repealed. The legislation came into operation on 1 July 1961 and from that date new designations were applied to many local government districts, bodies and offices. Former Municipalities, other than cities, became known as 'Towns' and Road Districts were renamed 'Shires'. Municipalities which already had city status remained 'Cities'. The executive body in each local government district became a 'Council', City Councils and Town Councils being presided over by a Mayor, and Shire Councils by a President. The chief non-elective executive office of a City or a Town is that of 'Town Clerk' and of a Shire, that of 'Shire Clerk'.

At 31 December 1974 there were 7 Cities, 13 Towns and 118 Shires in Western Australia.

Local Government Districts

The only unincorporated area in mainland Western Australia is King's Park, a public reserve of about 403 hectares in Perth, all other land being incorporated within the district of a City, Town or Shire.

On presentation of a petition signed by a prescribed minimum number of ratepayers, the number varying with the subject matter, the Governor may by Order constitute any part of the State as a Town; constitute any unincorporated area as a Shire; constitute as a new Shire any part of an existing Shire; divide a Shire into two or more Shires; sever portion of a district and annex the portion to an adjoining district, or constitute the portion as a new Town or Shire; annex to a district any adjacent unincorporated areas; divide a district into wards; or abolish a district and dissolve the local governing authority.

The Act establishes a Local Government Boundaries Commission of three members, one being an officer of the Department of Local Government, who is Chairman of the Commission. The other members must be persons having experience in local government and nominated by associations of local government authorities. The Minister may refer to the Commission any question concerning the constitution or alteration of the constitution of local government districts. Every case where authorities are unable to agree on a matter of amalgamation or severance of territory must be referred to the Commission.

On the petition of the local authority concerned, the Governor may by Order declare to be a City any district which satisfies certain specified requirements. These requirements are that, during the three years immediately preceding the declaration, it shall have maintained a population of not less than 30,000 persons if situated in the metropolitan area as declared for the purposes of the Act, or not less than 20,000 persons if situated outside that area; and have maintained a gross revenue of \$200,000 for each of the three years. In addition the district must be clearly distinguishable as a centre of population having a distinct civic centre with adequate halls and cultural facilities, and must have

sufficient residential, commercial and industrial centres to justify its declaration as a separate city. The seven Cities in Western Australia are all situated in the Perth Statistical Division and five of them had been granted city status before the requirements imposed by the present legislation became operative. These five Cities are Perth (proclaimed in 1856), Fremantle (1929), Subiaco (1952), Nedlands (1959), and South Perth (1959). The Town of Melville was declared a city on 3 May 1968 and the Shire of Perth was redesignated the City of Stirling with effect from 24 January 1971, having satisfied the requirements for city status provided by the Local Government Act.

The boundaries of local government districts as they existed at 31 December 1974 are delineated on the maps of the State immediately preceding the *Index* and the names and designations as at that date are given in accompanying lists.

Constitution and Electoral Provisions

The provisions of the Local Government Act relating to the composition of a City Council or a Town Council require that, in addition to the Mayor, there shall be, where the population is less than 1,000, six councillors; where the population is between 1,000 and 5,000, nine councillors; and if the population exceeds 5,000, twelve councillors if the district is not divided into wards but, where the district is divided into wards, three councillors for each ward. It is provided that a Shire Council shall consist of not less than five nor more than thirteen members, including the President.

Two methods of election to the office of Mayor or of President are prescribed. In the case of a City or Town, election is usually by a poll of the electors enrolled for the district. The President of a Shire is usually elected by the councillors from among their own number. It is provided, however, that a City or Town may adopt the system of election of the Mayor by the councillors, and that a Shire may conduct a poll of its electors for election to the office of President. The question of the adoption of the alternative system must, in all cases, be determined by submission to a poll of the electors, after delivery to the Mayor or the President of a resolution of a majority of the councillors or a petition signed by one-tenth of the electors, or by fifty electors, whichever is the greater. If not less than 15 per cent of eligible electors vote at the poll and a majority of the valid votes cast are in favour of the proposed alteration, the Governor may order its adoption.

The Act constitutes the office of Deputy Mayor, in the case of a City or a Town, and of Deputy President in the case of a Shire, and requires that the Council shall elect one of the councillors to the office.

Provision is made for local government elections to be held on the fourth Saturday in May of each year but in specified circumstances the Governor may, by proclamation, appoint a Saturday in May, earlier than the fourth Saturday, to be the election date. Membership of a Council is elective in all cases, the qualified electors being adult natural-born or naturalised British subjects who own or occupy rateable land in the district. The preferential system of voting is used and representation is generally on the basis of wards into which the district may be divided. Plural voting applies, an elector being entitled, in accordance with the rateable value of the property owned or occupied by him, to a number of votes which may not, however, exceed four in elections for Mayor or President, or two in elections for councillor. Voting is not compulsory. The Act contains provisions enabling nominees of corporations owning land in a district to vote at local government elections and to be elected to membership of the Council. Subject to disqualification on certain specified grounds, all adult persons who are natural-born or naturalised British subjects owning or occupying rateable land within the district are eligible for election to the Council of the district whether as Mayor, President or councillor, provided that their names appear on the Council's electoral roll.

The term of office of a Mayor or a President is two years if elected by the electors of the district, or one year if elected by the council. Councillors are elected for a term of three years, as near as practicable to one-third of their number retiring each year. On the expiration of their term of office all members, including the Mayor and the President, are eligible for re-election if not subject to any of the disqualifications contained in the Act.

It is provided that, if in a particular district there should at any time be no Council or insufficient councillors to form a quorum, a Commissioner may be appointed to exercise all the powers of the local authority.

Functions of Local Authorities

The functions and powers of local authorities are extremely diverse in character. They are prescribed in detail in the Local Government Act and some of the more important of them are referred to in later Chapters of the Year Book. For example, reference to local government activity in the fields of road construction and maintenance will be found in Chapter VI, Part 1 and Chapter IX, Part 3; the provision of parks, gardens and recreation grounds in Chapter V, Part 2; libraries in Chapter V, Part 2; public transport facilities in Chapter IX, Part 3; water supplies in Chapter VII, Part 2; town planning and building control in Chapter V, Part 4; and the licensing of vehicles and road traffic control in Chapter IX, Part 3. Among the many other powers of local authorities are those relating to hospitals and nursing services, kindergartens, hostels for school children, community centres, dental clinics, infant and maternal health centres, day nurseries, jetties, swimming baths, swimming pools, sanitation and disposal of refuse, fire prevention, eradication of noxious weeds and vermin, electricity generation, aerodromes, abattoirs, quarries, pounds and cemeteries. Under the provisions of the Health Act local authorities are responsible for certain aspects of health administration.

The operations of any local government authority may be subject to investigation by a person appointed by the Governor or the Minister and having, for the purposes of the inquiry, the powers of a Royal Commission.

Financial Provisions

Financial powers of local authorities, although derived mainly from the Local Government Act, are also provided by other statutes, including the Traffic Act, the Health Act, the Water Boards Act, the Vermin Act, the Fire Brigades Act, the Cemeteries Act, the Library Board of Western Australia Act, the Argentine Ant Act and the Noxious Weeds Act. Government grants, particularly for road works, are another important item in local government finance.

Before the commencement of the Local Government Act on 1 July 1961, a number of rates, in addition to those authorised by local government legislation, were imposed as separate levies. These included health, sanitary and sewerage rates, water rates and vermin rates, as well as rates relating to fire brigades, cemeteries, libraries and the control of Argentine ants and noxious weeds. Under the provisions of the Local Government Act, the local authorities may include these separate levies in the general rate provided for in the Act.

The general rate for any year is determined, subject to certain statutory limits, by dividing the sum required to make up the difference between anticipated expenditure and estimated revenue from sources other than rates for that year by the total value of rateable property in the district. In assessing this value, every local authority must adopt valuations made by the State Taxation Department, by the water supply authority for the district, or by a qualified valuer (or valuers) appointed by the Council. The Act provides for the constitution of Valuation Appeal Courts, to which appeals may be made on matters concerning valuations of property and liability for rates as assessed by the Council.

Valuations may be on the basis of either 'unimproved value' or 'annual value'. The unimproved value generally represents the price which the rated land might be expected to realise if sold on the open market and, as the term implies, excludes any improvements. The annual value is an estimate of the annual rental value of the property including improvements, but with a prescribed deduction to cover rates, repairs, insurance and other related expenditure. Generally, City Councils and Town Councils are required to assess the general rate on the basis of annual value, and Shire Councils on unimproved value. It is provided, however, that any Council may, under certain specified conditions, adopt

the alternative basis. Although in general a Council is required to levy a rate which is uniform throughout its district, it may differentiate in rating by charging a higher rate in a specified area where expenditure, including loan interest and repayments, is incurred in providing special services for the benefit of that area.

Local authorities are authorised to raise loans for works and undertakings and for the liquidation of existing loan debts. Borrowing by means of a special bank overdraft is permissible, with the consent of the Minister, for the installation of sewerage connections or septic tanks and, with the approval of the Governor, for other works or undertakings. Money may also be borrowed by the sale of debentures, repayment being either by the system of reducible principal or by means of a sinking fund. Payments to debenture holders are made at prescribed intervals. Under the system of reducible principal, the local authority undertakes to pay both principal and interest by fixed instalments. Where redemption is by means of a sinking fund, the local authority is required to establish and maintain the necessary fund at the State Treasury. Interest on the loan is normally paid half-yearly and the full amount of the loan is repaid at maturity.

The extent of loan raisings for works and undertakings is controlled by a provision which, except with the specific approval of the Governor, imposes a limit on the borrowings of an authority. The total amount of loans for which a Council may be indebted at any one time is a sum equal to ten times the amount obtained by subtracting from the average of the ordinary revenue of the authority during the preceding two years the average, for the same period, of its annual expenditure on the servicing of loans. The legislation allows that balances standing to the credit of sinking funds for loan repayment, as well as amounts actually repaid, may be deemed to be repayments for the purposes of calculating net total debt. In the case of borrowings to liquidate existing loans, it is provided that the money raised shall not exceed the outstanding balance of the loan.

Before a loan may be raised by the issue of debentures, approval of the borrowing must be obtained from the State Treasury and the local authority must then publish in a newspaper and in the *Government Gazette of Western Australia* a notification of its intention to borrow money, including a statement of the amount of the proposed loan, its purpose and other relevant matters. Except in the case of a loan to liquidate an existing loan debt, the ratepayers of the district may demand that the proposition be submitted to a poll. If less than 15 per cent of the ratepayers vote at the poll, the raising of the loan is approved. Where not less than 15 per cent of ratepayers vote and the majority are against the loan, or the number of votes against the loan is equal to the number of those in favour, the raising of the loan is forbidden.

Certain of the works and undertakings for which loan moneys may be used are specified in the Local Government Act. They include the construction of streets, roads and bridges, sewers, drains and water works; the erection or purchase of electric lighting plant, gas works and stone quarries; the provision of hostels for school children, libraries and other recreational facilities; the construction of civic and other buildings; and the purchase of land, materials and equipment. Where a particular work or undertaking is not specified in the Act the Governor may approve of it as a project for which money may be borrowed.

The financial transactions of local government authorities are subject to annual audit either by an auditor (or auditors) appointed by the Council or by a government inspector appointed by the Minister. To qualify for the office of auditor, a person must be a member of a specified institute or society of accountants and be registered as an auditor under the Companies Act. Appointment is for a term not exceeding two years, at the end of which time the holder of the office is eligible for reappointment.

The financial year for all Councils ends on 30 June.

Details of the revenue and expenditure of local authorities during the five-year period ending with the financial year 1972-73 are given in the section *Local Government Finance* in Chapter VI, Part 1.

Information in greater detail and particulars relating to the financial operations of individual local authorities are given in the annual publication *Statistics of Western Australia—Local Government* issued by the Western Australian Office of the Bureau.

General information regarding each City, Town or Shire appears in the same publication and, in particular, in the annual *Abstract of Statistics of Local Government Areas* which provides a wide selection of demographic and economic statistics for individual local authorities.

CHAPTER IV—POPULATION AND VITAL STATISTICS

Part 1—Population

NOTE. Population censuses prior to the Commonwealth Census of 1911 were undertaken by the Governments of the several Australian Colonies. In the Western Australian census it was the practice to exclude full-blood Aborigines from the tabulations. Aborigines have been enumerated as completely as possible at all censuses since the establishment of the Commonwealth, but those having more than one-half Aboriginal blood (see reference 'Aborigines' on page 144) were excluded from published census results in accordance with the requirements of section 127 of the Australian Constitution. This section was repealed with effect from 10 August 1967, and official population statistics for dates and periods subsequent to the 1966 Census include Aborigines. It has been possible to compile some data from the 1966 Census on the basis of total population (i.e. including Aborigines), and particulars have been incorporated, as appropriate, in the tables on the following pages.

The State of Western Australia, although comprising almost one-third of the total area of Australia, contains little more than 8 per cent of the population.

At the end of 1829, the year of establishment of the Colony, there were 1,000 persons in Western Australia. Progress in the early years was slow, and in 1849 the population was still less than 5,000. Transportation of convicts, begun in the following year, resulted in some acceleration, but it was not until the discovery of gold in the Kimberley in 1885 and the rich finds at Coolgardie in 1892 and at Kalgoorlie in 1893 that any marked increase took place. This development was so rapid that, in the last decade of the century, the population was almost quadrupled, from 48,500 at the end of 1890 to 180,000 in 1900, representing an average annual rate of increase of 14·01 per cent. The rate of growth in those years has never been approached in the present century, as will be seen from the table on page 162, but the average annual rate of increase of Western Australia's population from the beginning of the century to the end of 1973, 2·49 per cent, has been higher than that of any other State and of Australia as a whole (1·74 per cent).

THE CENSUS

The first systematic census of the Colony of Western Australia was taken in 1848, since when there have been fourteen enumerations, at the dates shown in the table on page 144. The Census of 1881 was the first taken simultaneously in all the Australian Colonies and formed part of the first simultaneous census of the British Empire.

The first census of the Commonwealth of Australia conducted under the authority of the *Census and Statistics Act* 1905 was taken in 1911. The Act provided that a census should be taken in that year 'and in every tenth year thereafter'. In 1930 this provision was amended by the addition of the words 'or at such other time as is prescribed'. The depressed economic conditions of 1931 caused the postponement of the third Australian census to 1933, and because of war conditions the fourth Australian census was not taken until 1947. Consideration was then given to holding future censuses in the series of years originally provided for by the Act. However, it was thought that the interval from 1947 to 1951 was too short, and it was therefore decided to take the fifth census in 1954, at the mid-point of the period from 1947 to 1961. The sixth census was held in 1961. Owing to the administrative demand for more frequent counts of the population, censuses were taken in 1966 and 1971.

Scope of the Census

The Australian census is conducted on a *de facto* basis, i.e. it records the population actually in Australia, persons being enumerated at the place where they spent the night of the census, and the population so recorded being credited to that place whether or not it is the usual place of residence.

The census covers the population of Australia and the dwellings in which it lives. The only persons excluded from the census tabulations are diplomatic representatives of overseas countries and their families and staffs having diplomatic immunity in accordance with international practice. Prior to the Census of 30 June 1971 full-blood Australian Aborigines were also excluded (see the following section *Aborigines*).

The term 'dwelling', as defined in the Census and Statistics Act, means 'a building, erection, or tenement, whether permanent or temporary, which is wholly or partly used for the purpose of human habitation and includes any ship or other vessel in any port of the Commonwealth or in any inland waters thereof, or any ship or vessel on a passage between any two Commonwealth ports'.

Tables dealing with dwellings recorded at the census will be found in Chapter V, Part 4.

Aborigines. Before an amendment to the Australian Constitution in 1967, it was provided by section 127 that 'in reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted'. This provision was deleted following a referendum held on 27 May 1967 which resulted in a large majority of votes in favour of its repeal. The enabling Act, the *Constitution Alteration (Aboriginals)* 1967, came into operation on 10 August 1967.

With regard to the original provision, Commonwealth legal authorities were of the opinion that persons of the half-blood were not 'aboriginal natives' within the meaning of the Constitution, and *a fortiori* that persons of less than half Aboriginal blood were not Aboriginal natives. Accordingly, only persons having Aboriginal blood to a degree greater than one-half were excluded from the census tabulations. Dwellings occupied solely by full-blood Aborigines so defined were similarly excluded.

Tables relating to the Aboriginal population appear on pages 159-60.

Recorded Population

The population recorded in Western Australia at each census from 1848, its relation to the Australian population, and the masculinity are shown in the following table.

POPULATION AT EACH CENSUS DATE—1848-1971 (a)
WESTERN AUSTRALIA AND AUSTRALIA

Date of census	Western Australia			Australia	Western Australia	
	Males	Females	Persons	Persons (b)	Proportion of Australia (per cent)	Masculinity (c)
1848—10 October	2,818	1,804	4,622	326,445	1.42	156.21
1854—30 September	7,779	3,964	11,743	671,436	1.75	196.24
1859—31 December	9,522	5,315	14,837	1,097,305	1.35	179.15
1870—31 March	15,375	9,410	24,785	1,606,057	1.54	163.39
1881—3 April	17,062	12,646	29,708	2,250,194	1.32	134.92
1891—5 April	29,807	19,975	49,782	3,177,823	1.57	149.22
1901—31 March	112,875	71,249	184,124	3,773,801	4.88	158.42
1911—3 April	161,565	120,549	282,114	4,455,005	6.33	134.02
1921—4 April	177,278	155,454	332,732	5,435,734	6.12	114.04
1933—30 June	233,937	204,915	438,852	6,629,839	6.62	114.16
1947—30 June	258,076	244,404	502,480	7,579,358	6.63	105.59
1954—30 June	330,358	309,413	639,771	8,986,530	7.12	106.77
1961—30 June	375,452	361,177	736,629	10,508,186	7.01	103.95
1966—30 June (a)	432,569	415,531	848,100	11,599,498	7.31	104.10
1971—30 June (a)	529,066	501,403	1,030,469	12,755,638	8.08	105.52

(a) Figures for 30 June 1961 and earlier exclude full-blood Aborigines (see NOTE on page 143); those for 1966 and 1971 refer to total population (i.e. including Aborigines). (b) Figures for dates prior to 3 April 1881 are estimates. (c) Number of males to each 100 females.

Characteristics of the Population

Masculinity. The sharp rise in masculinity between the Census of 1848 and the three succeeding enumerations, as shown in the preceding table, was doubtless a result of the transportation of convicts which began in 1850 and continued until 1868. During this period a total of 9,668 convicts, all of whom were males, were brought to the Colony. The high levels of masculinity disclosed by the Censuses of 1891 and 1901 may be attributed to the influx of a predominantly male population following the gold discoveries of 1885 and later years.

The masculinity of Western Australia's population has continued to be high. At 30 June 1971, it stood at 105·52 and was higher than in any other State and significantly higher than the Australian figure of 101·10.

Age. The following table shows the numbers and proportions of the population of Western Australia in selected age groups at each census from 1947 to 1971. The age groups have been chosen as representing, in a general sense, such sectors as the pre-school population, children of school age, minors, women of child-bearing age, the economically active population, and those beyond normal working age.

POPULATION IN SELECTED AGE GROUPS (a)—CENSUSES, 1947 TO 1971

Age last birthday (years)	Number in each age group (b)					Per cent of total				
	Census, 30 June—					Census, 30 June—				
	1947	1954	1961	1966	1971	1947	1954	1961	1966	1971
MALES										
Under 6	31,749	45,350	50,559	53,830	64,003	12·30	13·73	13·47	12·44	12·10
6-12	29,717	44,075	56,195	64,380	75,483	11·51	13·34	14·97	14·88	14·27
6-15	41,261	59,028	78,270	90,409	106,849	15·99	17·87	20·85	20·90	20·20
Under 18	81,352	113,847	141,371	160,461	189,965	31·52	34·46	37·65	37·09	35·91
Under 21	92,636	126,605	157,345	183,031	217,724	35·89	38·32	41·91	42·31	41·15
15-44	116,353	142,694	150,826	183,495	239,732	45·08	43·19	40·17	42·42	45·31
15-64	168,675	208,670	228,248	268,110	334,554	65·36	63·16	60·79	61·98	63·23
65 and over	20,386	22,262	24,593	28,850	34,165	7·90	6·74	6·55	6·67	6·46
All ages	258,076	330,358	375,452	432,569	529,066	100·00	100·00	100·00	100·00	100·00
FEMALES										
Under 6	30,518	43,871	47,888	51,154	60,639	12·49	14·18	13·26	12·31	12·09
6-12	28,911	41,897	54,243	61,118	71,417	11·83	13·54	15·02	14·71	14·24
6-15	40,023	56,210	75,024	86,218	100,622	16·38	18·17	20·77	20·75	20·07
Under 18	78,667	109,142	134,811	152,855	179,532	32·19	35·27	37·33	36·79	35·81
Under 21	90,538	121,393	150,128	173,882	205,636	37·04	39·23	41·57	41·85	41·01
15-44	110,993	131,254	143,056	170,476	216,730	45·41	42·42	39·61	41·03	43·22
15-64	157,458	189,062	213,573	250,092	307,689	64·43	61·10	59·13	60·19	61·37
65 and over	20,235	25,027	30,504	36,279	42,019	8·28	8·09	8·45	8·73	8·38
All ages	244,404	309,413	361,177	415,531	501,403	100·00	100·00	100·00	100·00	100·00
PERSONS										
Under 6	62,267	89,221	98,447	104,984	124,642	12·39	13·95	13·36	12·38	12·10
6-12	58,628	85,972	110,438	125,498	146,900	11·67	13·44	14·99	14·80	14·26
6-15	81,284	115,238	153,294	176,627	207,471	16·18	18·01	20·81	20·83	20·13
Under 18	160,019	222,989	276,182	313,316	369,497	31·85	34·85	37·49	36·94	35·86
Under 21	183,174	247,998	307,473	356,913	423,360	36·45	38·76	41·74	42·08	41·08
15-44	227,346	273,948	293,882	353,971	456,462	45·24	42·82	39·90	41·74	44·30
15-64	326,133	397,732	441,821	518,202	642,243	64·90	62·17	59·98	61·10	62·33
65 and over	40,621	47,289	55,097	65,129	76,184	8·08	7·39	7·48	7·68	7·39
All ages	502,480	639,771	736,629	848,100	1,030,469	100·00	100·00	100·00	100·00	100·00

(a) Figures for 30 June 1961 and earlier exclude full-blood Aborigines (see NOTE on page 143); those for 1966 and 1971 refer to total population (i.e. including Aborigines). (b) Recorded ages adjusted by the distribution of ages 'not stated'.

AGE DISTRIBUTION OF THE POPULATION (a)—CENSUSES, 1947 TO 1971

Age last birthday (years)	Population in each age group (b)					Percentage distribution				
	Census, 30 June—					Census, 30 June—				
	1947	1954	1961	1966	1971	1947	1954	1961	1966	1971
0-4	52,452	74,978	81,916	86,481	104,994	10.44	11.72	11.12	10.20	10.19
5-9	44,592	67,079	80,754	90,835	103,309	8.87	10.48	10.96	10.71	10.03
10-14	38,682	52,693	77,041	87,453	103,739	7.70	8.24	10.46	10.31	10.07
15-19	39,939	45,251	57,738	80,159	93,426	7.95	7.07	7.84	9.45	9.07
20-24	38,434	43,602	47,877	60,308	93,464	7.65	6.82	6.50	7.11	9.07
25-29	36,126	49,479	44,321	54,739	78,298	7.19	7.73	6.02	6.45	7.60
30-34	38,585	48,520	49,647	50,145	67,914	7.68	7.58	6.74	5.91	6.59
35-39	38,178	42,690	50,634	54,782	61,097	7.60	6.67	6.87	6.46	5.93
40-44	36,084	44,406	43,665	53,838	62,263	7.18	6.94	5.93	6.35	6.04
45-49	32,471	40,636	45,275	45,557	57,756	6.46	6.35	6.15	5.37	5.60
50-54	25,064	35,647	40,376	45,256	46,415	4.99	5.57	5.48	5.34	4.50
55-59	22,606	25,234	34,833	39,827	44,141	4.50	3.94	4.73	4.70	4.28
60-64	18,646	22,267	27,455	33,591	37,469	3.71	3.48	3.73	3.96	3.64
65-69	15,809	17,502	20,240	25,116	30,285	3.15	2.74	2.75	2.96	2.94
70-74	11,934	13,340	15,742	17,497	21,022	2.38	2.09	2.14	2.06	2.04
75 and over	12,878	16,447	19,115	22,516	24,877	2.56	2.57	2.59	2.65	2.41
Total	502,480	639,771	736,629	848,100	1,030,469	100.00	100.00	100.00	100.00	100.00
Under 21	183,174	247,998	307,473	356,913	423,360	36.45	38.76	41.74	42.08	41.08
21-64	278,685	344,484	374,059	426,058	530,925	55.46	53.84	50.78	50.24	51.52
65 and over	40,621	47,289	55,097	65,129	76,184	8.08	7.39	7.48	7.68	7.39
Total	502,480	639,771	736,629	848,100	1,030,469	100.00	100.00	100.00	100.00	100.00

(a) Figures for 30 June 1961 and earlier exclude full-blood Aborigines (see NOTE on page 143); those for 1966 and 1971 refer to total population (i.e. including Aborigines). (b) Recorded ages adjusted by the distribution of ages 'not stated'.

AGE DISTRIBUTION OF THE POPULATION—CENSUSES, 1966 (a) AND 1971

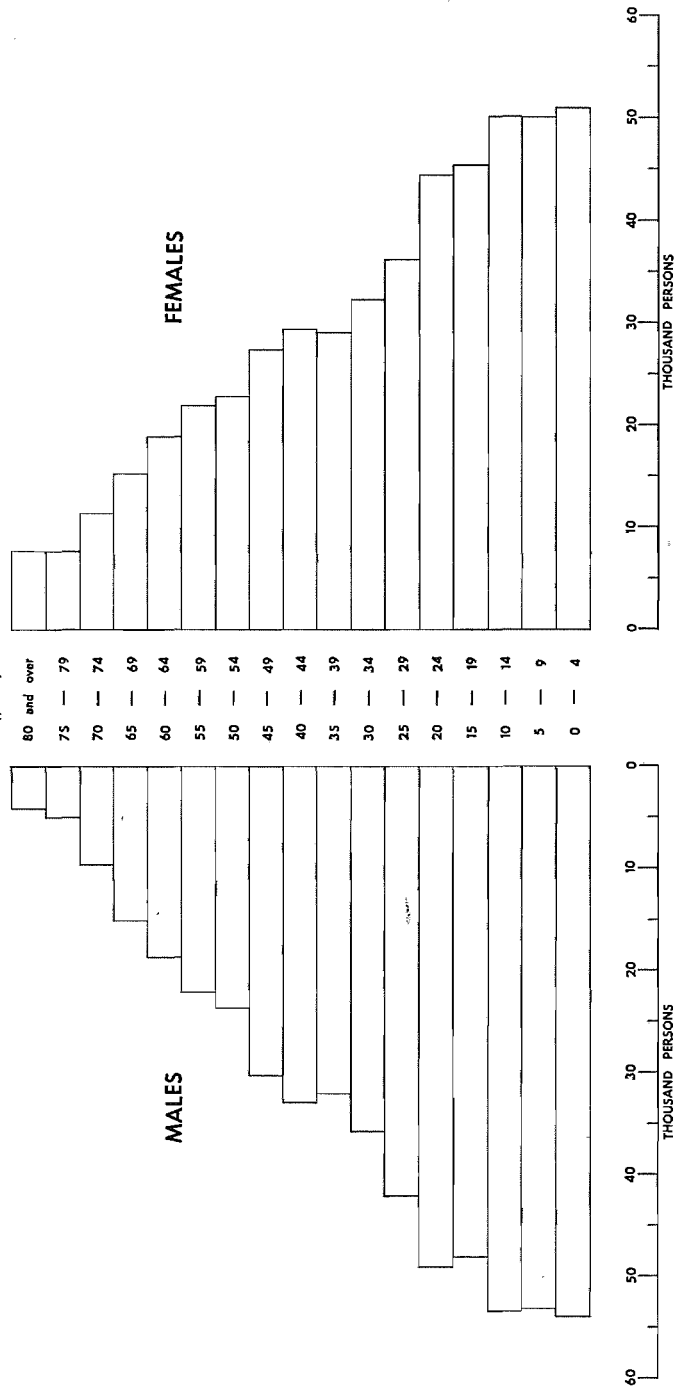
Age last birthday (years) (b)	Census, 30 June 1966 (a)		Census, 30 June 1971					
	Persons	Per cent of total	Males	Females	Persons			
					Number	Per cent of total	Increase since 1966	
							Numerical	Per cent
0-4	86,481	10.20	53,932	51,062	104,994	10.19	18,513	21.41
5-9	90,835	10.71	53,044	50,265	103,309	10.03	12,474	13.73
10-14	87,453	10.31	53,371	50,368	103,739	10.07	16,286	18.62
15-19	80,159	9.45	48,105	45,321	93,426	9.07	13,267	16.55
20-24	60,308	7.11	49,036	44,428	93,464	9.07	33,156	54.98
25-29	54,739	6.45	42,030	36,268	78,298	7.60	23,559	43.04
30-34	50,145	5.91	35,602	32,312	67,914	6.59	17,769	35.44
35-39	54,782	6.46	32,015	29,082	61,097	5.93	6,315	11.53
40-44	53,838	6.35	32,944	29,319	62,263	6.04	8,425	15.65
45-49	45,557	5.37	30,367	27,389	57,756	5.60	12,199	26.78
50-54	45,256	5.34	23,621	22,794	46,415	4.50	1,159	2.56
55-59	39,827	4.70	22,168	21,973	44,141	4.28	4,314	10.83
60-64	33,591	3.96	18,666	18,803	37,469	3.64	3,878	11.54
65-69	25,116	2.96	15,120	15,165	30,285	2.94	5,169	20.58
70-74	17,497	2.06	9,667	11,355	21,022	2.04	3,525	20.15
75-79	12,042	1.42	5,174	7,728	12,902	1.25	860	7.14
80-84	6,510	0.77	2,792	4,805	7,597	0.74	1,087	16.70
85-89	2,933	0.35	1,089	2,088	3,177	0.31	244	8.32
90-94	859	0.10	279	701	980	0.10	121	14.09
95-99	158	0.02	41	165	206	0.02	48	30.38
100 and over	14	0.00	3	12	15	0.00	1	7.14
Total	848,100	100.00	529,066	501,403	1,030,469	100.00	182,369	21.50

(a) See NOTE on page 143.

(b) Recorded ages adjusted by the distribution of ages 'not stated'.

Population, by Age Group: Census, 30 June 1971

AGE GROUP
(years)



Birthplace; Nationality. The category 'British' nationality, as used in this table, comprises all persons who, by virtue of Australian legislation relating to nationality and citizenship, were deemed to be British subjects. It includes Australian citizens and citizens of other countries as specified in the legislation. Persons of Irish nationality are also included.

BIRTHPLACE AND NATIONALITY OF THE POPULATION—CENSUSES, 1966 (a) AND 1971

Classification	Census, 30 June 1966 (a)		Census, 30 June 1971					
	Persons	Per cent of total	Males	Females	Persons			
					Number	Per cent of total	Increase or decrease (b) since 1966	
							Numerical	Per cent
BIRTHPLACE								
Australia—								
Western Australia	564,204	66.53	310,128	307,974	618,102	59.98	53,898	9.55
Elsewhere in Australia	85,105	10.03	65,766	63,328	129,094	12.53	43,989	51.69
Total	649,309	76.56	375,894	371,302	747,196	72.51	97,887	15.08
New Zealand	2,668	0.31	4,315	3,163	7,478	0.73	4,810	180.28
Europe—								
United Kingdom and Re-								
public of Ireland	104,120	12.28	82,193	74,824	157,017	15.24	52,897	50.80
Germany	5,935	0.70	3,582	3,494	7,076	0.69	1,141	19.22
Greece	5,443	0.64	2,760	2,280	5,040	0.49	403	7.40
Italy.....	28,141	3.32	17,139	13,402	30,541	2.96	2,400	8.53
Netherlands	10,369	1.22	6,245	5,031	11,276	1.09	907	8.75
Poland	4,727	0.56	2,737	1,958	4,695	0.46	32	0.68
Yugoslavia	7,501	0.88	6,240	3,919	10,159	0.99	2,658	35.44
Other	10,892	1.28	8,539	5,929	14,468	1.40	3,576	32.83
Total	177,128	20.89	129,435	110,837	240,272	23.32	63,144	35.65
Asia—								
Burma	1,140	0.13	1,527	1,692	3,219	0.31	2,079	182.37
India	3,814	0.45	3,958	3,946	7,904	0.77	4,090	107.24
Malaysia	1,635	0.19	1,670	1,287	2,957	0.29	1,322	80.86
Other	4,564	0.54	4,622	2,905	7,527	0.73	2,963	64.92
Total	11,153	1.32	11,777	9,830	21,607	2.10	10,454	93.73
United States of America	2,063	0.24	2,394	1,594	3,988	0.39	1,925	93.31
Other birthplaces	5,779	0.68	5,251	4,677	9,928	0.96	4,149	71.79
GRAND TOTAL	848,100	100.00	529,066	501,403	1,030,469	100.00	182,369	21.50
NATIONALITY								
British (c)—								
Born in Australia	649,309	76.56	375,894	371,302	747,196	72.51	97,887	15.08
Born outside Australia	167,501	19.75	122,419	106,819	229,238	22.25	61,737	36.86
Total, British	816,810	96.31	498,313	478,121	976,434	94.76	159,624	19.54
Foreign—								
Dutch	3,985	0.47	2,103	1,801	3,904	0.38	81	2.03
German	1,526	0.18	1,089	750	1,839	0.18	313	20.51
Greek	2,565	0.30	1,146	989	2,135	0.21	430	16.76
Italian	12,822	1.51	7,661	6,650	14,311	1.39	1,489	11.61
Polish	960	0.11	385	283	668	0.06	292	30.42
U.S. American	1,944	0.23	2,189	1,489	3,678	0.36	1,734	89.20
Yugoslav	3,037	0.36	2,691	1,655	4,346	0.42	1,309	43.10
Other	3,824	0.45	6,336	3,671	10,007	0.97	6,183	161.69
Stateless (d)	627	0.07	7,153	5,994	13,147	1.28	n.a.	n.a.
Total, Foreign	31,290	3.69	30,753	23,282	54,035	5.24	22,745	72.69
GRAND TOTAL	848,100	100.00	529,066	501,403	1,030,469	100.00	182,369	21.50

n.a. denotes 'not applicable'.

(a) See NOTE on page 143. (b) Minus sign (—) denotes decrease. (c) See letterpress immediately preceding table.
(d) The figures shown for 1971 include persons whose nationality was not stated. At the 1966 Census, in the small number of cases where nationality was not stated, allocation of a selected nationality was made in accordance with other information on the census schedule (usually birthplace).

Religion; Marital Status. The Census and Statistics Act provides that there shall be no penalty for failure to answer the question on religion, and a statement to this effect is contained in the census schedule.

RELIGION AND MARITAL STATUS OF THE POPULATION—CENSUSES, 1966 (a) AND 1971

Classification	Census, 30 June 1966 (a)		Census, 30 June 1971					
	Persons	Per cent of total	Males	Females	Persons			
					Number	Per cent of total	Increase or decrease (b) since 1966	
							Numerical	Per cent
RELIGION								
Christian—								
Baptist	10,921	1.29	6,348	6,997	13,345	1.30	2,424	22.20
Brethren	845	0.10	605	659	1,264	0.12	419	45.59
Catholic (c)	100,124	11.81	46,561	46,637	93,198	9.04	—6,926	—6.92
Catholic, Roman (c)	115,857	13.66	89,272	85,520	174,792	16.96	58,935	50.87
Church of England	317,212	37.40	180,677	182,082	362,759	35.20	45,547	14.36
Churches of Christ	12,070	1.42	6,177	7,259	13,436	1.30	1,366	11.32
Congregational	8,375	0.99	3,857	4,401	8,258	0.80	—117	—1.40
Jehovah's Witness	(d)	(d)	2,177	2,657	4,834	0.47	(e)	(e)
Lutheran	5,155	0.61	3,597	3,401	6,998	0.68	1,843	35.75
Methodist	80,965	9.55	41,108	44,175	85,283	8.28	4,318	5.33
Orthodox	11,836	1.40	7,361	6,130	13,491	1.31	1,655	13.98
Presbyterian	44,310	5.22	23,862	24,505	48,367	4.69	4,057	9.16
Salvation Army	4,924	0.58	2,896	3,174	6,070	0.59	1,146	23.27
Seventh-day Adventist	4,430	0.52	2,135	2,684	4,819	0.47	389	8.78
Protestant (undefined)	6,748	0.80	8,056	7,795	15,851	1.54	9,103	134.90
Other (including Christian undefined)	13,065	1.54	8,317	8,796	17,113	1.66	(e)	(e)
Total, Christian	736,837	86.88	433,006	436,872	869,878	84.42	133,041	18.06
Non-Christian—								
Hebrew	2,996	0.35	1,569	1,533	3,102	0.30	106	3.54
Muslim	} 1,261	0.15	697	330	1,027	0.10	} 1,501	119.03
Other			1,089	646	1,735	0.17		
Total, Non-Christian	4,257	0.50	3,355	2,509	5,864	0.57	1,607	37.75
Indefinite	2,849	0.34	1,777	1,225	3,002	0.29	153	5.37
No religion	8,203	0.97	54,887	35,474	90,361	8.77	82,158	1,001.56
Total replies	752,146	88.69	493,025	476,080	969,105	94.05	216,959	28.85
No reply	95,954	11.31	36,041	25,323	61,364	5.95	—34,590	—36.05
GRAND TOTAL	848,100	100.00	529,066	501,403	1,030,469	100.00	182,369	21.50
MARITAL STATUS								
Never married—								
Under 15 years of age	264,499	31.19	160,347	151,695	312,042	30.28	47,543	17.97
15 years of age and over	154,007	18.16	112,323	70,648	182,971	17.76	28,964	18.81
Total	418,506	49.35	272,670	222,343	495,013	48.04	76,507	18.28
Married	372,105	43.88	234,605	231,237	465,842	45.21	93,737	25.19
Married but permanently separ- ated (f)	11,649	1.37	7,378	7,379	14,757	1.43	3,108	26.68
Divorced.....	7,523	0.89	5,732	5,313	11,045	1.07	3,522	46.82
Widowed	38,317	4.52	8,681	35,131	43,812	4.25	5,495	14.34
Total	429,594	50.65	256,396	279,060	535,456	51.96	105,862	24.64
GRAND TOTAL	848,100	100.00	529,066	501,403	1,030,469	100.00	182,369	21.50

(a) See NOTE on page 143. (b) Minus sign (—) denotes decrease. (c) As stated in individual census schedules.
(d) Not available; included in *Other (including Christian undefined)*. (e) Not applicable; see footnote (d). (f) Legally
or otherwise.

Occupational Status; Industry; Occupation. Classifications of the population according to occupational status, industry, and occupation, as recorded at the Census of 30 June 1971, will be found in Chapter X.

INTERCENSAL INCREASES

The following table shows the population of Western Australia at each census from 1891 to 1971, and the intercensal gains or losses by natural increase and by migration. It also shows the average annual gains or losses in each intercensal period.

POPULATION—ANALYSIS OF INTERCENSAL INCREASES, 1891-1971

Period (a)	Population at beginning of period	Natural increase (b)		Net migration (c)		Total increase		Population at end of period
		Total	Annual average	Total	Annual average	Number	Annual average	
1891-1901 (10 years)	49,782	15,901	1,590	118,441	11,844	134,342	13,434	184,124
1901-1911 (10 years)	184,124	44,246	4,425	53,744	5,374	97,990	9,799	282,114
1911-1921 (10 years)	282,114	51,850	5,185	-1,232	-123	50,618	5,062	332,732
1921-1933 (12½ years)	332,732	60,127	4,908	45,993	3,755	106,120	8,663	438,852
1933-1947 (14 years)	438,852	69,439	4,960	-5,811	-415	63,628	4,545	502,480
1947-1954 (7 years)	502,480	65,576	9,368	71,715	10,245	137,291	19,613	639,771
1954-1961 (7 years)	639,771	79,432	11,348	17,426	2,489	96,858	13,837	736,629
1961-1966 (5 years)	736,629	53,122	10,624	46,922	9,384	100,044	20,009	836,673
1966-1971 (5 years) (d)	848,100	64,454	12,891	117,915	23,583	182,369	36,474	1,030,469

(a) For census dates, see table on page 144. (b) Excess of births registered over deaths registered. (c) Interstate and overseas. Minus sign (—) indicates loss by migration. (d) Figures relate to total population (i.e. including Aborigines); those shown for earlier periods exclude full-blood Aborigines (see NOTE on page 143).

The following table shows the increases in the populations of the several States and Territories, and of Australia as a whole, during each of the eight intercensal periods from 1901 to 1971.

POPULATION—INTERCENSAL INCREASES: STATES AND TERRITORIES, 1901-1971

State or Territory	1901-1911 (a) (10 years)	1911-1921 (10 years)	1921-1933 (12½ years)	1933-1947 (14 years)	1947-1954 (7 years)	1954-1961 (7 years)	1961-1966 (5 years)	1966-1971 (b) (5 years)
NUMERICAL INCREASE								
New South Wales (c)	293,602	453,637	500,476	383,991	438,691	493,484	316,809	363,279
Victoria	114,481	215,729	288,981	234,440	397,640	477,772	289,413	282,134
Queensland	107,684	150,159	191,562	158,881	211,844	200,569	144,857	152,741
South Australia	50,212	86,602	85,789	65,124	151,021	172,246	122,535	78,723
Western Australia	97,990	50,618	106,120	63,628	137,291	96,858	100,044	182,369
Tasmania	18,736	22,569	13,819	29,479	51,674	41,588	21,095	18,977
Northern Territory	-1,501	557	983	6,018	5,601	10,626	10,338	29,886
Australian Capital Territory	(d)	858	6,375	7,958	13,410	28,513	37,185	48,031
AUSTRALIA	681,204	980,729	1,194,105	949,519	1,407,172	1,521,656	1,042,276	1,156,140

PROPORTIONAL INCREASE (per cent)

New South Wales (c)	21.67	27.55	23.83	14.76	14.70	14.41	8.09	8.57
Victoria	9.53	16.40	18.87	12.88	19.35	19.48	9.88	8.76
Queensland	21.62	24.79	25.34	16.77	19.15	15.21	9.54	9.12
South Australia	14.01	21.20	17.33	11.21	23.38	21.61	12.64	7.19
Western Australia	53.22	17.94	31.89	14.50	27.32	15.14	13.58	21.50
Tasmania	10.86	11.80	6.46	12.95	20.10	13.47	6.02	5.11
Northern Territory	-31.20	16.83	25.42	124.08	51.54	64.52	38.15	52.89
Australian Capital Territory	(d)	50.06	247.86	88.95	79.33	94.06	63.21	50.02
AUSTRALIA	18.05	22.01	21.97	14.32	18.57	16.93	9.92	9.97

AVERAGE ANNUAL RATE OF INCREASE (per cent)

New South Wales (c)	1.97	2.46	1.76	0.99	1.98	1.94	1.57	1.66
Victoria	0.91	1.53	1.42	0.87	2.56	2.58	1.90	1.69
Queensland	1.98	2.24	1.86	1.11	2.53	2.04	1.84	1.76
South Australia	1.32	1.94	1.31	0.76	3.05	2.83	2.41	1.40
Western Australia	4.36	1.66	2.29	0.97	3.51	2.03	2.58	3.97
Tasmania	1.04	1.12	0.51	0.87	2.65	1.82	1.18	1.00
Northern Territory	-3.67	1.57	1.87	5.93	6.12	7.37	6.68	8.86
Australian Capital Territory	(d)	4.14	10.71	4.65	8.70	9.93	10.29	8.45
AUSTRALIA	1.67	2.01	1.63	0.96	2.46	2.26	1.91	1.92

(a) Minus sign (—) denotes decrease. (b) See footnote (d) to previous table. (c) Includes Australian Capital Territory prior to 1911. (d) Part of New South Wales prior to 1911.

GEOGRAPHICAL DISTRIBUTION

Urban, Rural and Migratory Population

At the 1971 Census a boundary was defined for each population cluster of 1,000 or more persons. These clusters are named 'urban centres' and the population enumerated in them is classified as urban for statistical purposes.

In determining the boundary of an urban centre with a population of 25,000 or more, all contiguous census collectors' districts which were found to have a minimum population density of 500 per square mile (*i.e.* approximately 193 persons per square kilometre) at the census were included. Some areas of lower density were classified as urban in accordance with certain other specified criteria. The term *Major urban* is applied to those centres which had a population of 100,000 or more, and supersedes the term *Metropolitan* as used at previous censuses. Urban Perth is the only such centre in Western Australia.

Around each urban centre with a population of at least 100,000 a further boundary was defined to contain the anticipated development of the urban centre and associated smaller urban centres for a period of at least twenty years. This boundary delimits an area which is now, or is expected to be, in close social and economic contact with the urban centre. It is a fixed boundary, as distinct from the boundary of the urban centre which moves from census to census as urbanisation proceeds. In Western Australia, the area within this fixed boundary is described as the Perth Statistical Division (see maps immediately preceding the *Index*).

Urban Perth at 30 June 1971 comprised the Cities of Fremantle, Nedlands, Perth, South Perth, and Subiaco; the Towns of Claremont, Cottesloe, East Fremantle, and Mosman Park; the Shires of Bassendean and Peppermint Grove; parts of the Cities of Melville and Stirling, parts of the Towns of Canning and Cockburn, and parts of the Shires of Armadale-Kelmscott, Bayswater, Belmont, Gosnells, Kalamunda, Mundaring, Swan, and Wanneroo. It covered an approximate area of 528 square kilometres, compared with 383 square kilometres (designated Perth Metropolitan Area) at 30 June 1966. The area of the Perth Statistical Division was 5,368 square kilometres.

In delimiting urban centres with a population of less than 25,000 persons all continuous urban growth is included (which, in small urban centres, would not necessarily occur if the density criterion were applied), together with any close but non-contiguous development which could be clearly regarded as part of the centre.

A full description of the criteria adopted in the delimitation of urban centres appears in the *Official Year Book of Australia*: No. 59, 1973 (pages 134-5) published by the Commonwealth Statistician, Canberra.

Rural population represents persons enumerated in the area not included in urban centres. The term *Migratory* refers to persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.

The following tables show, for 1966 and 1971, a division of the population of each State and Territory into *Major urban*, *Other urban*, *Rural* and *Migratory*. The classification *Major urban* represents the population of the urban centres of Sydney (2,725,064 at 30 June 1971), Newcastle (255,162) and Wollongong (188,679), as well as part of Canberra (15,434), in New South Wales; Melbourne (2,394,117) and Geelong (115,181) in Victoria; Brisbane (818,423) in Queensland; Adelaide (809,482) in South Australia; Perth (641,800) in Western Australia; Hobart (129,928) in Tasmania; and part of Canberra (140,864) in the Australian Capital Territory.

In the intercensal period each of the States and Territories showed an increase in urban population, and all except the Northern Territory experienced a decline in rural population. In Australia as a whole, urban population increased by 1,296,448 (13.48 per cent) and rural population fell by 137,833 (7.02 per cent).

POPULATION

URBAN AND RURAL POPULATIONS (a)—STATES AND TERRITORIES
CENSUSES, 1966 AND 1971

State or Territory	Urban			Rural	Migratory	Total population
	Major	Other	Total			
CENSUS, 30 JUNE 1966						
New South Wales	2,843,395	816,767	3,660,162	568,675	9,064	4,237,901
Victoria	2,213,461	540,078	2,753,539	463,690	2,988	3,220,217
Queensland	716,402	557,841	1,274,243	398,018	2,063	1,674,324
South Australia	728,279	174,964	903,243	190,167	1,574	1,094,984
Western Australia	500,246	142,111	642,357	202,704	3,039	848,100
Tasmania	119,469	141,513	260,982	109,779	675	371,436
Northern Territory		30,166	30,166	26,043	295	56,504
Australian Capital Territory	92,311		92,311	3,721		96,032
AUSTRALIA	7,213,563	2,403,440	9,617,003	1,962,797	19,698	11,599,498
CENSUS, 30 JUNE 1971						
New South Wales	3,176,980	898,937	4,075,917	519,304	5,959	4,601,180
Victoria	2,509,298	561,493	3,070,791	429,257	2,303	3,502,351
Queensland	818,423	629,601	1,448,024	375,376	3,665	1,827,065
South Australia	809,482	183,187	992,669	179,148	1,890	1,173,707
Western Australia	641,800	198,395	840,195	187,657	2,617	1,030,469
Tasmania	129,928	159,652	289,580	100,418	415	390,413
Northern Territory		55,411	55,411	30,605	374	86,390
Australian Capital Territory	(b)140,864		(b)140,864	3,199		144,063
AUSTRALIA	8,226,775	2,686,676	10,913,451	1,824,964	17,223	12,755,638

(a) Figures relate to all persons enumerated, i.e. including Aborigines. See page 151 for definitions of *Urban*, *Rural*, etc. (b) The total population of urban Canberra was 156,298, including 15,434 persons in Queanbeyan Municipality (New South Wales).

URBAN AND RURAL POPULATIONS (a)—STATES AND TERRITORIES
PERCENTAGE DISTRIBUTION: CENSUSES, 1966 AND 1971

State or Territory	Urban			Rural	Migratory	Total
	Major	Other	Total			
CENSUS, 30 JUNE 1966						
New South Wales	67.09	19.27	86.37	13.42	0.21	100.00
Victoria	68.74	16.77	85.51	14.40	0.09	100.00
Queensland	42.79	33.32	76.10	23.77	0.12	100.00
South Australia	66.51	15.97	82.48	17.36	0.14	100.00
Western Australia	58.98	16.76	75.74	23.90	0.36	100.00
Tasmania	32.16	38.10	70.26	29.56	0.18	100.00
Northern Territory ....	....	53.39	53.39	46.09	0.52	100.00
Australian Capital Territory	96.13	....	96.13	3.87	....	100.00
AUSTRALIA	62.18	20.72	82.90	16.92	0.16	100.00
CENSUS, 30 JUNE 1971						
New South Wales	69.05	19.51	88.56	11.32	0.13	100.00
Victoria	71.65	16.03	87.68	12.26	0.07	100.00
Queensland	44.79	34.46	79.25	20.55	0.20	100.00
South Australia	68.97	15.61	84.58	15.26	0.16	100.00
Western Australia	62.28	19.25	81.54	18.21	0.26	100.00
Tasmania	33.28	40.89	74.17	25.72	0.11	100.00
Northern Territory ....	....	64.14	64.14	35.43	0.43	100.00
Australian Capital Territory	97.78	....	97.78	2.22	....	100.00
AUSTRALIA	64.50	21.06	85.56	14.31	0.14	100.00

(a) See footnote (a) to previous table.

Population of Urban Centres and Bounded Localities

Population clusters where 1,000 or more persons were enumerated at the 1971 Census are designated 'urban centres' and are marked (U) in the following table. The other areas shown are described as 'bounded localities'. In delimiting urban Perth special

criteria were applied (see page 151). For areas other than urban Perth, boundaries were determined by examination of the most recent available aerial photographs in order to identify as closely as possible the periphery of the built-up area. Those centres which had a population of more than 200 persons at the 1971 Census are included in the table.

POPULATION—URBAN CENTRES AND BOUNDED LOCALITIES
CENSUSES, 1966 AND 1971

Urban centre or bounded locality	Population (a)				Intercensal increase or decrease (b)	
	Census, 30 June—				Number	Per cent
	1966	1971				
		Persons	Males	Females			Persons
Albany (U)	11,440	6,412	6,689	13,101	1,661	14.52
Augusta	n.a.	166	184	350	n.a.	n.a.
Australind	n.a.	202	216	418	n.a.	n.a.
Beverley	883	383	402	785	—98	—11.10
Boddington	n.a.	182	169	351	n.a.	n.a.
Boyanup	n.a.	154	149	303	n.a.	n.a.
Boyup Brook	711	353	335	688	—23	—3.23
Bridgetown (U)	1,569	773	763	1,536	—33	—2.10
Brookton	660	356	303	659	—1	—0.15
Broome (U)	1,874	1,159	890	2,049	175	9.34
Bruce Rock	775	373	356	729	—46	—5.94
Brunswick Junction....	878	486	416	902	24	2.73
Bunbury (U)....	15,467	8,900	8,879	17,779	2,312	14.95
Busselton (U)	4,278	2,416	2,567	4,983	705	16.48
Byford	n.a.	317	310	627	n.a.	n.a.
Capel	n.a.	332	325	657	n.a.	n.a.
Carnamah	n.a.	252	214	466	n.a.	n.a.
Carnarvon (U)	3,086	2,140	2,102	4,242	1,156	37.46
Chidlow	n.a.	114	90	204	n.a.	n.a.
Collie (U)	7,669	3,321	3,413	6,734	—935	—12.19
Coolgardie	473	317	307	624	151	31.92
Corrow	n.a.	113	102	215	n.a.	n.a.
Corrigin	797	385	399	784	—13	—1.63
Cranbrook	n.a.	204	188	392	n.a.	n.a.
Cue	n.a.	142	145	287	n.a.	n.a.
Cunderdin	800	449	424	873	73	9.13
Dalwallinu	n.a.	371	353	724	n.a.	n.a.
Dampier (U)	1,080	2,620	965	3,585	2,505	231.94
Darkan	n.a.	126	130	256	n.a.	n.a.
Deanmill	n.a.	182	142	324	n.a.	n.a.
Denmark	800	325	333	658	—142	—17.75
Derby (U)	1,843	1,278	1,260	2,538	695	37.71
Dongara	n.a.	183	148	331	n.a.	n.a.
Donnybrook....	981	494	504	998	17	1.73
Dowerin	376	176	175	351	—25	—6.65
Dumbleyung....	n.a.	190	186	376	n.a.	n.a.
Dwellingup	n.a.	267	218	485	n.a.	n.a.
Eaton	n.a.	377	408	785	n.a.	n.a.
Esperance (U)	2,698	2,510	2,364	4,874	2,176	80.65
Exmouth (U)	881	1,572	1,098	2,670	1,789	203.06
Geraldton (U)	12,196	7,909	7,548	15,457	3,261	26.74
Gingin	n.a.	175	169	344	n.a.	n.a.
Gnowangerup (U)	1,014	506	503	1,009	—5	—0.49
Goldsworthy (U)	n.a.	658	362	1,020	n.a.	n.a.
Goomalling	670	387	370	757	87	12.99
Greenbushes	n.a.	132	143	275	n.a.	n.a.
Halls Creek	n.a.	319	359	678	n.a.	n.a.
Harvey (U)	2,066	1,175	1,162	2,337	271	13.12
Jarrahdale	n.a.	206	185	391	n.a.	n.a.
Kalgoorlie-Boulder (U)	19,980	10,992	9,873	20,865	885	4.43
Kambalda (U)	n.a.	2,406	1,818	4,224	n.a.	n.a.
Karratha (U)	n.a.	1,036	802	1,838	n.a.	n.a.
Katanning (U)	3,596	1,744	1,850	3,594	—2	—0.06
Kellerberrin (U)	1,370	658	648	1,306	—64	—4.67
Kojonup	980	511	472	983	3	0.31
Kondinin	n.a.	170	141	311	n.a.	n.a.
Koolyanobbing	n.a.	167	139	306	n.a.	n.a.
Koorda	n.a.	218	193	411	n.a.	n.a.
Kulin	n.a.	161	148	309	n.a.	n.a.
Kununurra (U)	975	704	536	1,240	265	27.18
Kwinana New Town (U) (c)	4,144	5,078	5,030	10,108	5,964	143.92

POPULATION—URBAN CENTRES AND BOUNDED LOCALITIES
CENSUSES, 1966 AND 1971—continued

Urban centre or bounded locality	Population (a)				Intercensal increase or decrease (b)	
	Census, 30 June—				Number	Per cent
	1966	1971				
	Persons	Males	Females	Persons		
Lake Grace	545	304	253	557	12	2.20
Lake MacLeod	n.a.	232	67	299	n.a.	n.a.
Lancelin	n.a.	111	99	210	n.a.	n.a.
Leonora	338	300	294	594	256	75.74
Mandurah (U)	2,730	2,503	2,559	5,062	2,332	85.42
Manjimup (U)	3,186	1,710	1,816	3,526	340	10.67
Marble Bar	n.a.	211	183	394	n.a.	n.a.
Margaret River	632	332	333	665	33	5.22
Meekatharra	577	512	415	927	350	60.66
Merredin (U)	3,601	1,872	1,681	3,553	—48	—1.33
Mingenew	n.a.	275	229	504	n.a.	n.a.
Moora (U)	1,263	735	674	1,409	146	11.56
Morawa	881	494	393	887	6	0.68
Mount Barker (U)	1,595	817	778	1,595	....	....
Mount Magnet	683	366	270	636	—47	—6.88
Mukinbudin	n.a.	160	161	321	n.a.	n.a.
Mullaloo	n.a.	125	111	236	n.a.	n.a.
Mullewa	833	469	409	878	45	5.40
Mundaring	n.a.	295	284	579	n.a.	n.a.
Mundijong	n.a.	122	114	236	n.a.	n.a.
Nannup	591	285	228	513	—78	—13.20
Narembeen	n.a.	228	214	442	n.a.	n.a.
Narrogin (U)	4,878	2,398	2,451	4,849	—29	—0.59
Newman (U)	n.a.	2,922	984	3,906	n.a.	n.a.
Norseman (U)	1,911	1,011	778	1,789	—122	—6.38
Northam (U)	7,413	3,634	3,483	7,117	—296	—3.99
Northampton	701	384	379	763	62	8.84
Northcliffe	n.a.	121	103	224	n.a.	n.a.
Nyamup	n.a.	125	99	224	n.a.	n.a.
Onslow	n.a.	181	168	349	n.a.	n.a.
Paraburdoo (U)	n.a.	2,519	458	2,977	n.a.	n.a.
Pemberton	931	435	380	815	—116	—12.46
Perenjori	n.a.	163	127	290	n.a.	n.a.
Perth (U)	500,246	317,593	324,207	641,800	141,554	28.30
Pingelly	969	464	454	918	—51	—5.26
Pinjarra (U)	889	561	630	1,191	302	33.97
Port Hedland (U)	1,920	4,330	2,899	7,229	5,309	276.51
Quairading	687	442	414	856	169	24.60
Ravensthorpe	n.a.	116	109	225	n.a.	n.a.
Rockingham (U)	(d) 5,039	6,197	5,832	12,029	6,990	138.72
Roebourne (U)	n.a.	808	707	1,515	n.a.	n.a.
Roleystone (U)	n.a.	570	579	1,149	n.a.	n.a.
Shark Bay	n.a.	187	136	323	n.a.	n.a.
Southern Cross	853	445	450	895	42	4.92
Tambellup	n.a.	218	188	406	n.a.	n.a.
Tammin	n.a.	184	176	360	n.a.	n.a.
Three Springs	n.a.	286	268	554	n.a.	n.a.
Tom Price (U)	549	2,061	1,365	3,426	2,877	524.04
Toodyay	710	295	286	581	—129	—18.17
Trayning	n.a.	108	101	209	n.a.	n.a.
Wagin (U)	1,753	824	740	1,564	—189	—10.78
Walpole	n.a.	120	102	222	n.a.	n.a.
Wanneroo (U)	n.a.	768	758	1,526	n.a.	n.a.
Waroona (U)	1,013	579	583	1,162	149	14.71
Wickepin	n.a.	161	133	294	n.a.	n.a.
Williams	n.a.	229	216	445	n.a.	n.a.
Wittenoom Gorge	878	243	179	422	—456	—51.94
Wongan Hills	763	453	428	881	118	15.47
Wundowie (U)	1,040	554	488	1,042	2	0.19
Wyalkatchem	625	291	282	573	—52	—8.32
Wyndham (U)	1,421	849	666	1,515	94	6.62
Yarloop	476	261	258	519	43	9.03
York (U)	1,432	609	568	1,177	—255	—17.81

n.a. denotes 'not available' or 'not applicable'.

(a) Figures relate to total population, i.e. including Aborigines. (b) Minus sign (—) denotes decrease. (c) Described as Medina-Callista at the 1966 Census. (d) Comprises population of urban centres of Rockingham-Safety Bay and Kwinana Industrial as delimited at the 1966 Census; incorporated into urban Rockingham at the 1971 Census.

Population in Statistical Divisions

Western Australia is divided into a number of municipal districts for the purposes of local government administration. These districts, of which there were 140 at 30 June 1971, are used as the basis of presentation of data derived not only from the Census of Population and Housing but also from many of the regular statistical collections. Information presented in this way is valuable when considering activities in particular local government areas but is often more detailed than is required for a broader geographical assessment. For this reason, the municipal districts are combined into Statistical Divisions which provide significant areas for the publication of statistics in a convenient and readily appreciable summary form. The Statistical Divisions and their component local government areas are shown on the maps immediately preceding the *Index*.

In 1929, when statistics were first presented according to Statistical Divisions, Western Australia was divided into seven such areas. At the 1971 Census there were ten Statistical Divisions, and these have been used as the basis of compilation of the particulars in the following tables. The figures shown refer to the areas contained within the boundaries of the several Divisions as they existed at the Census of 30 June 1971.

STATISTICAL DIVISIONS—POPULATION AT EACH CENSUS FROM 1911
(Figures compiled on the basis of the 1971 boundaries)

Statistical Division	Census date							
	1911 3 April	1921 4 April	1933 30 June	1947 30 June	1954 30 June	1961 30 June	1966 30 June (a)	1971 30 June (a)
POPULATION ('000)								
Perth Statistical Division	116.2	170.2	230.3	303.0	395.0	475.4	559.3	703.2
Other Divisions—								
South-West	27.0	34.4	50.4	52.0	68.6	71.6	73.0	77.3
Southern Agricultural	15.9	20.5	27.0	24.9	36.1	41.6	44.8	45.3
Central Agricultural	31.5	40.5	53.6	43.8	55.9	57.6	58.8	53.7
Northern Agricultural	13.4	17.7	26.6	24.7	32.1	35.8	38.8	42.8
Eastern Goldfields	55.0	33.7	33.2	37.7	34.6	34.1	35.1	42.8
Central	9.57	4.97	7.87	6.37	4.79	3.96	4.62	7.42
North-West	2.13	2.07	2.61	2.64	4.22	4.56	9.05	11.8
Pilbara	2.46	1.41	1.84	1.65	2.65	3.24	8.91	29.0
Kimberley (b)	1.96	2.18	2.13	2.77	3.54	5.67	12.7	14.6
Total (b)	158.9	157.3	205.3	196.5	242.5	258.2	285.8	324.7
Total, all Divisions (b)	275.1	327.5	435.7	499.5	637.5	733.6	845.1	1,027.9
Migratory (b)	7.02	5.19	3.20	2.98	2.27	3.02	3.04	2.62
WESTERN AUSTRALIA	282.1	332.7	438.9	502.5	639.8	736.6	848.1	1,030.5

PROPORTION OF STATE TOTAL (per cent)

Perth Statistical Division	41.18	51.16	52.49	60.29	61.75	64.54	65.95	68.24
Other Divisions—								
South-West	9.57	10.33	11.49	10.34	10.72	9.72	8.61	7.51
Southern Agricultural	5.63	6.16	6.15	4.96	5.65	5.65	5.28	4.39
Central Agricultural	11.16	12.16	12.22	8.71	8.74	7.82	6.94	5.21
Northern Agricultural	4.75	5.32	6.06	4.91	5.01	4.86	4.58	4.15
Eastern Goldfields	19.51	10.13	7.57	7.51	5.40	4.63	4.13	4.15
Central	3.39	1.49	1.79	1.27	0.75	0.54	0.54	0.72
North-West	0.75	0.62	0.60	0.52	0.66	0.62	1.07	1.14
Pilbara	0.87	0.42	0.42	0.33	0.41	0.44	1.05	2.81
Kimberley (b)	0.70	0.65	0.48	0.55	0.55	0.77	1.50	1.42
Total (b)	56.33	47.28	46.78	39.11	37.90	35.05	33.69	31.51
Total, all Divisions (b)	97.51	98.44	99.27	99.41	99.65	99.59	99.64	99.75
Migratory (b)	2.49	1.56	0.73	0.59	0.35	0.41	0.36	0.25
WESTERN AUSTRALIA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(a) Figures relate to total population (*i.e.* including Aborigines); those shown for 30 June 1961 and earlier exclude full-blood Aborigines (see NOTE on page 143). (b) At censuses prior to 1954, the pearling fleet based on Broome was classified to *Migratory* (see letterpress on page 151). The estimated population involved was 2,500 in 1911; 1,500 in 1921; 800 in 1933; and 200 in 1947. From 1954, pearling crews have been included in the population of Broome.

STATISTICAL DIVISIONS—POPULATION (a) AT CENSUSES, 1966 AND 1971

Statistical Division	Census, 30 June 1966				Census, 30 June 1971			
	Males	Females	Persons	Masculinity (b)	Males	Females	Persons	Masculinity (b)
Perth Statistical Division....	275,122	284,176	559,298	96·81	349,453	353,746	703,199	98·79
Other Divisions—								
South-West	37,540	35,443	72,983	105·92	39,412	37,935	77,347	103·89
Southern Agricultural	23,496	21,312	44,808	110·25	23,548	21,733	45,281	108·35
Central Agricultural	31,628	27,192	58,820	116·31	28,590	25,071	53,661	114·04
Northern Agricultural	21,061	17,756	38,817	118·61	23,044	19,760	42,804	116·62
Eastern Goldfields	19,000	16,062	35,062	118·29	23,264	19,505	42,769	119·27
Central	2,640	1,980	4,620	133·33	5,108	2,312	7,420	220·93
North-West	5,747	3,299	9,046	174·20	6,729	5,055	11,784	133·12
Pilbara	6,350	2,557	8,907	248·34	19,385	9,600	28,985	201·93
Kimberley	7,476	5,224	12,700	143·11	8,225	6,377	14,602	128·98
Total	154,938	130,825	285,763	118·43	177,305	147,348	324,653	120·33
Total, all Divisions	430,060	415,001	845,061	103·63	526,758	501,094	1,027,852	105·12
Migratory (c)	2,509	530	3,039	473·40	2,308	309	2,617	746·93
WESTERN AUSTRALIA	432,569	415,531	848,100	104·10	529,066	501,403	1,030,469	105·52

(a) Figures relate to total population, i.e. including Aborigines. (b) Number of males to each 100 females. (c) Refers to persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.

STATISTICAL DIVISIONS—ANALYSIS OF POPULATION INCREASE (a)
30 JUNE 1966 TO 30 JUNE 1971

Statistical Division	Intercensal increase of population (b)				
	By natural increase (c)	By migration	Total		
			Number	Per cent	Average annual rate (per cent)
Perth Statistical Division....	37,507	106,394	143,901	25·73	4·69
Other Divisions—					
South-West	5,037	—673	4,364	5·98	1·17
Southern Agricultural	4,011	—3,538	473	1·06	0·21
Central Agricultural	5,445	—10,604	—5,159	—8·77	—1·82
Northern Agricultural	4,478	—491	3,987	10·27	1·97
Eastern Goldfields	3,635	4,072	7,707	21·98	4·05
Central	506	2,294	2,800	60·61	9·94
North-West	1,061	1,677	2,738	30·27	5·43
Pilbara	1,408	18,670	20,078	225·42	26·62
Kimberley	1,366	536	1,902	14·98	2·83
Total	26,947	11,943	38,890	13·61	2·58
Total, all Divisions	64,454	118,337	182,791	21·63	3·99
Migratory (d)	n.a.	—422	—422	—13·89	n.a.
WESTERN AUSTRALIA....	64,454	117,915	182,369	21·50	3·97

n.a. denotes 'not applicable'.

(a) Figures relate to total population, i.e. including Aborigines. (b) Minus sign (—) denotes decrease. (c) Excess of births registered over deaths registered. (d) See note (c) to previous table.

The population of the Perth Statistical Division at the Census of 30 June 1971 was 703,199, or 68·2 per cent of the State total, compared with 559,298 (65·9 per cent) five years earlier, an increase of 143,901 persons or 25·7 per cent. The State's natural increase between the Censuses was 64,454 of which the Perth Statistical Division contributed 37,507. In addition, this Division experienced a net gain by migration of 106,394. The larger towns of the Agricultural and South-West Statistical Divisions also showed substantial population increases, the greatest being those of Geraldton (3,261 persons; or 26·7 per cent), Bunbury (2,312; 15·0 per cent) and Albany (1,661 ; 14·5 per cent).

The total population in the area outside the Perth Statistical Division rose by 38,890 or 13·6 per cent. The natural increase recorded in the area was 26,947, so that there was a gain of 11,943 persons by migration. Of the total increase of 38,890 persons, the Pilbara Division accounted for more than half with a population gain of 20,078 and showed the greatest proportional increase, 225·4 per cent. Other Divisions showing an increase were Eastern Goldfields, 7,707 (22·0 per cent); South-West, 4,364 (6·0 per cent); Northern Agricultural, 3,987 (10·3 per cent); Central, 2,800 (60·6 per cent); North-West, 2,738 (30·3 per cent); Kimberley, 1,902 (15·0 per cent); and Southern Agricultural, 473 (1·1 per cent). The Central Agricultural Division experienced a decline in population with a loss of 5,159 persons, or 8·8 per cent.

The Eastern Goldfields, Central and Pilbara Statistical Divisions together comprised an area of 1,653,673 square kilometres (or almost two-thirds of the State) and had a population of only 79,174 persons at the Census of 30 June 1971. A low rainfall renders much of it virtually uninhabitable and desert or near-desert conditions prevail over some 900,000 square kilometres which includes much of the eastern and northern parts of the area and extends into the southern portion of the Kimberley Statistical Division. Almost no part of this desert area has an annual rainfall greater than 250 millimetres and a considerable proportion has much less. Of the total population of 79,174 persons recorded in the three Divisions at the Census, nearly four-fifths were enumerated in the urban centres of Kalgoorlie-Boulder (20,865), Port Hedland (7,229), Esperance (4,874), Kambalda (4,224), Newman (3,906), Dampier (3,585), Tom Price (3,426), Paraburdoo (2,977), Karratha (1,838), Norseman (1,789), Roebourne (1,515) and Goldsworthy (1,020), and the townships of Meekatharra (927), Southern Cross (895), Mount Magnet (636), Coolgardie (624), Leonora (594), Wittenoom Gorge (422), Marble Bar (394), Koolyanobbing (306), Cue (287) and Ravensthorpe (225).

Population of South-West Land Division

The South-West Land Division, as defined in the *Land Act, 1933-1972*, often has particular importance in matters of legislation and administration. Its boundaries are almost coincident with those of the area formed by the aggregation of the Perth Statistical Division and the South-West, Southern Agricultural, Central Agricultural and Northern Agricultural Statistical Divisions. It embraces an area of 254,610 square kilometres, a little more than one-tenth of the whole State (2,525,500 square kilometres), and had a population of 922,700 persons at the 1971 Census, equivalent to 89·5 per cent of the State total, compared with 774,800 (91·4 per cent) in 1966.

Population North of 26° S. Latitude

For administrative and other purposes, the portion of the State lying north of the 26th parallel of latitude frequently has special significance. This area, which embraces part of the Central Statistical Division, almost all of the North-West Statistical Division, and the whole of the Pilbara and Kimberley Statistical Divisions, is 1,371,367 square kilometres in extent and is therefore somewhat greater in area than half the entire State. It had a population of 31,053 persons at the 1966 Census and 58,616 in 1971. Of this total, almost three-quarters were enumerated in the ports and other coastal settlements of Port Hedland (7,229), Carnarvon (4,242), Dampier (3,585), Exmouth (2,670), Derby (2,538), Broome (2,049), Karratha (1,838), Roebourne (1,515), Wyndham (1,515), Onslow (349), Shark Bay (323), and Lake MacLeod (299), the iron ore mining centres of Newman (3,906), Tom Price (3,426), Paraburdoo (2,977) and Goldsworthy (1,020), the Ord River agricultural settlement at Kununurra (1,240), and the townships of Halls Creek (678), Wittenoom Gorge (422) and Marble Bar (394).

POPULATION DENSITY

Urban Perth (see letterpress *Urban, Rural and Migratory Population* on page 151) is the most densely populated part of the State. At the Census of 30 June 1971 it had a population of 641,800 persons and an area of approximately 528 square kilometres, representing a density of about 1,215 persons per square kilometre. Among the Statistical Divisions,

Perth with a population of 703,199 and 5,368 square kilometres in area showed the highest density, 131 persons per square kilometre. The Central Statistical Division was the most sparsely populated with an area of 564,644 square kilometres (more than one-fifth of the entire State) and a Census population of only 7,420 persons, equivalent to an average of one person to every seventy-five square kilometres.

STATISTICAL DIVISIONS—AREA, POPULATION AND DENSITY: CENSUS, 30 JUNE 1971

Statistical Division	Area (a)		Population					
	Square kilometres	Per cent of total	Males	Females	Persons			
					Number	Per cent of total	Density (per square kilometre)	
Perth Statistical Division	5,368	0·21	349,453	353,746	703,199	68·24	131·00	
Other Divisions—								
South-West	28,570	1·13	39,412	37,935	77,347	7·51	2·71	
Southern Agricultural	57,099	2·26	23,548	21,733	45,281	4·39	0·79	
Central Agricultural	78,400	3·10	28,590	25,071	53,661	5·21	0·68	
Northern Agricultural	82,985	3·28	23,044	19,760	42,804	4·15	0·52	
Eastern Goldfields	644,943	25·52	23,264	19,505	42,769	4·15	0·07	
Central	564,644	22·34	5,108	2,312	7,420	0·72	0·01	
North-West	201,014	7·95	6,729	5,055	11,784	1·14	0·06	
Pilbara	444,086	17·57	19,385	9,600	28,985	2·81	0·07	
Kimberley	402,520	16·64	8,225	6,377	14,602	1·42	0·04	
Total	2,522,261	99·79	177,305	147,348	324,653	31·51	0·13	
Total, all Divisions	2,525,500	100·00	526,758	501,094	1,027,852	99·75	0·41	
Migratory (b)	n.a.	n.a.	2,308	309	2,617	0·25	n.a.	
WESTERN AUSTRALIA	2,525,500	100·00	529,066	501,403	1,030,469	100·00	0·41	

n.a. denotes 'not applicable'.

(a) See page xiv. (b) Refers to persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.

Western Australia had a population density at the 1971 Census of only 0·41 persons per square kilometre, compared with an average of 1·66 for Australia as a whole. Victoria was the most densely populated State, having an average of 15·64 persons per square kilometre.

AREA, POPULATION AND DENSITY—STATES AND TERRITORIES: CENSUS, 30 JUNE 1971

State or Territory	Area (a)		Population				
	Square kilometres	Per cent of total	Males	Females	Persons		
					Number	Per cent of total	Density (per square kilometre)
New South Wales	801,600	10·44	2,307,210	2,293,970	4,601,180	36·07	5·74
Victoria	224,000	2·92	1,750,061	1,752,290	3,502,351	27·46	15·64
Queensland	1,727,200	22·49	921,665	905,400	1,827,065	14·32	1·06
South Australia	984,000	12·81	586,051	587,656	1,173,707	9·20	1·19
Western Australia	2,525,500	32·89	529,066	501,403	1,030,469	8·08	0·41
Tasmania	67,800	0·88	196,442	193,971	390,413	3·06	5·76
Northern Territory	1,346,200	17·53	48,627	37,763	86,390	0·68	0·06
Australian Capital Territory	2,400	0·03	73,589	70,474	144,063	1·13	60·03
AUSTRALIA	7,678,700	100·00	6,412,711	6,342,927	12,755,638	100·00	1·66

(a) See page xiv.

ABORIGINAL POPULATION

Reference is made on pages 143 and 144 to the exclusion of *full-blood* Aborigines from the tabulations of census data prior to 1971. Aborigines have, however, been enumerated at all censuses of the Commonwealth, although the degree of coverage and information obtained have varied substantially since 1911. Since the Census taken in 1933, the adequacy of the particulars obtained has improved progressively, as a result of an increasing number of Aborigines coming into contact with more populated areas.

At the 1971 Census the question relating to a person's race differed from that asked at previous censuses, and the figures shown in the tables in this section cannot be compared with those published in the Year Book for 1973 and earlier issues.

In 1971 the aim was to ascertain the race with which the respondent identified himself, by asking him to state his racial origin and, if of mixed origin, to indicate the one to which he considered himself to belong. The 1971 Census data concerning Aboriginal population therefore refer to persons who described themselves as being of *Aboriginal origin*.

The information shown in the following tables has been selected from a bulletin *The Aboriginal Population* published by the Commonwealth Statistician, Canberra. The bulletin contains statistics dealing with a range of characteristics of the Aboriginal population in each State and Territory and in Australia as a whole at the 1971 Census.

Details of the distribution of the Aboriginal population between urban and rural areas at the 1971 Census are given in the following table.

ABORIGINAL POPULATION (a)—URBAN, RURAL AND MIGRATORY (b)
WESTERN AUSTRALIA AND AUSTRALIA: CENSUS, 30 JUNE 1971

Classification	Western Australia				Australia			
	Males	Females	Persons		Males	Females	Persons	
			Number	Per cent of total			Number	Per cent of total
Urban—								
Major	1,094	1,137	2,231	10·19	7,775	7,892	15,667	14·74
Other	3,227	3,287	6,514	29·74	15,137	15,457	30,594	28·78
Total, urban	4,321	4,424	8,745	39·93	22,912	23,349	46,261	43·52
Rural	6,921	6,223	13,144	60·01	30,975	29,012	59,987	56·44
Migratory	8	6	14	0·06	32	10	42	0·04
GRAND TOTAL	11,250	10,653	21,903	100·00	53,919	52,371	106,290	100·00

(a) Persons described as being of *Aboriginal origin*.

(b) See letterpress on page 151.

The following table shows the Aboriginal population of Western Australia at the Census of 30 June 1971 according to Statistical Division.

ABORIGINAL POPULATION (a)—STATISTICAL DIVISIONS
WESTERN AUSTRALIA: CENSUS, 30 JUNE 1971

Statistical Division	Males	Females	Persons	
			Number	Per cent of total
Perth Statistical Division	1,355	1,317	2,672	12·20
Other Divisions—				
South-West	334	308	642	2·93
Southern Agricultural	684	579	1,263	5·77
Central Agricultural	1,063	993	2,056	9·39
Northern Agricultural	1,003	825	1,828	8·35
Eastern Goldfields	980	1,000	1,980	9·04
Central	756	727	1,483	6·77
North-West	697	637	1,334	6·09
Pilbara	1,193	1,133	2,326	10·62
Kimberley	3,177	3,128	6,305	28·79
Total	9,887	9,330	19,217	87·74
Total, all Divisions	11,242	10,647	21,889	99·94
Migratory (b)	8	6	14	0·06
WESTERN AUSTRALIA	11,250	10,653	21,903	100·00

(a) Persons described as being of *Aboriginal origin*.

(b) See letterpress on page 151.

In the next table, details are given of the age distribution of the Aboriginal population as revealed at the 1971 Census.

ABORIGINAL POPULATION (a)—AGE DISTRIBUTION
WESTERN AUSTRALIA AND AUSTRALIA: CENSUS, 30 JUNE 1971

Age last birthday (years)	Western Australia				Australia			
	Males	Females	Persons		Males	Females	Persons	
			Number	Per cent of total			Number	Per cent of total
0-4	1,971	1,832	3,803	17.36	9,488	9,295	18,783	17.67
5-9	1,682	1,675	3,357	15.33	8,293	8,107	16,400	15.43
10-14	1,487	1,463	2,950	13.47	7,195	6,964	14,159	13.32
15-19	1,089	1,045	2,134	9.74	5,365	5,373	10,738	10.10
20-24	851	865	1,716	7.83	4,555	4,489	9,044	8.51
25-29	704	639	1,343	6.13	3,597	3,379	6,976	6.56
30-34	610	576	1,186	5.41	2,886	2,934	5,820	5.48
35-39	552	498	1,050	4.79	2,614	2,617	5,231	4.92
40-44	511	455	966	4.41	2,313	2,258	4,571	4.30
45-49	364	355	719	3.28	1,931	1,765	3,696	3.48
50-54	335	293	628	2.87	1,583	1,470	3,053	2.87
55-59	272	212	484	2.21	1,148	1,024	2,172	2.04
60-64	231	273	504	2.30	902	1,004	1,906	1.79
65-69	244	175	419	1.91	881	673	1,554	1.46
70-74	186	168	354	1.62	628	544	1,172	1.10
75 and over	161	129	290	1.32	540	475	1,015	0.95
Total	11,250	10,653	21,903	100.00	53,919	52,371	106,290	100.00
Under 21	10,659	10,181	12,655	57.78	51,870	50,679	62,099	58.42
21-64			8,185	37.37			40,450	38.06
65 and over	591	472	1,063	4.85	2,049	1,692	3,741	3.52
Total	11,250	10,653	21,903	100.00	53,919	52,371	106,290	100.00

(a) Persons described as being of Aboriginal origin.

ESTIMATES OF POPULATION

For dates other than those of the periodic census of population, estimates are based on records of births and deaths and of movements of population interstate and overseas. Estimates of the population of Australia and of each of the States and Territories are prepared by the Commonwealth Statistician as at 31 March, 30 June, 30 September and 31 December in each year. Because the available records of interstate movement are incomplete, these intercensal estimates as they apply to States and Territories are approximate and are revised when the results of the next succeeding census become known.

Mean Population

It is often useful to relate a given characteristic to population in order to express it in *per capita* terms or as 'per head of population'. In some cases it is appropriate to relate a characteristic to the population as at a specified date as, for example, savings bank balances per head of population at 30 June, or motor vehicles per head of population at 31 December.

Where events, as for instance births or deaths, are taking place continuously throughout a period, it is obviously not appropriate to relate these events to the population as at a specific date. It is necessary, therefore, to devise a measure which takes account of the change in population which occurs continuously throughout any period. This measure is known as the *mean population*.

As stated earlier, estimates of population are prepared as at the end of each quarter of the year. The mean population of a quarter might be taken to be the average, or arithmetic mean, of the populations at the beginning and the end of the quarter. If *a*



PLATE 5—APPLE PICKING IN THE SOUTH-WEST

Apples are the principal fruit crop of Western Australia and account for more than half the total area of orchards in the State. In 1973-74, total production amounted to 2,764,948 bushels, the principal varieties being Granny Smith, Jonathan, Yates, Delicious and Cleopatra. While the most important apple districts are in the South-West, significant quantities are produced in the Darling Range area near Perth.

Photograph by courtesy of the Department of Industrial Development



PLATE 6—MARINE RESEARCH LABORATORIES, WATERMAN

Illustrated is part of the Western Australian Marine Research Laboratories built at Waterman, on the coast about twenty-two kilometres north of Fremantle, for the Department of Fisheries and Wildlife. Experiments and studies, mainly on the rock lobster, are carried out at the centre, where accommodation is shared with fisheries research workers from the Commonwealth Scientific and Industrial Research Organization and the University of Western Australia.

Photograph by courtesy of the Department of Industrial Development

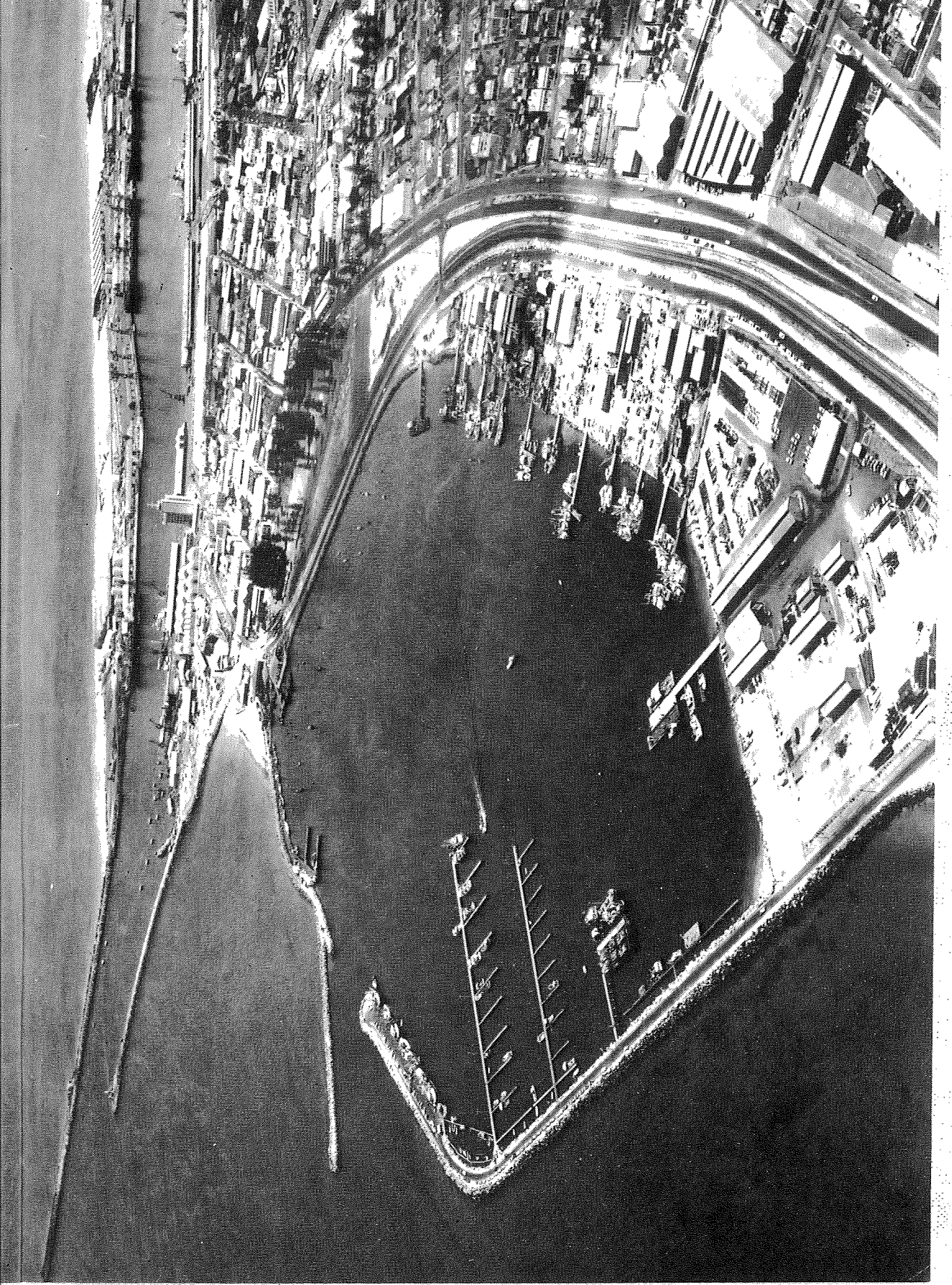


PLATE 7—FISHING BOAT HARBOUR, FREMANTLE

The protected anchorage for fishing boats illustrated overleaf is situated within the Outer Harbour of the Port of Fremantle. In the background may be seen the two breakwaters forming the entrance to the Inner Harbour, part of Victoria Quay (nearest the camera) and North Quay, and the Fremantle Port Authority building.

Photograph by courtesy of the Department of Industrial Development



PLATE 8—'OCEAN ENDEAVOUR' DRILLING RIG

The self-propelled, semi-submersible drilling rig 'Ocean Endeavour' was built on land at Woodman Point south of Fremantle and launched in December 1974 by cutting a channel from the sea to a specially constructed basin surrounding the rig.

Propulsion is by two 3,500 hp submarine electric motors and the rig is capable of cruising at 7.5 knots. The height from keel to deck is thirty-nine metres and to the top of the drill mast ninety-three metres. The rig will provide modern air conditioned accommodation for eighty-one persons and includes a hospital and all the customary navigational aids of a modern ship.

Photograph by courtesy of Transfield (W.A.) Pty. Limited

represents the population at the beginning of a year and b , c , d and e the populations at the end of the first, second, third and fourth quarters, respectively, these quarterly means would then be $\frac{1}{2}(a + b)$ for the first quarter, $\frac{1}{2}(b + c)$ for the second, $\frac{1}{2}(c + d)$ for the third and $\frac{1}{2}(d + e)$ for the fourth quarter. The mean population for the year might then be taken as the arithmetic mean of the four quarterly average populations, or

$$\frac{1}{4}\{\frac{1}{2}(a + b) + \frac{1}{2}(b + c) + \frac{1}{2}(c + d) + \frac{1}{2}(d + e)\}$$

which may be more simply expressed as $\frac{1}{8}(a + 2b + 2c + 2d + e)$. This method of deriving mean population had been in use in Western Australia prior to its general adoption by the 1903 Conference of Australian Statisticians. It was later superseded by the more precise measure

$$\frac{1}{12}(a + 4b + 2c + 4d + e)$$

which is now commonly used in Australian statistics. In order to establish uniformity with current practice, estimates of mean population for 1901 and later years were revised, where necessary, by the application of this formula.

The estimated mean population of Western Australia is shown in the next table for each financial and calendar year in the period from 1 January 1969 to 30 June 1974.

Population Estimates

As a result of the repeal, with effect from 10 August 1967, of section 127 of the Australian Constitution, to which reference is made on page 144, current population estimates no longer exclude full-blood Aborigines. Estimates for earlier dates and periods back to the Census of 30 June 1961 have also been prepared on the basis of *total* population (*i.e.* including Aborigines). The final results of the 1966 Census, inclusive of all persons enumerated, were taken into account in the preparation of these estimates.

The following table shows estimates of the population of Western Australia and the elements of population increase during the period from 1 January 1969 to 30 June 1974. Figures for dates and periods subsequent to 30 June 1971 are subject to revision in accordance with the results of the next census.

POPULATION ESTIMATES

Year	Population at end of year			Increase during year			Mean population		
	Males	Females	Persons	Natural increase (a)	Estimated net migration (b)	Total increase	Males	Females	Persons
YEAR ENDED 30 JUNE									
1970	508,612	482,742	991,354	13,683	22,825	36,508	499,755	475,308	975,063
1971	(c) 529,066	(c) 501,403	(c) 1,030,469	15,476	23,639	39,115	520,000	493,455	1,013,455
1972	539,595	513,587	1,053,182	15,634	7,079	22,713	536,769	509,858	1,046,627
1973	547,041	521,428	1,068,469	13,528	1,759	15,287	544,573	519,634	1,064,207
1974	(d)	(d)	(e) 1,091,100	12,390	(e) 10,241	(e) 22,631	(d)	(d)	1,083,800 (e)
YEAR ENDED 31 DECEMBER									
1969	500,378	476,242	976,620	13,404	25,416	38,820	489,531	466,129	955,660
1970	520,174	493,878	1,014,052	14,075	23,357	37,432	509,875	484,326	994,201
1971	537,781	511,116	1,048,897	16,433	18,412	34,845	529,371	502,243	1,031,614
1972	544,918	520,845	1,065,763	14,736	2,130	16,866	541,158	515,350	1,056,508
1973	554,342	530,057	1,084,399	12,665	5,971	18,636	548,876	523,804	1,072,680

(a) Excess of births registered over deaths registered, available at time of publication.

(e) Provisional.

(b) Interstate and overseas.

(c) Census figures.

(d) Not

The following table shows the estimated population of each State and Territory of Australia at 31 December of the years 1969 to 1973. The estimates refer to *total* population (see letterpress preceding previous table).

POPULATION ESTIMATES—STATES AND TERRITORIES
(‘000)

State or Territory	Estimated population at 31 December—				
	1969	1970	1971	1972	1973
New South Wales	4,490·8	4,573·7	4,651·5	4,697·2	4,738·1
Victoria	3,421·2	3,482·0	3,537·5	3,581·0	3,615·8
Queensland	1,779·7	1,812·8	1,852·3	1,898·6	1,946·5
South Australia	1,149·4	1,170·2	1,185·5	1,196·5	1,211·1
Western Australia	976·6	1,014·1	1,048·9	1,065·8	1,084·4
Tasmania	387·0	390·3	392·8	395·6	399·1
Northern Territory	75·8	82·8	88·9	93·4	98·1
Australian Capital Territory	126·8	137·6	150·8	163·2	175·4
AUSTRALIA	12,407·2	12,663·5	12,908·2	13,091·3	13,268·6

The following table shows the estimated population of Western Australia at ten-yearly intervals from 1830 to 1970, and annually from 1969 to 1973. The estimates for 1960 and earlier exclude full-blood Aborigines. The figures shown for 1969 and later refer to *total* population, i.e. including Aborigines; see letterpress *Population Estimates* on previous page.

ESTIMATED POPULATION (a)—1830–1973

At 31 December—	Males	Females	Persons	Increase (b)		
				Number	Per cent	Average annual rate (per cent)
1830	877	295	1,172	....	....	....
1840	1,434	877	2,311	1,139	97·18	7·03
1850	3,576	2,310	5,886	3,575	154·69	9·80
1860	9,597	5,749	15,346	9,460	160·72	10·06
1870	15,511	9,624	25,135	9,789	63·79	5·06
1880	16,985	12,576	29,561	4,426	17·61	1·64
1890	28,854	19,648	48,502	18,941	64·07	5·08
1900	110,088	69,879	179,967	131,465	271·05	14·01
1910	157,971	118,861	276,832	96,865	53·82	4·40
1920	176,895	154,428	331,323	54,491	19·68	1·81
1930	232,868	198,742	431,610	100,287	30·27	2·68
1940	248,734	225,342	474,076	42,466	9·84	0·94
1950	294,758	277,891	572,649	98,573	20·79	1·91
1960	372,665	358,368	731,033	158,384	27·66	2·47
1970 (a)	520,174	493,878	1,014,052	283,019	38·71	3·33
1969	500,378	476,242	976,620	38,820	4·14	....
1970	520,174	493,878	1,014,052	37,432	3·83	....
1971	537,781	511,116	1,048,897	34,845	3·44	....
1972	544,918	520,845	1,065,763	16,866	1·61	....
1973	554,342	530,057	1,084,399	18,636	1·75	....
Five years ended 31 December 1973				146,599	15·63	2·95

(a) Estimates for 1960 and earlier exclude full-blood Aborigines; those shown for 1969 and later refer to *total* population, i.e. including Aborigines. (b) Decennial increases during the period 1830–1970; annual increases from 1969 to 1973.

Chapter IV—continued

Part 2—Births, Deaths and Marriages

NOTE. Reference is made on page 144 to the repeal, with effect from 10 August 1967, of section 127 of the Australian Constitution. As a consequence of this repeal, all vital statistics, which previously excluded births, deaths and marriages of full-blood Aborigines, now include events among the total population. Statistics for 1966 and later years have been compiled on this basis.

A line drawn across a column in a table between two consecutive figures, indicates a break in continuity in the series. Figures above the line exclude full-blood Aborigines; those below the line refer to events among the total population, i.e. including Aborigines.

THE REGISTRATION SYSTEM

Compulsory registration of births, deaths and marriages in Western Australia was originally provided for by legislation of the year 1841. The Statutes currently in force are the *Registration of Births, Deaths and Marriages Act, 1961-1965* (State) and the *Marriage Act 1961-1973* (Commonwealth). For administrative purposes, the State is divided into twenty-seven Registry Districts, each having a District Registrar. Particulars of births, deaths and marriages reported to the District Registrars are sent to the Registrar-General at Perth, where a central registry office has been maintained since 1841. Local registers are kept at each district office.

Births are required to be registered within sixty days of the event, and must be notified by the father, the mother or the occupier of the premises where the birth took place. Special provisions and penalties apply to notification and registration after the expiration of the sixty-day period.

A stillbirth is required to be registered both as a birth and a death. From 1 January 1968 the term 'stillbirth', for registration purposes, refers to a child of at least twenty weeks' gestation not born alive. Previously it was restricted to cases where the gestation period was at least twenty-eight weeks.

Deaths are required to be registered within fourteen days. Notification must be given by the person who disposes of the body or by the occupier of the premises where the death occurred. As in the case of births, special provisions and penalties exist for the late registration of a death.

Marriages may be celebrated by persons authorised as celebrants under the provisions of the *Marriage Act 1961-1973* (Commonwealth). These may be ministers of religion, District Registrars, or other authorised persons. Celebrants other than District Registrars are required to lodge a marriage certificate with the District Registrar for registration within fourteen days of the celebration of a marriage. A penalty fee is provided for registrations after fourteen days from the date of marriage.

Statistics of births, deaths and marriages are prepared from the registration documents.

The following table shows, for the years 1969 to 1973, the number of births and deaths registered in Western Australia, classified according to Statistical Divisions. The figures do not necessarily represent the number of such events which actually occurred in a particular Statistical Division during each year, since births are allocated to the usual place of residence of the mother and deaths to the usual place of residence of the deceased. Further, the statistics are compiled according to date of registration and not date of occurrence.

BIRTHS, DEATHS AND MARRIAGES

BIRTHS AND DEATHS—NUMBERS REGISTERED
STATISTICAL DIVISIONS (a)

Statistical Division (a)	Births (b)					Deaths (c)				
	1969	1970	1971	1972	1973	1969	1970	1971	1972	1973
Perth Statistical Division	13,094	13,908	15,843	14,400	13,307	5,185	5,345	5,591	5,318	5,641
Other Divisions—										
South-West	1,522	1,603	1,742	1,534	1,486	564	630	627	618	594
Southern Agricultural	1,161	1,128	1,183	965	933	339	359	324	307	326
Central Agricultural	1,494	1,300	1,348	1,216	1,068	335	347	353	339	317
Northern Agricultural	1,192	1,135	1,175	1,068	984	229	245	241	232	216
Eastern Goldfields	1,085	1,170	1,249	1,181	1,053	319	334	348	320	331
Central	158	164	133	131	142	59	46	55	37	33
North-West and Pilbara	648	758	1,066	1,173	1,081	139	100	137	121	221
Kimberley	400	452	500	509	456	181	137	130	149	166
Total	7,660	7,710	8,396	7,777	7,203	2,165	2,198	2,215	2,123	2,204
WESTERN AUSTRALIA	20,754	21,618	24,239	22,177	20,510	7,350	7,543	7,806	7,441	7,845

(a) For component local government areas, see maps immediately preceding *Index*.
are not included; see next table.

(b) Live births.

(c) Stillbirths

BIRTHS

Statistics of births in each of the five years 1969 to 1973 in the Perth Statistical Division, the rest of the State, and in Western Australia as a whole are shown in the following table. Additional details of stillbirths appear on page 175.

BIRTHS REGISTERED

Year	Live births					Stillbirths (c)
	Males (a)	Females (a)	Persons (a)	Ex-nuptial births (b)	Multiple births (b)	

PERTH STATISTICAL DIVISION

1969	6,697	6,397	13,094	1,159	253	165
1970	7,124	6,784	13,908	1,252	278	184
1971	8,075	7,768	15,843	1,530	239	194
1972	7,259	7,141	14,400	1,424	271	173
1973	6,799	6,508	13,307	1,295	(d) 263	173

OTHER DIVISIONS

1969	3,898	3,762	7,660	1,072	(d) 152	85
1970	4,048	3,662	7,710	1,064	(d) 132	111
1971	4,423	3,973	8,396	1,190	(e) 173	104
1972	4,078	3,699	7,777	1,208	(d) 143	85
1973	3,758	3,445	7,203	1,202	(e) 180	97

WESTERN AUSTRALIA

1969	10,595	10,159	20,754	2,231	(d) 405	250
1970	11,172	10,446	21,618	2,316	(d) 410	295
1971	12,498	11,741	24,239	2,720	(e) 412	298
1972	11,337	10,840	22,177	2,632	(d) 414	258
1973	10,557	9,953	20,510	2,497	(f) 443	270

(a) Includes ex-nuptial births and multiple births. (b) Figures represent the number of children live-born. (c) Figures refer to stillbirths where the child was of at least 20 weeks' gestation. (d) Includes 1 case of triplets. (e) Includes 2 cases of triplets. (f) Includes 3 cases of triplets.

The following table shows the number of nuptial confinements during 1973, classified according to age group of mother and number of previous issue.

NUPTIAL CONFINEMENTS—AGE OF MOTHER AND PREVIOUS ISSUE, 1973 (a)

Previous issue (number)	Age of mother (years)							Total married mothers	
	Under 20	20-24	25-29	30-34	35-39	40-44	45 and over	Number	Per cent
0	1,177	3,276	1,792	388	112	25	2	6,772	38·00
1	304	2,571	2,606	573	135	19	2	6,210	34·85
2	16	630	1,357	699	174	23	3	(b) 2,903	16·29
3		97	452	404	152	16	1	1,122	6·30
4		22	117	178	95	19	5	436	2·45
5		5	39	62	52	17		175	0·98
6			9	41	33	11		94	0·53
7			5	13	29	10		57	0·32
8			2	9	10	6		27	0·15
9				1	4	4		9	0·05
10 or more					9	7		16	0·09
Total married mothers	1,497	6,601	6,379	2,368	805	157	13	(b) 17,821	100·00

(a) Figures represent cases in which at least 1 child was live-born.
mother was not stated.

(b) Includes 1 confinement for which the age of

The following table shows the number of nuptial confinements during 1973, classified according to the relative ages of parents.

NUPTIAL CONFINEMENTS—RELATIVE AGES OF PARENTS, 1973 (a)

Age of father (years)	Age of mother (years)							Total fathers	
	Under 20	20-24	25-29	30-34	35-39	40-44	45 and over	Number	Per cent
Under 20	278	40	1					319	1·79
20-24	992	2,622	275	9	2			3,900	21·88
25-29	194	3,284	3,468	212	16	2		7,176	40·27
30-34	26	521	2,114	1,164	109	5		3,939	22·10
35-39	6	105	422	706	360	23	2	(b) 1,625	9·12
40-44	1	19	68	201	228	63	2	582	3·27
45-49		7	23	47	79	50	8	214	1·20
50 and over		3	7	29	11	14	1	65	0·36
Not stated			1					1	0·01
Total married mothers—									
Number	1,497	6,601	6,379	2,368	805	157	13	(b) 17,821	100·00
Per cent	8·40	37·04	35·79	13·29	4·52	0·88	0·07		

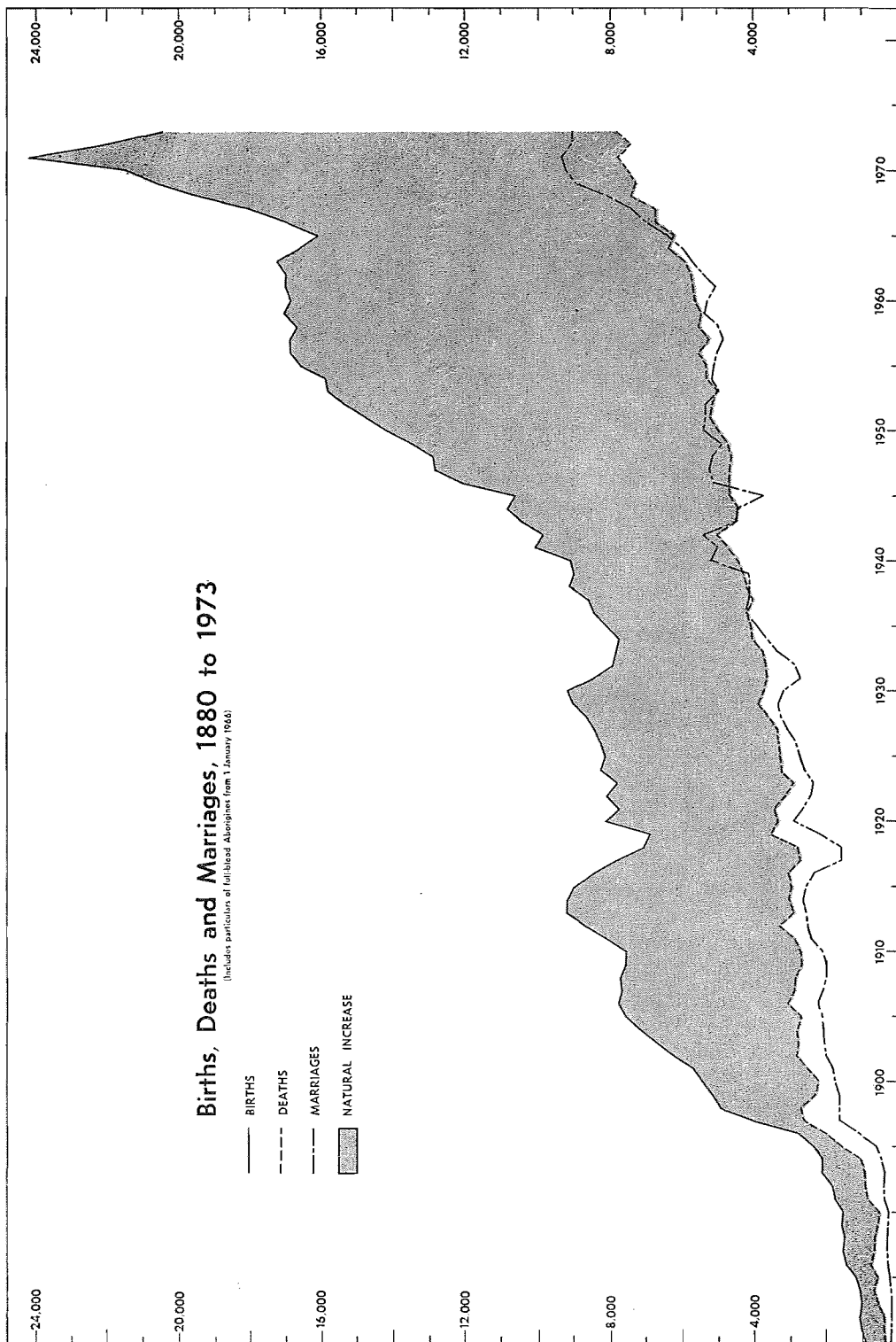
(a) Figures represent cases in which at least 1 child was live-born.
mother was not stated.

(b) Includes 1 confinement for which the age of

The ages of mothers of ex-nuptial children born during each of the years 1969 to 1973 are shown in the following table.

EX-NUPTIAL BIRTHS—AGE OF MOTHER

Age of mother (years)	1969	1970	1971	1972	1973
Under 14	4	7	6		2
14	11	15	19	15	9
15	34	55	69	79	78
16	123	128	166	155	150
17	197	200	257	257	236
18	217	227	287	276	313
19	192	241	251	273	236
20	205	215	240	218	184
21-24	552	550	639	587	558
25-29	313	311	397	414	386
30-34	207	211	245	203	210
35-39	115	108	94	114	90
40-44	41	39	40	31	36
45 and over	8	5	9	3	4
Not stated	12	4	1	7	5
Total, ex-nuptial births	2,231	2,316	2,720	2,632	2,497



Crude Birth Rates. The crude birth rate in any period may be defined as the number of live births occurring during the period for every thousand of the mean population.

The average annual rates for each five-year period in the fifty years from 1921 to 1970 and the rates for single years from 1964 to 1973, for Western Australia and Australia as a whole, are shown in the following table.

CRUDE BIRTH RATES (a)
WESTERN AUSTRALIA AND AUSTRALIA

Period	Average annual rate (b)		Year	Annual rate (b)	
	Western Australia	Australia		Western Australia	Australia
1921-25	22.85	23.86	1964	20.93	20.60
1926-30	21.54	20.98	1965	19.85	19.65
1931-35	18.36	16.94			
1936-40	19.16	17.52	1966	20.25	19.28
1941-45	21.72	20.28	1967	20.48	19.42
			1968	21.34	20.04
1946-50	25.24	23.39			
1951-55	25.37	22.86	1969	21.72	20.38
1956-60	24.20	22.59	1970	21.74	20.55
1961-65	21.71	21.34	1971	23.50	21.62
			1972	20.99	20.39
1966-70	21.14	19.95	1973	19.12	18.81

(a) See NOTE on page 163. (b) Rates for years prior to 1971 are based on final census results; those for 1971 and later are subject to revision after the next census.

In each year of the period under review, Western Australia's crude birth rate has been higher than that of Australia with the exception of the early 1920s.

In Western Australia, the rate showed a marked and almost continuous decrease from the beginning of the century to the depression of thirty years later when the unprecedentedly low rate of 17.64 was recorded in 1934 (see Graph—*Rates of Birth, Death and Marriage*). In the following years a fairly consistent increase was evident until 1952 when the rate reached 25.66, its highest level since 1917. The rate then declined and in 1965 was 19.85, the lowest since 1940. It increased in each succeeding year until 1971 when the rate was 23.50, the highest recorded since 1959. In 1972 it fell to 20.99 and in 1973 to 19.12, the lowest rate recorded since 1937.

Age-specific Birth Rates. As a measure of fertility, the crude birth rate has the advantage of simplicity in calculation. The data necessary for its computation are usually readily available from published statistics, and it is therefore useful in comparing the fertility of the populations of States and countries for which no additional data are available. However, it is of limited use, since it does not take into account the important factors of age and sex composition of the population. Age-specific birth rates, which do have regard to these factors, therefore provide a better measure of fertility. Age-specific birth rates represent the number of births to women of specified ages per thousand women of those particular ages, and thus take cognisance of the variations in fertility experienced by women at the successive stages of their child-bearing life.

AGE-SPECIFIC BIRTH RATES (a)—WESTERN AUSTRALIA

Year	Age group (years)						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1947	32.63	187.14	206.24	146.72	84.97	28.63	2.06
1954	42.74	231.09	217.77	135.74	71.71	23.61	1.52
1961	47.07	246.94	231.92	127.38	61.82	20.55	1.17
1966	53.81	203.08	197.12	102.12	45.68	13.27	1.38
1971	63.33	204.90	203.58	101.91	41.96	9.89	0.73

(a) Number of live births registered per 1,000 women in each age group. Rates are based on census results and exclude particulars of full-blood Aborigines prior to 1966 (see NOTE on page 163).

For purposes of comparison with Western Australian experience, age-specific birth rates for Australia as a whole are given in the following table.

AGE-SPECIFIC BIRTH RATES (a)—AUSTRALIA

Year	Age group (years)						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1947	32·06	166·18	186·60	129·99	75·02	23·52	1·81
1954	39·19	197·13	194·02	121·76	64·43	20·16	1·47
1961	47·35	225·81	221·21	131·11	63·38	19·17	1·41
1966	49·26	172·81	183·29	105·28	50·60	14·28	1·09
1971	55·17	180·92	195·39	102·26	44·90	11·42	0·78

(a) Number of live births registered per 1,000 women in each age group. Rates are based on census results and exclude particulars of full-blood Aborigines prior to 1966 (see NOTE on page 163).

Gross and Net Reproduction Rates. The gross reproduction rate is derived from fertility rates representing the number of *female* births to women of specified ages per thousand women of those particular ages. It provides a measure of the number of female children who would be born, on the average, to every woman assuming that she lives through the whole of the child-bearing period and that the basic fertility rates remain unaltered throughout.

The gross reproduction rate assumes that all females survive to the end of their child-bearing capacity. A more accurate measure, which takes into account the effect of mortality among women during this period is the net reproduction rate. This rate represents the average number of female children who would be born to women during their lifetime if they were subject in each succeeding year of life to the fertility and mortality rates on which the calculation is based. The net reproduction rate is a measure of the number of women who, in the next generation, will replace the women of reproductive age in the current generation. It provides a useful indication of likely future population trends. A rate remaining stationary at unity indicates an ultimately static population. If a rate greater than unity is maintained, an ultimate increase of population will result, while a continuing rate less than unity will lead to an ultimate decline.

GROSS AND NET REPRODUCTION RATES (a)
WESTERN AUSTRALIA AND AUSTRALIA

Year	Gross reproduction rate		Net reproduction rate	
	Western Australia	Australia	Western Australia	Australia
1947	1·683	1·494	(b) 1·595	(b) 1·416
1954	1·772	1·559	(c) 1·704	(c) 1·499
1961	1·785	1·728	(d) 1·730	(d) 1·672
1966	1·486	1·401	(e) 1·441	(e) 1·357
1971	1·516	1·441	(e) 1·470	(e) 1·397

(a) Rates are based on census results and exclude particulars of full-blood Aborigines prior to 1966 (see NOTE on page 163). (b) Based on 1946-48 mortality experience. (c) Based on 1953-55 mortality experience. (d) Based on 1960-62 mortality experience. (e) Based on 1965-67 mortality experience.

DEATHS

Statistics of deaths in each of the five years 1969 to 1973 in the Perth Statistical Division, the rest of the State, and in Western Australia as a whole appear in the following table.

DEATHS REGISTERED

Year	Deaths (a)			Infant deaths (b)		
	Males	Females	Persons	Males	Females	Persons

PERTH STATISTICAL DIVISION

1969	2,936	2,249	5,185	133	107	240
1970	3,006	2,339	5,345	140	111	251
1971	3,151	2,440	5,591	154	115	269
1972	2,951	2,367	5,318	109	79	188
1973	3,184	2,457	5,641	129	84	213

OTHER DIVISIONS

1969	1,377	788	2,165	117	96	213
1970	1,386	812	2,198	109	99	208
1971	1,385	830	2,215	111	84	195
1972	1,366	757	2,123	98	62	160
1973	1,402	802	2,204	112	69	181

WESTERN AUSTRALIA

1969	4,313	3,037	7,350	250	203	453
1970	4,392	3,151	7,543	249	210	459
1971	4,536	3,270	7,806	265	199	464
1972	4,317	3,124	7,441	207	141	348
1973	4,586	3,259	7,845	241	153	394

(a) Including infant deaths.
of life.

(b) Deaths occurring in the first year

Crude Death Rates. The crude death rate is perhaps the most common measure of mortality, and is derived by relating the deaths occurring in a period to the mean population for that period. It is usually expressed as number of deaths per thousand of mean population.

The rates for Western Australia and for Australia in the period 1921 to 1973 are compared in the following table.

CRUDE DEATH RATES (a)
WESTERN AUSTRALIA AND AUSTRALIA

Period	Average annual rate (b)		Year	Annual rate (b)	
	Western Australia	Australia		Western Australia	Australia
1921-25	9.17	9.52	1964	8.06	9.04
1926-30	8.91	9.26	1965	7.70	8.79
1931-35	8.83	9.00			
1936-40 (c)	9.22	9.63	1966	8.13	9.01
1941-45 (c)	9.86	9.96	1967	7.71	8.70
			1968	8.16	9.11
1946-50 (c)	9.23	9.74			
1951-55	8.49	9.25	1969	7.69	8.68
1956-60	7.90	8.78	1970	7.59	9.02
1961-65	7.78	8.75	1971	7.57	8.66
			1972	7.04	8.45
1966-70	7.84	8.90	1973	7.31	8.42

(a) See NOTE on page 163. (b) Rates for years prior to 1971 are based on final census results; those for 1971 and later are subject to revision after the next census. (c) Excludes deaths of members of defence forces from September 1939 to June 1947.

In the early years of the century, the Western Australian rate was higher than that for Australia as a whole, but fell below the Australian average in 1909. Since that time, the rate for Western Australia has, with very few exceptions, remained lower than that for Australia.

Western Australia's crude death rate for the year 1902 was 13·79 per thousand of the mean population but by 1931 it had fallen to 8·51 (see Graph—*Rates of Birth, Death and Marriage*). After that year, the rate increased until it reached 10·65 in 1942. Since then there was a general decline until 1963 when the rate was 7·68. The rate for 1972 was 7·04 per thousand of mean population, the lowest ever recorded in Western Australia. The rate for 1973 was 7·31.

Standardised Death Rates. The crude death rate expresses simply the number of deaths occurring in a population during any period as a proportion of the mean population for that period. Although this rate is useful as a measure of the absolute level of mortality, its value is necessarily restricted when comparing the mortality in different communities in the same period, or in one community at different times.

The effect on the crude death rate of the presence in a community of a high proportion of young people or of aged people, or of a high or low masculinity, will be readily appreciated. To devise an adequate measure of comparative mortality, it is therefore necessary to select a 'standard' population to which the varying mortality experiences may be referred. A standard population compiled by the International Statistical Institute, based upon the age and sex distribution of the population of nineteen European countries at their censuses nearest to the year 1900, has been used as the basis of the standardised death rates for Western Australia and Australia given in the next paragraph. The rate is computed by applying to each sex and age group in the standard population, the death rates actually recorded in the corresponding groups of the State and Australian populations. The sum of these results represents the number of deaths which would have occurred in the standard population if it had been exposed to the same risks of mortality. The standardised death rate is derived by expressing this number in terms of 'per thousand of the standard population'.

For the Census years 1921, 1933, 1947, 1954, 1961 and 1966 the standardised death rates for Western Australia were 11·88, 8·74, 7·28, 6·71, 6·02 and 6·25, and the corresponding rates for Australia as a whole were 10·58, 8·62, 7·34, 6·90, 6·27 and 6·53. These rates have been compiled on a basis which excludes full-blood Aborigines; see *NOTE* on page 163. The rates for 1971, calculated on the basis of total population (*i.e.* including Aborigines), were 6·16 for Western Australia and 6·32 for Australia.

Causes of Death. Statistics of causes of death provide important numerical facts by which to evaluate the varying health conditions and needs of different countries. In order to enable valid international comparisons, it is necessary that each country present its statistics of causes of death in a uniform manner. The first classification of causes of death to be adopted internationally was that compiled by Dr J. Bertillon at the request of the International Statistical Institute meeting in Vienna in 1891. Subsequently this classification was periodically revised by the Institute in collaboration with the League of Nations Health Organization. More recently, revisions have been carried out by a Committee of the World Health Organization.

PRINCIPAL CAUSES OF DEATH, 1973

International number	Cause of death (a) (b)	Males	Females	Persons	Per cent of all deaths	Rate (c)
000-136	Infective and parasitic diseases—					
010-012	Tuberculosis of respiratory system	6	2	8	0·1	0·7
	Other infective and parasitic diseases	45	42	87	1·1	8·1
140-239	Neoplasms—					
140-199	Malignant—					
150-159	Digestive organs and peritoneum	259	222	481	6·1	44·8
162	Trachea, bronchus and lung	255	46	301	3·8	28·1
174	Breast	1	113	114	1·5	10·6
180-189	Genito-urinary organs	109	112	221	2·8	20·6
	Other	160	80	240	3·1	22·4
200-209	Lymphatic and haematopoietic tissue—					
204-207	Leukaemia and aleukaemia	41	18	59	0·8	5·5
	Other	40	39	79	1·0	7·4
210-239	Benign and unspecified	10	7	17	0·2	1·6
240-279	Endocrine, nutritional and metabolic diseases—					
250	Diabetes mellitus	59	42	101	1·3	9·4
	Other	16	18	34	0·4	3·2

PRINCIPAL CAUSES OF DEATH, 1973—*continued*

International number	Cause of death (a) (b)	Males	Females	Persons	Per cent of all deaths	Rate (c)
280-289	Diseases of blood and blood-forming organs	13	6	19	0.2	1.8
290-315	Mental disorders	51	41	92	1.2	8.6
320-389	Diseases of the nervous system and sense organs	54	29	83	1.1	7.7
390-438	Diseases of the circulatory system—					
393-398	Rheumatic heart disease	29	26	55	0.7	5.1
410-414	Ischaemic heart disease	1,278	844	2,122	27.0	197.8
430-438	Cerebrovascular disease	413	529	942	12.0	87.8
	Other	334	331	665	8.5	62.0
460-519	Diseases of the respiratory system—					
480-486	Pneumonia	91	65	156	2.0	14.5
490-493	Bronchitis, emphysema and asthma	261	61	322	4.1	30.0
	Other	60	35	95	1.2	8.9
520-577	Diseases of the digestive system	118	80	198	2.5	18.5
580-629	Diseases of the genito-urinary system	68	68	136	1.7	12.7
630-678	Complications of pregnancy, childbirth and the puerperium	5	2	7	0.1	0.5
680-709	Diseases of the skin and subcutaneous tissue	14	13	27	0.3	2.5
710-738	Diseases of the musculoskeletal system and connective tissue	55	51	106	1.4	9.9
740-759	Congenital anomalies	55	71	126	2.6	18.8
760-779	Certain causes of perinatal morbidity and mortality	131	71	202	2.6	18.8
780-796	Ill-defined conditions	82	54	136	1.7	12.7
800-999	Accidents, poisonings and violence—					
810-823	Motor vehicle accidents	283	92	375	4.8	35.0
850-877	Accidental poisonings	6	3	9	0.1	0.8
880-887	Accidental falls	29	30	59	0.8	5.5
950-959	Suicide and self-inflicted injury	83	44	127	1.6	11.8
	Other	127	38	165	2.1	15.4
	All causes	4,586	3,259	7,845	100.0	731.3

(a) Classified in accordance with the *International Statistical Classification of Diseases, Injuries, and Causes of Death* (Eighth Revision), operative from 1 January 1968. (b) Defined, in part, as the disease or injury which initiated the train of morbid events leading directly to death. (c) Per 100,000 of mean population.

The figures in the previous table have been compiled on the basis of the *International Statistical Classification of Diseases, Injuries, and Causes of Death* (Eighth Revision, 1965), operative from 1 January 1968. The term 'cause of death', as used in this table and elsewhere in this Part, means '(a) the disease or injury which initiated the train of morbid events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury'.

The principal causes of death in age groups and the number and proportion (per cent) of total deaths from specified causes are shown in the following table.

PRINCIPAL CAUSES OF DEATH—AGE GROUPS, 1973

International number	Age group and cause of death (a)	Deaths from specified cause			
		In age group (b)		At all ages	
		Number	Per cent	Number	Per cent (c)
	Under 1 year	394	100.0	....	....
000-136	Infective and parasitic diseases	31	7.9	95	32.6
480-486	Pneumonia	13	3.3	156	8.3
740-759	Congenital anomalies	78	19.8	106	73.6
760-769	Maternal causes, including difficult labour	118	29.9	118	100.0
770	Conditions of placenta	21	5.3	21	100.0
776	Anoxic and hypoxic conditions n.e.c.	33	8.4	33	100.0
	Other causes	100	25.4	....	....
	1-4 years	85	100.0	....	....
000-136	Infective and parasitic diseases	10	11.8	95	10.5
140-209	Malignant neoplasms (d)	10	11.8	1,495	0.7
480-486	Pneumonia	5	5.9	156	3.2
740-759	Congenital anomalies	6	7.1	106	5.7
800-949	Accidents	41	48.2	587	7.0
	Other causes	13	15.3	....	....
	5-14 years	73	100.0	....	....
140-209	Malignant neoplasms (d)	11	15.1	1,495	0.7
480-486	Pneumonia .....	....	....	156	....
740-759	Congenital anomalies	4	5.5	106	3.8
800-949	Accidents	42	57.5	587	7.2
	Other causes	16	21.9	....	....

PRINCIPAL CAUSES OF DEATH—AGE GROUPS, 1973—*continued*

International number	Age group and cause of death (a)	Deaths from specified cause			
		In age group (b)		At all ages	
		Number	Per cent	Number	Per cent (c)
	15-19 years	118	100.0		
140-209	Malignant neoplasms (d)	4	3.4	1,495	0.3
740-759	Congenital anomalies	1	0.8	106	0.9
800-999	Accidents, poisonings, violence—				
810-823	Motor vehicle accidents	64	54.2	375	17.1
950-959	Suicide	8	6.8	127	6.3
	Other	18	15.3	233	7.7
	Other causes	23	19.5	....	....
	20-24 years	117	100.0		
140-209	Malignant neoplasms (d)	8	6.8	1,495	0.5
800-999	Accidents, poisonings, violence—				
810-823	Motor vehicle accidents	61	52.1	375	16.3
950-959	Suicide	12	10.3	127	9.4
	Other	17	14.5	233	7.3
	Other causes	19	16.2	....	....
	25-34 years	168	100.0		
140-209	Malignant neoplasms (d)	20	11.9	1,495	1.3
390-458	Diseases of circulatory system	9	5.4	3,784	0.2
740-759	Congenital anomalies	2	1.2	106	1.9
800-999	Accidents, poisonings, violence—				
810-823	Motor vehicle accidents	60	35.7	375	16.0
950-959	Suicide	19	11.3	127	15.0
	Other	23	13.7	233	9.9
	Other causes	35	20.8	....	....
	35-44 years	269	100.0		
140-209	Malignant neoplasms (d)	53	19.7	1,495	3.5
393-398, 402 }	Heart diseases	45	16.7	2,542	1.8
404, 410-429 }	Cerebrovascular diseases	17	6.3	942	1.8
430-438	Diseases of respiratory system	12	4.5	573	2.1
460-519	Accidents, poisonings, violence—				
800-999	Motor vehicle accidents	40	14.9	375	10.7
810-823	Suicide	32	11.9	127	25.2
950-959	Other	29	10.8	233	12.4
	Other causes	41	15.2	....	....
	45-54 years	618	100.0		
140-209	Malignant neoplasms (d)	191	30.9	1,495	12.8
393-398, 402 }	Heart diseases	162	26.2	2,542	6.4
404, 410-429 }	Cerebrovascular diseases	37	6.0	942	3.9
430-438	Diseases of respiratory system	39	6.3	573	6.8
460-519	Accidents, poisonings, violence—				
800-999	Motor vehicle accidents	34	5.5	375	9.1
810-823	Suicide	26	4.2	127	20.5
950-959	Other	21	3.4	233	9.0
	Other causes	108	17.5	....	....
	55-64 years	1,214	100.0		
140-209	Malignant neoplasms (d)	336	27.7	1,495	22.5
393-398, 402 }	Heart diseases	448	36.9	2,542	17.6
404, 410-429 }	Cerebrovascular diseases	105	8.6	942	11.1
430-438	Diseases of respiratory system	79	6.5	573	13.8
460-519	Accidents, poisonings, violence—				
800-999	Motor vehicle accidents	32	2.6	375	8.5
810-823	Other	33	2.7	360	9.2
	Other causes	181	14.9	....	....
	65-74 years	1,960	100.0		
140-209	Malignant neoplasms (d)	460	23.5	1,495	30.8
250	Diabetes	26	1.3	101	25.7
393-398, 402 }	Heart diseases	759	38.9	2,542	29.9
404, 410-429 }	Cerebrovascular diseases	231	11.8	942	24.5
430-438	Diseases of respiratory system	182	9.3	573	31.8
460-519	Accidents, poisonings, violence—				
800-999	Motor vehicle accidents	26	1.3	375	6.9
810-823	Other	32	1.6	360	8.9
	Other causes	244	12.4	....	....

PRINCIPAL CAUSES OF DEATH—AGE GROUPS, 1973—*continued*

International number	Age group and cause of death (a)	Deaths from specified cause			
		In age group (b)		At all ages	
		Number	Per cent	Number	Per cent (c)
	75 years and over	2,827	100.0	....	....
140-209	Malignant neoplasms (d)	400	14.1	1,495	26.8
393-398, 402	Heart diseases	1,115	39.4	2,542	43.9
404, 410-429	Cerebrovascular diseases	544	19.2	942	57.7
430-438	Diseases of arteries, arterioles and capillaries	147	5.2	231	63.6
440-448	Diseases of respiratory system	231	8.2	573	40.3
460-519	Accidents, poisonings, violence—				
800-999	Accidental falls	37	1.3	59	62.7
880-887	Other	25	0.9	676	3.7
	Other causes	328	11.6	....	....

n.e.c. denotes 'not elsewhere classified'.

(a) Classified in accordance with the *International Statistical Classification of Diseases, Injuries and Causes of Death* (Eighth Revision), operative from 1 January 1968. (b) Excludes 2 deaths (1 classified to *Heart diseases* and 1 ill-defined cause) for which ages were not stated. (c) Deaths in the specified age group as a percentage of total deaths for a particular cause. (d) Including neoplasms of lymphatic and haematopoietic tissue.

Infant Deaths. The term 'infant death' refers to a death which occurs before the completion of the first year of life. In the following table, infant deaths registered in Western Australia during each of the five years to 1973 are classified according to age at death.

INFANT MORTALITY—AGES AT DEATH

Year	Days					Total under 28 days	Months			Total under 1 year		
	Under 1	1-6	7-13	14-20	21-27		Under 3	3-5	6-11			
MALES												
1969	93	68	10	8	3	182	201	17	32	250
1970	91	62	18	5	3	179	208	19	22	249
1971	103	57	8	5	1	174	203	28	34	265
1972	90	38	5	3	3	139	163	22	22	207
1973	96	46	12	9	3	166	188	26	27	241
FEMALES												
1969	76	56	3	4	1	140	152	29	22	203
1970	80	39	9	3	5	136	158	18	34	210
1971	80	31	14	4	2	131	145	29	25	199
1972	46	32	4	5	5	92	108	21	12	141
1973	64	20	7	6	1	98	109	28	16	153
PERSONS												
1969	169	124	13	12	4	322	353	46	54	453
1970	171	101	27	8	8	315	366	37	56	459
1971	183	88	22	9	3	305	348	57	59	464
1972	136	70	9	8	8	231	271	43	34	348
1973	160	66	19	15	4	264	297	54	43	394

Infant Mortality Rates. The infant mortality rate expresses the relationship between deaths of infants and the live births occurring in a period, and is stated in terms of number of deaths under one year of age per thousand live births.

The rates for Western Australia and for Australia in the period 1921 to 1973 are shown in the following table.

INFANT MORTALITY RATES (a)
WESTERN AUSTRALIA AND AUSTRALIA

Period	Average annual rate		Year	Annual rate	
	Western Australia	Australia		Western Australia	Australia
1921-25	59.14	57.88	1964	19.66	19.06
1926-30	49.27	51.99	1965	21.68	18.47
1931-35	40.81	41.27			
1936-40	39.70	38.81	1966	19.95	18.73
1941-45	33.30	34.97	1967	17.42	18.26
			1968	20.37	17.78
1946-50	28.15	26.98			
1951-55	24.41	23.34	1969	21.83	17.92
1956-60	21.42	21.05	1970	21.23	17.88
1961-65	20.73	19.42	1971	19.14	17.29
			1972	15.69	16.72
1966-70	20.25	18.10	1973	19.21	16.49

(a) See NOTE on page 163.

In the first decade of the century, the average annual rate (106.07) in Western Australia was considerably above the Australian average of 86.83, and was the highest of any State. Since then both the Western Australian and the Australian rates have shown a remarkable decrease. In the five years ended 1973, Western Australia's average annual rate was 19.38 compared with the Australian rate of 17.26. The Western Australian rate of 15.69 in 1972 was the lowest ever recorded in this State and was lower than the rate in any other State except Victoria.

Causes of Infant Deaths. The causes of infant deaths registered during the year 1973 are set out in the following table.

INFANT MORTALITY—CAUSES OF DEATH, 1973

International number	Cause of death (a)	Males	Females	Persons
	Causes mainly of prenatal and natal origin—			
740-759	Congenital anomalies	38	40	78
760-769	Attributed to conditions of the mother—			
762	Toxaemia of pregnancy	6	1	7
764-768	Difficult labour	12	3	15
769	Other complications of pregnancy and childbirth	43	33	76
	Other	13	7	20
770	Conditions of placenta	18	3	21
771	Conditions of umbilical cord	2	1	3
774, 775	Haemolytic disease of newborn	2	1	3
776	Anoxic and hypoxic conditions, n.e.c.	25	8	33
777	Immaturity, unqualified	8	9	17
	Other	4	5	9
	Total	169	111	280
	Causes mainly of postnatal origin—			
000-009	Intestinal infectious diseases	12	11	23
038	Septicaemia	1	1	2
320, 036	Meningitis and meningococcal infection	7	1	8
480-486	Pneumonia	9	4	13
911	Inhalation or ingestion of food causing obstruction or suffocation	43	26	69
	Other	43	26	69
	Total	72	42	114
	All causes	241	153	394

n.e.c. denotes 'not elsewhere classified'.

(a) Classified in accordance with the *International Statistical Classification of Diseases, Injuries, and Causes of Death* (Eighth Revision), operative from 1 January 1968.

Stillbirths. The infant mortality rate discussed above is that most commonly used, and takes no account of stillbirths. It is informative, however, to examine the occurrence of stillbirths in comparison with infant deaths, as in the next table, which deals with the experience of the five years 1969 to 1973.

STILLBIRTHS (a) AND INFANT DEATHS
NUMBERS AND MASCULINITY

Year	Stillbirths (a)				Deaths under 1 year of age			
	Males	Females	Persons	Masculinity (b)	Males	Females	Persons	Masculinity (b)
1969	145	105	250	138.1	250	203	453	123.2
1970	166	129	295	128.7	249	210	459	118.6
1971	155	143	298	108.4	265	199	464	133.2
1972	134	124	258	108.1	207	141	348	146.8
1973	136	134	270	101.5	241	153	394	157.5

(a) Figures refer to stillbirths where the child was of at least 20 weeks' gestation. (b) Number of males to each 100 females.

The relationship between stillbirths and infant deaths during the same period is further examined in the following table, which shows the numbers of stillbirths and of infant deaths at various ages. The rates shown represent the number of stillbirths, or of infant deaths, per thousand of total births (*i.e.* including stillbirths). The average annual rate for the five-year period ended 1973 was 31.5.

STILLBIRTHS (a) AND INFANT DEATHS
NUMBERS AND RATES

Year	Stillbirths (a)	Infant Deaths			Stillbirths and infant deaths (a)
		Under 7 days	Under 28 days	Under 1 year	
NUMBER					
1969	250	293	322	453	703
1970	295	272	315	459	754
1971	298	271	305	464	762
1972	258	206	231	348	606
1973	270	226	264	394	664
RATE (b)					
1969	11.9	13.9	15.3	21.6	33.5
1970	13.5	12.4	14.4	20.9	34.4
1971	12.1	11.0	12.4	18.9	31.1
1972	11.5	9.2	10.3	15.5	27.0
1973	13.0	10.9	12.7	19.0	32.0

(a) Figures refer to stillbirths where the child was of at least 20 weeks' gestation. (b) Rate per 1,000 of total births (*i.e.* including stillbirths); see also footnote (a).

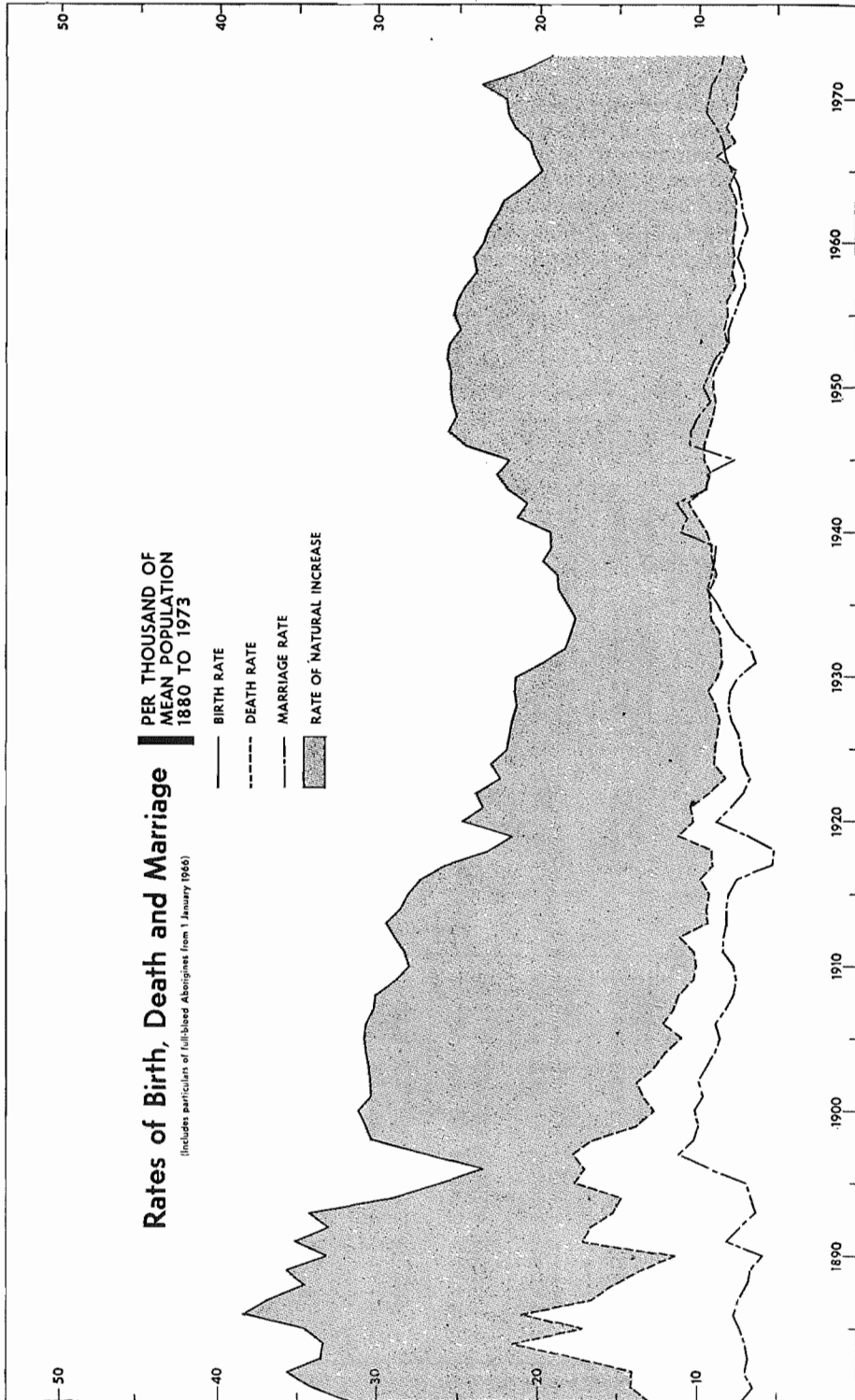
Age-specific Death Rates. The age-specific death rate expresses the number of deaths at specified ages in terms of the population at those particular ages. In the following table, which shows age-specific death rates for Western Australia, the average annual rates for each period relate to deaths in the three years surrounding the date of a Population Census. For census dates see table on page 144.

BIRTHS, DEATHS AND MARRIAGES

AGE-SPECIFIC DEATH RATES (a) (b)

Age group (years)	1910-12	1920-22	1932-34	1946-48	1953-55	1960-62	1965-67	1970-72
MALES								
Under 1	28.4	23.9	12.8	9.3	7.0	(b) 22.9	(b) 22.1	(b) 20.6
1-4	2.6	2.2	1.6	0.9	0.7	1.2	1.2	1.2
5-9	2.2	1.4	1.4	0.6	0.5	0.5	0.5	0.5
10-14	2.9	2.4	1.8	1.5	1.6	0.4	0.4	0.4
15-19	5.2	4.0	2.5	2.2	2.0	1.2	1.2	1.4
20-24	5.9	4.1	2.9	2.0	1.9	1.7	1.6	1.8
25-29	6.8	5.4	3.1	2.3	1.8	1.5	1.5	1.5
30-34	8.4	6.4	4.0	2.5	2.2	1.6	1.8	1.6
35-39	10.4	7.9	5.7	4.2	3.2	2.1	2.3	2.2
40-44	15.0	12.1	8.8	6.3	5.8	3.5	3.4	2.9
45-49	17.7	17.2	13.5	11.5	9.0	5.0	5.3	5.5
50-54	24.7	23.8	21.4	17.2	15.8	9.5	9.2	8.3
55-59	35.1	34.2	28.3	26.3	24.8	14.8	16.1	14.7
60-64	46.0	49.5	42.4	40.3	41.5	23.8	25.4	25.1
65-69	78.7	72.2	63.4	61.0	62.9	40.3	41.4	40.6
70-74	110.5	115.6	105.1	98.7	93.8	59.6	63.6	61.5
75-79	185.2	184.5	176.8	149.5	146.9	96.7	96.4	98.2
80-84	328.2	283.5	265.0	222.4	225.7	140.9	146.5	153.1
85-89	321.4	566.7	380.8	376.2	297.4	244.5	247.4	242.9
90 and over								
FEMALES								
Under 1	21.8	18.8	8.6	7.9	5.1	(b) 19.4	(b) 17.7	(b) 16.6
1-4	2.6	1.3	1.3	0.5	0.5	1.2	0.8	1.0
5-9	1.8	1.2	1.0	0.6	0.3	0.3	0.3	0.3
10-14	2.0	1.3	1.3	0.7	0.7	0.2	0.2	0.2
15-19	3.8	3.1	1.9	1.2	0.7	0.5	0.7	0.6
20-24	4.4	4.0	2.8	1.5	0.8	0.6	0.7	0.5
25-29	4.9	4.6	3.1	1.6	1.0	0.8	0.8	0.8
30-34	6.2	4.9	4.2	2.6	1.5	1.4	1.4	1.4
35-39	6.7	6.4	5.8	3.1	2.1	2.0	2.1	1.8
40-44	8.4	8.1	6.4	5.1	3.6	3.3	3.3	3.2
45-49	11.8	10.6	9.1	6.8	5.9	5.0	5.3	4.7
50-54	14.2	12.8	10.7	10.1	8.6	7.2	7.6	7.5
55-59	20.4	17.8	17.3	16.1	13.9	11.4	12.6	11.5
60-64	34.6	30.5	29.8	24.6	20.7	19.4	20.7	19.4
65-69	54.5	54.2	44.1	40.8	39.2	35.4	34.6	35.7
70-74	92.5	96.4	74.4	74.2	67.7	60.6	57.8	57.9
75-79	144.1	137.1	121.0	117.6	109.7	101.9	100.6	94.8
80-84	186.7	219.5	192.4	187.5	189.9	191.5	182.4	194.7
85-89	359.0	478.3	397.2	273.8	285.9			
90 and over								
PERSONS								
Under 1	25.2	21.4	11.4	8.6	6.1	(b) 21.2	(b) 19.9	(b) 18.7
1-4	2.6	1.8	1.4	0.7	0.6	1.2	1.0	1.1
5-9	2.0	1.3	1.2	0.6	0.4	0.4	0.4	0.4
10-14	2.5	1.9	1.5	1.1	1.2	0.3	0.3	0.3
15-19	4.6	3.5	2.2	1.7	1.4	0.8	0.8	1.0
20-24	5.3	4.0	2.8	1.7	1.4	1.2	1.2	1.2
25-29	6.0	5.0	3.1	1.9	1.4	1.1	1.1	1.0
30-34	7.5	5.7	4.1	2.5	1.8	1.2	1.3	1.2
35-39	9.1	7.2	5.2	3.7	2.7	1.8	1.9	1.8
40-44	12.7	10.4	7.7	5.7	4.8	2.8	2.8	2.4
45-49	15.6	14.6	11.5	9.2	7.6	4.2	4.3	4.4
50-54	20.9	19.6	16.6	13.8	12.3	7.3	7.3	6.6
55-59	29.3	27.9	23.4	21.4	19.3	11.4	12.1	11.1
60-64	41.2	41.7	37.0	32.6	30.9	17.8	19.3	18.3
65-69	68.7	64.3	55.3	50.8	50.4	29.1	30.8	29.9
70-74	103.3	106.7	91.1	86.6	79.8	46.5	47.2	47.7
75-79	170.1	162.6	149.7	133.2	125.9	76.3	74.1	74.0
80-84	266.7	252.0	222.9	204.1	205.8	118.0	118.3	116.3
85-89	333.3	528.3	389.2	312.3	290.4	210.7	203.8	210.2
90 and over								

(a) Average annual number of deaths at the specified ages during each three-year period per 1,000 of population in the corresponding age group at the relevant census. Figures for 1960-62 and earlier exclude particulars of full-blood Aborigines (see NOTE on page 163); those for 1965-67 and later relate to total population, i.e. including Aborigines. (b) For age Under 1, figures for 1960-62 and later represent infant deaths per 1,000 live births registered.



Australian Life Tables. It has been the practice at each census from 1911 onwards to prepare Life Tables representative of the mortality experience of Australia. The mortality of the Australian population for the thirty years from 1881 to 1910 inclusive was investigated in 1911 by the Commonwealth Statistician. Tables were compiled for each State and for Australia as a whole in respect of each sex for each of the decennial periods 1881 to 1890, 1891 to 1900, and 1901 to 1910. At the Census of 1921, Life Tables were prepared by the Commonwealth Statistician from the recorded census population and the deaths in the three years 1920 to 1922. Tables based on data derived from later censuses have been compiled by the Commonwealth Actuary.

The expectation of life of males and females at various ages as revealed by these investigations is shown in the following table.

EXPECTATION OF LIFE (a)—AUSTRALIA: 1881-90 TO 1965-67
(Years)

Age last birthday (years)	1881-90	1891-1900	1901-10	1920-22	1932-34	1946-48	1953-55	1960-62	1965-67
MALES									
0	47·20	51·08	55·20	59·15	63·48	66·07	67·14	67·92	67·63
5	52·86	55·61	57·91	60·43	62·57	63·77	64·32	64·77	64·36
10	48·86	51·43	53·53	56·01	58·02	59·04	59·53	59·93	59·50
15	44·45	46·98	49·03	51·44	53·36	54·28	54·72	55·07	54·63
20	40·58	42·81	44·74	46·99	48·81	49·64	50·10	50·40	49·98
25	37·10	38·90	40·60	42·70	44·37	45·04	45·54	45·80	45·40
30	33·64	35·11	36·52	38·44	39·90	40·40	40·90	41·12	40·72
35	30·06	31·34	32·49	34·20	35·46	35·79	36·25	36·45	36·04
40	26·50	27·65	28·56	30·05	31·11	31·23	31·65	31·84	31·44
45	23·04	23·99	24·78	26·03	26·87	26·83	27·18	27·38	26·99
50	19·74	20·45	21·16	22·20	22·83	22·67	22·92	23·13	22·76
55	16·65	17·08	17·67	18·51	19·03	18·84	19·00	19·18	18·83
60	13·77	13·99	14·35	15·08	15·57	15·36	15·47	15·60	15·27
65	11·06	11·25	11·31	12·01	12·40	12·25	12·33	12·47	12·16
70	8·82	8·90	8·67	9·26	9·60	9·55	9·59	9·77	9·52
75	6·72	6·70	6·58	6·87	7·19	7·23	7·33	7·47	7·33
80	5·11	5·00	4·96	5·00	5·22	5·36	5·47	5·57	5·51
85	3·86	3·79	3·65	3·62	3·90	3·84	4·01	4·08	4·07
90	2·91	2·91	2·64	2·60	2·99	2·74	2·93	3·02	3·05
95	2·16	2·16	1·88	1·86	2·11	1·93	2·10	2·29	2·33
100	1·32	1·29	1·18	1·17	1·10	....	....	....	1·82
FEMALES									
0	50·84	54·76	58·84	63·31	67·14	70·63	72·75	74·18	74·15
5	56·00	58·64	60·80	63·64	65·64	67·91	69·61	70·78	70·64
10	51·95	54·46	56·39	59·20	61·02	63·11	64·78	65·92	65·75
15	47·54	49·97	51·86	54·55	56·29	58·27	59·90	61·01	60·84
20	43·43	45·72	47·52	50·03	51·67	53·47	55·06	56·16	56·00
25	39·67	41·69	43·36	45·71	47·19	48·74	50·24	51·32	51·17
30	36·13	37·86	39·33	41·48	42·77	44·08	45·43	46·49	46·34
35	32·58	34·14	35·37	37·28	38·37	39·46	40·67	41·70	41·56
40	29·08	30·49	31·47	33·14	34·04	34·91	36·00	36·99	36·85
45	25·56	26·69	27·59	28·99	29·74	30·45	31·44	32·38	32·26
50	22·06	22·93	23·69	24·90	25·58	26·14	27·03	27·92	27·83
55	18·64	19·29	19·85	20·95	21·58	22·04	22·81	23·63	23·58
60	15·39	15·86	16·20	17·17	17·74	18·11	18·78	19·51	19·52
65	12·27	12·75	12·88	13·60	14·15	14·44	15·02	15·68	15·70
70	9·70	9·89	9·96	10·41	10·98	11·14	11·62	12·19	12·23
75	7·24	7·37	7·59	7·73	8·23	8·32	8·69	9·16	9·22
80	5·27	5·49	5·73	5·61	6·01	6·02	6·30	6·68	6·72
85	3·90	4·12	4·19	4·06	4·30	4·32	4·52	4·79	4·85
90	2·98	3·07	2·99	2·91	3·05	3·08	3·24	3·48	3·53
95	2·25	2·18	2·10	2·07	2·00	2·14	2·31	2·59	2·66
100	1·37	1·23	1·24	1·24	1·02	....	....	....	2·04

(a) Figures for years prior to 1965-67 refer to population exclusive of full-blood Aborigines; see letterpress *Aborigines* on page 144.

MARRIAGES

The number of marriages registered in Western Australia in each of the ten years 1964 to 1973 is shown in the following table. Marriages celebrated by ministers of religion are distinguished from those celebrated by civil officers, and the proportions of the total number of marriages which were celebrated by each category of celebrant are also shown.

MARRIAGES REGISTERED (a)

Year	Marriages celebrated by—		All marriages	Proportion celebrated by—	
	Ministers of religion	Civil officers		Ministers of religion	Civil officers
1964	5,151	872	6,023	per cent 85.52	per cent 14.48
1965	5,506	942	6,448	85.39	14.61
1966	5,996	1,006	7,002	85.63	14.37
1967	6,289	1,141	7,430	84.64	15.36
1968	6,810	1,276	8,086	84.22	15.78
1969	7,463	1,530	8,993	82.99	17.01
1970	7,473	1,754	9,227	80.99	19.01
1971	7,478	1,904	9,382	79.71	20.29
1972	7,230	1,890	9,120	79.28	20.72
1973	7,075	2,027	9,102	77.73	22.27

(a) See NOTE on page 163.

Age at Marriage. The relative ages of bridegrooms and brides who married in Western Australia in 1973 are shown in the following table.

RELATIVE AGES OF BRIDEGROOMS AND BRIDES, 1973

Age of bridegroom (years)	Total bridegrooms	Age of bride (years)							
		Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 and over
Under 20	659		559	94	5	1			
20-24	4,850		2,216	2,434	177	18	5		
25-29	2,056		365	1,093	477	88	28		
30-34	582		30	211	210	93	28	3	2
35-39	274		3	59	71	69	41	22	9
40-44	179		2	3	38	42	38	30	26
45-49	152		1	7	12	20	30	26	56
50-54	83			1	4	6	8	12	52
55-59	89			1	5	1	5	11	66
60-64	66						3	4	59
65 and over	112			1		1	1		109
Total brides	9,102		3,176	3,904	999	339	187	115	382

The following table gives details of the average age and of the marital status of bridegrooms and brides in each of the five years to 1973.

AVERAGE AGES OF BRIDEGROOMS AND BRIDES

Year	Average age of bridegrooms (years)				Average age of brides (years)			
	Bachelors	Widowers	Divorced	Total	Spinsters	Widows	Divorced	Total
1969	24.58	54.94	40.30	26.36	21.71	47.82	37.13	23.51
1970	24.31	56.88	40.42	26.25	21.65	49.79	36.88	23.48
1971	24.44	54.40	39.36	26.27	21.61	50.41	36.66	23.47
1972	24.31	54.26	39.91	26.38	21.59	48.99	35.61	23.53
1973	24.34	58.51	38.26	26.61	21.56	50.95	35.15	23.69

The following table shows the age and the marital status at time of marriage of bridegrooms and brides who married in Western Australia during 1973.

AGE AND MARITAL STATUS OF BRIDEGROOMS AND BRIDES, 1973

Age at marriage (years)	Bridegrooms				Brides			
	Bachelors	Widowers	Divorced	Total	Spinsters	Widows	Divorced	Total
15 ....	....	....	....	....	7	....	....	7
16	1	....	....	1	208	....	....	208
17	11	....	....	11	499	....	....	499
18	231	....	....	231	1,077	....	....	1,077
19	416	....	....	416	1,383	1	1	1,385
20	805	....	....	805	1,314	....	2	1,316
21	1,183	....	1	1,184	1,010	....	8	1,018
22	1,132	1	4	1,137	678	2	13	693
23	915	2	12	929	493	4	29	526
24	777	....	18	795	325	1	25	351
25	622	....	26	648	265	3	50	318
26	492	1	37	530	210	4	36	250
27	329	1	44	374	129	4	45	178
28	266	....	35	301	96	4	48	148
29	152	2	49	203	62	3	40	105
30	132	1	42	175	45	7	34	86
31	86	....	30	116	37	4	36	77
32	64	3	33	100	20	5	30	55
33	66	3	38	107	29	7	34	70
34	48	....	36	84	17	7	27	51
35	35	....	30	65	18	5	28	51
36	36	1	31	68	17	3	21	41
37	18	1	21	40	13	2	25	40
38	28	1	25	54	6	7	18	31
39	21	3	23	47	6	2	16	24
40-44	55	24	100	179	32	19	64	115
45-49	34	21	97	152	13	45	62	120
50-54	16	26	41	83	7	31	39	77
55-59	12	40	37	89	5	40	22	67
60-64	4	42	20	66	3	47	12	62
65-69	7	40	12	59	2	31	3	36
70-74	2	18	4	24	1	12	1	14
75 and over	....	26	3	29	....	6	....	6
Total	7,996	257	849	9,102	8,027	306	769	9,102

Marriage Rates. The average annual marriage rates per thousand of mean population for Western Australia and for Australia in each five-year period from 1921 to 1970, as well as the rates for each of the years from 1964 to 1973, are shown in the following table.

MARRIAGE RATES (a)
WESTERN AUSTRALIA AND AUSTRALIA

Period	Average annual rate (b)		Year	Annual rate (b)	
	Western Australia	Australia		Western Australia	Australia
1921-25	7.27	8.04	1964	7.55	7.73
1926-30	7.80	7.52	1965	7.91	8.25
1931-35	7.58	7.16			
1936-40	9.49	9.35	1966	8.25	8.28
1941-45	9.74	9.94	1967	8.44	8.47
			1968	8.83	8.85
1946-50	10.01	9.77			
1951-55	8.44	8.29	1969	9.41	9.16
1956-60	7.36	7.50	1970	9.28	9.26
1961-65	7.43	7.63	1971	9.09	9.20
			1972	8.63	8.78
1966-70	8.87	8.81	1973	8.49	8.56

(a) See NOTE on page 163. (b) Rates for years prior to 1971 are based on final census results; those for 1971 and later are subject to revision after the next census.

Religious and Civil Marriages. *The Marriage Act 1961-1973* (Commonwealth) provides that marriages may be celebrated either by ministers of religion registered for the purpose with the Registrar of Ministers of Religion in each State or Territory or by certain civil officers, usually District Registrars.

The following table, which relates to marriages registered in Western Australia during the period 1969 to 1973, shows the numbers and proportions celebrated by ministers of the principal religious denominations and by civil officers.

RELIGIOUS AND CIVIL MARRIAGES

Category of authorised celebrant	1969	1970	1971	1972	1973	
					Number	Per cent of total
Registered ministers of recognised religious denominations (a)—						
Church of England in Australia	2,754	2,778	2,700	2,589	2,435	26.75
Church of Jesus Christ of Latter Day Saints	14	15	21	17	16	0.18
Churches of Christ in Australia	162	175	202	163	171	1.88
Congregational Union of Australia	109	123	114	98	115	1.26
Jehovah's Witnesses	36	30	39	43	53	0.58
Jewry	14	8	16	19	16	0.18
Lutheran Church (b)	46	47	39	47	42	0.46
Orthodox Church (b)	82	75	93	83	105	1.15
Roman Catholic Church	2,436	2,490	2,515	2,395	2,268	24.92
Seventh-day Adventist Church	45	28	41	49	33	0.36
The Baptist Union of Australia	110	133	118	127	138	1.52
The Methodist Church of Australasia	975	962	932	962	973	10.69
The Presbyterian Church of Australia	523	475	478	452	490	5.38
The Salvation Army	48	33	37	47	58	0.64
Other	72	63	78	109	128	1.41
Total	7,426	7,435	7,423	7,200	7,041	77.36
Other authorised celebrants —						
Ministers of religion	37	38	55	30	34	0.37
Civil officers	1,530	1,754	1,904	1,890	2,027	22.27
Total marriages	8,993	9,227	9,382	9,120	9,102	100.00
Proportion of total (per cent)—						
Ministers of religion	83.0	81.0	79.7	....	....	77.73
Civil officers	17.0	19.0	20.3	....	....	22.27

(a) Under authority of the Marriage Act made under the Marriage Act.

(b) Includes denominations grouped under this heading in the proclamation

DIVORCE

The Matrimonial Causes Act 1959-1973 (Commonwealth) establishes uniform grounds throughout Australia for the termination of marriage. Grounds for dissolution of marriage (i.e. divorce) include adultery, desertion for not less than two years, separation for not less than five years, cruelty, drunkenness, and failure to comply with maintenance orders. Grounds for nullity of marriage include bigamy and incapacity to consummate the marriage.

Decrees may be granted by a Court for dissolution of marriage, nullity of marriage, judicial separation, and restitution of conjugal rights. Orders may also be made for the custody and welfare of children, maintenance, the settlement of property, and damages for adultery.

A decree for dissolution of marriage and nullity of voidable marriage is in the first instance a decree *nisi*. The decree automatically becomes absolute at the expiration of three months, unless it is in the meantime rescinded; appeal proceedings are instituted; or there are children of the marriage under the age of sixteen years, in which case the court must be satisfied that appropriate arrangements have been made for their welfare before the decree will become absolute. The parties cannot remarry until a decree *nisi* has become absolute. A decree of judicial separation is available on most of the grounds available for divorce.

Statistics of decrees granted, as shown in the second table on the next page, refer to decrees *nisi* made absolute, except for the following cases where no decrees *nisi* are granted: (i) decrees of nullity of void marriage, as distinct from nullity of voidable marriage. (A void marriage is invalid because of failure to meet a legal requirement, and the original

decree of nullity is final. A valid marriage is voidable on proof of one or more of the grounds set out in the Matrimonial Causes Act); and (ii) decrees of judicial separation, which do not dissolve the marriage and may be discharged on resumption of cohabitation.

PETITIONS FILED

Year	Petitions for—				Total petitions	Petitioner	
	Dissolution of marriage	Nullity of marriage	Judicial separation	Restitution of conjugal rights		Husband	Wife
1969	1,059	5	1	6	1,071	503	568
1970	1,204	2	....	1	1,207	578	629
1971	1,451	3	....	5	1,459	678	781
1972	1,628	5	1	2	1,636	752	884
1973	1,875	2	3	9	1,889	827	1,062

The following table shows the number of decrees granted during the period 1969 to 1973, together with the grounds for the decrees.

DECREES GRANTED

Ground	1969	1970	1971	1972	1973		
					To husband	To wife	Total

DISSOLUTION OF MARRIAGE

Single grounds—							
Adultery	332	370	468	579	335	339	674
Desertion	305	305	332	389	211	265	476
Separation	183	169	191	190	70	110	180
Cruelty	16	16	23	22	....	35	35
Drunkenness	7	8	10	11	1	16	17
Intoxication by drugs	....	....	1	....	....	....	....
Failure to pay maintenance	7	1	1	2	....	2	2
Non-compliance with restitution decree	2	....	....	....	....	1	1
Refusal to consummate	1	1	....	8	2	2	4
Insanity	....	2	....	....	....	....	....
Frequent convictions	....	3	1	2	....	....	....
Imprisonment	1	....	1	1	....	....	....
Other single grounds	....	....	1	1	....	1	1
Dual grounds—							
Adultery and—							
Separation	....	1	....	....	....	....	....
Cruelty	....	....	....	3	....	1	1
Other	....	....	....	1	....	....	....
Desertion and—							
Adultery	8	6	14	13	5	7	12
Separation	4	3	10	9	5	2	7
Cruelty	....	....	....	5	....	....	....
Drunkenness	....	....	1	....	....	....	....
Failure to pay maintenance	2	....	1	....	....	....	....
Other	....	....	....	1	....	....	....
Cruelty and—							
Drunkenness	3	3	8	6	....	12	12
Frequent convictions	....	....	1	....	....	....	....
Other	....	....	....	....	1	....	1
Three grounds or more	1	1	....	....	....	1	1
Total	872	889	1,064	1,243	630	794	1,424

NULLITY OF MARRIAGE

Bigamy	....	....	2	....	....	....	....
Incapacity to consummate	....	....	....	1	1	2	3
Pregnancy	1	1	1
Unsound mind	1
Total	1	1	2	1	2	2	4

JUDICIAL SEPARATION

Separation	2
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In the following table particulars are given of the duration of marriage, *i.e.* the interval between marriage and the time of dissolution, for marriages dissolved during the five years 1969 to 1973.

DISSOLUTIONS OF MARRIAGE—DURATION OF MARRIAGE

Year of dissolution of marriage	Marriages dissolved after a duration of—								Total marriages dissolved
	Under 5 years	5–9 years	10–14 years	15–19 years	20–24 years	25–29 years	30–34 years	35 years and over	
1969	92	223	180	129	128	71	32	17	872
1970	106	247	167	116	120	81	32	20	889
1971	120	304	199	153	161	74	30	23	1,064
1972	130	376	234	181	161	103	38	20	1,243
1973	165	430	285	200	151	105	62	26	1,424

The following table shows, for the year 1973, the number of marriages dissolved classified according to duration of marriage and the number of children of the marriage.

DISSOLUTIONS OF MARRIAGE—DURATION OF MARRIAGE AND NUMBER OF CHILDREN OF THE MARRIAGE (a), 1973

Duration of marriage (years)	Marriages dissolved with—							Total marriages dissolved	Total number of children
	No children	1 child	2 children	3 children	4 children	5 children	6 or more children		
0–4	106	47	9	....	2	1	....	165	78
5–9	142	128	130	24	5	....	1	430	486
10–14	34	46	116	67	17	3	2	285	576
15–19	15	10	61	77	26	6	5	200	531
20–24	19	19	42	41	20	6	4	151	367
25–29	38	29	18	9	5	6	....	105	142
30–34	43	13	3	2	1	....	....	62	29
35 and over	23	3	....	....	....	....	....	26	3
Decree to—									
Husband	210	135	172	79	22	7	5	630	872
Wife	210	160	207	141	54	15	7	794	1,340
Total	420	295	379	220	76	22	12	1,424	2,212

(a) Number of children living and under 21 years of age at time of petition. Includes children deemed to be children of the marriage in accordance with Section 6 of the Matrimonial Causes Act.

The following table shows, for the year 1973, the ages of husband and wife at the time of dissolution of the marriage.

DISSOLUTIONS OF MARRIAGE—RELATIVE AGES OF PARTIES AT TIME OF DISSOLUTION, 1973

Age group of husband (years)	Age group of wife (years)										Total husbands
	Under 20	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60 and over	
Under 20
20–24	4	47	5	....	....	....	....	....	....	....	56
25–29	108	180	10	....	....	....	....	....	....	298
30–34	17	149	105	10	1	1	....	....	....	283
35–39	23	105	82	8	2	....	....	....	220
40–44	5	20	85	65	13	....	....	....	190
45–49	1	2	5	15	61	54	2	....	....	153
50–54	2	7	17	35	30	4	1	95
55–59	2	5	10	29	15	6	67
60 and over	1	2	2	4	16	14	23	62
Total wives	4	173	364	248	203	159	119	87	37	30	1,424

CHAPTER V—SOCIAL CONDITIONS

Part 1—Education

PRIMARY, SECONDARY AND TECHNICAL EDUCATION

In Western Australia, education at primary and secondary levels is provided at government schools administered and staffed by the Education Department and at non-government schools, most of which are conducted by the principal religious bodies. Reference to the Technical Education Division of the Education Department will be found on pages 190-2.

Primary and Secondary School Enrolments

The following tables give a classification according to age of pupils enrolled at government and non-government schools on 1 August in the years shown.

GOVERNMENT AND NON-GOVERNMENT SCHOOLS
PUPILS CLASSIFIED ACCORDING TO AGE

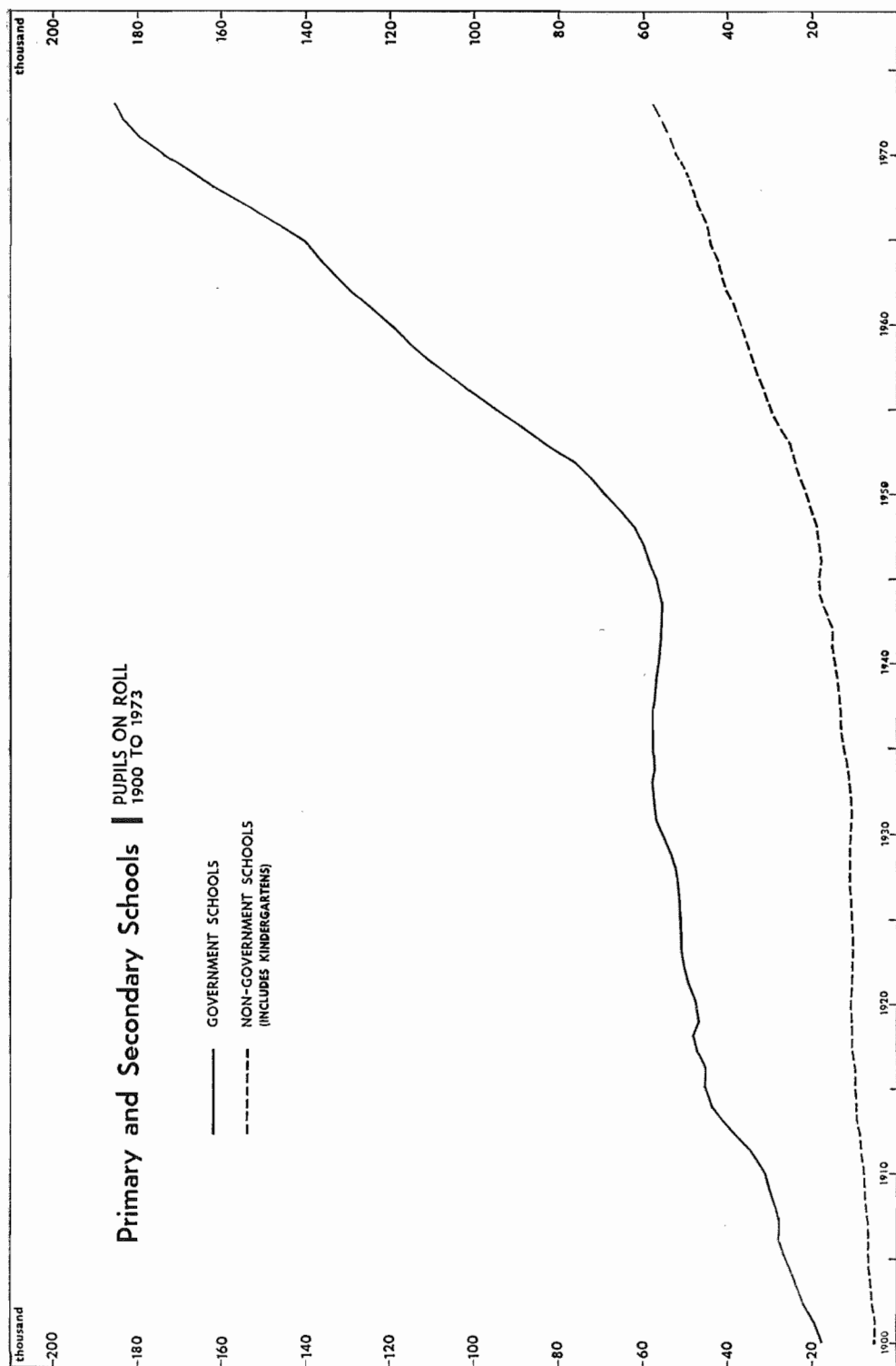
Age last birthday (a) (years)	Government schools (b)					Non-government schools (c)				
	1969	1970	1971	1972	1973	1969	1970	1971	1972	1973
Under 6	6,584	6,675	6,951	6,998	7,071	1,304	1,379	1,371	1,376	1,364
6	16,965	16,765	16,703	16,815	17,245	3,617	3,414	3,276	3,306	3,292
7	16,818	17,470	17,348	17,103	17,059	3,460	3,724	3,517	3,384	3,390
8	17,165	17,474	18,179	17,764	17,262	3,399	3,465	3,587	3,391	3,301
9	16,810	17,826	17,983	18,424	17,709	3,449	3,461	3,509	3,553	3,365
10	16,648	17,284	18,151	18,237	18,706	3,379	3,438	3,474	3,517	3,461
11	16,308	16,785	17,759	18,171	18,101	3,388	3,484	3,528	3,546	3,641
12	15,646	16,394	16,931	17,524	17,846	3,725	3,845	3,994	3,852	4,068
13	15,231	15,434	16,171	16,512	17,058	4,185	4,160	4,144	4,384	4,297
14	14,399	15,048	15,245	15,807	16,023	4,002	4,080	4,043	4,130	4,270
15	9,327	10,179	10,921	11,478	11,694	3,303	3,471	3,515	3,420	3,648
16	4,198	4,446	5,027	5,731	6,186	2,177	2,175	2,327	2,492	2,571
17	1,901	2,069	2,326	2,718	2,987	1,239	1,287	1,233	1,396	1,428
18 and over	195	175	194	257	273	181	175	163	163	107
Total	168,195	174,024	179,889	183,539	185,220	40,808	41,558	41,681	41,910	42,203

(a) At 1 August. Children may commence school at the beginning of the year in which they attain the age of 6 years. Except in special circumstances, attendance is compulsory from the age of 6 years and upward to the end of the year in which the child attains the age of 15 years. (b) Includes Special Schools and Classes; see letterpress on page 189. Excludes Technical Schools and Colleges; see table on page 191. (c) Excludes all part-time students enrolled in the Western Australian Correspondence School. (c) Excludes children attending kindergarten schools or pre-school education centres and children in kindergarten (pre-school grades at other schools; see pages 192-3.

GOVERNMENT AND NON-GOVERNMENT SCHOOLS
PUPILS CLASSIFIED ACCORDING TO AGE AND SEX: AUGUST 1973

Age last birthday (a) (years)	Government schools (b)			Non-government schools (c)			All schools (b) (c)		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Under 6	3,692	3,379	7,071	615	749	1,364	4,307	4,128	8,435
6	8,940	8,305	17,245	1,577	1,715	3,292	10,517	10,020	20,537
7	8,841	8,218	17,059	1,649	1,741	3,390	10,490	9,959	20,449
8	8,985	8,277	17,262	1,587	1,714	3,301	10,572	9,991	20,563
9	9,250	8,459	17,709	1,564	1,801	3,365	10,814	10,260	21,074
10	9,788	8,918	18,706	1,579	1,882	3,461	11,367	10,800	22,167
11	9,528	8,573	18,101	1,667	1,974	3,641	11,195	10,547	21,742
12	9,366	8,480	17,846	1,916	2,152	4,068	11,282	10,632	21,914
13	8,880	8,178	17,058	2,042	2,255	4,297	10,922	10,433	21,355
14	8,364	7,659	16,023	2,026	2,244	4,270	10,390	9,903	20,293
15	6,109	5,585	11,694	1,693	1,955	3,648	7,802	7,540	15,342
16	3,309	2,877	6,186	1,304	1,267	2,571	4,613	4,144	8,757
17	1,706	1,281	2,987	738	690	1,428	2,444	1,971	4,415
18 and over	211	62	273	75	32	107	286	94	380
Total	96,969	88,251	185,220	20,032	22,171	42,203	117,001	110,422	227,423

For footnotes, see previous table.



School censuses are conducted annually at or about the beginning of August in all States and the internal Territories of Australia. The Western Australian Correspondence School (see letterpress on page 189), special schools and classes (see letterpress on page 189), schools in institutional homes, hospitals and similar establishments, and pre-school education centres are included in the census. Institutions such as business colleges and coaching establishments are excluded.

In the following table pupils enrolled in primary grades at 1 August 1973 are classified according to grade and age. The figures exclude particulars of children attending pre-school education centres and children in pre-school grades at other schools. Reference to pre-school education centres will be found on pages 192-3.

PRIMARY PUPILS—AGE AND GRADE AT 1 AUGUST 1973

Age last birthday (years)	Grade							Ungraded pupils—		Total
	1	2	3	4	5	6	7	In special classes (a)	In special schools(a)	
GOVERNMENT SCHOOLS (b)										
Under 6	7,004	11	....	....	....	....	....	3	53	7,071
6	10,756	6,355	13	....	....	....	....	21	100	17,245
7	651	10,337	5,860	34	....	....	....	68	109	17,059
8	27	841	10,429	5,670	39	....	....	141	115	17,262
9	5	50	942	10,708	5,706	24	....	161	113	17,709
10	1	3	40	1,139	11,271	5,861	24	267	100	18,706
11 ....	....	....	3	66	1,144	10,967	5,548	242	120	18,090
12	1	....	1	7	82	1,159	10,985	191	148	12,574
13 ....	....	1	....	1	14	72	1,121	52	125	1,386
14 ....	....	....	....	1	2	5	39	4	133	184
15 ....	....	....	....	....	....	1	9	1	114	125
16 ....	....	....	....	....	1	....	....	....	78	79
17 ....	....	....	....	....	....	....	....	....	74	74
18 and over ....	....	....	....	....	....	....	....	....	33	33
Total	18,445	17,598	17,288	17,627	18,258	18,089	17,726	1,151	1,415	127,597

NON-GOVERNMENT SCHOOLS (c)

Under 6	1,361	3	...	...	...	...	...	...	...	1,364
6	2,095	1,195	2	...	...	...	...	...	...	3,292
7	127	2,056	1,181	26	...	...	...	...	...	3,390
8	10	178	1,946	1,163	4	...	...	...	...	3,301
9	2	12	2,080	1,039	10	...	...	...	...	3,365
10	...	7	14	276	2,095	1,065	...	...	...	3,461
11	...	1	2	20	288	2,173	1,139	...	...	3,623
12	...	...	3	13	35	302	2,226	...	...	2,579
13	...	...	2	3	4	29	265	...	...	303
14	1	...	...	...	1	12	30	...	...	44
15	...	...	...	...	...	2	1	...	...	3
16	...	...	...	...	...	...	1	...	...	1
17	...	...	...	...	...	...	...	...	...	...
18 and over	...	...	...	...	...	...	...	...	...	...
Total	3,596	3,452	3,372	3,581	3,466	3,593	3,666	...	...	24,726

ALL SCHOOLS (b) (c)

Under 6	8,365	14	...	...	...	...	...	3	53	8,435
6	12,851	7,550	15	...	...	...	...	21	100	20,537
7	778	12,393	7,041	60	...	...	...	68	109	20,449
8	37	1,019	12,375	6,833	43	...	...	141	115	20,563
9	...	62	1,164	12,788	6,745	34	...	161	113	21,074
10	1	10	54	1,415	13,366	6,926	28	267	100	22,167
11	...	1	5	86	1,432	13,140	6,687	242	120	21,713
12	1	...	4	20	117	1,461	13,211	191	148	15,153
13	...	1	2	4	18	101	1,386	52	125	1,689
14	1	...	...	1	3	17	69	4	133	228
15	...	...	...	...	...	3	10	1	114	128
16	...	...	...	1	...	...	1	...	78	80
17	...	...	...	...	...	...	...	...	74	74
18 and over	...	...	...	...	...	...	...	...	33	33
Total	22,041	21,050	20,660	21,208	21,724	21,682	21,392	1,151	1,415	152,323

(a) See letterpress *Special Schools and Classes* on page 189. (b) Excludes part-time students enrolled in the Western Australian Correspondence School. (c) Excludes 15,109 children attending pre-school education centres and 375 children in pre-school grades at other schools.

The following table gives a classification of school pupils at secondary level at 1 August 1973 according to year of study and age of pupil.

SECONDARY PUPILS—AGE AND YEAR OF STUDY AT 1 AUGUST 1973

Age last birthday (years)	Year of study					Ungraded pupils in special classes (a)	Total
	1	2	3	4	5		
GOVERNMENT SCHOOLS (b)							
11	11						11
12	5,225	11				36	5,272
13	10,216	5,249	25			182	15,672
14	1,199	9,722	4,728	11		179	15,839
15	57	898	8,271	2,277	3	63	11,569
16	9	111	668	3,978	1,334	7	6,107
17		16	75	339	2,482	1	2,913
18 and over			11	13	216		240
Total	16,717	16,007	13,778	6,618	4,035	468	57,623
NON-GOVERNMENT SCHOOLS							
11	18						18
12	1,476	11	2				1,489
13	2,653	1,309	31	1			3,994
14	297	2,617	1,308	4			4,226
15	40	241	2,376	961	27		3,645
16	1	27	191	1,654	697		2,570
17		1	7	154	1,266		1,428
18 and over				11	96		107
Total	4,485	4,206	3,915	2,785	2,086		17,477
ALL SCHOOLS (b)							
11	29						29
12	6,701	22	2			36	6,761
13	12,869	6,558	56	1		182	19,666
14	1,496	12,339	6,036	15		179	20,065
15	97	1,139	10,647	3,238	30	63	15,214
16	10	138	859	5,632	2,031	7	8,677
17		17	82	493	3,748	1	4,341
18 and over			11	24	312		347
Total	21,202	20,213	17,693	9,403	6,121	468	75,100

(a) See letterpress *Special Schools and Classes* on page 189.
enrolled in the Western Australian Correspondence School.

(b) Excludes part-time students

THE EDUCATION DEPARTMENT

The Education Department is responsible for the organisation and management of the State Government's education programme and is controlled by a Director-General of Education responsible to the Minister for Education. The administrative structure of the Department provides for four Divisions. The Divisions, each of which is in the charge of a Director, are those of Primary Education, Secondary Education, Technical Education, and Special Services. Special Branches attached to particular Divisions are concerned with such activities as physical education (including swimming instruction), music, drama, art and crafts, visual education and publications. In addition there is provision for a number of other services which are concerned with particular aspects of the education and welfare of school children, such as the Nature Advisory Service, and the School Medical and Dental Services conducted in collaboration with the Department of Public Health.

Primary and Secondary Schools

Instruction in the primary school is given in seven grades. A child who makes normal progress completes the course at the age of twelve years and may then enter high school. A Senior High School provides tuition in five years of study leading to the Tertiary Admissions Examination, which is the final examination in Western Australian secondary schools

and is normally taken at the age of seventeen years. A High School gives instruction in the first three years of the secondary school curriculum. A District High School is one which provides primary schooling and three years of post-primary schooling. At some centres where there is no high school, post-primary subjects are taught at the primary school.

The Education Act provides for a Board of Secondary Education for the purposes of approving courses of study and the certification of student achievement in secondary education in Western Australia.

The Achievement Certificate describes the achievement of a student in the first three years of secondary schooling and is issued at the end of the third year, or earlier if the student leaves school before completing the third year. Each full year's achievements are recorded.

The Board of Secondary Education Leaving Certificate is issued to students at the end of the fifth year. Certification is based on the results of the Tertiary Admissions Examination.

The following table shows the number of schools staffed and controlled by the Education Department, the number of teachers employed, and the number of pupils classified according to grade of education, for each of the years 1969 to 1973.

The figures shown under the heading 'On special duties' represent teachers engaged in activities associated with the Division of Special Services and the Special Branches of the Department.

GOVERNMENT SCHOOLS

Particulars	At 1 August—				
	1969	1970	1971	1972	1973

NUMBER OF SCHOOLS

Primary schools	484	493	497	501	504
District high schools	40	45	46	49	50
High schools	20	15	17	14	12
Senior high schools	29	36	38	42	47
Total	573	589	598	606	613

NUMBER OF TEACHERS (a)

Engaged in teaching duties	6,306	6,688	7,080	7,520	8,017
On special duties	121	131	139	157	175
On leave	70	99	73	90	87
Total	6,497	6,918	7,292	7,767	8,279
Males	3,164	3,278	3,457	3,775	3,969
Females	3,333	3,640	3,835	3,992	4,310
Total	6,497	6,918	7,292	7,767	8,279

NUMBER OF PUPILS (b)

Grade of education—					
Primary	120,032	123,255	126,675	127,698	127,597
Secondary—					
Years 1, 2 and 3	41,209	43,424	44,886	46,092	46,502
Years 4 and 5	6,472	6,972	7,930	9,359	10,653
Ungraded pupils in special classes.....	482	373	398	390	468
Total	168,195	174,024	179,889	183,539	185,220
Males	88,487	91,698	94,644	96,496	96,969
Females	79,708	82,326	85,245	87,043	88,251
Total	168,195	174,024	179,889	183,539	185,220

(a) Excluding persons teaching part-time.
Australian Correspondence School.

(b) Excludes part-time students enrolled in the Western

Primary and Secondary Curriculum

In primary schools the subjects taught are English, mathematics, social studies, elementary science, physical education, handicrafts, music and art. The teaching of elementary science aims at a better understanding of the child's physical environment. The course is adapted to the conditions of the particular neighbourhood, and so varies between town and country areas. In musical expression, choral singing receives most attention, although school orchestras are being developed in some primary and high schools. Advisory teachers, under the direction of specialist superintendents, assist teachers in the fields of handicrafts, physical education, art, music, speech, drama and elementary science.

At the post-primary level, every student is required to take instruction in English, mathematics, science, and social studies, as well as one or more subjects chosen from a range of optional subjects.

Education in the government schools is secular in character but periods are set aside during which representatives of various religious denominations attend to give religious instruction. In addition, instruction in scripture stories is given by class teachers.

Radio, Television and Film Aids

Extensive use is made of radio and films, most schools having radio receivers and many being equipped also with film projectors and sound-reproduction systems. The use of television is increasing, particularly in secondary schools, as an aid in the teaching of mathematics, science, literature, social studies and languages. The Australian Broadcasting Commission co-operates with the Education Department in providing suitable radio and television programmes and Parents and Citizens' Associations assist in supplying the necessary equipment. The Audio-Visual Education Branch of the Department provides a wide variety of audio-visual aids.

Student Counselling and Vocational Guidance

Guidance officers of the Division of Special Services are available to discuss with parents the most suitable courses of study for their children and vocational guidance is given to pupils leaving high school. In addition, cases of handicapped or educationally retarded children are investigated and appropriate courses of education recommended.

Special Schools and Classes

The Division of Special Services provides a variety of assistance for physically and mentally handicapped children. A Kindergarten and Infant School for Deaf Children is maintained, as well as a Deaf School for older pupils. Special classes are organised for the blind and for the mentally handicapped, and instruction is given to patients at the Princess Margaret Hospital for Children and at other hospitals. The Department co-operates with welfare organisations, such as the Spastic Welfare Association and the Slow Learning Children's Group, by making teachers available to them.

Correspondence Tuition

The Western Australian Correspondence School provides tuition by correspondence for children living in remote areas or unable to attend school for other reasons. The service extends also to post-primary students in the smaller country schools, to sick and invalid children, and to some adults in country areas. Adults enrol mainly in order to meet the training requirements for some occupations, or to improve their general education. At 1 August 1973, full-time students enrolled in the Correspondence School comprised 422 primary and ninety-seven secondary students.

Schools of the Air are conducted through the radio network of the Royal Flying Doctor Service from bases at Carnarvon, Derby, Kalgoorlie, Meekatharra and Port Hedland to supplement tuition provided by the Correspondence School.

Education of Aborigines

Aboriginal and part-Aboriginal children are admitted to ordinary schools and are educated under the same conditions as other children. For schools with a preponderance of Aborigines, special attention is directed to the framing of courses of study suited to the vocational needs of the older Aboriginal pupils. In August 1973 there were 6,782 Aboriginal and part-Aboriginal children at government primary schools and high schools and 1,333 at non-government schools.

Instruction for adult Aborigines is available under the Adult Aboriginal Education programme conducted by the Technical Education Division (see page 192).

Agricultural Education

Agricultural education is provided at certain high schools. Residential accommodation is available at the Narrogin Agricultural Senior High School, the Harvey Agricultural High School and the Agricultural District High Schools at Cunderdin and Denmark. Day instruction is provided by high schools at Esperance, Kojonup, Manjimup, Margaret River and Mount Barker. Preference is given to the sons of farmers but other suitably qualified boys, with the physical capacity for farm work, are admitted. The curriculum is designed as a continuation of general education to standards equivalent to those of other types of schools but with appropriate vocational emphasis. The aim is to produce young men capable of becoming leaders in rural communities as well as being successful farmers with an appreciation of the value of scientific methods in agriculture. Each school providing agricultural instruction has agricultural land attached to it.

Diploma and certificate courses in various aspects of agriculture are provided by the Technical Education Division by means of class tuition, or by correspondence through the Technical Extension Service.

In addition to the activities of the Education Department in the field of agricultural education, facilities are also provided by Muresk Agricultural College, a department of The Western Australian Institute of Technology (see letterpress on pages 194-8).

Technical Education

The Technical Education Division of the Education Department offers technician-level courses, apprenticeship and pre-apprenticeship training, general studies programmes (including courses for students preparing for public and other external examinations), and adult education (including classes designed as leisure-type studies).

The Technical Education Division provides instruction in ten 'areas of study', namely Agriculture; Apprenticeships and Post-apprenticeship Courses; Art; Building and Architecture; Engineering (including Aeronautical); General Studies; Health and Psychology; Home Economics; Management, Business and Commercial Studies; and Mathematics and Science.

Institutions under the control of the Technical Education Division at 31 December 1973 comprised five technical colleges (Fremantle, Leederville, Mount Lawley, Perth, and the Technical Extension Service), eight technical schools (Albany, Balga, Bunbury, Carlisle, Claremont, Eastern Goldfields, Midland and Wembley), eight technical centres with full-time officers in charge, and seventy-four technical centres with part-time officers in charge. The Division has a Counselling Service which is available to advise students in selecting a course, to assist them in their studies, and to provide consultant services to industry and commerce on staff selection and training.

Technician-level studies are usually designed as diploma or certificate courses, for which the minimum entry requirement is the satisfactory completion of three years of secondary education or its accepted equivalent. Although these courses were originally on the basis of part-time study, some of them are now also available by full-time study, and other part-time courses at these levels are being progressively redesigned on a full-time, or partially full-time, basis. This means that an increasing number of subjects in these courses are becoming available to part-time students who can obtain day release

from their employers to attend classes. Diploma and certificate courses are conducted, wholly or partly, at technical colleges and schools, and subjects in the early stages of a number of courses are also available at some technical education centres.

Details of teaching positions and student enrolments in the five years 1969 to 1973 are given in the next table.

TECHNICAL EDUCATION

Particulars	1969	1970	1971	1972	1973
COLLEGES (a)					
Number of—					
Colleges (b)	5	5	5	5	5
Teaching positions (c)—					
Full-time	383	419	441	440	461
Part-time	620	744	755	853	743
Student enrolments (d)	31,991	34,854	29,757	30,608	33,320
SCHOOLS					
Number of—					
Schools (b)	6	6	6	6	8
Teaching positions (c)—					
Full-time	168	191	201	188	234
Part-time	289	277	327	389	427
Student enrolments (d)	11,747	11,540	12,888	12,893	19,897
CENTRES					
Number of—					
Centres (b)	81	71	75	86	82
Teaching positions (c)—					
Full-time	20	32	21	24	17
Part-time	849	851	883	953	932
Student enrolments (d)	21,613	20,618	21,443	24,162	26,411
OTHER SERVICES (e)					
Number of—					
Services (b)	3	3	3	3	3
Teaching positions (c)—					
Full-time	27	30	30	30	39
Part-time	96	244	244	162	204
Student enrolments (d)	3,487	3,243	5,417	6,563	3,451
TOTAL					
Number of—					
Colleges, schools, centres, and other services (b)	95	85	89	100	98
Teaching positions (c)—					
Full-time	598	672	693	682	751
Part-time	1,854	2,116	2,209	2,357	2,306
Total	2,452	2,788	2,902	3,039	3,057
Student enrolments (d)—					
Males	40,197	(f) 42,603	(f) 40,476	42,115	46,445
Females	28,641	(f) 27,652	(f) 29,029	32,111	36,634
Total	68,838	70,255	69,505	74,226	83,079

(a) Includes Technical Extension Service. (b) At 31 December. (c) At 1 July. A teacher may occupy teaching positions at more than one institution; the number of individual teachers is not available. (d) A student is counted once for each course undertaken during the year. (e) Adult Aboriginal Education Classes, Youth Education Classes, Counselling Service, and teachers in administrative positions. (f) Estimated. A few small centres were unable to provide separate figures for males and females.

Programmes of study are available for students wishing to undertake examinations organised by other examining bodies such as The Royal Society of Health and a number of Australian Government and State Government Departments.

Vocational courses, including apprenticeship training, may be taken at colleges and schools close to Perth, at the Albany, Bunbury and Eastern Goldfields Technical Schools and at the Geraldton Technical Education Centre. In addition, there are many courses and subjects which help students to develop useful and interesting leisure-time activities.

The Technical Education Division has a number of evening technical centres in the metropolitan area and in country towns. These centres, which are located in government school buildings, offer those subjects for which there is sufficient local demand and for which suitable facilities and staff are available. The subjects provided fall into the categories of general education, including Public Examination and pre-diploma subjects, accounting, business studies and commercial subjects, and leisure-type activities.

The Technical Extension Service, through its correspondence courses, caters for a wide range of instruction for students who are unable to attend formal classes because of remoteness or individual limitations such as physical disability. In larger country centres, correspondence instruction is supplemented by the provision of study groups which students may attend for one period a week to do their correspondence work in the local school under the supervision of a teacher who is able to assist in interpretation of material and in the presentation of answers. The technical aspects of this instruction are the responsibility of specialist tutors employed in the Service.

The Technical Education Division collaborates with two Australian Government authorities, the Department of Labor and Immigration and the Department of Education, in providing courses in the English language for adult migrants. The Division conducts an Adult Aboriginal Education programme which, although designed mainly to develop literacy, also conducts classes in community obligations, home skills, employment skills and leisure-time activities.

NON-GOVERNMENT SCHOOLS

The non-government schools, which are conducted mainly by religious organisations, provide education from pre-school level to the end of the secondary school course, equivalent to the final year in the government high schools. The curriculum at the primary and secondary levels is substantially the same as that in the government schools.

Pre-school Education

KINDERGARTEN SCHOOLS AND PRE-SCHOOL CENTRES (a)

Particulars	At 1 August—				
	1969	1970	1971	1972	1973
Number of centres (a) (b) with—					
Less than 21 children	34	39	45	44	55
21–35 children	42	46	47	57	47
36–100 children	133	144	159	174	202
101–200 children .....	....	....	2	3	3
Total	209	229	253	278	307
Number of staff—					
Trained teachers	177	217	219	277	315
Untrained assistants	188	242	258	326	376
Total	365	459	477	603	691
Number of children—					
Pre-school centres (a) (b)....	9,191	10,201	11,632	13,291	15,109
Pre-school grades in non-government schools	245	386	432	388	375
Total	9,436	10,587	12,064	13,679	15,484

(a) Figures for dates prior to 1 August 1973 refer to kindergarten schools; those for 1 August 1973 refer to pre-school centres.
 (b) Primary schools with pre-school (kindergarten) grades are excluded.

The *Pre-School Education Act, 1973-1974*, which came into operation on 1 July 1973, establishes the Western Australian Pre-School Education Board. The Act authorises the dissolution of the Kindergarten Association of Western Australia, Incorporated, and the transfer to the Board of its property, rights, obligations, and liabilities. The Act provides that every person conducting a pre-school education centre shall hold a permit issued by the Minister for Education, and that every authorised pre-school education centre shall be subject to inspection by an officer of the Education Department.

Schools, Teachers and Pupils

NON-GOVERNMENT SCHOOLS

Particulars	At 1 August—				
	1969	1970	1971	1972	1973
NUMBER OF SCHOOLS					
Primary and secondary—					
Church of England	9	8	9	10	10
Methodist	3	3	3	3	3
Presbyterian	2	2	2	2	2
Roman Catholic	168	168	169	165	163
Other denominations	10	10	10	10	10
Undenominational	4	5	7	7	9
Pre-school (a)	209	229	253	278	307
Total	405	425	453	475	504
NUMBER OF TEACHERS (b)					
Primary and secondary—					
Church of England	236	260	259	266	268
Methodist	107	107	117	107	122
Presbyterian	81	91	99	102	103
Roman Catholic	976	1,005	1,082	1,115	1,133
Other denominations	44	45	48	48	50
Undenominational	12	12	19	21	29
Pre-school (a)	365	459	477	603	691
Total	1,821	1,979	2,101	2,262	2,396
NUMBER OF PUPILS					
Primary and secondary—					
Church of England	4,103	4,138	4,123	4,220	4,277
Methodist	1,859	1,944	2,041	2,084	2,089
Presbyterian	1,455	1,503	1,579	1,586	1,603
Roman Catholic	33,088	33,700	33,520	33,504	33,520
Other denominations	953	967	1,062	1,125	1,180
Undenominational	8,786	9,893	11,420	13,070	15,018
Total	50,244	52,145	53,745	55,589	57,687
Grade of education—					
Pre-school (a)	9,436	10,587	12,064	13,679	15,484
Primary	24,929	25,312	25,228	25,009	24,726
Secondary—Years 1, 2 and 3	11,972	12,272	12,268	12,380	12,606
Years 4 and 5	3,907	3,974	4,185	4,521	4,871
Total	50,244	52,145	53,745	55,589	57,687
Males	24,373	25,215	26,111	27,109	27,873
Females	25,871	26,930	27,634	28,480	29,814
Total	50,244	52,145	53,745	55,589	57,687

(a) For additional information see previous table.
and persons teaching part-time.

(b) Excluding persons on leave without pay

TEACHER EDUCATION

The *Teacher Education Act, 1972-1974*, which came into operation on 12 January 1973, establishes the Western Australian Teacher Education Authority, with the responsibility of providing teacher education, formerly a function of the Education Department. The

Authority consists of a Council and constituent colleges. There are five such colleges, all of which are in the Perth metropolitan area. They are situated at Churchlands, Claremont, Graylands, Mount Lawley and Nedlands. The college at Nedlands is for the training of secondary school teachers.

Among the principal objects of the Authority are the co-ordination and improvement of teacher education, and the development of autonomy in each college both academically and in the control of its finances.

The basic course of teacher education is of three years' duration. The minimum requirement for entrance is a pass in English and three other subjects at Leaving Certificate level, or its equivalent. Selected students may take extended courses of from three to six years' duration in special fields of study to obtain University degrees and/or other qualifications. There is also a one-year course open to University graduates and to associates of The Western Australian Institute of Technology.

At 1 August 1974 the total student enrolment (including 90 students on leave without pay) was 4,920, comprising Churchlands 805, Claremont 717, Graylands 482, Mount Lawley 922, and Nedlands 1,994.

TEACHERS COLLEGES

Particulars	1969	1970	1971	1972	1973
Number of—					
Lecturers (a)	133	154	187	223	277
Students enrolled (a)—					
Departmental (b)—					
Primary course	1,137	1,285	1,468	1,835	2,116
Secondary course	1,050	1,205	1,313	1,489	1,677
On study leave	43	63	62	70	53
Private (b)	40	46	83	131	111
Total	2,270	2,599	2,926	3,525	3,957
Students graduating—					
Departmental (b)	668	715	774	938	1,012
Private (b)	22	13	24	54	9
Total	690	728	798	992	1,021

(a) At 1 August. (b) 'Departmental' students are those who have entered into an agreement to serve with the Education Department for a specified period after completion of the course; 'private' students are those who have not entered into such an agreement.

THE WESTERN AUSTRALIAN INSTITUTE OF TECHNOLOGY

The Western Australian Institute of Technology is a college of advanced education, established in terms of the *Western Australian Institute of Technology Act, 1966-1974* as an autonomous body under the control of a governing council. The main functions of the Institute, as set out in the Act, are to provide facilities for higher specialised instruction and to advance training in the various branches of technology and science; to aid the advancement, development and practical application to industry of science or any techniques; and to encourage and provide facilities for the development and improvement of tertiary education whether on a full or part-time basis to meet the needs of the community.

Buildings for the Institute were commenced in 1963 on a site of about 109 hectares at Bentley, approximately eleven kilometres from the Perth city centre, and the initial group of buildings was officially opened on 17 August 1966. The administration and associated buildings were officially opened on 11 October 1968.

The Institute conducts courses leading to a degree, an associateship or a diploma. The courses vary in duration, requiring either three years or four years of full-time study or the part-time equivalent. (In the case of Architecture the three-year full-time course is followed by two years' part-time study while in approved employment.) The normal entrance requirement is that a student shall have attained an aggregate of 270 or more on percentage marks obtained in English and four other subjects at Leaving Certificate level,

or shall have passed the qualifying examination (at Leaving standard) conducted by the Technical Education Division of the Education Department. In some courses a student over the age of twenty-three years without the normal entrance requirements may sit for an Institute Mature Age Examination to gain admission. Qualifications held by students entering from secondary schools in other States or countries, or from other institutions, are assessed prior to admission to courses.

In 1974, the teaching work of the Institute was organised under six Schools, each comprising one or more Departments. The fields of study within each School for both undergraduate and postgraduate courses are listed below.

SCHOOL OF APPLIED SCIENCE

Undergraduate: Agriculture, Applied Geology, Biology, Chemistry, Computing, Geophysics, Information Processing, Mathematics, Physics, Radiography (Diagnostic and Therapeutic)

Postgraduate: Chemistry, Physics (Master's degree)

SCHOOL OF HEALTH SCIENCES

Undergraduate: Chiropody, Dental Therapy, Environmental Health, Medical Technology, Nutrition and Food Science, Occupational Therapy, Pharmacy, Physiotherapy

Postgraduate: Dietetics, Manipulative Therapy, Pharmacy

SCHOOL OF ARCHITECTURE, ART AND ENGINEERING

Undergraduate: Architecture, Art, Art Teaching, Civil Engineering, Communications Engineering, Design, Electrical Engineering, Electronic Engineering, Fine Art, Industrial Arts, Mechanical Engineering, Metallurgy (Physical), Production Engineering, Quantity Surveying, Surveying, Town and Regional Planning

Postgraduate: Chemical Engineering, Surveying

SCHOOL OF BUSINESS AND ADMINISTRATION

Undergraduate: Accounting, Administration, Business, Commerce, Educational Administration, Management Studies, Secretarial and Administrative Practice, Valuation

Postgraduate: Accounting, Administration, Cost and Management Accounting, Data Processing, Government Accounting, Public Accounting

SCHOOL OF SOCIAL SCIENCES

Undergraduate: Asian Studies, English, Home Economics, Language Studies, Library Studies, Social Science, Social Work

Postgraduate: Counselling Psychology, Library Studies

SCHOOL OF TEACHER EDUCATION

Undergraduate: Kindergarten Teaching

The School of Mines of Western Australia (see below) is a Branch of the Institute.

The Institute has a Department of External Studies. Tuition is available in some of the courses leading to a degree, an associateship or a diploma.

The Institute offered degrees for the first time in 1973. These were available in Applied Chemistry, Applied Physics, Business (with options in Accounting, Management and Secretarial Administration), Pharmacy, Social Science and Surveying. By 1973 Graduate Diploma courses had been established in Accounting, Administration, Applied Physics, Chemical Engineering, Chemistry, Counselling Psychology, Library Studies, Pharmacy and Surveying.

In 1974 the degree programme was expanded to include courses in Applied Science (Mathematics, Biology and Social Work), Medical Technology, Physiotherapy, and Arts (Social Sciences) with further options in Applied Chemistry and Physics. In addition, Graduate Diplomas were established in Dietetics and Manipulative Therapy, and a Master's degree was offered in Physics.

On 1 January 1969 the Institute took over the administration and academic control of the Royal Perth Hospital School of Occupational Therapy, the School of Physiotherapy, the School of Mines of Western Australia and Muresk Agricultural College.

The Kindergarten Teachers College, formerly under the control and management of the Kindergarten Association of Western Australia, Incorporated, became incorporated with the Institute on 1 July 1973. It is the inaugural member of a School of Teacher Education to be built at the Institute.

The College of Nursing, Australia (Western Australian Branch) passed to the control of the Institute from 1 July 1974.

School of Mines of Western Australia

The School of Mines of Western Australia was established at Coolgardie in 1902 and was transferred to Kalgoorlie in the following year. Control of the School of Mines, formerly part of the Department of Mines, passed to The Western Australian Institute of Technology in January 1969. The number of students enrolled in 1974 was 201.

Undergraduate courses are available in Accounting, Business, Engineering (Civil, Electrical, Mechanical, Mining), Metallurgy (extractive), Mine Surveying, and Mining Geology. These courses extend over three or four years of full-time study or the part-time equivalent. A diploma course in Mining Technology extending over two years of full-time study, or the part-time equivalent, is also provided.

Through the Kalgoorlie Metallurgical Laboratory, the School undertakes metallurgical investigations as well as assays for gold or for other metals. Free assays and mineral determinations are made available for *bona fide* prospectors.

The School has a geological museum which is open to the public and contains rocks and minerals from many parts of Australia and elsewhere.

Muresk Agricultural College

Muresk Agricultural College, situated about thirteen kilometres south of Northam in the Avon valley, was established by the Department of Agriculture in 1926. Control of the College was transferred to The Western Australian Institute of Technology from the Department of Agriculture in January 1969.

The College course, which is at tertiary level, leads to a Diploma in Agriculture. It is of two years' duration and is fully residential. The course is designed to give a sound scientific, technical and managerial training suitable for those wishing to become farm owners or managers, or to work in industries servicing agriculture. The subjects studied are Plant Sciences and Husbandry, Animal Sciences and Husbandry, Agricultural Engineering, Farm Management, Soil Science, Humanities and Practical Farm Work. Instruction is given by means of lectures, assignments, laboratory and workshop practical work, demonstrations, tutorials, day tours to farms and research stations, extended tours into the agricultural areas, and practical farming on the College estate.

The estate of some 900 hectares is devoted to mixed farming and provides the students with an opportunity to gain a considerable amount of practical experience by observation, demonstration and actual participation in a wide variety of farming activities. Use is made of the College facilities for various research projects. High quality stock from the College's herds and flocks is available to Western Australian farmers.

From time to time short courses are held at the College. These include in-service training schools for personnel of the Department of Agriculture and for field and service staff of agricultural firms.

The number of students enrolled at the College in 1974 was 102.

Finance

The following table relates to income and expenditure of The Western Australian Institute of Technology in each year from 1969 to 1973.

THE WESTERN AUSTRALIAN INSTITUTE OF TECHNOLOGY—FINANCE
(\$'000)

Particulars	1969	1970	1971	1972	1973
INCOME					
Income for specific capital purposes (a)—					
Australian Government grants	1,765	1,192	2,045	1,013	2,488
State Government grants	1,765	1,192	2,045	1,654	1,459
Total	3,530	2,384	4,090	2,667	3,947
Income for other purposes—					
Australian Government grants	1,395	2,017	2,676	3,184	4,964
State Government grants	2,233	3,203	4,353	4,962	7,319
Donations and endowments	54	28	25	25	25
Student fees (b)	289	529	635	1,092	1,229
Other	59	94	594	480	897
Total	4,030	5,871	8,283	9,743	14,434
TOTAL INCOME	7,560	8,255	12,373	12,410	18,381
EXPENDITURE					
Salaries and wages	2,595	4,351	5,972	7,097	9,123
Library	48	78	123	137	204
Buildings, grounds and equipment	3,580	2,532	4,306	2,407	3,870
Minor equipment	94	211	247	446	563
Sundry auxiliary expenditure	1,203	1,003	1,482	2,232	3,376
TOTAL EXPENDITURE	7,520	8,175	12,130	12,319	17,136

(a) Income received specifically for new buildings, major alterations and additions to buildings, installation of services, purchase of land and buildings and major equipment. (b) Excludes fees collected on behalf of student organisations.

Teachers, Students, and Awards Conferred

The following table gives particulars of teaching staff in each of the years 1969 to 1973. The number of associateships, diplomas and degrees conferred is also shown.

THE WESTERN AUSTRALIAN INSTITUTE OF TECHNOLOGY

Particulars	1969	1970	1971	1972	1973
NUMBER OF TEACHING STAFF (a)					
Full-time—					
School and department heads	16	21	21	22	26
Senior lecturers	37	49	63	71	93
Lecturers	149	171	194	219	222
Assistant lecturers, tutors, demonstrators, etc.	101	114	158	187	207
Total, Full-time	303	355	436	499	548
Part-time (b)—					
Teaching staff	35	32	36	59	58
Supporting staff	4	7	7	2	7
STUDENT ENROLMENTS (c)					
Full-time	1,680	1,824	2,202	2,877	3,178
Part-time	2,565	3,112	3,498	3,591	4,271
Correspondence	334	463	608	750	967
Total	4,579	5,399	6,308	7,218	8,416
Males	3,776	4,476	5,113	5,612	6,397
Females	803	923	1,195	1,606	2,019
Total	4,579	5,399	6,308	7,218	8,416

THE WESTERN AUSTRALIAN INSTITUTE OF TECHNOLOGY—continued

Particulars	1969	1970	1971	1972	1973
ASSOCIATESHIPS, DIPLOMAS AND DEGREES CONFERRED					
School or department—					
Associateships and diplomas—					
Accounting	13	32	47	57	86
Agriculture	17	30	15	14	21
Architecture	21	16	44	41	36
Art and design	*18	23	42	43	66
Chemistry	14	23	30	15	18
Computing and data processing .....	....	....	....	....	8
Engineering—					
Civil	21	40	37	42	43
Electrical	16	24	19	36	43
Mechanical	16	17	29	18	27
English and language studies .....	....	....	*3	3	15
Home economics	18	22	26	22	15
Management	31	30	48	37	51
Mathematics	5	5	7	8	18
Medical technology	20	21	33	21	32
Mines	7	19	21	*20	24
Pharmacy	26	28	25	35	6
Physics	22	16	16	17	11
Psychology .....	....	14	14	16	23
Secretarial administration .....	....	....	2	1	3
Social science	29	24	48	29	24
Surveying	10	19	19	14	27
Therapy	31	30	25	39	33
Total awards	*335	433	*550	*528	630
Degrees (d)—					
Applied science (chemistry) .....	....	3	10	5	14
Applied science (pharmacy) .....	....	....	....	....	26
Applied science (physics) .....	....	....	3	7	14
Total .....	....	(d)	(d)	(d)	54
Males	265	343	425	401	512
Females	70	90	125	127	172
Total awards (e)	*335	433	*550	*528	684

(a) Figures for 1969 to 1972 are at 30 June; for 1973 at 30 April. (b) Expressed on the basis of full-time staff equivalents. (c) A student is counted once for each course undertaken during the year. Figures for 1969 at 30 September; for 1970, 1972 and 1973 at 30 April; and for 1971 at 23 December. (d) Degrees were first awarded in 1973. Those shown for earlier years have been conferred retrospectively and are also included as associateships in figures shown above. (e) Excludes awards granted initially as associateships and subsequently accorded degree status. * Revised.

THE UNIVERSITY OF WESTERN AUSTRALIA

University education first became available in Western Australia in 1898, with the formation of the Extension Committee of the University of Adelaide by which facilities were provided for external studies in courses for degrees in Arts and Science. The first step towards the establishment of a university in Western Australia was taken in 1904, when a University Endowment Act providing for the incorporation of a trust to administer funds for the purpose was passed by the State Parliament. Following a favourable report made by a Royal Commission under the chairmanship of Dr (later Sir Winthrop) J. W. Hackett, the University was established by the University of Western Australia Act of 1911. Teaching began in 1913 in subjects related to the Faculties of Arts, Science and Engineering. Additional Faculties established since that time are those of Law (1927), Agriculture (1936), Dental Science (1946), Education (1947), Economics (1954), Medicine (1956) and Architecture (1966). The Faculty of Economics was reconstituted as the Faculty of Economics and Commerce in 1961.

Matriculation Requirements

A candidate for matriculation is required to take subjects at the Tertiary Admissions Examinations (see page 209) selected in accordance with the Matriculation Regulations, and to obtain an aggregate of marks not less than a minimum determined by the University. The marks included in the aggregate of a full-time student must have been obtained in a single year, while those included in the aggregate of a part-time student must have been obtained during a period of not more than three consecutive years.

Matriculant status may be granted to an applicant who has satisfied the examination requirements of another university in Australia, New Zealand or the United Kingdom, or of any other university recognised by the University of Western Australia, qualifying him for matriculation.

The regulations also provide that a person over the age of twenty-one years who has not qualified for matriculation may be admitted provisionally to a degree course if he is able to demonstrate that, by reason of his education, aptitude or intelligence, there is a reasonable prospect of his being able to assimilate and benefit from the course. Some faculties use the Mature Age Examination (which, for admission in 1976, will probably consist of English or English Literature and one other subject in the Tertiary Admissions Examination), while other faculties accept other evidence.

Degrees

Degrees are granted in the Faculties of Agriculture, Architecture, Arts, Dental Science, Economics and Commerce, Education, Engineering, Law, Medicine and Science.

Courses for the pass degrees of Bachelor of Arts, Bachelor of Economics, Bachelor of Commerce, Bachelor of Physical Education and Bachelor of Science extend over a period of not less than three years; pass and honours courses for the degrees of Bachelor of Music, Bachelor of Education, Bachelor of Engineering, Bachelor of Science in Agriculture and Bachelor of Science Education, over not less than four years; and those for the degrees of Bachelor of Dental Science and Bachelor of Architecture, over not less than five years. The course for the degree of Bachelor of Jurisprudence extends over a period of not less than three years, following successful completion of the first year of a course in any other faculty, and that for the degree of Bachelor of Laws over a period of not less than one further year. Honours degree courses in Arts, Commerce, Economics, Education, Music and Science are usually of four years' duration. The course in the Faculty of Medicine for the degrees of Bachelor of Medicine and Bachelor of Surgery extends over six years. This course may be interrupted to permit selected students to take a one-year course for the honours degree of Bachelor of Medical Science. The course for the degree of Bachelor of Psychology occupies not less than one year after completion of three years of a course for the degree of Bachelor of Arts or Bachelor of Science. The course for the postgraduate degree of Bachelor of Social Work extends over a period of not less than two years after successful completion of a first degree course.

Other degrees conferred by the University are those of Master of Arts and Doctor of Letters, Master of Music and Doctor of Music, Master of Psychology, Master of Laws and Doctor of Laws, Master of Education, Master of Economics, Master of Commerce, Master of Science and Doctor of Science, Master of Science Education, Master of Engineering Science, Master of Engineering and Doctor of Engineering, Master of Science in Agriculture and Doctor of Science in Agriculture, Master of Dental Science and Doctor of Dental Science, Master of Surgery and Doctor of Medicine, Master of Architecture, Master of Building Science and Master of Social Work. The degree of Doctor of Philosophy is given for research in all faculties.

Diplomas

There are two postgraduate courses leading to a diploma. These are the Diploma in Education and the Diploma in Computation. The Diploma in Social Work (see table on page 202) is no longer awarded. The course for the Diploma in Numerical Analysis and Automatic Computing was reorganised in 1969 and the name of the award changed to Diploma in Computation.

University Government

The original Act provided that the Senate and Convocation should constitute the governing authority with power to make statutes for 'the management, good government and discipline of the University'.

The Senate consists of twenty-five members, of whom six are appointed by the Governor, six are elected by Convocation, four are elected by the full-time teaching staff, two are elected by students, three are *ex officio* members (the Vice-Chancellor of the University, the Director-General of Education and the President of the Guild of Undergraduates), and four are co-opted members. Convocation consists of graduates of the University and such other persons as are eligible for membership under the provisions of the University of Western Australia Act.

Since an amendment to the Act in 1944 the Senate alone has been the governing authority and is responsible, subject to the Act and the statutes, for the entire control and management of the University. Statutes originate in the Senate and are submitted to Convocation for its consideration, and although Convocation may suggest amendments the Senate is not bound to accept them. The Act requires that statutes shall be submitted to the Governor for approval, after which they have the force of law.

The Chancellor is the titular head of the University. He is elected annually by the Senate from among its members and presides over its meetings. The Vice-Chancellor is the chief executive officer of the University and is appointed by the Senate for a period not exceeding ten years, at the end of which term he is eligible for reappointment. At meetings of Convocation the chairman is the Warden who is elected annually by Convocation from among its members.

The Guild of Undergraduates is constituted under the Act as an association of undergraduates 'for furthering of their common interests, and shall be the recognised means of communication between the undergraduates and the governing authority of the University'. The government of the student body is vested in the Guild Council, to which members are elected in accordance with regulations made by the Guild.

Student Fees, Allowances and Scholarships

The Royal Commission appointed to inquire into the establishment of a University recommended that teaching should be free and suggested that 'if fees are found to be necessary, they should be on the lowest possible scale'. This policy was adopted and tuition fees were not charged, except in the case of a limited number of students, until 1962 when fees were introduced to assist in meeting the increasing costs of operation resulting from a rapidly growing student enrolment and to enable the University to take full advantage of financial aid available under Commonwealth legislation (see page 205). The Australian Government assumed full financial responsibility for tertiary education with effect from 1 January 1974 and tuition fees were abolished. However, students are still required to pay Guild of Undergraduates and faculty society subscriptions, membership being compulsory for students enrolled in a course for a bachelor's degree or a diploma, or for one or more units of study.

Financial assistance is given to students by the Australian Government under the Tertiary Education Assistance Scheme and by means of postgraduate awards, to which reference is made on page 207. In addition, the University makes awards, from its own funds, of research studentships for postgraduate study which are competed for by students holding no other award and having an Honours degree of second class (Division A), or higher, standard. Hackett Scholarships, tenable at the University of Western Australia or in special circumstances at other recognised institutions in Australia, are open to graduates of the University. Graduates may also apply for Hackett Studentships which, in addition to other financial benefits, may carry a travel grant where the Student elects to study overseas or in another State. Some large private industrial concerns also make annual awards for study at postgraduate level.

Finance

The following table relates to the income and expenditure of the University of Western Australia in each year from 1969 to 1973. Information in greater detail is available in the publication *University Statistics: Part 3—Finance*, issued annually by the Commonwealth Statistician, Canberra.

UNIVERSITY OF WESTERN AUSTRALIA—FINANCE (a)
(S'000)

Particulars	1969	1970	1971	1972 (b)	1973
INCOME					
Income for specific capital purposes (c)—					
Australian Government grants	457	1,659	714	1,920	1,618
State Government grants	1,850	475	1,463	2,393	179
Total	2,307	2,134	2,177	4,313	1,797
Income for other purposes—					
Australian Government grants	3,467	4,242	4,885	5,428	8,286
State Government grants	4,022	4,784	6,024	5,863	7,771
Donations and endowments	936	1,068	1,103	1,390	1,993
Student fees (d)	1,658	2,145	2,293	3,618	3,556
Other	885	1,023	1,091	612	890
Total	10,968	13,262	15,396	16,911	22,496
TOTAL INCOME	13,276	15,396	17,573	21,224	24,293

EXPENDITURE					
Teaching and research	7,184	8,849	10,468	10,856	14,035
Administration and general overhead	881	1,154	1,341	1,636	2,057
Libraries	554	663	829	998	1,275
Buildings, premises, grounds	2,121	2,653	3,207	6,237	3,909
Sundry auxiliary expenditure	1,007	1,034	1,381	809	1,903
TOTAL EXPENDITURE	11,747	14,353	17,227	20,536	23,179

(a) Figures for 1972 and 1973 are not strictly comparable with those for earlier years due to some changes in definition and classification. (b) Figures revised; see footnote (a). (c) Income received specifically for new buildings, major alterations and additions to buildings, installation of services, purchase of land and buildings and major equipment. (d) Excludes fees collected on behalf of student organisations.

Staff, Students, Degrees Conferred and Diplomas Granted

The following table gives particulars of teaching staff and students in each of the years from 1969 to 1973. The numbers of degrees conferred and diplomas granted during each of these years are also shown. Information in greater detail is available from the publications *University Statistics: Part 1—Students and Degrees Conferred* and *Part 2—Staff and Libraries*, which are issued annually by the Commonwealth Statistician, Canberra.

UNIVERSITY OF WESTERN AUSTRALIA

Particulars	1969	1970	1971	1972	1973
NUMBER OF STAFF (a)					
Teaching—					
Full-time—					
Professors	54	54	60	55	50
Associate professors, readers	49	50	51	59	66
Senior lecturers	130	142	143	146	163
Lecturers, teaching registrars	112	118	136	131	131
Senior tutors, demonstrators	57	54	70	74	85
Demonstrators, tutors, teaching fellows	27	37	35	42	48
Total	429	455	495	507	543
Part-time (b)—					
Lecturing	22	25	27	28	11
Tutoring/demonstrating	490	505	523	542	72
Total (b)	512	530	550	570	82
Research—					
Full-time	60	58	67	73	33
Part-time (b)	3	1	2	5	....
Other—					
Full-time	861	892	919	972	1,345
Part-time (b)	93	98	107	100	95

UNIVERSITY OF WESTERN AUSTRALIA—*continued*

Particulars	1969	1970	1971	1972	1973
NUMBER OF STUDENTS (a)					
Internal—					
Full-time	4,407	4,966	5,288	5,551	5,618
Part-time	2,430	2,464	2,692	2,759	3,089
External	314	352	375	343	370
Total	7,151	7,782	8,355	8,653	9,077
Males	5,065	5,373	5,603	5,761	5,959
Females	2,086	2,409	2,752	2,892	3,118
Total	7,151	7,782	8,355	8,653	9,077
DEGREES CONFERRED AND DIPLOMAS GRANTED					
Degrees conferred (c)—					
Agriculture	20	42	43	43	36
Architecture	8	12	15	20	22
Arts....	282	295	325	370	390
Commerce	41	50	35	72	100
Dental Science	22	14	19	26	22
Economics	44	61	60	73	78
Education	31	41	45	77	81
Engineering	95	66	79	91	110
Law	38	37	29	44	47
Medicine	53	53	55	53	54
Music	1	3	7	1	8
Psychology....	24	26	21	23	25
Science	204	214	262	234	234
Social Work ....	....	....	....	6	19
Total	863	914	995	1,133	1,226
Diplomas granted (d)—					
Education	102	96	147	201	245
Social Work	9	9	12	11	....
Numerical Analysis and Automatic Com- puting	5	....	....	....	....
Computation ....	....	5	10	15	12
Total	116	110	169	227	257

(a) Figures shown for 1969 are as at 30 June; those for later years are as at 30 April. (b) Figures for part-time staff have been converted to a full-time equivalent. However, as the basis for conversion was changed in 1973, figures for that year are not comparable with those for earlier years. For 1973, the basis for conversion was 250 hours per annum for lecturers, 700 hours per annum for tutors and demonstrators and 35 hours per week for all other staff. In earlier years the basis for conversion was 100 hours per annum for all teaching staff, 30 hours per week for maintenance and cleaning staff and 35 hours per week for all other staff. (c) Excluding honorary degrees. (d) See page 199.

Colleges and Hall of Residence

There are five residential colleges within the University. For men students, Saint George's College is conducted by the Church of England and Kingswood College by the Methodist Church. Saint Catherine's College is an undenominational college for women students. Saint Columba College, a joint foundation of the Congregational and Presbyterian Churches, and Saint Thomas More College, conducted by the Roman Catholic Church, take both men and women students.

Currie Hall is an undenominational hall of residence for men and women students.

Tuition

In addition to the normal lectures and tutorials for full-time students, courses for part-time students are offered in the Faculties of Arts, Education, and Economics and Commerce. Certain subjects may be taken at institutions affiliated with the University. These are The Western Australian Institute of Technology, the Secondary Teachers College, Claremont Teachers College, Graylands Teachers College and Mount Lawley Teachers College.

In 1976 external tuition formerly given by the University of Western Australia will become the responsibility of Murdoch University (see below). In 1975 the University of Western Australia accepted as external students only persons who had been previously enrolled.

Extension Service

The Adult Education and Extension Committee was established by the Senate of the University in 1968 as a result of the reorganisation of the former Adult Education Board which had been created by the University in 1928. In 1972 the Committee was renamed the Extension Committee and more emphasis is now placed on University extension activities. The policies of the Committee are implemented by the Director of the Extension Service. The headquarters of the organisation are at the University.

The Extension Service is responsible for general courses for adults at university level, for postgraduate and refresher courses and for certain cultural activities. It works in close liaison with university departments and faculties and with professional organisations in the community. The Extension Service also conducts conferences, symposia, seminars and residential schools, and members of its staff are involved during the summer months in work connected with the annual Festival of Perth.

Classes are conducted at the University, and various other activities are arranged in both the metropolitan and country areas. These are generally non-vocational in character. An annual Summer School is also held at the University.

MURDOCH UNIVERSITY

Murdoch University is established under the provisions of the *Murdoch University Act, 1973*, which came into operation on 1 July 1973. The University is named in honour of the distinguished Australian essayist and biographer, Sir Walter Murdoch (1874-1970), foundation Professor of English at the University of Western Australia (1912-1939) and later Chancellor (1943-1948). A ceremony to mark the inauguration of the University was held on 17 September 1974, the centenary of his birth.

Admissions. The first nineteen postgraduate students were accepted in 1974 and some 600 undergraduate and forty postgraduate students were accepted in 1975. The University has a flexible policy concerning admissions. In determining the eligibility of a prospective student, consideration is given to information obtained from school reports, the results of selection tests, interviews with applicants, and examination results. There are no special entrance examination requirements. Passes in particular subjects at any specific level are not required as a prerequisite for admission. However, in some courses, particularly in the physical and biological sciences and in mathematics, some prior knowledge of certain subjects is considered necessary. 'Make-up' courses are provided in some fields for students requiring them.

Schools of Study. The University is organised on the basis of schools of study which have both academic and administrative responsibilities. The following initial schools have been established: Education; Environmental and Life Sciences; Human Communication; Mathematical and Physical Sciences; Social Inquiry; and Veterinary Studies.

Awards. Studies in appropriate programmes will lead to pass or honours degrees in Arts, Education, Science, and Veterinary Medicine and Surgery.

The higher degrees offered by the University are the degrees of Master of Philosophy and Doctor of Philosophy. A one-year graduate Diploma in Education is also offered for a restricted number of students.

Courses for the degree of bachelor are of the following duration: for the ordinary degree of Bachelor of Arts or Bachelor of Science three years, and for the corresponding honours degree four years; for Bachelor of Education four years; and for Bachelor of Veterinary Medicine and Surgery five years.

External Studies. Special provision is to be made for external students, and it is expected that a substantial and innovative programme of external studies will be developed during the 1976-1978 triennium. External tuition will be the responsibility of staff of the schools of study, but the external studies programme as a whole will be co-ordinated by a Director of External Studies.

Beginning in 1975 with a small pilot scheme, Murdoch University will in 1976 assume full administrative responsibility for all university external studies in Western Australia. The external studies programme will be equally available to residents in the Perth metropolitan area and to those living outside Perth.

University Government. The governing body of the University is the Senate. The Act provides that the Senate shall consist of: the Chancellor; the Vice-Chancellor; the Director-General of Education; the President of the Guild of Students of Murdoch University; three persons elected by and from among the members of the full-time academic staff; two persons elected by and from among the students; two Members of Parliament; nine other persons from specified categories; and in addition such persons, up to three in number, as may be co-opted to serve as members of the Senate by an absolute majority of the other members. The Act provides further that the Senate shall establish an Academic Council, its principal functions being 'the discussion and submission to the Senate of opinions and recommendations on academic policy, academic development, the admission of students, instruction, studies and examinations, research, the admission to degrees, the discipline of the University and any other matters which in the opinion of the Academic Council are relevant to the objects of this Act'. The Act requires that the Guild of Students of Murdoch University shall be established not later than 1 September 1976, and that Convocation shall be constituted on 1 July 1980.

Development of Site. The University site comprises 242 hectares of undulating land south of the Swan River about thirteen kilometres from the Perth city centre and eight kilometres from Fremantle. An area of approximately 175 hectares was formerly part of the Somerville Pine Plantation and was given to Murdoch University by the University of Western Australia.

The major buildings to be erected during the first triennium are the first stage of the Veterinary School and four main buildings which are grouped around an open court in an elevated position in the northern part of the site. These buildings comprise the Library and Lecture Block, the East Academic Building (physical sciences), the West Academic Building (humanities), and the Student and Staff Amenities Building. Eight hectares have been cleared for playing fields in the south-west part of the site, and thirty-two hectares in the south-east are being developed as a veterinary farm and holding area.

STATE GOVERNMENT EXPENDITURE ON EDUCATION

The following table shows the amounts expended on education from State Government funds during the five-year period ended 30 June 1973.

Payments from the Consolidated Revenue Fund relate to recurrent expenditure on such items as departmental administration, teachers' salaries, transport of school children, scholarships and allowances, maintenance of buildings, assistance to non-government schools, and grants to the University of Western Australia.

STATE GOVERNMENT EXPENDITURE ON EDUCATION (\$'000)

Classification	1968-69	1969-70	1970-71	1971-72	1972-73
CONSOLIDATED REVENUE FUND					
Administration and general	1,461	1,879	2,401	3,202	3,452
Primary	22,087	26,441	32,730	36,904	39,754
Secondary	14,314	18,229	24,410	29,153	34,437
Technical	7,094	8,655	11,241	13,222	16,683
Agricultural	417	135	105	111	124
University	4,095	5,065	5,589	6,504	8,002
Training of teachers	3,565	4,698	6,131	7,420	9,988
Transport of school children	3,299	3,547	3,666	4,099	4,106
Other	20	14	59	61	73
Total	56,352	68,664	86,333	100,677	116,619

STATE GOVERNMENT EXPENDITURE ON EDUCATION—*continued*
(\$'000)

Classification	1968-69	1969-70	1970-71	1971-72	1972-73
GENERAL LOAN FUND					
Primary	5,713	6,968	6,047	5,699	5,555
Secondary	2,883	3,165	3,480	4,371	6,977
Technical	1,041	1,270	1,588	1,730	1,116
Agricultural	13				
University	466	1,182	866	778	1,198
Training of teachers	8	470	1,468	1,496	1,142
Other	508	741	582	117	125
Total	10,632	13,796	14,032	14,191	16,113

Expenditure from the General Loan Fund is principally on capital works which include buildings at The Western Australian Institute of Technology, primary schools, high schools and technical schools. Purchases of furniture and equipment are also included.

Financial Assistance for Schools and Students

The State Government provides financial aid to non-government schools by means of a direct annual grant in respect of each pupil enrolled. The value of the grant is twenty per cent of an amount estimated to be the national average cost of educating a pupil in government schools, less the assessed value of goods and services supplied or paid for by the Minister for Education in relation to a pupil. Separate rates apply to primary and secondary schools.

Annual grants are made to non-government schools to enable the purchase of equipment, instruments and appliances. Subsidies are provided for the installation of swimming pools, and assistance is given by way of reimbursement of interest paid, up to a prescribed maximum rate, on moneys borrowed since 1 January 1965 for expenditure on new residential accommodation for scholars.

The State Government each year awards to country students 150 scholarships, valued at \$81 per annum, tenable for the first three years of secondary education at a government or non-government school. (These amounts are additional to the boarding allowances which are paid by the Australian Government to students who are obliged to live away from home to attend school; see letterpress *Isolated Children* on page 208).

Text books are issued free of charge to primary school children. An annual text book subsidy of \$5 is paid in respect of each student in the first, second and third year of secondary education, \$25 in the fourth year and \$15 in the fifth year.

All these forms of assistance to students are granted without the application of a means test.

AUSTRALIAN GOVERNMENT ASSISTANCE FOR EDUCATION

Although education is primarily the responsibility of the States, the Australian Government provides moneys for the financing of educational institutions and the assistance of students.

Finance for Institutions

Grants to the States for education began with contributions towards the recurrent expenditures of universities in 1951-52. Since that year, the Australian Government has increased its commitments to include: capital expenditures of universities (from 1957-58); capital grants for technical education and science laboratories (from 1964-65); colleges of advanced education (from 1965-66); teachers colleges (from 1967-68); pre-school teachers colleges (from 1968-69); secondary school libraries (from 1968-69); recurrent grants for non-government schools (from 1969-70); child migrant education

(from 1969-70); educational research (from 1970-71); capital grants for government schools (from 1971-72); recurrent grants for government schools (from 1973-74); capital grants for non-government schools (from 1973-74); pre-schools (from 1973-74); and recurrent grants for technical education (from 1973-74). Some account of the legislation authorising payment of grants by the Australian Government appears in *Western Australian Year Book*, No. 12—1973 (pages 182-4) and earlier issues. Details of amounts paid by the Australian Government in respect of Western Australia during the five-year period ended 30 June 1974 are given in the following table.

AUSTRALIAN GOVERNMENT ASSISTANCE FOR EDUCATION
WESTERN AUSTRALIA
(\$'000)

Nature of assistance	1969-70	1970-71	1971-72	1972-73	1973-74
Assistance of a revenue nature—					
Universities	3,281	3,900	4,594	5,683	14,610
Colleges of advanced education	1,929	2,333	2,920	4,015	11,462
Teachers colleges .....	.....	.....	.....	.....	5,785
Technical education .....	.....	.....	.....	.....	974
Research grants	323	296	307	370	410
Government schools .....	.....	.....	.....	.....	2,462
Non-government schools	862	1,682	2,064	2,903	3,927
Child migrant education	16	62	150	138	157
Aboriginal education	10	26	26	193	732
Pre-schools and child care .....	.....	.....	.....	.....	385
Educational research .....	.....	8	7	17	26
Total	6,421	8,307	10,068	13,319	40,930
Assistance of a capital nature—					
Universities	2,048	384	1,571	2,531	4,581
Colleges of advanced education	1,050	1,903	1,899	1,689	5,493
Teachers colleges	201	3	1,132	1,865	1,729
Pre-school teachers colleges	161	.....	.....	.....	.....
Technical education	957	804	747	1,166	1,311
Government schools	865	1,106	1,699	2,430	5,566
Non-government schools	652	594	597	587	1,244
Child migrant education .....	.....	.....	.....	.....	100
Aboriginal education	160	250	290	425	505
Pre-schools and child care .....	.....	.....	.....	.....	166
Total	6,093	5,044	7,935	10,693	20,695
GRAND TOTAL	12,514	13,351	18,003	24,012	61,625

An offer by the Australian Government to assume full financial responsibility for tertiary education from 1 January 1974 was accepted by the States at the Premiers' Conference in June 1973. (At the same time it was agreed that appropriate offsets would be made in the general purpose funds provided by the Australian Government to the States.)

Until December 1973, the Australian Government continued to make grants to the States for universities, colleges of advanced education, teachers colleges and pre-school teachers colleges on the basis of the existing 'matching' arrangements with the States. These arrangements provided for grants for recurrent expenditure to be made by the Australian Government on the basis of \$1 for each \$1.85 of State grants and student fees combined. Grants for capital expenditure were made on a \$1 for \$1 basis with moneys spent by the States for this purpose.

The inclusion of teachers colleges and pre-school teachers colleges in the arrangements for other tertiary institutions resulted from a decision that assistance would be provided to these colleges from 1 July 1973 on the same basis as to universities and colleges of advanced education. Previously, assistance had been granted for teachers colleges and pre-school teachers colleges under the States Grants (Teachers Colleges) Acts of 1967 and 1970 and the *States Grants (Pre-school Teachers Colleges) Act* 1968-1972. Grants under these Acts were provided to the States for constructional work and equipping of teachers colleges and to expand the capacity of pre-school teachers colleges. Grants for teachers colleges under these arrangements ceased on 30 June 1973 and those for pre-school teachers colleges at the end of 1973.

Assistance for Students

Concurrently with the Australian Government's assuming full financial responsibility for tertiary education with effect from 1 January 1974, tuition and related fees in universities, colleges of advanced education, teachers colleges and technical colleges were abolished.

Tertiary Education Assistance Scheme. A new system of tertiary and post-secondary allowances came into operation at the beginning of 1974 to replace the University Scholarship, Advanced Education Scholarship, and Technical Scholarship Schemes (see *Western Australian Year Book*, No. 12—1973, page 182). Under this system full-time Australian students enrolled in an approved course at a university, college of advanced education, teachers college, technical college or agricultural college may apply for a living allowance subject to a means test. The maximum rates payable are \$1,000 per annum for students living at home and \$1,600 per annum for students living away from home. Dependants' allowances are also payable.

Students who qualify for the payment of a living allowance are entitled to two other types of benefit, an incidentals allowance and a fares allowance. The incidentals allowance is designed to assist students in meeting the cost of fees such as student representative council, union and sports fees. Eligible students attending universities receive an incidentals allowance of \$100 per annum, those at colleges of advanced education \$70 per annum and technical college students \$30 per annum. The fares allowance entitles students living away from the normal place of residence in order to undertake a course of study to be reimbursed for the cost of three return journeys per annum between their homes and the institution at which they are enrolled.

Aboriginal Study Grants Scheme. The Aboriginal Study Grants Scheme provides assistance to Aboriginal students who have left school and are undertaking further education such as business college courses, courses in creative arts and culture, and courses in domestic crafts, as well as more formal tertiary and post-secondary courses. The allowances payable under the Scheme are \$32 per week for students under eighteen years of age, \$38·50 for those aged between eighteen and twenty years, and \$45 for students who are over twenty-one years of age, or are married, or have dependants. Dependants' allowances are also payable.

Postgraduate Awards. Holders of postgraduate awards are paid allowances to assist them to study for higher degrees at universities or colleges of advanced education. Allowances payable are a living allowance of \$3,250 per annum; an establishment allowance of \$75 for an unmarried student or \$150 for a married student; a thesis allowance of \$150 for a Master's thesis or \$250 for a Ph.D. thesis; and an incidentals allowance of \$100 per annum for award holders at universities and \$70 per annum for those at colleges of advanced education, to assist in meeting the cost of fees such as student representative council, union and sports fees. Dependants' allowances are also payable.

Secondary Education. The Secondary Allowances Scheme assists families with limited financial resources to maintain children at school for the final two years of secondary education. Benefits are subject to a means test. The maximum value of the allowance is \$450 per annum.

The Senior Secondary Scholarships Scheme, now discontinued, provided awards tenable during the final two years of secondary education at government and non-government schools. Benefits comprised a basic grant of \$150 per annum free of means test and an additional grant, subject to a means test on family income, up to a maximum of \$250 per annum. The final awards under the Scheme were made in 1974.

Aboriginal Secondary Grants Scheme. The Aboriginal Secondary Grants Scheme provides financial assistance to encourage Aboriginal children to remain at school beyond the normal school leaving age. The Scheme includes all Aboriginal children attending secondary schools and classes, as well as those attending primary school who are aged

fourteen years or over. Benefits include either assistance with boarding costs up to a maximum of \$975 per annum or a living allowance, and a contribution towards fees and expenditure on books, uniforms and other items.

Migrant Children. The *Immigration (Education) Act* 1971-1973 provides for special instruction to assist migrant children who have English language difficulties to achieve a sufficient command of English to enable them to participate fully in normal classes. Funds are provided to government and non-government school authorities to purchase special language teaching equipment, to pay the salaries of special teachers and to provide portable or demountable classrooms.

Soldiers' Children Education Scheme. The *Repatriation Act* 1920-1974 provides assistance for the education and training of children of ex-servicemen who have died as a result of war service, or are either totally and permanently incapacitated or blind. The allowances paid cover expenditure on fees, books, equipment, fares and other items.

Isolated Children. A scheme of allowances was introduced from the beginning of the 1973 school year to assist in the education of children who, because of their geographic isolation, are without reasonable daily access to a government school providing courses at the appropriate level. Benefits payable in respect of children living away from home to attend school comprise: a boarding allowance of \$350 per annum free of means test; a further amount of \$350 per annum subject to a means test; and, in cases of particular hardship, a special supplementary allowance up to a maximum of \$450 per annum for a secondary scholar and \$300 per annum for a primary scholar. For isolated children who study at home by correspondence there is an allowance free of means test. The allowance comprises a basic grant of \$200 per annum with provision for reimbursement of up to \$150 per annum for expenditure on certain specified items.

THE WESTERN AUSTRALIAN TERTIARY EDUCATION COMMISSION

A Committee was appointed by the Western Australian Government in August 1966 to investigate the future needs of Western Australia in relation to tertiary education, the institutions necessary to meet those needs, the appropriate form of control and government of tertiary institutions, and the future role and development of these institutions. The Committee published its recommendations in September 1967.

As a result of these recommendations a Tertiary Education Commission was formed in February 1969 as a standing advisory commission. Subsequently the *Western Australian Tertiary Education Commission Act, 1970*, which came into operation on 23 April 1971, established the Commission as a statutory corporate body.

The *Western Australian Tertiary Education Commission Act, 1970-1972* provides that the Commission shall consist of ten members, comprising a Chairman appointed by the Governor on the recommendation of the Minister; the Director-General of Education; the Under Treasurer of the State; the chief executive officers of the University of Western Australia, Murdoch University, The Western Australian Institute of Technology, and the Western Australian Teacher Education Authority; and three persons appointed by the Governor on the recommendation of the Minister.

The principal functions of the Commission are to promote, develop and co-ordinate tertiary education, having regard to the needs of the State and the financial and other resources available to it; to consider and make recommendations on the future development of tertiary education institutions (including the acquisition and reservation of sites), the levels of financial support requested by such institutions, the terms and conditions of appointment and employment of staff, the fees to be charged by each institution, and proposals for the establishment of new tertiary education courses; to co-ordinate the criteria for entrance to tertiary education institutions; and to determine the minimum requirements for new academic awards.

The Act also provides that the Commission shall confer and collaborate on matters relevant to tertiary education with Australian Government and State Government Departments, the Universities Commission, the Commission on Advanced Education and other governmental bodies and instrumentalities.

Tertiary Admissions Examination Committee. The Tertiary Admissions Examination Committee, established by the Western Australian Tertiary Education Commission, comprises members nominated by government and non-government schools, the Education Department and tertiary educational institutions. The purpose of the Committee is to formulate policy regarding the Tertiary Admissions Examination, designed to replace the Leaving Examination which was abolished at the end of 1974.

The Tertiary Admissions Examination will be used for admission purposes by the University of Western Australia, Murdoch University, The Western Australian Institute of Technology and the constituent colleges of the Western Australian Teacher Education Authority. The examination will be based on syllabuses in approved subjects. Joint Syllabus Committees have been established by the Board of Secondary Education (see page 188) and the Tertiary Admissions Examination Committee for each subject area designed to be accepted both for Board of Secondary Education certification and for examination for tertiary admission.

Chapter V—continued

Part 2—Arts, Science and Recreation

PUBLIC LIBRARIES

The Library Board of Western Australia

The Library Board of Western Australia is constituted under the provisions of the *Library Board of Western Australia Act, 1951-1974*. It was set up as an independent statutory authority in 1952.

The Board consists of twelve members. The Director-General of Education is an *ex officio* member. The remaining eleven members are appointed by the Governor, five being nominated by the Minister and the other six selected by the Minister. Of these six members, one represents the Library Association of Australia, Western Australian Branch, and the other five represent local government interests throughout the State.

The Board's main responsibilities are to advise the Minister and local authorities on matters of general policy relating to libraries and to administer the funds made available by Parliament for the State library and information service.

THE LIBRARY BOARD OF WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Expenditure—					
Salaries and wages	\$ 353,303	440,417	560,588	616,071	781,532
Books, periodicals and binding	\$ 484,201	543,291	583,517	715,016	699,472
Other	\$ 110,863	118,310	127,747	119,819	148,375
Total	\$ 948,367	1,102,018	1,271,852	1,450,906	1,629,379
Number of—					
Full-time staff (a)—					
Qualified librarians	22	31	33	36	45
Student librarians and cadets	20	23	17	16	18
Other	75	77	89	92	100
Total	117	131	139	144	163
Associated public libraries (a)—					
Perth Statistical Division	27	29	33	34	36
Other Statistical Divisions	99	104	106	107	109
Total	126	133	139	141	145
Books—					
Reference library stock—					
Bound volumes (a)	249,612	254,223	259,243	266,368	274,181
Periodical and serial titles received	8,143	8,289	8,397	8,784	8,650
Circulation library stock—					
Books processed for circulation	102,366	111,927	108,861	135,779	143,435
Net additions to stock	46,054	51,478	44,371	60,971	69,093
Stock (a)	703,203	754,681	799,052	860,023	929,116
Received and dispatched in the exchange programme with local libraries	298,322	310,020	330,416	365,570	396,514
Inter-library requests received	61,047	62,880	73,229	76,493	70,599
Central Music Library stock (a)—					
Number of—					
Books	4,175	4,386	4,656	5,016	5,264
Musical scores	12,731	13,239	13,725	14,142	14,984

(a) At 30 June.

The State library service comprises: The State Reference Library of Western Australia, which includes the State archives; the Central Music Library; the State Bibliographical Centre; and local public libraries throughout the State. These units are co-ordinated by

the Board to provide an integrated and comprehensive library and information service throughout the State.

The State Reference Library of Western Australia

The origins of the State Reference Library date from 1886 when the Government resolved to establish a library to mark the Golden Jubilee of Queen Victoria. In 1911 this library became the Public Library of Western Australia and is now The State Reference Library of Western Australia.

The library's resources and service are of a high standard and two-thirds of the stock has been acquired in the last eighteen years.

The State Reference Library differs from other libraries in that its function is not principally to supply books but to provide information in answer to inquiries. It handles over a hundred serious or research inquiries per day, and for this purpose is divided into five specialised subject units arranged in three Divisions, each of which has staff experienced in the subject matter concerned.

The West Australian History Division, more commonly known as the Battye Library covers all aspects of the history and development of Western Australia. It has a very large collection of historical documents and papers, including the State archives (see below). It also has the latest information on State developments. It receives the *Government Gazette of Western Australia* on the day of issue, all Royal Commission and similar reports on the day that they are tabled in Parliament, proposed amendments to town planning schemes as soon as they are issued, and all current Western Australian publications received under copyright.

The Commerce and Technology Division provides the business community, the home hobbyist or the tradesman with the latest technical information and also makes available older material of research value and general works intended for the non-specialist. It comprises the Library of Business, Science and Technology and the Information Centre. The Centre is intended to provide immediate answers to questions, mainly in the commercial field. It has telephone directories, business directories, gazetteers, newspapers and similar material from many parts of the world.

The Humanities Division covers a wide field in the arts and social sciences, and includes comprehensive sets of the official publications of the Australian Government, State Governments, and selected overseas governments.

The State Reference Library is equipped with microfilm, microfiche, photocopy and tape-recording apparatus. Photocopies of material are available to the extent permitted by the *Copyright Act* 1968 (Commonwealth), on payment of an appropriate fee.

In addition to providing reference facilities in the metropolitan area, the service of the Library extends throughout the State, through the agency of a local public library whenever possible, or by correspondence direct to country inquirers not in contact with a local library.

The State Archives. Under legislation passed in 1974 the Board has responsibility for the control and custody of all State archives. These include the records not only of the Government but also of all local authorities and all other bodies established under statute. So long as they are in current use they remain the responsibility of the department or body concerned, but when they cease to be in current use they become the responsibility of the Board and their destruction is prohibited without the approval of the Board. The State archives form part of the West Australian History Division and are available for public use in the Battye Library.

The Central Music Library

The Central Music Library, situated in the State Reference Library building, is the principal music library of the State. It offers a full reference service in the field of music, and scores are available on loan. Facilities are also available for listening to musical recordings. Books and journals dealing with electronic and similar aspects of music are held in the Library of Business, Science and Technology.

The State Bibliographical Centre

The function of the State Bibliographical Centre is to encourage and facilitate co-operation between all libraries in Western Australia, so that the total resources in the State may be made as widely available as possible to all library users.

The Centre operates the Request and Information Service provided by the Board for all public libraries, organises inter-library loans for, or between, any other approved libraries in the State or elsewhere, and offers bibliographical assistance to any library and to users of the State Reference Library. For these purposes it is equipped with catalogues of the whole stock of the Library Board and with union catalogues of both books and journals in some 200 other libraries ranging from those of the University of Western Australia to highly specialised collections held by private concerns or government departments. It also has a large range of published bibliographies from many parts of the world. The Centre is connected by telex to all major libraries of the world.

Local Public Libraries

The books in all public libraries in the State are supplied by the Board and remain its property. Books are supplied on a minimum basis of 1·1 volumes per head of the population served by the library concerned. It is the intention of the Board to raise this ratio to 1·25, and this has been achieved in about half the libraries in the State. At least one-quarter of the books in each library are withdrawn each year and replaced by a corresponding number of other volumes.

Any non-fiction book in the State-wide stock is available at any public library if requested by a reader. A printed catalogue of the entire stock is supplied free to every library each year. In the metropolitan area the Board provides a delivery van service to libraries.

Prior to dispatch, all books supplied to public libraries are fully catalogued and prepared for use by the Board, which also maintains central stock and location records.

As far as possible, selection of books for each library is carried out by the local librarian but the Board's staff makes the selection for those libraries which are unable to do so.

The Board is not responsible for the provision of local premises nor the employment of local staff, which are provided by the local authority concerned. However, professional advice on library design is available to architects and local authorities.

Of the 138 local authorities in Western Australia, all but eight have established one or more public libraries or are in process of doing so.

THE WESTERN AUSTRALIAN MUSEUM

The Western Australian Museum has developed from two earlier collections. One of these, the museum of the Swan River Mechanics' Institute, was founded by public subscription in 1860, and the other, the Geological Museum at Fremantle, was started in 1881. In 1889 the contents of the Geological Museum were moved to the former Perth Gaol (which is still part of the Western Australian Museum) and a Curator was appointed in 1891. In the following year the museum of the Swan River Mechanics' Institute was purchased, and the collections combined to form the Public Museum which, in 1897, became known as the Western Australian Museum.

Under the provisions of the *Museum Act, 1969-1973*, The Western Australian Museum is governed by seven Trustees appointed by the Governor. The staff includes a Director, a Deputy Director, two Divisional Heads, thirteen Curators and other professional and technical staff, and is grouped functionally within Divisions of Human Studies and Natural Science, service departments and a small administrative unit.

The headquarters of The Western Australian Museum and its principal display galleries are situated in Perth. A branch of The Western Australian Museum containing maritime and historical displays was established at Fremantle in 1970. It is governed by a Committee of Management appointed by the Minister responsible for the Museum Act.

The work of the Museum relates mainly to natural sciences and human studies. It contains collections devoted to zoology, palaeontology, meteorites, archaeology, anthropology, history, technology and military exhibits. Emphasis in both display and research is on the fauna and the human population, past and present, of Western Australia. There is an extensive scientific library which also houses the library of the Royal Society of Western Australia. Research within the Division of Natural Sciences is related specifically to marine fauna, mammals, birds, reptiles, insects and fossils of the State. The Division of Human Studies is concerned with prehistoric archaeology and art, Aboriginal material culture, colonial history, maritime history, underwater archaeology, industrial and agrarian technology, and arms and armour.

The *Museum Act, 1969-1973* allows the Trustees to assist in establishing and maintaining municipal museums. The Museum's role is mainly to assist by making available the expertise of its own staff in designing layout, advising on material and restoration problems, and lending showcases and material.

The Museum is an active educational instrument. Members of the scientific staff lecture in University Extension programmes and in the University departments. A children's centre, staffed by a Museum teacher provided by the Education Department, is open during school holidays. Children voluntarily participate in general knowledge tests and other exercises designed for vacation activities. Regular classes are held during school terms, and special visits are made by children from schools not included in the regular series.

In connection with its work of education, research and conservation, the Museum is often called upon to act in an advisory capacity to government departments. In particular, senior staff serve on committees formed for the purpose of protection of the environment and of native fauna. The Museum is assisted in certain fields by Honorary Museum Associates, some of whom serve on Advisory Committees.

Under the provisions of the *Aboriginal Heritage Act, 1972* the Museum is responsible for administering the work of the Aboriginal Cultural Material Committee. The Act requires that the Registrar of Aboriginal Sites, the principal executive officer of the Committee, shall be a member of the staff of the Museum. The main function of the Committee is to evaluate, record and preserve Aboriginal sites and specific traditional Aboriginal artefacts within Western Australia.

THE WESTERN AUSTRALIAN MUSEUM (a)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Expenditure—					
Salaries and wages	\$ 225,059	353,109	507,117	581,976	763,555
Other	\$ 140,861	224,100	312,916	345,234	270,824
Total	\$ 365,920	577,209	820,033	927,210	1,034,379
Square metres of—					
Display area (b)	635	1,750	2,050	3,200	3,050
Storage area (b)	1,565	1,500	1,850	2,500	3,400
Total	2,200	3,250	3,900	5,700	6,450
Number of—					
Staff (b)—					
Full-time—					
Professional	20	26	30	35	41
Technical	29	36	38	41	44
Administrative and clerical	9	14	16	17	23
Attendant-receptionist	6	15	17	23	23
Honorary	2	4	6	2	1
Total	66	95	107	118	132
Man-days spent on field work	501	2,084	2,408	2,024	1,673
Guide lectures to school parties	519	457	639	1,074	875
Children attending lectures	18,451	16,421	22,119	34,320	33,389
Children's Centre school vacation attendances	40,881	25,037	22,970	47,917	64,731
Total visitors' attendances (c)	141,998	232,734	296,691	283,237	247,054

(a) Including Fremantle Branch, opened October 1970.

(b) At 30 June.

(c) Including attendances of school children.

The *Maritime Archaeology Act, 1973* vests in the Museum five ships wrecked off the Western Australian coast in the 17th and 18th centuries. It also makes provision for the preservation of any other ship abandoned, wrecked or stranded before 1900 and lying in territorial waters of the State, and of relics carried by, derived from, or associated with, any ship before 1900.

Under the provisions of the *Museum Act, 1969-1973* all meteorites are declared to be the property of the Crown and are vested in the Museum.

THE WESTERN AUSTRALIAN ART GALLERY

The Western Australian Art Gallery is under the control of a Board of five members appointed by the Governor under the provisions of the *Art Gallery Act, 1959-1974*.

The Gallery occupies part of a building shared with the Museum. The lower gallery is used mainly for lectures, art films and the display of interstate and overseas exhibitions. Works from the permanent collection are exhibited in the upper gallery, while the print room is used to house and exhibit the collection of prints and drawings. Both displays are changed regularly. Important pieces of sculpture are on permanent display in both galleries and in an exterior courtyard designed for this purpose. Aboriginal grave and tribal posts, carvings and paintings are on permanent display in the upper gallery.

At 30 June 1974 the area available for display was 850 square metres, and for storage 550 square metres.

The Gallery has extended its services throughout the metropolitan area and country districts. Branch gallery facilities exist at the Cultural Centre at Derby where an exhibition of paintings from the permanent collection is displayed and changed each year. Reproductions of paintings are circulated by means of its loan service to various public institutions, and touring exhibitions from the permanent collection are taken to country districts at regular intervals.

These activities are supplemented by publications of various kinds, which are distributed to schools and other institutions or direct to the public. Reproductions of some works in the collection are also available.

THE WESTERN AUSTRALIAN ART GALLERY

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Expenditure—					
Salaries and wages	\$ 68,564	88,201	98,875	114,265	142,086
Acquisition of exhibits	\$ 112,009	46,014	66,967	76,892	108,685
Special exhibitions	\$ 10,771	11,690	12,780	14,370	14,632
Printing	\$ 8,324	7,380	7,742	5,506	7,811
Other	\$ 23,951	21,537	27,929	34,015	41,115
Total	\$ 223,619	174,822	214,293	245,048	314,329
Number of—					
Staff (a)—					
Full-time—					
Professional	3	3	3	3	7
Administrative and clerical	5	5	5	5	5
Other	12	10	13	14	14
Honorary	5	3	3	3	3
Total	25	21	24	25	29
Exhibits for display (a)—					
Oil paintings	482	499	520	546	565
Water colour paintings	206	207	210	218	222
Drawings	438	453	460	481	484
Engravings, prints, woodcuts	1,300	1,354	1,407	1,447	1,515
Sculptures	57	67	72	72	76
Ceramics	427	430	443	445	450
Jewellery, medallions, coins	831	834	834	(b) 44	44
Other	265	272	345	378	383
Total	4,006	4,116	4,286	3,631	3,739
Special exhibitions	10	7	9	8	8
Visitors' attendances	121,718	118,059	130,317	138,118	109,857

(a) At 30 June.

(b) Medallions and coins transferred to The Western Australian Museum.

The Art Gallery operates a general information service which is widely used, and tours of the Gallery are conducted for organised groups of adults, students and school-children. Children's art classes, which are supervised by the Gallery's education officers, are held during school holidays.

Members of the professional staff are called upon to judge exhibitions, give public lectures, and sit on various planning and advisory committees.

THE WESTERN AUSTRALIAN ARTS COUNCIL

The Western Australian Arts Council was established by the *Western Australian Arts Council Act, 1973*, operative from 1 December 1973. The Council took over the functions of the Western Australian Arts Advisory Board. In terms of the Act, 'it shall be the general duty of the Council to encourage, foster, and promote the practice and appreciation of the arts in Western Australia'. The Council may make grants, pay subsidies or furnish advances to local authorities, organisations or persons engaged in activities consistent with this duty. Subject to the provisions of the Act, the Council may 'generally do whatever it considers necessary or expedient in order to stimulate artistic or cultural activity'.

Funds available to the Council to enable it to exercise its functions include amounts appropriated by the State Parliament or made available by the Australian Government, amounts borrowed by the Council under the provisions of the Act, and moneys which may be advanced by the Treasurer.

The Council is affiliated with the Arts Council of Australia (Federal Division).

STATE GOVERNMENT OBSERVATORY

The Perth Observatory was originally established, near King's Park, in 1896; the present buildings, near Bickley in the Darling Range, were officially opened on 30 September 1966.

The astronomical instruments at the Observatory are a photographic refractor of thirty-three centimetres aperture, the Hamburg Observatory's nineteen-centimetre meridian transit telescope, and the Lowell sixty-centimetre reflector. A forty-centimetre reflector, constructed by the Physics Department of the University of Western Australia, is also in operation at the Observatory site.

The photographic refractor is used for investigations of stellar motions based on measurements of old (1900-1920) and recent photographs; for the recovery of minor planets which have been unobserved for several years; for positional observations of comets, which are used in investigations of comet orbits; and for securing photographs, to a faint magnitude limit, of significant areas of the southern sky, which may be used in the future in determinations of stellar motions.

From late in 1967 to the end of 1971, a team of astronomers from the Hamburg (West Germany) Observatory carried out a programme of observations of the positions of reference stars in the southern hemisphere. Their automated meridian transit telescope is now on indefinite loan to the Perth Observatory, whose staff are continuing with programmes in this field, which is basic to all work in positional astronomy. The current programme is designed, through international collaboration, to extend the fundamental catalogue of star positions.

The sixty-centimetre reflecting telescope was installed at the beginning of April 1971. It is used mainly for observation in the International Planetary Patrol Program, which is financed by the National Aeronautics and Space Administration of the United States of America and conducted by the Lowell Observatory, of Flagstaff, Arizona, U.S.A. This programme involves the photography, with identical cameras at six observatories, well distributed in longitude, of the planets Mars, Jupiter and, occasionally, Venus. Each planet is photographed, through four standard colour filters, systematically throughout the period during which it is available. The purpose of this programme is to set up an extensive library of photographs for the study of temporal variations in the atmospheres and surface features of these planets.

The telescope is also equipped with a photometer, which was used during 1973 to record a series of mutual occultations and eclipses between the four major satellites of Jupiter. Since 1974, when the Planet Patrol observations were reduced in scale, the telescope has been used in investigations of the variations in brightness of planet satellites and of asteroids.

The Observatory maintains the time service for the State, and provides an astronomical information service for educational and general interest inquiries. It is open to visitors daily, except Saturdays, at 3 p.m.

STATE GOVERNMENT CHEMICAL LABORATORIES

In 1922 the various chemical services of the State Government were amalgamated to form the Government Chemical Laboratories, primarily for the performance of chemical work required by government departments. In addition, the Laboratories serve government instrumentalities and semi-government authorities and undertake some chemical work for the general public. The activities of the Laboratories are organised under seven Divisions, the separate functions of which are described briefly in the following summary.

The *Agriculture Division* does analytical work, on soils, for basic research, the effect of fertilisers, cultivation methods and crop rotation; on plants, as fodders for livestock and also to assess the nutritional requirements of plants with particular reference to the use of fertilisers and the correction of trace element deficiencies; on fertilisers and manures generally; and on animal tissues for diagnostic purposes. Samples of many kinds are analysed to determine the effects of pollution on agricultural and native plants and on stock, and to determine the level of potential pollutants in raw materials and finished products.

The *Engineering Chemistry Division* is concerned mainly with research into the utilisation of the State's natural resources, particularly fuel and mineral resources. Investigations are carried out on specific technological problems at the request of government departments, industry, or individual sponsors, or are initiated from within the Division. Facilities are available for physical and chemical testing of coals and other fuels and for experimental work on most aspects of fuel utilisation, ore dressing, chemical engineering and metallurgical processing. Technical advice is also given on these topics.

The *Food, Drugs and Toxicology Division* deals with chemical analyses in the fields of food, drugs, pesticides, toxicology, industrial hygiene and general analytical chemistry. Examinations are performed to ensure conformity to standards of quality prescribed by legislation, as well as analyses for traces of pesticide residues and other contaminants. A major portion of the work comprises toxicological examinations concerning deaths from drugs or poisons, analysis of blood for alcohol level, and some forensic work to assist criminal investigations. Industrial hygiene analyses and field investigations of working conditions and potential health hazards are also performed.

The *Industrial Chemistry Division* provides, for Government, industry and the public generally, a source of technical information and advice on matters relating to industry and its products. It also advises on the potential of new methods or improvements in existing processes, and undertakes related experimental investigations.

The *Kalgoorlie Metallurgical Laboratory* carries out research in mineral beneficiation and ore treatment for mining companies and prospectors. Assays and mineral analyses are done in the course of this work and also on separate samples.

The *Mineral Division* is basically concerned with studying and recording the mineralogy of the State. This is done by physical and chemical examination of mineral and rock specimens obtained from departmental and other sources and by the maintenance of a reference collection of minerals from most known occurrences within Western Australia. A service to government authorities (particularly other branches of the Department of Mines) is maintained by examination of samples and provision of advice on mineralogy and inorganic chemistry generally. In some circumstances this service is extended to the mining industry, prospectors and the general public.

The *Water Division* analyses waters from all parts of the State for Government and the public and makes recommendations on their suitability for specific purposes. Most of the work is done on behalf of the Metropolitan Water Supply, Sewerage, and Drainage Board and the Public Works Department, to ensure that water supplies under their control comply with the accepted standards of water for human consumption. The Division also investigates problems associated with water distribution and industrial use, including cooling and heating waters and liquid wastes where corrosion, scaling or pollution are involved and, in addition, carries out surveys of industrial effluents and the pollution of river and ocean waters.

Details of the operations of the Government Chemical Laboratories are published in the Annual Report of the Director.

THE INSTITUTE OF AGRICULTURE, UNIVERSITY OF WESTERN AUSTRALIA

The Institute of Agriculture, established in 1938, comprises the four teaching and research departments of the Faculty of Agriculture in the University of Western Australia. The primary function of the Institute is to promote research in agriculture within the University. While part of the research is financed from normal University research funds, a substantial part is supported by grants from producer organisations and many research committees interested in research in agriculture.

During the first ten years of its existence, and despite the dislocation of the war years, it initiated research on plant and animal problems of the pastoral areas, commenced a series of fundamental studies related to the nutrition of ruminants, investigated factors affecting the baking quality and nutritive value of wheat and flour, elucidated factors affecting the fertility of sheep, and carried out a series of economic surveys of the sheep, wheat, dairying, pig, and poultry industries. The work of these years is summarised in the report of the Director, published in 1949.

Research in soils was increased following the establishment of the Department of Soil Science and Plant Nutrition in 1963 with strong research groups engaged in the study of soil mineralogy, soil physics, soil chemistry, soil microbiology and plant nutrition. Soil mineralogy is concerned with the study of the distribution, properties and origins of soils in various parts of Western Australia. The soil physics group has been especially concerned with the role and properties of clay minerals in soil, with soil-water, and the movement and retention of soil phosphorus and sulphur. The soil chemistry group is especially concerned with the chemistry of soil organic matter and its relation to available soil nitrogen, as well as the 'fixation' and release of inorganic nutrient ions from soil particles. Particular attention has been given by the plant nutrition group to the limits and conditions of uptake of mineral nutrients by crop and pasture plants, especially of potassium, phosphorus, copper, zinc and manganese. The soil microbiology workers have been engaged in research into the ecology of soil micro-organisms, problems of nodulation and nitrogen fixation in legumes, and the biological control of root pathogens.

The early work of plant breeding, selection, and genetical research with the aim of increasing the productivity and expanding the climatic limits of crops and pasture legumes, especially lupins, cereals, subterranean clovers and medics, has continued. The work on pasture legumes resulted not only in the introduction and development of new strains but also assisted in the elucidation of sheep infertility in Western Australia. The development of new sweet non-shedding lupins has added a valuable crop to Western Australian agriculture. A Department of Agronomy was developed in 1967 and the research activities of the staff of the department were expanded to include investigations into the response of plants to climatic factors with particular reference to the limitations imposed by climate. The activities of the department may be divided into crop pasture environment and physiology, and crop and pasture improvement. The department now has active breeding programmes with wheat, barley, subterranean clover, medics and rape seed.

Research related to the nutrition of ruminants includes fundamental studies on nutritional physiology and microbiology of the wool sheep and more recently cattle, with particular reference to factors influencing the utilisation of protein and roughages, as well as

studies on mineral metabolism especially sulphur, phosphorus, cobalt and zinc. Fundamental and field research into the physiology of reproduction and the causes of reproductive wastage in sheep have been strongly developed and work has been initiated on the relationship between various nutritional factors and reproductive processes. A Department of Animal Science and Production was established in 1971.

The Department of Agricultural Economics was formally established in 1971 after many years of teaching and research activities in agricultural economics and farm management. Since 1961 these activities have been further supported by the John Thomson Agricultural Economics Centre at the Institute of Agriculture. This Centre is financed by banks and other organisations. The Centre undertakes its own research, publishes the quarterly journal *Farm Policy*, and in 1967 financed the establishment of the Farm Management Service Laboratory (see Chapter VIII, Part 1—*Primary Production*). The research of the Department of Agricultural Economics is concerned with studies in national rural policy, economic planning in agriculture, and computerised farm management planning.

A biometrics unit, developed in the Institute in 1969, carries out research in experimental design and the application of statistical methods in many fields of biological and agricultural research.

This brief review of the very wide range of the research activities of the Institute of Agriculture, at both the fundamental and at the more applied level, illustrates the extent to which it contributes to the assistance and service of the rural industries, indirectly by its training of agricultural scientists and directly through its manifold research projects.

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

Two Divisions of the Commonwealth Scientific and Industrial Research Organization (CSIRO), namely the Division of Land Resources Management and the Division of Mineralogy, have their headquarters in Perth. In addition several other CSIRO Divisions have laboratories in Western Australia. While most of the research is relevant to agriculture and industry in this State, much of it is also applicable to other areas of Australia.

Division of Land Resources Management. The Division of Land Resources Management is developing principles for managing Australia's land resources in a way that is consistent both with efficient productivity and the conservation of those resources. This involves consideration of the environmental implications of land use in pastoral, agricultural, forested, and near-urban areas.

The Division has a national responsibility, and research programmes are being developed to investigate a number of resource management situations throughout Australia. The Division has branch laboratories at Alice Springs (Northern Territory), Canberra (Australian Capital Territory) and Deniliquin (New South Wales).

Research on water supply and land use in the Darling Range and elsewhere in the south-west of Western Australia is one of the Division's main projects. Practices which may increase total evapotranspiration from farmlands and so reduce water and salt movement into streams are being developed and tested. The stress which a developing city such as Perth places on groundwater resources is receiving increased attention.

Forested lands, which surround many of Australia's major cities, supply not only timber but also vital domestic and industrial water supplies, recreational opportunities and animal habitats. The Division is investigating the management of forested lands in relation to the multiple demands placed on them.

Australia's rangelands (the arid and semi-arid grazing lands) constitute a large area of low rainfall and include major parts of five mainland States. Some vegetation types are badly degraded, others less so. Low rainfall is the overriding restriction, and maintenance or restoration of stability and productivity is the principal objective of the Division's work rather than increased production.

The general field of resource management principles and practice represents a new programme for the Division, and it demands that the traditional scientific disciplines be accompanied by social and economic evaluations. Communication of information to decision makers, and resolution of conflict in the field of multiple resource use are two areas which are receiving particular attention.

Division of Entomology. A long-term study of the ecology and population dynamics of two serious pasture pests, the red-legged earth mite and the lucerne flea, was commenced in 1952. The work has led to an understanding of the process involved in regulating numbers and has revealed the likely occurrence of agents for biological control. Two useful predatory mites were discovered in Europe and North Africa, and are now established in Western Australia. Detailed taxonomic studies of the families Bdellidae and Anystidae, to which these mites belong and of the host family Sminthuridae are in progress.

Jarrah is a most important source of timber in Western Australia. The foliage of this tree is attacked by the jarrah leaf miner, the larvae of a small moth. The extent and intensity of this infestation seems to have increased in recent years, and in 1967 a detailed ecological study was commenced. Special attention is being paid to the possible effects on the environment of various silvicultural methods, including controlled burning and its influence on the natural control of the leaf miner by parasites and predators.

A programme of research into the pest insects of pome fruit orchards was started in 1968. The programme is designed to gather data for comparison with results obtained in eastern Australian orchards, and to provide a detailed understanding of the life system of San José scale. In unsprayed orchards San José scale is kept at a low level of abundance by a series of parasites and predators, and under such conditions does not damage trees.

In 1969-70 a large-scale field test of a granulosus virus of potato tuber moth was carried out in the lower South-West. The test was successful and the study has been expanded to give data relating to the epidemiology of the virus, the ecology of potato tuber moth, and the role and status of other pests of potatoes. In the test area the virus has become well established and flares up from time to time, depending on the density of potato tuber moth larvae and population stresses.

Division of Mathematics and Statistics. The Division of Mathematics and Statistics is concerned with the mathematical analysis of scientific problems and the application of statistical methods to areas of interest in the applied and biological sciences. Its officers also act in an advisory capacity to other research workers in the State on matters relating to mathematical methods, as well as the design of experiments and the analysis and interpretation of statistical data.

Division of Computing Research. The Division of Computing Research provides a computing service for research workers in other Divisions. Computing equipment installed includes key punch machines and a node computer terminal connected to a Cyber 76 computer in Canberra by means of an Australian Post Office leased telephone line. The node computer provides a remote batch service and an interactive service for six consoles.

Division of Mineralogy. The Division of Mineralogy is concerned with research bearing on the discovery and definition of Australian mineral resources. Its work deals mainly with the chemical and physical nature of geological processes of mineral formation and acretion.

Under two main programmes, mineralisation and exploration, studies are in progress on processes of ore genesis, particularly with respect to nickel sulphide ores, on supergene alteration of these ores, on the geochemical and petrological evidence for defining areas of differing crustal development in the Archaean of Western Australia, and on improving techniques and interpretation of surface geochemical exploration in deeply-weathered arid terrain.

Division of Wildlife Research. The Division of Wildlife Research has a research group at Helena Valley, working on the higher vertebrates (more particularly mammals and birds). Investigations cover not only species of economic importance but also native fauna generally.

Studies of the ecology of the Emu, the White-tailed Black Cockatoo, the Noisy Scrub-bird, and the Galah are proceeding. Factors controlling breeding seasons of birds under Western Australian conditions are also being investigated.

Division of Fisheries and Oceanography. The Division of Fisheries and Oceanography has a research group in Western Australia carrying out research on the western rock lobster. The project includes studies of population ecology, physiology and behaviour, and of the water circulation responsible for larval drift and survival. This latter work is carried out from a research vessel forty-four metres in length. The Division is building its own regional laboratory for the rock lobster project and any further projects undertaken in Western Australia. Pending completion of this building, it is sharing facilities at the Western Australian Marine Research Laboratories.

Division of Food Research. The Meat Research Laboratory of the Division of Food Research has an extension officer located in the laboratories of the Western Australian Department of Agriculture at South Perth. He is a member of the Meat Laboratory's Industry Section which is responsible for service, investigation, liaison and extension work in meatworks and meat processing establishments, to ensure that the results of investigations by the Commonwealth Scientific and Industrial Research Organization are made known and to encourage their application by the meat industry. The extension officer services processing plants in Western Australia and the Northern Territory and gives a limited extension liaison service to other food processing industries.

Division of Animal Health. The Melbourne Laboratory of the Division of Animal Health has set up a branch laboratory in the Institute of Agriculture at the University of Western Australia to investigate reproductive losses in sheep in Western Australia, with particular reference to pathological aspects of clover disease and possible infectious causes of infertility.

Division of Tropical Agronomy. Since 1 July 1974 the Division of Tropical Agronomy has been responsible for the operation of the Kimberley Research Station which is situated near Kununurra on the banks of the Ord River in the far north of Western Australia. The Station was operated jointly by CSIRO and the Western Australian Department of Agriculture during the period 1945-1974. More than three-fifths of its budget is now financed through the Australian Department of Northern Development.

The main priorities in the Station's research are establishing the fertiliser requirements of the soils in the Ord irrigation area and of the soils that are available for dry-land pasture improvement in the surrounding region; breeding better tropical varieties of grain sorghum (the yields of existing varieties have been disappointingly low in northern Australia); evaluating a large number of grain legume introductions for their grain yields and protein and oil contents; improving beef cattle production from irrigated pastures based on the promising shrub legume *Leucaena*; and finding legumes that can be used to improve dry-land pastures in the Kimberley region.

Division of Applied Geomechanics. Many of the new buildings in Perth are, or will be, founded on reinforced concrete rafts. Due to the soil conditions and the uncertain effects of earthquake shocks on foundations, adequate design data are often not available. The Division of Applied Geomechanics has therefore undertaken a project to provide data on the performance of the rafts for several large buildings in the city area.

An investigation of the performance of the raft foundations of the Australian Mutual Provident Society building, the Reserve Bank building, and the Commercial and National Bank buildings in the St Martin's City Centre has been continuing for several years. The observations are providing data for the development of improved structural design techniques having regard to soil-structure interaction.

Observations of total settlement and deflected shape of the rafts, settlement within soil layers beneath the rafts, and contact pressures at the soil-raft interface have indicated that the raft-soil interaction is similar to a loaded plate or a layered elastic medium of finite depth. A computer programme for analysing this behaviour, which is called FOCALS (Foundation On Cross Anisotropic Layered System), has been developed and released for use by consulting engineers through various computing networks.

As part of the investigation into soil-structure interaction, the behaviour of piled foundations is being studied at the headquarters building of the Criminal Investigation Branch, Perth.

DEPARTMENT OF AGRICULTURE

Reference to the scientific work of the Department of Agriculture appears in the section *The Department of Agriculture* in Chapter VIII, Part 1—*Primary Production*, and also in Chapter VII, Parts 1 and 2.

BOTANIC GARDEN

The Botanic Garden was established in The King's Park in 1962 and is under the control of the King's Park Board (see following section *Public Parks and Reserves*). The Botanic Garden is the counterpart of The Western Australian Museum in the botanical field and complements the State Herbarium by maintaining collections of living plants for scientific and educational purposes. Its official objects are to foster public interest in the conservation and cultivation of the Western Australian flora; to contribute to public education in this field; to become a centre for botanical and horticultural research in the flora of Western Australia; and to provide a major tourist attraction.

The Garden, which was officially opened in October 1965, extends over thirty-four hectares, made up of the Western Australian collection (seventeen hectares), Californian, South African and Mediterranean collections (three hectares), and an arboretum of native trees (fourteen hectares). The indigenous flora of the State is represented in the Western Australian collection by approximately 1,200 species. Trees grown as specimens in the arboretum are mainly those which are native to the southern half of the State.

Parties from the Botanic Garden are regularly in the field for the collection of propagating material. Special attention is devoted to the preservation of rare species or species threatened with extinction. Seed of native plants collected is distributed from surplus stocks to botanical institutions throughout the world. A seed list, which normally offers from 1,000 to 1,300 species, is published annually, and more than 10,000 packets of seed are distributed each year.

Experimental work in propagation of native plants is carried out and a Wildflower Exhibition is held in the Park each spring. Lectures are given by members of the staff to interested societies and to students engaged in related courses of study. The public may also, by arrangement, consult members of the staff. Facilities are provided for the employment and training of students enrolled in the three-year course for the Certificate in Horticulture, which is conducted by the Technical Education Division of the Education Department.

PUBLIC PARKS AND RESERVES

It is within the power of the Governor to dispose of, in any manner which serves the public interest, lands which are vested in the Crown and, in terms of this authority, Crown land is frequently reserved by order of the Governor for a variety of public purposes. Some of this land is reserved for public recreation and amusement, national and other public parks, or flora and fauna sanctuaries and the reserves are controlled by statutory bodies, the more important of which are dealt with in this section.

The *National Parks Board of Western Australia* controlled forty-two National Parks and a number of other reserves at 30 June 1974, totalling in all about 1.77 million hectares in area. Flora and fauna are protected and firearms prohibited in all National Parks and

Reserves controlled by the Board. Picnic, recreational, camping and caravan facilities are available in certain parks and reserves.

NATIONAL PARKS BOARD OF WESTERN AUSTRALIA
PARKS AND RESERVES VESTED IN THE BOARD AT 30 JUNE 1974

National Park or Reserve	Area	National Park or Reserve	Area
	hectares		hectares
Alexander Morrison	8,504	Matilda Bay Reserve	23
Araluen-Canning Dam Reserve	20	Moore River	17,380
Avon Valley	4,430	Nambung	17,332
Badgingarra	10,285	Nowergup Lake Fauna Sanctuary	117
Cape Arid	259,808	Neerabup	1,127
Cape Le Grand	23,000	Penguin Island Reserve	13
Cape Range	13,424	Porongurup	2,239
Charles Gairdner Flora Reserve	583	Porongurup Range Reserve (a)	61
Chichester Range	150,609	Scott	1,376
Cowaramup	879	Serpentine	636
Drovers Cave	2,681	Sir James Mitchell	1,093
East Perth Cemetery Reserve	5	Stirling Range	115,689
Fitzgerald River	242,557	Stokes Inlet (a)	10,667
Frank Hann	49,877	Tathra	4,355
Geikie Gorge	3,136	Torndirrup	3,904
Geekabee Hill Flora Reserve	4	Tunnel Creek (a)	92
Gooseberry Hill	33	Walpole-Nornalup	17,961
Greenmount	51	Walyunga	1,790
Haddleton Flora Reserve	713	Watheroo	34,920
Hamelin Bay (a)	1,260	William Bay	1,879
Hamersley Range	590,206	Windjana Gorge	2,134
Hassell	1,279	Wolf Creek Meteorite Crater Reserve	1,460
John Forrest	1,579	Yalgorup	10,482
Kalamunda	372	Yallingup (a)	1,885
Kalbarri	152,732	Yanchep	2,790
Leeuwin	1,101	Yanchep Flora Reserves	178
Lesmurdie Falls.....	55		
Total area of National Parks and Reserves (b)			1,770,765

a) Not officially named at 30 June 1974.

(b) Excludes a number of small reserves, totalling 19 hectares, not listed above.

The *Emu Point (Albany) Reserve Board* controls a reserve containing an area of approximately 451 hectares at Emu Point near Albany, which has been developed for recreation, camping and residential purposes. A hostel, two camping and caravan parks and a motel provide accommodation. Pen facilities are available for small boats and mooring areas are provided for professional fishing boats.

The *King's Park Board* administers an area of almost 403 hectares close to the centre of Perth. Part of this area was dedicated in 1872 'for the purpose of a public park and recreation ground' and was enlarged in 1890. Beautification commenced in 1896 under the presidency of Sir John Forrest, and the name was changed in 1901 from Perth Park to The King's Park in honour of the accession of King Edward VII. In addition to its original function as park and recreation ground, The King's Park has over the years gradually developed two other important functions, as a National Shrine and as a Botanical Reserve. In the former case it houses the State's most important monuments and commemorative features of a military and historical nature. A memorial to the South African war was built in 1901, and the State War Memorial to the fallen of both world wars was erected on a commanding position on Mount Eliza in 1929 and extended in 1952. 'Honour Avenues' of trees dedicated to individual fallen servicemen were planted in 1919 and later, and another avenue commemorates the State Centenary of 1929. There are smaller memorials erected by individual regiments or other military units, and a number of monuments to important historical personages.

The concept of the botanical reserve grew from the fact that four-fifths of the Park's area remained undeveloped under a natural bushland which contained many native wild-flowers. Increasing urbanisation and the loss of natural sites in and close to Perth made the retention of this bushland area a matter of scientific and aesthetic value. This function was strengthened from 1962 onwards by the establishment in the Park of a botanic garden and arboretum of thirty-four hectares for the cultivation and display of Western Australian native plants. (See preceding section *Botanic Garden*.)

Recent developments have continued to contribute to the Park's aesthetic and recreational functions. A fully-equipped modern restaurant was erected in 1956, close to such features as a floral clock, a wishing well, a giant karri log and an observation platform. There are several public barbecue sites and many kilometres of pedestrian paths and tracks. The original twenty hectares of lawns and shrubberies have been materially extended by the Botanic Garden development. Four new lawns have been added within the Garden, one of which encircles a landscaped water garden with four pools, two cascades and a waterfall, one pool featuring an illuminated fountain dedicated to the pioneer women of the State. A picnic lawn, refreshment kiosk, and children's nature playground have been established around an artificial lake at the western end of the park and linked to older-developed areas by a mile-long vista leading to a viewing tower.

The *Zoological Gardens Board* administers the Zoological Gardens at South Perth an area of eighteen hectares of animal enclosures, cages, lawns and gardens. The Zoological Gardens were established in October 1898 for the collection and display of mammals, birds, reptiles and fish from all parts of the world, but specialising in Australian, and particularly Western Australian, fauna. The Zoo is open to the public every day of the year. During the year ended 30 June 1974, 85 species of mammals, 302 species of birds and 35 species of reptiles were exhibited. In this period 356,029 people paid for admission and, in addition, 3,870 disadvantaged children and adults were admitted free.

The *Rottneet Island Board* administers as a tourist and holiday resort a reserve comprising almost the whole of Rottneet Island, which is situated about eighteen kilometres west of Fremantle. The settlement at Thomson Bay contains 140 cottages and bungalows to let, a hotel, lodge, camping areas and all services. Recreational facilities include a golf course, tennis courts, bowling green and a riding school. The coastline is ringed by a road system with access to the various swimming and fishing areas. There is a land-backed wharf and three jetties in Thomson Bay and jetties at Geordie Bay and Green Island. Special features of the island include the marsupial known as the Quokka and the Rottneet Island Daisy. The island is served daily by air and sea transport. Visitors to the island in 1973-74 totalled 174,000.

Caves Reserves. Extensive limestone caves have been discovered at several places in the south-west part of the State. Some of them, between Cape Naturaliste and Cape Leeuwin and at Yanchep, have been developed for public inspection and certain areas of the surrounding land have been reserved, notably at Yanchep, Yallingup, Margaret River and Augusta.

Local Government Reserves. Many local authorities hold land for recreational purposes, the areas having been either Crown land vested in the Council, acquired by way of purchase, or received under private bequest. Included in these local government reserves are areas required to be surrendered to the Crown by private owners, when subdividing land into residential lots in order to provide recreation areas for the holders of lots in the subdivision. The reserves are frequently developed as public parks or to provide facilities for sports or camping.

The *Youth, Community Recreation and National Fitness Council of Western Australia* functions under the provisions of the *Youth, Community Recreation and National Fitness Act, 1972* which became operative on 28 February 1973.

The Council includes in its operations the activities formerly engaged in by the State National Fitness Council and the Youth Council of Western Australia.

In terms of the Act, the purpose of the Council is 'to promote co-operation between and to assist organisations concerned with youth service, community recreation and physical and cultural fitness'.

Funds are made available by the Australian Government and the State Government, and the Council is authorised to make grants to community groups for the establishment of training courses for coaches, leaders, officials and administrators; for the purchase of items of equipment; for special development projects; and for capital works.

The Council has appointed a number of officers to local government authorities to promote greater community involvement in all forms of leisure activity. It also conducts courses in leadership training and sports coaching.

Camps which provide low cost accommodation and recreation facilities for youth, sporting and other recreational organisations are fully operative at Point Peron, on the coast south of Fremantle, at Bickley, east of Perth in the Darling Range, and at Guildford near Perth. A major recreational project is under development at Sorrento, north of Perth and new camps are being established near Pemberton and Collie.

The Council is also involved in the annual Fitness Australia campaign to promote physical fitness in the community, the Vacation Play Centres Scheme for primary school children and the Duke of Edinburgh's Award Scheme.

Chapter V—continued

Part 3—Health Services, Hospitals, and Care of the Aged and Disabled

HEALTH SERVICES

The Australian Government and State Government health authorities, together with Boards of Health under local government administration, co-operate in maintaining health services and in the prevention and control of infectious diseases in Western Australia.

Australian Government Services

The National Health Services provided under the National Health Act are controlled partly by the Department of Health and partly by the Department of Social Security. Each of these Departments is administered, subject to the control of the relevant minister, by a Director-General. There is also, in each State, a Director who is responsible to the Director-General. The administration of the Quarantine Act is another function of the Department of Health.

National Health Services. National Health Services financed from the National Welfare Fund, to which reference is made on page 256, include hospital and nursing home benefits; medical benefits; pharmaceutical benefits; handicapped children's benefits; domiciliary nursing care benefits; and the payment of tuberculosis allowances and other forms of assistance in tuberculosis control. (For rates and conditions applying to payment of these benefits see letterpress *National Health Services* on pages 265-70.) Additional expenditure from the National Welfare Fund in relation to health services includes the cost of district health laboratory services, the free supply of certain prophylactic materials and biological products (e.g. poliomyelitis vaccine), the supply and maintenance of hearing aids for persons aged up to twenty-one years and for eligible pensioners and their dependants, subsidies to various voluntary organisations conducting home-nursing services that are assisted by the State Governments or local government authorities, the supply of artificially produced radio-active isotopes to private medical practitioners and hospitals for medical treatment purposes, and expenses in connection with the blood fractionation plant of the Commonwealth Serum Laboratories.

Quarantine. The *Quarantine Act* 1908-1973 provides for the quarantine of humans, animals and plants. Human quarantine is concerned primarily with the procedures necessary to exclude quarantinable diseases, namely smallpox, plague, cholera, yellow fever, typhus fever, leprosy, and such other diseases as may be declared under the Quarantine Act. Animal quarantine regulates the importation of animals and animal products from overseas, and plant quarantine the importation of all plants and plant products, with the object of excluding plant diseases, insect pests and weeds. In respect of interstate movements of animals and plants, the Quarantine Act becomes operative only when it is considered that Australian Government action is necessary for the protection of any State or States, and in general the control of interstate movements of animals and plants is the responsibility of State Governments.

State Government Services

The principal Statute relating to the provision and regulation of health services in Western Australia is the *Health Act, 1911-1975*, which is administered, subject to the control of the Minister, by a Commissioner of Public Health. The Act is comprehensive in scope and confers on the Commissioner the powers necessary for the prevention and control of infectious diseases; the enforcement of sanitation, building and pure foods standards; the control of nuisances and offensive trades; the regulation of the sale of

pesticides and the manufacture of therapeutic substances; and the registration of private hospitals and the licensing of maternity homes. Other Acts under Public Health administration are the Anatomy Act, the Clean Air Act, the Cremation Act, the Noise Abatement Act, the Poisons Act and the Radioactive Substances Act.

The Public Health Department maintains a health laboratory service which provides diagnostic medical laboratory services for a major metropolitan general hospital (Sir Charles Gairdner Hospital), for all those areas of Western Australia not otherwise served by medical laboratories, for government and charitable institutions and for pensioners. A public health epidemiological service is also provided for the State; nutritional, health and other surveys are undertaken; and forensic laboratory work is done for the Police Department and the Crown Law Department. A new central laboratory building is under construction at the Perth Medical Centre being established at Hollywood under the provisions of the *Perth Medical Centre Act, 1966-1973*.

The Health Education Council is established as a statutory body under the provisions of the *Health Education Council Act, 1958-1961*. The Council conducts publicity campaigns and public lectures on matters affecting public health, including home accidents, handling of poisons, poliomyelitis and diphtheria immunisation and the control of flies and mosquitoes.

The Cancer Council of Western Australia is constituted under the provisions of the *Cancer Council of Western Australia Act, 1958-1964* as a statutory body with the functions of co-ordinating, promoting and subsidising research into the cause, diagnosis, prevention and treatment of cancer.

The Western Australian Government subsidises the cost of dental care for pensioners and persons on low incomes who are treated at the Perth Dental Hospital and at clinics in some major country centres. Co-operating dental practitioners assist the subsidy programme in other areas.

Infectious Diseases

The *Health Act, 1911-1975* provides for the compulsory notification of infectious diseases and for the application of preventive measures. For the purposes of the Act, infectious diseases are those which are specified in the Act, as well as any other diseases which may, from time to time, be declared. The occupier of premises where such a disease occurs is required to notify the local authority forthwith. The medical practitioner who attends a person suffering from an infectious disease must, on the day on which he becomes aware of the nature of the disease, notify the occupier and also the local authority and the Commissioner of Public Health.

On the appearance of any epidemic, endemic or contagious disease, the local authority is required to notify the Commissioner immediately and to report periodically on the disease. The Act provides for the disinfection and cleansing of premises and for the disinfection and destruction of bedding, clothing or other articles which have been exposed to infection. The Commissioner may require any person suspected to be suffering from, or to be a carrier of, an infectious disease to submit to medical examination.

NOTIFIABLE DISEASES (a)—NUMBER OF CASES NOTIFIED (b)

Disease	1969	1970	1971	1972	1973
Brucellosis	2	2	1	....	1
Diphtheria .....	....	2	1	2	5
Infectious hepatitis	146	166	291	163	165
Leprosy (c)	39	28	25	10	13
Leptospirosis .....	....	....	....	2	3
Paratyphoid fever .....	....	....	1	....	1
Poliomyelitis .....	....	....	....	4	....
Tetanus	1	....	4	....	....
Tuberculosis	160	148	143	155	146
Typhoid fever	3	1	1	2	....
Typhus (all forms) .....	....	....	....	1	....

(a) See letterpress immediately following table. (b) Figures exclude cases where the original diagnosis was subsequently disproved. No cases of cholera, plague, smallpox or yellow fever were notified during the period. (c) Aborigines account for practically all of these cases.

The previous table shows, for Western Australia, the number of cases notified during the years 1969 to 1973 for those diseases notifiable in all, or nearly all, States and Territories of Australia. In May 1965 the National Health and Medical Research Council at its Fifty-ninth Session proposed a basic list of diseases to be notifiable in each State and Territory and this table is based upon that proposal. The table does not include all diseases which are notifiable in Western Australia.

Leprosy and trachoma are endemic among the Aborigines of the Kimberley Division in the far north of the State, and cases are, with few exceptions, confined to the Aboriginal population. The Department of Public Health and the Northern Territory Medical Service co-operate in the control of these diseases.

The Commissioner of Public Health may compel any person believed to be suffering from venereal disease to undergo examination by a medical practitioner. Any person who is aware or suspects that he is suffering from venereal disease is required to consult a medical practitioner and, if found to be infected, must continue treatment until a certificate of cure is issued. Free treatment is available at public hospitals. In 1973, 1,657 cases of gonorrhoea and 290 of syphilis were notified to the Department.

A joint campaign of tuberculosis control is conducted by the Australian Government and the State Governments. Under the provisions of the *Tuberculosis Act* 1948-1973, the Australian Government reimburses the State for capital expenditure incurred after 1 July 1948, and for net maintenance expenditure in excess of that of the base year 1947-48. In addition, the Australian Government pays allowances to tuberculosis sufferers and their dependants, as set out in Part 5 of this Chapter. Western Australia, like the other States, carries out the actual work of diagnosis and treatment.

Special Health Services for Children

In addition to measures provided for immunisation against poliomyelitis, diphtheria and other infectious diseases, Child Health Services and School Health and Dental Services assist in maintaining the general health of children in Western Australia.

Child Health Centres have been established throughout the State to advise mothers concerning the care of infants and pre-school children. Expectant mothers are also assisted and country mothers who are unable to attend a Centre may receive advice by letter under a Correspondence Nursing Scheme. It is estimated that 90 per cent of infants in the State are taken to a Centre at least once in the first year of life. Child Health Sisters also visit remote areas of the State and interview mothers who are normally dependent on advice given by correspondence.

CHILD HEALTH CENTRES

Particulars	1969	1970	1971	1972	1973
Expenditure (a)—					
Salaries and wages \$'000	305	344	370	494	652
Other \$'000	63	73	94	105	104
Total \$'000	368	417	464	599	756
Number of—					
Staff (b)—					
Medical officers	2	2	1	1	2
Nurses	84	84	83	92	95
Total	86	86	84	93	97
Child health centres (b)	76	78	84	89	89
Mobile clinics (b)	3	4	4	4	4
Total	79	82	88	93	93
Attendances at centres—					
Individual infants	38,407	40,020	41,927	43,166	43,795
Total attendances	256,304	273,368	276,056	273,226	254,545
Infants examined at pre-school centres	6,491	7,386	(c)	(c)	(c)
Home visits by nurses	27,778	31,375	31,697	33,343	32,598

(a) Year ended 30 June.

(b) At 31 December.

(c) Not available.

The School Health Services provide for a complete medical examination of each child during the first year at school. Subsequent screening for visual and hearing defects is carried out on two further occasions during school life. In addition medical assessment for physical, mental or learning handicap is available on the request of either teacher, guidance officer, or parent. Parents are notified of any defects detected during such examinations and advised to seek attention through their family doctor when necessary. Visual and hearing defects are the conditions most frequently reported. Similar services are available for pre-school centres, kindergartens and day care centres. It is also intended, under a scheme at present being developed in conjunction with the Education Department, to station a nurse at a school or a group of schools to screen children for impediments to learning as well as to provide counselling and first-aid services.

Preventive dentistry centres, staffed by school dental therapists trained at the Public Health Department's School of Dental Therapy, are progressively being established throughout the State. Dental therapists, under the direction of dental officers, also provide free dental care for children under fifteen years of age, and in country areas not served by private practitioners school dental officers provide a service for adults as well as for children.

Royal Flying Doctor Service of Australia

The Royal Flying Doctor Service of Australia is a non-profit organisation financed by grants from the Australian and State Governments and by private donations. The principal function of the Service is to provide aerial medical services for residents in remote areas. Isolated townships, mining centres and sheep and cattle stations are usually equipped with two-way radio sets and, by this means, are linked with bases where doctors are available for radio consultation in the event of sickness or accident. In serious cases a doctor flies to the patient, who may then be flown to hospital for treatment. The Service provides, through the Australian Department of Health, standard medical chests with directions for the use of the drugs and medical supplies which they contain.

The radio network of the Royal Flying Doctor Service is regularly used in the work of Schools of the Air conducted by the Education Department, and also for the transmission and receipt of telegrams. In addition, it may be used, as the need arises, in connection with flood relief, in searching for lost parties and in co-ordinating movements of livestock.

The following table gives particulars of the operations of the Western Australian Section of the Service during the five years ended June 1974.

ROYAL FLYING DOCTOR SERVICE OF AUSTRALIA
OPERATIONS OF WESTERN AUSTRALIAN SECTION

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Expenditure (operational) \$'000	245	283	351	*380	443
Number of—					
Medical flights	1,041	1,161	1,193	1,257	1,297
Miles flown	516,690	602,702	648,523	725,731	739,833
Patients transported	1,412	1,717	1,749	2,220	2,161
Patients attended	6,558	9,345	(a) 17,781	(a) 16,870	(a) 12,840
Radio and telephone consultations	2,520	2,547	2,082	1,902	1,763

(a) Not comparable with figures shown for 1970-71 and earlier, due to inclusion of some services (e.g. immunisation) previously excluded. * Revised.

HOSPITALS OTHER THAN MENTAL HOSPITALS

Australian Government Hospitals

The Repatriation General Hospital at Hollywood and the Edward Millen Hospital at Victoria Park provide free treatment for certain recipients of pensions payable under the Repatriation Act (see pages 263-5) and for their dependants. Free treatment is also available to some other categories of former members of the defence forces and their dependants.

State Government and Government-assisted Hospitals

The *Hospitals Act, 1927-1973* is administered, subject to the direction of the Minister for Health, by the Medical Department. For administrative purposes, a hospital under the direct control of the Medical Department is classified as 'departmental' and is financed from State funds. A hospital classified as a 'Board' hospital has its own board of management and is subsidised by the State Government.

The principal government and government-assisted hospitals are the Royal Perth Hospital, Fremantle Hospital, Sir Charles Gairdner Hospital, King Edward Memorial Hospital for Women, Princess Margaret Hospital for Children, the Home of Peace for the Chronic Sick, the Perth Dental Hospital, and Mount Henry Hospital and Sunset Hospital for long-term patients.

Departmental and Board hospitals collect fees from patients able to pay for treatment, and receive hospital benefit payments provided by the Australian Government under Part V of the *National Health Act 1953-1975* (see letterpress *Hospital and Nursing Home Benefits* on pages xxx-xx), but are financed mainly from State Government funds. Details of the activities of departmental and Board hospitals during the five years ended 30 June 1973 are given in the following table.

DEPARTMENTAL AND BOARD HOSPITALS (a)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Expenditure—					
Capital funds.... \$'000	6,707	8,548	9,197	5,231	12,721
Hospital Fund—					
Establishment and domestic (b).... \$'000	4,129	5,076	6,913	7,072	9,642
Salaries and wages \$'000	24,330	28,958	36,142	47,114	58,180
Other \$'000	12,902	14,839	17,667	19,208	20,288
Tuberculosis \$'000	495	534	554	559	657
Total \$'000	48,562	57,956	70,474	79,183	101,488
Number of—					
Hospitals (c)—					
Departmental	46	46	47	46	47
Board	52	53	54	54	52
Total	98	99	101	100	99
Beds (d)—					
Departmental	3,274	3,073	3,167	3,265	3,352
Board	3,583	4,009	4,071	4,015	4,201
Total	6,857	7,082	7,238	7,280	7,553
Staff (c)—					
Medical	264	306	393	392	448
Nursing	4,651	5,003	5,622	6,171	6,181
Other	5,097	5,518	5,939	6,176	6,652
Total	10,012	10,827	11,954	12,739	13,281
In-patients—					
At beginning of year	4,769	5,034	5,182	5,367	5,303
Admissions	140,985	150,278	159,244	*168,430	176,458
Discharges	137,507	146,896	155,891	*165,137	173,301
Deaths	3,213	3,234	3,168	*3,357	3,333
At end of year	5,034	5,182	5,367	*5,303	5,127
Average daily number resident	4,873	4,922	5,112	5,338	5,294
Out-patients—					
Individuals	339,644	378,538	416,540	464,016	529,358
Treatments....	861,384	807,748	988,028	1,112,704	1,212,762

(a) Includes particulars of the Perth Dental Hospital, and Mount Henry Hospital and Sunset Hospital for long-term patients. (b) Maintenance of equipment, furnishings and minor repairs. (c) At 30 June. (d) At 31 July. * Revised.

As previously indicated, the control of tuberculosis is chiefly a State Government activity, supported by Australian Government subsidies and carried out under the direction of the Commissioner of Public Health. The principal institution for the treatment of tuberculosis is the Sir Charles Gairdner Hospital at Hollywood.

Leprosy, which is confined almost entirely to the far north of the State, is treated at a leprosarium at Derby in the Kimberley Division.

Private Hospitals and Nursing Homes

In addition to the government hospitals there are a number of private general and maternity hospitals, which are registered and inspected by the Department of Public Health. The principal private hospitals are those established by religious bodies in the metropolitan area and the main country towns. These include the Hospitals of Saint John of God at Subiaco, Rivervale, Bunbury, Geraldton and Kalgoorlie; Saint Anne's, Mount Lawley; Bethesda Hospital, Claremont; the Hillcrest Maternity Hospital, North Fremantle and Saint Joseph's Hospital, Bicton.

Private hospitals collect fees from patients and receive hospital benefit payments provided by the Australian Government under Part V of the *National Health Act* 1953-1975. At 30 June 1974 there were 122 private hospitals and nursing homes in Western Australia approved for payment of hospital benefits and nursing home benefits under the Act. These hospitals and homes had a total bed capacity of 5,688 at that date.

MENTAL HEALTH SERVICES

The *Mental Health Act, 1962-1973*, which consolidates and amends the law relating to the treatment of mental disorders, came into operation on 1 July 1966. The Mental Health Services established under the Act are administered, subject to the control of the Minister for Health, by the Director of Mental Health Services. The Director must be a psychiatrist and is appointed by the Governor. Institutions authorised by the Act include hospitals for the treatment of mental illness, reception homes, out-patient and child guidance clinics, day hospitals, training centres, geriatric centres, hostels, and sheltered workshop units.

The Act provides for the admission of patients to hospitals approved for the purpose, either on referral by a medical practitioner or by order of a Justice of the Peace supported by the referral of a medical practitioner. A person so received into a hospital must be examined within seventy-two hours by the superintendent or another psychiatrist, and admission as a patient is dependent upon the result of the examination. Unless found to be in need of treatment, the person is required to leave the hospital. Special provisions exist for the detention for observation or treatment of persons admitted by order of a court or from a prison. The Act also provides for voluntary admissions. A person not less than eighteen years of age may be granted admission on his own request. Younger persons may be admitted on the application of a parent or guardian.

Except in the case of a person admitted by order of a court or from a prison, a patient may be released on leave or discharged by the hospital superintendent. A Board of Visitors or the Supreme Court of Western Australia may also, after due consideration, order the release of a patient. Where application for the discharge of a voluntary patient is made either by the patient himself or, in the case of a patient under the age of eighteen years, by the parent or guardian at whose request the patient was admitted, he must be discharged within seventy-two hours.

Establishments designated as approved hospitals within the meaning of the Act are Graylands Hospital, Swanbourne Hospital, Lemnos Hospital and Heathcote Hospital. Out-patient clinics are conducted at the Graylands and Swanbourne Hospitals.

Other establishments include the Whitby Falls Hostel, Greenplace Hostel, the Community Development Centre, the Havelock Out-patient Clinic, the Bentley Out-patient Clinic, the Fremantle Out-patient Clinic, the Geraldton Out-patient Clinic, the Kalgoorlie Out-patient Clinic, the Port Hedland Out-patient Clinic, the Mildred Creak Centre for Autistic Children, the Child Guidance Clinic and the Stubbs Terrace Hospital for children, the Irrabeena Referral Centre, the Industrial Rehabilitation Unit and the sheltered workshop at North Fremantle.

There are also the Pyrtton Training Centre for the intellectually handicapped at Eden Hill; the Nathaniel Harper Homes at Bassendean and Guildford; Mental Deficiency Division hostels at Armadale, Bassendean, Belmont, Nedlands, Rivervale, Scarborough and Subiaco; and the Elwyn Morey Pre-school Centre at Dianella.

The following table shows particulars concerning the mental health service units operated by the Mental Health Services authority during the year ended 30 June 1973.

MENTAL HEALTH SERVICES—YEAR ENDED 30 JUNE 1973

Particulars	Approved hospitals	Rehabilitation units	Hostels	Training centres	Out-patient clinics (a)
Expenditure—					
Salaries and wages S'000	5,651	231	557	1,494	933
Other S'000	1,436	17	163	270	163
Total S'000	7,087	248	720	1,764	1,096
Number of (b)—					
Units	4	3	10	2	9
Beds	1,284	....	272	180	....
Staff—					
Medical	28	....	1	3	25
Nursing and attendants	609	....	89	225	47
Other	556	44	50	123	114
Total	1,193	44	140	351	186
Patients at beginning of year	2,605	396	231	175	n.a.
Admissions	2,632	312	315	436	(c) 43,417
Discharges (d)	2,730	325	316	431	n.a.
Patients at end of year	2,507	383	230	180	(e) 11,992

n.a. denotes 'not applicable'.

(a) Includes day-patient centres not elsewhere included. (b) At 30 June. (c) Number of out-patient attendances. (d) Includes deaths. (e) Patients treated during the year.

The Australian Government is empowered by the *Mental Health and Related Services Assistance Act 1973* to provide financial assistance to States, local governing bodies and voluntary organisations in respect of services or facilities in relation to mental illness, mental disability, alcoholism and drug dependence. The Act came into operation on 27 November 1973 and replaces the *States Grants (Mental Health Institutions) Act 1964-1970* which expired on 30 June 1973.

CARE OF AGED AND DISABLED PERSONS

Part 5 of this Chapter gives particulars of pensions, allowances and some other benefits available to aged and disabled persons under the provisions of the Social Services Act, the Repatriation Act, the National Health Act and the Tuberculosis Act. Forms of assistance extended to such persons by other Commonwealth Acts are dealt with below.

Aged or Disabled Persons Homes Act

The *Aged or Disabled Persons Homes Act 1954-1974* incorporates the *Aged Persons Homes Act 1954-1973* and extends its provisions to include disabled persons. The purpose of the legislation is to enable the Australian Government to give financial assistance to religious, charitable and other organisations in providing accommodation for the aged or disabled. The Act is administered, subject to any directions of the Minister, by the Director-General of Social Security.

For the purposes of the Act, the term 'aged person' means a man aged sixty-five years or over or a woman aged sixty years or over and includes the spouse of the aged person; 'disabled person' means a person who has attained the age of sixteen years and who is permanently blind or permanently incapacitated for work. Grants are made to organisations 'to encourage and assist the provision of suitable homes for eligible persons, and in particular homes at which eligible persons may reside in conditions approaching as nearly as possible normal domestic life . . .'. The legislation authorises grants to eligible organisations to be applied towards the cost of erecting or purchasing approved homes to be used permanently for the accommodation of aged or disabled persons. To be eligible for assistance an organisation must be one which is carried on otherwise than for the purpose

of profit or gain to its individual members, and may be a religious, charitable or benevolent organisation, an organisation of former members of the defence forces, an organisation approved by the Governor-General, or a local governing body. An organisation conducted or controlled by the Australian Government or a State Government is not eligible for assistance.

When the original Act commenced on 16 December 1954 the grant was made on the basis of \$1 for each \$1 raised by the organisation excluding borrowed money and money received from a governmental body. An amending Act, effective from 22 October 1957, increased the Government's contribution to \$2 for each \$1 raised by the organisation. In terms of the *Aged or Disabled Persons Homes Act* 1974, which came into operation on 3 December 1974, the Government's contribution is increased to \$4. Grants are made from moneys appropriated by the Parliament from the Consolidated Revenue Fund.

Details of the number and value of grants and of persons accommodated in each of the five years ended 30 June 1974 are given in the following table.

AGED PERSONS HOMES GRANTS—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Grants approved (a)— Number	18	25	31	30	25
Persons accommodated— Type of accommodation—					
Self-contained	326	354	314	313	419
Hostel	97	207	182	108	144
Nursing	85	205	161	41	89
Total persons	508	766	657	462	652
Amount	\$'000 2,019	\$'000 3,335	\$'000 3,001	\$'000 2,576	\$'000 3,480

(a) A supplementary grant may be approved in a year subsequent to the year when the original grant was approved. In this table each supplementary grant has been included in the year in which the additional amount was actually approved.

Personal Care Subsidy. An amendment to the Aged Persons Homes Act operative from 10 October 1969 provided for payment of a Personal Care Subsidy to approved homes. Homes eligible for the subsidy are those where residents are provided with all meals and where staff is employed to assist residents who need help with bathing, dressing, personal laundry and the cleaning of their rooms, and those who need help with medication.

The *Aged or Disabled Persons Homes Act* 1954-1974 authorises the payment of subsidy at the rate of \$15 per week in respect of each person residing in approved premises who has attained the age of eighty years or is receiving approved personal care services. Payments are made from the National Welfare Fund (see table on page 292).

PERSONAL CARE SUBSIDY—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of approved premises (a)....	29	32	32	43	46
Number of qualified residents (a)	492	505	441	554	820
Amount of subsidy paid	\$ 89,020	\$ 123,260	\$ 143,780	\$ 277,500	\$ 527,840

(a) At 30 June.

Aged Persons Hostels Act

The *Aged Persons Hostels Act* 1972-1974 is administered, subject to any directions of the Minister, by the Director-General of Social Security. The Act authorises the Australian Government to assist in the provision of additional hostel-type accommodation for aged persons by making grants to organisations which satisfy certain conditions related to

existing accommodation. During the period from the commencement of the original Act on 27 September 1972 to 30 June 1974, two grants amounting in total to \$161,000 were approved in respect of organisations in Western Australia.

Homeless Persons Assistance Act

The *Homeless Persons Assistance Act* 1974, which came into operation on 13 December 1974, authorises the Australian Government to make grants to charitable and other organisations providing temporary accommodation and personal services for the homeless. Grants may be made in respect of the acquisition of land, buildings and furniture; the rent of premises; the salaries of social welfare workers (including social workers, welfare officers, psychologists and occupational therapists); and the provision of meals.

Delivered Meals Subsidy Act

The *Delivered Meals Subsidy Act* 1970-1974 is administered, subject to any directions of the Minister, by the Director-General of Social Security. Its purpose is to enable help to be given to approved organisations to establish, maintain, expand and improve services for the delivery of meals to aged and invalid persons. To qualify for approval, an organisation must conduct a regular service delivering meals wholly or mainly to aged or invalid persons in their homes.

The Act authorises payment of subsidy at the rate of 25 cents per meal, which is increased to 30 cents if the meal includes fresh fruit or fruit juice. Payments are made from the National Welfare Fund (see table on page 292).

Handicapped Persons Assistance Act

The *Handicapped Persons Assistance Act* 1974, which repeals the *Handicapped Children (Assistance) Act* 1970-1973 and parts of the *Sheltered Employment (Assistance) Act* 1967-1973, consolidates and extends the Australian Government's programmes of assistance to voluntary organisations concerned with the welfare of handicapped persons. The main provisions of the repealed legislation are continued and expanded by the provisions of the Handicapped Persons Assistance Act. The Act is administered, subject to any directions of the Minister, by the Director-General of Social Security.

The Act provides that grants may be made to eligible organisations which are deemed by the Minister to provide 'prescribed services' for disabled persons. Prescribed services which may be approved for the purposes of the Act include training, activity therapy, sheltered employment, residential accommodation, holiday accommodation, recreational facilities and rehabilitational facilities. Assistance may be provided towards meeting the cost of purchase or construction of premises to provide the prescribed services. The Act allows the payment of subsidy in respect of residential accommodation to be extended to include accommodation for disabled persons capable of engaging in normal employment. Subsidies may also be approved to help meet expenditure on building maintenance, rental of premises, equipment, and the salaries of certain staff involved in providing prescribed services. The Act also authorises the payment to organisations of a training fee for each person who, after being employed for six months or longer in a sheltered workshop, has spent at least twelve months in normal employment.

The handicapped children's benefit, formerly payable in terms of the National Health Act, is continued under the provisions of the *Handicapped Persons Assistance Act* 1974. A handicapped child is defined as a person under sixteen years of age who is suffering from a physical or mental disability. An eligible organisation which provides approved residential accommodation for handicapped children is entitled to receive benefit in respect of each such child at the rate of \$3.50 for each day, commencing with 1 January 1975, on which accommodation is provided for the child.

Sheltered Employment Allowances

Sheltered employment allowances, which were introduced in terms of the *Social Services Act* 1967, enable invalid pensioners and certain other disabled persons to earn an

income from sheltered employment and at the same time to be eligible to receive a special allowance which, in the case of an invalid pensioner, replaces the pension.

Sheltered Workshops Grants

The following table shows the number and amount of sheltered workshops grants approved in respect of organisations in Western Australia during the five-year period ended 30 June 1974. These grants were authorised by the *Sheltered Employment (Assistance) Act* 1967-1973, to which reference is made on page 207 of *Western Australian Year Book*, No. 13—1974.

SHELTERED WORKSHOPS GRANTS—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of grants approved for—					
Workshop premises	1	1	5	4	3
Workshop equipment	19	38	47	51	114
Workshop rental	1	1	3	1	2
Residential units	2	1	5	1	1
Training fees .....	....	1	6	3	1
Salary subsidy .....	....	30	73	6	18
Total	23	72	139	66	139
	\$	\$	\$	\$	\$
Amount of grants approved for—					
Workshop premises	74,279	21,933	144,027	42,087	257,600
Workshop equipment	27,244	60,566	42,835	55,726	145,698
Workshop rental	2,686	3,062	4,185	6,252	12,773
Residential units	82,001	9,323	277,593	14,789	16,143
Training fees .....	....	500	3,000	1,500	500
Salary subsidy .....	....	30,020	57,374	11,265	24,690
Total	186,210	125,404	529,014	131,619	457,404

Handicapped Children Assistance Grants

The following table shows the number and amount of handicapped children assistance grants approved in respect of organisations in Western Australia during the four-year period ended 30 June 1974. These grants were provided in terms of the *Handicapped Children (Assistance) Act* 1970-1973, now repealed. Reference to the repealed legislation is made on pages 207-8 of *Western Australian Year Book*, No. 13—1974.

HANDICAPPED CHILDREN ASSISTANCE GRANTS WESTERN AUSTRALIA

Particulars	1970-71	1971-72	1972-73	1973-74
Number of grants approved for—				
Training centres	1	....	....	3
Equipment .....	....	2	7	18
Accommodation centres .....	....	....	....	4
Total	1	2	7	25
	\$	\$	\$	\$
Amounts of grants approved for—				
Training centres	80,071	....	....	228,640
Equipment .....	....	6,603	6,288	33,056
Accommodation centres .....	....	....	....	267,479
Total	80,071	6,603	6,288	529,175

Other Forms of Assistance

Under the *States Grants (Home Care) Act* 1969-1973 the Australian Government shares with a State on a \$2 for \$1 basis the cost of approved housekeeping or other domestic services provided wholly or mainly for aged persons in their homes. It also shares with a State the cost of providing approved senior citizens' centres, on a \$2 for \$1 basis up to a maximum of two-thirds of the capital cost of the centres, as well as paying two-thirds of

the salary of a welfare officer engaged in the co-ordination of home care services and associated with a senior citizens' centre. Grants to Western Australia were first made in the year 1970-71, details of amounts paid to 1973-74 being given in the following table.

HOME CARE SERVICES GRANTS—WESTERN AUSTRALIA

Particulars	1970-71	1971-72	1972-73	1973-74
	\$	\$	\$	\$
Amount of grants paid for—				
Home care services	3,500	10,000	12,500	22,500
Senior citizens' centres .....	....	30,244	67,252	123,148
Welfare officers .....	....	....	5,475	15,182
Total	3,500	40,244	85,227	160,830

The *States Grants (Paramedical Services) Act* 1969 authorises the Australian Government to share with a State on a \$1 for \$1 basis the cost of approved paramedical services, such as chiropody, occupational therapy, physiotherapy and speech therapy, provided wholly or mainly for aged persons in their homes. Payments are made from the Consolidated Revenue Fund and the maximum annual expenditure authorised by the Act is \$250,000, of which \$19,000 is payable to Western Australia. In the period to 30 June 1974, no grant had been made to Western Australia.

The *States Grants (Dwellings for Aged Pensioners) Act* 1969 authorised the Australian Government to share with a State on a \$1 for \$1 basis the cost of providing self-contained dwellings at reasonable rentals for certain recipients of an age pension payable under the Social Services Act or a service pension under the Repatriation Act. The Act enabled expenditure by the Australian Government, during the five-year period to 30 June 1974, of an amount of \$25 million, Western Australia's share being \$1.75 million. Grants were financed from the Consolidated Revenue Fund. Payments to Western Australia comprised \$700,000 in 1970-71, \$224,555 in 1971-72, \$518,815 in 1972-73 and \$306,630 in 1973-74.

Chapter V—continued

Part 4—Housing and Building

HOUSING AND THE CENSUS

NOTE. Before an amendment to the Australian Constitution in 1967, dwellings occupied solely by full-blood Aborigines were excluded from published tables relating to the Census of Population and Housing (see letterpress Aborigines on page 144). As a result of this amendment, such dwellings are included in the statistics derived from the Census of 30 June 1971, which therefore relate to all dwellings. It has been possible to compile some data from the 1966 Census on this basis and particulars have been incorporated, as appropriate, in the tables on the following pages.

The definitions given below are relevant when considering data derived from the Census of Population and Housing.

OCCUPIED DWELLING. For the purpose of the Census of Population and Housing an occupied dwelling is any habitation occupied on census night by a household group living together as a domestic unit, and may comprise the whole of a building or only part of it. The term has therefore a very wide reference and includes, in addition to houses and flats, a great variety of dwellings ranging from a single-roomed shack to a multi-roomed hotel or institution.

UNOCCUPIED PRIVATE DWELLING. An unoccupied private dwelling is defined as a structure built specifically for private living purposes and capable of being lived in, though unoccupied at the time of the census. The term includes vacant dwellings available for sale or renting; dwellings such as week-enders or holiday homes which were not occupied on census night; dwellings normally occupied but whose occupants were temporarily absent on the night of the census; newly-completed dwellings whose owners or tenants had not entered into occupation on census night; and dwellings described as 'to be demolished', 'condemned', 'exhibition home', etc. The total number of unoccupied dwellings does not, therefore, represent the number of vacant houses and flats available for sale or renting.

PRIVATE DWELLINGS comprise the following classes:

PRIVATE HOUSE, which includes separate houses; semi-detached houses; attached houses; terrace houses; and villa units.

SELF-CONTAINED FLAT. A self-contained flat is part of a house or other building which can be completely closed off and which has its own cooking and bathing facilities. Home units are included in this class.

OTHER FLAT is part of a house, flat or other premises which is not self-contained.

OTHER PRIVATE DWELLINGS include sheds, tents, garages, caravans, houseboats, etc. occupied on a permanent or semi-permanent basis.

Dwellings at Censuses from 1901

The following table shows the numbers of occupied and unoccupied dwellings recorded in Western Australia at each census from 1901 to 1971. It should be noted that the number of unoccupied dwellings shown for censuses prior to 1971 include both private and non-private dwellings, while those for the 1971 Census refer to private dwellings only.

DWELLINGS—CENSUSES, 1901 TO 1971 (a)

Census date	Occupied dwellings				Unoccupied dwellings
	Private		Non-private	Total	
	Number	Average number of inmates			
1901—31 March	(b) 46,436	(c) 3.35	2,070	48,506	2,263
1911— 3 April	(d) 66,553	(e) 3.68	2,317	68,870	3,158
1921— 4 April	70,185	4.11	3,363	73,548	3,274
1933—30 June	100,441	3.95	3,137	103,578	4,029
1947—30 June	122,078	3.73	2,689	124,767	2,606
1954—30 June	159,496	3.64	3,327	162,823	6,614
1961—30 June	191,616	3.59	2,701	194,317	13,705
1966—30 June	222,416	3.53	3,285	225,701	17,965
1971—30 June	284,359	3.38	(f) 2,486	286,845	(g) 28,274

(a) Figures for censuses prior to 1966 exclude dwellings occupied solely by full-blood Aborigines; those for 1966 and 1971 relate to all dwellings (see NOTE on page 236). (b) Comprises 17,702 dwellings of calico, canvas, and hessian, with an average of 2.10 inmates, and 28,734 other dwellings with an average of 4.12 inmates. (c) See note (b). (d) Comprises 14,216 dwellings of calico, canvas, and hessian, with an average of 1.93 inmates, and 52,337 other dwellings with an average of 4.16 inmates. (e) See note (d). (f) For further details see next table. (g) Unoccupied private dwellings only.

Class of Dwelling

The following table shows the number of occupied dwellings in Western Australia according to class of dwelling at the Census of 30 June 1971. Private houses constituted 87.8 per cent of all occupied private dwellings in 1971 compared with 90.4 per cent in 1966. The proportion of self-contained flats to total occupied private dwellings increased from 6.33 per cent in 1966 to 8.96 per cent in 1971.

DWELLINGS ACCORDING TO CLASS—CENSUS, 30 JUNE 1971

Class of dwelling	Perth Statistical Division	Other Divisions	Total
Occupied dwellings—			
Private dwellings—			
Separate house	160,809	70,169	230,978
Semi-detached house	10,822	1,834	12,656
Attached house	1,099	1,049	2,148
Terrace or row house	1,721	266	1,987
Villa unit or town house	1,296	629	1,925
Total, Private houses	175,747	73,947	249,694
Self-contained flat or home unit	23,380	2,093	25,473
Other flat	1,908	475	2,383
Other private dwellings	984	5,825	6,809
Total, Private dwellings	202,019	82,340	284,359
Non-private dwellings—			
Hotel, motel			572
Staff quarters			630
Boarding house			618
Boarding school			44
Residential college			33
Hospital other than mental hospital	n.a.	n.a.	148
Nursing home			84
Home for the aged			30
Aboriginal mission settlement			68
Convent, monastery, etc.			92
Prison			43
Other non-private dwellings			124
Total, Non-private dwellings	988	1,498	2,486
Total, Occupied dwellings	203,007	83,838	286,845
Unoccupied private dwellings—			
Private house	9,382	13,626	23,008
Self-contained flat	3,920	558	4,478
Other	394	394	788
Total, Unoccupied private dwellings	13,696	14,578	28,274

n.a. denotes 'not available'.

The following table gives particulars of the numbers of occupied dwellings at the Censuses of 1966 and 1971, together with the total numbers of persons enumerated. Of the total of 1,026,734 persons enumerated in private and non-private dwellings at the Census of 30 June 1971, 86·2 per cent were in private houses, 5·28 per cent in self-contained flats, 2·28 per cent in other private dwellings, and 6·28 per cent in non-private dwellings. The corresponding percentages in 1966 were 87·5, 3·54, 2·12, and 6·80.

Between the Censuses of 1966 and 1971, the numbers of occupied dwellings in the State increased by 27·1 per cent. Private houses showed an increase of 48,531 or 24·1 per cent and self-contained flats an increase of 11,392 or 80·9 per cent.

OCCUPIED DWELLINGS AND PERSONS ENUMERATED CENSUSES, 1966 AND 1971

Particulars	Census, 30 June 1966		Census, 30 June 1971					
	Western Australia		Perth Statistical Division	Other Divisions	Western Australia			
	Number	Per cent of total	Number	Number	Number	Per cent of total	Increase or decrease(a) since 1966	
							Number	Per cent
OCCUPIED DWELLINGS								
Occupied dwellings—								
Private dwellings—								
Private houses	201,163	89·13	175,747	73,947	249,694	87·05	48,531	24·13
Self-contained flats	14,081	6·24	23,380	2,093	25,473	8·88	11,392	80·90
Other private dwellings	7,172	3·18	2,892	6,300	9,192	3·20	2,020	28·17
Total, Private dwellings	222,416	98·54	202,019	82,340	284,359	99·13	61,943	27·85
Non-private dwellings	3,285	1·46	988	1,498	2,486	0·87	—799	—24·32
Total, Occupied dwellings	225,701	100·00	203,007	83,838	286,845	100·00	61,144	27·09
PERSONS ENUMERATED								
Persons enumerated in—								
Private dwellings—								
Private houses	737,943	87·01	618,427	266,237	884,664	85·85	146,721	19·88
Self-contained flats	29,854	3·52	49,678	4,531	54,209	5·26	24,355	81·58
Other private dwellings	17,844	2·10	5,405	17,962	23,367	2·27	5,523	30·95
Total, Private dwellings	785,641	92·64	673,510	288,730	962,240	93·38	176,599	22·48
Non-private dwellings	57,340	6·76	n.a.	n.a.	64,494	6·26	7,154	12·48
Total, Occupied dwellings	842,981	99·40	n.a.	n.a.	1,026,734	99·64	183,753	21·80
Persons enumerated elsewhere—								
Campers-out	2,080	0·25	n.a.	n.a.	1,118	0·11	—962	—46·25
Migratory population (b)	3,039	0·36	n.a.	n.a.	2,617	0·25	—422	—13·89
Total population	848,100	100·00	703,199	324,653	1,030,469	100·00	182,369	21·50

n.a. denotes 'not available'.

(a) Minus sign (—) denotes decrease.
(b) Comprises persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.

Number of Inmates

Details of the number of inmates in private houses and self-contained flats at the Census of 30 June 1971 are given in the next table.

At the 1971 Census, 87·1 per cent of occupied private houses in Western Australia had less than six inmates, and 88·8 per cent of occupied self-contained flats had less than four inmates.

The average number of inmates was 3·54 for private houses compared with 2·13 for self-contained flats.

**OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
NUMBER OF INMATES: CENSUS, 30 JUNE 1971**

Number of inmates per house or flat	Private house			Self-contained flat		
	Perth Statistical Division	Other Divisions	Total	Perth Statistical Division	Other Divisions	Total
1	16,703	7,624	24,327	7,230	675	7,905
2	42,645	17,286	59,931	9,913	857	10,770
3	31,845	13,229	45,074	3,632	304	3,936
4	37,418	14,415	51,833	1,692	132	1,824
5	25,792	10,620	36,412	625	79	704
6	12,816	5,959	18,775	207	26	233
7	5,167	2,629	7,796	61	11	72
8 and over	3,361	2,185	5,546	20	9	29
Total houses, flats	175,747	73,947	249,694	23,380	2,093	25,473
Total inmates	618,427	266,237	884,664	49,678	4,531	54,209
Average number of inmates	3.52	3.60	3.54	2.12	2.16	2.13

Number of Rooms

A comparison of the number of rooms in private houses and self-contained flats at the Censuses of 1966 and 1971 is made in the following table.

Occupied private houses containing five rooms were the most numerous group in Western Australia at both the 1966 and 1971 Censuses, comprising respectively 42.8 per cent and 45.5 per cent of the total. Among occupied self-contained flats, those comprising three rooms predominated at each of the censuses and represented 35.8 per cent of the total in 1971 and 34.3 per cent in 1966.

**OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
NUMBER OF ROOMS: CENSUSES, 1966 AND 1971**

Number of rooms (a) per house or flat	Private house				Self-contained flat			
	Census, 30 June—				Census, 30 June—			
	1966	1971			1966	1971		
	Total, private houses	Perth Statistical Division	Other Divisions	Total	Total, self-con- tained flats	Perth Statistical Division	Other Divisions	Total
1	194	322	332	654	282	1,338	57	1,395
2	1,608	1,555	1,051	2,606	2,869	6,755	397	7,152
3	6,000	7,718	3,571	11,289	4,835	8,261	867	9,128
4	34,821	30,407	13,812	44,219	4,058	5,226	484	5,710
5	86,146	82,069	31,554	113,623	1,393	1,348	152	1,500
6	45,104	35,659	15,008	50,667	404	258	45	303
7 and over	27,290	18,017	8,619	26,636	240	194	91	285
Total houses, flats	201,163	175,747	73,947	249,694	14,081	23,380	2,093	25,473

(a) Includes kitchen and permanently enclosed sleep-out, but does not include bathroom, toilet, pantry, laundry, storeroom, hall, or room used only for business purposes.

Material of Outer Walls

Brick predominated as the material of outer walls of occupied private dwellings in Western Australia at both the 1966 and 1971 Censuses, representing 44.4 per cent of private houses and 78.6 per cent of self-contained flats in 1966, and 53.1 per cent and 89.5 per cent in 1971. Fibro-cement was next in importance, being used in 30.5 per cent of private houses in 1966 and 22.8 per cent in 1971. The proportion of private houses with outer walls of timber rose from 13.1 per cent in 1966 to 13.6 per cent in 1971.

In 1971, 67.9 per cent of private houses in the Perth Statistical Division had outer walls of brick whereas in other Divisions the proportion was 18.0 per cent, the predominant material outside the Perth Statistical Division being fibro-cement with 42.4 per cent.

OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
MATERIAL OF OUTER WALLS: CENSUSES, 1966 AND 1971

Material of outer walls	Private house				Self-contained flat			
	Census, 30 June—				Census, 30 June—			
	1966	1971			1966	1971		
	Total, private houses	Perth Statistical Division	Other Divisions	Total	Total, self-contained flats	Perth Statistical Division	Other Divisions	Total
Brick	89,377	119,334	13,300	132,634	11,070	21,716	1,083	22,799
Brick veneer	10,938	10,518	4,269	14,787	231	232	78	310
Stone	3,090	1,804	1,537	3,341	244	165	47	212
Concrete	4,666	1,417	1,134	2,551	412	596	75	671
Timber	26,294	16,311	17,652	33,963	568	262	230	492
Metal	4,204	547	3,756	4,303	181	16	97	113
Fibro-cement	61,343	25,507	31,361	56,868	1,364	375	473	848
Other	1,251	309	938	1,247	11	18	10	28
Total	201,163	175,747	73,947	249,694	14,081	23,380	2,093	25,473

Nature of Occupancy

The nature of occupancy of private houses and self-contained flats at the Censuses of 1966 and 1971 is compared in the following table.

At the 1971 Census, nature of occupancy was stated in respect of 245,758 occupied private houses and 24,845 occupied self-contained flats. Of the houses, 70.0 per cent were stated to be occupied by owners including purchasers by instalments, 8.60 per cent by tenants of government authorities, and 17.9 per cent by other tenants. The corresponding percentages for flats were 12.2, 11.0, and 74.5.

OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
NATURE OF OCCUPANCY: CENSUSES, 1966 AND 1971

Nature of occupancy	Private house				Self-contained flat			
	Census, 30 June—				Census, 30 June—			
	1966	1971			1966	1971		
	Total, private houses	Perth Statistical Division	Other Divisions	Total	Total, self-contained flats	Perth Statistical Division	Other Divisions	Total
Owner (a)	150,542	129,022	43,123	172,145	1,880	2,794	234	3,028
Tenant of government authority	16,206	14,049	7,090	21,139	1,113	2,636	79	2,735
Other tenant	29,672	27,452	16,568	44,020	10,702	16,960	1,545	18,505
Other methods of occupancy (b)	3,899	5,224	7,166	8,454	309	970	235	577
Not stated	844			3,936	77			628
Total	201,163	175,747	73,947	249,694	14,081	23,380	2,093	25,473

(a) Including purchaser by instalments.

(b) Including caretaker.

Facilities

At the 1971 Census the question on gas and electricity facilities was answered in respect of 281,843 occupied private dwellings in Western Australia. Of this total, 0.34 per cent had gas only, 59.7 per cent had electricity only, 39.3 per cent had both gas and electricity, and 0.66 per cent had neither gas nor electricity. There were 216,063 dwellings with a television set, equivalent to 76.0 per cent of all occupied dwellings. At the 1966 Census, 150,687 occupied private dwellings, equivalent to 70.0 per cent of the total, were stated to have a television set.

The following table gives detailed particulars of facilities in relation to occupied private houses and self-contained flats at the Censuses of 1966 and 1971.

**OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
FACILITIES: CENSUSES, 1966 AND 1971**

Facilities	Private house				Self-contained flat			
	Census, 30 June—				Census, 30 June—			
	1966	1971			1966	1971		
	Total, private houses	Perth Statistical Division	Other Divisions	Total	Total, self-con- tained flats	Perth Statistical Division	Other Divisions	Total
Gas only	731	100	346	446	22	20	4	24
Electricity only	126,765	116,594	40,359	156,953	5,265	8,145	1,286	9,431
Gas and electricity	70,423	58,312	31,819	90,131	8,733	14,979	751	15,730
Neither gas nor electricity	2,744	117	713	830	20	11	1	12
Not stated	500	624	710	1,334	41	225	51	276
Total	201,163	175,747	73,947	249,694	14,081	23,380	2,093	25,473
Television set	142,557	147,932	49,670	197,602	8,130	15,427	1,008	16,435

Motor Vehicles

At the 1971 Census the question on motor vehicles was answered in respect of 278,922 occupied private dwellings in Western Australia. Of this total, 15.6 per cent had no vehicle, 50.3 per cent had one vehicle, 25.3 per cent had two vehicles, and 8.73 per cent had more than two vehicles.

In the following table information is shown for private houses and self-contained flats at the Censuses of 1966 and 1971.

**OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
NUMBER OF MOTOR VEHICLES (a): CENSUSES, 1966 AND 1971**

Number of motor vehicles (a)	Private house				Self-contained flat			
	Census, 30 June—				Census, 30 June—			
	1966	1971			1966	1971		
	Total, private houses	Perth Statistical Division	Other Divisions	Total	Total, self-con- tained flats	Perth Statistical Division	Other Divisions	Total
No vehicle	35,498	25,280	8,228	33,508	4,875	6,983	513	7,496
1 vehicle	106,481	87,351	34,559	121,910	7,329	13,058	1,163	14,221
2 vehicles	41,384	47,741	19,222	66,963	1,265	2,361	256	2,617
3 or more vehicles	14,972	12,962	10,537	23,499	223	388	70	458
Not stated	2,828	2,413	1,401	3,814	389	590	91	681
Total houses, flats	201,163	175,747	73,947	249,694	14,081	23,380	2,093	25,473

(a) At the 1966 Census, householders were asked to state 'the number of Motor Vehicles (excluding Motor Cycles and Scooters) used by members of this household that were garaged or parked at or near this dwelling for the night of Thursday, 30th June'. At the 1971 Census, they were asked: 'How many motor vehicles owned or driven by members of your household were garaged or parked at or near this dwelling for the night of Wednesday 30 June 1971? Exclude motor cycles, scooters, tractors. Include company vehicles kept at home.'

Number of Bedrooms

The question concerning number of bedrooms was included in the census schedule in 1971 for the first time. The question was answered in respect of 281,114 occupied private dwellings in Western Australia. Of this number, 6,792 (including one-room apartments and bed-sitting rooms), equivalent to 2.42 per cent, were classified as having no bedroom, 7.26 per cent had one bedroom, 24.2 per cent had two bedrooms, 52.0 per cent had three, 12.0 per cent had four, and 2.12 per cent had five or more bedrooms.

Details for private houses and self-contained flats are given in the following table.

**OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
NUMBER OF BEDROOMS (a): CENSUS, 30 JUNE 1971**

Number of bedrooms (a)	Private house			Self-contained flat		
	Perth Statistical Division	Other Divisions	Total	Perth Statistical Division	Other Divisions	Total
0 (b)	578	386	964	1,729	73	1,802
1	4,993	2,615	7,608	9,730	753	10,483
2	40,231	15,669	55,900	10,097	939	11,036
3	103,933	40,368	144,301	1,341	180	1,521
4	21,772	11,869	33,641	107	34	141
5 and over	3,339	2,335	5,674	71	56	127
Not stated	901	705	1,606	305	58	363
Total	175,747	73,947	249,694	23,380	2,093	25,473

(a) Includes permanently enclosed sleep-out.

(b) Includes one-room apartment and bed-sitting room.

Method of Sewage Disposal

The question concerning method of sewage disposal was included in the census schedule in 1971 for the first time. Of the total of 284,359 occupied private dwellings in Western Australia, 101,468 (35.7 per cent) had a flush toilet connected to a public sewer; 170,455 (59.9 per cent) had a flush toilet connected to an individual system, such as septic tank; 4,198 (1.48 per cent) were serviced by sanitary pan collection; and 8,238 (2.90 per cent) were classified to the category 'Other and not stated'.

**OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
METHOD OF SEWAGE DISPOSAL: CENSUS, 30 JUNE 1971**

Method of sewage disposal	Private house			Self-contained flat		
	Perth Statistical Division	Other Divisions	Total	Perth Statistical Division	Other Divisions	Total
Mains sewer	66,932	12,504	79,436	18,801	859	19,660
Separate system	107,092	55,367	162,459	4,029	1,150	5,179
Sanitary pan	371	3,352	3,723	11	25	36
Other and not stated	1,352	2,724	4,076	539	59	598
Total	175,747	73,947	249,694	23,380	2,093	25,473

Unoccupied Dwellings

For dwellings not occupied on the night of the census, collectors were required to determine as many particulars as possible and, where the information was available, to enter on the census schedule the reason why the dwelling was unoccupied. That this information could not be ascertained in a high proportion of cases is evident from the numbers shown in the following table in the category 'Other and not stated', equivalent to 38.2 per cent of all unoccupied private dwellings in 1966 and 17.3 per cent in 1971.

UNOCCUPIED PRIVATE DWELLINGS—CENSUSES, 1966 AND 1971

Reason for being unoccupied	Census, 30 June—			
	1966	1971		
	Total, unoccupied private dwellings	Perth Statistical Division	Other Divisions	Total
For sale, to let	1,834	5,133	2,364	7,497
Newly built	662	1,026	476	1,502
Vacant for repair	289	468	379	847
Holiday home	4,796	1,972	4,548	6,520
Temporarily vacant	3,218	3,768	3,262	7,030
Other and not stated	6,668	1,327	3,551	4,878
Total	17,467	13,694	14,580	28,274

Geographical Distribution of Dwellings

Statistical Divisions. The following tables show the numbers and proportions of occupied dwellings in each of the Statistical Divisions of Western Australia at each census from 1911 to 1971, and a dissection according to class of dwelling at the Census of 1971. (The Statistical Divisions and their component local government areas are shown on the maps immediately preceding the *Index*.)

Between the Censuses of 1966 and 1971 the number of occupied dwellings in Western Australia rose by 27·1 per cent. The number in the Perth Statistical Division increased by 30·9 per cent, compared with an increase of 18·6 per cent in the rest of the State. Other Divisions showing an increase were Pilbara, 328 per cent; North-West, 62·0 per cent; Kimberley, 42·1 per cent; Eastern Goldfields, 23·3 per cent; Central, 22·5 per cent; Northern Agricultural, 17·3 per cent; South-West, 13·6 per cent; and Southern Agricultural, 7·30 per cent. A decrease of 1·37 per cent was recorded in the Central Agricultural Division.

OCCUPIED DWELLINGS IN STATISTICAL DIVISIONS—CENSUSES, 1911 TO 1971 (a)
(Figures compiled on the basis of the 1971 boundaries)

Statistical Division (b)	Census date							
	1911 3 April	1921 4 April	1933 30 June	1947 30 June	1954 30 June	1961 30 June	1966 30 June (a)	1971 30 June (a)
Perth Statistical Division	24,358	35,190	53,394	74,478	102,745	129,488	155,029	203,007
Other Divisions—								
South-West	7,381	8,319	12,544	13,611	17,336	18,714	19,718	22,391
Southern Agricultural	3,903	4,654	6,410	6,522	9,159	10,775	11,714	12,569
Central Agricultural	8,115	9,026	12,352	10,872	13,378	14,097	14,579	14,379
Northern Agricultural	2,953	3,846	5,963	5,691	7,403	8,338	9,395	11,020
Eastern Goldfields	17,058	9,808	9,271	10,614	9,607	9,389	9,323	11,494
Central	3,261	1,344	2,247	1,628	1,205	1,015	1,068	1,308
North-West	416	389	526	506	749	922	1,687	2,733
Pilbara	856	414	323	322	564	643	1,187	5,084
Kimberley	569	558	548	523	677	936	2,013	2,860
Total	44,512	38,358	50,184	50,289	60,078	64,829	70,684	83,838
WESTERN AUSTRALIA	68,870	73,548	103,578	124,767	162,823	194,317	225,713	286,845

(a) Figures for censuses prior to 1966 exclude dwellings occupied solely by full-blood Aborigines; those for the Censuses of 1966 and 1971 relate to all dwellings (see *NOTE* on page 236). (b) For component local government areas, see maps immediately preceding the *Index*.

OCCUPIED DWELLINGS IN STATISTICAL DIVISIONS—CENSUSES, 1911 TO 1971 (a)
PERCENTAGE DISTRIBUTION
(Figures compiled on the basis of the 1971 boundaries)

Statistical Division (b)	Census date							
	1911 3 April	1921 4 April	1933 30 June	1947 30 June	1954 30 June	1961 30 June	1966 30 June (a)	1971 30 June (a)
Perth Statistical Division	35·37	47·85	51·55	59·69	63·10	66·64	68·68	70·77
Other Divisions—								
South-West	10·72	11·31	12·11	10·91	10·65	9·63	8·74	7·81
Southern Agricultural	5·67	6·33	6·19	5·23	5·63	5·55	5·19	4·38
Central Agricultural	11·78	12·27	11·93	8·71	8·22	7·25	6·46	5·01
Northern Agricultural	4·29	5·23	5·76	4·56	4·55	4·29	4·16	3·84
Eastern Goldfields	24·77	13·34	8·95	8·51	5·90	4·83	4·13	4·01
Central	4·74	1·83	2·17	1·30	0·74	0·52	0·47	0·46
North-West	0·60	0·53	0·51	0·41	0·46	0·47	0·75	0·95
Pilbara	1·24	0·56	0·31	0·26	0·35	0·33	0·53	1·77
Kimberley	0·83	0·76	0·53	0·42	0·42	0·48	0·89	1·00
Total	64·63	52·15	48·45	40·31	36·90	33·36	31·32	29·23
WESTERN AUSTRALIA	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

(a) Figures for censuses prior to 1966 exclude dwellings occupied solely by full-blood Aborigines; those for the Censuses of 1966 and 1971 relate to all dwellings (see *NOTE* on page 236). (b) For component local government areas, see maps immediately preceding the *Index*.

OCCUPIED DWELLINGS IN STATISTICAL DIVISIONS—CLASS OF DWELLING CENSUS, 30 JUNE 1971

Statistical Division (a)	Private dwellings				Non-private dwellings	Total occupied dwellings
	Private house	Self-contained flat	Other	Total		
Perth Statistical Division	175,747	23,380	2,892	202,019	988	203,007
Other Divisions—						
South-West	21,241	573	380	22,194	197	22,391
Southern Agricultural	11,717	257	454	12,428	141	12,569
Central Agricultural	13,591	178	404	14,173	206	14,379
Northern Agricultural	9,969	256	613	10,838	182	11,020
Eastern Goldfields	9,722	358	1,140	11,220	274	11,494
Central	919	15	305	1,239	69	1,308
North-West	1,780	97	778	2,655	78	2,733
Pilbara	3,314	315	1,274	4,903	181	5,084
Kimberley	1,694	44	952	2,690	170	2,860
Total	73,947	2,093	6,300	82,340	1,498	83,838
WESTERN AUSTRALIA	249,694	25,473	9,192	284,359	(b) 2,486	286,845

(a) For component local government areas, see maps immediately preceding the Index. (b) For dissection according to class of dwelling see page 237.

Australian States. The following table gives a dissection according to class of dwellings recorded in each of the Australian States and in Australia as a whole at the Census of 30 June 1971.

DWELLINGS ACCORDING TO CLASS—AUSTRALIAN STATES: CENSUS, 30 JUNE 1971

Class of dwelling	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Australia (a)
Occupied dwellings—							
Private dwellings—							
Private house	1,092,355	869,936	444,661	320,058	249,694	99,396	3,119,589
Self-contained flat	225,549	120,857	49,313	16,569	25,473	8,417	453,083
Other private dwellings	38,629	19,393	18,626	5,437	9,192	1,784	97,881
Total, Private dwellings	1,356,533	1,010,186	512,600	342,064	284,359	109,597	3,670,553
Non-private dwellings	8,009	5,299	4,645	2,048	2,486	823	24,006
Total, Occupied dwellings	1,364,542	1,015,485	517,245	344,112	286,845	110,420	3,694,559
Unoccupied dwellings	124,522	88,521	51,077	30,553	28,274	13,307	339,057

(a) Includes Northern Territory (17,282 occupied private dwellings and 510 occupied non-private dwellings) and Australian Capital Territory (37,932 occupied private dwellings and 186 occupied non-private dwellings).

In the following table occupied dwellings recorded in each State and Territory at the 1971 Census are classified to *Major Urban*, *Other Urban* or *Rural* areas in accordance with the criteria outlined on page 151.

OCCUPIED DWELLINGS (a) MAJOR URBAN, OTHER URBAN, AND RURAL (b) STATES AND TERRITORIES: CENSUS, 30 JUNE 1971

State or Territory	Urban			Rural	Total
	Major	Other	Total		
NUMBER OF DWELLINGS					
New South Wales	959,230	261,851	1,221,081	143,461	1,364,542
Victoria	738,006	161,163	899,169	116,316	1,015,485
Queensland	238,784	179,053	417,837	99,408	517,245
South Australia	242,183	52,133	294,316	49,796	344,112
Western Australia	186,845	51,800	238,645	48,200	286,845
Tasmania	37,246	44,732	81,978	28,442	110,420
Northern Territory		12,198	12,198	5,594	17,792
Australian Capital Territory	37,280		37,280	838	38,118
AUSTRALIA	2,439,574	762,930	3,202,504	492,055	3,694,559

OCCUPIED DWELLINGS (a)
MAJOR URBAN, OTHER URBAN, AND RURAL (b)
STATES AND TERRITORIES: CENSUS, 30 JUNE 1971—*continued*

State or Territory	Urban			Rural	Total
	Major	Other	Total		
PERCENTAGE DISTRIBUTION					
New South Wales	70.30	19.19	89.49	10.51	100.00
Victoria	72.68	15.87	88.55	11.45	100.00
Queensland	46.16	34.62	80.78	19.22	100.00
South Australia....	70.38	15.15	85.53	14.47	100.00
Western Australia	65.14	18.06	83.20	16.80	100.00
Tasmania	33.73	40.51	74.24	25.76	100.00
Northern Territory .....	.....	68.56	68.56	31.44	100.00
Australian Capital Territory	97.80	...	97.80	2.20	100.00
AUSTRALIA	66.03	20.65	86.68	13.32	100.00

(a) Private and non-private.
Urban, and Rural.

(b) See page 151 for definitions of *Major Urban, Other Urban, and Rural.*

GOVERNMENT AND GOVERNMENT-SPONSORED HOUSING

The State Housing Commission

The State Housing Commission was established in January 1947 under the State Housing Act of 1946 to replace the Workers' Homes Board which had been created in 1912 to 'erect and dispose of workers' dwellings, and to make advances to people of limited means to provide homes for themselves'. The Act confers on the Commission the legal authority formerly vested in the Board and has as its objects 'the improvement of existing housing conditions' and 'the provision of adequate and suitable housing accommodation for persons of limited means and certain other persons not otherwise adequately housed'. The legislation is comprehensive in scope, providing for the erection of homes for workers, the making of advances to workers for the purchase of homes, the erection of homes for letting on a weekly rental basis, the acquisition and development of land, the clearing of slums, the erection of hostels and the planning of community facilities.

The Commission consists of seven members of whom one must be the person occupying the office of General Manager of the Commission, one an officer of the State Public Service, one a representative of the building trades unions, one a registered builder (or a person qualified to be so registered), one a woman, one a discharged member of the Forces, and one a person with a wide knowledge of and experience in housing conditions in the State. The functions of the Commission include the State-wide provision of low-cost housing for purchase or rental by families of low and moderate income, under the authority of the State Housing Act and of the Housing Agreement Act (Commonwealth) which, on 1 July 1973, replaced the States Grants (Housing) Act (Commonwealth); the administration of the Building Societies Act and the Housing Loan Guarantee Act; and the construction and maintenance of dwellings on behalf of the Government Employees' Housing Authority. Tables showing the operations of the Commission are shown on page 248.

State Housing Act. Under the authority of the *State Housing Act, 1946-1974*, the State Housing Commission uses funds provided by the State Government to build dwellings for sale and to lend money for home building. Eligibility for assistance is restricted to persons with income below a prescribed amount, which varies according to changes in industrial awards affecting the earnings of a tradesman, but outside the Perth metropolitan region the Minister may allow assistance to a family having a higher income. Loans of up to \$9,000 (or more, in some cases) may be made on a minimum deposit of \$200 including the ingoing fees (or less, at the discretion of the Commission), the maximum period of repayment being forty-five years. The rate of interest (31 December 1974) is 5½ per cent per annum reducible on a monthly basis.

Various forms of assistance have been granted to encourage home ownership, including loans secured by mortgage, advances made under contract of sale, advances for acquiring homes under leasehold conditions, second mortgage loans and loans for the completion of partly-built dwellings.

Commonwealth and State Housing Agreements. The final draft of an agreement on housing between the Australian Government and State Governments was prepared at the Conference of Premiers in August 1945 and was later ratified by Commonwealth and State legislation. The Commonwealth and State Housing Agreement Act, passed by the State Parliament in 1945, enabled Western Australia to participate in the Agreement, the purpose of which was to provide homes quickly, primarily for persons at the lower income levels, by standardisation of design and erection in large groups. The Agreement provided a broad basis of collaboration between the Commonwealth and the State with the Commonwealth providing advances of money, general direction on policy and co-ordination of effort and the State undertaking the actual site acquisition and planning, the construction of the dwellings, the selection of tenants and the detailed administrative work.

Further details of the 1945 Agreement are given on page 203 of the *Western Australian Year Book*, No. 8—1969 and in earlier issues.

With the expiry of the 1945 Agreement, the Commonwealth Parliament in 1956 passed the Housing Agreement Act providing 'financial assistance to the States for the purpose of housing' for a period of five years ending on 30 June 1961. The complementary State legislation authorising the State Government to enter into the Agreement was the Commonwealth and State Housing Agreement Act of 1956.

The 1956 Agreement required that, for the first two years of its operation, at least 20 per cent of the money allocated to the State was to be advanced to building societies and other approved institutions for lending to private persons for the building or purchase of homes, the proportion to be increased to not less than 30 per cent during the remainder of the period. The balance of the allocation was to be used by the State for the erection of houses for either rental or sale. The Commonwealth was entitled to specify that of this balance a portion not exceeding 5 per cent in any one year should be set aside for the erection of houses for serving members of the defence forces. The Commonwealth provided supplementary advances to the State equal to the amounts set aside for this purpose.

On the introduction of the 1956 Agreement, the State Housing Commission adopted the policy of offering for sale before occupancy one-half of the total number of houses built, the remainder being made available on a rental basis. The proportion was subsequently varied several times.

Under the provisions of Commonwealth and State legislation passed in 1961 the period of operation of the Commonwealth and State Housing Agreement was extended for a further five years to 30 June 1966. The 1961 Agreement incorporated all the main features of the earlier arrangement, with only minor modifications.

In terms of the *Housing Agreement Act 1966* (Commonwealth) and the *Commonwealth and State Housing Agreement Act, 1966* (State) the operation of the Agreement, with minor amendments, was extended until 30 June 1971 and it has not been renewed.

Although Agreements subsequent to that of 1945, and which were effective until 30 June 1971, made no provision for rebates to tenants unable to pay the full rental, the State Government continued the system during the period.

New arrangements were introduced from 1 July 1971 under the authority of the *States Grants (Housing) Act 1971*, which considerably altered the principles of the previous Agreements.

Under this legislation the States continued to determine the amount from their annual Loan Council borrowing programmes to be allocated to housing. Instead, however, of this amount being advanced to the States at a concessional rate of interest (as was the case under previous Agreements), the Commonwealth was to make cash grants of \$2.75 million a year payable for thirty years in respect of each year's housing programme over the period 1971-72 to 1975-76.

Certain conditions attached to payment of the grants which were to be shared among the States in proportions specified in the Act. Western Australia's share was 11·4 per cent or \$313,500 per annum over the period nominated, which became the years 1971-72 and 1972-73 in terms of the *States Grants (Housing) Act* 1971-1973. This Act continues the provision for payment of a rental assistance grant to help the States meet the cost to them of reducing the rents of housing authority dwellings for families considered to have insufficient means to pay the rents ordinarily required by the authority. The grant of \$1·25 million is payable to the States in each of the five years 1971-72 to 1975-76, a total of \$6·25 million. Payment is in specified proportions, Western Australia's share being 11·5 per cent or \$143,750 per annum.

Housing Agreement Act. The *Housing Agreement Act* 1973, as amended by the *Housing Agreement Act* 1974, provides for new arrangements to operate for a period of five years from 1 July 1973. The 1973-1974 Housing Agreement is similar to the former Commonwealth and State Housing Agreement but with additional restraints.

The amounts payable to the States each year are not specified within the new legislation but are to be determined after an annual application by the States to the Australian Government. After consultations with the State Ministers the Australian Government determines the amounts payable to the States for the provision of welfare housing and allocations for advances to terminating building societies or co-operative housing societies, or other approved lending authorities of the State.

In terms of the *Housing Agreement Act* 1973 the Australian Government will advance funds to the States for the provision of welfare housing at an interest rate of 4 per cent.

From this low interest-bearing money not less than 85 per cent of all family accommodation provided must be for families that satisfy certain needs criteria. For a family which includes two children the main breadwinner would need to be earning not more than 85 per cent of gross average weekly earnings per employed male unit in the State, or in Australia, as a State may elect. The Act also defines needs criteria applicable to aged pensioner couples and single aged pensioners.

The new agreement has a proposed life of five years, 1973-74 to 1977-78. For the year 1974-75 Western Australia has been allocated \$35·44 million, of which \$16·87 million is to be allocated to terminating building societies and approved State lending authorities.

A separate agreement between the Australian Government and the States has been entered into covering the provision of housing for serving members of the armed forces. Under this agreement the Commonwealth provides, by way of repayable advances, all the funds required and the States are not required to set aside part of their housing allocation for this purpose.

States Grants (Dwellings for Pensioners) Act. Under the provisions of the *States Grants (Dwellings for Aged Pensioners) Act* 1969, which expired on 30 June 1974, the Commonwealth made available to the States a grant totalling \$25 million over a period of five years for the construction of self-contained dwellings for single aged pensioners. Western Australia received a total of \$1·75 million over the period and under this scheme the Commission built 28 units in 1969-70, 76 units in 1970-71, 12 units in 1971-72, 106 in 1972-73, and 59 in 1973-74.

The scheme is renewed and eligibility conditions widened to include invalid pensioners, Class B widow pensioners and service pensioners, in addition to aged pensioners, under the provisions of the *States Grants (Dwellings for Pensioners) Act* 1974. The Australian Government will advance interest-free non-repayable grants to the States totalling \$30 million over the three years 1 July 1974 to 30 June 1977. The Act provides that Western Australia will receive annual payments of \$700,000 during the period.

Other Functions. The State Housing Commission conducts certain other housing schemes and has completed, or is currently engaged on, other specific projects on behalf of the State Government. Under a 'Departmental Homes' scheme, which commenced in 1952-53, 2,354 houses were built in the period to 30 June 1974 for Government Departments

and semi-government authorities. A Government Employees' Housing Scheme was introduced in 1958-59 and, up to 30 June 1974, had provided 758 rental houses in country areas. (See also the section *Government Employees' Housing Authority* on page 249.) The Commission has also undertaken the erection of flats for occupation by widows and by aged women pensioners, as well as cottage flats for aged married couples. Design and supervisory services have been made available free of cost to several private charitable organisations which are developing pensioner housing schemes financed jointly by these organisations and the Australian Government under the *Aged Persons Homes Act* 1954-1973 (Commonwealth). The Commission has also been made responsible from time to time for special housing schemes for industry or major developmental projects.

Operations of The State Housing Commission

In this section, a summary of the activities of The State Housing Commission is given. The first table below shows the number of housing units completed by the Commission in various categories during each year from 1969-70 to 1973-74. It also shows the numbers of housing units in connection with which the Commission provided design and supervisory services free of cost to private charitable organisations.

THE STATE HOUSING COMMISSION—DWELLINGS CONSTRUCTION

Category	1969-70	1970-71	1971-72	1972-73	1973-74
Housing units (a) completed—					
State Housing Act	736	602	889	926	440
Commonwealth and State Housing Agreements (b)	1,088	2,368	1,360	846	1,172
Aboriginal Housing	84	61	48	118	135
Departmental Homes	114	131	79	76	80
Government Employees' Homes	119	96	97	48	88
Shire Building Scheme (c)	31	25	23	15	3
Defence Service Homes	77	129	54	72	....
Dwellings for Aged Pensioners (d)	28	76	12	106	59
Other (e)	21	7	....	....	....
Total	2,298	3,495	2,562	2,207	1,977
Other activities (f)	62	4	19	....	6

(a) Comprises number of houses and number of individual units in other dwellings. (b) From 1 July 1971 to 30 June 1973 replaced by the *States Grants (Housing) Act* 1971-1973. (c) For local government employees. (d) Constructed under the provisions of the *States Grants (Dwellings for Aged Pensioners) Act* 1969. (e) Comprises houses built by the Commission in terms of the *Laporte Industrial Factory Agreement Act, 1961-1965*, the *Broken Hill Proprietary Company's Integrated Steel Works Agreement Act, 1960-1973*, the *Exmouth Development Scheme* and *Project Development (Special Agreements Scheme)*. (f) The figures shown represent housing units built by charitable organisations in connection with which the Commission provided design and supervisory services.

THE STATE HOUSING COMMISSION
REVENUE, EXPENDITURE AND FUNDS EMPLOYED
(\$'000)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Revenue—					
Rentals	7,448	8,701	9,862	10,802	11,488
Profit on sale of—					
Houses and land	3,643	5,356	2,779	1,562	3,055
Sundry assets	6	5	6	9	15
Interest—					
Home purchase	5,787	6,120	4,763	5,163	5,207
Other	21	32	55	262	1,274
Recoup of management expenses	1,665	2,039	4,006	2,735	3,005
Fees and miscellaneous	473	558	583	562	816
Total Revenue	19,043	22,811	22,054	21,095	24,860
Expenditure—					
Interest—					
Loan capital	6,644	7,999	7,964	9,665	11,370
Debentures	681	837	1,023	1,229	1,546
Loan repayment	902	989	1,090	1,269	1,584
Management expenses	3,167	3,946	4,814	6,014	7,443
Rental outgoings	2,919	2,558	3,870	4,485	5,851
Other	66	75	147	91	365
Total Expenditure	14,379	16,404	18,908	22,753	28,159
Surplus	4,664	6,407	3,146	(a) 1,658	(a) 3,299

(a) Deficit.

THE STATE HOUSING COMMISSION
REVENUE, EXPENDITURE AND FUNDS EMPLOYED—continued
 (\$'000)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Funds employed at 30 June—					
Loan indebtedness—					
Government advances	193,043	210,243	232,265	243,430	274,650
Debenture issues	13,335	15,581	18,038	21,402	25,211
Commonwealth special grants	4,924	5,563	5,727	6,498	6,728
Accumulated surpluses and reserves	31,167	37,840	40,495	41,566	37,404
Total Funds employed	242,469	269,227	296,525	312,896	343,993

Government Employees' Housing Authority

The Government Employees' Housing Authority is established under the provisions of the *Government Employees' Housing Act, 1964-1973* to provide adequate and suitable housing accommodation for employees of State Government Departments to which the Act applies.

The Authority is empowered to enter into an agreement with the State Housing Commission whereby the Commission shall act as its agent upon such terms as may be mutually agreed upon by the Authority and the Commission.

Defence Service Homes

Under the *Defence Service Homes Act 1918-1974* the Australian Government provides assistance in acquiring a home to persons who satisfy the eligibility conditions set out in the Act. Persons eligible for assistance include (a) members of the Australian Forces and nursing services enlisted or appointed for or employed on active service outside Australia or on a ship of war during the first and second World Wars, or who served in the war-like operations in Korea or Malaya, or who have served on 'special service' as defined in the *Repatriation (Special Overseas Service) Act 1962-1973* (e.g. South Vietnam), (b) Regular Servicemen who, on or after 7 December 1972, complete three years effective full-time service, and (c) National Servicemen who, on or after 7 December 1972, complete the period of service for which they were engaged. The categories of eligible persons also include the widow of an eligible person and, in certain circumstances, the widowed mother of a deceased eligible person, members of the mercantile marine service, and persons who, on or after 3 December 1939, complete service outside Australia as representatives of an approved welfare organisation.

The maximum amount of loan is \$15,000 and the rate of interest 3.75 per cent for amounts up to and including \$12,000. Where the advance exceeds \$12,000, the rate of interest charged on the excess (up to the maximum of \$3,000) is 7.25 per cent.

The Australian Department of Housing and Construction acts as the representative in Western Australia of the Director of Defence Service Homes.

DEFENCE SERVICE HOMES SCHEME—OPERATIONS IN WESTERN AUSTRALIA

Year	Homes provided during year				Total homes provided from inception to end of year	Annual expenditure	Installments paid	Loans repaid
	By erection	By purchase	By discharge of mortgage	Total				
	No.	No.	No.	No.	No.	\$'000	\$'000	No.
1969-70	77	234	151	462	28,351	4,100	8,041	677
1970-71	129	240	136	505	28,856	4,675	7,376	480
1971-72	54	263	144	461	29,317	4,623	7,912	651
1972-73	72	350	179	601	29,918	5,896	8,904	682
1973-74	67	577	136	780	30,698	9,500	9,115	894

State Housing Death Benefit Scheme Act. The *State Housing Death Benefit Scheme Act, 1965* establishes, with effect from 20 February 1965, a scheme to provide benefits for the families of purchasers of dwellings who die leaving unpaid the whole or part of a liability to the State Housing Commission under a contract of sale or mortgage. The benefit is applied to the credit of the deceased purchaser's account, and the instalments payable during the unexpired term of the loan are reduced accordingly.

From the inception of the scheme in 1965-66 to 30 June 1974, 220 claims have been admitted and a total of \$209,707 paid in the form of assistance to purchasers.

Additional details of the scheme are given on page 204 of the *Western Australian Year Book*, No. 8—1969 and in earlier issues.

Housing Loan Guarantee Act

The purposes of the *Housing Loan Guarantee Act, 1957-1973* are to encourage, through provisions for guarantees and indemnities, the building and the purchasing of new houses. Under this Act, the Government provides guarantees to lenders of funds to building societies and other approved financial organisations making advances to persons desiring to purchase or build their own home on low deposits.

The maximum rate of interest which an approved institution may charge on a loan to a borrower is $10\frac{3}{4}$ per cent (31 December 1974). Loans may be made up to 70 per cent of the value of the house and land or a specified sum, whichever is the lesser amount. In respect of the metropolitan region, the maximum loan permitted is \$16,000, and outside the metropolitan region but south of the 26th parallel it is \$17,000. For a new house situated north of the 26th parallel and in the North-West or Eastern Land Divisions, the maximum loan is \$21,000 and in the Kimberley Land Division, \$22,500.

Complementary action has been taken by the Commonwealth in establishing the Housing Loans Insurance Corporation to foster high-ratio loans (see following section).

Housing Loans Insurance Scheme

The Housing Loans Insurance Corporation was established by the *Housing Loans Insurance Act 1965-1973* (Commonwealth) to insure approved lenders against losses arising from the making of housing loans. The Corporation consists of a chairman (who is also managing director) and a deputy chairman, both being full-time members, and three part-time members, all of whom are appointed by the Governor-General. The main purpose of the Corporation is to assist people to obtain, as a single loan and at a reasonable rate of interest, the money they need and can afford to borrow to obtain a home suited to their requirements.

For a loan to acquire a house or a home unit, the maximum amount insurable is \$40,000 and the maximum ratio of the loan amount to valuation of the property is 95 per cent. The maximum period of repayment for an insurable loan to acquire a house is forty years and for a loan to purchase a home unit, thirty-five years.

The Corporation charges a single premium at the outset of the loan. The premium rate depends on the ratio of the loan amount to property valuation—a premium of 1.4 per cent is charged where the loan represents 94 per cent or more of valuation but, for loans of less than 94 per cent of valuation, the premium rate reduces progressively to a minimum of 0.25 per cent for loans below a ratio of 76 per cent. These rates took effect from 14 September 1973.

The Housing Loans Insurance Corporation insures loans that are made for a wide range of purposes in addition to the purchase or construction of a dwelling. The other purposes include alterations, extensions or improvements to a dwelling, and the provision of roads, kerbing and footpaths. Loans may only be insured for approved lenders who are appointed by the Corporation from within approved classes of lenders specified by the Minister for Repatriation and Compensation. The approved classes include banks, permanent building societies, co-operative housing societies, friendly societies, life and general insurance companies, mortgage management companies, trustee companies, credit unions, solicitors', superannuation and provident funds, and religious, charitable and benevolent

bodies. The Housing Loans Insurance Corporation commenced its insurance operations in November 1965 and to 30 June 1974 had insured loans in Western Australia amounting to \$319 million (net).

HOUSING LOANS INSURANCE CORPORATION LOANS INSURED IN WESTERN AUSTRALIA

Purpose of loan	1969-70		1970-71		1971-72		1972-73		1973-74	
	Number	\$'000	Number	\$'000	Number	\$'000	Number	\$'000	Number	\$'000
Houses—										
For building a new house	513	7,000	813	10,760	1,203	16,216	1,393	20,786	587	9,338
For purchase of a new house	1,085	14,416	1,273	16,782	1,512	20,217	2,303	33,021	1,035	15,884
For purchase of a used house	728	9,433	954	11,823	1,661	20,740	2,969	40,003	1,748	24,065
For discharge of mortgage	48	649	80	953	151	1,798	190	2,443	33	533
Home units—										
For purchase of a new or used unit or discharge of mortgage	174	2,019	335	3,721	357	4,113	311	3,767	224	2,907
Other	59	542	76	433	104	590	109	1,048	26	382
Total	2,607	34,059	3,531	44,472	4,988	63,674	7,275	101,063	3,653	53,109

Homes Savings Grants

The *Homes Savings Grant Act* 1964-1973 (Commonwealth), which came into operation on 28 May 1964, is designed to 'assist young married persons, and young widowed and divorced persons with dependent children, to purchase or build their own homes'. The Act is administered, subject to any directions of the Minister, by the Secretary to the Department of Housing and Construction.

The Act provides for the payment to eligible persons of a grant of \$1 for every \$3 saved for a home by one or both of the marriage partners. The grant takes the form of a gift free of tax and is payable in respect of a house, a home unit or a flat. The maximum benefit is \$750 payable on savings of \$2,250 which must be 'acceptable' savings within the meaning of the Act.

To qualify for the grant a person must be married or a widowed or divorced person with one or more dependent children; must have lived and saved in Australia for at least three years or was an Australian citizen throughout that period; must have entered into a contract to buy a home or to have a home built, or have begun to build a home; must be under thirty-six years of age at the date of marriage and at the date of entering into a contract to buy or build the home or at the date on which building began; must not have already received a grant and must not be, nor previously have been, married to a person who has received a grant during the marriage. An undischarged bankrupt or a person serving a term of imprisonment may not receive a grant.

The grant is not payable in respect of a home where the cost, including the cost of land, exceeds \$22,500.

Grants are financed from the National Welfare Fund and the first payments were made during the year ended 30 June 1965. Expenditure on grants in Western Australia amounted to \$1,313,730 in 1972-73 and \$2,202,767 in 1973-74.

CONTROL OF BUILDING

Each of the local government authorities as constituted under the provisions of the *Local Government Act, 1960-1975* has power to exercise general control over the erection of buildings in its own district. The powers of local government authorities to control building derive from the *Town Planning and Development Act* and the *Local Government Act*.

The *Town Planning and Development Act, 1928-1975* gives local authorities the right to make by-laws covering such aspects of town planning as the purchase or reservation of land for thoroughfares, the density of dwelling accommodation per hectare, the classification of areas for residential, commercial, industrial and recreational use, the prescription of

building standards, and the general planning of new subdivisions. Town planning measures proposed by a local authority are subject to the approval of the Minister for Town Planning, who has the advice of a Town Planning Commissioner and a Town Planning Board.

The *Local Government Act, 1960-1975* contains provisions for the control of building which are compatible with those exercised under the Town Planning and Development Act but are in a more detailed form. The Uniform Building By-laws have been applied to most local government areas, and the erection of all buildings must be carried out in compliance with these by-laws. The Local Government Act provides that no new building or the alteration of an existing building may be begun before the plans have been approved by the local authority. The Governor may by Order, at the request of a local authority, suspend the operation of this provision in its district. Generally, in remote parts of the State prior approval of plans is required only in the case of building in town-site areas. Where any local authority refuses to approve plans, the Act provides that an appeal may be made to the Minister for Local Government, who has the power to modify or reverse the decision of the local authority. The decision of the Minister is final and not subject to appeal. Other appeals or matters in dispute in relation to the control of building may be determined only by two referees, one of whom is appointed by the Governor and the other by the local authority concerned.

BUILDING OPERATIONS

Since the end of the second World War, the Australian Statisticians have undertaken a quarterly collection of statistics of building operations. The first of these collections in Western Australia related to the quarter ended 30 September 1945.

Statistics of various series for Western Australia *ab initio* appeared in Part XII of the *Statistical Register of Western Australia* for 1965-66. Current data are given in the quarterly statement *Building Operations* and in the annual publication *Statistics of Western Australia—Building and Housing*.

The survey covers the activities of building contractors who undertake the construction of new buildings; the building operations of Australian Government, State Government, semi-government and local government authorities; and work performed by owner-builders.

The statistics in this section relate only to the erection of buildings as distinct from the construction of railways, bridges, earthworks, etc.

The following table shows the number of houses and other dwellings completed, according to ownership, in each of the five years 1969-70 to 1973-74.

A building is classified as 'private' or 'government' according to ownership at date of commencement. Thus 'government' includes buildings erected for Australian Government, State Government, semi-government and local government authorities, either by contractors or by day labour, whether these buildings are for their own use or for rental or sale after completion. Houses erected for particular persons under government-sponsored home building schemes or with government financial assistance are classified as 'private'.

NUMBER OF HOUSES AND OTHER DWELLINGS COMPLETED—OWNERSHIP

Year	Private (a)			Government (a)			Total		
	Houses	Other dwellings	Total dwellings	Houses	Other dwellings	Total dwellings	Houses	Other dwellings	Total dwellings
1969-70	12,384	4,915	17,299	1,549	681	2,230	13,933	5,596	19,529
1970-71	9,648	3,608	13,256	2,273	1,405	3,678	11,921	5,013	16,934
1971-72	11,167	992	12,159	2,120	603	2,723	13,287	1,595	14,882
1972-73	11,723	770	12,493	2,057	150	2,207	13,780	920	14,700
1973-74 (b)	11,416	2,729	14,145	1,279	835	2,114	12,695	3,564	16,259

(a) See letterpress immediately preceding table.

(b) From July 1973 'houses' and 'flats' have been reclassified to 'houses' and 'other dwellings'; see letterpress immediately preceding the next table.

In the following table the value of building completed, classified according to the function each building is intended to serve, is shown for the period 1969-70 to 1973-74. The values shown for each class of building exclude the value of land and represent the estimated value of the building on completion. From July 1973 dwellings have been classified according to the sub-groups 'houses' and 'other dwellings', replacing the previous categories 'houses' and 'flats'. Under the new classification, a 'house' refers only to a single, self-contained, detached dwelling unit occupying a separate titled block of land, while 'other dwellings' includes flats and other multi-unit dwelling types previously classified to houses (e.g. duplex or triplex houses, town houses, terrace houses, etc.). Separate 'house' and 'other dwelling' statistics are not comparable therefore to the separate 'house' and 'flat' statistics shown prior to July 1973. 'Total dwellings' statistics are directly comparable to 'total houses and flats' shown previously.

VALUE OF BUILDING COMPLETED—CLASS OF BUILDING (a)
(\$'000)

Class of building	1969-70	1970-71	1971-72	1972-73	1973-74 (b)
Dwellings—					
Houses—					
Material of outer walls—					
Brick, brick veneer, concrete, stone	130,842	130,148	150,483	151,074	162,574
Timber (weatherboard, etc.)	355	1,684	267	152	233
Asbestos-cement	19,797	17,397	13,856	13,784	15,713
Other	307	442	2,129	227	474
Total, Houses	151,300	149,671	166,736	165,237	178,994
Other dwellings	40,519	39,964	13,914	7,308	33,007
Total, Dwellings	191,819	189,636	180,650	172,545	212,001
Other building—					
Hotels, etc.	14,815	17,054	13,237	17,510	8,213
Shops	7,501	11,270	16,833	27,504	17,852
Factories	16,615	18,006	21,336	15,594	23,430
Offices	14,294	39,736	19,360	21,245	19,034
Other business premises	15,968	18,816	14,591	17,965	12,859
Education	13,297	20,589	16,325	24,767	21,846
Religion	995	1,145	1,152	680	1,760
Health	5,949	17,527	17,250	6,342	15,456
Entertainment and recreation	6,033	6,750	6,385	9,504	5,368
Miscellaneous	16,110	24,485	24,322	10,355	13,346
Total, Other building	111,577	175,377	150,790	151,468	139,163
TOTAL, ALL BUILDING	303,397	365,012	331,440	324,013	351,164

(a) See letterpress immediately preceding table. (b) From July 1973 'houses' and 'flats' have been reclassified to 'houses' and 'other dwellings'; see letterpress immediately preceding table.

As an indication of the distribution of building activity throughout the State, the number of houses completed in each Statistical Division during 1969-70 to 1973-74 is shown in the next table.

NUMBER OF HOUSES COMPLETED IN STATISTICAL DIVISIONS

Statistical Division	1969-70	1970-71	1971-72	1972-73	1973-74 (a)
Perth Statistical Division	10,463	7,805	9,670	11,453	9,970
Other Divisions—					
South-West	973	948	1,032	753	861
Southern Agricultural	365	314	196	237	318
Central Agricultural	331	179	148	135	214
Northern Agricultural	637	500	455	446	541
Eastern Goldfields	486	467	356	303	382
Central	16	296	15	12	33
North-West	146	174	290	} (b) 359	280
Pilbara	416	1,152	1,070		
Kimberley	100	86	55		
Total	3,470	4,116	3,617	2,327	2,725
WESTERN AUSTRALIA	13,933	11,921	13,287	13,780	12,695

(a) From July 1973 'houses' and 'flats' have been reclassified to 'houses' and 'other dwellings'; see letterpress preceding previous table. (b) Extensive boundary changes between the North-West and Pilbara Statistical Divisions resulting from reallocation of local government area boundaries have necessitated the amalgamation of these Divisions for publication purposes after 30 June 1972.

A further measure of building activity is that of 'value of work done' which is the estimated value of work actually carried out on buildings during the period. For any building, the sum of these values obtained during its construction equals the value of the building on completion. The figures in the following table include estimates for the value of work done on owner-built houses.

VALUE OF WORK DONE ON BUILDING
(\$'000)

Class of building	1969-70	1970-71	1971-72	1972-73	1973-74 (a)
Dwellings—					
Houses	154,761	150,653	157,798	180,351	195,840
Other dwellings	44,783	28,302	11,022	8,952	34,399
Total, Dwellings	199,545	178,955	168,819	189,303	230,238
Other building—					
Hotels, etc.	16,574	16,241	18,711	9,115	8,385
Shops	8,434	14,700	22,686	21,888	15,014
Factories	16,052	19,400	21,419	16,726	26,822
Offices	26,692	31,480	23,442	18,390	31,572
Other business premises	18,937	18,905	16,049	12,314	14,938
Education	15,829	20,626	19,325	22,165	27,758
Religion	1,068	1,041	1,216	792	1,698
Health	12,937	13,975	11,444	14,558	15,119
Entertainment and recreation	6,539	7,455	7,293	6,819	8,891
Miscellaneous	20,336	24,243	19,406	11,735	16,463
Total, Other building	143,398	168,067	160,992	134,502	166,660
TOTAL, ALL BUILDING	342,943	347,022	329,811	323,805	396,898

(a) From July 1973 'houses' and 'flats' have been reclassified to 'houses' and 'other dwellings'; see letterpress on page 253.

Employment in Building

Details of building employment are given in the following table. The figures shown relate to persons working on the jobs of contractors who undertake the erection of new buildings and on the jobs of government authorities which erect new buildings on their own account. They include persons actually engaged on alterations, additions, repairs, and maintenance when these jobs are undertaken by such contractors and authorities. The figures also include the number of persons working on new private buildings (other than houses) erected without the services of a contractor responsible for the whole job.

EMPLOYMENT IN BUILDING (a)

Classification	End of June—				
	1970	1971	1972	1973	1974
Occupational status—					
Contractors	673	646	590	771	800
Sub-contractors	3,132	3,181	3,213	4,274	3,993
Wage earners	15,788	13,965	11,694	12,564	14,509
Total	19,593	17,792	15,497	17,609	19,302
Occupation—					
Carpenters	5,114	4,327	3,623	4,001	4,406
Bricklayers	2,463	2,365	2,258	3,043	3,070
Painters	1,611	1,476	1,395	1,484	1,675
Electricians	1,364	1,235	1,165	1,331	1,502
Plumbers	1,695	1,579	1,446	1,657	1,853
Builders' labourers	3,171	2,433	2,208	2,479	2,647
Other	4,175	4,377	3,402	3,614	4,149
Total	19,593	17,792	15,497	17,609	19,302

(a) See letterpress immediately preceding table.

Informants are asked to supply details of all persons employed on their jobs *on a specified day*, including working principals, men working as or for sub-contractors, and men temporarily laid off on account of weather. Because of the intermittent employment of

various types of sub-contractors on any particular job, it is sometimes difficult for informants to provide precise particulars of the number of sub-contractors and sub-contractor employees working on their jobs on the specified day. This factor may cause some understatement in the figures shown in the table. In other cases, because of frequent movement between jobs of some types of tradesmen (such as electricians) who may work on several jobs on the one day, some duplication may occur.

The figures *exclude* persons working on owner-built houses, and employees of building firms which undertake only alterations, additions, repairs, and maintenance.

DWELLINGS COMPLETED IN AUSTRALIA

The following table shows the numbers of houses and other dwellings completed in each of the Australian States and Territories during the year 1973-74. In Western Australia the number of houses and other dwellings completed per thousand of mean population was 15.00 compared with 11.27 in the rest of Australia and 11.57 in Australia as a whole.

HOUSES AND OTHER DWELLINGS COMPLETED AUSTRALIAN STATES AND TERRITORIES: 1973-74

State or Territory	Houses	Other dwellings (a)	Total dwellings (a)		
			Total number completed	Proportion of Australian total (per cent)	Per thousand of mean population
New South Wales	30,825	19,426	50,251	32.74	10.60
Victoria	27,624	10,065	37,689	24.55	10.42
Queensland	20,664	6,826	27,490	17.91	14.14
South Australia	9,045	3,963	13,008	8.47	10.75
Western Australia	12,695	3,564	16,259	10.59	15.00
Tasmania	2,837	705	3,542	2.31	8.89
Northern Territory	959	446	1,405	0.92	14.23
Australian Capital Territory	3,597	261	3,858	2.51	21.99
AUSTRALIA	108,246	45,256	153,502	100.00	11.57

(a) Individual living units.

Chapter V—continued

Part 5—Social Benefits, Pensions and Welfare Services

NOTE. The conditions relating to payment of the several benefits dealt with in this Part are described *as they existed at 1 January 1975*. Rates of benefit, where quoted in textual matter, are those which were current at that date. The information given is intended to serve only as a general guide to the main provisions relating to social security and repatriation benefits and national health services provided by the Australian Government and relief payments made by the State Government.

The Australian Government's social security programme is designed to provide protection against economic hardship caused by events such as loss of earnings by reason of age, invalidity, sickness or unemployment, or the death or the absence of a supporting male as a result of desertion or long-term separation. Another aim of the system is to help parents with the expenses associated with the bearing and rearing of children. It is designed also to compensate ex-servicemen for disabilities caused by war service and to assist the dependants of those who died as a result of war service.

This assistance may take the form of (a) financial aid to or for institutions, organisations or authorities (see pages 231-5) or (b) regular cash payments to or on behalf of individuals, which may be either selective benefits (*i.e.* subject to a means test) such as age and invalid pensions and widows' pensions, or universal benefits (*i.e.* free of means test) such as maternity allowances and child endowment. In addition, there is provision for a wide range of welfare services for people with special needs (*e.g.* invalids and other persons may be trained so that they can re-enter paid employment).

The Social Services Act provides for pensions and other benefits dealt with on pages 257-63; the Repatriation Act, for war pensions, service pensions, and allowances (see pages 263-5); and the Tuberculosis Act, for allowances to sufferers from tuberculosis as well as assistance to the States in a national campaign against the disease (see pages 268 and 270). Health services such as medical, hospital and pharmaceutical benefits are authorised by the National Health Act (see pages 265-70).

Pensions and other benefits provided under the Social Services Act and health services provided under the National Health Act are financed from the National Welfare Fund. Other payments from the fund include allowances to sufferers from tuberculosis and reimbursement to the States of maintenance expenditure in connection with the diagnosis, treatment and control of tuberculosis. The fund receives each year by transfer from the Consolidated Revenue Fund an amount equal to the payments made. Other income of the National Welfare Fund is derived from interest on investments. Details of expenditure in Western Australia since the fund was established in 1943 are given in the *Statistical Summary from 1829* following Chapter X.

War pensions, service pensions, and allowances provided under the Repatriation Act are financed from the Consolidated Revenue Fund.

The State Government makes certain payments for the relief of women and others in necessitous circumstances which in most cases supplement benefits provided by the Australian Government (see letterpress *State Relief Payments* on pages 271-2).

Rates of Benefit

The following table shows the maximum weekly rates applying to age and invalid pensions, sheltered employment allowances, widows' pensions, supporting mothers' benefits (introduced 3 July 1973), and unemployment and sickness benefits. The rates shown apply also to service pensions (see page 265).

MAXIMUM WEEKLY RATES OF BENEFIT (a)
(£)

Pension, benefit or allowance	Rate current at—				
	31 March 1973	31 October 1973	30 April 1974	31 August 1974	30 November 1974
Single (i.e. unmarried) rate	21·50	23·00	26·00	31·00	31·00
Married rate (combined)	37·50	40·50	45·50	51·50	51·50
Each dependent child, including student child (b)	4·50	5·00	5·00	5·00	5·50
Guardian's (or mother's) allowance (c)—					
Where there is a child aged under 6 years or an invalid child requiring full-time care	6·00	6·00	6·00	6·00	6·00
Other cases	4·00	4·00	4·00	4·00	4·00
Supplementary assistance (d)	4·00	4·00	4·00	4·00	5·00

(a) Rates current at dates prior to those shown in this table appear in *Western Australian Year Book*, No. 12—1973 (pages 238, 241 and 555), and earlier issues. (b) See letterpress *Student Children* on page 262. (c) Guardian's allowance payable to unmarried pensioner or recipient of sheltered employment allowance having the care of one or more dependent children, including student children. Mother's allowance payable to Class A widow pensioner or recipient of supporting mother's benefit. (d) Payable where pensioner or beneficiary is wholly or substantially dependent on the pension or benefit and is paying rent or lodging charges.

BENEFITS PAYABLE UNDER SOCIAL SERVICES ACT

Age and Invalid Pensions and Allowances

AGE AND INVALID PENSIONS—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of pensioners at 30 June—					
Age—					
Males	17,329	18,071	18,930	21,948	24,150
Females	38,688	40,153	41,593	46,753	51,974
Persons	56,017	58,224	60,523	68,701	76,124
Invalid—					
Males	4,453	4,499	4,704	5,474	6,102
Females	3,480	3,656	3,781	4,044	4,304
Persons	7,933	8,155	8,485	9,518	10,406
Average weekly pension at 30 June (a)—					
Age	13·55	14·29	16·30	19·56	21·11
Invalid	15·76	16·57	19·02	22·65	26·67
Amount paid during year (b)—					
Age pensions					
Invalid pensions					
Age pensions	44,637	48,979	49,107	64,896	83,580
Invalid pensions			8,267	11,292	14,431
Total	44,637	48,979	57,374	76,188	98,011

(a) Includes allowances and supplementary assistance. (b) Includes amounts paid to benevolent homes for maintenance of pensioners and to pensioner inmates of these homes. Includes also allowances and supplementary assistance.

Age Pensions. Age pensions are payable, subject to residence qualification, to women aged sixty years or more and men aged sixty-five years or more. A period of ten years' continuous residence in Australia is usually necessary. There is a means test on income and property which does not, however, apply to persons aged seventy-five years or more. The means test was abolished in respect of such persons in 1973, and it is planned to make progressive reductions in the age limit for payment of pension free of means test.

Wife's pension, subject to a means test, is payable to an age pensioner's wife who does not qualify for an age pension, invalid pension or service pension in her own right.

Additional payments are made to pensioners with dependent children. These additional payments are subject to a means test. Supplementary assistance is payable, subject to a special means test, to pensioners who are required to pay rent or lodging charges. On the death of one of a married pensioner couple, the surviving member may become entitled to receive, for up to six fortnightly instalments, the equivalent of the two pensions that would have been paid if the spouse had not died.

Invalid Pensions. Invalid pensions are payable, subject to a means test on income and property, to residually qualified persons aged not less than sixteen years who are permanently incapacitated for work to the extent of at least 85 per cent or who are permanently blind. To be residually qualified a period of five years' continuous residence in Australia is necessary unless the incapacity occurred outside Australia, in which case the residence qualification is the same as that for an age pension.

A wife's pension is payable to the wife of an invalid pensioner if she is not eligible for age pension, invalid pension or service pension in her own right. Invalid pensioners are eligible for the same additional payments as age pensioners and the rates of benefit are the same.

Sheltered Employment Allowances

Sheltered employment allowances are payable to disabled persons who are qualified to receive an invalid pension or who would become so qualified if they ceased to be provided with sheltered employment. The allowance is subject to the same means test as that which applies to the invalid pension, and the rates of benefit are the same.

SHELTERED EMPLOYMENT ALLOWANCES—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of (a)—					
Workshops paying allowances	5	5	6	7	8
Employees receiving allowances	97	106	134	176	232
Expenditure on allowances	\$'000 74	\$'000 74	\$'000 96	\$'000 170	\$'000 265

(a) At 30 June.

Funeral Benefits

A funeral benefit up to a maximum of \$20 is payable to any person liable for the funeral costs of an age or invalid pensioner. A higher benefit, up to a maximum of \$40, is payable to an age, invalid or widow pensioner liable for the funeral costs of a spouse, a child, or of another such pensioner.

Widows' Pensions and Allowances

Pensions are payable to widows, subject to a means test on income and property. No period of residence is necessary if a woman and her husband were residing permanently in Australia when she became a widow. In other cases, five years' continuous residence immediately preceding lodgment of claim is necessary but this requirement is waived in the case of a woman widowed overseas who returns to Australia, provided she had resided continuously in Australia for ten years at any time.

WIDOWS' PENSIONS—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of pensions current at 30 June—					
Class A pensioners	2,903	3,050	3,368	4,088	4,683
Class B pensioners	3,178	3,328	3,417	3,851	4,067
Class C pensioners	5	14	10	9	13
Total	6,086	6,392	6,795	7,948	8,763
Average weekly pension at 30 June (a)	\$ 18.41	\$ 19.03	\$ 22.44	\$ 27.62	\$ 29.43
Amount paid during year (a)	\$'000 5,600	\$'000 6,172	\$'000 7,180	\$'000 10,064	\$'000 13,409

(a) Includes allowances and supplementary assistance.

There are three classes of widow pensioners: Class A—a widow with one or more dependent children in her care; Class B—a widow without dependent children who is at least fifty years of age, or is not less than forty-five years of age when her Class A pension

ceases because she no longer has a dependent child in her care; and Class C—a widow without dependent children who is in necessitous circumstances at the time of her husband's death or within twenty-six weeks thereafter. For all classes, the term 'widow' includes a woman who was the common-law wife of a man for at least three years immediately before his death. For Classes A and B, the term includes a wife who has been deserted for six months, a divorcee, a woman whose husband has been imprisoned for six months, or a woman whose husband is in a mental hospital.

Widow pensioners are eligible for supplementary assistance, additional payments for dependent children, and mother's allowance (in place of guardian's allowance) at the same rates and subject to the same conditions as age and invalid pensioners.

Supporting Mother's Benefit and Allowances

The supporting mother's benefit is payable under the provisions of the *Social Services Act (No. 3) 1973*. It was introduced, with effect from 3 July 1973, to assist unmarried mothers and mothers who are deserted *de facto* wives, *de facto* wives of prisoners, or separated wives. The benefit is paid at the same rate and subject to similar conditions as the Class A widow's pension. Payment commences six months after the birth of a child or the date of separation. (During this period a claimant may be eligible to receive State Government assistance; see the section *State Relief Payments* on pages 271-2.)

Benefits paid in Western Australia amounted to \$4.73 million during the period to 30 June 1974, and the number of recipients at that date was 2,748.

Unemployment, Sickness and Special Benefits

Unemployment and sickness benefits are available, subject to a means test on income, to persons who have suffered loss of income because they are unemployed or are temporarily incapacitated for work. There is a waiting period of seven days before benefits are paid. (During this period a claimant may be eligible to receive State Government assistance; see the section *State Relief Payments* on pages 271-2.)

A special benefit may be paid to a person ineligible for a pension or for an unemployment or sickness benefit, if he is unable to earn a sufficient livelihood for himself and his dependants and is suffering hardship.

UNEMPLOYMENT, SICKNESS AND SPECIAL BENEFITS—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Unemployment benefit—					
Number admitted to benefit during year	6,362	12,718	33,359	38,422	25,405
Average number on benefit at end of each week	474	872	2,808	4,960	2,863
Number on benefit at end of year—					
Males	598	1,146	4,836	2,935	2,077
Females	205	297	987	1,137	952
Persons	803	1,443	5,823	4,072	3,029
Sickness benefit—					
Number admitted to benefit during year	5,358	5,775	7,028	7,970	10,897
Average number on benefit at end of each week	492	547	761	1,082	1,319
Number on benefit at end of year—					
Males	400	440	738	1,056	1,210
Females	119	170	217	275	296
Persons	519	610	955	1,331	1,506
Special benefit (a)—					
Number admitted to benefit during year	817	1,027	942	887	1,399
Average number on benefit at end of each week	231	278	268	265	328
Number on benefit at end of year—					
Males	23	15	27	28	47
Females	228	223	252	264	346
Persons	251	238	279	292	393
Benefits paid during year—					
Unemployment	\$'000 407	\$'000 828	\$'000 2,945	\$'000 6,253	\$'000 5,020
Sickness	508	719	1,159	1,840	2,805
Special (a)	123	151	194	279	489
Total (a)	1,039	1,699	4,297	8,372	8,314

(a) Excludes special benefits to migrants in accommodation centres.

To be eligible for unemployment or sickness benefit, a person must be at least sixteen years of age and under sixty, in the case of a female, or under sixty-five, in the case of a male. The claimant must also have lived in Australia for at least a year immediately before applying for benefit, or have the intention of remaining in Australia permanently.

The rates of benefit are the same as for age and invalid pensions. A beneficiary with a dependent child or children is eligible for an additional benefit for each dependent child. After having received benefit for six consecutive weeks, a sickness beneficiary is also eligible, subject to a special means test, to receive supplementary assistance if paying rent or lodging charges. This assistance is not payable to a beneficiary who is in hospital and who has no dependants.

Rehabilitation Service

The Rehabilitation Service is designed to restore disabled persons as fully as possible to physical, mental, social and vocational usefulness. Treatment and training are provided free to persons in the following categories if there is a reasonable prospect of their engaging in gainful employment: invalid pensioners; recipients of unemployment, sickness, or special benefit; servicemen who are disabled at time of discharge but are ineligible for rehabilitation assistance from the Department of Repatriation and Compensation; persons receiving a tuberculosis allowance; persons who become disabled while working for the Australian Government and who are covered by the Compensation (Australian Government Employees) Act; and boys and girls of fourteen to fifteen years of age who would otherwise be likely to qualify for an invalid pension at the age of sixteen years. A person not included in one of these categories is eligible for rehabilitation if the costs involved are paid by or on behalf of the disabled person.

REHABILITATION SERVICE—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number accepted for rehabilitation—					
Invalid pensioners	25	25	19	20	30
Unemployment and sickness beneficiaries	121	124	148	196	157
Other	16	16	16	51	37
Total	162	165	183	267	224
Number placed in employment—					
Invalid pensioners	20	23	17	14	14
Unemployment and sickness beneficiaries	101	97	98	119	141
Other	15	10	13	29	29
Total	136	130	128	162	184
Expenditure	\$'000 254	\$'000 331	\$'000 448	\$'000 529	\$'000 662

Training Scheme for Widow Pensioners

TRAINING SCHEME FOR WIDOW PENSIONERS—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Applications received from—					
Class A pensioners	72	237	132	166	182
Class B pensioners	18	61	31	30	31
Supporting mothers (a) .....	....	....	....	....	188
Total	90	298	163	196	401
Number of pensioners—					
Accepted for training	77	193	137	120	262
Commenced training	77	201	175	150	290
Completed training	56	51	122	80	93
Placed in employment	50	57	70	85	72
Expenditure	\$'000 30	\$'000 55	\$'000 54	\$'000 37	\$'000 72

(a) Included in scheme from July 1973 (see page 261).

The Training Scheme for Widow Pensioners was introduced on 27 September 1968 to provide vocational training for Class A and Class B widow pensioners. From July 1973 it was extended to include recipients of supporting mother's benefit (see page 259). With the introduction on 1 October 1974 of the National Employment and Training System, to which reference is made in the final section of Chapter X, Part 2—*Employment*, arrangements were made for the absorption of the Scheme into the new System.

Maternity Allowance

Maternity allowance is payable, as a lump sum, to mothers on the birth of children. There is no means test. A woman is entitled to the allowance if she resides, or intends to reside, in Australia permanently and gives birth to a child in Australia or on board a ship travelling to Australia. Special conditions apply to a woman who is not a British subject and does not intend to reside in Australia permanently.

MATERNITY ALLOWANCES—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of claims paid—					
Single births: amount of allowance—					
\$30	7,682	9,190	9,152	8,111	7,658
\$32	9,432	10,828	10,585	10,606	10,111
\$35	2,990	3,179	2,882	2,550	1,939
Multiple births: amount of allowance—					
Twins—					
\$40	63	66	64	70	62
\$42	90	103	117	114	102
\$45	37	50	39	30	31
Triplets—					
\$50 .....	....	....	....	1	....
\$52 .....	....	1	2	1	....
\$55 .....	....	....	1	1	....
Total number of claims paid	20,294	23,417	22,842	21,484	19,903
Amount paid	\$'000 645	\$'000 743	\$'000 724	\$'000 680	\$'000 626

The allowance is \$30 where there are no other children under sixteen years of age, \$32 where the mother has one or two other children under sixteen years of age, or \$35 where she has three or more other such children. The amount payable is increased by \$10 for each additional child of a multiple birth.

Child Endowment

Child endowment is payable, free of means test, to persons having the care of children under sixteen years of age or student children. Endowment for the first child under sixteen years of age is at the rate of fifty cents per week, for the second child \$1 per week, and for the third child \$2 per week. For each subsequent child the endowment increases progressively by twenty-five cents, so that the weekly rate payable for the fourth child is \$2.25, for the fifth child \$2.50, and so on. Endowment is payable to a person having the care of a student child (or children) aged sixteen years but under twenty-one years who is receiving full-time education at a school, college or university and is not in employment or engaged in work on his own account. Endowment is at the rate of \$1.50 per week for each such child.

Endowment is usually paid to the mother and to be eligible for endowment she must reside, or intend to reside, permanently in Australia and have the care of one or more children. Special conditions apply if the person does not intend to reside permanently in Australia.

An approved institution is qualified to receive \$1.50 per week in respect of each student child and \$2 per week for each other child in its care.

Details of child endowment in Western Australia in respect of the five years 1969-70 to 1973-74 are given in the table on page 262.

CHILD ENDOWMENT—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Endowed families at 30 June—					
Number of claims in force in respect of—					
Children under 16 years of age	140,719	147,507	153,600	156,774	156,901
Student children	10,495	12,316	14,039	16,088	15,963
Number of endowed children—					
Children under 16 years of age	317,904	329,671	338,855	342,055	339,031
Student children	11,367	13,449	15,390	17,790	17,490
Average number of endowed children per claim—					
Children under 16 years of age	2.26	2.24	2.21	2.18	2.16
Student children	1.08	1.09	1.10	1.10	1.10
Approved institutions at 30 June—					
Number of endowed child inmates—					
Children under 16 years of age	4,154	4,177	4,600	4,714	4,373
Student children	172	288	62	31	95
Total number of endowed children at 30 June—					
In families	329,271	343,120	354,245	359,845	356,521
In institutions	4,326	4,465	4,662	4,745	4,468
Total	333,597	347,585	358,907	364,590	360,989
Amount paid during year (a) (b)	\$'000 (c) 17,894	\$'000 16,423	\$'000 18,188	\$'000 (c) 21,407	\$'000 19,009

(a) Includes payments to institutions. (b) A number of endowments are paid every 12 weeks. During two years in every three, there are four such payments each year, and five in the third year. (c) Expenditure in this year includes five 12-weekly payments; see footnote (b).

Handicapped Child's Allowance

The handicapped child's allowance was introduced in terms of a provision of the *Social Services Act (No. 3) 1974* operative from 30 December 1974. The allowance is payable at the rate of \$10 per week to parents or guardians in respect of a child aged under sixteen years who is cared for at home and who, because of the severity of the handicap, is in need of constant care and attention.

Double Orphan's Pension

Double orphan's pension, payable under the provisions of the *Social Services Act (No. 4) 1973*, was introduced with effect from 9 October 1973. Conditions relating to payment are generally similar to those applying to child endowment. For the purposes of the Act a double orphan is a child aged under sixteen years, or a student child aged sixteen but under twenty-one years, both of whose parents are dead or one of whose parents is dead and the whereabouts of the other unknown. The pension, which is additional to child endowment, is paid at the rate of \$11 per week and is not subject to a means test. It may be paid to a person, institution or authority and is to be applied to the maintenance, training and advancement of the child. The pension is not payable in the case of a child in respect of whom a war orphan's pension is being paid in terms of the Repatriation Act.

Student Children

The *Social Services Act 1973*, which came into operation on 16 March 1973, defines a student child as being a person who is wholly or substantially dependent on a pensioner or beneficiary and who '(a) has attained the age of sixteen years; (b) is receiving full-time education at a school, college or university; and (c) is not in receipt of an invalid pension'. Payments on account of student children which, prior to the operation of the Act, ceased when the student reached the age of twenty-one years were thus extended without limitation in respect of age. This extension of benefit applies to student children of age, invalid and widow pensioners, recipients of supporting mother's benefit, and unemployment and sickness beneficiaries. However, the age limit of twenty-one years continues to apply to the payment of child endowment on account of student children.

Payment of Benefits outside Australia

Reciprocal arrangements in respect of payment of age and invalid pensions, widows' pensions, unemployment and sickness benefits and child endowment have been in force between the Governments of Australia and New Zealand since 1 July 1949 and between Australia and the United Kingdom since 7 January 1954.

The *Social Services Act (No. 3) 1972* provided for the continued payment of a pension, subject to certain conditions, if a pensioner left Australia to reside in any other country with which appropriate reciprocal arrangements had been made. The *Social Services Act (No. 2) 1973*, which came into operation on 8 May 1973, repeals this provision and enables age and invalid pensions (including wives' pensions) and widows' pensions, which were granted in Australia, to continue to be paid in any country where the pensioner may choose to live. In terms of the *Social Services Act (No. 3) 1973*, a woman receiving supporting mother's benefit may continue to be paid the benefit outside Australia so long as she remains a supporting mother.

BENEFITS PAYABLE UNDER REPATRIATION ACT

War Pensions and Allowances

In general, war pensions and associated benefits are payable to an ex-serviceman and/or his dependants where the ex-serviceman has died or been incapacitated as a result of service in the 1914-1918 War, the 1939-1945 War, or certain subsequent operations of a war-like nature. In addition, members of the Regular Defence Force who have had at least three years' service terminating on or after 7 December 1972 (or a lesser period if discharged on medical grounds) may also be eligible for repatriation pensions if the incapacity or death resulted from that service. Dependants of deceased servicemen may also qualify for benefit.

For ex-servicemen, basic eligibility varies according to the nature of service. Broadly, for those with 'active service', incapacity or death resulting from any occurrence during war service may be accepted. The criterion applying to 'home service' is more restricted, in that incapacity or death must have arisen out of, be attributable to, or have been aggravated by, that service.

Pensions in the categories available to ex-servicemen and their dependants (see below) are also payable to eligible members of the Regular Defence Force and their dependants.

Pensions for Ex-servicemen. Pensions are paid to eligible ex-servicemen in three main categories: the Special Rate (known as the T.P.I.) pension, payable to an ex-serviceman who, as a result of war service, is blind, or is totally and permanently incapacitated so that he is unable to earn more than a negligible percentage of a living wage; the Intermediate Rate, payable to an ex-serviceman who, because of the severity of his incapacity accepted as related to war service, can work only part-time or intermittently and, in consequence, cannot earn a living wage; and the General Rate, payable to an ex-serviceman who has an incapacity accepted as related to war service but is not, because of that incapacity, prevented from being able to work full-time. General Rate pensions payable range from 10 per cent to 100 per cent of the maximum rate, according to the assessed degree of incapacity.

Pensions for Dependants. War pensions are also paid to the wives of incapacitated ex-servicemen and to dependent children. Such persons are paid at rates varying with the assessed degree of the particular ex-serviceman's incapacity. When the death of an ex-serviceman has been accepted as related to his war service, his widow qualifies for the war widow's rate of pension and for associated benefits, while his children receive pensions at 'orphan' rates and other benefits. If an ex-serviceman's death has not been accepted as related to war service, but at the time of death he was receiving, or is later adjudged to have been eligible to receive, a pension at the Special Rate (or one of certain other rates) his dependants qualify for pensions as if his death had been accepted as due to war service.

Allowances. Several allowances are provided to supplement war pensions. These allowances vary according to the type or severity of disablement and the special needs of the pensioner. They include attendant's allowance, sustenance allowance, recreation transport allowance and domestic allowance.

An education allowance is paid in respect of children of special rate pensioners and children of ex-servicemen who died as a result of war service.

Attendant's allowance is paid at either of two rates to certain classes of severely disabled ex-servicemen, including the war-blinded, the paralysed and some double amputees. Sustenance allowance is payable at either of two rates to an ex-serviceman who is prevented from following his usual occupation because he is undergoing medical treatment. The lower rate is paid where out-patient treatment is received for a period not exceeding twenty-eight days, and the sum of sustenance allowance and any war pension being paid is equal to the General (100 per cent) Rate war pension. The higher rate is equal to, or sufficient to bring any war pension payable up to, the Special (T.P.I.) Rate, and is payable in respect of in-patient treatment for disablement accepted as related to war service, or convalescence immediately following that treatment or out-patient treatment for a continuous period in excess of twenty-eight days. Recreation transport allowance may be paid at either of two rates for recreation purposes to certain classes of seriously disabled ex-servicemen. Domestic allowance is payable to a war widow in addition to her pension if she has attained the age of fifty years, or is permanently unemployable, or has a dependent child who is under the age of sixteen years or is undertaking approved full-time education or training and is not receiving an adequate living wage.

WAR PENSIONS AND ALLOWANCES—RATES OF BENEFIT (a) (\$)

Pension or allowance	Rate current at—				
	31 March 1973	31 October 1973	30 April 1974	31 August 1974	30 November 1974
	per week	per week	per week	per week	per week
War pensions—					
Ex-serviceman—					
Special (T.P.I.) rate	51·10	55·60	60·10	60·10	64·10
Intermediate rate	36·55	38·80	41·05	41·05	44·55
General rate	16·00	19·00	22·00	22·00	25·00
Wife	4·05	4·05	4·05	4·05	4·05
Each dependent child	1·38	1·38	1·38	1·38	1·38
War widow	21·50	23·00	26·00	31·00	31·00
War orphan—					
Where father dead	7·35	9·25	9·25	9·25	10·45
Where both parents dead	14·70	18·50	18·50	18·50	20·90
Allowances—					
Payments for certain amputations and/or loss of vision	1·80 to 35·10	2·25 to 36·60	2·25 to 38·10	2·25 to 38·10	2·55 to 39·10
Attendant's allowance—					
Higher rate	17·50	22·00	22·00	22·00	24·90
Lower rate	10·50	13·00	13·00	13·00	14·70
Sustenance allowance—					
Higher rate	51·10	55·60	60·10	60·10	64·10
Lower rate	16·00	19·00	22·00	22·00	25·00
Domestic allowance	8·50	9·50	9·50	9·50	12·00
Recreation transport allowance—					
Higher rate	25·00	32·00	32·00	32·00	36·00
Lower rate	12·50	16·00	16·00	16·00	18·00

(a) Pension rates current at dates prior to those shown in this table appear in *Western Australian Year Book*, No. 12—1973 (pages 240 and 555), and earlier issues.

WAR PENSIONS (a)—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of pensions current at 30 June—					
Incapacitated ex-servicemen	18,449	18,181	17,888	17,452	17,026
Dependants of incapacitated ex-servicemen	25,257	24,037	22,932	22,471	21,654
Dependants of deceased ex-servicemen	4,254	4,264	4,228	4,141	4,100
Miscellaneous (b)	33	32	31	29	27
Total	47,993	46,514	45,079	44,093	42,807
Amount paid in pensions during year (c)	\$'000 12,811	\$'000 13,140	\$'000 14,413	\$'000 *15,462	\$'000 17,363

(a) Including pensions in respect of ex-servicewomen.
Pensions and Allowances Act and 'Act of grace' pensions.

(b) Pensions payable under Seamen's War
(c) Includes widows' allowances. * Revised.

Service Pensions and Allowances

Service pension is payable, subject to a means test similar to that applied to age and invalid pensions, to an ex-serviceman who served in a theatre of war and who has attained the age of sixty years or is permanently unemployable. It is payable to an ex-service-woman who served in a theatre of war or embarked for service abroad and has attained the age of fifty-five years or is permanently unemployable. It may also be paid to an ex-serviceman or woman suffering from pulmonary tuberculosis, irrespective of the area of service.

A service pension is therefore a broad equivalent of an age or invalid pension. The advantages to the recipient are the availability of pension five years earlier and access to a wide range of medical treatment services in the repatriation system. Service pensioners are eligible for the same range of pensions and allowances as age pensioners and the rates of benefit are the same.

The means test applying to service pensions paid to men and women aged seventy-five years and over was abolished in 1973.

SERVICE PENSIONS (a)—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of pensions current at 30 June—					
Ex-servicemen	6,282	6,314	6,385	7,299	7,983
Dependants of—					
Living service pensioners...	1,004	972	970	1,765	2,187
Deceased service pensioners	494	477	504	529	492
Miscellaneous (b)	3	4	5	6	7
Total	7,783	7,767	7,864	9,599	10,669
Amount paid in pensions during year	\$'000 4,491	\$'000 4,769	\$'000 5,298	\$'000 7,394	\$'000 10,191

(a) Including pensions in respect of ex-servicewomen.

(b) 'Act of grace' pensions.

Student Children

Prior to amendments made to the Repatriation Act in 1973, benefits and allowances payable in respect of student children, *i.e.* dependent persons receiving full-time education at a school, college or university, ceased when the student reached the age of twenty-one years. Under the provisions of the *Repatriation Act 1973* and the *Repatriation Act (No. 2) 1973*, payment continues until the student ceases his studies or the parent or other person on whom he is dependent ceases to be eligible for a pension.

Payment of Benefits outside Australia

The *Repatriation Act (No. 2) 1973*, which came into operation on 8 May 1973, authorises the payment of a service pension in any country in which the pensioner may choose to live. This provision had previously applied only to war pensions.

NATIONAL HEALTH SERVICES

The *National Health Act 1953-1975* provides for expenditure from the National Welfare Fund in respect of a free general practitioner medical service to eligible pensioners and their dependants; hospital, medical and pharmaceutical benefits to the community generally; and subsidised health benefits for certain persons. Other services financed from the fund are the payment of domiciliary nursing care benefits for aged persons; the payment of handicapped children's benefits; the payment of allowances to sufferers from tuberculosis; reimbursement to State Governments of expenditure in relation to the diagnosis, treatment and control of tuberculosis; and a number of miscellaneous health services.

Hospital and Nursing Home Benefits

The payment of hospital and nursing home benefits is authorised under Part V of the National Health Act. Benefits are payable only in respect of treatment received in approved hospitals and approved nursing homes. For the purposes of the National Health Act,

premises which provide medical treatment, care and accommodation for sick persons are approved either as hospitals or as nursing homes depending mainly on their clinical standards and the type of patients accommodated.

Under a health insurance scheme, which is voluntary, the Australian Government provides a benefit of \$2 per day for a hospital in-patient who is insured with a registered hospital benefits fund against the cost of hospital treatment. Payment of eighty cents per day is made direct to the hospital for patients who are not contributors to an insurance fund. A benefit of \$2 per day is payable direct to hospitals in respect of patients, whether insured or uninsured, provided that no charge is made by the hospital.

In accordance with arrangements made with the States, pensioners enrolled in the Pensioner Medical Service and their dependants are entitled to free treatment in public wards of public hospitals. The Australian Government pays the hospitals a benefit of \$5 per day for each patient.

A benefit of \$3.50 per day is paid for all qualified patients in approved nursing homes, whether the patient is insured or not. A supplementary benefit of \$3 per day is payable for those patients in approved nursing homes who need and receive intensive nursing home care.

An additional nursing home benefit, subject to a statutory maximum, is payable by the Australian Government in respect of pensioners enrolled in the Pensioner Medical Service and their dependants. The rate of benefit varies as between States, the maximum rate payable in Western Australia being \$4.20 per day. Registered hospital insurance organisations may pay the additional benefit at the same rate in respect of their members.

The following table shows the amounts of benefit paid in Western Australia during each financial year from 1969-70 to 1973-74, and the number and membership of registered benefit organisations at 30 June in each year. It should be noted that the total number of persons covered by hospital benefit schemes is considerably higher than the number of members shown, as many members contribute on account of dependants as well as for themselves.

HOSPITAL AND NURSING HOME BENEFITS—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Registered organisations—					
Number at 30 June	8	7	7	7	6
Membership at 30 June	330,298	349,359	360,321	367,214	379,950
Amount of benefits paid during year—					
National Welfare Fund payments (a)—	\$'000	\$'000	\$'000	\$'000	\$'000
Hospital patients	4,834	5,606	7,804	9,685	9,786
Nursing home patients	4,319	4,650	6,688	9,378	11,436
Total	9,153	10,256	14,492	19,063	21,222
Health insurance fund payments (b)	9,400	10,922	17,594	22,221	22,319

(a) For details see table on pages 292-3.
account deficits and subsidised health benefits.

(b) Includes reimbursements paid by Australian Government in relation to special

A 'special account' system provides an assured rate of hospital fund benefits to contributors who would otherwise be excluded from fund benefits on account of organisations' rules covering pre-existing ailments, chronic illnesses and maximum fund benefit. One condition of payment is that the treatment in respect of which the fund benefit is paid is given in an approved hospital, although fund benefit is also payable in certain circumstances in respect of treatment given in approved nursing homes. If the payments from special accounts exceed the contributions credited to the account, the amount of the deficit is reimbursed by the Australian Government.

Australian residents who receive hospital treatment in recognised hospitals in overseas countries, while temporarily absent from Australia, are eligible to receive the government and fund benefits to which they would be entitled if the service were rendered in Australia.

Domiciliary Nursing Care Benefit

Domiciliary nursing care benefit, payable under the provisions of the *National Health Act 1972*, was introduced with effect from 1 March 1973. Benefit is paid at the rate of \$2 per day to assist in meeting the cost of home nursing for aged persons who are chronically ill and are being cared for in the private home of a relative or other approved person. The benefit applies to a patient who has attained the age of sixty-five years, has a continuing need for nursing care, and is receiving such care given by or under the supervision of a registered nurse.

Handicapped Children's Benefit

Reference is made on page 241 of *Western Australian Year Book*, No. 13—1974 to handicapped children's benefits which were provided in terms of the *National Health Act* prior to 1 January 1975. From that date, benefit at the rate of \$3.50 per day became payable under the provisions of the *Handicapped Persons Assistance Act 1974* (see page 233).

Medical Benefits

Under the voluntary health insurance scheme, the Australian Government provides benefits for medical services rendered to contributors to registered medical insurance funds and to their dependants. The benefits supplement those paid by the funds in respect of a proportion of the medical expenses, such as fees for medical and surgical treatment, incurred by contributors and their dependants. Benefits provided by the Australian Government are paid either on a fee-for-service basis or in the form of a subsidy representing a proportion of the payments made to medical practitioners by the funds under contract arrangements.

Under the 'special account' system referred to on page 266, contributors who would otherwise be excluded from fund benefits because of organisations' rules covering pre-existing or long-term ailments receive full fund benefits with the Australian Government reimbursing the organisations for any deficits incurred in providing benefits in such cases.

Australian residents who, while temporarily absent from Australia, receive medical attention by registered medical practitioners are entitled, if insured, to the government and fund benefit to which they would be entitled if the service were rendered in Australia.

The following table shows the number of medical services rendered in Western Australia to members of medical benefit organisations and their dependants during each financial year from 1969-70 to 1973-74. The number of organisations and their membership at 30 June in each year are also shown. It should be noted that the total number of persons covered by medical benefit schemes is considerably higher than the number of contributors, as many members subscribe for benefits on account of dependants as well as for themselves.

MEDICAL BENEFITS—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Registered organisations—					
Number at 30 June	8	8	8	8	7
Membership at 30 June	323,486	344,380	358,476	366,824	380,673
	'000	'000	'000	'000	'000
Number of medical services received during year—					
General practitioner services	2,050	1,886	2,136	2,276	2,265
Other	1,029	1,311	1,678	1,733	1,787
Total	3,079	3,197	3,814	4,009	4,052
	\$'000	\$'000	\$'000	\$'000	\$'000
Amount of benefits paid during year—					
National Welfare Fund payments (a)	6,373	9,782	13,800	15,957	16,478
Health insurance fund payments (b)	5,654	5,746	7,130	7,814	8,783

(a) For details see table on pages 292-3.

(b) Includes reimbursements paid by Australian Government in relation to special account deficits and subsidised health benefits.

Under the Pensioner Medical Service scheme, qualified pensioners and their dependants are provided with a free general practitioner service. Specialist services are not provided. A small fee may be charged by practitioners who attend qualified patients outside normal surgery or visiting hours. Practitioners in the scheme are remunerated on a fee-for-service basis by the Australian Government.

Subsidised Health Benefits

The Australian Government provides assistance covering hospital, nursing home, medical, and pharmaceutical benefits to families whose weekly income does not exceed a specified amount; to persons in receipt of unemployment, sickness or special benefits; and to migrants during the first two months after their arrival in Australia.

The income eligibility limits are amended consequent upon variations in the minimum wage determined by the Australian Conciliation and Arbitration Commission and are prescribed by regulations under the National Health Act. In terms of an amendment to these regulations effective from 24 June 1974, families with weekly income of \$68.50 or less were entitled to full medical benefits, and also to hospital benefits equal to the cost of public ward treatment, without any payment of contributions. Families with income of more than \$68.50 but not more than \$73 per week were eligible for the same benefits on payment of contributions at one-third of the usual rate, while those with income of more than \$73 but not more than \$77.50 per week were eligible for the benefits on payment of contributions at two-thirds of the usual rate.

Families qualifying for assistance may secure insurance cover higher than that needed to meet public ward hospital charges by paying the extra contributions involved.

Pharmaceutical Benefits

All persons receiving treatment by a registered medical practitioner are entitled to receive benefits through approved pharmaceutical chemists or, in certain circumstances, medical practitioners. Eligible pensioners and their dependants receive benefits free of charge. Persons eligible under the Subsidised Health Benefits scheme, to which reference is made above, receive benefits for a fee not exceeding fifty cents for each item dispensed. Other persons receive benefits for a fee not exceeding \$1 for each item. In addition, benefits are made available through approved hospitals and, by special arrangements, to persons living in isolated areas and persons who cannot be conveniently or efficiently supplied in accordance with the general provisions of the National Health Act.

The drugs and medicinal preparations available as pharmaceutical benefits are determined by the Minister on the advice of the Pharmaceutical Benefits Advisory Committee.

Free Milk for School Children

Under the provisions of the *States Grants (Milk for School Children) Act* 1950, milk was distributed free to school children throughout Australia, with the object of improving their diet. The Australian Government reimbursed the States for the cost of supplying one-third of a pint of milk each day of the school year to children under thirteen years of age, and also contributed one-half of the cost of related capital and incidental expenditure incurred by the States in the administration of the scheme. From the beginning of the 1974 school year the scheme was modified and the general distribution of milk discontinued.

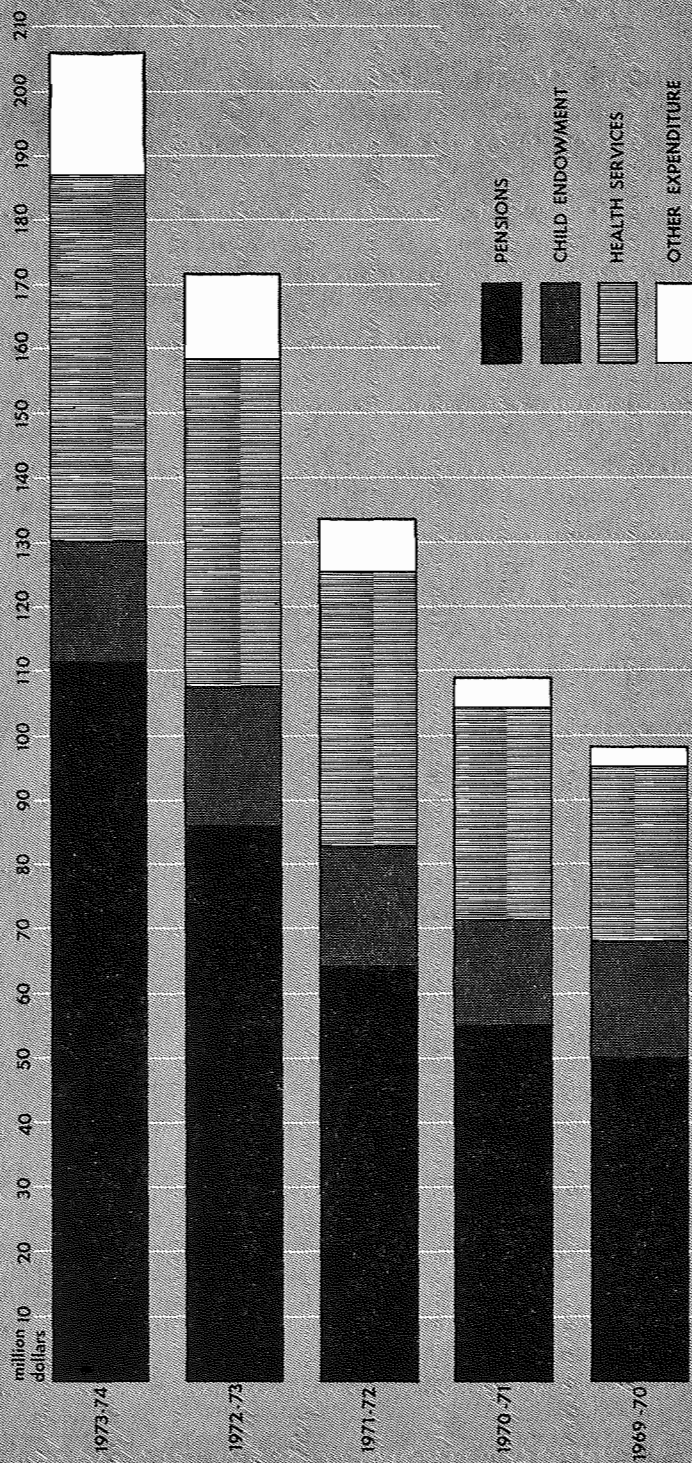
Tuberculosis Medical Services and Allowances

Under the provisions of the *Tuberculosis Act* 1948-1973 the Australian Government reimburses the States for all capital expenditure on buildings, furnishings, equipment and plant for the diagnosis, treatment and control of tuberculosis. It also reimburses the States for net maintenance expenditure on the diagnosis, treatment and control of tuberculosis in excess of that incurred during the base year 1947-48.

Provision is made in the Act for allowances to be paid, subject to a means test, to sufferers from tuberculosis and their dependants. The allowances are determined by the Director-General of Health, subject to the direction of the Minister. The rates payable

EXPENDITURE IN WESTERN AUSTRALIA 1969.70 to 1973.74

National Welfare Fund



at 1 January in each year from 1971 to 1975 are shown in the next table. In certain circumstances, additional benefits may be paid in the form of a mother's or guardian's allowance or supplementary assistance.

Miscellaneous Health Services

Other expenditure by the Australian Government on health services includes the cost of district health laboratory services, the free supply of certain prophylactic materials and biological products (e.g. poliomyelitis vaccine), the supply and maintenance of hearing aids for children and pensioners, subsidies to various voluntary organisations conducting home-nursing services that are assisted by the State Governments or local government authorities, the supply of artificially produced radio-active isotopes to private medical practitioners and hospitals for medical treatment purposes, and expenses in connection with the blood fractionation plant of the Commonwealth Serum Laboratories.

Summary of Rates, 1971 to 1975

The following table shows the daily amounts of hospital and nursing home benefits, domiciliary nursing care benefit and handicapped children's benefit being paid at 1 January of the years 1971 to 1975. The maximum weekly rates of tuberculosis allowances at each date are also shown.

NATIONAL HEALTH SERVICE PAYMENTS (a)
(\$)

Benefit or allowance (a)	At 1 January—				
	1971	1972	1973	1974	1975
Hospital benefits (per day)—					
Insured patient (b)	2.00	2.00	2.00	2.00	2.00
Uninsured patient	0.80	0.80	0.80	0.80	0.80
Patient treated without charge (c)	2.00	2.00	2.00	2.00	2.00
Pensioner patient in public hospital (d)	5.00	5.00	5.00	5.00	5.00
Nursing home benefits (per day)—					
Ordinary benefit	2.00	3.50	3.50	3.50	3.50
Supplementary benefit for intensive care	3.00	3.00	3.00	3.00	3.00
Additional benefit (e) ....	....	....	1.60	1.60	4.20
Domiciliary nursing care benefit (per day) (f) ....	....	....	....	2.00	2.00
Handicapped children's benefit (per day)	1.50	1.50	1.50	3.00	(g) 3.50
Tuberculosis allowances—					
Maximum weekly rate—					
Sufferer with dependent spouse	30.75	33.75	37.75	40.75	44.00
Sufferer without spouse but with dependent child or children	23.50	25.25	28.00	29.50	35.00
Sufferer without dependants—					
While undergoing approved domiciliary treatment	18.75	20.50	23.25	24.75	34.25
While undergoing free hospital treatment	15.50	17.25	20.00	21.50	31.00
Payments in respect of dependent children (h)—					
First child	2.50	4.50	4.50	4.50	5.00
Each other child	3.50	4.50	4.50	4.50	5.00

(a) In addition to the benefits shown, payments from the National Welfare Fund in respect of National Health Services include medical benefits (see page 267), pharmaceutical benefits (see page 268), subsidised health benefits (see page 268) and miscellaneous health services (see above). (b) Member of an approved hospital insurance organisation. (c) Benefit payable in respect of each non-pensioner patient, whether insured or uninsured, provided that no hospital fee is charged. (d) Benefit payable on account of a pensioner enrolled in the Pensioner Medical Service who is a patient in a public hospital and for whom no fees are charged. (e) Introduced 1 January 1973. Rate of benefit varies as between States; the amount shown is the maximum rate payable in Western Australia. (f) Introduced 1 March 1973. (g) Payable under provisions of *Handicapped Persons Assistance Act 1974* (see page 233). (h) In addition to child endowment.

DEPARTMENT FOR COMMUNITY WELFARE, WESTERN AUSTRALIA

The *Community Welfare Act, 1972*, which came into operation on 1 July 1972, establishes the Department for Community Welfare. The *Child Welfare Act Amendment Act (No. 2), 1972* abolishes the former Child Welfare Department and transfers its functions to the Department for Community Welfare. The *Aboriginal Affairs Planning Authority Act, 1972* repeals the *Native Welfare Act, 1963*. The welfare functions of the former Department of Native Welfare were transferred to the Department for Community Welfare with effect from 1 July 1972.

The functions of the Department for Community Welfare, as defined in the *Community Welfare Act, 1972*, are: (a) to promote individual and family welfare in the community; (b) to prevent the disruption of the welfare of individuals and families in the community;

and to mitigate the effects of any disruption; (c) to co-ordinate, assist and encourage the provision of social welfare services to the community, and for that purpose to confer and collaborate with other bodies and instrumentalities who offer, or may offer, a social welfare service; (d) to conduct, promote and encourage research into the problems of community welfare; (e) to conduct, promote and encourage programmes of training or rehabilitation, or which are otherwise of a nature that is concerned with the advancement of the welfare of particular individuals or groups in the community who are disadvantaged; (f) to consider and initiate, or to assist in, the provision and development of new or additional welfare services, whether of a general or specific nature, for individuals or groups within the community who are needy or disadvantaged; (g) to encourage the development of the greatest possible degree of service and administration at the local level, and to emphasise the value of preventive measures; (h) to provide assistance, where the Minister considers it to be necessary, when the welfare of any individual, family or group is threatened or in jeopardy; (i) to provide and, where appropriate, to manage facilities, which may include land, buildings and specialized appliances, for specific purposes consistent with the objects of this Act; (j) generally, to administer and give effect to the provisions of this Act and to carry out such other functions as may be prescribed, or as the Minister may direct.'

The Acts administered by the Director of the Department for Community Welfare, subject to any direction of the Minister, are the Community Welfare Act, the Child Welfare Act, the Welfare and Assistance Act, the Adoption of Children Act, and the Guardianship of Children Act.

STATE RELIEF PAYMENTS

Under the provisions of the *Welfare and Assistance Act, 1961*, the State Government, through the Department for Community Welfare, extends financial assistance to indigent persons not immediately eligible for benefits paid by the Australian Government under its social security programme. These relief payments are made primarily to ensure that dependent children do not suffer hardship from the indigence of parents or guardians. Those assisted include deserted wives, unmarried mothers, families where the husband is unable to provide adequate support because of sickness, unemployment, age or imprisonment, and other special cases.

The rates of benefit payable by the State Government appear in the table on page 275. State monetary assistance to a woman not receiving a pension or other benefit from the Australian Government may be increased by \$2 per week if she has a child aged under six years or an invalid child aged under sixteen years. She may be eligible for an additional allowance up to a maximum of \$5 per week if paying rent or lodging charges.

Other aid provided by the State for persons in need includes free travel for country people requiring medical treatment in the metropolitan area and a contribution towards the cost of school requisites for children of women receiving financial assistance. In certain circumstances, the burial of indigent persons is arranged at State expense.

Deserted wives and unmarried mothers applying to the Department for assistance are given advice concerning the legal redress available to them and it is usual for application to be made to a Summary Relief Court or a Children's Court for an order requiring the husband or the father to provide maintenance. Court orders are enforceable throughout Australia and in certain overseas countries.

Under the *States Grants (Deserted Wives) Act 1968* the Australian Government shares on a \$1 for \$1 basis with the States the cost of helping certain mothers of families without a breadwinner where the mother is ineligible for a Class A widow's pension or the supporting mother's benefit (see page 259). The main groups of mothers assisted are deserted wives, wives of prisoners, and unmarried mothers. Assistance is provided during the first six months after the birth of a child or the date of separation. After the first six months, a woman may qualify for either a Class A widow's pension or a supporting mother's benefit.

The grant by the Australian Government to a State is equal to half the cost of the approved assistance paid by the State to each eligible person but may not exceed half the amount that would have been payable to such a person under the Social Services Act had she been eligible for a Class A widow's pension.

FAMILIES GRANTED STATE GOVERNMENT FINANCIAL ASSISTANCE (a)

Category	Number of applications approved				
	1969-70	1970-71	1971-72	1972-73	1973-74
Deserted wives	905	1,274	1,510	2,557	3,323
Foster mothers	110	103	255	260	425
Husband imprisoned	202	272	463	521	473
Husband sick or unemployed	1,204	1,716	3,492	3,788	4,090
Special cases	118	125	36	33	105
Unmarried mothers	254	475	610	916	807
Divorced women	32	18	36	108	63
Husband pensioner .....	....	33	47		
Widows	47	45	72		
Total	2,872	4,061	6,521	8,183	9,286

(a) Figures for years prior to 1972-73 refer to the Child Welfare Department, and those for 1972-73 and 1973-74 to the Department for Community Welfare; see letterpress *Department for Community Welfare* on pages 270-1.

CHILD WELFARE

Under the provisions of the *Child Welfare Act, 1947-1972* the State Government, through the Department for Community Welfare, is responsible for the care of State wards and children placed under supervision or released on probation by Children's Courts. For the purposes of the Act, a child is defined as 'any boy or girl under the age of eighteen years'. Institutions caring for children, as well as children brought to Western Australia under child migration schemes, are subject to supervision by the Department, as also are foster-mothers who have in their care children under six years of age and who are required under the Act to be licensed for this purpose. Among other functions of the Department are the arranging of legal adoptions and the licensing of children employed in street trading and in public entertainment. A provision of the Child Welfare Act vests in the Department the right to decide which institution or what form of treatment is appropriate to the needs of a child committed by a Children's Court to the care of the Department for treatment, discipline and training.

Children's Courts are established at Perth and at other centres throughout the State and have jurisdiction in all cases where children under eighteen years of age are involved whether as offenders or as being neglected or destitute. The Courts also have jurisdiction to deal with adults committing certain specified offences against children. The public may be excluded from Court hearings and names of juvenile offenders are withheld from publication unless with the express authority of the Court. Adults charged with certain indictable offences against children may forgo the right to trial by jury and agree to be dealt with summarily by Children's Courts. This power to exercise summary jurisdiction is designed to eliminate as far as possible the necessity for children to appear in open courts as witnesses in cases dealing with sex offences. A Children's Court may commit such offenders for sentence by the Supreme Court of Western Australia or The District Court of Western Australia.

Children guilty of minor offences may be cautioned, fined, bound over, placed on probation, or the charge may be dismissed without a conviction being recorded. A Court may declare a child to be neglected or destitute and may order the child to be committed to the care of the Department for Community Welfare or released on probation. Children found guilty of offences punishable by imprisonment may be committed to the care of the Department, released on security given by parents, or released on probation under the supervision of the Department. Those guilty of less serious or first offences are generally placed in the care of their parents or suitable guardians under appropriate supervision by officers of the Department for Community Welfare.

Departmental Expenditure. The following table gives details of annual expenditure of the Child Welfare Department during the three-year period ended 30 June 1972, and of the Department for Community Welfare during 1972-73 and 1973-74.

DEPARTMENTAL EXPENDITURE (a)
(\$'000)

Nature of expenditure	1969-70	1970-71	1971-72	1972-73	1973-74
Administration	853	1,128	1,486	3,110	4,125
Departmental institutions	1,213	1,617	2,153	2,862	3,546
Maintenance of wards	751	1,060	1,214	1,543	2,153
Maintenance of migrant children	6	4	5	4	1
Adoption of children	41	62	84	82	142
Outdoor relief (b)	576	904	1,624	2,935	1,779
Unemployment relief	22	29	71	67	66
Parole classes	3	4	8	8	25
Burial of indigents	11	10	15	48	64
Reserves (Aboriginal housing) (c) .....	....	....	....	194	261
Total expenditure	3,476	4,818	6,660	10,853	12,162
Total revenue	228	280	306	490	588
Net expenditure	3,248	4,538	6,354	10,363	11,574

(a) See letterpress *Department for Community Welfare* on pages 270-1. (b) Assistance to women with dependent children and to the infirm. (c) Prior to 1972-73 a function of the former Department of Native Welfare.

Supervision of Children. A child committed to the care of the Department for Community Welfare or to the custody of the Director of the Department for Community Welfare becomes a ward of the Department. A ward may be placed in an institution, boarded out with a relative or other approved person, paroled or placed in suitable employment. The Director of the Department for Community Welfare has authority to place wards of working age in employment or apprenticeship. The *Immigration (Guardianship of Children) Act 1946-1973* (Commonwealth) provides that the Minister for Immigration shall be the guardian of migrant children under the age of twenty-one years who are not in the care of a parent or other relative. In Western Australia this function is exercised, under delegation, by the Director of the Department for Community Welfare.

Some children, other than wards, are also under the supervision of the Department. These comprise children under six years of age who may be either in institutions or in the care of licensed foster-mothers.

Maintenance of Children. The Department for Community Welfare makes payments at the rates shown in the table on page 275 to foster-parents and institutions having State wards in their care. The British Government pays \$2.50 per week for each British migrant child in an institution or boarded out and the State Government pays an additional amount of \$1.50 per week where the child is unaccompanied. A further grant of \$1 per week for each child maintained is paid to the institutions by the State Lotteries Commission. Where an institution refuses assistance from the Commission on religious or moral grounds the State Government may grant an equivalent allowance to the institution for each ward maintained. All institutions and foster-parents having the care of children receive Commonwealth child endowment payments. Under an 'emergency' foster placement scheme, children are placed for short periods in approved private homes while awaiting permanent placement.

Parents or step-parents are required to contribute towards the maintenance of wards in institutions or boarded out.

Day Care Centres. Any person who provides day-to-day care of children under the age of six years must have a licence issued by the Department for Community Welfare in accordance with regulations which specify standards relating to premises, furnishings, equipment, staffing and the general conduct of centres. An advisory service is provided by the Department to assist those wishing to establish centres, and to ensure that the regulations are observed and that good standards of child care are maintained.

The Australian Government, under the provisions of the *Child Care Act 1972*, provides financial assistance to certain non-profit organisations for the establishment and operation of child care centres primarily for the children of working or sick parents or of parents who for other reasons are unable to care for them during the day. Capital grants are payable to eligible organisations for the purchase, erection, extension or alteration of buildings (including land cost) for use as a child care centre. Recurrent grants are payable to encourage the employment of qualified staff and to enable the centres to offer reduced fees in respect of children from families in financial need. The Act also provides for grants to be made available to suitable bodies for research and evaluation of matters relating to child care.

Adoption of Children. Any person wishing to adopt a child must first obtain the written approval of the Director of the Department for Community Welfare. Legal adoptions may be arranged by the Department or privately by solicitors. In either case, the Director is required to investigate the suitability of applicants and an order for adoption must be obtained from a Judge of the Supreme Court of Western Australia.

Institutions. The State Government subsidises homes for children in Western Australia. Most of these institutions are conducted by religious organisations. All institutions having the care of wards (including migrant children) or private children under six years of age are subject to the supervision of the Department for Community Welfare.

Departmental institutions provide short-term accommodation for children in need of care and children awaiting proceedings in Children's Courts; assessment facilities for children coming into the care of the Department; treatment centres in the nature of reformatories; and hostel accommodation. Children aged from three years to seventeen years are provided for. Wards under three years of age requiring short-term care are placed by arrangement at Ngal-a Mothercraft Home and Training Centre, South Perth.

CHILDREN IN DEPARTMENTAL INSTITUTIONS (a)

Institution	At 30 June—				
	1970	1971	1972	1973	1974
Bridgewater Care and Assessment Centre, Applecross	21	27	44	81	60
Hillston Farm School, Stoneville	68	64	62	50	81
Longmore Remand and Assessment Centre, Bentley	59	60	63	62	69
McCall Treatment Centre, Cottesloe	.....	.....	16	14	12
Mount Lawley Reception Home	33	34	35	30	28
Nyandl, Bentley	21	25	32	20	28
Riverbank, Caversham	38	40	44	36	45
Total	240	250	296	293	323

(a) See letterpress *Department for Community Welfare* on pages 270-1.

Employment of Children. The *Child Welfare Act, 1947-1972* provides that children may not engage in street trading except under licence granted by the Department for Community Welfare. The issue of licences is restricted to boys aged twelve years and over and it is an offence to employ an unlicensed child. Most of the licences issued are for the sale of newspapers.

The Act provides further that children under the age of sixteen years may not take part in any form of public entertainment for profit or reward unless under licence, except in the case of an occasional entertainment for the benefit of a school or charitable or patriotic object. Most of these licences are issued for concerts arranged by dancing teachers and other tutors.

SUMMARY OF RELIEF AND WELFARE PAYMENTS

The following table shows the maximum weekly rates of allowances and benefits paid in terms of the Welfare and Assistance Act and the Child Welfare Act. The rates current at dates prior to those shown in the table appear in *Western Australian Year Book*, No. 12—1973 (page 251) and earlier issues.

STATE GOVERNMENT RELIEF AND WELFARE PAYMENTS (a)
MAXIMUM WEEKLY RATES
(\$)

Allowance or benefit	Rate current at—				
	31 March 1973	31 October 1973	30 April 1974	31 August 1974	30 November 1974
Woman not receiving Australian Government assistance	21·50	23·00	26·00	31·00	31·00
Additional payments in respect of dependent children—					
First child	8·50	9·00	9·00	9·00	9·50
Second child	4·50	5·00	5·00	5·00	5·50
Third child	6·50	5·00	5·00	5·00	5·50
Fourth and each subsequent child	4·50	5·00	5·00	5·00	5·50
Supplementary allowances—					
Child aged under 6 years or invalid child aged under 16 years	2·00	2·00	2·00	2·00	2·00
Rent allowance	4·00	4·00	4·00	4·00	5·00
Widow pensioner with dependent children (b) (c)	2·00	....	....	....	....
Age or invalid pensioner—					
Payments in respect of dependent children (c)—					
Where there is one child	2·00	....	....	....	....
Where there are two or more children	2·50	....	....	....	....
Unemployment and sickness benefits (d)—					
Married person	8·25	8·25	8·25	8·25	8·25
Dependent spouse	3·00	3·00	3·00	3·00	3·00
Each dependent child up to and including the seventh	1·50	1·50	1·50	1·50	1·50
Wards of the State—					
Foster children in families—					
Each child	8·00	8·00	13·00	13·00	14·00
Additional payment for each high school child (e)	1·00	1·00	1·00	1·00	2·00
In institutions—					
Each child	9·50	9·50	12·50	12·50	13·50
Additional payment for each high school child (f) ....	....	....	....	....	3·50
Allowance for each high school child (f) (g)—					
At first year level ....	....	....	....	....	0·50
At second year level ....	....	....	....	....	1·00
At third year level ....	....	....	....	....	1·50
At fourth and fifth year levels ....	....	....	....	....	2·00
Foster child (h) in institution or private home	5·50	8·50	8·50	8·50	10·00

(a) Payments made in terms of the Welfare and Assistance Act and the Child Welfare Act. (b) Woman receiving widow's pension and having 3 or more dependent children in her care. (c) Payment discontinued 8 August 1973. (d) Paid only in respect of the first week of unemployment or sickness, during which period benefits are not payable under the Social Services Act (Commonwealth). (e) Before October 1974, paid only in respect of children aged 15 years or over. (f) Payable from October 1974. (g) Applies to all wards, whether accommodated in institutions or living as foster children in families. (h) Foster child not being a ward of the State.

Chapter V—continued

Part 6—Law, Order and Public Safety

The law in force in Western Australia is contained in The Statutes of Western Australia, comprising legislation passed by the Western Australian Parliament and certain Imperial Acts which have been adopted, and in the Commonwealth Acts in so far as they apply to Western Australia. Under the Constitution of the Commonwealth of Australia, 'when a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid'.

The Legal Profession

The Barristers' Board, constituted under the *Legal Practitioners Act, 1893-1973*, comprises the Attorney-General as chairman; the Solicitor-General; all Queen's Counsel residing and practising in the State; persons who retire from an office of Judge of the Supreme Court of Western Australia and are resident in the State; and seven practitioners of at least three years' standing and practice in the State, elected annually by the practitioners on the roll of the Supreme Court residing and practising in the State.

The Board has the power to regulate and control the examination and admission of articled clerks, and the examination of all candidates for admission as practitioners. The certificate of the Board is necessary before any person may be admitted to practice. An applicant for admission having qualifications acquired outside Western Australia must satisfy the Board that he possesses qualifications substantially equivalent to those required for the admission of persons who qualify in Western Australia.

The Crown Law Department

The Crown Law Department is administered, subject to the control of the Minister, by the Under Secretary for Law. The Department is responsible for the Supreme Court Central Office, the District Court Registry, Court Offices throughout the State (except Children's Courts), the Crown Solicitor's Office, the Office of Titles, the Public Trust Office, the Companies Registration Office, and the Probation and Parole Service. The Department, in addition to administering the Acts which come under the portfolio of the Minister, conducts Crown legal business and, when required, acts for and advises all other State Government Departments and instrumentalities.

Law Reform Commission of Western Australia

The Law Reform Commission of Western Australia was established by the *Law Reform Commission Act, 1972* which came into force on 19 January 1973. It succeeded the Law Reform Committee which had been in existence since 1968. The Commission has three members: a legal practitioner in practice on his own account; a member of the Law School of the University of Western Australia; and a legal officer of the Crown Law Department.

The Commission examines proposals for review of aspects of the law referred to it by the Attorney-General. It may also submit to him proposals for review. The Commission usually issues a working paper discussing the issues involved and invites comments from interested persons.

Reports submitted by the Commission are presented to the Parliament. During the year ended 30 June 1974 the Commission submitted reports on: commercial arbitration and the trial of commercial causes; innocent misrepresentation; immunity of suit between spouses; and review of the Land Agents Act.

Parliamentary Commissioner for Administrative Investigations

The *Parliamentary Commissioner Act, 1971*, which came into operation on 12 May 1972, provides for the appointment of a Parliamentary Commissioner for Administrative Investigations with the powers of a Royal Commission as specified in the *Royal Commissions Act, 1968*. The first Commissioner was appointed on 24 April 1972.

The Commissioner is empowered to investigate administrative actions taken by or on behalf of certain government authorities. The Act applies to all Departments of the Public Service, excluding officers of the establishment of the Governor and of the Agent General for Western Australia (London), to all local government authorities, and to other specified authorities. It does not apply to the Supreme Court of Western Australia, The District Court of Western Australia, other courts of law in the State, a Judge of the Supreme Court or of the District Court, a commissioner of any court, a stipendiary magistrate, a coroner, the Auditor-General, the Parliamentary Privileges Act, or any decision of the Cabinet or of a Minister of the Crown.

LAW COURTS

The principal courts operating in Western Australia are the High Court of Australia, the Supreme Court of Western Australia, The District Court of Western Australia, the Magistrates' and Coroners' Courts, the Summary Relief Court and the Licensing Court of Western Australia. In Chapter X, Part 1, reference is made to the Australian Industrial Court, the Australian Conciliation and Arbitration Commission, the Western Australian Industrial Appeal Court, and The Western Australian Industrial Commission.

High Court of Australia

The High Court of Australia is the Federal Supreme Court and its powers are defined in the Commonwealth of Australia Constitution Act and in the *Judiciary Act 1903-1973*. The High Court consists of a Chief Justice and six other Justices. Sittings are held in the capital city of each State as occasion may require. The High Court exercises both original and appellate jurisdiction, acting as a court of appeal for Australia.

An appeal may lie from a judgment of the High Court of Australia to the Judicial Committee of the Privy Council in London. However, the *Privy Council (Limitation of Appeals) Act 1968-1973* (Commonwealth) limits the matters which may be the subject of special leave of appeal from a decision of the High Court. The Act provides, in part, that leave of appeal 'may be asked only in a matter in which the decision of the High Court was a decision that (a) was given on appeal from a decision of the Supreme Court of a State given otherwise than in the exercise of federal jurisdiction; and (b) did not involve the application or interpretation' of the Australian Constitution, or of a Commonwealth law (including any ordinance, rule, regulation or by-law made under such a law).

Supreme Court of Western Australia

The Supreme Court of Western Australia, as constituted under the *Supreme Court Act, 1935-1974*, consists of a Chief Justice and such other Judges, not exceeding six in number, as may from time to time be appointed. The jurisdiction of the Court in both civil and criminal matters is exercised by a single Judge, sitting alone or with a jury, unless it is provided that an action must be brought before a Full Court. Criminal cases are heard before a jury. Criminal sittings of the Supreme Court are held at Perth each month from February to December, and also in January if the Chief Justice so directs. Civil sittings and Full Court sittings are held at times fixed by the Court from year to year. There are regular sittings at Albany, Bunbury, Geraldton and Kalgoorlie, and at other country centres as required.

Any two or more Judges together comprise a Full Court except that when sitting as a court of criminal appeal there must be an uneven number of Judges. Appeals are heard against judgments of the Supreme Court and the District Court as well as against decisions of the magistrates in lower courts.

Appeal from a judgment of the Supreme Court of Western Australia lies to the High Court of Australia, subject to the provisions of the *Judiciary Act* 1903-1973 (Commonwealth), and may also be made direct to the Privy Council.

The District Court of Western Australia

The District Court of Western Australia is constituted under the provisions of the *District Court of Western Australia Act, 1969-1974* and consists of a Chairman of Judges and such other Judges as may from time to time be appointed. The Act, which came into operation on 1 April 1970, repeals the *Courts of Session Act, 1921*. The jurisdiction of the Court is exercised by a Judge sitting alone or with a jury. Criminal cases must be heard before a Judge and jury. Criminal sittings of the District Court are held at Perth each month from February to December, five times a year at Albany, Bunbury, Geraldton and Kalgoorlie, and at five other centres when required. Civil sittings are held concurrently with criminal sittings in Perth, and immediately following the criminal sittings at other centres except at Bunbury where special civil sittings are held four times a year.

Civil jurisdiction exists broadly up to a maximum of \$10,000, and criminal jurisdiction in respect of indictable offences except those for which the maximum penalty exceeds fourteen years' imprisonment.

Appeals from a District Court Judge lie, in the civil jurisdiction, to the Full Court of the Supreme Court and, in the criminal jurisdiction, to the Court of Criminal Appeal.

Magistrates' and Coroners' Courts

In addition to their usual functions, magistrates act as coroners and mining wardens where required. Two or more Justices of the Peace sitting together in petty sessions may deal with cases which could be decided by a magistrate sitting alone.

COURTS OF PETTY SESSIONS. Courts of Petty Sessions, which are established in terms of the *Justices Act, 1902-1973*, are held at centres of population throughout the State. Minor offences are dealt with summarily, but a person charged with an indictable offence may be committed to a higher court for trial or sentence if there is sufficient evidence to justify this course.

CHILDREN'S COURTS. The *Child Welfare Act, 1947-1972* provides for the establishment of Children's Courts, and the appointment of special magistrates, to deal with offenders under the age of eighteen years and to hear certain specified cases of offences against children. Certain cases of offences concerning children may be remanded for hearing or committed for sentence before the Supreme Court. The public may be excluded from Children's Court hearings and names of juvenile offenders are withheld from publication unless with the express authority of the Court. Children's Courts operate in Perth, and at other centres as required. Further reference to Children's Courts appears in the section *Child Welfare* in Part 5 of this Chapter.

SUMMARY RELIEF COURT. The Summary Relief Court is established under the provisions of the *Married Persons and Children (Summary Relief) Act, 1965-1972* and is empowered to make orders providing for separation, payment of maintenance, legal custody of a child and access to a child.

LOCAL COURTS. Local Courts, which are established in terms of the *Local Courts Act, 1904-1973*, are held throughout the State to determine minor civil issues, largely the recovery of small debts. Jurisdiction is limited in most cases to claims not exceeding \$1,000.

CORONERS' COURTS. The powers of coroners are derived from the *Coroners Act, 1920-1960*. Coroners' Courts may be held to inquire into the circumstances of sudden or unnatural deaths or the cause and origin of fires. A coroner may charge a person with a major offence and commit him for trial at a higher court.

Licensing Court of Western Australia

The Licensing Court of Western Australia is established under the provisions of the *Liquor Act, 1970-1974*. The Court comprises three members, including a chairman,

appointed by the Governor. Except as otherwise provided by the Act, the Court may be constituted, and its jurisdiction may be exercised, by any two members. The Court has exclusive jurisdiction to hear and determine all applications under the Liquor Act in respect of licences, provisional certificates and permits relating to the sale, supply and consumption of liquor. Appeal against a direction, determination or order of the Court lies to the Supreme Court, but only where the appeal involves a question of law.

COURT PROCEEDINGS

Higher Courts

The term *Higher Courts*, as used in the tables on pages 280 and 282, refers to courts presided over by a Judge. The general jurisdiction of the higher courts includes appeals from the lower courts, cases of crime committed from lower courts, and civil cases. Under the *Bankruptcy Act 1966-1973* (Commonwealth) the Supreme Court of Western Australia is invested with jurisdiction in bankruptcy, and under the *Matrimonial Causes Act 1959-1973* (Commonwealth) with jurisdiction in divorce and related matters.

Civil Proceedings

Particulars of civil cases dealt with by the courts in the five years ended 31 December 1973 are shown in the following table.

CIVIL PROCEEDINGS

Particulars	1969	1970	1971	1972	1973
SUPREME COURT OF WESTERN AUSTRALIA—					
Bankruptcy (a)—					
Number of—					
Petitions—					
Filed	233	233	299	419	383
Withdrawn or dismissed	4	2	5	6	6
Sequestration orders—					
On debtors' petitions	206	218	289	387	346
On creditors' petitions	18	11	3	21	18
Assignments and arrangements without sequestration	60	64	98	110	108
Assets and liabilities—					
Under sequestration orders—					
Assets \$'000	495	847	637	1,300	3,498
Liabilities \$'000	1,081	1,924	2,322	3,478	3,693
Under assignments and arrangements without sequestration—					
Assets \$'000	896	1,098	2,483	2,839	2,017
Liabilities \$'000	1,100	1,421	2,702	3,806	3,381
Divorce (b)—					
Number of—					
Petitions filed	1,065	1,206	1,454	1,634	1,880
Decrees granted	873	890	1,068	1,244	1,428
Other proceedings—					
Number of—					
Writs commencing actions	2,264	2,330	1,521	2,002	1,089
Judgments—					
With trial	101	69	72	76	81
Without trial	700	695	415	563	277
Amounts awarded \$'000	3,358	3,368	4,187	5,296	3,316
DISTRICT COURT OF WESTERN AUSTRALIA (c)—					
Number of—					
Writs commencing actions ....	....	802	2,253	2,205	3,021
Judgments—					
With trial ....	....	51	53	131	157
Without trial ....	....	243	952	1,060	1,476
Amounts awarded \$'000	....	n.a.	n.a.	3,619	5,227
THIRD PARTY CLAIMS TRIBUNAL (d)—					
Number of claims filed	694	736	758	334	(e)
Amounts awarded \$'000	2,082	2,713	3,161	1,458	(e)
LOCAL COURTS—					
Number of—					
Plaints entered	60,854	64,727	69,026	71,757	66,193
Verdicts for plaintiffs	36,734	27,348	27,830	29,699	26,392
Amounts awarded \$'000	3,263	3,810	4,144	4,599	4,342
CORONERS' COURTS—					
Number of inquests—					
On persons	206	192	193	174	164
On fires	5	9	11	8	13

n.a. denotes 'not available'.

(a) Figures relate to year ended 30 June; for further details see page 329.

(b) For further details see pages 181-3.

(c) See letterpress on page 278.

(d) Abolished 13 July 1972, and functions transferred to Supreme Court, District Court, and Local Courts, as appropriate.

(e) Not applicable; see footnote (d).

CONVICTIONS IN COURTS

Number of Convictions

It is important to bear in mind when considering the particulars shown in the tables on pages 280-2 that the figures relate to the *number of convictions* recorded and not to the *number of persons* convicted. Thus, where a person is convicted on more than one count each conviction so recorded has been included in the statistics.

HIGHER COURTS AND MAGISTRATES' COURTS—NUMBER OF CONVICTIONS

Class of offence	1969	1970	1971	1972	1973
HIGHER COURTS					
Offences against the person—					
Murder	5	7	6	16	6
Attempted murder	2	....	3	2	....
Manslaughter	10	19	20	12	7
Negligent driving causing death	5	6	4	....	3
Sex offences	16	25	49	40	21
Assault	30	35	36	36	30
Other	7	14	7	7	9
Total	75	106	125	113	76
Offences against property—					
Breaking, entering and stealing	674	812	855	645	301
Stealing, receiving....	58	103	109	144	127
Other	50	54	45	68	54
Total	782	969	1,009	857	482
Forgery and offences against the currency	5	50	196	24	21
Offences against good order	1	15	16	55	29
Other offences	29	47	26	32	46
GRAND TOTAL	892	1,187	1,372	1,081	654
MAGISTRATES' COURTS (a)					
Offences against the person—					
Sex offences	186	180	212	195	251
Assault	1,067	1,214	1,466	1,391	1,727
Other	1	4	2	7	1
Total	1,254	1,398	1,680	1,593	1,979
Offences against property—					
Breaking, entering and stealing	1,835	2,376	2,748	4,124	4,551
Unlawfully on premises	933	1,003	1,160	768	738
Stealing, receiving....	7,286	7,947	9,783	9,164	8,778
Unlawfully using motor vehicles	1,279	2,253	3,076	3,048	2,839
Wilful damage	868	837	1,072	1,096	1,241
Other	99	43	80	83	102
Total	12,300	14,459	17,919	18,288	18,249
Forgery and offences against the currency	68	68	177	177	387
Offences against good order—					
Drunkenness	11,970	12,612	16,197	16,379	15,104
Disorderliness	3,090	3,071	4,012	4,142	4,574
Vagrancy	710	699	828	660	474
Escaping legal custody	256	260	272	315	299
Offences against police	1,118	1,112	1,354	1,438	1,470
Other	226	243	407	499	579
Total	17,370	17,997	23,070	23,433	22,500
Other offences—					
Breach of—					
Traffic Act (b)	43,428	34,882	40,388	41,255	46,468
Native Welfare Act	1,038	965	372	99	....
Liquor laws	2,837	1,730	1,440	1,491	1,530
Health laws	166	223	214	184	243
Gaming	154	308	305	370	530
Industrial offences	83	234	96	69	58
Maintenance offences	886	606	751	1,290	1,791
Taxation offences	758	914	1,258	1,742	1,964
Other offences	5,614	6,115	5,878	5,682	6,273
Total	54,964	45,977	50,702	52,182	58,857
GRAND TOTAL	85,956	79,899	93,548	95,673	101,972

(a) Including Children's Courts.
letterpress on page 282.

(b) Excludes minor traffic offences not subject to court process; see

Convictions of Juveniles

The term *juvenile*, as used in relation to the statistics given in this Part, means a person under the age of eighteen years. Convictions of juvenile offenders are included in the figures shown in the table on page 280 and are given separately in the tables below and on page 282.

The following table shows the number of convictions of juvenile offenders in Children's Courts in Western Australia during the five-year period ended 31 December 1973. A classification according to age of offender is given in the succeeding table.

OFFENCES BY JUVENILES—NUMBER OF CONVICTIONS (a)

Class of offence	1969	1970	1971	1972	1973
Offences against the person—					
Sex offences	93	71	94	86	101
Assault	138	184	193	232	260
Other	1	2	1	5	1
Total	232	257	288	323	362
Offences against property—					
Breaking, entering and stealing	1,781	2,359	2,697	3,546	3,273
Unlawfully on premises	266	340	431	276	250
Stealing, receiving	3,135	3,365	3,484	3,361	3,404
Unlawfully using motor vehicles	718	1,568	2,209	2,244	2,004
Wilful damage	423	367	445	482	491
Other	61	29	57	65	77
Total	6,384	8,028	9,323	9,974	9,499
Forgery and offences against the currency	11	29	9	9	35
Offences against good order—					
Drunkenness	241	220	396	543	494
Disorderliness	348	305	407	529	527
Vagrancy	55	54	59	63	38
Escaping legal custody	32	38	30	51	51
Offences against police	169	197	224	317	343
Other	58	35	89	102	110
Total	903	849	1,205	1,605	1,563
Other offences—					
Breach of—					
Traffic Act	3,211	3,689	4,517	4,678	5,377
Liquor laws	628	356	461	465	440
Other offences	186	284	207	238	249
Total	4,025	4,329	5,185	5,381	6,066
GRAND TOTAL	11,555	13,492	16,010	17,292	17,525

(a) Comprises convictions in Children's Courts.

CONVICTIONS OF JUVENILES, 1973 (a)
AGES OF OFFENDERS

Class of offence	Age last birthday (years)											Total
	8	9	10	11	12	13	14	15	16	17	Not stated	
Against the person	1	2	5	20	23	54	92	124	41	362
Against property	44	64	220	258	447	1,027	1,424	1,558	2,068	2,144	245	9,499
Forgery, etc.	5	21	9	....	35
Against good order	1	3	15	43	92	262	465	642	40	1,563
Other offences (b)	6,066
Total	17,525

(a) Comprises convictions in Children's Courts.
and breaches of liquor laws.

(b) The figures shown comprise mainly convictions for traffic offences

Summary of Convictions in Courts

The following table gives a summary of convictions in courts in Western Australia during each of the five years to 31 December 1973, together with an analysis according to class of offence of convictions recorded during the year ended 31 December 1973.

HIGHER COURTS AND MAGISTRATES' COURTS—NUMBER OF CONVICTIONS

Particulars	Higher courts			Magistrates' courts			Convictions of juveniles (a)		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
FIVE YEARS ENDED 31 DECEMBER 1973									
Year—									
1969	867	25	892	76,404	9,552	85,956	10,365	1,190	11,555
1970	1,158	29	1,187	69,890	10,009	79,899	12,166	1,326	13,492
1971	1,235	137	1,372	81,984	11,564	93,548	14,302	1,708	16,010
1972	1,042	39	1,081	84,691	10,982	95,673	15,424	1,868	17,292
1973	636	18	654	89,023	12,949	101,972	15,660	1,865	17,525
YEAR ENDED 31 DECEMBER 1973									
Class of offence—									
Against the person	73	3	76	1,830	149	1,979	332	30	362
Against property	470	12	482	16,208	2,041	18,249	8,614	885	9,499
Forgery, etc.	20	1	21	239	148	387	4	31	35
Against good order	27	2	29	18,144	4,356	22,500	1,084	479	1,563
Other offences	46	....	46	52,602	6,255	58,857	5,626	440	6,066
Total	636	18	654	89,023	12,949	101,972	15,660	1,865	17,525

(a) Included in figures shown under *Magistrates' courts*.

Regulations under the Traffic Act allow fines to be imposed without court action for minor traffic offences. Similar provisions apply under parking facilities legislation and municipal by-laws. These minor offences (which are, of course, excluded from the tables relating to court convictions) numbered 117,436 in 1969, 154,307 in 1970, 176,994 in 1971, 200,723 in 1972, and 211,913 in 1973.

LIQUOR LICENCES

The following table shows the number of liquor licences of the several types in force in Western Australia. The figures shown for 30 June 1970 relate to licences granted under the provisions of the *Licensing Act, 1911-1969*. The Licensing Act was repealed, with effect from 1 July 1970, by the *Liquor Act, 1970*.

LIQUOR LICENCES IN FORCE

Type of licence (a)	At 30 June 1970	Type of licence (b)	At 30 June—			
			1971	1972	1973	1974
Publican's general	419	} Hotel	463	467	469	471
Wayside house	39					
Australian wine, beer and spirits	1	} Limited hotel	15	17	19	22
Limited hotel	11					
Australian wine	46	} Australian wine	39	36	26	23
Australian wine, bottle	8					
Gallon	212	} Store	227	239	251	282
Packet	9					
Railway refreshment room ....	....	} Packet	14	12	10	11
Spirit merchant's	45					
Brewer's	4	} Railway refreshment room ....	....	....	....	....
Club	259					
Canteen	15	} Wholesale spirit merchant's	45	46	55	59
Restaurant	41					
		} Brewer's	4	4	4	4
		} Club	264	270	276	280
		} Canteen	25	29	27	27
		} Restaurant	47	63	75	88
		} Tavern ....	....	1	9	19
		} Winehouse	2	7	17	15
		} Cabaret	17	22	26	27
		} Theatre	1	1	3	3
		} Vigneron ....	....	....	....	....
Total	1,109	Total	1,163	1,214	1,267	1,331

(a) As described in the *Licensing Act, 1911-1969*.(b) As described in the *Liquor Act, 1970-1974*.

By a provision of the *Government Railways Act, 1904-1973*, The Western Australian Government Railways Commission is authorised to lease railways premises for the sale of refreshments, subject to the provisions of the *Liquor Act, 1970-1974*.

A licence applying to premises at Perth International Airport is issued in terms of the *Airports (Business Concessions) Act 1959-1973* (Commonwealth).

POLICE

The Western Australian Police Force comprises eight main branches under the direction of the Commissioner of Police. The Commissioner is appointed by the Governor under the provisions of the *Police Act, 1892-1974* and is responsible to the Minister for Police.

For the administration of the Uniformed Branch, the State is divided into three metropolitan districts, one metropolitan division and eight country districts, each under the direction of a commissioned officer. At 30 June 1974 there were, in addition to the Uniformed Branch and the Women Police, a number of specialised branches, including the Criminal Investigation Branch, the Liquor and Gaming Branch, the Firearms and Inquiries Branch, the Traffic Branch, the Prosecuting Branch, and the Public Relations and Lecturing Branch.

The following table shows the numbers and classification of members of the Western Australian Police Force at 30 June of each year from 1970 to 1974.

POLICE FORCE—NUMBER AND CLASSIFICATION (a)

Date and classification	Branch and number of officers							Total (a)
	Uniformed Branch	Women Police	Criminal Investi- gation Branch	Liquor and Gaming Branch	Firearms and Inquiries Branch	Traffic Branch	Other Branches	
At 30 June—								
1970	1,071	29	146	23	12	263	40	1,584
1971	1,051	35	151	25	12	299	39	1,612
1972	1,128	38	169	34	12	255	46	1,682
1973	1,228	38	181	36	12	253	55	1,803
1974—								
Superintendent	11	....	1	1	1	2	1	17
Senior Inspector	10	....	2	....	....	3	3	18
Inspector	13	....	2	....	....	4	1	21
Sergeant	266	3	74	5	3	51	39	441
Constable	992	33	110	31	8	239	70	1,483
Total	1,292	37	189	37	12	299	114	1,980

(a) In addition to the numbers shown there were, at each date, a Commissioner of Police, a Deputy Commissioner, an Assistant Commissioner, and a Chief Superintendent.

The Uniformed Branch comprises the main body of the Police Force and is responsible for the routine maintenance of law and order throughout the State. Where required, officers of the Branch act as Clerks of Courts and perform special duties for other government authorities.

The Women Police are employed mainly in police duties concerning women and children. Policewomen are stationed at Perth, Fremantle, Midland, Albany, Bunbury, Geraldton, Kalgoorlie and Northam.

The Criminal Investigation Branch is centred in Perth, with several sub-branches in the metropolitan area and the principal country towns. The Branch is primarily concerned with the investigation of serious crimes and the apprehension of offenders.

The Scientific Bureau, formerly part of the Criminal Investigation Branch, is responsible for matters relating to fingerprints, photography, criminal records, ballistics, hand-writing and document examination, and various technical and scientific aids to investigation.

The Liquor and Gaming Branch is concerned mainly with the enforcement of the liquor laws and laws for the suppression of vice and gaming.

The Firearms and Inquiries Branch is responsible for the licensing of firearms throughout the State. It also makes inquiries concerning the suitability of applicants for licences to operate as land agents, auctioneers, money-lenders, inquiry agents, employment brokers, and debt collectors.

The Traffic Branch is responsible for the regulation of traffic in the Metropolitan Traffic Area and in certain country areas. In other parts of the State these functions are performed by the local government authorities. Motor vehicle licences and motor vehicle drivers' licences are issued by police officers throughout the State on behalf of the Department of Motor Vehicles. The Traffic Branch is responsible for the patrol of major high-ways to check commercial vehicles for overloading and for excessive speed. (See Chapter IX, Part 3 for reference to changes under the *Road Traffic Act, 1974*.)

The Prosecuting Branch conducts police prosecutions in Courts of Petty Sessions in the metropolitan area, at Kalgoorlie and, when required, at other centres.

The Public Relations and Lecturing Branch is responsible for maintaining a satisfactory relationship with the public and the news media, and for co-operation with the civil emergency services. Lectures are given to children and students from kindergarten to tertiary education level and also to minor offenders against the traffic and liquor laws.

Police and Citizens' Youth Clubs are established by the Police Department to provide recreational facilities for young people and to give them an appreciation of civic responsibilities.

PRISONS

Under the provisions of the *Prisons Act, 1903-1971*, the Director of the Department of Corrections is responsible, subject to the control of the Minister, for the administration of prisons in Western Australia. In addition to prison establishments under the control of the Department of Corrections, there are some police gaols administered jointly by the Department of Corrections and the Police Department.

The principal institution is Fremantle Prison and there are regional prisons at Albany, Broome, Geraldton and Kalgoorlie. Barton's Mill Prison, Brunswick Junction Prison, Bunbury Rehabilitation Centre, Byford Inebriates Centre, Karnet Rehabilitation Centre, Pardelup Prison Farm and Wooroloo Training Centre are minimum security institutions. Bandyup Women's Training Centre, situated at Middle Swan about twelve miles from Perth, is a medium security institution. It was opened in March 1970 and women formerly accommodated at Fremantle Prison were transferred there.

The following table shows the number of receivals for penal imprisonment in gaols in Western Australia during each of the five years to 30 June 1973. It is important to note that the figures relate to *receivals* and not to *distinct persons*, i.e. a prisoner has been counted once for each time he or she was received.

PENAL IMPRISONMENT—NUMBER OF RECEIVALS (a)

Institution	Year ended 30 June—									
	1969		1970		1971		1972		1973	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Prisons—										
Fremantle (b)	3,013	409	3,091	....	2,288	....	2,490	....	2,045	....
Albany	231	62	188	49	255	35	198	42	310	10
Bandyup Training Centre (c) ....	....	....	....	455	....	467	....	351	....	286
Broome	144	18	149	8	235	43	332	56	399	66
Brunswick Junction (d)	19	....	134	....	124	....	142	....	141	....
Byford Inebriates Centre (e) ....	....	....	....	....	....	....	54	....	95	....
Geraldton	421	66	487	22	486	34	510	49	530	33
Kalgoorlie	513	102	398	90	456	117	632	195	648	262
Karnet Inebriates Section	84	....	108	....	110	....	48	....	(f)	....
Wooroloo Training Centre	....	....	(g)	....	1,239	....	1,261	....	819	....
Total	4,425	657	4,555	624	5,193	696	5,667	693	4,987	657
Police gaols	883	218	903	275	1,203	461	1,726	635	1,926	582
GRAND TOTAL	5,308	875	5,458	899	6,396	1,157	7,393	1,328	6,913	1,239

(a) Excludes imprisonment for debt and receivals of persons on remand. (b) Includes figures for Barton's Mill Prison, Bunbury Rehabilitation Centre (opened 5 February 1971), Karnet Rehabilitation Centre, Pardelup Prison Farm and, for 1969-70, Wooroloo Training Centre (opened 5 March 1970). (c) Opened 13 March 1970. (d) Opened 6 March 1969. (e) Opened 19 April 1972; replaced Karnet Inebriates Section as a receivals centre. (f) See footnote (e). (g) See footnote (b).

Fremantle Prison is divided into separate sections for prisoners on remand or awaiting trial, juvenile prisoners, and other sentenced prisoners. There are workshops where prisoners are employed in bootmaking, carpentry, printing, tailoring, tinsmithing and welding, making cement products, and in arts and crafts work. Prisoners can also qualify as cooks and bakers. A school is conducted by teachers supplied by the Education Department, and tuition by correspondence is also available. The section at Fremantle Prison which was occupied by female prisoners before their transfer to Bandyup Women's Training Centre is now used as an assessment centre.

At Barton's Mill Prison the development of trade training workshops is continuing, with the aim of replacing the declining activity of firewood cutting. Farming is carried on at Pardelup Prison Farm and Karnet Rehabilitation Centre, and inmates receive instruction in animal husbandry, market gardening, and the operation and maintenance of farm machinery. Karnet Rehabilitation Centre is a dual-purpose institution with accommodation in two dormitory blocks, one of which houses committed inebriates. The other block provides for selected inmates, mainly first offenders, for whom accommodation has been increased by the erection of single cabins adjacent to the dormitory block. Bunbury Rehabilitation Centre receives inmates who have been selected at the Fremantle Prison assessment centre for educational courses and vocational training. Brunswick Junction Prison is used for short-term offenders from the south-west of the State. Byford Inebriates Centre provides accommodation for committed inebriates. Short-term offenders from the metropolitan area are sent to the Wooroloo Training Centre.

Police gaols are established in Perth and at other centres. They are used for the detention of short-sentence prisoners and prisoners awaiting trial. In addition, provision is made for holding prisoners for short periods at police stations throughout the State.

The following table shows the number of prisoners, excluding trial and remand prisoners and debtors, in gaols in Western Australia at 30 June in each year from 1969 to 1973.

PRISONERS IN GAOL

Institution	At 30 June—									
	1969		1970		1971		1972		1973	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Prisons—										
Fremantle	523	55	439	....	438	....	447	....	367	....
Albany	60	4	59	....	64	....	63	....	67	....
Bandyup (a) .....	....	....	....	54	....	57	....	48	....	31
Barton's Mill	123	....	123	....	114	....	70	....	70	....
Broome	37	1	53	2	61	8	76	2	53	3
Brunswick Junction	21	....	24	....	22	....	25	....	23	....
Bunbury (b) .....	....	....	....	....	31	....	63	....	57	....
Byford (c) .....	....	....	....	....	....	....	24	....	25	....
Geraldton	99	....	122	1	109	....	82	1	72	1
Kalgoorlie	40	5	32	1	28	....	35	2	33	1
Karnet—										
Inebriates Section	51	....	56	....	58	....	36	....	24	....
Other	79	....	64	....	42	....	66	....	59	....
Pardelup	65	....	42	....	46	....	51	....	43	....
Wooroloo (d) .....	....	....	42	....	122	....	90	....	88	....
Total	1,098	65	1,056	58	1,135	66	1,128	54	981	36
Police gaols	48	3	53	7	55	5	59	28	58	30
GRAND TOTAL	1,146	68	1,109	65	1,190	71	1,187	82	1,039	66

(a) Opened 13 March 1970.

(b) Opened 5 February 1971.

(c) Opened 19 April 1972.

(d) Opened 5 March 1970.

PROBATION AND PAROLE SERVICE

The Probation and Parole Service, a branch of the Crown Law Department, is constituted under the provisions of the *Offenders Probation and Parole Act, 1963-1971*.

The Act establishes a Parole Board of five members, comprising a Judge of the Supreme Court as chairman, the Director of the Department of Corrections as an *ex-officio*

member, and three members appointed by the Governor. On occasions when a female offender is being dealt with by the Board, two of the appointed members must be females.

Probation officers supervise offenders placed on probation by the courts. A court may also request a pre-sentence report on any convicted person as an aid in determining the appropriate penalty. These reports are prepared by probation officers.

The Act requires that where a person is sentenced to imprisonment for twelve months or longer the court shall, unless special circumstances make it inappropriate, fix a minimum term during which the convicted person is not eligible to be released. The court is given discretionary power to fix a minimum term where the sentence is for less than twelve months. Provision is made for the reduction of a minimum term, as a reward for good conduct or industry. Where no minimum term has been fixed, remission of up to 25 per cent of the sentence may be allowed for diligence and good conduct.

The Parole Board is empowered to release on parole a prisoner who has served a minimum term fixed by a court, or a prisoner being detained at the Governor's pleasure.

The Governor may direct the release on parole of a prisoner sentenced to imprisonment for life, a prisoner undergoing a sentence of imprisonment for life commuted from a sentence of death, or an unconvicted person held in custody during the Governor's pleasure following acquittal because of unsoundness of mind. The Parole Board is required to submit to the Minister, at prescribed intervals, a report and a recommendation concerning such prisoners.

Parole officers establish contact with prisoners serving a minimum term (*i.e.* the non-parole period of the sentence) during their imprisonment, prepare a case history of each prisoner for the information of the Parole Board, and supervise paroled persons during the parole period.

The following table gives particulars of the operations of the Probation and Parole Service during the five-year period ended 30 June 1974.

PROBATION AND PAROLE SERVICE

Particulars	Year ended 30 June—				
	1970	1971	1972	1973	1974
PROBATION					
Number of persons—					
Under supervision at beginning of period	1,023	1,202	1,211	1,160	1,260
Admitted to probation during period	609	623	710	777	757
Under supervision during period	1,632	1,825	1,921	1,937	2,017
Cancellation of probation	92	156	155	168	89
Completion of probation	338	458	606	509	528
Under supervision at end of period	1,202	1,211	1,160	1,260	1,400
PAROLE					
Number of persons—					
Under supervision at beginning of period	336	384	420	440	542
Released on parole during period	337	401	419	491	482
Under supervision during period	673	785	839	931	1,024
Cancellation of parole	102	154	159	166	172
Completion of parole	187	211	240	223	292
Under supervision at end of period	384	420	440	542	560

PUBLIC SAFETY

National Safety Council

The National Safety Council of Western Australia was founded in January 1946 following discussions among office bearers and senior officials of the Royal Automobile Club of Western Australia and police and education authorities about the creation of an organisation for the prevention of accidents.

Although the Council has been primarily concerned with road traffic safety and training courses associated with it, a Home Safety Division was established in 1963 and a Water Safety Division in 1965 and these also conduct a wide range of practical training courses. An Industrial Safety Division was also formed but now operates as a separate organisation although it is affiliated with the Council.

The National Safety Council of Western Australia is the State member division of the National Safety Council of Australia and is also represented on such bodies as the Federal Publicity Advisory Committee on Education in Road Safety and the State Road Traffic Safety Authority.

The Council aims at the prevention of accidents by the co-ordination of the efforts of relevant organisations and by an educational programme in accident prevention techniques. It pursues its objectives through the voluntary service of executive members, the financial support of the Government, and the staff and facilities of the Safety Instructional Centre at Mount Lawley. This Centre, situated on about seven and one-quarter hectares of land close to Perth, comprises a complete road system and a comprehensive office complex including a projection theatre and lecture rooms.

Fire Protection

Western Australian Fire Brigades Board. The *Fire Brigades Act, 1942-1972* constitutes the Western Australian Fire Brigades Board of ten members. The Board comprises two members appointed by the Governor, one of whom is president of the Board; three members elected by the insurance companies carrying on business in the State; one member elected by the Council of the City of Perth; three members elected by other local government authorities; and one member elected by the registered volunteer fire brigades. The general duties of the Board are to take, superintend and enforce all necessary steps for the prevention and extinguishing of fires and the protection of life and property from fire, and the control of all fire brigade premises and of all fire brigades.

WESTERN AUSTRALIAN FIRE BRIGADES BOARD—CALLS RECEIVED

Year	Number of fire calls							Number of calls for special services	Total calls
	False alarms	Fires causing negligible damage	Chimney fires	Other fires causing damage estimated at—					
				Less than \$200	\$200 to \$10,000	\$10,001 to \$200,000	More than \$200,000		

METROPOLITAN FIRE DISTRICT (a)

1969-70	1,392	2,198	56	96	215	30	1	314	4,302
1970-71	1,839	2,039	52	94	267	21	4	340	4,656
1971-72	1,983	2,610	41	93	288	29	1	364	5,409
1972-73	2,028	3,010	37	112	346	25	2	436	5,996
1973-74	2,062	3,033	33	117	366	21	....	440	6,072

OTHER FIRE DISTRICTS

1969-70	213	621	71	73	119	6	....	61	1,164
1970-71	209	518	61	71	96	8	....	57	1,020
1971-72	180	741	50	61	145	8	....	77	1,262
1972-73	222	1,046	52	65	147	13	....	80	1,625
1973-74	206	1,050	44	41	172	17	1	100	1,631

WESTERN AUSTRALIA

1969-70	1,605	2,819	127	169	334	36	1	375	5,466
1970-71	2,048	2,557	113	165	363	29	4	397	5,676
1971-72	2,163	3,351	91	154	433	37	1	441	6,671
1972-73	2,250	4,056	89	177	493	38	2	516	7,621
1973-74	2,268	4,083	77	158	538	38	1	540	7,703

(a) As defined in the Fire Brigades Act.

Sixteen permanent and two volunteer brigades operate in the metropolitan fire district centred on the City of Perth. Permanent brigade personnel serve with volunteer brigade personnel in five large country centres, and volunteer brigades provide town fire protection at seventy-five other centres. At 30 June 1974, the Board had 676 employees and there were 1,796 volunteer brigade officers and firemen.

Bush Fires Board. The Bush Fires Board, which is constituted under the *Bush Fires Act, 1954-1973*, consists of thirteen members appointed by the Governor on the recommendation of the Minister. It comprises the Under Secretary for Lands as chairman; six persons nominated by the Country Shire Councils' Association of W.A.; and one person nominated by each of the following: the Minister for Forests, the Minister for Agriculture, The Western Australian Government Railways Commission, the Fire and Accident Underwriters' Association of Western Australia, the Commissioner of Police, and the Associated Sawmillers and Timber Merchants of Western Australia. The principal functions of the Board are to administer the Bush Fires Act; to report to the Minister on methods of preventing or extinguishing bush fires; to recommend the prohibited burning times to be declared for the whole or any part of the State for any yearly period; to carry out such fire prevention measures as it considers necessary; to carry out research in connection with fire prevention and control; to conduct publicity campaigns for the purpose of improving fire prevention measures; and to provide training facilities for volunteers.

The Board operates through its staff of liaison officers based in country centres, each officer being the fire-protection mentor for his area. These officers promote fire protection by the exercise of co-ordination, liaison and advisory functions.

Protective fire-breaks are compulsory throughout the agricultural areas and bush fire brigades carry out programmes of protective burning.

At 30 June 1974 there were 917 registered bush fire brigades with 4,801 officers. In addition, there were 2,382 bush fire control officers.



Block by courtesy of BP

PLATE 9—COCKATIEL
(*Leptolophus hollandicus*)

The Cockatiel is a favourite cage bird but very few photographs of wild birds exist. This nest, which was found near Derby, was only about three metres above the ground in a Bloodwood tree. As is usual with parrots, the Cockatiels were very shy and absolute silence had to be maintained in the hide to secure this photograph. The male and female arrived together, the female waiting for the male to feed the chicks before she entered the nesting chamber. One feed usually sufficed the chicks for about two and a half hours.



Block by courtesy of BP

PLATE 10—WHISTLING EAGLE

(*Haliastur sphenurus*)

Although a common bird, the Whistling Eagle has defied most photographers because the nest is so inaccessible—this picture was taken at a height of twenty-one metres in a Baobab tree. The adult eagle is coming in to the nest with the last meal of the day, just as the sun is setting. A mild, inoffensive hawk, the Whistling Eagle is really a Kite, and all its habits are kite-like—scavenging for scraps, or dead or injured animals. The call, however, is a martial whistle which can be heard well over a kilometre away and belies the slovenly appearance of the bird.

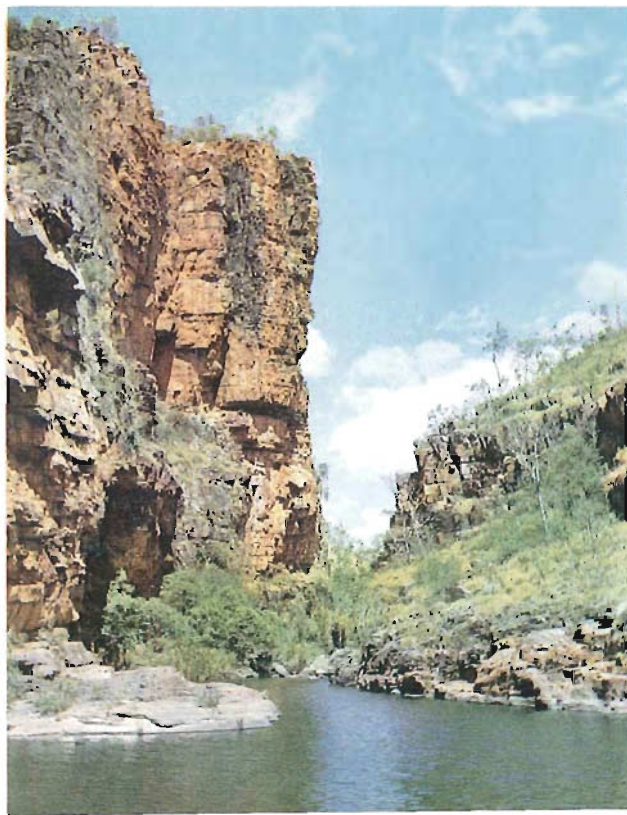
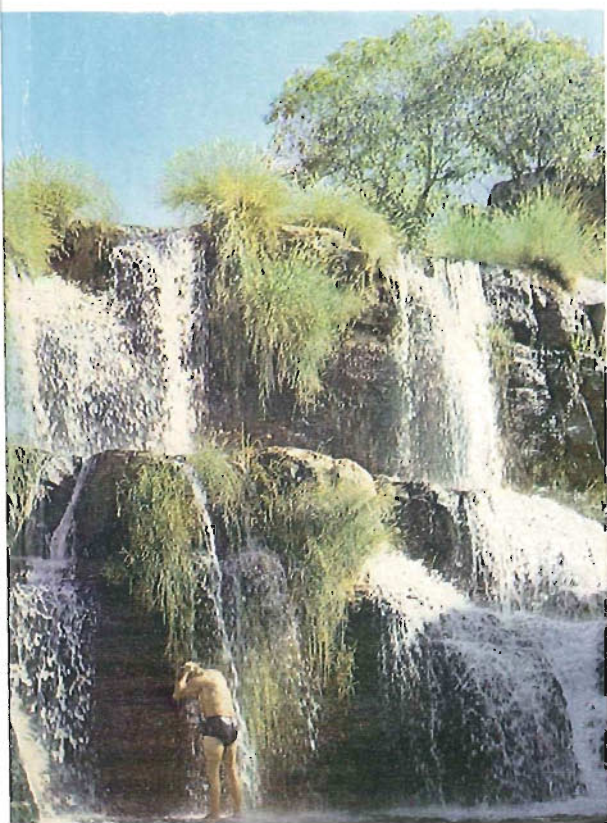
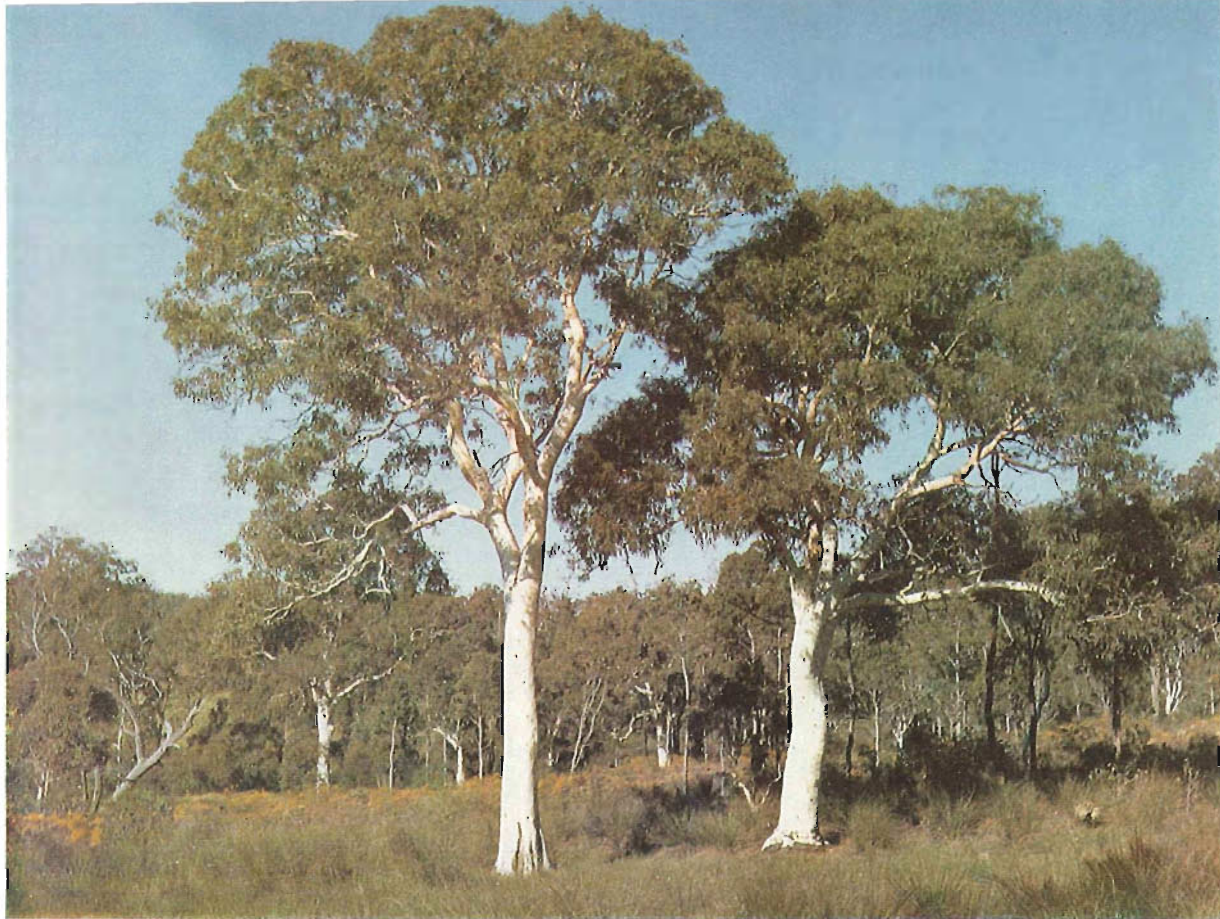


PLATE 11—UNCOMMON WHITE BARK EUCALYPTS

(*Eucalyptus laeliae* Podger and Chippendale)

This species is the most recently named Eucalypt in Western Australia and is closely related to Powder Bark Wandoo (*E. accedens*). It has a limited occurrence in small pure stands on laterite-free soils in the drainage lines of the Darling Range.

The tree, which reaches a height of almost twenty metres, is characterised by a startling white bark which persists to the smallest branches. These specimens are growing on the south side of the Pinjarra-Dwelling-up road about fourteen kilometres from Pinjarra.

Block by courtesy of the Forests Department

PLATE 12—PRINCE REGENT RIVER RESERVE

The Prince Regent River Reserve in the far north of the State was created by notice published in the *Government Gazette of Western Australia* of 10 April 1964. Set aside for the purposes of conservation of flora and fauna, the reserve has a total area of approximately 633,825 hectares. Two of the many picturesque natural features which occur in the reserve are illustrated overleaf.

Left—Near the top of King Cascade

Right—Part of the gorge on Pitta Creek

Blocks by courtesy of the Department of Fisheries and Wildlife

PLATE 13—
SPECIES OF LECHENAUTIA
(*Lechenaultia linarioides*)

At right—The wildflower illustrated is endemic to Western Australia and flowers for most of the year in the limestone tracts of the west coast between Geraldton and Perth. It is a shrub up to little more than a metre in height with masses of yellow flowers, commonly suffused with a brick red.

Photographs by F. A. Sharr

PLATE 14—
ALBANY PITCHER PLANT
(*Cephalotus follicularis*)

Below—Unique to Western Australia, the Albany Pitcher Plant grows in swamps around Albany and as far west as the Vasse. The plant is insectivorous and the pitchers, which are not flowers but an alternative leaf form, are traps containing a fluid which digests the insect. The purpose, however, is not absolutely clear since plants raised in captivity and denied their insect diet have flowered apparently quite normally.



CHAPTER VI—FINANCE

Part 1—Public Finance

FEDERAL-STATE FINANCIAL RELATIONS

The Financial Agreement of 1927

Under the terms of the Financial Agreement, the Australian Government took over from the States their public debts existing at 30 June 1927 and assumed responsibility for all future loan raisings by the Australian and State Governments. The Australian Government also agreed to contribute annually for a period of fifty-eight years from 1 July 1927 an amount of \$15,169,824 towards the interest payable on the States' debts, Western Australia's share of this amount being \$946,864.

Sinking Funds established by the Financial Agreement between the Australian Government and the States are designed to redeem the States' debts as follows: (a) debt existing at 30 June 1927, in a period of fifty-eight years thereafter; (b) debt incurred after 30 June 1927 (except debt for the purpose of redemptions or conversions or the financing of revenue deficits), in a period of fifty-three years from the date of creation of the debt; (c) debt incurred to finance revenue deficits for the years 1929-30 to 1934-35, in a period of thirty-nine years from 30 June 1944; and (d) debt incurred to finance other revenue deficits, in a period of approximately seventeen years from the date of its creation.

These Sinking Funds are under the control of the National Debt Commission. Receipts of the Funds consist mainly of contributions from the Consolidated Revenue Funds of the Australian and State Governments. The Australian Government and the States make annual contributions towards the redemption of debt existing at 30 June 1927 and debt created since that date, with the exception of debt incurred to finance revenue deficits.

Contributions made by the Australian Government and the States in respect of the States' debts are not accumulated but must be applied by the National Debt Commission, whenever expedient, to the redemption and repurchase of loan securities. Under the provisions of the Financial Agreement, repurchased or redeemed securities must be cancelled, and the debts of the States are reduced accordingly.

More detailed reference to the Financial Agreement of 1927 appears in *Western Australian Year Book*, No. 13—1974 (page 263) and earlier issues.

The Australian Loan Council

The Australian Loan Council was established by the Financial Agreement Act of 1928 to co-ordinate the public borrowings of the Australian and State Governments. The Council has as its Chairman the Prime Minister of Australia, or a Minister nominated by him, and the other members are the Premiers of the States or, in the absence of a Premier, a Minister nominated by him. The Commonwealth and each State submits to the Council a programme of its desired loan raisings during each financial year, including the amount of any revenue deficit to be funded. The Australian Government's borrowings for defence purposes are expressly excluded from its submissions to the Council. If the Council decides that the total amount of the loan programme for a year cannot be borrowed at reasonable rates and conditions, it decides the amount to be borrowed during the year, and may by unanimous decision allocate this amount between the Commonwealth and the States. Where the members fail to arrive at a unanimous decision the Commonwealth is entitled to a maximum of one-fifth of the total sum to be borrowed. Of the balance, each State is entitled to an amount in the proportion which its net loan expenditure during the preceding five years bears to the aggregate for all the States.

Grants to the States

Debt Charges Assistance. The *States Grants (Debt Charges Assistance) Act* 1970 provides Commonwealth financial assistance to the States in connection with interest and sinking fund contributions payable in terms of the Financial Agreement. The assistance is in the form of an annual grant to meet charges on \$200 million of the States' debts in each year from 1970-71 to 1974-75. The grants amount in total to \$172.6 million in respect of \$1,000 million of existing debt. Western Australia's share (\$1.11 million in 1970-71, \$2.21 million in 1971-72, \$3.32 million in 1972-73, \$4.42 million in 1973-74, and \$5.53 million in 1974-75) amounts to \$16.6 million in respect of \$96.1 million of debt. It was agreed at a Premier's Conference in June 1970 that the \$1,000 million of States' debts to which the Act relates would be formally transferred from the States to the Australian Government in June 1975.

The Grants Commission. Section 96 of the Commonwealth Constitution provides that the States may be granted financial assistance. In 1933 the Commonwealth Parliament passed the Commonwealth Grants Commission Act establishing a Commission to inquire into and report on applications made by States for grants of financial aid.

In each year from 1934-35, in respect of which the Commission made its first recommendation, Western Australia received a Special Grant until it ceased to be a claimant State from and including the year 1968-69, in accordance with an agreement made between the Commonwealth and the State at a Premiers' Conference in June 1968. Following this agreement the Commonwealth was authorised by the *States Grants Act* 1968 to pay to Western Australia an amount of \$15.5 million in each of the years 1968-69 and 1969-70, in addition to the Financial Assistance Grant (see below), as a substitute for any Special Grant that might have been recommended by the Commission for those years. For subsequent years, additional grants on a reducing basis were provided by the *States Grants Act* 1970 (\$12.5 million for 1970-71), and the *States Grants Act (No. 2)* 1971 (\$9.5 million for 1971-72, \$6.5 million for 1972-73, \$3.5 million for 1973-74, and \$0.5 million for 1974-75).

The *Grants Commission Act* 1973, which repeals the *Commonwealth Grants Commission Act* 1933 and later amendments, continues the principle of making special assistance available to a State for its own purposes and, in addition, authorises the provision of assistance to a State for local government purposes. Grants to Western Australia, to be distributed among local government authorities as recommended by the Grants Commission, amounted to \$4.96 million for the year 1974-75.

Other Grants. As well as the Special Grants paid to some States on the recommendation of the Grants Commission, annual Financial Assistance Grants are made by the Australian Government to every State. Special revenue assistance has been provided in some years in addition to the Special Grants and Financial Assistance Grants. Details of payments made to Western Australia are shown in the next table under the heading *General revenue grants*.

Other Financial Assistance

As well as providing general financial assistance to the States by means of grants, the Australian Government allocates to them funds for specific purposes, as shown in the following tables which give details of payments made to Western Australia during the five-year period ended 30 June 1973. Social service benefits, national health benefits and homes savings grants are paid from the National Welfare Fund (see table on pages 292-3). In addition, financial assistance for housing and war service land settlement is provided from Loan Fund. Further information on financial assistance for housing is given in Chapter V, Part 4. Reference to war service land settlement appears in Chapter VII, Part 1.

AUSTRALIAN GOVERNMENT PAYMENTS TO WESTERN AUSTRALIA (a)
PAYMENTS OF A REVENUE NATURE
 (\$'000)

Nature of payment	1968-69	1969-70	1970-71	1971-72	1972-73
Financial Agreement—					
Interest on State debts	947	947	947	947	947
Sinking Fund contribution	2,106	2,258	2,384	2,557	2,715
Debt Charges Assistance Grants ....	....	....	1,106	2,211	3,317
General revenue grants—					
Financial Assistance Grants (b)	123,796	138,835	163,313	170,960	(c)196,369
Special Grants (d)	582	....	....	....	....
Special Financial Assistance Grants	1,296	1,545	5,030	6,014	....
Education—					
Universities	2,833	3,281	3,900	4,594	5,683
Colleges of advanced education	912	1,929	2,333	2,920	4,015
Research grants	276	323	296	307	370
Non-government schools ....	....	862	1,682	2,064	2,903
Child migrant education ....	....	16	62	150	138
Aboriginal education ....	....	10	26	26	193
Educational research ....	....	....	8	7	17
Development of resources and assistance to industry—					
Agricultural extension services	375	493	598	589	680
Bovine brucellosis and tuberculosis eradication ....	....	64	119	192	380
Natural disaster payments	50	42	....	....	....
Minor agricultural research ....	....	....	....	14	....
Supervision of apprenticeship training ....	....	....	....	....	11
Health—					
Aboriginal health ....	....	10	100	93	292
Blood transfusion services	75	76	79	106	134
Health education ....	....	....	38	43	49
Welfare—					
Aboriginal welfare ....	....	10	14	104	892
Housekeeper services	2	....	....	....	....
Home care services ....	....	....	4	10	13
Unemployment relief ....	....	....	....	2,024	8,901
Senior citizens' centres ....	....	....	....	....	5
Other—					
Road safety practices	19	19	25	25	25
Coal mining industry long service leave	*68	*79	*93	*103	90
Total	*133,336	*150,800	*182,158	*196,060	228,139

(a) Excludes subsidy and bounty payments. (b) Includes payments in place of a Special Grant: 1968-69, \$15,500,000; 1969-70, \$15,500,000; 1970-71, \$12,500,000; 1971-72, \$9,500,000; 1972-73, \$6,500,000. (c) Includes special temporary addition: \$3,500,000. (d) See letterpress *The Grants Commission* on page 290. * Revised.

AUSTRALIAN GOVERNMENT PAYMENTS TO WESTERN AUSTRALIA
PAYMENTS OF A CAPITAL NATURE
 (\$'000)

Nature of payment	1968-69	1969-70	1970-71	1971-72	1972-73
Transport and communication—					
Commonwealth Aid Roads Acts	30,537	32,940	36,270	39,250	43,910
Beef cattle roads grants	1,451	1,168	1,000	1,600	1,900
Eyre Highway—Contribution to maintenance	25	25	25	25	25
Railway standardisation agreement (a)	8,362	7,900	5,236	1,988	1,250
Darwin shipping service ....	....	....	....	....	2,500
Education—					
Universities	734	2,048	384	1,571	2,531
Colleges of advanced education	874	1,050	1,903	1,899	1,689
Teachers colleges	582	201	3	1,132	1,865
Pre-school teachers colleges	14	161	....	....	....
Technical education	437	957	804	747	1,166
Government schools	698	865	1,106	1,699	2,430
Non-government schools	391	652	594	597	587
Aboriginal education	203	160	250	290	425
Development of resources and assistance to industry—					
Water supplies (b)	2,050	2,000	1,792	2,000	158
Softwood forestry (b)	500	859	424	56	1,020
Investigation and measurement of water resources	273	312	572	670	710
Ord River irrigation agreement (c)	5,100	5,850	5,847	4,760	748
Natural disaster payments ....	....	130	31	....	....
Rural reconstruction (d) ....	....	....	....	6,500	8,130
Marginal dairy farms (e) ....	....	....	352	478	277

AUSTRALIAN GOVERNMENT PAYMENTS TO WESTERN AUSTRALIA
PAYMENTS OF A CAPITAL NATURE—continued
(\$'000)

Nature of payment	1968-69	1969-70	1970-71	1971-72	1972-73
Health—					
Mental institutions—Contributions to capital expenditure	375	241	395	454	219
Tuberculosis Act—Reimbursement of capital expenditure ....	....	....	12	88	20
Nursing homes .....	....	....	337	44	....
Aboriginal health	75	75	5	192	638
Disposal of ships' garbage .....	....	....	....	104	10
Welfare—					
Aboriginal welfare .....	....	....	205	550	386
Dwellings for aged pensioners .....	....	....	700	224	519
Senior citizens' centres .....	....	....	....	30	67
Other—					
Aboriginal housing	547	990	1,080	1,245	4,000
Aboriginal community amenities .....	....	....	....	....	60
Capital assistance grants .....	....	....	18,680	20,470	23,213
Exmouth township development (f) .....	....	59	584	12	28
Migrant centre	411	60	65	23	....
Total	53,639	58,703	78,656	88,698	100,481

(a) Includes repayable advances: 1968-69, \$4,919,000; 1969-70, \$4,647,000; 1970-71, \$3,080,000; 1971-72, \$1,169,000; 1972-73, \$735,000. (b) Repayable advances. (c) Includes repayable advances: 1970-71, \$140,000; 1971-72, \$167,000; 1972-73, \$409,000. (d) Includes repayable advances: 1971-72, \$4,875,000; 1972-73, \$6,097,000. (e) Includes repayable advances: 1970-71, \$159,000; 1971-72, \$239,000; 1972-73, \$139,000. (f) Includes repayable advances: 1969-70, \$59,000; 1970-71, \$269,000; 1971-72, \$12,000.

National Welfare Fund

The National Welfare Fund was established in 1943 by the National Welfare Fund Act passed by the Commonwealth Parliament in that year. The purpose of the fund is to provide for the payment of social service benefits, health benefits and homes savings grants. The fund receives each year by transfer from the Consolidated Revenue Fund an amount equal to the payments made. Further reference to the fund will be found on page 256.

NATIONAL WELFARE FUND—PAYMENTS IN WESTERN AUSTRALIA (a)
(\$'000)

Pension, allowance, benefit or other payment	1968-69	1969-70	1970-71	1971-72	1972-73
Social services—					
Age pensions	39,404	44,637	48,979	49,107	64,896
Invalid pensions	4,786	5,600	6,172	8,267	11,292
Widows' pensions	96	102	107	7,180	10,064
Funeral benefits	648	645	743	108	101
Maternity allowances .....	....	....	....	724	680
Child endowment—					
Children under 16 years of age	14,644	(b) 17,004	15,498	17,056	(b) 20,047
Student children	896	(b) 890	926	1,132	(b) 1,360
Unemployment, sickness and special benefits—					
Unemployment benefits	309	407	828	2,945	6,253
Sickness benefits	389	508	719	1,159	1,840
Special benefits—					
Ordinary	97	123	151	194	279
Migrant .....	....	....	(c) 74	(c) 96	170
Sheltered employment allowances	37	74	....	....	....
Rehabilitation service—					
Invalid pensioners, etc.	196	254	331	448	529
Training scheme for widow pensioners	12	30	55	54	37
Personal care subsidy .....	....	89	123	144	278
Delivered meals subsidy .....	....	20	29	28	50
Assistance for deserted wives	215	342	544	981	1,746
Total, Social services	61,729	70,725	75,279	89,623	119,622
Health services—					
Hospital benefits—					
Pensioners	2,375	2,246	2,058	2,333	2,175
Uninsured patients—					
In public hospitals	150	148	94	100	66
In private hospitals .....	....	12	10	8	5
Insured patients	1,722	1,756	1,895	2,223	2,334
Patients treated without charge—					
In public hospitals .....	....	....	42	22	1
In private hospitals .....	....	....	(c) 789	(c) 1,340	2,358
Special account deficits	343	600	720	1,778	2,745
Subsidised health benefits .....	....	72	....	....	....

NATIONAL WELFARE FUND—PAYMENTS IN WESTERN AUSTRALIA (a)—continued
(S'000)

Pension, allowance, benefit or other payment	1968-69	1969-70	1970-71	1971-72	1972-73
Nursing home (d) benefits—					
Public nursing homes—					
Ordinary benefit	840	972	964	1,454	....
Supplementary benefit	181	623	667	780	....
Private nursing homes—					
Ordinary benefit	1,453	1,638	1,712	2,813	....
Supplementary benefit	337	1,085	1,306	1,641	....
Pensioners .....	....	....	....	....	705
State and participating—					
Ordinary .....	....	....	....	....	5,790
Supplementary .....	....	....	....	....	2,883
Domiciliary nursing care benefits .....	....	....	....	....	100
Medical benefits—					
Pensioners	1,168	1,394	1,345	1,835	2,207
Insured patients	4,345	4,817	8,229	11,652	13,286
Special account deficits	87	132	85	102	154
Subsidised health benefits .....	....	29	123	211	311
Pharmaceutical benefits—					
Pensioners	2,507	2,720	2,814	3,324	3,758
General benefits	4,364	4,950	5,681	5,985	5,695
Public hospitals	1,803	2,133	2,679	3,065	3,751
Other	27	34	41	44	54
Tuberculosis campaign—					
Allowances	44	39	30	32	46
Maintenance and surveys	602	789	770	875	778
Handicapped children's benefits	3	64	60	41	42
Milk for school children	797	797	835	997	1,086
Miscellaneous health services—					
Pathology laboratories....	33	35	49	59	78
Home nursing services subsidy	157	177	248	317	425
Total, Health services (e)	23,340	27,262	33,246	43,032	50,827
Homes savings grants	760	590	691	1,115	1,314
GRAND TOTAL (f)	85,828	98,577	109,216	133,770	171,763

(a) For conditions and rates applying to payment of the several social service benefits, health benefits, and other forms of assistance, see the relevant sections in Chapter V (pages 257-63, 265-70 and 232-4). (b) See footnote (b) to table on page 262. (c) Less than \$500. (d) From 1 January 1973, classified as *State nursing homes* and *Participating nursing homes*. (e) In addition to the items shown there are some services, the expenditure on which is not allocable among States. In 1972-73 the cost of these services, for Australia as a whole, was \$3.57 million, comprising the supply of blood products \$1.14 million, radio-active isotopes \$1.33 million, hearing aids for school children and pensioners \$0.54 million, poliomyelitis vaccine \$0.55 million, and other vaccines \$0.42 million. (f) See footnote (e).

AUSTRALIAN GOVERNMENT AND STATE GOVERNMENT TAXATION

Australian Government Taxation

The taxes levied in Western Australia by the Australian Government are listed in the table on page 295 which shows the net amounts collected in the five years to 1972-73.

Income Tax. Income tax is by far the most important source of Commonwealth revenue from taxation and accounted for 67.4 per cent of all Commonwealth taxation collections in 1972-73. The tax is levied on the incomes of individuals, companies, partnerships and trusts, and superannuation funds. When considering the figures shown in the tables on the next page the following definitions are relevant.

Assessable income includes all income (other than *exempt income*) derived directly or indirectly from sources in Australia, and in the case of a taxpayer resident in Australia it includes income from sources outside Australia. (The principal items of *exempt income* are war and service pensions; age and invalid pensions, child endowment, and other payments made in terms of the Social Services Act and the Tuberculosis Act; income from gold mining and some other mining operations; and income received from a scholarship, bursary or other educational allowance.)

Net income comprises assessable income less deductions for expenses incurred in gaining assessable income.

Taxable income is the amount remaining after deducting from assessable income all allowable deductions, which include special deductions and rebates and, in the case of an individual, concessional deductions. Concessional deductions may be claimed in respect

of dependants, housekeepers, education expenses, medical expenses, funeral expenses, life insurance premiums, and payments to superannuation funds and medical and hospital benefits funds.

INCOME TAX ASSESSMENTS—INDIVIDUALS (a): WESTERN AUSTRALIA
INCOME YEAR 1971-72 (ASSESSMENT YEAR 1972-73)

Grade of net income	Number of taxpayers			Net income (b)	Salary and wages in assessable income (c)	Taxable income		Net tax	
	Males	Females	Persons			Total	Average per taxpayer	Total	Average per taxpayer
\$ \$				\$'000	\$'000	\$'000	\$	\$'000	\$
417- 599	3,470	7,366	10,836	5,557	4,749	5,366	495	100	9
600- 799	4,064	8,546	12,610	8,802	7,426	8,276	656	246	20
800- 999	4,087	8,533	12,620	11,368	9,528	10,490	831	432	34
1,000- 1,199	4,617	9,206	13,823	15,178	12,530	13,716	992	708	51
1,200- 1,399	5,036	9,325	14,361	18,658	15,420	16,686	1,162	1,016	71
1,400- 1,599	5,223	9,934	15,157	22,734	18,231	20,310	1,340	1,397	92
1,600- 1,799	5,352	9,448	14,800	25,164	19,533	22,371	1,512	1,722	116
1,800- 1,999	6,141	9,710	15,851	30,119	23,497	26,662	1,682	2,265	143
2,000- 2,199	6,293	9,820	16,113	33,827	26,017	29,855	1,853	2,782	173
2,200- 2,399	6,656	10,086	16,742	38,525	30,203	34,144	2,039	3,485	208
2,400- 2,599	6,914	10,211	17,125	42,796	33,876	37,881	2,212	4,180	244
2,600- 2,799	7,909	8,819	16,728	45,128	35,469	39,530	2,363	4,620	276
2,800- 2,999	8,843	7,304	16,147	46,840	36,919	40,622	2,516	4,990	309
3,000- 3,199	10,031	6,354	16,385	50,792	40,607	43,469	2,653	5,552	339
3,200- 3,399	10,759	5,274	16,033	52,881	42,587	44,915	2,801	5,992	374
3,400- 3,599	11,378	4,170	15,548	54,419	44,141	45,720	2,941	6,336	408
3,600- 3,799	12,096	3,371	15,467	57,198	46,637	47,474	3,069	6,818	441
3,800- 3,999	12,297	2,802	15,099	58,882	48,435	48,690	3,225	7,270	481
4,000- 4,499	30,890	5,531	36,421	154,590	130,122	126,448	3,472	20,070	551
4,500- 4,999	28,127	3,991	32,118	152,357	130,859	123,743	3,853	21,278	662
5,000- 5,499	23,227	2,827	26,054	135,501	116,566	110,345	4,235	20,344	781
5,500- 5,999	17,949	2,140	20,089	115,303	97,777	92,849	4,622	18,209	906
6,000- 6,499	14,040	1,628	15,668	97,756	82,230	78,627	5,018	16,306	1,041
6,500- 6,999	11,199	1,176	12,375	83,399	69,942	66,939	5,409	14,604	1,180
7,000- 7,499	8,560	963	9,523	68,911	56,455	55,189	5,795	12,576	1,321
7,500- 7,999	6,554	800	7,354	56,933	46,111	45,751	6,221	10,872	1,478
8,000- 8,999	8,995	1,053	10,048	84,937	67,124	68,237	6,791	17,062	1,698
9,000- 9,999	5,660	646	6,306	59,608	46,153	48,042	7,618	12,894	2,045
10,000-14,999	8,777	1,162	9,939	116,290	77,909	95,491	9,608	29,282	2,946
15,000-19,999	1,804	242	2,046	34,680	17,308	29,588	14,461	11,235	5,491
20,000-29,999	778	114	892	21,026	6,400	18,518	20,760	8,453	9,476
30,000-49,999	225	37	262	9,471	1,838	8,616	32,885	4,699	17,935
50,000-99,999	58	9	67	4,186	868	3,836	57,254	2,317	34,582
100,000 and over	6	1	7	1,854		1,840	262,857	1,248	178,286
Total	298,015	162,599	460,614	1,816,669	1,443,468	1,510,234	3,279	281,359	611

(a) An individual was liable to pay tax on income derived in 1971-72 only if the taxable income exceeded \$416. (b) Includes income from salary and wages, investments and property, and business and professional activities. (c) Includes items such as commission, bonuses, allowances, directors' fees, and superannuation.

INCOME TAX ASSESSMENTS—COMPANIES (a): WESTERN AUSTRALIA
INCOME YEAR 1971-72 (ASSESSMENT YEAR 1972-73)

Grade of taxable income	Taxable companies			Non-taxable companies	
	Number	Taxable income	Net tax	Number	Taxable income (b)
\$ \$		\$'000	\$'000		\$'000
Nil	.....	.....	.....	(c) 6,851	.....
1- 1,999	1,517	1,053	385	272	207
2,000- 9,999	2,121	11,823	4,214	319	1,609
10,000- 19,999	863	11,915	4,349	80	1,156
20,000- 39,999	545	15,397	5,702	59	1,606
40,000- 99,999	388	24,055	9,167	23	1,250
100,000- 199,999	142	20,238	7,535	11	1,475
200,000- 399,999	65	18,341	6,936	(d)	(d)
400,000- 999,999	52	30,472	10,980	(d)	(d)
1,000,000-1,999,999	15	21,346	9,466	.....	.....
2,000,000 and over	7	28,022	12,496	.....	.....
Total	5,715	182,663	71,229	7,619	8,981

(a) Includes private, public, co-operative, and non-profit companies. (b) A company, other than a non-profit company, is not liable for income tax if its taxable income is less than \$1 or if it is allowed rebates which equal or exceed the tax otherwise payable; a non-profit company is not taxable if the taxable income is \$416 or less. (c) Includes 4,749 companies showing an aggregate loss of \$41.9 million. (d) Not available for publication.

The Commonwealth Statistician, Canberra publishes an annual bulletin *Commonwealth Taxation Assessments* which contains comprehensive statistical tables and details of rates of tax, allowable deductions and other conditions applying to tax on incomes of individuals and of companies.

AUSTRALIAN GOVERNMENT TAXATION
NET COLLECTIONS IN WESTERN AUSTRALIA (a)
(\$'000)

Tax, duty, charge or levy	1968-69	1969-70	1970-71	1971-72	1972-73
Paid to Consolidated Revenue Fund—					
Income tax (b)	226,532	280,042	317,373	359,836	356,770
Customs duties (b)	19,580	22,865	27,662	28,075	24,035
Excise duties	68,642	76,101	88,341	100,955	105,165
Sales tax (b)	34,779	40,819	43,647	47,305	46,266
Pay-roll tax (c)	15,162	18,180	21,156	6,055	172
Estate duty	2,482	4,220	3,642	3,842	3,934
Gift duty	812	1,008	708	737	780
Broadcast listeners' and television viewers' licences	3,127	3,483	3,689	4,642	5,113
Other	67	136	212	250	512
Total (b)	371,185	446,854	506,430	551,697	542,747
Other (d)—					
Wool tax	3,017	2,541	974	1,153	2,065
Export charges on primary products	62	60	82	44	75
Stevedoring industry charge	1,487	1,455	1,390	1,900	2,103
Butterfat levy	61	58	56	64	47
Dairying research levy .....	.....	.....	.....	.....	19
Canning-fruit charge	(e)	.....	(e)	.....	1
Livestock slaughter levy—					
Cattle	105	121	116	174	206
Pigs .....	.....	.....	.....	13	25
Sheep and lambs	101	132	128	214	210
Honey levy	8	5	7	10	9
Tobacco charge	3	.....	.....	.....	.....
Total	4,845	4,372	2,753	3,572	4,760
GRAND TOTAL (b)	376,030	451,226	509,183	555,269	547,507

(a) Details of the purposes and rates applicable to the main forms of Australian Government taxation are given in the *Official Year Book of Australia*: No. 59—1973 on pages 281-5 (customs duties), 566-74 (income tax), and 577-83 (other taxation). (b) The amounts shown have been adjusted by offsetting remissions under special circumstances of income tax, customs duties and sales tax. (c) Discontinued as Australian Government tax September 1971; from that date collected by State Government (see page 297). (d) Transferred to trust funds or relevant authorities and used for purposes of the industry concerned. (e) Less than \$500.

It is important to note that, although the figures shown in the preceding table represent the amounts of taxes actually *collected* in Western Australia, they do not necessarily indicate the amounts contributed by the people of the State, as moneys may be collected in one State in respect of goods consumed or assessments made in other States. Further, administrative arrangements for the collection of certain taxes are such that a large proportion of the revenue (or, as in the case of wheat tax, the whole of the revenue) is brought to account in a State other than Western Australia.

State Taxation

The net amounts collected in Western Australia in the form of State Government taxation in each year from 1968-69 to 1972-73 are shown in the table on page 301. Information concerning rates of tax and the relevant legislation is given below.

STAMP DUTIES. The *Stamp Act, 1921-1974* imposes stamp duties and prescribes the rates applying to a great number of transactions relating to a wide range of property, commodities and services (see table on page 300).

ESTATE DUTY (PROBATE AND SUCCESSION DUTIES). The *Death Duty Act, 1973* imposes duties on the estates of deceased persons and specifies the rates of duty. Conditions relating to the imposition, assessment, and collection of duties are contained in the *Death Duty Assessment Act, 1973-1974*. Differential rates of duty and amounts of exemption apply according to distinct categories of beneficiary. The following table shows the amounts of duty payable from 1 January 1974 on estates of persons dying on or after that date, classified according to the final balance of the estate.

**ESTATE DUTY—AMOUNTS PAYABLE FROM 1 JANUARY 1974
CLASSIFIED ACCORDING TO VALUE OF ESTATE**

Final balance of estate	Where deceased was domiciled in Western Australia at time of death			Where deceased was not domiciled in Western Australia at time of death
	Gross amount payable where estate passes to—			
	Widow, widower, children, etc. (a)	Brothers, sisters, or parents, (b)	Any other person (c)	
\$	\$	\$	\$	\$
200	Nil	Nil	Nil	Nil
1,000	Nil	Nil	Nil	100
1,500	Nil	Nil	Nil	153
3,000	Nil	90	120	312
5,000	Nil	250	300	540
10,000	Nil	750	850	1,180
15,000	Nil	1,350	1,500	1,920
20,000	450	1,950	2,150	2,760
30,000	1,550	3,350	3,650	4,440
50,000	4,150	6,750	7,250	8,400
70,000	7,350	10,750	11,450	13,160
90,000	11,350	15,550	16,450	18,720
110,000	16,150	21,150	22,450	25,080
130,000	21,750	27,750	29,450	32,240
150,000	28,150	35,350	37,450	40,200
170,000	35,750	44,150	46,650	48,960
200,000	49,250	59,150	62,250	63,600
250,000	62,500	75,000	80,000	80,000
500,000	125,000	150,000	160,000	160,000

(a) Widow, widower, children, grandchildren, other issue, or dependent parents of the deceased person. (b) Includes brothers or sisters of the half blood or by step or adoptive relationship, and parents other than dependent parents. (c) Or any body corporate or unincorporate.

LAND TAX. The *Land Tax Assessment Act, 1907-1973* authorises a tax, with certain specified exemptions, on every owner of land, and the rates of tax are prescribed by the *Land Tax Act, 1948-1969*. The following table shows the rates of tax and the amounts of tax payable, in respect of the assessment year 1972-73, on improved land and unimproved land of the values specified.

**LAND TAX—RATES OF TAX AND AMOUNTS PAYABLE
ASSESSMENT YEAR 1972-73**

Unimproved value—		Improved land		Unimproved land	
Exceeding	Not exceeding	Tax on amount in first column	Tax per dollar on remainder	Tax on amount in first column	Tax per dollar on remainder
\$	\$	\$	cents	\$	cents
Nil	5,000	Nil	0.3	Nil	1.00
5,000	10,000	15	0.4	50	1.25
10,000	15,000	35	0.5	112.50	1.50
15,000	20,000	60	0.6	187.50	1.75
20,000	25,000	90	0.7	275	2.00
25,000	30,000	125	0.8	375	2.25
30,000	35,000	165	0.9	487.50	2.50
35,000	40,000	210	1.0	612.50	2.75
40,000	45,000	260	1.1	750	3.00
45,000	50,000	315	1.2	900	3.25
50,000	60,000	375	1.3	1,062.50	3.50
60,000	70,000	505	1.4	1,412.50	3.75
70,000	80,000	645	1.5	1,787.50	4.00
80,000	90,000	795	1.6	2,187.50	4.25
90,000	100,000	955	1.8	2,612.50	4.50
100,000	110,000	1,135	2.0	3,062.50	4.75
110,000	120,000	1,335	2.2	3,537.50	5.00
120,000	upwards	1,555	2.4	4,037.50	5.25

PAY-ROLL TAX. Pay-roll tax, which was formerly levied by the Australian Government (see page 295), has been collected by the States since September 1971. In Western Australia the enabling legislation comprises the *Pay-roll Tax Assessment Act, 1971-1973* and the *Pay-roll Tax Act, 1971-1974*. The tax is payable by each employer, with certain specified exceptions, on all wages and salaries paid in excess of \$1,733.33 per month (\$20,800 per annum). The rate of tax prescribed by the *Pay-roll Tax Act, 1971-1974* is: 3½ per cent of the taxable wages paid or payable during or before the month of August 1973; 4½ per cent of the taxable wages paid or payable after August 1973 but during or before August 1974; and 5 per cent from September 1974.

BOOKMAKERS BETTING TAX. The *Bookmakers Betting Tax Act, 1954-1970* provides for a tax on money paid or promised as the consideration for bets made by or on behalf of bookmakers. Rates of tax are prescribed as a proportion of the turnover of a racing year (1 August to 31 July). In respect of turnover of the year ended 31 July 1974 the rates applying to on-course transactions were 2 per cent of amounts up to \$100,000 and 2½ per cent of the remainder. For off-course transactions the rate was 2½ per cent of amounts up to \$50,000, the rate payable on each additional \$50,000 of turnover increasing by ½ per cent up to \$300,000; on turnover exceeding \$300,000 the rate was 3½ per cent.

TOTALISATOR AGENCY BOARD BETTING TAX. The *Totalisator Agency Board Betting Tax Act, 1960-1973* imposes a tax on all moneys paid to the Board in respect of bets made through or with the Board. The rate of tax payable at 30 June 1974 was 6 per cent.

TOTALISATOR DUTY. The *Totalisator Duty Act, 1905-1973* authorises the payment of duty on the takings of totalisators operated by horse-racing clubs and prescribes the rates to be paid. Differential rates apply to totalisators operated within a radius of twenty-five miles from the General Post Office, Perth and those situated outside this area. In 1973-74, the principal rates of duty payable in respect of totalisators in the former area were 9 per cent of the gross takings from win and place transactions and 5 per cent of the gross takings from wagering transactions known as 'jack pots', 'quinellas' and 'doubles'; for totalisators outside that area, the rate was 5 per cent for all transactions.

TOTALISATOR LICENCES. The *Totalisator Regulation Act, 1911-1973* provides for the licensing of totalisators operated by horse-racing clubs. Licence fees are prescribed by regulation and are payable annually in respect of the calendar year. For the year 1974 the fee payable was \$2 for each \$2,000 (or part of \$2,000) passing through the totalisator.

BETTING INVESTMENT TAX. The *Betting Investment Tax Act, 1959-1966* imposed a tax on each bet made by a bookmaker in registered premises and on each bet made through or with the Totalisator Agency Board. The amount of tax payable at 31 December 1970 was three cents on each such bet. (The Betting Investment Tax Act was repealed, with effect from 1 January 1971, by the *Betting Investment Tax Act Repeal Act, 1970*.)

LIQUOR LICENCES. Licences and permits authorising the holder to sell or supply fermented and spirituous liquors are granted under the provisions of the *Liquor Act, 1970-1974*. The Act prescribes the fees payable in respect of liquor licences and permits. The several types of licence for which the Act provides are shown in the table *Liquor Licences in Force* on page 282. Annual licence fees, except in the case of a vigneron's licence, are assessed as a proportion of the gross amount paid for liquor purchased for licensed premises or, in the case of a wholesale spirit merchant's licence and a brewer's licence, the gross amount received for liquor sold. The proportion prescribed by the Act is 8 per cent for a tavern licence or a store licence and 7 per cent for other licences. An additional annual fee of \$60 is payable in respect of a wholesale spirit merchant's licence and a brewer's licence. The annual fee payable for a vigneron's licence is \$20.

MOTOR VEHICLE REGISTRATION FEES. The *Traffic Act, 1919-1974* provides for the registration of vehicles and prescribes the licence fees to be paid in respect of the several classes of vehicles required to be registered. Fees are based on a combination of power unit and tare weight (except for motor cycles, in respect of which the fee is related to engine capacity).

For example, the annual licence fee for a motor car with an engine other than a rotary type is eighty-three cents per power unit and an additional eighty-three cents for each fifty-one kilograms of the tare weight. The annual licence fee for a motor cycle is \$7 where the engine capacity is 250 cubic centimetres or less, and \$9 where the engine capacity is more than 250 cubic centimetres. A recording fee of \$4 is payable for the grant or renewal of any licence for a vehicle, and a fee of \$3 for the transfer of any licence. (See below.)

MOTOR VEHICLE DRIVERS' LICENCES. The *Traffic Act, 1919-1974* authorises the issue of drivers' licences to persons of a minimum age of seventeen years, specifies other conditions to be satisfied, and prescribes the fees to be paid on application for, and issue or renewal of, a licence. The fee payable on application is \$4, and on issue or on renewal, for each period of twelve months, \$5 (or \$1 in the case of a licence to drive a passenger vehicle). (The *Road Traffic Act, 1974* replaced the *Traffic Act* from 1 June 1975.)

MOTOR VEHICLE THIRD PARTY INSURANCE SURCHARGE. The *Motor Vehicle (Third Party Insurance Surcharge) Act, 1962-1973* imposes a surcharge on premiums paid in respect of policies of insurance with The Motor Vehicle Insurance Trust. At 31 December 1974 the rate of the surcharge was \$5 per annum.

TAXI CONTROL BOARD LICENCES. The *Taxi-cars (Co-ordination and Control) Act, 1963-1973*, under which the Taxi Control Board is constituted, requires that taxi-cars operating in the Metropolitan Traffic Area and other areas as declared shall be licensed, and prescribes maximum fees payable. At 31 December 1974 these fees were \$30 on the issue or annual renewal of a licence, and \$4 on the transfer of a licence.

TRANSPORT COMMISSION LICENCES. The *Transport Commission Act, 1966-1972* provides for the licensing of public vehicles in the categories of omnibus, commercial goods vehicle, trailer or semi-trailer, and aircraft, as well as ships engaged in the coasting trade. Licence fees are as determined from time to time by the Commissioner of Transport, subject to certain maximum charges prescribed by the Act. In the case of an omnibus for example, the fee may not exceed 6 per cent of the gross earnings, or \$10 per annum for each unit of the maximum number of passengers which it is licensed to carry, the basis of assessment being that considered by the Commissioner to be the more appropriate.

ROAD MAINTENANCE CONTRIBUTION. The *Road Maintenance (Contribution) Act, 1965-1972* imposes a charge on the operations, subject to specified exemptions of any commercial goods vehicle having a load capacity of more than 8·13 tonnes. At 31 December 1974 the rate of the charge was 0·17 cents per tonne-kilometre calculated on the basis of the tare weight plus two-fifths of the load capacity. The Act provides that, in specified circumstances, the charge may be levied on vehicles having a load capacity of 8·13 tonnes or less.

METROPOLITAN REGION IMPROVEMENT TAX. The *Metropolitan Region Improvement Tax Act, 1959-1966* authorises a tax, with certain specified exemptions, on every owner of land within the Metropolitan Planning Region. (The Region is coterminous with the Perth Statistical Division; see maps preceding *Index*). The rate of tax payable for the assessment year ended 30 June 1974 was one-quarter of a cent for every dollar of the unimproved value of all land chargeable with the tax.

VERMIN RATE. The *Vermin Act, 1918-1973*, in addition to prescribing levies imposed for the purposes of local Vermin Boards, authorises a special vermin rate, the revenue from which is used by the Agriculture Protection Board for the control or eradication of animals, birds and insects declared to be vermin within the meaning of the Act. Subject to certain exemptions, every holding of an area of more than five acres is rateable. The rate, as prescribed by the Act, may not exceed two and one-half cents in the dollar of the unimproved capital value in the case of land held under pastoral lease, or five-twelfths of a cent in the dollar in the case of other holdings. For the assessment year 1969-70, the

rate was two cents in the dollar on pastoral leases and 0·14 of a cent in the dollar on other holdings. (The *Vermin Act Amendment Act, 1970* suspends imposition of the rate with effect from 30 June 1970.)

NOXIOUS WEEDS RATE. The *Noxious Weeds Act, 1950-1973* contains provisions relating to noxious weeds which are generally similar to those of the Vermin Act in relation to declared vermin. The maximum rate as prescribed by the Act is, in the case of a pastoral lease, one and one-quarter cents and, in the case of other land, five twenty-fourths of a cent in the dollar of the unimproved value of the holding. In 1969-70 the rate was not levied in respect of pastoral land. The rate payable on other land was 0·07 of a cent in the dollar. (The noxious weeds rate was abolished, with effect from 1 July 1970, by the *Noxious Weeds Act Amendment Act, 1970*.)

FRUIT FLY ERADICATION. The *Plant Diseases Act, 1914-1974* provides for the compulsory registration of orchards and the payment of registration fees to be credited to a fund to finance the control, prevention, and eradication of the fruit fly pest. In accordance with regulations gazetted on 30 June 1972 a fee of twenty cents is payable on registration of an orchard having an area of less than one acre. This fee is levied once only. An annual fee at the rate of fifty cents per acre or part of an acre is payable in respect of an orchard of one acre or more, except that the maximum annual fee is \$6 in the case of a vineyard the fruit of which is used only for the manufacture of wine.

STATE GOVERNMENT FINANCE

Moneys collected and expended by the State Government are dealt with through accounts based on funds of three types, the Consolidated Revenue Fund, the General Loan Fund and Trust Funds. The transactions of these Funds are summarised in the Public Accounts prepared each year by the Treasurer and in the Financial Statement presented to the Parliament by the Treasurer in introducing the annual budget.

Public finance statistics published by the States are limited generally to dissections of the revenue, loan and debt transactions of State Governments and local government authorities. However, work has been proceeding in recent years on the development of a new system of public authority finance statistics with the aim of providing data on the financial transactions of all public authorities. This information is required by government departments and many other users for economic analysis and social inquiries, and for a wide variety of other purposes.

Although comprehensive statistics compiled on the new basis have not yet been published for the several States, a limited analysis is available in the printed bulletin *Public Authority Finance, 1969-70* issued March 1972 by the Commonwealth Statistician, Canberra. More recent figures are contained in the mimeographed release *Public Authority Finance: State and Local Authorities, 1972-73* published May 1974 by the Commonwealth Statistician.

Consolidated Revenue Fund

All State revenues, apart from those which are credited to trust or special accounts, are paid into the Consolidated Revenue Fund. Disbursements from the Fund are authorised by the Parliament, each year under an Appropriation Act, or under Special Acts subject to periodical review. Among the permanent appropriations by Special Acts are such items as the salaries of the Governor of Western Australia, the Judges of the Supreme Court and Members of Parliament, interest charges on the public debt, contributions to the Public Debt Sinking Fund, payments to the State Superannuation Fund and the annual subsidy to the University of Western Australia.

The principal sources of revenue, as shown in the following table, are the grants and other financial assistance received from the Australian Government; the income of public utilities; taxation; departmental revenues from reimbursements, fees and services; and territorial revenues.

CONSOLIDATED REVENUE FUND—SOURCES OF REVENUE
(\\$'000)

Nature of revenue	1968-69	1969-70	1970-71	1971-72	1972-73
Collected by the State—					
Taxation—					
Stamp duties on—					
Cheques, orders, procurations, etc.	1,977	2,385	2,425	2,835	3,276
Conveyances and transfers	8,777	8,589	6,681	7,009	10,011
Credit facilities (including hire purchase agreements)	888	1,712	3,050	3,283	3,659
Insurance policies	2,383	2,862	3,324	3,706	3,861
Mortgages	1,097	1,191	1,082	1,220	1,693
Motor vehicle licences	1,670	1,978	2,103	2,247	2,417
Receipts	5,213	5,318	3,148	102	10
Share transfers	519	1,453	1,021	541	792
Other	353	377	323	351	377
Other taxation (a).....	18,726	25,000	25,278	57,195	71,044
Total	41,602	50,865	48,434	78,490	97,141
Territorial revenues—					
Land	1,565	1,489	1,448	1,653	1,895
Mining—					
Royalties—					
Iron ore	9,028	13,085	19,027	22,449	24,676
Petroleum	1,392	1,922	2,010	1,543	1,310
Nickel	295	308	769	549	632
Other	285	380	541	706	1,048
Lease and other rentals	1,459	3,286	5,140	4,774	4,337
Timber royalties	3,277	3,164	3,251	3,317	3,264
Total	17,301	23,633	32,187	34,992	37,162
Public utilities—					
Railways	49,163	57,200	61,820	66,180	60,717
Water supplies, sewerage and drainage....	4,538	5,602	6,476	7,209	8,371
Other	706	120	54	57	70
Total	54,407	62,921	68,350	73,446	69,158
Departmental—					
Agriculture	815	982	1,167	1,517	1,710
Companies Registration Office	704	1,031	1,226	1,454	1,684
Education	986	1,167	1,382	1,463	1,743
Forests	1,378	1,444	1,459	1,716	1,776
Harbour and Light	3,300	2,297	2,821	3,022	3,420
Lands and Surveys	684	648	740	793	773
Land Titles	870	866	785	860	1,544
Police	1,954	1,940	1,878	3,141	3,595
Printing	1,426	1,655	1,640	3,176	3,816
Public Health	860	957	1,222	1,259	1,663
Public Works	1,300	1,541	1,632	1,975	1,802
Treasury (including interest and sinking funds)	15,677	18,679	24,781	27,640	36,852
Other	3,081	3,698	4,850	6,115	6,333
Total	33,035	36,905	45,583	54,131	66,711
Other	2,115	2,538	2,301	2,808	3,035
Total, Collected by the State	148,460	176,863	196,855	243,867	273,207
Received from the Commonwealth (b)—					
Interest on State debts	947	947	947	947	947
Special grants	582	.....	.....	.....	.....
Financial assistance grants (c)	123,796	138,835	163,313	170,960	192,869
Special financial assistance grants	1,296	1,545	5,030	6,014	3,500
Debt charges assistance grants .....	.....	.....	1,106	2,211	3,317
Total, Received from the Commonwealth	126,621	141,326	170,396	180,132	200,633
GRAND TOTAL	275,081	318,189	367,252	423,999	473,840

(a) For further details, see table *State Government Taxation—Net Amounts Collected* on page 301.
 (b) See first table on page 291. (c) Includes payments in place of a Special Grant: 1968-69, \$15.5 million; 1969-70, \$15.5 million; 1970-71, \$12.5 million; 1971-72, \$9.5 million; 1972-73, \$6.5 million (see letter-press *The Grants Commission* on page 290).

Payments made to the State of Western Australia by the Australian Government during each of the years from 1968-69 to 1972-73 appear in the tables on pages 291-2. Not all of these moneys are paid to the State Consolidated Revenue Fund, as some of them are provided for specific purposes and are therefore paid to trust or other accounts.

Territorial revenues are those derived from royalties, sales of Crown land, and the issue of leases, licences and permits in connection with land, mining and timber. Reference

to the several types of tenure in these categories will be found in Chapter VII, Part 1—*Land Tenure and Settlement*.

There has been a considerable increase in recent years in revenue from mining royalties, due principally to greatly accelerated exploitation of iron ore and nickel deposits and the commencement of oil drilling on a commercial scale. Reference to these developments will be found in Chapter VIII, Part 2—*Mining*. Collections of royalties on all minerals amounted to \$11·0 million in 1968-69, \$15·7 million in 1969-70, \$22·3 million in 1970-71, \$25·2 million in 1971-72, and \$27·7 million in 1972-73. Total revenue from this source in 1973-74 was \$33·6 million, comprising \$30·6 million from iron ore, \$1·40 million from crude petroleum, \$0·60 million from nickel, \$0·39 million from bauxite, \$0·25 million from natural gas, \$0·21 million from salt, and \$0·18 million from all other minerals.

STATE GOVERNMENT TAXATION—NET AMOUNTS COLLECTED (a)
(\$'000)

Nature of tax	1968-69	1969-70	1970-71	1971-72	1972-73
Paid to Consolidated Revenue Fund—					
Stamp duties not elsewhere included	21,173	23,832	20,717	18,776	23,426
Probate and succession duties	6,297	9,399	8,256	7,562	7,499
Land tax	4,746	6,737	7,201	9,439	10,512
Pay-roll tax (b) ....	....	....	....	23,770	32,492
Racing—					
Stamp duty	66	78	77	76	76
Bookmakers betting tax and licences	193	230	333	493	527
Totalsator Agency Board betting tax	2,386	2,718	3,062	4,006	4,599
Totalsator duty and licences	646	794	884	1,034	1,100
Betting investment tax	642	733	(c) 436	....	....
Liquor	2,848	3,262	3,753	4,434	4,988
Motor vehicle—					
Stamp duty on registration and transfer of motor vehicles	1,670	1,978	2,102	2,246	2,415
Vehicle registration fees and taxes	277	767	667	1,530	1,842
Drivers' licences and fees	838	881	915	939	992
Third party insurance surcharge	735	816	873	1,587	2,402
Licences not elsewhere included	355	383	431	666	750
Total	42,891	52,607	49,706	76,559	93,619
Paid to trust funds—					
Stamp duties not elsewhere included	94	102	124	151	202
Motor vehicle (d)—					
Vehicle registration fees and taxes (e)	6,710	12,211	13,122	13,726	14,141
Drivers' licences and fees	641	681	715	743	774
Road transport (f)	863	918	1,405	1,419	1,024
Road maintenance contribution	3,210	3,624	3,990	3,822	3,359
Metropolitan region improvement	1,656	1,325	1,264	1,413	1,341
Vermín	593	770	(g) 111	....	....
Noxious weeds	235	352	(h) 54	....	....
Licences and taxes not elsewhere included (i)	313	402	382	429	429
Total	14,316	20,385	21,168	21,705	21,270
GRAND TOTAL	57,207	72,991	70,874	98,264	114,889

(a) For rates and conditions applying to the several taxes, see pages 295-9. (b) On 1 October 1971 the State Government commenced collection of pay-roll tax on wages paid or payable by employers after 31 August 1971; pay-roll tax had previously been levied by the Australian Government. (c) Tax abolished with effect from 1 January 1971. (d) See letterpress *Finance for Roads*, Chapter IX, Part 3. (e) From 1 July 1969, includes amounts collected by local government authorities and paid to the Main Roads Trust Account, as required by the *Traffic Act Amendment Act (No. 2), 1969*. For amounts collected and retained by local government authorities, see table on page 308. (f) Includes revenue from Taxi Control Board Licences and Transport Commission Licences. (g) Vermín rate suspended with effect from 30 June 1970; amount shown represents arrears. (h) Noxious weeds rate abolished with effect from 1 July 1970; amount shown represents arrears. (i) Includes fees collected under the Plant Diseases Act; see letterpress *Fruit Fly Eradication* on page 299.

The amounts shown in the preceding table are grouped according to the nature of the tax rather than the method of collection. Thus stamp duties on betting tickets and revenue from bookmakers' licences and totalsator licences are included under the heading 'Racing' and not under 'Stamp duties' or 'Licences'. Figures for some types of licences and other fees representing net collections paid to the Consolidated Revenue Fund are not included under taxation revenue (gross) in the table on page 300, earnings from them being credited to departmental revenue. Items dealt with in this way include drivers' licences and fees as shown in the first part of the table, as well as licences relating

to firearms; factories and shops; fishing, pearling and game; and marine collectors. Other moneys paid to departmental revenue are fees collected under the provisions of the Companies Act and the Business Names Act.

CONSOLIDATED REVENUE FUND
REVENUE AND EXPENDITURE CLASSIFIED ACCORDING TO ACTIVITY
(£'000)

Activity	1971-72			1972-73		
	Revenue	Expenditure		Revenue	Expenditure	
		Gross	Net		Gross	Net
Legislation	2	2,113	2,112	....	2,458	2,458
General administration and services, not elsewhere included	266,268	19,019	Cr. 247,249	307,164	22,766	Cr. 284,398
Law, order and public safety	6,192	26,208	20,017	6,878	30,139	23,261
Education	1,570	100,677	99,106	1,744	116,619	114,875
Cultural and recreational facilities	7	3,778	3,771	6	3,661	3,655
Public health	2,667	61,099	58,432	3,297	73,885	70,588
Welfare	494	11,284	10,789	490	13,890	13,400
War and defence .....	....	130	130	....	102	102
Immigration	114	551	436	73	451	378
Regulation of trade and industry and industrial safety	792	1,754	962	837	1,983	1,146
Development and conservation of natural resources and assistance to industry	49,236	48,351	Cr. 885	52,646	52,460	Cr. 187
Transport and communication	69,509	80,501	10,993	64,367	85,347	20,980
Power, fuel and light .....	....	5	5	....	149	149
Housing	5	142	137	....	223	223
Banking and insurance	807	104	Cr. 703	877	96	Cr. 781
Public debt charges	25,623	62,558	*36,935	34,853	65,834	30,981
Miscellaneous	712	6,614	5,902	606	7,267	6,661
Total	423,999	424,890	(a) 891	473,840	477,330	(b) 3,490

(a) Published Budget deficit, \$890,971.

(b) Published Budget deficit, \$3,489,510.

* Revised.

This table is designed to show (in respect of the Consolidated Revenue Fund only) the gross and net cost of each activity of Government irrespective of the Department or Departments administering these activities. In cases where an activity is such that it involves more than one function, each of its components has been included in that activity which is considered to be the most appropriate. For example, in classifying expenditure attributable to child welfare, the custody and care of delinquent children is included under 'Law, order and public safety' and the education of children in institutions under 'Education', only the balance being assigned to the item 'Welfare'.

The amount shown as revenue under the heading 'General administration and services, not elsewhere included' is more than three-fifths of the total. The item includes receipts from the Australian Government and taxation collected by the State amounting in all to \$259.2 million in 1971-72 and \$298.4 million in 1972-73.

By a provision of the *State Government Insurance Office Act, 1938-1965* the State Government Insurance Office is required to pay each year to the Treasury the equivalent of the amount of State taxes on profits or income that any insurance company, other than a life insurance company, would be liable to pay. The amounts shown as revenue under 'Banking and insurance' include \$539,833 in 1971-72 and \$477,963 in 1972-73 in relation to such payments. The expenditure under the heading of 'Banking and insurance' comprises mainly reimbursements from the Treasury to The Rural and Industries Bank of Western Australia of administration expenses incurred in the conduct of its Government Agency Department. These recoups were \$103,984 in 1971-72 and \$95,754 in 1972-73.

The particulars shown in the following table and in the table on page 300 are an abridged form of the presentation given in the Public Accounts. It is, of course, possible to present the figures of income and expenditure of the Consolidated Revenue Fund on other bases for particular purposes. One such grouping is a dissection according to activity as in the preceding table. The classification used has been summarised for the

purposes of this table from a more detailed statement appearing in *Statistics of Western Australia—Finance* issued annually by the Western Australian Office of the Bureau.

**CONSOLIDATED REVENUE FUND
EXPENDITURE ACCORDING TO NATURE OF SERVICE (\$'000)**

Nature of expenditure	1968-69	1969-70	1970-71	1971-72	1972-73
Expenditure on public utilities—					
Railways	51,377	56,956	62,937	68,173	71,196
Water supplies, sewerage and drainage	11,512	13,649	16,202	13,674	16,444
State batteries	512	498	578	563	732
Other	616	64	....	....	....
Total	64,016	71,166	79,717	82,410	88,372
Departmental expenditure—					
Aboriginal Affairs Planning Authority (a) .....	....	....	....	....	575
Agriculture	5,013	5,850	6,855	7,880	8,705
Audit	306	342	401	477	535
Bush Fires Board	149	203	208	197	249
Chief Secretary	459	514	470	515	590
Child Welfare (a)	2,649	3,476	4,818	6,660	....
Community Welfare (a) .....	....	....	....	....	10,852
Computer Centre	73	80	211	241	682
Corrections	2,012	2,475	3,353	4,390	5,368
Crown Law	3,232	3,864	4,528	5,481	6,228
Development and Decentralisation .....	....	....	....	....	1,455
Education	46,441	55,839	66,341	82,472	94,547
Electoral	111	142	403	195	213
Factories	104	123	155	180	186
Fisheries and Fauna	595	747	929	1,075	1,230
Forests (b)	1,600	1,575	1,745	1,989	2,479
Government Stores	605	697	731	719	706
Harbour and Light	2,041	1,910	2,209	2,009	1,826
Industrial Commission	160	185	214	271	191
Inspection of Machinery .....	....	194	227	252	299
Labour	125	139	205	258	396
Lands and Surveys	3,857	4,309	4,237	4,834	4,880
Library Board, Museum, and Art Gallery	1,130	1,421	1,803	2,045	1,895
Local Government	181	201	254	285	334
London Agency	199	229	246	259	240
Mental Health Services	5,304	6,393	7,794	9,954	11,771
Metropolitan (Perth) Passenger Transport Trust—Recoup of loss	925	923	1,791	3,189	4,623
Mines	2,372	2,909	3,696	4,562	5,373
Native Welfare	3,056	3,349	3,328	3,145	....
Observatory	58	76	88	126	135
Police	7,936	9,396	10,811	14,314	15,631
Premier's Department	365	333	367	377	486
Printing	1,188	1,337	1,479	3,449	3,767
Public Health	28,310	34,950	44,781	49,908	60,094
Public Service Board	223	278	342	428	604
Public Works	9,404	10,805	13,308	13,662	15,531
Registry and Friendly Societies	127	152	180	210	220
Superannuation Board	66	93	111	142	166
Taxation	666	816	2,389	2,625	2,543
Tourist Development Authority	606	649	763	924	1,027
Town Planning	298	388	494	583	629
Treasury	547	640	446	548	600
University of Western Australia—Additional payments (b)	3,509	4,441	4,931	5,459	6,772
War Service Land Settlement Scheme—Contribution to capital losses	1,400	1,297	....	....	....
Western Australian Coastal Shipping Commission—Recoup of loss	3,251	3,651	4,796	4,398	4,629
Western Australian Institute of Technology	1,830	2,933	3,861	4,760	6,598
Other	11,520	13,508	18,409	21,115	24,561
Total	154,877	184,841	225,946	267,594	310,418
Expenditure under special Acts—					
Agriculture Protection Board Act	593	770	243	....	....
Forests Act (c)	2,775	2,744	2,696	2,795	2,270
Loan Acts (public debt)—					
Interest	38,709	42,539	44,611	51,664	54,290
Sinking fund contributions	8,373	8,887	9,566	10,365	10,990
Mine Workers' Relief Act	52	57	68	73	70
Parliamentary salaries and allowances	844	872	863	1,107	1,185
State Transport Co-ordination Act	77	115	142	119	118
Superannuation Acts—Government employees	3,785	4,557	5,125	6,193	6,548
University of Western Australia Act (c)	500	500	500	500	500
Other	1,109	1,341	1,592	1,435	1,807
Total	56,817	62,383	65,406	74,250	77,778
Other expenditure	427	510	553	635	761
GRAND TOTAL	276,137	318,901	371,620	424,890	477,330

(a) See page 270.
expenditure above.

(b) For expenditure under Special Acts, see below.

(c) For additional payments, see *Departmental*

General Loan Fund and Public Debt

General Loan Fund. The first Loan Act in Western Australia was assented to in 1872 and gave authority for the raising of a loan for public works, mainly in connection with harbours and rivers, for the purchase of the Perth-Fremantle telegraph line and for railway surveys in the Champion Bay district. A General Loan Fund was established by the Loans Consolidation Act of 1896 which provided for the merging in the Fund of all loan balances unexpended at 30 June 1896, and since that time the proceeds of each new loan have been paid to the credit of the General Loan Fund.

As shown in the table on page 306, net loan expenditure from 1872 to 30 June 1973 amounted to \$1,292.9 million. The highest amounts expended over this period were in relation to *Water supplies, sewerage, drainage and irrigation* (\$283.7 million) and *Railways, tramways and omnibuses* (\$229.9 million). Further information on aggregate net loan expenditure appears in *Statistics of Western Australia—Finance*.

Details of gross expenditure from the General Loan Fund for particular purposes of government, during the five-year period ended 30 June 1973, are given in the following table.

Where an activity is such that it involves more than one function, each of its components has been included in that function which is considered to be the most appropriate. For example, in classifying expenditure attributable to the development of agriculture, the expenditure on Muresk Agricultural College is included under *Education*, only the more general items being assigned to 'agriculture', which is included in *Development and conservation of natural resources and assistance to industry*.

GENERAL LOAN FUND
GROSS EXPENDITURE CLASSIFIED ACCORDING TO PURPOSE
(\$'000)

Purpose	1968-69	1969-70	1970-71	1971-72	1972-73
Legislation .....	.....	60	342	118	5
Law, order and public safety	2,290	2,932	2,320	1,002	2,009
Education	10,632	13,796	14,032	14,191	16,113
Cultural and recreational facilities	8	273	1,088	714	44
Public health	7,326	8,808	8,240	8,081	15,602
Welfare	69	95	19	758	1,139
War and defence .....	.....	.....	27	85	5
Immigration	439	60	75	27	(a)
Development and conservation of natural resources and assistance to industry	18,046	21,328	25,823	24,384	28,002
Transport and communication	16,967	14,223	13,145	11,913	10,532
Power, fuel and light	5,685	4,567	28	3,666	4,104
Housing	2,741	3,601	5,786	24,275	15,614
Miscellaneous	300	427	1,475	3,116	2,318
Total	64,503	70,170	72,400	92,330	95,488

(a) Less than \$500.

Expenditure on *Education* during 1972-73 amounted to \$16.1 million. Of this total, \$5.56 million was spent on primary education, \$6.98 million on secondary education, \$2.31 million on tertiary education and \$1.14 million on teacher training.

Expenditure on *Public health* (\$15.6 million) was mainly for the provision of new hospitals and extensions to existing hospitals.

The principal items of expenditure included under the heading *Development and conservation of natural resources and assistance to industry* related to water supply, sewerage and town drainage (\$22.4 million), secondary industries (\$1.49 million) and forestry (\$1.9 million). An account of progress in the field of water conservation and supply is given in Chapter VII, Part 2.

The item *Transport and communication* (\$10.5 million) included \$7.26 million spent on railways, \$2.42 million on harbours, and \$0.85 million advanced to the Metropolitan (Perth) Passenger Transport Trust for the purchase of new omnibuses. Reference is made to the operations of the Trust in Chapter IX, Part 3.

Expenditure on *Power, fuel and light* consisted mainly of advances to The State Electricity Commission, the activities of which are described in Chapter VIII, Part 3.

Expenditure attributed to *Housing* was principally the provision of additional capital to The State Housing Commission for the erection of houses, land acquisition and development, and assistance to home builders. This expenditure, which relates only to the General Loan Fund, does not, of course, include moneys applied to the Commission's purposes from Commonwealth loans under the Commonwealth-State Housing Agreement. Reference to the Agreement and to the work of The State Housing Commission will be found in Chapter V, Part 4.

The following table shows the amounts of loan raisings and redemptions by or on behalf of the State Government during the five-year period ended 30 June 1973.

LOAN RAISINGS AND REDEMPTIONS
(\$'000)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Raisings—					
By Australian Government—					
Loans subscribed in Australia	54,967	60,517	48,685	63,447	68,663
Total, Raisings	54,967	60,517	48,685	63,447	68,663
Redemptions—					
By National Debt Commission—					
Australian securities	4,480	6,749	8,413	9,256	10,907
London securities	2,659	6,891	2,439	1,663	2,865
New York securities	411	380	441	620	727
Canadian securities	8	26	24	26	28
Netherlands securities	36	36	36	36	36
Total, Redemptions	7,594	14,082	11,352	11,601	14,562
Excess of Raisings over Redemptions	47,374	46,435	37,333	51,847	54,101

Public Debt. Western Australia's gross public debt at 30 June 1973, was \$1,030 million, compared with \$793 million at 30 June 1968, representing an increase of \$237 million during the five years. Total raisings in the financial years 1968-69 to 1972-73 amounted to \$296 million and the value of securities repurchased and redeemed in Australia, London, New York, Canada and the Netherlands by the National Debt Commission was \$59.2 million.

The first table on page 306 presents a summary of public debt transactions in each year of the period between 30 June 1968 and 30 June 1973.

Reference is made on page 289 to the Sinking Funds established by the Financial Agreement of 1927 designed to redeem the public debts of the States. Transactions of the National Debt Sinking Fund in respect of the public debt of Western Australia during the five-year period ended 30 June 1973 are shown in the second table on page 306.

In the following table interest and Sinking Fund payments from Consolidated Revenue Fund in relation to public debt are shown for the years 1968-69 to 1972-73.

PUBLIC DEBT—INTEREST AND
SINKING FUND PAYMENTS (a)
(\$'000)

Year	Interest (b)	Sinking Fund
1968-69	38,709	8,373
1969-70	42,539	8,887
1970-71	44,611	9,566
1971-72	51,664	10,365
1972-73	54,290	10,990

(a) From Consolidated Revenue Fund. (b) Includes exchange on overseas payments.

NET LOAN EXPENDITURE AND PUBLIC DEBT (\$'000)

Particulars	At 30 June—					
	1968	1969	1970	1971	1972	1973
Debits—						
Aggregate net loan expenditure	937,690	992,657	1,053,232	1,117,037	1,203,973	1,292,887
Inscribed stock issued under Agricultural Bank Act The Rural and Industries Bank of Western Australia debenture stock (a)	3,132	3,132	3,132	3,132	3,132	3,132
Unexpended balance of General Loan Fund	2,134	2,134	2,134	2,134	2,134	2,134
	4	3	....	3,507	488	3,450
Total, Debits	942,960	997,927	1,058,498	1,125,810	1,209,727	1,301,603
Credits—						
Aggregate redemptions	149,990	157,584	171,666	183,018	194,619	209,180
Australian Government Capital Grants (b) .....	....	....	....	18,680	39,150	62,363
Bank overdraft .....	....	....	54	....	....	....
Total, Credits	149,990	157,584	171,720	201,698	233,769	271,543
Balance, Gross public debt	792,969	840,343	886,778	924,111	975,958	1,030,060
Amount of public debt maturing in—						
Australia	723,808	774,295	835,541	875,814	935,403	993,159
London	62,599	59,940	46,070	43,631	36,571	33,707
New York	5,156	4,746	3,867	3,425	2,805	2,078
Canada	517	510	484	460	434	406
Netherlands	503	467	432	396	360	324
Switzerland	385	385	385	385	385	385
Total, Gross public debt	792,969	840,343	886,778	924,111	975,958	1,030,060
Sinking Fund available for further debt redemption (c)	408	3,015	182	582	1,216	265
Net public debt	792,562	837,329	886,597	923,530	974,742	1,029,795

(a) Representing stock issued in connection with the acquisition by the Government of the assets of The Midland Railway Company of Western Australia Limited. (b) As provided by States Grants (Capital Assistance) Acts. (c) Representing balance of Sinking Fund held by National Debt Commission.

SINKING FUND TRANSACTIONS (\$'000)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Balance at beginning of year	408	3,015	182	582	1,216
Receipts—					
Contributions by State	8,379	8,893	9,634	10,308	11,007
Contributions by Australian Government	2,105	2,258	2,384	2,557	2,715
Interest	(a)	97	23	25	32
Total, Receipts	10,483	11,249	12,041	12,890	13,754
Expenditure—					
Redemptions and repurchases (b) in—					
Australia	4,480	6,749	8,413	9,256	11,027
London	2,510	6,512	2,248	1,672	2,297
New York	818	724	882	1,224	1,279
Canada	14	42	45	47	45
Netherlands	54	54	54	57	57
Total, Expenditure	7,876	14,082	11,642	12,256	14,705
Balance at end of year	3,015	182	582	1,216	265

(a) Less than \$500.

(b) At net cost including exchange.

Trust Funds

Trust funds are divided into three groups, governmental, private, and those which deal with moneys advanced by the Australian Government for specific purposes. A detailed list of trust fund transactions is published quarterly in the *Statement of the Receipts and Disbursements of Western Australia*. The following table contains a summary of the more important items selected from this list and shows the balance of each trust fund at 30 June 1973.

SUMMARY OF TRUST FUNDS—RECEIPTS AND EXPENDITURE
(\$'000)

Title of account	1971-72		1972-73		Balance of Fund at 30 June 1973
	Receipts	Expenditure	Receipts	Expenditure	
Governmental trust funds—					
Aboriginal Affairs Planning Authority	3,308	3,332	613	558	95
Agriculture Protection Board	1,674	1,602	2,095	2,195	84
Country High School Hostels Authority	744	982	608	391	323
Crown Law Advance	10,475	10,510	10,782	10,838	77
Forests Improvement and Reforestation	6,335	6,198	7,590	6,908	1,599
Hospital Buildings and Equipment	2,740	2,131	2,838	2,239	1,404
Hospital Fund Contributions	48,179	48,179	59,571	59,571	....
Hospital Laundry and Linen Services .....	....	....	1,561	1,169	392
Housing—					
Government Employees' Housing Authority	3,645	3,770	3,573	3,544	31
State Housing Commission	61,228	52,403	68,653	75,090	8,906
Industrial Lands Development	2,111	2,660	1,336	492	878
Insurance—					
Government Fire and Marine Insurance	2,774	2,870	3,157	3,127	111
Government Workers' Compensation	1,495	1,363	1,594	1,734	359
Railway Accident and Fire Insurance	719	489	566	507	554
State Insurance	16,378	16,216	16,599	16,677	156
Karratha Development—Reticulation Services	682	858	137	542	Dr. 294
Library Board of Western Australia	1,807	1,816	1,477	1,466	40
Main Roads Department Pay-roll Surcharge	1,387	1,395	1,548	1,726	168
Metropolitan Region Improvement	4,017	3,870	4,170	4,351	11
National Parks Board	447	446	503	503	2
Noxious Weeds	567	731	830	795	148
Plant Hire	2,526	2,472	2,906	2,838	612
Public Debt Sinking Fund	635	....	....	951	265
Public Works Department Pay-roll Surcharge	1,999	1,993	2,422	2,471	1,103
Railways Rolling Stock Replacement	1,108	1,006	1,008	1,362	102
Roads—					
Main Roads	102,150	103,153	108,717	109,877	4,414
Main Roads—New Buildings	954	953	100	119	7
Roads Maintenance Trust	3,850	3,907	3,389	3,459	11
Rural and Industries Bank	1,455	1,526	1,329	1,165	192
Rural Reconstruction	3,486	3,430	7,746	7,026	776
Tourist Fund	1,308	1,177	1,274	1,294	570
Transport Commission	3,452	3,499	2,595	3,052	457
Unemployment Relief Works	1,840	265	1,000	2,416	160
Vermin Act	918	1,450	1,578	1,541	166
Western Australian Museum	755	820	923	961	32
Other	*10,572	*8,697	15,944	15,200	17,787
Total	307,719	296,167	340,736	348,154	41,698
Funds financed from Australian Government grants and advances—					
Aboriginal Advancement	2,642	1,796	6,919	6,977	850
Housing—					
Commonwealth-State Housing Agreement	30,601	31,111	36,987	30,618	6,622
Home Builders	2,578	2,425	2,505	2,427	327
Defence Forces Homes	5,115	5,069	6,450	6,487	12
Metropolitan Sewerage Unemployment Relief .....	....	....	3,500	3,500	....
Non-metropolitan Unemployment Relief	2,024	1,611	5,401	5,441	373
Non-productive Capital Works	21,090	21,090	23,421	23,421	....
Ord River Dam Construction	4,687	4,584	352	333	39
Petroleum Products Subsidy	5,189	5,189	5,325	5,453	242
Pharmaceutical Benefits	3,320	3,320	4,137	4,137	....
Primary and Secondary Education Buildings	620	488	1,384	1,415	101
Roads—					
Beef Cattle Roads	1,822	1,828	2,222	2,149	101
Commonwealth Aid Roads Acts	40,968	44,975	50,745	50,264	1,662
Rural Reconstruction Scheme	6,500	6,500	11,130	10,000	1,130
Softwood Forestry Agreement	56	56	1,020	1,020	....
South-West Region Water Supplies	2,000	2,000	158	158	....
Technical Training—Buildings and Equipment	833	608	1,168	1,657	Dr. 256
Water Resources	685	685	710	710	....
Other	*7,370	*8,067	9,571	8,327	2,288
Total	138,099	141,401	173,105	164,495	13,491
Private trust funds—					
Clerk of Courts	7,577	7,609	8,587	8,606	213
Coal Mine Workers' Pensions	662	558	721	771	55
Esperance Railway Standardisation	2,090	1,930	4,858	4,532	486
Public Trustee Common Fund	11,069	10,771	12,545	12,770	411
Superannuation Fund	18,917	19,121	20,649	19,369	1,527
Superannuation Investment Reserve	7,712	29	6,455	....	60,280
Workers' Compensation in Suspense	505	464	738	697	147
Other	6,296	5,535	7,352	6,118	8,198
Total	54,828	46,016	61,905	52,864	71,316
GRAND TOTAL	500,646	483,584	575,746	565,513	126,506

* Revised.

LOCAL GOVERNMENT FINANCE

The financial powers of local government authorities in Western Australia are derived principally from the *Local Government Act, 1960-1975*, the main provisions of which are outlined in Chapter III—*Constitution and Government*. Among other statutes affecting local government finance are the Traffic Act, the Health Act, the Water Boards Act, the Vermin Act and the Fire Brigades Act.

General Revenue

The following table gives a summary of the revenue (other than loan revenue) of local government authorities during the five years 1968-69 to 1972-73.

SUMMARY OF LOCAL GOVERNMENT REVENUE (a)
(\$'000)

Source of revenue	1968-69	1969-70	1970-71	1971-72	1972-73
Taxation—					
Rates—					
Municipal	19,500	22,530	25,630	30,368	33,624
Vermin Board	77	71	46	35	47
Licences and fees—					
Dog	37	41	44	48	54
Building	280	346	317	322	386
Other (b)	109	134	161	210	267
Total (b)	*20,003	*23,123	*26,197	*30,984	34,378
Public works and services—					
Income from property and plant—					
Parks, gardens and other recreational facilities	1,440	1,784	1,883	2,602	2,627
Halls and other buildings	829	1,005	1,607	1,485	1,777
Vehicles and plant	1,215	1,252	1,547	1,529	1,783
Land sales	2,356	2,319	3,299	2,517	2,001
Other property	1,111	2,016	1,192	1,192	1,198
Contributions for road construction, etc. (c)	3,811	4,640	5,430	5,287	6,314
Sanitation charges (including garbage services) (d)	1,370	1,629	1,978	2,475	3,062
Other works and services—					
Municipalities	2,792	1,550	2,190	2,528	2,811
Water Boards	*340	*376	*498	*506	613
Vermin Boards	19	17	18	22	17
Total	*15,282	*16,587	*19,644	*20,143	22,202
Government grants and reimbursements—					
Roads (e)—					
Central Road Trust Fund (f)	4,912	.....	.....	.....	.....
Main Roads Trust Account	4,554	15,748	16,908	18,128	18,874
Metropolitan Traffic Trust Account (f)	825	(g) 13	.....	.....	.....
Unemployment relief .....	.....	.....	.....	1,074	3,915
Recreational facilities (h)	309	333	797	1,095	618
Electricity supply	11	13	12	5	3
Water Boards	1	1	1	27	7
Vermin destruction bonuses—					
Municipalities	5	7	5	3	4
Vermin Boards	7	13	12	7	7
Other	188	230	378	717	855
Total	10,810	16,358	18,112	21,056	24,284
Vehicle licences and fees (i)	5,038	930	761	829	850
Electricity undertakings	3,044	3,660	4,089	4,101	3,458
Other revenue—					
Fines and penalties—					
Traffic	480	750	804	845	925
Other	22	33	34	34	50
Interest	544	737	1,043	1,185	1,268
Other	1,016	878	1,105	1,067	1,047
Total	2,061	2,397	2,986	3,131	3,291
GRAND TOTAL	56,239	63,056	71,789	80,244	88,463

(a) Loan receipts are excluded; for particulars see page 310. (b) Excludes revenue from vehicle licences (see 'Vehicle licences and fees' below) and sanitary and garbage fees (see 'Sanitation charges (including garbage services)' below). (c) Includes reimbursements from various government instrumentalities for road construction and repair. Excludes grants and reimbursements from the Main Roads Department, which are included in 'Government grants and reimbursements—Roads' shown below. (d) Excludes revenue received where the charge is incorporated in the general (municipal) rate. (e) Includes grants and reimbursements from the Main Roads Department; see also footnote (c). (f) From 1 July 1969 paid from Main Roads Trust Account as required by the *Main Roads Act Amendment Act, 1969*. (g) Arrears; see footnote (f). (h) Includes grants from the Western Australian Tourist Development Authority. (i) From 1 July 1969, revenue from both motor vehicle licences (less an amount retained for costs of administration) and certain fees has been paid to the Main Roads Trust Account, as required by the *Traffic Act Amendment Act (No. 2), 1969*. * Revised.

General Expenditure

The following table gives a summary of the expenditure of local government authorities during the five years 1968-69 to 1972-73. Expenditure from loan funds is not included, but appears in the next section *Loan Transactions*.

SUMMARY OF LOCAL GOVERNMENT EXPENDITURE (a)
(\$'000)

Nature of expenditure	1968-69	1969-70	1970-71	1971-72	1972-73
General administration	(b) 4,401	3,779	4,520	4,806	5,436
Debt services (c)—					
Interest—					
On loans—					
Municipalities	3,123	3,572	4,165	4,876	5,410
Water Boards	42	43	43	58	74
On overdraft	37	45	57	71	62
Redemption—					
Municipalities	4,991	5,556	6,241	6,736	7,216
Water Boards	66	69	80	80	81
Total (c)	8,259	9,285	10,585	11,821	12,844
Public works and services—					
Roads, paths and bridges—					
Construction and maintenance	15,952	20,818	23,003	23,823	27,105
Other road work	738	932	1,033	979	(d) 534
Street lighting	658	735	811	1,040	1,050
Property and plant—					
Parks, gardens and other recreational facilities	4,583	5,287	6,064	6,657	8,593
Halls and other buildings	2,224	2,681	3,929	6,014	5,179
Vehicles and plant	3,116	3,126	3,257	3,112	3,793
Other property	1,899	3,094	2,729	2,005	2,712
Other public works and services—					
Sanitary and garbage services	2,039	2,569	3,133	3,546	(e) 4,672
Other health services	924	1,059	1,148	1,348	1,687
Sundry works and services—					
Municipalities (f)	4,722	4,769	5,816	7,572	9,076
Water Boards	231	264	365	423	457
Vermin Boards	89	97	68	85	57
Total	37,175	45,430	51,354	56,607	64,914
Grants and donations—					
Western Australian Fire Brigades Board (g)	468	561	647	842	1,050
Hospitals and ambulances	48	43	31	32	38
Other	278	360	328	457	356
Total	794	964	1,006	1,331	1,444
Electricity undertakings (including debt services)	3,119	3,440	4,067	3,968	3,424
Other expenditure	636	808	600	529	611
GRAND TOTAL	54,384	63,706	72,132	79,063	88,672

(a) Loan expenditure is excluded; for particulars see page 310.

(b) Figures not comparable with those for 1969-70 and later years due to a change in accounting procedures allowing an increased proportion of certain administrative expenditure to be charged to expenditure on roads.

(c) Excludes debt services of electricity undertakings.

(d) From 1972-73, expenditure on street cleaning included in *Sanitary and garbage services*.

(e) See footnote (d).

(f) Includes contributions to Regional Traffic Councils.

(g) Contributions required under the Fire Brigades Act.

Loan Transactions

Under the provisions of the local government legislation, local government authorities are constituted as corporate bodies and are authorised to raise loans for works and undertakings and for the liquidation of existing loan debts. The conditions imposed by the *Local Government Act, 1960-1975* in relation to loan raisings, the levying of loan rates, the expenditure of loan moneys and the repayment of loans are summarised on pages 140-2 under the heading *Financial Provisions*.

Loans are raised mainly from banks, insurance companies and superannuation funds. The State Government exercises a measure of supervision over the loan transactions of local government authorities and, where a loan is repayable in full at maturity, maintains the necessary sinking fund at the Treasury.

The following table gives a dissection of the loan receipts and expenditure of local government authorities in each financial year during the five years ended 1972-73.

LOCAL GOVERNMENT LOAN RECEIPTS AND EXPENDITURE (\$'000)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
RECEIPTS					
Municipalities—					
Ordinary services	12,163	12,914	14,438	12,141	15,877
Health services	419	410	756	895	1,808
Electricity undertakings	1,072	694	707	1,769	1,000
Water Boards	174	72	114	300	163
Total	13,828	14,089	16,014	15,105	18,848
EXPENDITURE					
Municipalities—					
Public works and services—					
Roads, paths and bridges	2,818	3,049	2,975	3,285	3,433
Parks, gardens and other recreational facilities	2,672	2,813	3,020	2,889	2,724
Halls and other buildings	3,309	3,263	4,971	3,437	4,158
Vehicles and plant	1,631	1,801	1,265	1,433	1,874
Electricity undertakings	976	921	925	1,290	632
Other works and services	487	1,118	1,276	1,902	2,171
Redemptions	16	58	....	....	542
Other loan charges, transfers, etc.	93	147	117	62	267
Water Boards	148	70	42	338	143
Total	12,150	13,240	14,592	14,636	15,944

The following table shows the aggregate local government loan debt outstanding at 30 June of each year during the period from 1969 to 1973.

LOCAL GOVERNMENT LOAN DEBT (\$'000)

Nature of debt	At 30 June—				
	1969	1970	1971	1972	1973
Loan debt outstanding	67,407	75,582	83,574	90,767	101,342
Sinking fund balances	*35	*40	*46	*44	51
Net loan debt	*67,372	*75,542	*83,528	*90,723	101,291
Net loan debt on account of—					
Ordinary services	*60,097	*67,593	*76,360	*82,013	90,432
Health services	1,615	1,918	2,495	3,240	4,845
Electricity undertakings	4,903	5,271	3,880	4,450	4,912
Water Boards	757	760	793	1,021	1,103
Total, Net loan debt	*67,372	*75,542	*83,528	*90,723	101,291

* Revised.

PENSION AND SUPERANNUATION SCHEMES

The Western Australian Government and many local government authorities and public corporations have established pension and superannuation schemes for eligible employees and their dependants, to which both employers and employees contribute. These schemes are operated either through separately constituted funds or through life insurance offices.

The *Superannuation and Family Benefits Act, 1938-1975* applies to employees of State Government Departments and some other public authorities. The Act establishes The Superannuation Fund and a Provident Account under the management of a Superannuation Board. Contributions made by the State are paid from the Consolidated Revenue Fund.

The *Superannuation, Sick, Death, Insurance, Guarantee and Endowment (Local Governing Bodies' Employees) Funds Act, 1947-1975* enables local government authorities to establish funds to provide benefits for their employees. Contributions made by an authority are paid from its ordinary revenue.

GOVERNMENT PENSION AND SUPERANNUATION SCHEMES (a)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
OPERATED THROUGH SEPARATELY CONSTITUTED FUNDS					
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	3,603	4,089	5,252	6,956	8,237
Employers	4,340	5,121	6,108	6,712	7,359
Interest, dividends and rents	2,240	2,541	3,003	3,591	4,188
Other	57	236	174	178	159
Total	10,240	11,987	14,537	17,438	19,943
Expenditure—					
Pensions	4,840	5,750	6,482	7,776	8,631
Lump sum payments (b)	949	1,273	1,334	1,640	1,809
Other (c)	96	64	64	65	156
Total	5,885	7,086	7,879	9,481	10,595
Assets at end of year—					
Cash—					
Deposits with Treasury	314	2	501	297	1,565
Other deposits and cash	706	200	233	235	162
Australian Government securities	106	89	12	12	8
Local and semi-governmental securities	33,389	36,954	40,675	46,813	51,735
Mortgages—					
Housing .....	...	564	803	792	966
Other	1,066	1,155	1,556	2,087	2,206
Loans to building societies	440	776	874	868	1,315
Company shares	454	453	547	705	823
Company debentures and notes	673	791	993	1,089	1,274
Other assets	5,377	6,591	7,957	9,509	11,167
Total	42,525	47,574	54,150	62,407	71,223
less sundry creditors, etc.	216	364	283	882	351
Accumulated funds	42,309	47,210	53,867	61,525	70,872
Contributors at end of year	number 19,330	number 19,910	number 21,766	number 24,210	number 26,291
Pensioners at end of year—					
Ex-employees	3,542	3,655	3,853	4,049	4,306
Widows	2,327	2,427	2,482	2,580	2,645
Children	220	209	225	238	235

OPERATED THROUGH LIFE INSURANCE OFFICES

Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	599	679	943	1,070	1,202
Employers	850	963	1,395	1,528	1,758
Surrenders	129	147	161	132	237
Death claims and matured policies	151	223	330	335	271
Other	9	12	23	13	33
Total	1,738	2,023	2,853	3,078	3,502
Expenditure—					
Premiums paid to insurance companies	1,423	1,712	2,261	2,521	2,904
Benefits to contributors—					
On retirement or death	149	215	327	327	293
On resignation or dismissal	106	133	133	118	205
Other	27	31	96	84	54
Total	1,705	2,090	2,816	3,049	3,457
Contributors at end of year	number 3,294	number 3,477	number 3,788	number 4,010	number 4,212

(a) Schemes established by the State Government, local government authorities, public corporations, the University of Western Australia and The Western Australian Institute of Technology. (b) On retirement, death, resignation or dismissal. Includes refunds of contributions. (c) Includes gratuities: \$187 in 1968-69; and \$2,124 in 1969-70.

Parliamentary Superannuation Fund. The *Parliamentary Superannuation Act, 1970-1971* establishes a Parliamentary Superannuation Fund to provide superannuation, pensions and other benefits for former Members of the Parliament of Western Australia and their dependants. The Fund is financed from contributions paid by members and moneys appropriated from the Consolidated Revenue Fund.

PARLIAMENTARY SUPERANNUATION FUND

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Members	51	59	68	88	93
Government	56	95	137	175	314
Interest	31	34	37	39	44
Other .....	....	1	....	....	(b)
Total	138	189	242	302	450
Expenditure—					
Pensions	93	109	180	210	253
Lump sum payments (a)	6	6	75	....	2
Total	100	116	256	210	255
Assets at end of year—					
Cash deposits with Treasury	11	8	3	90	285
Australian Government securities	45	45	45	45	45
Local and semi-governmental securities	541	591	591	592	592
Other	8	53	21	25	25
Total	606	698	660	752	948
less sundry creditors, etc.	6	24	(b)	(b)	(b)
Accumulated funds	600	674	660	752	948
Contributors at end of year	number 81	number 81	number 81	number 81	number 80
Pensioners at end of year—					
Ex-members	29	26	37	33	32
Widows	26	23	27	31	33

(a) On retirement, death, resignation or dismissal. Includes refunds of contributions.

(b) Less than \$500.

Coal Mine Workers' Pensions Fund. The *Coal Mine Workers (Pensions) Act, 1943-1973* establishes a Coal Mine Workers' Pensions Fund to provide pensions and other benefits for persons formerly engaged in coal mining and for their dependants. The Fund is financed from contributions paid by employees and employers and moneys appropriated from the Consolidated Revenue Fund.

COAL MINE WORKERS' PENSIONS FUND

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	51	51	50	51	54
Employers	186	191	190	187	203
Government	80	90	91	93	120
Interest, dividends and rents	129	140	156	169	177
Total	446	472	487	499	554
Expenditure—					
Pensions	282	279	313	366	367
Lump sum payments—					
On retirement or death .....	.... 6	.... 9	.... 8	.... 3	.... 4
On resignation or dismissal	6	8	13	18	1
Other .....	....	....	....	....	....
Total	294	296	334	386	372
Assets at end of year—					
Cash deposits with Treasury	1	9	(a)	105	55
Australian Government securities	118	118	118	118	118
Local and semi-governmental securities	2,331	2,499	2,657	2,666	2,894
Other	29	30	33	33	38
Total	2,478	2,656	2,808	2,922	3,104
less sundry creditors, etc.	3	5	4	4	5
Accumulated funds	2,475	2,651	2,804	2,917	3,099
Contributors at end of year	number 628	number 640	number 622	number 614	number 630
Pensioners at end of year—					
Ex-employees	278	276	274	278	285
Widows and children	208	205	210	227	245

(a) Less than \$500.

Chapter VI—continued

Part 2—Private Finance

CURRENCY

The power to legislate with respect to currency, coinage and legal tender and the issue of paper money is vested by the Constitution in the Commonwealth Parliament. This power was originally exercised by the Commonwealth Government under the Coinage Act of 1909 and the Australian Notes Act of 1910. These Acts, and later amendments were superseded by the *Reserve Bank Act* 1965 and the *Currency Act* 1965, when a decimal currency system was adopted in Australia with effect from 14 February 1966.

Prior to 14 February 1966 the Australian currency was based on the system then in use in the United Kingdom, and therefore had as its unit the pound (£) divided into twenty shillings (s.) each of twelve pence (d.). The *Currency Act* 1965, which replaced the *Coinage Act* 1909-1947, provides for the adoption of a monetary unit known as the 'dollar', equivalent in value to ten shillings in the currency previously in use. The dollar is divided into 100 minor units, or 'cents'. Coins are in the denominations of 50 cents, 20 cents, 10 cents, 5 cents, 2 cents and 1 cent. The *Reserve Bank Act* 1965 authorises the issue of notes in the denominations of one dollar, 2, 5, 10, 20 and 50 dollars, or in any other denomination that the Treasurer determines. Notes currently issued are in the denominations of 1, 2, 5, 10, 20 and 50 dollars.

Australian notes are legal tender in Australia to any amount, coins of the denominations of 5, 10, 20 and 50 cents for amounts not exceeding five dollars, and two-cent and one-cent coins for amounts up to and including 20 cents.

Rates of Exchange

The following table shows the average telegraphic transfer selling rates of exchange for Sydney (New South Wales) on a selection of overseas countries. The figures appearing in the table, which are averages of daily quotations, are based generally on rates quoted by the Commonwealth Trading Bank of Australia.

OVERSEAS EXCHANGE RATES—AVERAGE TELEGRAPHIC TRANSFER SELLING RATES
SYDNEY ON OVERSEAS COUNTRIES: JUNE 1974

Country	Currency	Number to \$A1	Country	Currency	Number to \$A1
Austria	Schillings	26.64	New Zealand	Dollars	1.021
Belgium (a) .....	.....	.....	Norway	Kroner	8.01
Financial rate	Francs	58.26	Noumea	Francs	131.44
Convertible rate	Francs	55.94	Philippine Islands	Pesos	9.822
Canada	Dollars	1.4263	Singapore	Dollars	3.578
China, People's Republic of (b)	Renminbi	2.863	South Africa	Rands	0.9836
Denmark	Kroner	8.79	Spain	Pesetas	84.42
Fiji	Dollars	1.178	Sri Lanka	Rupees	9.618
France	Francs	7.230	Sweden	Kronor	6.436
Germany, Federal Republic of	Deutsche Marks	3.723	Switzerland	Francs	4.407
Greece	Drachmae	43.97	Thailand	Bahts	29.77
Hong Kong	Dollars	7.427	Union of Soviet Socialist Republics (b)	Roubles	1.102
India	Rupees	11.572	United Kingdom	Pounds	0.620
Italy	Lire	958	United States of America	Dollars	1.4850
Japan	Yen	417.16			
Netherlands	Guilders	3.906			

(a) The 'convertible' rate applies to trade transactions accompanied by documentation; in respect of other transactions the 'financial' rate applies. (b) Rate of exchange used in converting import values to Australian currency for the purpose of calculating customs duty.

BANKING

The banking system in Western Australia comprises the Commonwealth banking institutions, The Rural and Industries Bank of Western Australia and the private trading banks, summary details of which are given below.

Commonwealth Banking Institutions

Prior to the operation of the Reserve Bank Act and the Commonwealth Banks Act, passed by the Commonwealth Parliament in 1959, the Commonwealth banking institutions were the Commonwealth Bank, the Commonwealth Trading Bank and the Commonwealth Savings Bank. The Commonwealth Bank, in addition to performing the functions of a central bank, controlled the Australian note issue through a Note Issue Department and also provided special banking facilities through the Rural Credits Department, the Mortgage Bank Department and the Industrial Finance Department. The policy of the Banks was determined by a Commonwealth Bank Board.

The *Reserve Bank Act* 1959 repealed the Commonwealth Bank Acts, the first of which was passed in 1911, and established the Reserve Bank of Australia under the control of a Reserve Bank Board. The Reserve Bank was constituted as the central bank and took over the Note Issue Department and the Rural Credits Department of the former Commonwealth Bank. The function of the Rural Credits Department is to make available to statutory authorities or co-operative associations of primary producers advances to assist the marketing or processing of primary products.

The *Commonwealth Banks Act* 1959 constituted the Commonwealth Banking Corporation, which came into being on 14 January 1960 as the authority responsible for the operations of the Trading Bank, the Savings Bank and a new Development Bank. The Development Bank was formed basically from the Mortgage Bank Department and the Industrial Finance Department of the Commonwealth Bank, to provide finance and advice to persons to assist them in primary production or in the establishment or development of industrial undertakings, particularly small enterprises.

The Rural and Industries Bank of Western Australia

The Rural and Industries Bank of Western Australia was established by the State Government under the Rural and Industries Bank Act of 1944 to replace the former Agricultural Bank of Western Australia. The Bank consists of a Rural Department and a Government Agency Department, and management is vested in five Commissioners. The Rural Department provides general banking services and, since 1956, has also conducted savings bank business through a Savings Bank Division.

Trading Banks

At 30 June 1974 the trading banks conducting business in Western Australia comprised the Commonwealth Trading Bank of Australia, The Rural and Industries Bank of Western Australia (Rural Department), the Australia and New Zealand Banking Group Limited, The Bank of Adelaide, the Bank of New South Wales, the Banque Nationale de Paris, The Commercial Bank of Australia Limited, The Commercial Banking Company of Sydney Limited and The National Bank of Australasia Limited.

The operations of trading banks are governed by the *Banking Act* 1959-1973 (Commonwealth) which places them under a degree of control by the central bank, the Reserve Bank of Australia.

The following table shows the averages of total amounts on deposit with the trading banks and of their outstanding advances during each of the years 1969-70 to 1973-74. The figures relate to Western Australian business only and represent the annual average of amounts as at the close of business each Wednesday. The information is prepared from returns furnished under the requirements of the *Banking Act* 1959-1973 by all trading banks except The Rural and Industries Bank of Western Australia, which supplies information by special arrangement.

TRADING BANKS—AVERAGES OF DEPOSITORS' BALANCES AND BANK ADVANCES
('\$000)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Depositors' balances—					
Commonwealth and State Governments—					
Fixed	3,627	4,163	24,358	53,046	43,542
Current—					
Bearing interest	10	2	92	41	15
Not bearing interest	1,817	1,726	1,676	1,968	3,983
Other than Commonwealth and State Governments—					
Fixed	236,274	231,835	219,918	292,878	374,584
Current—					
Bearing interest	24,887	23,242	22,247	28,288	34,376
Not bearing interest	291,402	283,764	284,256	317,235	372,503
Total	558,017	544,732	552,546	693,456	829,002
Loans, advances and bills discounted (a)	323,824	351,110	357,410	443,330	604,460
Ratio of loans, advances, etc. to total balances (per cent)	58.0	64.5	64.7	63.9	72.9

(a) Excludes loans to authorised dealers in the short-term money market.

In the following table, which relates to Western Australian business only, the average amount on deposit with each trading bank and the average of its outstanding advances during the month of June 1974 are shown, together with the number of branches and agencies of each bank at 30 June 1974.

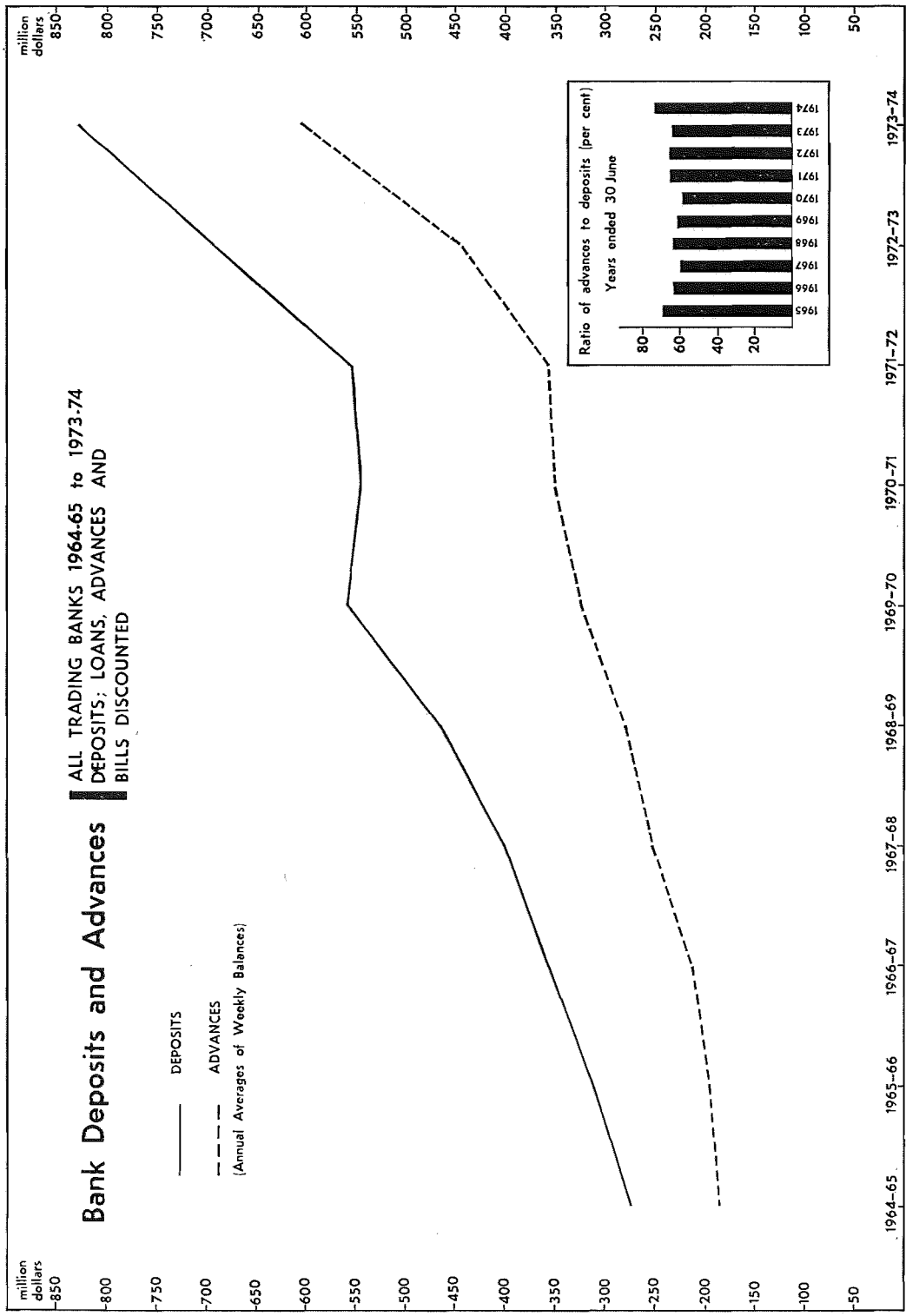
TRADING BANKS—BRANCHES, AGENCIES, DEPOSITS AND ADVANCES: JUNE 1974

Bank	Number of branches (a)	Number of agencies (a)	Depositors' balances (b)			Loans, advances, and bills discounted (b) (c)
			Not bearing interest	Bearing interest	Total	
			\$'000	\$'000	\$'000	\$'000
Commonwealth Trading Bank of Australia	76	30	62,492	84,566	147,056	92,144
The Rural and Industries Bank of Western Australia (Rural Department)	71	21	50,559	73,560	124,119	161,598
Other trading banks—						
Australia and New Zealand Banking Group Limited	73	18	57,248	70,060	127,307	85,499
The Bank of Adelaide	2	3	2,512	7,560	10,071	5,869
Bank of New South Wales	122	33	101,286	119,573	220,859	163,593
Banque Nationale de Paris	1	....	836	7,189	8,025	3,348
The Commercial Bank of Australia Limited	43	13	24,341	24,142	48,482	43,266
The Commercial Banking Company of Sydney Limited	10	....	4,703	7,547	12,250	4,456
The National Bank of Australasia Limited....	80	25	56,645	80,301	136,945	92,422
Total, Other trading banks	331	92	247,569	316,372	563,938	398,451
TOTAL, ALL TRADING BANKS	478	143	360,620	474,498	835,113	652,193

(a) At 30 June. (b) Averages based on amounts at close of business each Wednesday.

(c) Excludes loans to authorised dealers in the short-term money market.

In July 1974 the outstanding advances of the trading banks, excluding The Rural and Industries Bank of Western Australia and the Banque Nationale de Paris, amounted in total to \$492.2 million. Business advances represented \$362.9 million, personal advances \$121.7 million, advances to non-profit organisations \$3.8 million, and to public authorities other than the Australian Government and the State Government \$3.5 million. Business advances were mainly for rural industry (\$95.9 million), for retail and wholesale trade (\$76.8 million) and for manufacturing (\$31.9 million). Of the personal advances, loans for the building or purchasing of homes accounted for \$37.8 million.



The following table contains particulars of the average weekly debits to customers' accounts in each year from 1969-70 to 1973-74 and in each quarter of those years. The figures represent the total of all cheques drawn by customers of all trading banks and, in addition, the Rural Credits Department of the Reserve Bank of Australia and the Commonwealth Development Bank of Australia. Debits to Australian Government and State Government accounts at city branches are excluded as they are subject to abnormal influences. The figures are derived by averaging the debits made during weeks ended on Wednesdays during the several periods shown.

TRADING BANKS
AVERAGE WEEKLY DEBITS TO CUSTOMERS' ACCOUNTS (a)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
WEEKLY AVERAGE (\$ million)					
Average for quarter ended—					
September	227.8	267.6	304.1	315.9	394.0
December	254.8	310.7	322.3	336.8	432.3
March	246.9	297.9	328.4	359.9	452.4
June	255.7	307.3	318.9	412.0	478.8
Average for year	246.4	295.3	318.4	355.9	439.4
PER HEAD OF MEAN POPULATION (dollars)					
Average for quarter ended—					
September	237.4	268.3	293.8	299.2	367.5
December	262.5	308.0	308.7	317.0	400.3
March	251.6	292.2	312.1	337.0	415.4
June	258.6	299.0	302.5	385.3	438.4
Average for year	252.8	291.4	304.2	334.4	405.4

(a) Excludes debits to Australian Government and State Government accounts at city branches; see letterpress immediately preceding table.

Bank Charges. In October 1962 the trading banks discontinued the interstate exchange rates previously charged and instituted a system of charges on current accounts. The charges, comprising three separate elements, are calculated quarterly and debited as one composite item. In addition to a basic maintenance fee, there is a ledger activity fee, and a collection fee on cheques deposited in excess of twenty per quarter. Rebates are allowable on ledger activity fees where credit balances are maintained at the level of \$1,000 or more throughout the quarterly period.

Savings Banks

At 31 December 1974, savings banks operating in Western Australia comprised the Commonwealth Savings Bank of Australia, The Rural and Industries Bank of Western Australia (Savings Bank Division), the Australia and New Zealand Savings Bank Limited, The Bank of Adelaide Savings Bank Limited, the Bank of New South Wales Savings Bank Limited, The Commercial Savings Bank of Australia Limited, the C.B.C. Savings Bank Limited and The National Bank Savings Bank Limited.

Individual depositors may not operate on their savings bank accounts by cheque, but cheque accounts are generally available to non-profit organisations such as friendly, co-operative and charitable societies. Interest is paid on deposits with savings banks and no charge is made for the keeping of accounts. A school savings bank service is provided and its operations, except for the number of accounts open at the end of each year, are included in the figures shown in the following table which shows savings bank transactions for the five years ended 1973-74.

SAVINGS BANK TRANSACTIONS

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Deposits (a) \$'000	719,324	781,226	893,458	1,058,068	1,317,384
Withdrawals (a) \$'000	714,719	763,788	864,129	981,107	1,265,823
Excess of deposits over withdrawals \$'000	4,605	17,438	29,329	76,961	51,561
Interest added to accounts \$'000	14,288	15,295	17,518	19,716	25,281
Accounts open at end of year (b) No.	1,096,466	1,153,420	1,205,448	1,250,576	1,327,699
Depositors' balances at end of year—					
Total \$'000	431,877	464,611	511,457	608,133	684,974
Average per operative account \$	393.9	402.8	424.3	486.3	515.9
Average per head of population \$	436	451	486	569	632

(a) Includes inter-branch transfers but excludes transfers from and to other States.
(i.e. accounts of less than \$2 which have not been operated on for more than two years).

(b) Excluding inoperative accounts

The following table, which relates to Western Australian business only, shows the number of branches and agencies of each of the savings banks at 30 June 1974. The amount of depositors' balances held by each bank at the end of June 1974 is also shown. This information, together with similar particulars for each of the other Australian States, is published monthly in the *Australian Government Gazette*, and is prepared from returns furnished under the requirements of the *Banking Act 1959-1973* by all savings banks except The Rural and Industries Bank of Western Australia (Savings Bank Division), which supplies information by special arrangement.

SAVINGS BANKS—BRANCHES, AGENCIES AND DEPOSITS
JUNE 1974

Bank	Number of branches (a)	Number of agencies (a)	Depositors' balances (b)
			\$'000
Commonwealth Savings Bank of Australia	94	672	289,878
The Rural and Industries Bank of Western Australia (Savings Bank Division)	71	375	146,552
Other savings banks—			
Australia and New Zealand Savings Bank Limited	73	464	62,517
The Bank of Adelaide Savings Bank Limited	2	9	1,248
Bank of New South Wales Savings Bank Limited	122	356	112,989
The Commercial Savings Bank of Australia Limited	43	50	19,135
C.B.C. Savings Bank Limited	10	7	3,345
The National Bank Savings Bank Limited	80	77	49,310
Total, Other savings banks	330	963	248,544
TOTAL, ALL SAVINGS BANKS	495	2,010	684,974

(a) At 30 June. (b) Particulars for the Commonwealth Savings Bank and The Rural and Industries Bank of Western Australia (Savings Bank Division) relate to 30 June, and those for other savings banks to the last Wednesday in June.

In December 1969 approval was given by the Reserve Bank of Australia to a proposal for the establishment of a new type of savings bank account on which interest could be paid at rates almost 1 per cent above the general deposit rate paid at that time by most savings banks. The holder of such an account is required to give three months' notice before a withdrawal may be made. The account must also have, at all times, a minimum balance of \$500 and transactions are in minimum amounts of \$100. The maximum rate of interest payable on these 'investment' accounts at 30 June 1974 was 7.00 per cent per annum.

Bank Interest Rates

The following table shows bank interest rates current at 30 June 1974, the dates from which they became operative, and the rates which were applicable prior to those dates.

BANK INTEREST RATES AT 30 JUNE 1974

Particulars	Rate per annum	Date from which operative	Previous rate per annum
	per cent		per cent
LENDING RATES			
Trading banks—			
Overdraft—			
Less than \$50,000 (a)	9.50	1973—17 September	7.75
\$50,000 and over	(b)	17 September	(b)
Unsecured personal loans (a) (c)	7.25	17 September	6.25
Commonwealth Development Bank of Australia—			
Rural loans (d)	8.50	15 November	6.25
Industrial loans (d)	9.50	15 November	7.25
Reserve Bank of Australia, Rural Credits Department—			
Government-guaranteed loans	7.00	20 September	5.00
Other loans	7.25	20 September	5.25
Savings banks—			
Housing loans to individuals	(e) 7.25–8.00	1 October	(f) 6.25
Other loans—			
Less than \$50,000 (a)	9.50	1 October	7.75
\$50,000 and over	(b)	1 October	(b)
DEPOSIT RATES			
Trading banks—			
Fixed deposits of less than \$50,000 (a)—			
3 months and less than 12 months	6.75	1973—17 September	4.50
12 months and less than 2 years	7.50	1974—14 January	7.00
2 years and less than 4 years	7.50	14 January	7.25
4 years	7.50	1973—17 September	6.00
Fixed deposits of \$50,000 and over (a) (b)—			
30 days to 4 years	8.00	17 September	6.50
Certificates of deposit of \$50,000 and over (b)—			
3 months to 4 years	(g)	17 September	6.50
Savings banks (h)—			
Ordinary accounts (i)—			
\$4,000 and under	3.75–6.00	October	3.75–5.00
Over \$4,000	6.00–6.25	1 October	4.25–5.00
Investment accounts (j)	7.00	1 October	5.00

(a) Maximum rate. (b) Actual rates are a matter for negotiation between banks and their customers. (c) Flat rate.
 (d) Basic rate. (e) Range of rates predominantly charged. (f) Predominant rate. (g) Not subject to maximum rate.
 (h) Prior to 19 March 1974 the maximum interest-bearing amount in any one account was subject to certain limits (see footnote (g) to table on page 292 of *Western Australian Year Book*, No. 13—1974). (i) The lower rate shown has predominated in the case of most banks. (j) Subject to special notice and minimum balance requirements (see previous page).

INSURANCE

General Insurance

General insurance is available to the public in Western Australia from a number of companies and, in some fields, from the State Government Insurance Office. There is also a Motor Vehicle Insurance Trust whose activities are confined to motor vehicle third party insurance.

The *Insurance Act 1973* (Commonwealth) establishes a comprehensive system of supervision of general insurance business throughout Australia. The Act prescribes minimum standards of financial soundness and authorises the investigation of any insurer who fails to meet the required standards or who appears to be likely to fall below those standards. The Act provides for the appointment of an Insurance Commissioner who is responsible, subject to any directions of the Treasurer, for the administration of the legislation.

During 1973-74, there were 154 companies operating in Western Australia. The majority of these were 'tariff' offices, being members of the Fire and Accident Underwriters' Association and issuing the standard policies of the Association at uniform premium rates. The remainder were 'non-tariff' companies effecting insurances at competitive rates and reinsuring direct with Lloyd's or other underwriters.

The State Government Insurance Office covers fire, marine and general insurance risks for State Government instrumentalities and semi-government and local government authorities. It also conducts some classes of insurance business for the general public,

the principal transactions being workers' compensation and comprehensive motor vehicle insurance. By authority of amendments to the State Government Insurance Office Act in 1954 and 1958 the Office engages in personal accident insurance in respect of school children and students under a policy which indemnifies the parent or guardian against the cost of medical and surgical treatment and funeral and other expenses.

The following table gives details of revenue and expenditure relating to fire, marine and general insurance during each of the years from 1969-70 to 1973-74. It contains only selected items of statistics and is therefore not suitable for the construction of a 'Profit and Loss' statement or 'Revenue Account'. The amounts shown as 'Premiums' represent the full amount receivable in respect of policies issued or renewed during the year, less returns, rebates and bonuses paid or credited to policy holders during the year. They are not adjusted to provide for premiums unearned at the end of the year and consequently the amounts differ from 'earned premium income' appropriate to the year. The amounts shown as 'Claims' include provision for outstanding claims and represent claims or losses incurred during the year. Salvage and other amounts recoverable have been deducted. The transactions of The Motor Vehicle Insurance Trust are not included, but are shown in the table on page 322. The figures shown under the heading of 'Contributions to fire brigades' represent payments made to the Western Australian Fire Brigades Board for the operation and maintenance of fire brigades, as required by the Fire Brigades Act.

FIRE, MARINE AND GENERAL INSURANCE (a)
(\$'000)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
REVENUE					
Premiums—					
Motor vehicles	18,073	20,290	22,456	23,360	26,887
Fire	8,815	10,392	11,130	11,962	13,397
Workers' compensation	11,138	12,197	13,187	12,877	20,883
Householders' comprehensive	4,995	5,716	6,557	6,990	8,262
Personal accident	3,105	3,616	4,130	4,238	5,194
Hailstone	1,065	1,065	1,129	1,089	2,604
Marine	2,603	2,964	3,519	3,632	3,741
Other classes	5,847	7,633	8,953	9,410	10,295
Total premiums	55,641	63,873	71,061	73,558	91,263
Other (interest, dividends, rents, etc.—net)	1,703	1,726	2,102	2,312	2,872
Total revenue	57,343	65,599	73,163	75,870	94,135
EXPENDITURE					
Claims—					
Motor vehicles	13,154	14,946	16,324	15,890	19,644
Fire	3,096	4,210	3,988	3,813	4,630
Workers' compensation	8,528	8,616	10,047	12,558	17,770
Householders' comprehensive	1,516	1,663	1,900	2,283	3,278
Personal accident	1,094	1,336	1,684	1,513	1,573
Hailstone	273	374	816	777	1,841
Marine	1,177	1,342	1,790	1,755	2,033
Other classes	2,397	3,306	3,476	3,831	4,044
Total claims	31,237	35,793	40,025	42,420	54,813
Other—					
Management expenses	11,259	12,711	14,636	15,379	18,169
Commission and agents' charges	4,860	5,687	6,321	6,694	7,909
Taxation	1,117	1,683	1,901	2,005	2,167
Contributions to fire brigades	1,459	1,826	2,257	2,816	4,000
Total expenditure	49,931	57,700	65,140	69,315	87,058

(a) Excludes transactions of The Motor Vehicle Insurance Trust (see table on page 322). Operations of the State Government Insurance Office are included.

Life Insurance

Life insurance business throughout Australia is regulated by the *Life Insurance Act* 1945-1973 (Commonwealth), which requires companies to be registered by the Life Insur-

ance Commissioner appointed under the Act. The purpose of the Act, which supersedes State legislation, is to place life insurance business on a uniform basis throughout the Commonwealth and to afford protection to policy holders.

At 30 June 1974, there were thirty-six life insurance companies or societies operating in Western Australia. In terms of total sums insured, life insurance policies relate predominantly to ordinary endowment or whole-of-life insurance and superannuation, although an appreciable volume of industrial business is also undertaken.

Details of policies, sums insured and annual premiums for each class of business are given in the following table for the years 1969-70 to 1973-74.

LIFE INSURANCE

Year	New policies issued			Policies discontinued or reduced			Policies, etc. existing at end of year		
	Policies	Sum insured	Annual premiums	Policies	Sum insured	Annual premiums	Policies	Sum insured	Annual premiums
	Number	\$'000	\$'000	Number	\$'000	\$'000	Number	\$'000	\$'000

ORDINARY BUSINESS

1969-70	....	45,621	316,911	6,470	21,120	79,092	1,823	398,410	1,517,315	36,112
1970-71	....	50,911	371,518	7,265	23,699	107,492	2,364	425,622	1,781,341	41,013
1971-72	....	56,542	450,762	8,615	26,614	134,119	2,868	455,550	2,097,984	46,760
1972-73	....	53,650	488,421	8,510	29,342	157,803	3,283	479,858	2,428,602	51,987
1973-74	....	52,777	544,504	8,863	23,481	173,303	3,451	509,154	2,799,802	57,399

INDUSTRIAL BUSINESS

1969-70	....	10,435	13,004	538	11,160	7,222	304	167,915	78,368	3,218
1970-71	....	9,447	16,462	561	10,785	8,033	333	166,577	86,798	3,446
1971-72	....	9,101	16,122	560	12,488	10,108	384	163,190	92,812	3,621
1972-73	....	8,890	15,768	555	15,650	11,095	420	156,430	97,484	3,756
1973-74	....	7,321	14,821	508	10,264	9,966	351	153,487	102,339	3,916

SUPERANNUATION BUSINESS

1969-70	....	6,513	71,024	2,210	4,311	33,558	1,281	43,089	273,355	9,079
1970-71	....	7,237	108,457	3,488	4,880	43,304	1,427	45,446	338,508	11,140
1971-72	....	6,816	100,288	3,113	4,691	51,451	1,751	47,571	387,345	12,502
1972-73	....	6,513	115,867	3,479	4,954	51,293	1,657	49,130	451,919	14,324
1973-74	....	7,819	201,221	5,581	(a) 11,200	79,104	2,335	45,749	574,035	17,568

ORDINARY, INDUSTRIAL AND SUPERANNUATION BUSINESS

1969-70	....	62,569	400,938	9,218	36,591	119,872	3,409	609,414	1,869,038	48,409
1970-71	....	67,595	496,437	11,314	39,364	158,828	4,123	637,645	2,206,647	55,599
1971-72	....	72,459	567,171	12,288	43,793	195,678	5,004	666,311	2,578,140	62,884
1972-73	....	69,053	620,052	12,543	49,946	220,192	5,360	685,418	2,978,000	70,067
1973-74	....	67,917	760,547	14,950	44,945	262,375	6,134	708,390	3,476,177	78,883

(a) Increase due mainly to conversion of a superannuation scheme from individual policies to a blanket policy.

Motor Vehicle Third Party Insurance

Third party insurance in connection with motor vehicle accidents became compulsory on 1 July 1944 under the provisions of the Motor Vehicle (Third Party Insurance) Act of 1943. The Motor Vehicle Insurance Trust was established by an amendment to the Act in 1948 and comprises the general manager of the State Government Insurance Office, three members nominated by the Fire and Accident Underwriters' Association of Western Australia, and one nominee of those participating approved insuring organisations which are not members of the Association.

The Trust administers a Motor Vehicle Insurance Fund in which approved insurers participate. Premiums received from motor vehicle third party insurance and revenue from other sources constitute annual 'pools' and, after payment of claims and other

expenses appropriate to each pool, the resulting profit or loss is shared by the participating insurers, which include the State Government Insurance Office. These shares cannot be finally determined until the last claim is paid and it is usually several years before a pool has satisfied all the claims attributable to it. For this reason, the figures given in the following table are subject to progressive revision as the business of each pool approaches finality.

THE MOTOR VEHICLE INSURANCE TRUST
(£'000)

Revenue and expenditure	Pool (a) for the year—				
	1969-70	1970-71	1971-72	1972-73	1973-74
Revenue—					
Premiums	12,570	14,322	15,222	15,862	(b) 19,055
Interest received	2,773	2,888	2,268	1,497	470
Total revenue	15,343	17,210	17,490	17,359	(b) 19,524
Expenditure—					
Claims (c)	12,510	12,903	13,989	13,865	(d) 16,366
Commission	64	68	70	71	75
Management expenses	289	361	433	385	424
Taxation.....	20	16	10	9	14
Total expenditure	12,883	13,347	14,501	14,330	(d) 16,879

(a) See accompanying letterpress *Motor Vehicle Third Party Insurance*. Figures are revised to 30 June 1974. (b) Inclusive of \$4.33 million unearned premiums. (c) Includes estimate for claims outstanding. (d) Includes estimate of \$3.27 million for claims not notified.

Health Insurance Organisations

Voluntary health insurance is offered by a number of organisations which provide one or more types of benefit covering such items as hospitals and medical fees, funeral expenses and sick pay to or on behalf of contributing members and their dependants. They include societies registered under the *Friendly Societies Act, 1894-1964* and other organisations registered under the *National Health Act 1953-1975* (Commonwealth).

Benefits are available in a wide range to meet the cost, either wholly or in part, of such services as treatment by a general or specialist medical practitioner (including surgical operations and obstetrical attention), X-ray, cardiographic and pathological examinations, physiotherapy, dental treatment, hospital care, home nursing and ambulance transport. In many cases, the Australian Government pays a benefit additional to that received from the organisation. Reference to these additional benefits is made in Chapter V—*Social Conditions*. Members of friendly societies may contribute also for the supply of medicines and some societies maintain endowment assurance funds and supplementary death benefit funds.

The following tables give details, for the years 1969-70 to 1973-74, of the membership and the financial activities of friendly societies registered under the *Friendly Societies Act*. 'Benefit' members are those who contribute to the Sick and Funeral Fund of a society and 'other' members are principally those who pay only for medical and hospital benefits.

FRIENDLY SOCIETIES—NUMBER, MEMBERS AND SICKNESS BENEFITS

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Registered societies	11	11	11	11	11
Branches	246	246	243	238	237
Members at end of year—					
Benefit members of sick and funeral funds.....	15,175	14,841	14,087	13,781	13,424
Other members	38,648	39,628	50,304	56,141	66,832
Sickness benefits—					
Number of members paid	2,158	1,945	1,877	1,692	1,622
Number of weeks of sick pay	50,580	48,633	48,189	46,785	44,868

FRIENDLY SOCIETIES—REVENUE AND EXPENDITURE
(S'000)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Revenue—					
Fees, contributions and levies	2,756	2,947	3,734	4,018	5,007
Interest, dividends and rent	178	192	193	193	204
Other	73	260	91	153	307
Total revenue	3,008	3,399	4,018	4,364	5,518
Expenditure—					
Sick pay	39	38	38	35	34
Medical attendance and medicine	2,521	2,660	3,294	3,699	4,463
Death benefits	44	44	52	44	57
Administration	202	227	260	285	354
Other	134	114	246	204	246
Total expenditure	2,940	3,082	3,889	4,267	5,154
Balance of funds at end of year	4,095	4,411	4,541	4,638	5,002

CO-OPERATIVE SOCIETIES

Co-operative societies are divided into three classes, namely (i) those engaged in the manufacture and marketing of primary products and trade requirements, (ii) those engaged in retailing general household requirements, and (iii) those engaged in activities covered by both classes (i) and (ii). The first class may be described briefly as producers' co-operative societies and the second as consumers' co-operative societies. Co-operative societies in Western Australia are registered under the provisions of the *Companies (Co-operative) Act, 1943-1959* or the *Co-operative and Provident Societies Act, 1903-1973*.

CO-OPERATIVE SOCIETIES (a)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of—					
Societies	67	66	68	67	65
Members	65,770	66,062	53,984	56,869	68,604
Sales of goods (b)	\$'000	\$'000	\$'000	\$'000	\$'000
Less Cost of goods sold	79,383	79,544	78,638	70,842	133,714
	70,266	70,772	67,164	59,613	115,747
Trading profit (b)	9,117	8,772	11,474	11,230	17,967
Add Other revenue	21,086	22,512	27,424	28,315	43,651
Less Other expenditure—					
Salaries and wages	24,971	25,545	14,773	14,561	20,916
Other			18,189	18,647	29,336
Net surplus	5,233	5,739	5,936	6,336	11,366
Dividends or interest paid	814	816	796	854	1,883
Rebates and bonuses	3,439	3,258	3,498	1,337	3,580
Liabilities—					
Paid-up capital	12,684	13,111	13,302	14,272	15,814
Accumulated profits (net)	Dr. 88	Dr. 132	169	Dr. 447	Dr. 363
Reserves	11,413	9,485	9,984	13,768	18,358
Loan capital	52,607	54,691	60,827	102,514	110,914
Bank overdraft	14,145	11,605	5,120	3,715	11,487
Creditors	13,275	14,883	16,317	17,542	17,586
Other	3,136	5,010	4,593	3,675	6,790
Total	107,171	108,654	110,311	155,039	180,585
Assets—					
Land and buildings	8,318	9,531	10,809	9,887	10,217
Plant and machinery	56,523	53,904	55,821	63,091	82,253
Stocks	8,792	7,899	7,226	7,012	9,433
Debtors	25,918	28,869	27,357	29,831	44,491
Cash on hand and on deposit	1,987	1,947	2,114	36,968	22,734
Other	5,633	6,502	6,984	8,249	11,458
Total	107,171	108,654	110,311	155,039	180,585

(a) The financial years shown do not relate to a uniform accounting period, the actual period varying according to the financial year adopted by individual societies. (b) Figures for the year 1973-74 are not comparable with those for earlier years because they include an accounting period of 23 months in respect of 1 society which changed its year of record.

REGISTERED BUILDING SOCIETIES

Building societies in Western Australia are registered under the provisions of the *Building Societies Act, 1920-1970* primarily for the purpose of raising funds to assist members by granting loans, secured on mortgage, to build or acquire homes. They also provide a means of investment for shareholder members, trustee funds and other depositors. The funds of the societies may be in the form of payment for fully-paid shares, subscriptions for contributing shares, money placed on deposit, or negotiated loans. Another important source of revenue became available to the societies in 1956-57 when, under the *Housing Agreement Act 1956* (Commonwealth), it was provided that moneys should be allocated to approved institutions from Australian Government funds advanced to the States for housing. The current legislation, the *Housing Agreement Act 1973* (Commonwealth), as amended by the *Housing Agreement Act 1974*, provides financial assistance to the States during the five-year period ending 30 June 1978. The Act requires that, of the total amount advanced to a State in any year, not less than 20 per cent nor more than 30 per cent (which may, however, be exceeded in certain specified circumstances) shall be made available to building societies and some other institutions for the provision of loans to assist borrowers to build or purchase homes for themselves and their families.

The Building Societies Act provides for the constitution of a Building Societies Advisory Committee of five members, comprising the Registrar of Building Societies as chairman, the President of the State branch of the Commonwealth Institute of Valuers, two persons who are qualified and experienced in building society management and practice, and an officer of the State Public Service nominated by the Minister.

The functions of the Committee, as set out in the Act, are to make recommendations and submit proposals to the Minister with respect to regulations and model rules to be made under the Act; any action to be taken for promoting, encouraging and assisting in the formation of societies; improving the methods of operation of societies; charges which societies may make on and require to be paid by their members, other than share subscriptions and repayment of advances; the financing of societies in their operations and the protecting of the finances of societies; promoting the building of dwelling-houses by co-operative effort; determining and specifying the minimum standards of construction of dwelling-houses and other buildings to be accepted before advances can be made; and such other matters as the Minister refers to the Committee from time to time, or as may be prescribed.

REGISTERED BUILDING SOCIETIES (a)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
PERMANENT SOCIETIES					
Number of—					
Societies on register at 30 June	15	15	15	11	11
Shareholders	85,796	115,334	146,201	197,161	231,985
Borrowers	23,061	26,083	32,409	39,625	49,685
Loans paid over during year	\$'000	\$'000	\$'000	\$'000	\$'000
Administration expenses (b)	86,376	77,505	103,326	132,622	152,809
	1,555	2,577	3,896	5,565	7,621
Liabilities—					
Investing members' funds	112,238	166,497	234,828	320,120	405,186
Deposits	49,700	70,720	96,272	135,715	149,420
Loans due to—					
Government	13,756	15,622	16,344	18,604	21,045
Other	13,407	13,425	13,274	13,191	17,832
Other liabilities (c)	2,177	1,607	3,621	2,998	3,743
Total liabilities	191,278	267,870	364,337	490,628	597,226
Assets—					
Advances on mortgages (c)	163,979	223,909	301,171	401,745	497,356
Other assets	27,299	43,962	63,166	88,883	99,871
Total assets	191,278	267,870	364,337	490,628	597,226

REGISTERED BUILDING SOCIETIES (a)—continued

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
TERMINATING SOCIETIES					
Number of—					
Societies on register at 30 June	303	339	375	416	472
Shareholders	6,356	6,802	6,916	7,066	7,350
Borrowers	4,452	4,633	4,713	4,850	5,170
Loans paid over during year	\$'000	\$'000	\$'000	\$'000	\$'000
Administration expenses (b)	(d) 5,105	(d) 6,644	(d) 3,681	5,833	9,001
	183	223	218	279	302
Liabilities—					
Members' funds—					
Share subscriptions	1,715	1,777	1,860	978	974
Other	641	685	756	709	819
Loans due to—					
Government	14,301	16,996	17,225	20,375	22,426
Banks				12,199	15,125
Insurance companies	13,996	15,410	16,436	3,881	4,686
Other				1,354	2,015
Other liabilities (c)	184	233	339	476	983
Total liabilities	30,837	35,102	36,616	39,971	47,028
Assets—					
Advances on mortgages (c) (e)	27,690	31,795	32,940	35,113	39,271
Other assets	3,147	3,306	3,676	4,859	7,757
Total assets	30,837	35,102	36,616	39,971	47,028

(a) The financial years shown do not relate to a uniform accounting period, the actual period varying according to the financial year adopted by individual societies. (b) Excludes all interest payments. (c) Excludes loans in process and advances approved but not yet paid. (d) Includes inter-society loans. (e) Advances on mortgages are partly on a gross basis; a net figure may be derived by subtracting the liability item 'share subscriptions'.

INSTALMENT CREDIT FOR RETAIL SALES

The statistics in the following tables cover all types of instalment credit schemes which relate primarily to the financing of retail sales of goods in which repayment is made by regular predetermined instalments. Types of schemes covered include hire purchase, time payment, budget account and personal loans which relate primarily to the financing of retail sales of goods. In these statistics the term 'retail sales' relates not only to retail sales by retail establishments coming within the scope of the Censuses of Retail Establishments conducted periodically by the Commonwealth Statistician, Canberra (see Chapter IX, Part 2), but includes also other sales of goods to final purchasers (e.g. plant and machinery).

Credit schemes which do not involve repayment by regular predetermined instalments, lay-bys, and all credit transactions which relate mainly to the financing of 'producer' type goods such as plant, machinery and motor vehicles which would normally be used for commercial purposes are outside the scope of these statistics. In addition the instalment credit transactions of businesses covered by these statistics which relate primarily to the financing of sales of land, buildings, property improvements, travel and services such as repair and maintenance work, and schemes involving rental or leasing are not included.

In the following tables, two major classifications of instalment credit statistics are adopted: type of credit and type of business.

For the period up to 30 June 1973, 'type of business' information is shown as 'retail' or 'non-retail'. The term 'retail businesses' relates to retailers who provide their own finance, and also to subsidiary finance businesses set up by retailers (or by groups engaged mainly in retail trading), primarily for the purpose of financing their retail sales. All other businesses engaged in instalment credit financing of retail sales, irrespective of whether their main activity is finance, constitute 'non-retail finance businesses'.

Details of balances outstanding at 30 June 1969 to 1973, according to type of credit and type of business, are given in the next table.

INSTALMENT CREDIT FOR RETAIL SALES
BALANCES OUTSTANDING (a)
(\$ million)

At 30 June—	Type of credit		Type of business		
	Hire purchase	Other instalment credit	Retail (b)	Non-retail finance	Total
1969	132.9	38.0	27.6	143.3	170.9
1970	146.7	40.7	24.7	162.6	187.3
1971	168.5	35.9	23.2	181.2	204.4
1972	178.6	33.8	21.4	191.0	212.4
1973	192.7	32.8	23.3	202.1	225.4

(a) Includes hiring charges, interest and insurance. (b) Includes subsidiary finance businesses set up by retailers primarily for financing their retail sales.

From 1 July 1973, statistics of type of business have been classified according to 'finance companies' and 'other businesses'. A definition of the former term is given in the section *Finance Companies* on page 327. Most of the businesses included in the category 'other businesses' are those operating retail establishments which come within the scope of the Census of Retail Establishments and which provide instalment credit for retail sales of consumer commodities. The remaining businesses comprise unincorporated finance businesses, and businesses other than wholesalers and manufacturers, whose financing activities would generally be regarded as ancillary to some other function.

Balances outstanding in Western Australia at 30 June 1974 in respect of instalment credit for retail sales amounted to \$161.4 million for finance companies and \$16.1 million for other businesses.

In interpreting movements in outstanding balances, it should be noted that these movements are determined not only by new amounts financed and cash collections under existing agreements, but also by other liquidations of balances such as rebates allowed for early payouts and bad debts written off.

More detailed information may be found in the monthly release *Instalment Credit for Retail Sales* published by the Commonwealth Statistician, Canberra.

The following table shows for broad commodity groups the amount financed according to type of credit and type of business during the period 1968-69 to 1972-73.

INSTALMENT CREDIT FOR RETAIL SALES
AMOUNT FINANCED (a)
(\$ million)

Year	Type of credit		Type of business		
	Hire purchase	Other instalment credit	Retail (b)	Non-retail finance	Total
MOTOR VEHICLES, TRACTORS, ETC.					
1968-69	60.2	21.7	6.2	75.7	81.9
1969-70	73.2	20.0	5.1	88.1	93.2
1970-71	89.0	12.5	4.2	97.3	101.5
1971-72	92.1	13.7	3.8	102.0	105.8
1972-73	97.9	12.7	4.4	106.2	110.6
PLANT AND MACHINERY					
1968-69	12.6	4.7	2.0	15.3	17.3
1969-70	11.4	5.2	1.0	15.5	16.6
1970-71	13.0	0.8	0.6	13.2	13.8
1971-72	10.8	0.8	0.5	11.1	11.6
1972-73	15.3	1.4	0.5	16.2	16.7

INSTALMENT CREDIT FOR RETAIL SALES
AMOUNT FINANCED (a)—continued
 (\$ million)

Year	Type of credit		Type of business		
	Hire purchase	Other instalment credit	Retail (b)	Non-retail finance	Total
HOUSEHOLD AND PERSONAL GOODS					
1968-69	14.0	11.4	18.7	6.7	25.4
1969-70	15.1	11.0	19.0	7.1	26.1
1970-71	16.0	11.2	19.4	7.8	27.2
1971-72	15.8	12.4	20.3	7.9	28.2
1972-73	17.4	14.5	23.5	8.4	31.9
TOTAL					
1968-69	86.8	37.8	26.9	97.7	124.7
1969-70	99.7	36.2	25.2	110.7	135.9
1970-71	118.0	24.5	24.2	118.3	142.5
1971-72	118.7	26.8	24.6	121.0	145.6
1972-73	130.6	28.5	28.4	130.8	159.2

(a) Excludes hiring charges, interest and insurance. (b) Includes subsidiary finance businesses set up by retailers primarily for financing their retail sales.

The next table shows for broad commodity groups the amount financed according to type of credit and type of business during 1973-74.

INSTALMENT CREDIT FOR RETAIL SALES (a)
AMOUNT FINANCED (b): 1973-74
 (\$ million)

Commodity	Type of credit		Type of business		
	Hire purchase	Other instalment credit	Finance companies (c)	Other businesses	Total
Motor vehicles, etc.	92.1	6.6	96.8	1.9	98.7
Household and personal goods	20.2	7.3	9.2	18.3	27.5
Total	112.3	13.9	106.0	20.2	126.2

(a) Excluding the financing of 'producer' type goods such as plant, machinery and motor vehicles which would normally be used for commercial purposes. (b) Excludes hiring charges, interest and insurance. (c) Includes subsidiary finance businesses set up by retailers primarily for financing their retail sales.

FINANCE COMPANIES

Information relating to the lending operations of finance companies in Western Australia is given in the following tables. A comprehensive account of the scope of the statistics, definitions, and more complete details of the transactions of finance companies are given in the annual bulletin *Finance Companies Transactions* and the monthly statement *Finance Companies*, published by the Commonwealth Statistician, Canberra. Details of breaks in continuity of the series, indicated by a line drawn across a column between two consecutive figures, are given in the annual bulletin for the year 1972-73.

For the purpose of these statistics, finance companies are defined as companies which are engaged mainly in providing to the general public (businesses as well as persons in their private capacity) credit facilities of the following types: hire purchase and other instalment credit for retail sales; wholesale finance; other consumer and commercial loans; factoring; leasing of business equipment and plant; and bill of exchange transactions. The finance companies covered in these statistics, in so far as they provide credit for retail sales, are also included in the statistics shown in the preceding section *Instalment Credit for Retail Sales*.

Amount Financed. The following table shows the amount financed, according to type of agreement, *i.e.* instalment credit for retail sales, wholesale finance, personal loans, other consumer and commercial loans, in Western Australia for the years 1969-70 to 1973-74.

FINANCE COMPANIES
AMOUNT FINANCED: TYPE OF AGREEMENT
(\$ million)

Year	Instalment credit for retail sales	Wholesale finance	Personal loans	Other consumer and commercial loans	Total
1969-70	98.1	90.5	5.8	106.3	300.8
1970-71	106.8	102.3	3.8	73.9	286.7
1971-72	108.3	121.1	6.6	73.9	310.0
1972-73	112.5	130.9	8.5	121.1	372.9
1973-74	106.1	176.9	10.0	158.3	451.3

Collections and other Liquidations of Balances. The following table shows the collections and other liquidations of balances, according to type of agreement, *i.e.* instalment credit for retail sales, wholesale finance, and other consumer and commercial loans, made by finance companies in Western Australia for the years 1969-70 to 1973-74.

FINANCE COMPANIES
COLLECTIONS AND OTHER LIQUIDATIONS OF BALANCES
(\$ million)

Year	Instalment credit for retail sales	Wholesale finance	Personal loans	Other consumer and commercial loans		Total, all contracts
				Contracts including charges	Contracts excluding charges	
1969-70	107.2	87.8	(a)	60.6	45.0	300.6
1970-71	122.3	100.5	5.8	45.5	52.7	326.8
1971-72	134.9	115.1	5.7	44.3	62.5	362.5
1972-73	145.3	135.1	8.1	51.7	77.4	417.6
1973-74	127.9	170.4	10.3	86.2	78.9	473.5

(a) Not available separately; included in *Other consumer and commercial loans*.

Balances Outstanding. The following table shows the balances outstanding in Western Australia, according to type of agreement, and the total balances outstanding at the end of each year from 1969-70 to 1973-74.

FINANCE COMPANIES
BALANCES OUTSTANDING: TYPE OF AGREEMENT
(\$ million)

Year	Instalment credit for retail sales	Wholesale finance	Personal loans	Other consumer and commercial loans		Total, all contracts
				Contracts including charges	Contracts excluding charges	
1969-70	143.0	16.1	(a)	100.6	74.6	334.4
1970-71	162.7	19.6	7.2	91.1	76.4	356.9
1971-72	171.2	27.2	9.8	79.6	77.2	365.0
1972-73	177.1	26.6	12.6	64.5	107.4	388.3
1973-74	161.6	36.8	15.5	121.7	119.1	454.8

(a) Not available separately; included in *Other consumer and commercial loans*.

Business Plant and Equipment on Lease. The following table shows the initial capital cost of business plant and equipment on lease and the balances outstanding in Western Australia at the end of each year from 1969-70 to 1973-74.

FINANCE COMPANIES—BUSINESS PLANT AND
EQUIPMENT ON LEASE
(\$ million)

Year	Initial capital cost of goods newly leased during year	Balances outstanding at end of year
1969-70	16.9	27.4
1970-71	21.5	37.5
1971-72	21.3	48.9
1972-73	30.1	58.2
1973-74	47.2	90.6

BANKRUPTCY

Under the provisions of the *Bankruptcy Act* 1966-1973 (Commonwealth), which is administered by the Attorney-General, the State of Western Australia is a proclaimed Bankruptcy District and the Supreme Court of Western Australia has federal jurisdiction in bankruptcy matters. There is a Registrar in Bankruptcy whose duties include the holding of public sittings for the examination of bankrupts, the examination of witnesses, the issuing of bankruptcy notices and creditors' petitions, and such other duties as are specified in the Act or delegated to him by the Court. Another bankruptcy officer is the Official Receiver, who acts under the general authority and direction of the Court and whose duties relate to the conduct of the debtor and to the realisation and administration of his estate.

An order for the sequestration of an estate may result from a petition by either the debtor or the creditors. In cases where it appears certain that the assets of a deceased estate will be insufficient to meet the debts, the executor or a creditor may petition to have the estate administered in bankruptcy.

Compositions, deeds of assignment and deeds of arrangement are provided for in the Act. A debtor may call a meeting of his creditors and either compound with them to pay a certain sum in the \$ as full settlement of his debts or enter into a deed of arrangement allowing him a specified time in which to pay. On the other hand, his creditors may require him to execute a deed of assignment, by which control of his affairs passes to a trustee registered under the Act, or to file a petition in bankruptcy.

Reference to bankruptcy also appears in Chapter V, Part 6—*Law, Order and Public Safety* on page 279.

The following table relates to bankruptcy proceedings during each of the years from 1969-70 to 1973-74.

BANKRUPTCY PROCEEDINGS

Year	Sequestration orders (a)				Compositions and assignments without sequestration (b)		
	On petition of—		Assets (\$'000)	Liabilities (\$'000)	Number	Assets (\$'000)	Liabilities (\$'000)
	Creditors	Debtors					
1969-70	11	218	847	1,924	64	1,098	1,421
1970-71	3	289	637	2,322	98	2,483	2,702
1971-72	21	387	1,300	3,478	110	2,339	3,806
1972-73	18	346	3,498	3,693	108	2,017	3,381
1973-74	25	275	921	3,288	69	1,177	1,642

(a) Includes orders for administration of deceased persons' estates.

(b) Includes deeds of arrangement.

PUBLIC TRUST OFFICE

The *Public Trustee Act, 1941-1975* establishes the Public Trust Office administered by the Public Trustee.

The principal functions of the Public Trustee are the administration of the estates of deceased persons, including intestate estates; the management of the affairs of certain persons rendered incapable by mental illness or other infirmity; and the receipt of moneys under the control or order of the Supreme Court of Western Australia, to be invested and used for the maintenance, education or other benefit of the persons entitled thereto. The Public Trustee receives from the Workers' Compensation Board funds to be held in trust for investment and to be paid out at the direction of the Board. He may also act in the capacity of agent in cases of need.

PUBLIC TRUST OFFICE

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Matters accepted for administration—					
Estates of—					
Deceased persons	1,354	1,262	1,317	1,339	1,469
Mentally incapable persons	414	339	390	371	273
Infirm persons	21	23	31	40	48
Uncared-for property .....	....	4	3	3	3
Court trusts	230	262	275	167	143
Workers' compensation	96	105	102	102	70
Agencies	28	23	20	23	14
Total	2,143	2,018	2,138	2,045	2,020
Matters on hand at 30 June	6,069	6,279	6,535	6,276	6,451
Value of transactions—	\$'000	\$'000	\$'000	\$'000	\$'000
Trust moneys received	9,522	9,391	9,829	10,745	12,220
Trust moneys paid	8,601	8,322	8,577	10,076	10,692
Unclaimed moneys paid to Consolidated Revenue Fund	18	34	84	50	47
Value of estates and other matters on hand at 30 June	30,282	32,276	33,781	35,311	39,602

OFFICE OF TITLES

The Office of Titles is established under the provisions of the *Transfer of Land Act, 1893-1972*. The Act provides for the appointment of a Commissioner of Titles, a Deputy Commissioner of Titles and a Registrar of Titles. The principal functions of the Office are the registration and recording of all instruments and dealings affecting privately-owned land or land alienated from the Crown, the certification and issue of titles to land, and the maintenance of a register of legal ownership.

The number of documents accepted for registration during the year ended 30 June 1974 was 153,421, an increase of 4.45 per cent from the number in 1972-73.

OFFICE OF TITLES

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of registrations—					
Certificates of title—					
Crown grant	2,731	1,559	1,344	1,746	1,656
Other	19,363	19,095	21,878	25,247	27,404
Leases—					
Crown	363	254	269	257	193
Other	18	47	35	42	47
Transfers	38,015	31,700	35,618	45,599	50,663
Mortgages	33,970	29,085	31,901	39,775	40,952
Discharges of mortgages	27,075	24,126	26,750	31,877	35,047
Caveats lodged	5,778	6,910	8,684	8,643	6,649
Amount of consideration—	\$'000	\$'000	\$'000	\$'000	\$'000
Transfers	482,253	385,759	436,966	644,383	694,830
Mortgages	398,059	410,195	445,488	567,646	546,028
Fees collected	866	785	860	1,544	1,913
Expenditure	796	891	1,033	1,143	1,445
Assurance Fund—					
Amount of credit at 30 June	246	260	278	296	315

COMPANIES REGISTRATION OFFICE

The Registrar of Companies is responsible, subject to the Minister, for the administration of the *Companies Act, 1961-1973*, the *Business Names Act, 1962*, the *Associations Incorporation Act, 1895-1969* and the *Bills of Sale Act, 1899-1973*.

The following table gives a summary of operations under these Acts during the five-year period ended 31 December 1973.

COMPANIES REGISTRATION OFFICE

Particulars	1969	1970	1971	1972	1973
Number of registrations effected—					
Local companies (a)	2,176	2,524	1,969	1,584	1,750
Foreign companies (b)	422	624	529	431	374
Business names	15,119	16,624	16,340	17,300	18,742
Associations	111	113	141	164	177
Bills of sale and liens—					
Registrations	48,287	71,467	87,165	81,896	93,293
Satisfactions entered	638	562	745	790	909
Nominal capital of local companies registered during year	\$'000 195,145	\$'000 389,706	\$'000 115,873	\$'000 76,701	\$'000 58,226
Amount of bills of sale and liens—					
Registrations	141,496	208,059	303,542	*113,436	286,763
Satisfactions entered	5,822	4,708	5,790	6,919	15,445
Fees collected (c)	704	1,030	1,226	1,454	1,684

(a) Companies incorporated in Western Australia. (b) A company incorporated outside Western Australia is required to register as a 'foreign' company if carrying on business in Western Australia. (c) Year ended 30 June. * Revised.

LOTTERIES AND BETTING

Lotteries

The Lotteries Commission was established under the provisions of the *Lotteries (Control) Act, 1932*. The legislation currently in force is the *Lotteries (Control) Act, 1954-1972*. The Commission, as constituted by the Act, consists of four members appointed by the Minister. The principal functions of the Commission are to conduct lotteries in Western Australia to raise money for charitable purposes, and to control lotteries conducted by other persons.

LOTTERIES COMMISSION—NUMBER OF CONSULTATIONS AND TICKET SALES

Year	Type of lottery								Total
	\$10	\$5	\$4	\$3	\$2	\$1.99	\$1	50c	
NUMBER OF CONSULTATIONS									
1969-70	1	....	9	2	....	8	72	92
1970-71	1	....	1	7	....	11	77	97
1971-72	1	7	....	15	84	107
1972-73	1	2	....	3	1	18	85	110
1973-74	1	1	2	1	4	1	19	88	117
NUMBER OF TICKETS SOLD ('000)									
1969-70	50	....	450	100	....	800	7,200	8,600
1970-71	50	....	50	450	....	1,100	7,700	9,350
1971-72	100	700	....	1,500	8,400	10,700
1972-73	100	200	....	300	100	1,800	8,500	11,000
1973-74	100	100	200	100	400	100	1,900	8,800	11,700
RECEIPTS FROM TICKET SALES (\$'000)									
1969-70	250	....	1,350	200	....	800	3,600	6,200
1970-71	250	....	150	900	....	1,100	3,850	6,250
1971-72	300	1,400	....	1,500	4,200	7,400
1972-73	500	800	....	600	199	1,800	4,250	8,149
1973-74	1,000	500	800	300	800	199	1,900	4,400	9,899

The Act requires that all prizes distributed in lotteries conducted by the Commission shall be cash prizes. It is further provided that the total expenses of conducting lotteries in any year, including commission payable on ticket sales and the remuneration of members of the Commission, shall not exceed 25 per cent of the gross amount received from the sale of tickets.

The Commission is required to pay 20 per cent of all moneys received in respect of lotteries that it conducts into a special account, which is kept at the Treasury in terms of the *Hospital Fund Act, 1930-1937*. Moneys remaining to the credit of the Commission after meeting all outgoings authorised by the Act may, with the consent of the Minister, be applied to any approved charitable purpose or in the purchase, improvement or maintenance of lands and buildings for the purposes of the Act.

The table on page 331 shows the number of lotteries conducted by the Commission during the five-year period ended 30 June 1974, the number of tickets sold and the receipts from ticket sales. The financial transactions of the Commission appear in the following table.

LOTTERIES COMMISSION—FINANCIAL TRANSACTIONS
(\$'000)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
GENERAL ACCOUNT					
Receipts from ticket sales	6,200	6,250	7,400	8,149	9,899
Expenses—					
Prize money	3,757	3,803	4,506	4,958	6,008
Commission on ticket sales	479	485	572	624	749
Salaries and superannuation	108	108	125	141	167
Advertising	136	175	175	191	206
Other	77	85	87	99	121
Total	4,557	4,656	5,465	6,012	7,251
Surplus available for distribution	1,643	1,594	1,935	2,137	2,648
ACCUMULATED FUNDS ACCOUNT					
Balance at beginning of year	243	276	251	301	374
Surplus available for distribution	1,643	1,594	1,935	2,137	2,648
Unclaimed prizes	118	92	104	97	164
Rent and interest received	36	68	71	87	118
Other	83	37	2	8	28
Total	2,123	2,067	2,363	2,630	3,331
Grants approved	1,835	1,807	2,052	2,245	2,839
Prizes paid	6	7	7	8	8
Other	6	2	3	3	10
Total	1,847	1,816	2,062	2,256	2,857
Balance at end of year	276	251	301	374	474
AMOUNT OF GRANTS PAID					
Hospitals and medical and health services	1,089	1,334	1,560	1,794	2,042
Homes, orphanages and mission centres	169	208	172	186	246
Infant health services	2	7	9	7	11
Other charitable organisations	212	244	245	287	453
Total	1,472	1,793	1,986	2,274	2,753

Betting

The *Betting Control Act, 1954-1972* and the *Totalisator Agency Board Betting Act, 1960-1973* provide for the regulation and control of betting and bookmaking on horse racing in Western Australia.

The Betting Control Act authorises the Totalisator Agency Board to issue licences enabling the holder to carry on the business of bookmaking on a race-course or at registered premises, and betting by or with a person not so licensed is unlawful.

The Totalisator Agency Board Betting Act gives the Totalisator Agency Board authority to regulate and control off-course betting on totalisators through the Board and betting with the Board. The Board consists of seven members appointed by the Governor, and comprises a chairman nominated by the Minister, three persons nominated by The Western Australian Turf Club, and three persons nominated by the Western Australian Trotting Association.

The application of the Act is confined to areas declared by proclamation to be 'totalisator agency regions'. The first agency established by the Board was opened on 18 March 1961. At 31 July 1974 there were 168 agencies in operation.

The Board derives its principal revenues from commission on bets and from a duty of 1½ per cent on the gross takings of every totalisator, as provided by the *Totalisator Duty Act, 1905-1973*. The Board may also borrow money, subject to the approval of the Treasurer. It is required that the balance of the Board's funds, after meeting all taxes, expenses and allocations, shall be paid in specific proportions to The Western Australian Turf Club and the Western Australian Trotting Association.

Details of taxes, licence fees and duties payable in connection with horse racing are shown on page 297 and the amounts collected during the five-year period ended 30 June 1973 appear in the table *State Government Taxation—Net Amounts Collected* on page 301.

The following table shows the amounts invested on totalisators on race-courses and through agencies of the Totalisator Agency Board, and amounts invested with licensed bookmakers, during the five-year period ended 30 June 1974.

TOTALISATOR INVESTMENTS AND INVESTMENTS WITH LICENSED BOOKMAKERS

Type of investment	1969-70	1970-71	1971-72	1972-73	1973-74
	\$'000	\$'000	\$'000	\$'000	\$'000
Totalisator investments—					
On course	10,920	12,301	14,471	15,314	18,617
Off course (a)	49,993	55,351	68,072	77,060	96,734
Total	60,913	67,652	82,543	92,375	115,351
Investments with licensed bookmakers—					
On course	38,625	39,656	41,693	44,260	53,980
Off course	347	122	146	22	27
Total	38,972	39,778	41,840	44,282	54,008
All investments—					
On course	49,545	51,957	56,165	59,574	72,597
Off course	50,339	55,473	68,218	77,082	96,761
Total	99,884	107,430	124,383	136,657	169,359
Per head of mean population....	\$ 102	\$ 106	\$ 119	\$ 128	\$ 156

(a) Investments made through agencies of the Totalisator Agency Board.

THE STOCK EXCHANGE OF PERTH LIMITED

The Stock Exchange of Perth commenced operations in 1889, and conducted business at a number of locations before moving in December 1968 to its present quarters at Exchange House. These premises were designed and constructed to provide adequate space for total post trading which was introduced in July 1967, replacing the call system in which brokers made bids from their desks as stocks were called by a member of the Exchange staff.

The Stock Exchange of Perth was registered as a limited company under the provisions of the Companies Act on 30 June 1971. At that date there were thirty-five members of the Exchange, and at 30 June 1974 there were thirty members.

The following table gives details of turnover during the four-year period ended 30 June 1974. A revised system of sales recording was introduced in 1970-71 to include both on and off-room sales, and comparable figures for earlier years are not available.

THE STOCK EXCHANGE OF PERTH LIMITED
TURNOVER OF STOCKS AND SHARES
 (Figures supplied by The Stock Exchange of Perth Limited)

Particulars	1970-71	1971-72	1972-73	1973-74
NUMBER OF SHARES TRADED				
	'000	'000	'000	'000
Ordinary—				
Industrial....	26,232	21,935	22,480	16,927
Oil	27,949	17,384	21,448	10,095
Mining	167,127	67,828	66,899	28,090
Preference—				
Industrial....	} 68	{ 174	158	71
Mining				
.....		22	6	8
Total	221,377	107,343	110,992	55,191
VALUE OF TURNOVER				
	\$'000	\$'000	\$'000	\$'000
Shares—				
Ordinary—				
Industrial	29,500	27,831	30,501	25,028
Oil	5,081	5,768	8,327	2,692
Mining	112,162	22,425	20,567	10,947
Preference—				
Industrial	} 99	{ 185	155	114
Mining				
.....		21	4	7
Total	146,843	56,230	59,553	38,788
Commonwealth and semi-government loans	2,007	1,066	3,128	1,611
Debentures, unsecured notes, etc.	1,038	1,577	2,904	599
Total	3,044	2,642	6,032	2,210
Total value of turnover	149,887	58,872	65,585	40,999

CHAPTER VII

LAND TENURE AND SETTLEMENT, WATER SUPPLY AND SEWERAGE

Part 1—Land Tenure and Settlement

An outline of the origin and development of the land tenure system in Western Australia from the early years of settlement is given in Chapter VII of the *Official Year Book of Western Australia*, Nos. 1 and 2 (New Series).

The growth of land settlement in relation to particular agricultural and pastoral activities is dealt with in the relevant sections of Chapter VIII and in the *Statistical Summary from 1829* appearing after Chapter X.

LEGISLATION AND ADMINISTRATION

By the Land Act of 1898, earlier legislation relating to the sale, occupation and management of Crown lands was consolidated and amended. Under a series of Agricultural Lands Purchase Acts which were passed between 1896 and 1904 and consolidated by the *Agricultural Lands Purchase Act, 1909*, provision was made for the repurchase by the Crown of land suitable for closer settlement. The principal criteria applied in the purchase of such land were suitability for wheat or mixed farming and proximity to transport, especially the railways.

The operation of subsequent legislation has not greatly changed the pattern of land development which was created by the *Land Act, 1898* and the *Agricultural Lands Purchase Act, 1909*. The *Land Act, 1933-1972* is now the basic statute controlling the leasing and disposal of Crown land. Closer settlement legislation relates predominantly to schemes for the benefit of returned war-service personnel. Crown land is also leased under the *Mining Act, 1904-1973*, the *Petroleum Act, 1967-1972* and the *Forests Act, 1918-1972*, but no alienations are made under these Acts. In most freehold or leasehold titles of a residential, agricultural or pastoral nature the mineral rights, petroleum rights and, in many instances, the timber rights are reserved to the Crown.

The Department of Lands and Surveys is responsible for the leasing and alienation of Crown land, except where mining and forestry tenures are involved, and is under the control of the Minister for Lands. In certain instances, advisory or partly-executive boards have been created to assist in administration. These include the Land Board, which deals with general applications for land, and the Pastoral Appraisement Board.

Permits and leases for mining purposes are issued by the Department of Mines and those for forestry and timber milling by the Forests Department.

METHODS OF LAND ALIENATION

The principal methods of alienation provided for in the *Land Act, 1933-1972* are conditional purchase, public auction, private tender, selection under Part VIII which supersedes the Agricultural Lands Purchase Act, endowment (including free Crown grants) and reservation for public purposes. In addition to these normal methods of alienation there is provision in the Land Act for the release of land under special circumstances, where particular developmental projects are envisaged. In such cases any agreement must be ratified by the State Parliament.

The various methods of land alienation are described in greater detail in Chapter VII of the *Western Australian Year Book*, No. 8—1969 and earlier issues.

METHODS OF LEASING

Brief reference was made on page 335 to the work of the Department of Lands and Surveys, the Department of Mines and the Forests Department in granting leases of Crown lands in Western Australia. A summary of the activities of each Department in this field is given below, further details appearing in Chapter VII of the *Western Australian Year Book*, No. 8—1969, No. 6—1967 and earlier issues.

Department of Lands and Surveys

Approximately 99 per cent of the Crown land held under lease is covered by tenures granted by the Department of Lands and Surveys under the Land Act, and consists mainly of pastoral leases, special leases, leases of reserves and leases of residential lots. In addition, areas of perpetually-leased farming land have been made available to ex-servicemen under War Service Land Settlement Acts.

Department of Mines

Under the provisions of the *Mining Act, 1904-1973*, various special tenures, of which gold-mining leases, mineral leases and coal-mining leases are the most important, are granted by the Governor in connection with the mining of gold, coal and other minerals. The Act contains provisions relating to the payment of fees, rents and royalties. The Governor may exempt any person or class of persons from the payment of royalties.

Oil search permits and licences are granted by the Minister for Mines, and petroleum leases by the Governor under the provisions of the *Petroleum Act, 1967-1972* and the *Petroleum (Submerged Lands) Act, 1967-1970*, with authority to charge fees, rents and royalties.

Forests Department

While not designated as leases, certain of the tenures issued under the *Forests Act, 1918-1972*, such as Sawmilling Permits and Mill Site Permits, are similar in effect. A number of other leases, licences and permits are issued by the Forests Department, one of which, the Forest Produce Licence, authorises the licensee to collect various types of forest products other than millable timber. Permits are also granted for apiary sites of an area not exceeding 1.21 hectares.

LAND CLASSIFICATION

Large-scale as well as detailed soil survey measures have been developed progressively in Western Australia since the early days of settlement. Soil mapping of Crown lands in Western Australia has always been carried out as a function of the Department of Lands and Surveys. In the early years of land settlement the staff surveyors, when marking blocks, submitted classifications and commented generally on the probable yield and carrying capacity of the land, as a guide to pricing.

Modern survey techniques enable much use to be made of photogrammetric methods in the mapping and presentation of the soil survey, particularly in definition of vegetation and topographical detail such as rivers, creeks, swamps, hills, valleys, features such as rock outcrops and sand drifts, and the general contours of the land. Much topographical detail is available from the State mapping activities and this information is always used in conjunction with the field work of the soil survey.

The soils are graded into eight categories, to facilitate pricing procedure, due regard being given to the agricultural potential as determined by analysis and experimentation by the Department of Agriculture. This enables release of land in such a manner that each unit is adequate if developed on economic methods. At the same time, the soil maps assist in the overall planning for provision and extension of services such as roads, water and power supplies, townsites and all the services essential to regional development.

Pastoral potential appraisements are presented with more emphasis on the grazing potential of natural vegetation in order to assess estimated carrying capacities, rather than detailed soil types.

In addition to the soil and pastoral mapping surveys which are carried out under the direction of the Surveyor General, similar methods are used by other Government Authorities and private organisations, for forestry assessment, classification and control, and for geological mapping.

It has been estimated by the Surveyor General that, of the State's total area of 2,525,500 square kilometres about 11 per cent is represented by the agricultural areas, 52 per cent by the pastoral regions and the remaining 37 per cent by practically unoccupied areas of the interior. Soil mapping investigations have enabled a broad assessment of the total area and a detailed assessment of the bulk of the agricultural areas and pastoral regions.

OCCUPATION OF LAND

The following table shows, for a selection of years during the period from 1900 to 1973, the areas of land absolutely alienated or in process of alienation and of Crown land held under certain types of lease or licence. For the years 1900, 1910 and 1920 the basis of classification according to Department has been made to conform to current practice in the issue of leases and licences. For example, tenures relating to forests, which were originally issued by the Department of Lands and Surveys and later by the Department of Mines, have been shown for those years under the heading of Forests Department. For 1930 and later years the figures are as recorded by the Departments concerned. The types of tenure included under the several departmental headings are indicated in the footnotes to the table.

LAND ALIENATED AND LAND HELD UNDER LEASE
(⁰⁰⁰ hectares)

At 31 December—		Area absolutely alienated	Area in process of alienation	Area of leases or licences in force on Crown land and issued (a) by—			
				Department of Lands and Surveys		Department of Mines (c)	Forests Department (d)
				Pastoral leases	Other leases (b)		
1900	....	1,401	1,278	34,977	4	34	345
1910	....	1,835	5,551	67,203	224	43	522
1920	....	3,623	5,958	104,420	999	42	664
1930	....	5,937	8,610	90,693	358	34	539
1940	....	7,408	5,602	82,875	843	38	954
1950	....	8,727	4,788	(e) 79,212	1,400	41	1,448
1960	....	11,158	5,185	88,301	2,685	37	1,617
1969	....	13,885	5,734	96,554	2,591	58	1,513
1970	....	13,929	5,832	98,982	2,548	49	1,377
1971	....	14,104	5,441	99,466	* 2,529	54	1,339
1972	....	14,300	5,232	99,515	2,407	58	1,238
1973	....	14,603	4,936	98,975	2,495	86	1,155

(a) See letterpress preceding table. (b) Comprises special leases, leases of reserves, leases of residential lots and perpetual leases.

(c) Comprises gold-mining leases, mineral leases and miners' home-stead leases.

(d) Predominantly sawmilling permits. Includes permits for cutting wandoo for tannin extraction, but excludes permits and licences for cutting timber and firewood in Goldfields areas.

(e) Apparent decrease in area due mainly to revision in the records of the Department of Lands and Surveys.

* Revised.

Land which is shown as 'absolutely alienated' consists mainly of farming areas, acquired originally as conditional purchase leases and subsequently alienated under Crown grant. While held under lease prior to alienation they account for most of the land

shown as 'in process of alienation'. These two sets of figures taken together consequently give a broad indication of the increased use of land for agricultural purposes during the period under review. Similarly, variations in the area occupied as sheep and cattle stations may be gauged by reference to the area of pastoral leases issued by the Department of Lands and Surveys.

The passing of the Homesteads Act in 1893 and of a comprehensive Land Act in 1898 provided the basis for a rapid increase in the settlement of agricultural land. Under the Homesteads Act, any man over the age of eighteen years who did not already own an area of 100 acres (40.5 hectares) or more in this State could apply for a free homestead farm of 160 acres (64.7 hectares), on condition that he resided on his land during at least six months of each of the first five years and carried out prescribed improvements. With a lower minimum age of sixteen years, a similar provision is contained in the *Land Act, 1933-1972*, and this provision, operating in conjunction with the conditional purchase lease system, has also been a factor in the increase in land settlement, particularly in the wheat-growing areas.

About 1905 the Department of Lands and Surveys, by implementing a system of survey and subdivision before selection, partially checked the indiscriminate selection of land by inexperienced farmers. A further stabilising influence on agricultural development was the introduction in 1909 of a system of grading Crown lands into classes, First, Second and Third according to suitability for farming.

The movement of population from the goldfields to the wheat belt contributed to the increase in the area of land in process of alienation from 1,277,512 hectares in 1900 to 5,550,573 in 1910. The ultimate alienation of about one-third of this land by Crown grant is reflected in the greatly increased figures for 'absolutely alienated' land in 1920. Settlement of the wheat belt developed rapidly during and after the period 1910 to 1920, in spite of serious droughts which occurred in 1911 and 1914. Although the increased totals at 31 December 1930 were principally due to this development, they resulted in part from the acquisition during the previous ten years of farmland, mainly for dairying, in the south-west of the State under the Group Settlement Scheme. These holdings were individually much smaller than those in the wheat-growing districts, because of the type of farming and the heavy clearing costs, but the numbers involved made the total area taken up under the Scheme of some significance.

Pastoral leases, which comprise the greatest proportion of Crown land held under lease or licence, increased threefold between 1900 and 1920. The area actually held under pastoral lease conditions represents approximately one-third of the whole State. The aggregate area of gold-mining leases, mineral leases and miners' homestead leases, appearing in the table under the heading of Department of Mines, shows comparatively little variation since 1900. However, in recent years very large areas have been included in tenures issued under the provisions of the *Petroleum Act, 1967-1972* and in temporary reserves under the *Mining Act, 1904-1973*.

From 1930 the demand for land for agricultural purposes declined considerably, the principal reason being the lower farm commodity prices which prevailed for several years prior to the second World War. After 1945, however, the demand for land again increased, stimulated by the sharp rise in export prices, notably of wheat and wool, and later by the War Service Land Settlement Scheme. The area conditionally alienated in any one year reached a post-war peak of 691,161 hectares in 1953. During the next decade the area fluctuated between 285,657 hectares in 1956 and 499,591 hectares in 1962. The area then declined and by 1972 the area conditionally alienated was only 4,176 hectares, due to restrictions imposed on the release of Crown land by conditional purchase. A slight recovery occurred in 1973 when the area increased to 23,626 hectares.

The following table gives details of areas of land for which applications were approved, during each of the years 1969 to 1973, by the Department of Lands and Surveys for conditional alienation or allocation under lease or licence. The figures shown for any year do not necessarily represent land allotted for the first time, as they may include land previously held under any of the several forms of land tenure.

CROWN LANDS—AREA OF ALLOCATIONS
APPROVED BY DEPARTMENT OF LANDS AND SURVEYS (a)
(Hectares)

Particulars	1969	1970	1971	1972	1973
Conditional alienation—					
Conditional purchase	120,909	151,268	63,155	2,825	16,679
Agricultural land purchases	125	185	315	133	166
Town and suburban lots	1,941	602	1,259	1,218	6,781
Miscellaneous (b)					
Total	122,976	152,055	64,729	4,176	23,626
Leases and licences—					
Pastoral leases and licences	1,104,145	3,717,152	1,885,277	631,340	560,967
Special leases	76,319	30,806	44,217	41,187	163,860
Miscellaneous leases (c)	20,385	17,642	5,772	9,763	2,154
Total	1,200,849	3,765,600	1,935,266	682,290	726,981

(a) See letterpress immediately preceding table. (b) Comprises free homestead farms and reserves.
(c) Comprises perpetual leases, leases of reserves and leases of town and suburban lots.

GOVERNMENT LAND SETTLEMENT SCHEMES

Although, generally, the method of land alienation and settlement in the agricultural areas of Western Australia has been by independent applications by individual settlers for conditional purchase leases, there has also been a series of government land settlement schemes. The more important of these are the Soldiers' Settlement Scheme following the 1914-18 war, the Group Settlement Scheme introduced in 1921, the War Service Land Settlement Scheme which was initiated in 1945 and other lesser schemes for the settlement of civilians. An outline of each of these schemes appears in Chapter VII of the *Western Australian Year Book*, No. 7—1968 and earlier issues.

Chapter VII—continued

Part 2—Water Supply and Sewerage

The principal water supply and sewerage systems of Western Australia are under the control of two State authorities, the Metropolitan Water Supply, Sewerage, and Drainage Board and the Public Works Department.

The Metropolitan Water Supply, Sewerage, and Drainage Board is constituted under the provisions of the *Metropolitan Water Supply, Sewerage, and Drainage Act, 1909-1975*. It came into being on 1 July 1964 and replaced the former Metropolitan Water Supply, Sewerage and Drainage Department as the authority responsible, subject to the Minister, for the general administration of the Act. The Board consists of seven members appointed by the Governor. One member is appointed Chairman on the nomination of the Governor and the remaining members comprise the General Manager of the Board; a qualified engineer; the Under-Treasurer or an officer of the Treasury nominated by him; and three representatives of ratepayers of municipal districts within the Metropolitan Water, Sewerage and Drainage Area. This area of approximately 3,430 square kilometres constitutes the territory under the Board's administration. It embraces Perth and the metropolitan area southward to Warnbro Beach and Serpentine, northward to Gingin Brook and Herne Hill and eastward to Swan View-Sawyers Valley, Kalamunda, Bickley and Carmel, and also incorporates approximately 2,100 square kilometres of the water catchment areas of the Canning, Serpentine, North Dandalup and South Dandalup Rivers and streams of the Darling Range.

The Public Works Department controls the Goldfields and Agricultural Water Supply and the Great Southern Towns Water Supply as well as 138 local water supplies. It also provides water for irrigation purposes in the four South-West Irrigation Districts (Waroona, Harvey, Collie River and Preston Valley), the Camballin Irrigation District and the Ord Irrigation District. In addition, the Carnarvon and Gascoyne Groundwater Supply Scheme supplying seventy growers in the Carnarvon Non-Artesian Area is being operated.

Three independent town schemes are controlled by local Water Boards in country areas under the *Water Boards Act, 1904-1973* and some local authorities supply water under the provisions of the *Local Government Act, 1960-1975*. Private companies engaged in mining in the North-West of the State provide their own water supply for mining operations, power supply and domestic use. Individual water supplies serve railways, timber mill towns, isolated mines, pastoral properties, stock routes and agricultural areas, mainly from dams, tanks, wells and bores.

The principal water storages in Western Australia are shown in the next table. Supplies for the metropolitan area and environs are drawn almost entirely from Serpentine Reservoir and Serpentine Pipehead Reservoir, Canning Reservoir, Wungong Brook Diversion Weir, Churchman Brook Reservoir, Victoria Reservoir, North Dandalup Pipehead Dam, South Dandalup Reservoir and underground water from the shallow unconfined aquifers of the Gnangara sand beds. Mundaring Weir, which is the source for the Goldfields and Agricultural Water Supply, is linked to Kalgoorlie by pipeline and serves the more populous parts of the Eastern Goldfields as well as certain towns and farming areas north and south of the main pipeline. As occasion arises Mundaring Weir supplies to or draws from the Metropolitan Water Supply. Stirling Dam, with a supplementary catchment at Harvey Weir, serves part of the irrigation area of the South-West. Drakesbrook Dam, Samson Brook Dam, Logue Brook Dam, Waroona Dam and Glen Mervyn Dam are also used for this purpose. Wellington Dam, on the Collie River, has been enlarged to meet not only the needs of the southern parts of the irrigation area but also of towns and farmlands included in the Great Southern Towns Water Supply.

The storage capacities of the principal dams and reservoirs at 30 June 1974 were as shown below.

DAMS AND RESERVOIRS—STORAGE CAPACITY (a)
(⁰000 cubic metres)

Dam or reservoir	Storage capacity	Dam or reservoir	Storage capacity
Canning Reservoir	93,420	Samson Brook Dam	9,165
Churchman Brook Reservoir	2,182	Serpentine Pipehead Reservoir	3,864
Drakesbrook Dam	2,288	Serpentine Reservoir	177,300
Fitzroy Dam	4,650	17-Mile Dam (e)	5,489
Glen Mervyn Dam	1,491	South Dandalup Reservoir	208,211
Harvey Weir	(b) 7,903	Stirling Dam	56,976
Kununurra Diversion Dam (c)	98,679	Victoria Reservoir	859
Logue Brook Dam	24,321	Waroona Dam	14,931
Mundaring Weir	77,127	Wellington Dam	185,154
North Dandalup Pipehead Dam	(d)	Wungong Brook Diversion Weir	(d)
Ord River Dam (Lake Argyle)	5,723,000		

(a) At 30 June 1974. (b) Excludes flashboard storage. (c) Bandicoot Bar Dam or Ord River Diversion Dam. (d) Diversion weir only. (e) On Uralla Creek, an anabranch of the Fitzroy River.

METROPOLITAN WATER SUPPLY

The sources of the metropolitan water supply are South Dandalup Reservoir, Serpentine Reservoir and Serpentine Pipehead Reservoir, Canning Reservoir, Wungong Brook Diversion Weir, Churchman Brook Reservoir, Victoria Reservoir, North Dandalup Pipehead Dam and underground water from the shallow unconfined aquifers of the Gnangara sand beds north of Perth. The supply from these sources is supplemented as necessary from a pipeline link with Mundaring Weir and from a number of artesian bores. The amount of bore water used, however, is now low in proportion to total metropolitan consumption, being rarely more than 10 per cent during a severe summer and usually considerably less.

METROPOLITAN WATER SUPPLY—QUANTITIES OF WATER DRAWN (a)
(⁰000 cubic metres)

Source	1969-70	1970-71	1971-72	1972-73	1973-74
Canning Reservoir	51,790	43,723	40,000	38,946	40,899
Churchman Brook Reservoir	2,390	4,661	3,132	1,741	5,001
Mundaring Weir	1,064	1,431	1,588	2,337	6,280
North Dandalup Pipehead Dam (b)		2,436	13,298	11,270	17,077
Serpentine Reservoir (c)	67,464	71,665	69,297	81,206	72,620
South Dandalup Reservoir (d)					2,450
Victoria Reservoir	*1,842	3,791	2,045	2,604	2,861
Wungong Brook Diversion Weir	*6,523	10,114	10,425	9,008	9,657
Metropolitan bores (e)	*16,145	12,018	16,178	17,696	17,236
Total	*147,218	149,839	155,963	164,807	174,080

(a) Including supplies to railways and shipping. (b) Commenced operating December 1970.
(c) Includes water drawn from Serpentine Pipehead Reservoir. (d) Drawing of water commenced February 1974. (e) Includes shallow underground water. * Revised.

Victoria Reservoir, which was completed in 1891 with a capacity of 859,000 cubic metres, was the first of the existing water conservation projects to be completed in the Darling Range. In 1921 a 104,500 cubic metre reservoir, which is no longer used for water supply, was constructed at Bickley Brook to replace a pipehead dam, and in 1928 one with a capacity of 2,182,000 cubic metres was completed at Churchman Brook. During the same period pipehead dams were built across the upper course of the Canning River and its tributary, Wungong Brook, preliminary to the construction of Canning Reservoir, which was begun in 1933 and completed in 1940. Canning Reservoir has a storage capacity of 93,420,000 cubic metres retained by a concrete wall 66 metres high and 468 metres long at the crest. Serpentine Pipehead Reservoir was completed in 1957 and Serpentine Reservoir, commenced in 1957, was completed in 1961. Serpentine Reservoir is constructed of rolled earth fill and the embankment rises 52 metres above the stream bed, the length at the crest being 424 metres. Its capacity, which is slightly less than that of Wellington Dam

on the Collie River, is 177,300,000 cubic metres. Supplies to the metropolitan system are augmented by the North Dandalup Pipehead Dam which is the first stage of the Dandalup Rivers Scheme and was completed in December 1970. The major storage component of the scheme, the 208,211,000 cubic metre capacity South Dandalup Dam, was completed in late 1973 and at the end of the 1974 winter a total of 125,455,000 cubic metres of water was stored.

Water from the storages in the Darling Range is conveyed to the metropolitan area by large trunk mains and then distributed by feeder, distribution and reticulation mains, either directly from the trunk mains or from large service reservoirs at Mount Yokine, Mount Eliza, Bold Park, Mount Hawthorn, Richmond, Melville, Buckland Hill, Hamilton Hill, Thompson Lake and Greenmount and from summit tanks and water towers situated at high points throughout the area supplied. In addition, underground water from the shallow unconfined aquifers of the Gnangara sand beds, after treatment at the Mirrabooka Water Treatment Plant, is pumped to the Mirrabooka Reservoir for distribution into the northern supply system. The plant is capable of producing 58,000 cubic metres of clear water daily; this was increased to 103,000 cubic metres daily when the new treatment plant at Gwelup was commissioned in May 1975. To meet the peak demand during the summer months, supplies from these sources are supplemented from a system of artesian bores which can provide a daily maximum of 95,500 cubic metres. At 30 June 1974 the number of consumer services was 231,938. The previous table shows the quantities of water which were drawn from the various sources during each of the five years ended 30 June 1970 to 1974.

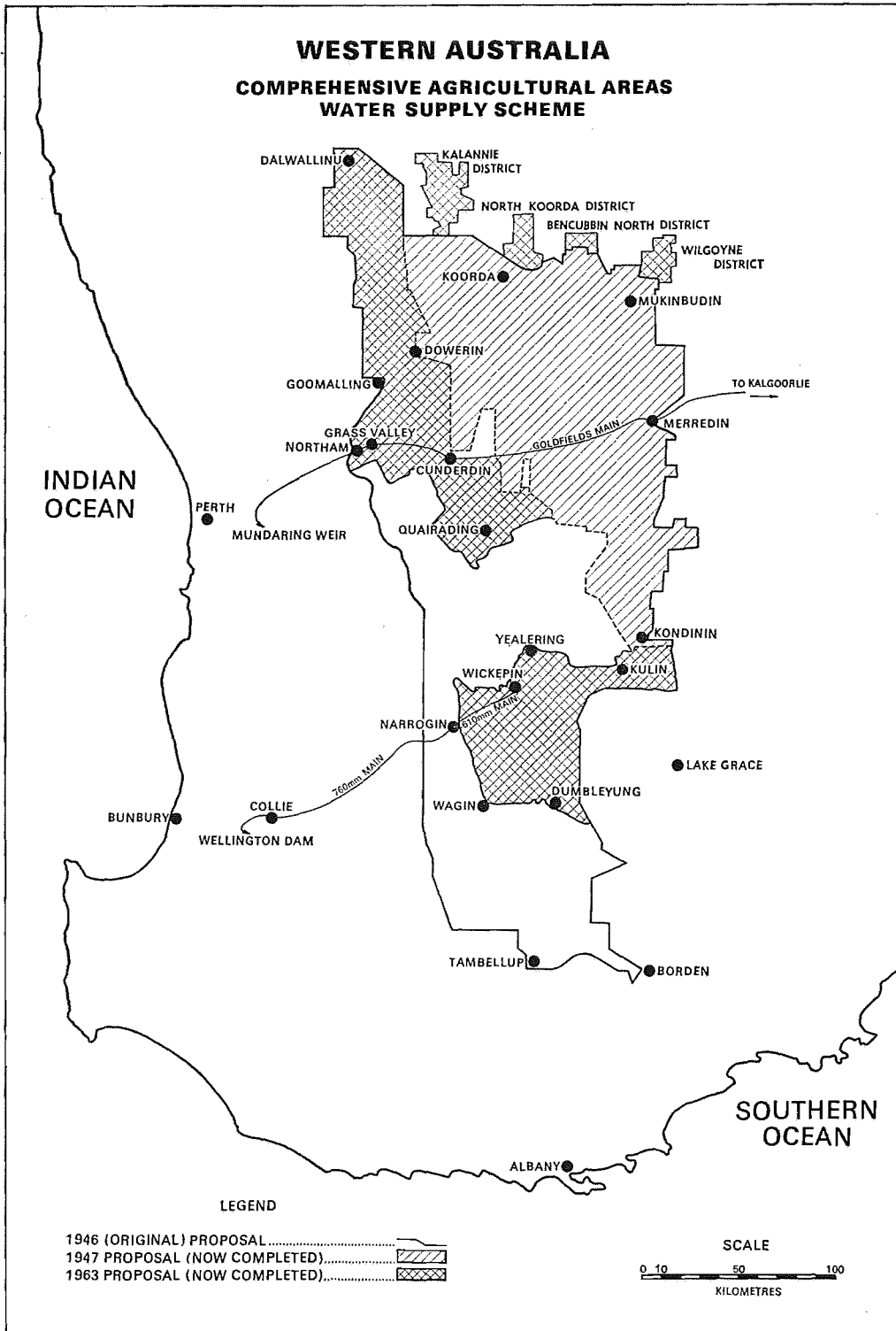
COUNTRY WATER SUPPLIES

Supplies controlled by the Public Works Department

Since 1947 enlargement and extension of the Goldfields and Agricultural Water Supply and the development of the Great Southern Towns Water Supply have been carried out mainly in accordance with a project known as the Modified Comprehensive Scheme. A proposal for a comprehensive water supply scheme was first submitted by the State Government to the Australian Government in January 1946 when applying for financial assistance in its construction. The initial plan was intended to supply water to towns and farms in an area of 4.7 million hectares in mixed farming (cereal and sheep) districts of Western Australia, as well as to increase the supply to the Eastern Goldfields. A committee appointed by the Australian Government to consider the State's submission reported that certain areas within the scheme had a higher priority than others. As a result, the project was greatly reduced in scope and a modified scheme, to embrace 1.7 million hectares, was agreed to by both Governments and adopted in October 1947. The extent of the scheme as originally proposed, and as modified, is shown on the map on page 343. A description of the boundary of the modified scheme is contained in a schedule to the *Agricultural Areas, Great Southern Towns, and Goldfields Water Supply Act, 1947* (State), which gave parliamentary approval of the undertaking. Commonwealth financial aid was provided by means of the *Western Australia Grant (Water Supply) Act 1948* (Commonwealth) and later amendments, which authorised reimbursement to the State of one-half of its expenditure on the scheme, up to a maximum grant of \$10 million.

The modified scheme was completed in 1961, the total expenditure amounting to \$20.6 million. A request made by the State Government in 1960 for a grant equal to half the cost of extending the scheme virtually to the boundary as first proposed in 1946 was rejected by the Australian Government. Following this rejection the State Government embarked on a necessarily limited programme financed from its own loan moneys, the policy being to restrict extensions to supply certain towns within the original area and farm lands adjacent to pipelines. A further request was made by the State Government in 1963 for a grant of \$10.5 million payable over a seven-year period and representing one-half of the estimated cost of proposed extensions which would increase by 1.5 million hectares the area served by the scheme. The Australian Government agreed to provide assistance in the form of an interest-bearing loan up to a maximum of \$10.5 million,

WESTERN AUSTRALIA COMPREHENSIVE AGRICULTURAL AREAS WATER SUPPLY SCHEME



advances to be made during a period of eight years commencing with the financial year 1965-66. Legislative authority for the loan is given by the *Western Australia (South-west Region Water Supplies) Agreement Act 1965* (Commonwealth). The map on page 343 shows the additional areas reticulated under the 1963 proposals.

Goldfields and Agricultural Water Supply

The original purpose of this undertaking, which was formerly known as the Goldfields Water Supply was to supply water for the Coolgardie and the Kalgoorlie-Boulder areas. To provide conservation, the Helena River was dammed near Mundaring, and on completion of the reservoir in 1902 it had a capacity of 21 million cubic metres. The increasing demand for water in the area served made it necessary to augment supplies. This was achieved by raising the wall 9.8 metres to a height of 40.2 metres and when the work was completed in 1951 the enlarged capacity of the reservoir was 68.9 million cubic metres. The capacity has since been further increased to 77.1 million cubic metres by the erection of adjustable steel crest gates 1.2 metres in height. In 1972 the Lower Helena Pipehead Dam, some eight kilometres below Mundaring Weir, was brought into operation, water being pumped from this source to augment the supply from this reservoir. The main pipeline between Mundaring and Kalgoorlie is 554 kilometres long. It is for the most part 762 millimetre diameter steel but has 1,219 millimetre, 1,067 millimetre and 914 millimetre pipe in the western portion with some duplication of the 762 and 914 millimetre pipe. The pipeline is equipped with seventeen pump stations. The maximum pumping capacity from Mundaring Weir is 123,000 cubic metres per day. The total capacity of all receiving, regulating, standby and service tanks (including four standby reservoirs at Kalgoorlie with a combined capacity of 336,000 cubic metres) is 1.2 million cubic metres.

At 30 June 1974 the Goldfields and Agricultural Water Supply was serving 112 towns and water was being reticulated to farms in an area of 2.65 million hectares. The number of services, length of water mains and consumption for the years 1968-69 to 1972-73 are given in the following table.

GOLDFIELDS AND AGRICULTURAL WATER SUPPLY

Year	Number of services (a)	Length of water mains (kilometres) (a)	Consumption (a) ('000 cubic metres)						Total
			Domestic	Commercial	Industrial (including railways)	Mining	Farms and market gardens	Other	
1968-69	24,973	6,754	5,180	870	1,176	2,819	3,335	1,338	14,718
1969-70	25,742	6,869	5,725	1,119	1,080	3,651	3,635	1,448	16,660
1970-71	26,046	7,303	5,563	737	958	3,693	3,761	1,295	16,008
1971-72	26,670	7,329	6,009	1,533	863	3,389	4,173	1,693	17,660
1972-73	27,002	7,883	6,928	809	1,245	3,918	4,746	1,677	19,323

(a) Figures include amounts consumed from local supplies at Waddouring-Barbalin-Knungajin, Bruce Rock, Narembeen and Kondinin.

Extensions to country towns and agricultural areas have been made from several points along the main pipeline. Norseman is connected by an extension southward from Coolgardie. A branch from this main supplies the nickel mining town of Kambalda. From a point west of Merredin water is taken northward to supplement local schemes at Waddouring-Barbalin-Knungajin. Other extensions north and south of the main pipeline provide water for a number of towns and surrounding districts, including Toodyay, Goomalling, York, Beverley and Bullfinch. A pipeline southward from Merredin to serve Bruce Rock, Narembeen, Kondinin and surrounding districts and Kulin and surrounding districts is linked to an extension south from Doodlakine and taken westward to supply Corrigin. A main south from Cunderdin serves Quairading and the intermediate farmlands. Areas north-west of Burracoppin are served by an extension northward from a point east of Merredin, and districts north of Kellerberrin by a pipeline connecting Kellerberrin to the Waddouring-Barbalin-Knungajin system already mentioned. Water is taken northward from Cunderdin through Minnivale to a point near

Kokardine. Extensions westward, eastward and northward from this pipeline serve a number of towns and localities, including Dowerin, Wyalkatchem, Yelbeni, Koorda, Kalannie, Pithara, Ballidu, Dalwallinu and Wongan Hills, and surrounding farm lands. An extension northward from the main pipeline serves Koolyanobbing, where iron ore is mined.

Great Southern Towns Water Supply

The Great Southern Towns Water Supply serves towns on the Great Southern Railway from Brookton to Katanning, as well as a number of other towns. Water is drawn from Wellington Dam which also supplies the Collie River Irrigation District. Work on raising the wall of the Dam to give it a holding capacity of some 185 million cubic metres was completed in 1960. Water is taken through Narrogin to Wickepin by means of a main pipeline 171 kilometres long. In addition to the pumping installation at the dam site, there are stations at a point forty-five kilometres east of the dam and at Narrogin. From Narrogin, pipelines extend sixty-four kilometres northward to Brookton and ninety-five kilometres southward to Katanning. A branch westward from Katanning serves the town of Kojonup and a second branch extends south-eastward through Broomehill to Gnowangerup. From Wickepin the pipeline extends southward to Dumbleyung, eastward to Kulin and northward to Bullaring through Yealering. A pipeline eighteen kilometres long supplies water to a power station constructed for the State Electricity Commission at Muja, south-eastward from Collie.

At 30 June 1974 the Great Southern Towns Water Supply was serving thirty-one towns and an area comprising 607,000 hectares of farmland. Details of the number of services, length of water mains and consumption for the years 1968-69 to 1972-73 are given in the following table.

GREAT SOUTHERN TOWNS WATER SUPPLY

Year	Number of services	Length of water mains (kilometres)	Consumption ('000 cubic metres)					Total
			Domestic	Commercial	Industrial (including railways)	Farms and market gardens	Other (a)	
1968-69	8,891	863	1,780	221	655	192	396	3,245
1969-70	9,584	1,110	2,090	237	1,325	270	483	4,405
1970-71	10,006	1,246	2,017	228	797	401	382	3,825
1971-72	10,202	1,559	2,147	221	732	495	482	4,077
1972-73	10,580	1,860	2,395	294	896	805	645	5,034

(a) Excludes mining, for which no services were provided by the Public Works Department.

Supplies to other Country Towns

One hundred and thirty-eight towns and localities are supplied with water from stream flow, dams, tanks, wells and bores, the schemes being administered under the provisions of the *Country Areas Water Supply Act, 1947-1974*. The following table gives, for these local schemes, the number of services, length of water mains and consumption for the years 1968-69 to 1972-73.

PUBLIC WORKS DEPARTMENT: LOCAL SCHEMES

Year	Number of services	Length of water mains (kilometres)	Consumption ('000 cubic metres)						Total
			Domestic	Commercial	Industrial (including railways)	Mining and shipping	Farms and market gardens	Other	
1968-69	27,481	1,521	6,886	1,655	1,328	67	257	1,612	11,804
1969-70	30,182	1,630	8,860	2,108	1,603	117	268	1,771	14,728
1970-71	32,642	1,811	10,166	2,412	2,122	225	216	1,934	17,075
1971-72	33,677	1,862	13,264	3,360	2,063	155	130	2,468	21,440
1972-73	36,232	2,005	15,635	3,519	5,086	265	560	2,751	27,818

The Public Works Department is also responsible for the provision and maintenance of tanks and wells as a source of cartage water for a number of small communities in gold mining and agricultural areas.

Other Country Water Supplies

As well as the schemes controlled by the Public Works Department, there are three local Water Boards operating under the *Water Boards Act, 1904-1973* which also draw supplies from stream flow, dams, tanks, wells and bores. In addition, some local authorities exercise powers under the *Local Government Act, 1960-1975* to supply water within their boundaries. There are still, however, a large number of individual farms and pastoral stations which are not connected to public schemes and are therefore obliged to provide their own supplies. The Forests Department and sawmilling companies operate schemes to supply water to their mill towns. In a number of ports and mining towns in the North-West of the State, mining companies are responsible for the provision of their own water supplies, and while the principal source of supply is underground reserves, desalination of sea water is also being used.

Railways of the Australian Government and State Government make independent provision for supplies of water for their own purposes, although considerable additional quantities are consumed by the railways from other sources, such as those controlled by the Public Works Department and the Metropolitan Water Supply, Sewerage, and Drainage Board.

UNDERGROUND WATER

Considerable use is made of groundwater by individual farmers, pastoralists, market gardeners, etc. and it is estimated that over 50,000 bores are in use in the State. The quality of the water varies from place to place and much of it is too saline for irrigation or even stock. Both pressure waters and non-pressure waters are used to supply or augment the supplies of numerous towns, including such major centres as Perth, Albany, Bunbury, Busselton, Carnarvon, Dampier, Esperance, Exmouth, Geraldton and Port Hedland, and the list is growing.

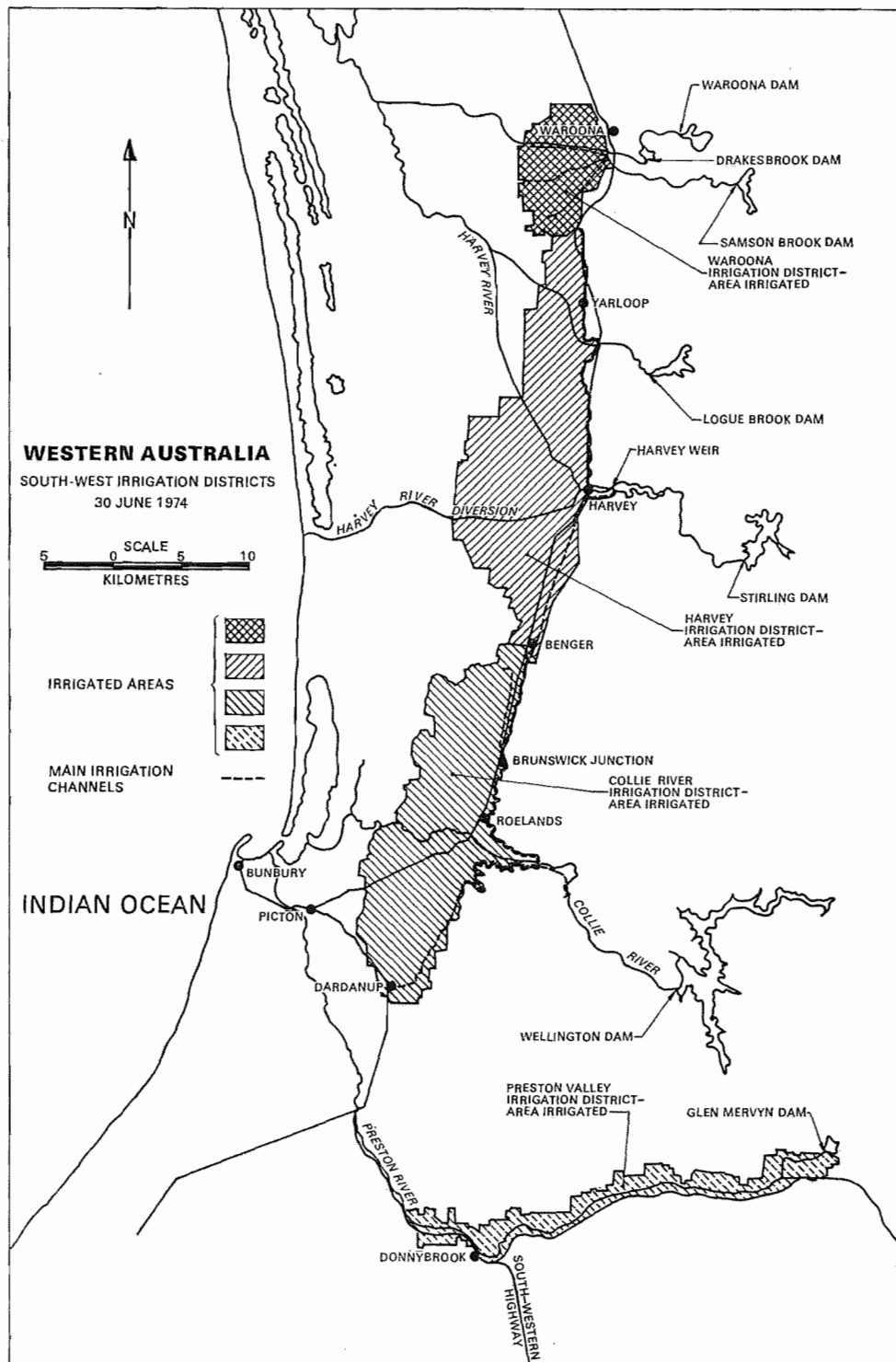
Industries also are using groundwater in substantial quantities, particularly in the processing of titanium, iron, and alumina. Recent mineral discoveries in several areas have given rise to very large demands for water, the search for which has had to be intensified. Marked advances in the knowledge of aquifers and quality of water in the main sedimentary basins have been made as a result of extensive geological surveys and exploratory drilling by the Geological Survey (a branch of the Department of Mines), several oil companies, and developmental drilling by the Public Works Department, and the Metropolitan Water Supply, Sewerage, and Drainage Board.

The Public Works Department and the Metropolitan Water Supply, Sewerage, and Drainage Board are responsible for all developmental works. The Geological Survey is responsible for all exploratory works, as well as for investigating and assessing the State's groundwater resources, and advising local government authorities, private industry and individuals on groundwater problems.

SOUTH-WEST IRRIGATION SCHEMES

Irrigation schemes have been established by the State Government on the coastal plain south of Perth in the Waroona, Harvey, Collie River and Preston Valley Irrigation Districts between Waroona and Donnybrook, the water being channelled from dams in the adjacent Darling Range. The areas irrigated and main irrigation channels in each Irrigation District at 30 June 1974 are shown on the accompanying map.

Specialist advice on irrigation farming methods is available through the Department of Agriculture and the properties are watered on a rotational plan, according to the 'Zone', or section of the District, within which the farms are situated.



The Harvey Irrigation District, opened in 1916, was the first large-scale project. Harvey Weir, with a capacity of 2.36 million cubic metres on completion, was constructed as the source of water supply and the service initially provided was for 1,215 hectares of land for citrus growing.

The success of dairying and stock raising and to a lesser extent vegetable growing, which have replaced citrus culture, has led to gradual but substantial extensions of the South-West irrigation area. The damming of Drakes Brook in 1931 and Samson Brook in 1941 provided a storage capacity of 10.37 million cubic metres which, by alterations to Samson Brook Dam in 1960, has been increased to 11.45 million cubic metres and is used for the irrigation of 1,570 rated hectares in the Waroona Irrigation District. In 1966 a third storage to serve the Waroona District, known as Waroona Dam, was completed on Drakes Brook about five kilometres up-stream from the existing Drakesbrook Dam. Its capacity is 14.93 million cubic metres and storage was available for the 1966-67 irrigation season. In 1931 the capacity of Harvey Weir was enlarged to 8.97 million cubic metres (including flashboard storage) and in 1948 Stirling Dam, with an original capacity of 54.83 million cubic metres (increased to 56.98 million cubic metres by alterations in 1958), was completed further up-stream on the Harvey River. These works enabled the Harvey Irrigation District to be extended northward to link with the Waroona District. Logue Brook Dam, with a capacity of 24.32 million cubic metres, was completed in 1963 and provides additional supplies for the Harvey Irrigation District, the rated area of which is 5,581 hectares.

During 1969 construction of the Glen Mervyn Dam on a tributary of the Preston River near Mumballup was completed. Water from this dam is made available each summer for controlled release into the Preston River when the natural stream flow is insufficient for the irrigation of orchards downstream from Donnybrook.

Concurrently with developments in the Harvey and Waroona Irrigation Districts, action was taken to conserve water for the Collie River Irrigation District and Welling-ton Dam on the Collie River was completed in 1933. In view of its importance, not only to irrigation projects but also to the Great Southern Towns Water Supply, the wall of this reservoir has been raised and when work was completed in 1960 its capacity of 36.37 million cubic metres was increased to 185.15 million cubic metres. It serves an area of 4,851 rated hectares in the Collie River Irrigation District, which extends from Brunswick Junction to Dardanup.

Details of irrigation in each district in the years 1972-73 and 1973-74 are given in the following table.

IRRIGATION: SOUTH-WEST SCHEMES

Particulars	Irrigation district								Total	
	Waroona		Harvey		Collie River		Preston Valley			
	1972-73	1973-74	1972-73	1973-74	1972-73	1973-74	1972-73	1973-74	1972-73	1973-74
Area watered—										
Pasture hectares	1,672	1,579	6,163	6,142	*6,222	6,710	....	....	*14,057	14,431
Fodder crops "	60	46	81	94	142	94	....	....	*283	234
Potatoes .... "	....	....	8	5	30	19	53	55	*91	79
Other vegetables "	97	27	30	25	12	14	....	....	*139	66
Orchards .... "	....	....	79	82	25	27	130	127	*234	236
Total "	1,829	1,652	6,361	6,348	*6,431	6,864	183	182	*14,804	15,046
Hectare waterings (a)	14,153	12,977	53,279	46,739	50,834	49,788	1,333	1,602	119,599	111,106
Average number of waterings(b)	7.7	7.9	8.4	7.4	7.9	7.3	n.a.	3.6	8.2	6.5
Total water gauged at entry to district '000 cu m	20,539	17,990	74,465	68,291	75,511	73,470	*1,127	957	*171,642	160,708
Dam capacity (c) "	*26,384	26,384	*90,271	90,271	*185,154	185,154	*1,491	1,491	*303,300	303,300
Length of channels km	*70	70	248	285	*197	197	n.a.	n.a.	*515	552

n.a. denotes 'not applicable'.

(a) Area watered multiplied by number of waterings. Figures shown represent the sum of hectare waterings for individual holdings in each district. (b) Total hectare waterings divided by total area watered. (c) Excludes flashboard storage.

* Revised.

NORTHERN IRRIGATION SCHEMES

Although not yet comparable in size with the South-West undertakings, the irrigation areas at Carnarvon and on the Ord and Fitzroy Rivers in the northern portion of the State are of increasing significance.

Carnarvon. During the past forty years a centre of tropical agriculture has been developed at Carnarvon, near the mouth of the Gascoyne River. It produces over half of the bananas consumed in Western Australia and is a major supplier to the Perth market of out-of-season vegetables. This centre was, in 1973-74, the largest producer in the State of French and runner beans, water melons, tomatoes, pumpkins, cucumbers and capsicums and the second largest producer of rock melons. Carnarvon also exports beans, cucumbers and pumpkins to the Eastern States.

Agricultural development has been made possible only by irrigation, as the rainfall is extremely variable and averages little more than 230 millimetres per annum. Each holding has its own irrigation plant and, wherever possible, the pumping unit is installed on a bank of the Gascoyne River. Usually the river bed is exposed, as surface flow does not occur regularly each year. Concrete-lined wells have been sunk into the river sands and the water obtained is pumped either to storage tanks or direct to the plantation feeder channels, from which it is distributed among the plants by furrows. Because of the limitations of supply from the river sands, the State Government has instituted controls over the quantity of water pumped by growers and has commenced to develop up-river sources under the Carnarvon and Gascoyne Groundwater Supply Scheme. The Scheme at present is delivering supplementary water by pipeline to seventy plantations. A tropical research station is maintained at Carnarvon by the Department of Agriculture. To the early activities of this research station may be credited much of the success of the Carnarvon plantations, notably in the field of plant selection and pest control, and experimental work is being continued.

Ord River. The Ord River in the Kimberley Division traverses a tropical area which receives monsoonal rains of irregular incidence and quantity, varying from an annual mean of 510 millimetres in the south to 760 millimetres in the north. Investigations at the Kimberley Research Station, established in 1945 and operated by the Department of Agriculture in conjunction with the Commonwealth Scientific and Industrial Research Organization, have shown that the climate and soil conditions are favourable for the cultivation of sorghum, sugar-cane, rice, cotton, safflower and various oil seeds. Following these investigations the State Government, with Australian Government financial assistance, embarked on a project to provide water supplies for irrigation in the area.

The Ord Irrigation Project provides for the development of 72,000 hectares of land agriculturally and topographically suitable for irrigation. The project comprises four stages: the first was the construction of a diversion dam to supply water for an area of 12,140 hectares and the second, the building of a main storage dam with a capacity of 5,723 million cubic metres. The other stages are the progressive development of the whole 72,000 hectares and the construction of a hydro-electric power station.

The diversion dam, situated at Bandicoot Bar about 105 kilometres by road south-east of Wyndham and forty-eight kilometres downstream from where the Ord River Dam now stands, was officially opened on 20 July 1963. The capacity of the diversion dam is 98.7 million cubic metres and irrigation from the dam commenced in April 1963. It has been renamed the Kununurra Diversion Dam and its storage is now named Lake Kununurra.

There are thirty farms included in the first stage of the project and each has an approximate area of 270 hectares. Cotton is the principal crop, although small areas of other crops are being grown. Fattening of cattle on irrigated fodder crops shows promise as another alternative.

An area of 970 hectares, originally a pilot farm developed by a private company to conduct farm-scale trials under an agreement with the State Government, later became the company's property under the agreement. Large quantities of grain sorghum have been grown on this property by the company for cattle fattening in feed lots.

The diversion dam was recognised by the Australian Government in August 1959 as an approved project within the meaning of the *Western Australia Grant (Northern Development) Act 1958-1959* (Commonwealth). This legislation provided for payment by the Australian Government to the State Government of a non-repayable grant of \$10 million for development of the part of the State north of 20°S. latitude. Of this grant \$8.2 million was spent on the diversion dam. In February 1963 a further approach was made to the Australian Government requesting an amount of \$3.3 million for the completion of channels and drains required to develop the whole of the 12,140 hectares included in the first stage of the project. The request was approved in August 1963 and moneys made available by way of grant in terms of the *Western Australia (Northern Development) Agreement Act 1963*.

In November 1967, the Australian Government approved the plan for the second phase of the Ord River Irrigation Scheme and agreed to provide financial assistance to the State for the works involved. Agreement as to the terms and conditions for financing the second phase of the scheme was announced in March 1968. In terms of the *Western Australia Agreement (Ord River Irrigation) Act 1968* the Australian Government agreed to provide financial assistance to the State in an amount equivalent to expenditure on the works, up to a maximum of \$48.18 million. The assistance took the form of a non-repayable grant for the construction of the main Ord dam (\$21.80 million) and an interest-bearing loan for the associated irrigation and drainage facilities.

The Ord River Dam was constructed over three dry seasons, 1969 to 1971, and was officially opened on 30 June 1972. A pump station and irrigation supply facilities to bring 2,020 hectares of new irrigation farmland into production on Packsaddle Plain was completed in December 1970. An extension of the scheme covering 770 hectares on Ivanhoe Plain was completed in December 1974.

Fitzroy River. On the Liveringa flood plain, grain and fodder sorghums are being produced at Camballin, 105 kilometres south-east of Derby. Irrigation water from the Fitzroy River is diverted by means of a weir with a capacity of 4.7 million cubic metres constructed across the river. It is diverted through Uralla Creek, an anabranch, for twenty-seven kilometres to another dam with a storage of 5.5 million cubic metres constructed on Uralla Creek. Later it will be necessary to construct a storage dam on the upper reaches of the Fitzroy River for the large-scale developments envisaged for this area.

During 1972-73 the company concerned with the development used 9.1 million cubic metres of water for the irrigation of 2,193 hectares of sorghum and fodder crops for the production of quality beef. Severe flooding during November, January and April restricted the 1973-74 cropping programme of the company and during 1973-74, 5.4 million cubic metres of water were used on 1,360 hectares of feed crop, mainly grain sorghum. The company has constructed a feed lot to handle 5,000 head of cattle at one time.

Details of irrigation in the Ord and Camballin Irrigation Districts for the years 1972-73 and 1973-74 are given in the following table.

IRRIGATION: ORD AND CAMBALLIN DISTRICTS

Particulars	Irrigation district				Total	
	Ord		Camballin		1972-73	1973-74
	1972-73	1973-74	1972-73	1973-74		
Area watered hectares	*6,065	5,198	*2,194	1,360	*8,259	6,558
Hectare waterings (a)	*36,526	25,101	*8,338	3,360	*44,864	28,461
Average number of waterings (b)	6.0	4.8	3.8	2.5	*4.9	3.6
Total water gauged at entry to district '000 cu m	*77,458	49,929	*9,117	5,422	*86,575	55,351
Dam capacity "	*5,821,649	5,821,649	(c) *11,639	(c) 11,639	*5,833,288	5,833,288
Length of channels km	*112	116	32	32	*144	148

(a) Area watered multiplied by number of waterings. Figures shown represent the sum of hectare waterings for individual holdings in each district. (b) Total hectare waterings divided by total area watered. (c) Includes 1.5 million cubic metres of natural storage. * Revised.

Dunham River. In addition to the government irrigation undertakings mentioned above, a private scheme is now in course of development in the Dunham River valley south of its confluence with the Ord River. An agreement between the Government of Western Australia and Goddard of Australia Pty. Ltd., subsequently ratified by the *Irrigation (Dunham River) Agreement Act, 1968*, authorises the company to construct a dam on Arthur Creek, a tributary of the Dunham River, to irrigate the pilot area. The company, in terms of the agreement, is required to subdivide the pilot area into not more than ten holdings each containing an area of approximately 400 hectares, of which some 240 hectares will be irrigated. By early 1972 construction of the Arthur Creek Dam had been completed and the irrigation system was serving seven 400-hectare farm units which are being progressively developed.

If the company demonstrates to the Government that it is both practical and economically sound to develop the pilot area for agricultural purposes by way of closer settlement in holdings of about 400 hectares, the company will be authorised to proceed with phase 2 of the plan—the construction of a dam on the Dunham River and a suitable water distribution system. The additional area involved in the second phase of the scheme amounts to approximately 13,750 hectares.

WATER RESOURCES INVESTIGATION AND MEASUREMENT

Work on the investigation and measurement of the water resources of Western Australia, both surface and underground, has been accelerated in recent years partly due to the activities of the Australian Water Resources Council, which was established by joint action of the Australian Government and State Government in 1962. The Council comprises Australian Government and State Government Ministers primarily responsible for water resources.

The primary objective of the Council is the provision of a comprehensive assessment on a continuing basis of Australia's water resources, and the extension of measurement and research so as to provide a sound basis for the planning of future development.

In terms of its main objective, the Council in 1964 recommended, and the Australian Government and State Governments agreed, that there should be an accelerated programme of establishment of stream gauging stations and investigation of underground water. Financial assistance to the States was rendered by the Australian Government under the *States Grants (Water Resources) Act 1964*, subject to certain qualifying expenditure by each State. Under various States Grants (Water Resources Measurement) Acts, financial assistance to the States has continued and has been extended to 30 June 1976.

The total expenditure by the Western Australian Government on water resources measurement, including grants received from the Australian Government, is given in the following table. It will be seen that, in general, expenditure has increased steadily each year since 1964-65 to a peak of \$2,625,539 in 1973-74.

EXPENDITURE ON WATER RESOURCES
MEASUREMENT (a)
(\$)

Year	Surface water	Underground water
1964-65	258,200	430,000
1965-66	311,270	514,620
1966-67	351,700	384,000
1967-68	364,299	569,664
1968-69	442,681	527,927
1969-70	498,519	776,011
1970-71	521,695	753,471
1971-72	655,494	812,841
1972-73	669,701	1,090,194
1973-74	1,065,915	1,559,624

(a) Including Australian Government grants.

Surface Water

To enable rivers and streams to be utilised efficiently, the quantity and quality of water flowing in many rivers and streams throughout Western Australia are being measured. These vary from comparatively small streams, to relatively large rivers such as the Ord River in the Kimberley.

The number of stream-gauging stations in operation is increasing each year and at 30 June 1974 totalled 237, compared with 199 at 30 June 1973. All stations are under the control of the Public Works Department.

The distribution of the gauging stations in the various drainage divisions is as follows:

South-West Coast Division (Esperance to the Hill River)	....	....	....	....	....	....	155
Indian Ocean Division (Arrowsmith River to the De Grey River)	....	....	....	....	....	....	44
Timor Sea Division (Broome to the Ord River)	....	....	....	....	....	....	38
Total	....	....	....	....	....	....	237

Underground Water

To locate and measure the quantity and quality of underground water available to supply the ever-growing needs of town water supplies, industries, farmers, pastoralists, etc. a considerable amount of investigation, including drilling, is in progress in Western Australia. The work is being carried out by the Department of Mines, the Public Works Department, and the Metropolitan Water Supply, Sewerage, and Drainage Board, with the Department of Mines assuming the major responsibility for hydro-geological work.

Underground water exploration projects in course during 1973-74 included major investigations of shallow aquifers north of Perth, which may provide large quantities of water to augment Perth's water supply, and broad scale investigations in the East Murchison to indicate water for possible mining developments. Other investigations designed to locate underground water to provide or augment the water supplies for Albany, Dunsborough, Gracetown, Green Head, Halls Creek, Moora, Marble Bar, Nullagine, Quindalup and the West Pilbara Water Supply were also carried out during the year.

SEWERAGE SCHEMES

Metropolitan Sewerage

There are three major sewerage systems and seven smaller systems administered by the Metropolitan Water Supply, Sewerage, and Drainage Board within the metropolitan area.

Sewage from the major systems either gravitates or is pumped through the pipe systems to treatment works at Subiaco, Swanbourne and Woodman Point. After treatment the effluent is discharged into the Indian Ocean, some distance from the coast under a substantial depth of water.

The seven smaller systems are served by treatment plants at Canning Vale, Gosnells, Westfield, Beenyup, Kwinana, Eden Hill and Kelmscott, the treated effluent being disposed of in sandy soil in the vicinity of the plant sites.

METROPOLITAN SEWERAGE SYSTEMS

At 30 June—			Services	Population served	Length of sewers
			number	persons	kilometres
1970	....	....	76,638	296,000	1,590
1971	....	....	81,940	313,059	1,828
1972	....	....	87,318	334,608	1,991
1973	....	....	93,402	353,700	2,158
1974	....	....	99,698	380,000	2,432

The previous table shows the number of services, population served and the length of sewer mains under the control of the Metropolitan Water Supply, Sewerage, and Drainage Board at 30 June for each of the years 1970 to 1974.

Country Towns Sewerage

A number of towns outside the metropolitan area have sewerage schemes which were constructed pursuant to the *Country Towns Sewerage Act, 1948-1973*. In addition, a further thirteen schemes have been provided by local government authorities and ten as private development in mining areas by certain mining companies.

Some expansion in local authority construction can be anticipated as a result of a State subsidy scheme designed to assist local government authorities in developing this service. The first grants to local authorities under the scheme were made available in 1971-72.

The following table shows the number of towns sewered, the area sewered and the number of services controlled by the Public Works Department at 30 June for each of the years 1970 to 1974. Details of the individual towns serviced are given in the succeeding table.

COUNTRY SEWERAGE SYSTEMS

At 30 June—		Number of towns sewered	Area sewered	Length of sewers	Services
		number	hectares	kilometres	number
1970	....	25	2,175	336	8,846
1971	....	25	2,508	369	10,178
1972	....	26	2,866	377	11,141
1973	....	30	3,140	385	11,989
1974	....	30	3,568	434	12,828

COUNTRY SEWERAGE SYSTEMS: AREA SEWERED, SEWERS AND NUMBER OF SERVICES

Town	At 30 June 1973			At 30 June 1974		
	Area sewered	Length of sewers	Services	Area sewered	Length of sewers	Services
	hectares	kilometres	number	hectares	kilometres	number
Albany	520	71.6	2,445	557	76.5	2,531
Bunbury	149	18.7	720	167	21.1	772
Collie	271	36.8	1,037	271	36.8	1,079
Corrigin	55	7.0	152	55	7.0	163
Denmark	8	1.6	22	8	1.6	23
Exmouth	82	10.8	393	82	10.8	395
Geraldton	28	2.3	270	28	2.3	270
Gnowangerup	66	7.0	137	75	8.0	144
Karratha	193	15.3	581	222	18.7	695
Kataanning	148	16.9	358	192	21.5	410
Kellerberrin	55	5.3	68	55	5.3	71
Kojonup	39	5.9	147	39	5.9	148
Kununurra	61	4.6	91	61	4.6	99
Laverton	(a)	(a)	(a)	45	4.7	61
Mandurah	(a)	(a)	(a)	76	8.4	30
Meckering	25	2.5	40	25	2.5	41
Merredin	87	10.6	267	94	11.5	287
Mount Barker	43	5.6	57	43	5.6	61
Narrogin	219	26.3	727	225	27.0	780
Norham	409	56.1	2,285	411	56.6	2,316
Pingelly	54	5.6	69	76	8.1	71
Pinjarra	122	12.8	211	142	15.0	224
Port Hedland	72	10.9	438	72	10.9	438
South Hedland	131	12.8	348	194	19.2	523
Three Springs	48	3.5	153	48	3.5	157
Wagin	64	8.9	300	73	10.1	301
Wickham	66	7.8	267	66	7.8	318
Wongan Hills	40	3.9	53	78	8.9	60
Wundowie	38	6.6	221	40	7.0	221
Wyalkatchem	47	7.2	132	48	7.4	139
Total	3,140	384.9	11,989	3,568	434.3	12,828

(a) Commenced after 30 June 1973.

CHAPTER VIII—PRODUCTION

In this Chapter 'production' denotes those economic activities with output in the form of 'goods' or 'commodities' which will be marketed as raw materials, fuels, semi-processed articles or finished products. This definition excludes building and construction activity which is covered in Chapter V, Part 4.

The Chapter is divided into three Parts which deal with the major sectors of production as follows:

Part 1 Agriculture, Forestry, Fishing and Hunting

Part 2 Mining

Part 3 Manufacturing and Electricity and Gas.

The subdivision of the Chapter into Parts 1, 2 and 3 is based on 'industry divisions' in the Australian Standard Industrial Classification (ASIC), and also reflects the current stage of development of economic statistics whereby information presented in Part 2 and Part 3 comes mainly from a system of integrated economic censuses based on ASIC, whereas statistics in Part 1 have yet to be included in this system. A brief description of ASIC and the system of integrated economic censuses is given below.

Australian Standard Industrial Classification (ASIC)

In 1969 the Australian Bureau of Statistics issued the 'Australian Standard Industrial Classification (Preliminary Edition)', or 'ASIC', which sets out a classification of all economic activities grouped into four levels of 'industry' in which the activities are primarily carried out. At the broadest level of the classification, economic activities are grouped into the following 'industry divisions':

Division A Agriculture, Forestry, Fishing and Hunting

B Mining

C Manufacturing

D Electricity, Gas and Water

E Construction

F Wholesale and Retail Trade

G Transport and Storage

H Communication

I Finance, Insurance, Real Estate and Business Services

J Public Administration and Defence

K Community Services

L Entertainment, Recreation, Restaurants, Hotels and Personal Services.

Each industry division is further divided into industry sub-divisions, groups and classes. An example from the Manufacturing division is given below:

Industry Division	: C	Manufacturing
Industry Sub-division	: 28	Glass, Clay and Other Non-Metallic Mineral Products
Industry Group	: 281	Glass and Glass Products
Industry Class	: 2811	Plate and Sheet Glass

Economic units are classified to industry division, sub-division, group and class, in that order, based on the predominant activities among all the activities carried out by the unit concerned. The basic economic unit is the *establishment* which generally represents the total operations under one ownership at one physical location (e.g. a farm, a shop, a factory, a mine). In some cases (e.g. electricity and gas production and distribution) the location constraint is relaxed to cover the total operations under one ownership in one State. Some separately-located units which exist primarily to provide services to other

establishments under the same ownership (e.g. separately-located administrative offices, laboratories, warehouses, manufacturers' sales offices not holding stocks, etc.) are regarded as *ancillary units* and are classified to the industry of the establishments served rather than to an industry based on the activity performed. If all the activities of all establishments and ancillary units under the same ownership are considered together the unit is described as the *enterprise*, or all the operations of a single entity in Australia. The final unit in the hierarchy is the *enterprise group* which is the group of legal entities owned or controlled by a single legal entity (e.g. a parent company and its subsidiaries as defined in the Companies Act).

Integrated Economic Censuses

In 1968-69 the Australian Bureau of Statistics commenced a programme of integrated economic censuses which would replace or add to the range of existing censuses developed independently over many years. By employing standard definitions of data items as described below and by using the standard definitions of units and methods of classification set out in ASIC, the programme was designed to remove many inconsistencies, gaps and overlaps between existing censuses and thereby permit comparisons of data across broad sectors of economic activity. Integrated censuses have now been conducted as set out in the table below.

Year	Integrated economic censuses completed
1968-69	Mining (a), Manufacturing, Electricity and Gas, Wholesale Trade (b), Retail and Selected Services (b)
1969-70	Mining (a), Manufacturing, Electricity and Gas
1970-71	Mining (a)
1971-72	Mining (a), Manufacturing, Electricity and Gas
1972-73	Mining (a), Manufacturing

(a) The Mining Censuses to date have excluded establishments primarily engaged in exploration or other services to mining. (b) See Chapter IX, Part 2, *Internal Trade* for further details of these censuses.

Statistics published from the integrated economic censuses are mainly *establishment statistics* or statistics resulting from the aggregation of data for individual establishments and ancillary units. However, statistics based on enterprises and enterprise groups as the basic unit of aggregation were also compiled from the 1968-69 censuses and are described briefly below. In this Chapter most of the statistics in Parts 2 and 3 are establishment statistics from integrated censuses and data for the standard items can be regarded as comparable between the two Parts. However, the sectors of production covered by Part 1 of this Chapter have not yet been included in the system of integrated economic censuses and consequently the statistics in Part 1 are not strictly comparable with those in Parts 2 and 3.

Enterprise Statistics

Since an enterprise is defined as a single legal entity, the use of the enterprise as the unit of aggregation provides statistics which are often of more value than establishment statistics in considering questions related to management and ownership. The statistics which result from the aggregation of enterprise data are different from establishment statistics since, for enterprises comprised of establishments operating in different industries, the industry classification of the enterprise depends on the respective contributions of each establishment to the value added of the enterprise. For example, an enterprise operating a mine and a factory contributes to both mining and manufacturing in establishment statistics whereas, in enterprise statistics, it is classified wholly to either mining or manufacturing depending on which establishment has the greater value added.

The concept of an enterprise has no geographical limits other than the requirement that only operations within Australia are included. For this reason enterprise statistics generally relate only to Australia as a whole and are not dissected into State components. Two bulletins of enterprise statistics from the 1968-69 integrated economic censuses have been published, namely: *Integrated Economic Censuses, 1968-69: Enterprise Statistics, Summary Bulletin, Australia* and *Integrated Economic Censuses 1968-69: Enterprise Statistics, Details by Industry Class, Australia*.

The published statistics show the number of enterprises in each ASIC industry class together with data for the standard set of establishment items described below, plus additional items collected only at the enterprise level such as rent and leasing revenue, land tax, rates and pay-roll tax, employer contributions to superannuation schemes, depreciation, interest and royalties (paid and received) and other expenses. Enterprise and establishment data are cross-tabulated to indicate the degree to which enterprises have establishments operating in industries different from the industry of the enterprise and the extent to which industries are comprised of establishments operated by enterprises classified to other industries. Selected data items are also tabulated according to the employment size of the enterprise and the employment size of component establishments.

Enterprise Group Statistics

Statistics based on enterprise groups as the unit of aggregation are of use in assessing the degree of competition in industries since the enterprise group comprises all single legal entities in Australia under common ownership or control. A publication entitled *Integrated Economic Censuses: 1968-69, Industry Concentration Statistics, Details By Industry Class, Australia* issued by the Commonwealth Statistician, Canberra shows the extent to which the largest enterprise groups contributed to the main items of establishment data for each of the ASIC classifications included in the 1968-69 integrated economic censuses. The enterprise groups were ranked on the basis of the value of turnover of establishments under their ownership or control in the ASIC classifications under consideration. For example, the bulletin shows that the twelve enterprise groups which were largest in terms of the turnover of their mining establishments accounted in these establishments for 59 per cent of total value added by all mining establishments, whereas the corresponding figure for the twelve highest ranked enterprise groups in manufacturing was only 16 per cent. This indicated a higher level of 'industry concentration' in mining than in manufacturing, but further interpretation is subject to a number of qualifications which are given in the above-mentioned publication.

Standard Data Items in Integrated Censuses

A necessary part of the system of integrated economic censuses was the adoption of common definitions for data items common to all censuses. Listed below are the definitions of the standard data items appearing in tables in Parts 2 and 3 of this Chapter and referred to in Part 2 of Chapter IX—*Internal Trade*.

Number of Establishments. The number of establishments as defined above operating at 30 June of each year. Numbers of separately-located administrative offices and ancillary units serving the establishments are not included.

Persons Employed. Working proprietors and employees on the pay-roll including those working at separately-located administrative offices and ancillary units.

Wages and Salaries. The wages and salaries of all employees including those at separately-located administrative offices and ancillary units. Amounts drawn by working proprietors are not included.

Turnover. Sales (exclusive of excise and sales tax) of goods, whether produced in the establishment or not, plus transfers out of goods to other establishments of the same enterprise, plus bounties and subsidies on production, plus all other operating revenue

(such as commission, repair and service revenue), plus capital work done for own use, or for rental or lease. Rent, leasing receipts, interest, royalties and receipts from the sale of fixed tangible assets are excluded.

Stocks. All the stocks of materials, fuels, etc. and finished goods and work-in-progress of the establishment, whether located at the establishments or elsewhere in Australia.

Purchases, Transfers In and Selected Expenses. Purchases of materials, fuel, power, stores, containers, etc. plus transfers in of goods from other establishments of the same enterprise, plus charges for commission and sub-contract work, repair and maintenance expenses, outward freight and cartage, motor vehicle running expenses and sales commission payments.

Value Added. Turnover, plus increase (or less decrease) in the value of stocks, less purchases, transfers in and selected expenses.

Rent and Leasing Expenses. Outlay on rent and leasing of buildings, vehicles, machinery, plant and equipment.

Fixed Capital Expenditure. Outlay on new and secondhand fixed tangible assets, less disposals, including expenditure on establishments not yet in operation.

Part 1—Primary Production

LAND UTILISATION ON RURAL HOLDINGS

In 1973-74 there were 20,608 rural holdings in the State, comprising 115 million hectares of land or just over 45 per cent of the total area of Western Australia.

Of the total area of rural holdings, 4·1 million hectares were used for crops, 6·9 million hectares were under sown pasture and 0·4 million hectares were in fallow. The balance consists mainly of uncleared land, most of which is pastoral leases held by sheep and cattle stations, but also includes cleared land used for grazing or was resting during the season, newly cleared land and small areas of lucerne.

Land development in the post-war period was stimulated by generally favourable prices for agricultural and pastoral commodities. Special concessions to primary producers under the provisions of the taxation legislation also contributed to the increased capital investment in primary industry. This development, undertaken principally by established farmers and by the War Service Land Settlement Board, was aided by the introduction of modern mechanical methods of land clearing. As a result, the area of

land used for crops increased from 1.4 million hectares in 1946-47 to more than 4.1 million hectares in 1973-74. This is the largest recorded area of crops, exceeding the previous peak of 3.9 million hectares in 1969-70. During the same period the area under pasture increased from 0.8 million hectares to almost 7.0 million hectares.

Details of land utilisation in the five years to 1973-74 are given in the next table together with the number of active rural holdings.

LAND UTILISATION

Season	Active rural holdings (number)	Land use during the season (hectares)				Total area of holdings (hectares)
		Used for crops	Under sown pastures (a)	Lucerne (all purposes)	Balance of holdings	
1969-70	22,937	(b) 3,915,599	6,666,012	(c)	103,061,737	113,643,348
1970-71	22,592	(b) 3,831,429	6,982,551	(c)	103,755,457	114,569,436
1971-72	21,997	3,751,233	6,809,377	14,819	103,895,864	114,471,293
1972-73	21,128	3,855,196	6,769,099	16,460	103,320,345	113,961,100
1973-74	20,608	4,133,095	6,939,501	16,687	103,563,970	114,653,253

(a) Collected and published under the term 'established pasture' prior to 1971-72. (b) Includes areas of sown pastures and of lucerne cut for hay or harvested for seed. (c) Included in land used for crops.

The following table shows a classification of rural holdings according to size of holding for 1973-74. For the State as a whole the largest group of holdings is in the size range 1,000 to 1,999 hectares and the 4,395 holdings concerned represent 21 per cent of the total number of holdings in the State.

The next largest group is holdings in the range 750 to 999 hectares and the 1,835 holdings in this category account for 9 per cent of the total. Sixteen per cent of all holdings are under twenty hectares in size.

CLASSIFICATION OF RURAL HOLDINGS ACCORDING TO SIZE OF HOLDING: SEASON 1973-74

Area of holdings	In agricultural areas (a)		In pastoral areas (b)		Whole State	
	Number of holdings	Area	Number of holdings	Area	Number of holdings	Area
hectares		hectares		hectares		hectares
1 to 4	1,586	4,019	31	83	1,617	4,102
5 to 9	790	5,354	57	397	847	5,751
10 to 19	682	9,313	49	626	731	9,939
20 to 29	323	7,602	16	344	339	7,946
30 to 39	282	9,691	5	166	287	9,857
40 to 49	394	16,931	6	256	400	17,187
50 to 74	614	38,047	1	71	615	38,118
75 to 99	532	45,800	1	91	533	45,891
100 to 124	527	58,957	1	108	528	59,065
125 to 149	457	62,415	....	....	457	62,415
150 to 199	696	121,049	2	334	698	121,383
200 to 249	671	149,012	4	887	675	149,899
250 to 299	486	133,234	9	2,416	495	135,650
300 to 399	815	283,454	3	1,025	818	284,479
400 to 499	811	358,163	4	1,830	815	359,993
500 to 749	1,552	966,250	4	2,133	1,556	968,383
750 to 999	1,829	1,582,410	6	5,369	1,835	1,587,779
1,000 to 1,999	4,385	6,226,496	10	12,094	4,395	6,238,590
2,000 to 2,999	1,382	3,311,129	....	....	1,382	3,311,129
3,000 to 3,999	545	1,864,897	1	3,375	546	1,868,272
4,000 to 4,999	248	1,086,991	2	8,917	250	1,095,908
5,000 to 9,999	234	1,498,697	4	26,648	238	1,525,345
10,000 to 19,999	43	573,532	7	93,856	50	667,388
20,000 to 29,999	4	101,847	6	149,991	10	251,838
30,000 to 49,999	10	394,940	19	768,604	29	1,163,544
50,000 and over	24	4,640,583	438	90,022,819	462	94,663,402
Total	19,922	23,550,813	686	91,102,440	20,608	114,653,253

(a) The agricultural areas comprise the Perth, South-West, Southern Agricultural, Central Agricultural and Northern Agricultural Statistical Divisions and the Shires of Dundas, Esperance, Ravensthorpe and Yilgarn. (b) The pastoral areas comprise the Kimberley, North-West, Pilbara and Central Statistical Divisions and the Shires of Boulder, Coolgardie, Laverton, Leonora and Menzies.

In the next table details of rural land utilisation according to Statistical Division are given for 1973-74. The greatest number of active rural holdings was in the Central Agricultural Division which also had the largest area under crop.

LAND UTILISATION IN EACH STATISTICAL DIVISION: 1973-74

Statistical Division	Active rural holdings (number)	Land use during the season (hectares)					Total area of holdings (hectares)
		Used for crops (a)	Under sown pastures	Lucerne (all purposes)	In fallow	Other	
Perth	3,272	8,553	75,692	630	810	68,116	153,801
South-West	4,006	33,977	648,809	2,687	3,215	373,756	1,062,444
Southern Agricultural	4,248	653,828	2,051,316	2,333	83,103	1,475,137	4,265,717
Central Agricultural	4,416	1,858,205	1,968,744	1,807	123,999	2,236,215	6,188,970
Northern Agricultural	2,979	1,218,043	1,558,520	1,332	102,137	3,414,843	6,294,875
Eastern Goldfields	1,096	350,855	599,007	6,924	89,782	18,415,943	19,462,511
Central	153	1,938	262	4	222	25,834,795	25,837,221
North-West and Pilbara	304	737	6	....	60	27,007,909	27,008,712
Kimberley	134	6,959	37,145	970	752	24,333,176	24,379,002
Total	20,608	4,133,095	6,939,501	16,687	404,080	103,159,890	114,653,253

(a) Excludes areas of sown pastures and of lucerne cut for hay or harvested for seed.

MACHINERY

The following table shows the principal items of machinery on rural holdings at 31 March in each of the years from 1970 to 1974. Items marked not available are, in general, collected only triennially.

MACHINERY ON RURAL HOLDINGS

Type	At 31 March—				
	1970	1971	1972	1973	1974
Rotary hoes—					
Self-contained power unit	1,671	1,518	1,728	1,756	1,728
Tractor-mounted and trailing types	1,622	1,616	2,149	2,159	2,331
Seeding and fertilising machines—					
Grain drills—					
Combine type	14,168	14,043	13,687	13,847	13,876
Other types	3,499	3,406	3,404	3,145	2,966
Fertiliser distributors and broadcasters—					
Rotary	(a)	9,315	9,367	9,378	9,422
Direct drop	(a)	668	722	730	721
Total	10,017	9,983	10,089	10,108	10,143
Harvesting machines—					
Grain and seed harvesters (b)—					
Tractor drawn	9,317	9,018	8,556	8,026	7,782
Self-propelled	1,592	1,727	1,906	2,079	2,319
Total	10,909	10,745	10,462	10,105	10,101
Agricultural mowers—					
Reciprocating (cutter bar) types—					
Power driven (incl. power take-off)	(a)	6,776	(a)	(a)	(a)
Ground driven	(a)	275	(a)	(a)	(a)
Rotary types (including slashers and toppers)	(a)	2,792	(a)	(a)	(a)
Hay rakes—Side-delivery	(a)	5,208	(a)	(a)	(a)
Other hay and agricultural rakes (including buck, dump and root)	(a)	3,293	(a)	(a)	(a)
Pick-up balers	4,113	4,329	4,570	4,674	4,792
Forage harvesters	644	626	688	670	717
Potato diggers	(a)	476	(a)	(a)	(a)
Tractors—					
Wheelled	32,120	31,917	31,809	31,970	32,381
Crawler	3,750	3,741	3,631	3,549	3,497
Total	35,870	35,658	35,440	35,519	35,878
Miscellaneous machines—					
Hammer mills (including roughage mills)	(a)	2,524	(a)	(a)	(a)
Milking machine units	9,144	(a)	8,401	8,529	(a)
Shearing machine stands	26,385	(a)	25,399	(a)	(a)

(a) Not available. (b) Includes headers and strippers; excludes reapers, binders and specialised clover seed harvesters.

VALUE OF PRODUCTION

For primary production the *gross value* is based on the wholesale price realised 'at the principal market'. Where primary products are consumed at the place of production or where they become raw material for secondary industry within the State, these points of consumption are taken as the 'principal market'. *Net value* represents the return to the producer after the cost of all goods consumed in the process of production and the costs of marketing the product have been deducted from the gross value. It is consequently the sum available for payment of wages, interest, rent, depreciation, other overhead costs and for the producer's own income.

Net values of production of the various primary industries excluding mining during the five years ended 1973-74 are given in the following table. A useful comparison of the relative importance of the individual primary industries is provided by the five-yearly averages quoted, as they tend to lessen the effect on the statistics of unusual seasonal or other conditions occurring in particular years. However, in making such comparisons particular account should be taken of price fluctuations for major commodities in each industry over the period (such as wool in 'Pastoral') and, from 1969-70, the implementation of the Wheat Delivery Quotas Plan. An outline of the Plan is given on pages 367-8.

The net value of production in 1973-74 showed an increase of 82 per cent over 1972-73, resulting mainly from a 254 per cent rise in the value for Agriculture, where wheat was the major factor.

NET VALUE OF RECORDED PRIMARY PRODUCTION
(Excluding Mining)

Industry	1969-70	1970-71	1971-72	1972-73	1973-74	Average of five years
VALUE (\$'000)						
Agriculture	84,327	177,640	145,641	134,350	476,225	203,637
Pastoral	132,610	104,437	156,314	275,052	314,558	196,594
Dairying	9,850	10,004	9,924	16,022	17,393	12,639
Poultry farming	4,673	5,707	6,736	6,362	9,469	6,589
Bee keeping	770	592	640	1,015	1,310	781
Hunting	614	592	640	1,908	1,606	1,103
Forestry	12,795	14,845	13,288	13,184	13,732	13,569
Fishing, pearling and whaling	17,989	23,655	29,089	*26,384	28,751	25,174
Total	263,629	337,158	362,324	*474,276	863,045	460,086
PROPORTION OF TOTAL (PER CENT)						
Agriculture	31.99	52.69	40.20	28.33	55.18	44.26
Pastoral	50.30	30.98	43.14	57.99	36.44	42.73
Dairying	3.74	2.97	2.74	3.38	2.02	2.75
Poultry farming	1.77	1.69	1.86	1.34	1.10	1.43
Bee keeping	0.23	0.08	0.19	0.21	0.15	0.17
Hunting	0.29	0.18	0.18	0.40	0.19	0.24
Forestry	4.85	4.40	3.67	2.78	1.59	2.95
Fishing, pearling and whaling	6.82	7.02	8.03	5.56	3.33	5.47
Total	100.00	100.00	100.00	100.00	100.00	100.00

* Revised.

Details of the turnover and value added by mining establishments in the State appear on page 409 in Part 2 of this Chapter.

The following table shows the gross and net values of production of the various primary industries in 1973-74. The '*local value*' which is quoted is the value at the source of production and is obtained by deducting marketing costs from the gross value. Marketing costs comprise freight, cost of containers, commission, and other charges incurred in marketing. Gross values provide a reliable measure of the value of production of any particular item or industry but net value of primary production should be used when comparing or combining values for primary industries with those for secondary industry.

PRIMARY INDUSTRIES—VALUE OF PRODUCTION: 1973-74
(Excluding Mining)
(\$'000)

Industry	GROSS VALUE (based on principal market prices)	Marketing costs	LOCAL VALUE (as at source of production)	Cost of goods consumed in process of production	NET VALUE
Agriculture	587,628	62,690	524,938	48,713	476,225
Pastoral	369,636	21,524	348,111	33,554	314,558
Dairying	39,290	2,324	36,966	19,572	17,393
Poultry farming	19,016	1,047	17,969	8,500	9,469
Bee keeping	1,343	32	1,310	(a)	1,310
Hunting	1,739	132	1,606	(a)	1,606
Forestry	15,264	1,531	13,732	(a)	13,732
Fishing, pearling and whaling	30,494	181	30,313	1,562	28,751
Total	1,064,408	89,462	974,946	111,901	863,045

(a) Not available.

Gross values of the principal items are shown in the next table for each of the years 1969-70 to 1973-74.

PRIMARY PRODUCTION—GROSS VALUES OF PRINCIPAL ITEMS
(Excluding Mining)
(\$'000)

Industry and commodity	1969-70	1970-71	1971-72	1972-73	1973-74
Agriculture—					
Wheat	90,961	153,227	115,934	109,399	443,770
Oats	5,910	18,100	10,256	5,793	25,253
Barley	8,874	34,194	39,223	29,523	48,050
Hay (all kinds)	13,457	15,396	13,294	19,948	22,529
Pasture seed—					
Subterranean clover	1,599	751	832	1,859	2,028
Barrel medic	65	111	81	60	79
Cotton	1,681	1,587	2,310	1,332	1,966
Vegetables—					
Potatoes	5,390	6,299	5,923	6,272	8,431
Tomatoes	2,024	1,915	1,975	2,387	2,321
Beans, French and runner (a)	859	801	856	709	843
Lettuce	831	773	808	998	1,170
Cauliflowers	829	1,061	1,083	919	1,263
Fruit, orchard—					
Apples	8,072	9,167	7,772	8,214	8,388
Bananas	2,143	367	1,433	1,747	1,479
Oranges	1,344	1,272	931	984	1,180
Pears	849	823	726	1,031	1,034
Plums and prunes	662	702	501	759	952
Vine fruits	1,282	1,457	1,238	1,246	1,597
Nursery products (b)	1,312	1,467	1,836	2,274	3,099
Pastoral—					
Wool (shorn and dead) (c)	120,552	91,937	134,764	223,559	250,704
Livestock slaughtered (d)	55,601	52,530	60,212	91,188	109,791
Dairying—					
Whole milk (e)	16,255	17,766	17,862	18,482	19,627
Livestock slaughtered (f)	9,687	9,041	10,365	15,540	19,667
Poultry farming—					
Eggs (g)	6,253	6,724	7,990	7,251	7,949
Poultry slaughtered	6,702	7,795	8,189	7,818	11,067
Bee keeping	659	296	729	1,045	1,343
Hunting	1,098	834	838	2,132	1,739
Forestry	13,632	16,174	14,660	14,607	15,264
Fishing—					
Prawns	2,697	2,986	2,969	4,106	4,277
Rock lobsters	12,115	18,040	22,184	17,923	17,855
Scale fish	1,019	1,200	1,437	*1,778	2,093

(a) Includes beans for processing. (b) Value of seedlings, cut flowers, bulbs, trees, etc. produced.
(c) The value of fellmongered wool and wool exported on skins is included in the value of livestock slaughtered which has been computed from prices of livestock 'on hoof' and therefore includes a value for wool on skins.
(d) Comprises cattle, sheep and lambs. (e) Includes Australian Government subsidy.
(f) Comprises calves and pigs. (g) Prior to 1971-72, figures include an estimate for non-commercial production. * Revised.

SUMMARY OF AUSTRALIAN STATISTICS

The following table contains a selection of the principal statistics of primary production in each of the Australian States for 1972-73. The figures shown for Australia include those for the Northern Territory and the Australian Capital Territory except where indicated otherwise.

The gross value of primary production (excluding mining) for Australia as a whole in 1972-73 amounted to \$5,256.9 million, of which Western Australia contributed \$619.6 million or 11.8 per cent of the total. The major contributor was New South Wales with \$1,613.6 million or 30.7 per cent.

PRINCIPAL STATISTICS OF PRIMARY PRODUCTION
AUSTRALIA: 1972-73

Particulars	Unit	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Australia (a)
Rural holdings—								
Number .....	....	74,587	66,890	42,329	29,001	21,128	9,733	244,255
Area	'000 ha	68,849	15,771	155,136	65,372	113,961	2,592	499,815
Principal crops—								
Wheat for grain—								
Area	'000 ha	2,618	1,087	471	986	2,437	4	7,604
Production	'000 tonnes	1,954	1,249	405	815	2,003	8	6,434
Oats for grain—								
Area	'000 ha	285	255	10	142	297	6	995
Production	'000 tonnes	196	238	8	74	212	7	736
Barley for grain—								
Area	'000 ha	336	277	78	692	744	13	2,140
Production	'000 tonnes	266	214	80	509	640	19	1,727
Hay, all types—								
Area	'000 ha	304	517	61	210	224	58	1,378
Production	'000 tonnes	1,041	1,975	349	623	664	233	4,893
Pasture seed	tonne	1,479	1,082	933	2,089	4,853	166	10,635
Onions—								
Area	hectare	910	922	1,370	900	132	224	4,464
Production	tonne	19,246	13,608	25,662	23,014	4,877	6,752	93,234
Potatoes—								
Area	hectare	9,134	13,120	5,960	2,673	2,378	3,330	(b) 36,607
Production	tonne	130,301	258,892	92,164	69,483	63,282	78,286	(b) 692,606
Other vegetables—								
Area	hectare	17,410	17,258	17,628	7,512	3,184	6,683	(c) 69,876
Apples—								
Number of trees	'000 trees	1,596	1,606	1,302	645	1,171	2,412	8,737
Production	'000 bush	3,452	4,783	1,981	1,470	2,960	7,042	21,702
Pears—								
Number of trees	'000 trees	258	1,633	124	200	87	145	2,447
Production	'000 bush	756	6,137	201	524	227	308	8,157
Oranges—								
Number of trees	'000 trees	2,617	653	259	1,465	356	....	5,351
Production	'000 bush	6,967	2,017	874	5,714	412	....	15,981
Vineyards—								
Area	hectare	13,274	21,526	1,560	29,528	2,565	....	68,502
Grapes (all purposes) .....	....	112,946	226,808	4,719	243,897	9,970	....	598,340
Livestock numbers, 31 March 1973—								
Sheep and lambs	'000	52,037	24,105	13,346	15,651	30,919	3,824	140,029
Cattle	'000	7,918	5,464	9,795	1,583	2,182	900	29,101
Pigs	'000	1,065	585	542	499	476	85	3,259
Livestock slaughtered for human consumption—								
Sheep	'000	6,356.7	7,855.7	1,712.7	2,397.1	4,229.4	636.5	23,201.5
Lambs	'000	6,240.8	6,672.8	739.6	2,141.4	1,318.6	641.7	17,931.9
Cattle	'000	2,071.2	1,894.9	1,675.6	336.9	462.9	234.8	6,773.5
Calves	'000	278.1	665.1	328.7	55.6	15.2	25.9	1,373.5
Pigs	'000	1,323.7	1,210.3	964.4	527.0	537.5	152.0	4,743.2
Wool production	mil. kg	226.2	172.4	70.9	100.9	148.5	18.2	736.1
Whole milk production—								
All purposes	'000 litres	1,176,962	4,061,466	736,792	424,265	242,060	423,841	7,068,375
Fisheries production—								
Fish, live weight	tonne	21,472	10,768	5,424	11,790	7,090	2,265	59,428
Crustaceans, gross weight	tonne	2,454	(d) 845	7,447	4,863	10,486	1,584	(d) 30,297
Gross value of production—								
Agriculture	\$'000	436,206	282,696	452,137	177,768	203,417	43,693	1,598,050
Pastoral	\$'000	840,790	607,812	399,232	270,233	321,111	72,357	2,542,408
Dairying	\$'000	176,991	263,161	78,436	47,808	34,022	29,914	631,109
Poultry farming	\$'000	89,032	49,099	29,020	14,274	15,069	5,822	203,942
Bee keeping	\$'000	2,482	2,142	815	1,712	1,045	220	8,424
Hunting	\$'000	3,335	3,225	2,323	582	2,132	415	12,051
Forestry	\$'000	43,564	35,985	22,715	10,683	14,607	30,922	159,510
Fishing, pearling and whaling	\$'000	21,165	11,471	13,462	15,915	28,158	6,577	101,365

(a) Includes Northern Territory and Australian Capital Territory except where indicated; see footnote (b). (b) Incomplete. Excludes Northern Territory and/or Australian Capital Territory. (c) Includes potatoes for Northern Territory and Australian Capital Territory. (d) Excludes details of freshwater crayfish and crabs for Victoria.

SEASONAL CALENDAR

The following calendar is intended to show the main periods when principal agricultural and pastoral activities are carried out in Western Australia. Operations are generally confined to the periods shown but are subject to variation according to such factors as geographical location within the State, the variety of seed sown (or trees and vines planted) and exceptional seasonal conditions.

SEASONAL CALENDAR

Item	Period	
	Sowing or planting	Harvesting
Pastures—		
Clovers	April to June	December to April
Medics	April to June	December to April
Grain—		
Wheat	May to mid-July	November to January
Oats	May and June	November and December
Barley	May to July	November and December
Rye	May and June	November and December
Sweet Lupins	April to June	November to January
Hay—		
Wheaten	May and June	October and November
Oaten	April to June	October and November
Cotton	November to February	June to October
Linseed	May to July	December and January
Vegetables—		
Beans, Runner—		
Carnarvon area	March to September	May to November
Perth Division	August to March	November to June
Green Peas—		
For processing	May to September	October to December
Fresh	May to September	August to December
Potatoes—		
Early planting—		
Perth and South-West	June and July	October to December
Mid-season planting—		
Perth, South-West and Southern Agricultural	July to November	November to March
Late planting—		
South-West and Southern Agricultural	November to February	February to June
Onions	March to November	September to April
Tomatoes—		
Carnarvon and Geraldton areas	February to August	May to December
Other areas	June to February	October to June
Fruit—		
Apples	June to August	February to May
Apricots	June and July	December and January
Bananas	September to March	July to June
Lemons	July and August	July to June
Mandarins	July and August	May to September
Nectarines	June and July	January and February
Olives	July and August	March and April
Oranges, Navel	July and August	May to September
Oranges, Valencia	July and August	August to February
Peaches	June and July	December to March
Pears	June and July	February and March
Plums	June and July	December to March
Grapes—		
For table use	July to September	January to May
For wine making	July to September	February to April
For drying	July to September	February
Shearing and lambing—		
Shearing—		
Pastoral areas	March to August	
Agricultural areas	February to November	
Lambing—		
Pastoral areas	April to July	
Agricultural areas	April to September	

BUSHEL WEIGHTS

The production of fruit and certain other commodities is generally recorded in bushels. While the weight of a bushel varies according to the nature of the product, it is also subject to considerable variation on account of such factors as method of packing and size and variety within each kind of product. The average bushel equivalent weights set out on the next page may be used to convert production to kilograms.

PRIMARY PRODUCTION

BUSHEL WEIGHTS

Product	Weight per bushel	Product	Weight per bushel	Product	Weight per bushel
Apples	kg 19	Lemons	kg 22	Passion fruit	kg 15
Apricots	22	Loquats	20	Peaches	20
Bananas	25	Mandarins	22	Pears	20
Cherries	22	Nectarines	23	Plums	26
Figs	20	Olives	25	Quinces	19
Grapefruit	19	Oranges	22	Tomatoes	20

AGRICULTURE

Wheat

Wheat has been grown from the earliest years of settlement and a brief synopsis of the development of production is given in the *Western Australian Year Book*, No. 7-1968 and earlier issues. By 1968, the area of land sown to wheat for grain had increased to 3·0 million hectares from which a harvest of 3·1 million tonnes was obtained for an average yield of 1·04 tonnes per hectare. With the introduction of the Wheat Delivery Quotas Plan in 1969 (see page 367) the area sown to wheat decreased by over 900,000 hectares between 1968-69 and 1971-72. The downward trend was arrested in 1972-73 when quotas were raised and 2·4 million hectares were sown. The area sown further increased to 3·0 million hectares in 1973-74 from which a State record harvest of 4·2 million tonnes was obtained at an average yield of 1·41 tonnes per hectare.

Mechanisation has been of great importance in the growth of wheat farming in Western Australia owing to the relatively low average yield per hectare obtained.

Most of Western Australia's wheat production is exported as grain and flour and in the following table the fluctuations which have occurred in exports since 1910 are shown, together with figures giving the estimated total wheat equivalent. The United Kingdom has been the most consistent purchaser of the State's wheat, but since 1961-62 the People's Republic of China and Japan have been the most important customers and in 1969-70 their purchases together accounted for 78 per cent of the State's total wheat exports. However, in 1973-74 their combined purchases were only 36 per cent of the State's total exports even though the People's Republic of China was the most important customer with purchases amounting to 517,145 tonnes. In 1973-74 other principal buyers, in order of importance, were the Arab Republic of Egypt and India. In the same year principal customers for flour were Mauritius, Saudi Arabia, the Union of Arab Emirates, Qatar and Oman. Further details of exports appear in Chapter IX, Part 1.

EXPORTS OF WHEAT AND FLOUR

Year	Wheat	Flour (a)	Estimated total wheat equivalent
	tonnes	tonnes	tonnes
1910	54,827	2,559	58,436
1919-20	249,053	117,254	414,381
1929-30	679,116	62,659	767,466
1939-40	417,226	83,159	534,344
1949-50	585,417	105,065	733,558
1959-60	999,173	79,697	1,111,546
1969-70	1,814,774	31,173	1,858,727
1970-71	2,670,891	26,670	2,708,496
1971-72	2,587,504	18,882	2,614,128
1972-73	2,249,934	9,798	2,263,749
1973-74	2,139,973	11,232	2,155,810

(a) Ships' stores are excluded from figures for 1959-60 and subsequent years.

WHEAT FOR GRAIN—AREA AND PRODUCTION

Season	Area sown	Production		
		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$
1900-01	29,947	21,092	0.70	309,862
1910-11	235,527	160,517	0.68	2,162,432
1920-21	516,379	333,336	0.65	11,023,272
1930-31	1,600,938	1,456,141	0.91	12,201,176
1940-41	1,062,301	573,159	0.54	8,647,906
1950-51	1,288,925	1,358,056	1.05	65,328,246
1960-61	1,627,242	1,739,074	1.07	92,290,238
1969-70	2,747,080	1,815,277	0.66	90,961,092
1970-71	2,361,146	2,956,969	1.25	153,226,816
1971-72	2,041,887	2,165,160	1.06	115,934,427
1972-73	2,437,412	2,002,975	0.82	109,398,972
1973-74	2,977,920	4,210,782	1.41	443,770,005

Bulk Handling of Wheat. The rapid increase in the production and export of wheat between 1910 and 1920 caused problems of transport and storage, and proposals for the bulk handling of the grain led to the formation of a company for this purpose in 1920. This original undertaking was wound up before commencing operations because the technical difficulties then appeared too great and the saving in handling costs problematical. In the early 1930s depressed wheat prices once again stimulated the search for cheaper methods of storage and transportation of grain. Experiments were carried out in the Wyalkatchem area during the 1931-32 season which essentially involved the adaptation of existing bagged wheat storages and bagged wheat mobile elevators to handle wheat in bulk.

The experiment proved successful and the Bulk Handling Act of 1935 gave a growers' co-operative the right of operating, under franchise, a bulk handling system. The co-operative company was Co-operative Bulk Handling Limited which had been formed in 1933, the initial capital being subscribed by two existing co-operatives, The Westralian Farmers and The Grain Pool. In founding Co-operative Bulk Handling Limited these two organisations had provided that as soon as the system was established and the initial liability repaid, ownership and control would be passed to the users of the system.

With its present toll system of operation Co-operative Bulk Handling Limited essentially conforms to the Rochdale principles of co-operation. The grower delivering grain to the Company pays a toll on each tonne delivered. For the first \$2 of toll, he receives one ordinary share in the company, which must be returned to the company if he ceases to deliver grain. For the remainder of his tolls he receives a debenture repayable in full over a ten-year cycle. The tolls are used for capital expenditure and for the repayment of previous tolls summarised into debentures. The toll system thus creates a revolving capital fund subscribed by the growers actually using the system, and in turn achieves perpetual and complete user-ownership. Each user of the system receives a share but only one share. He cannot accumulate any additional shares and thus has only one vote.

By 1943 the original construction programme had been completed and all debts repaid. At this time the decision was made to hand the system over to the growers to enable them to control and direct future expansions for their own benefit.

To the outbreak of the Second World War and beyond, the company continued its policy of expansion and modernisation. Services to off-line receival points were begun in the 1940-41 season and in 1951 growers of oats and barley requested that the co-operative include these grains in its system. Since then the company has stored and transported up to six grain types in many varieties and grades. Laboratory and sampling techniques have been extended, ensuring high quality control and a continued effort to meet marketing requirements. In addition Co-operative Bulk Handling Limited provided and operates

transfer depots for handling grain from narrow gauge to standard gauge railway wagons at Merredin, Midland and Northam. The depots are concrete vertical silo systems and between them handle all the grain destined for shipment through the Fremantle terminal which handles something more than half the total receipts.

In the 1960s, Co-operative Bulk Handling Limited commenced a modernisation programme of its country receipt points. Original receipt points were conceived in the era of horse-drawn transport and were spaced about eleven kilometres apart. Motor transport and better roads meant that a thirty-two-kilometre spacing would be adequate, while the mechanisation of farming and the improvement of farming techniques indicated a large size of storage was required. The modernisation programme has involved the progressive replacement of the older bins, permanent roofed bulkheads and open bulkheads with horizontal storages built of either concrete or steel and equipped with integrated handling machinery, or provision for such machinery to be installed at a later date.

In addition to country receipt points storage and transport, Co-operative Bulk Handling Limited provided and operates terminal depots for bulk wheat shipments at Albany, Bunbury, Esperance, Fremantle and Geraldton. The first stage of a modern deep-draught bulk loading terminal at Kwinana has been completed for the co-operative. This involved the construction of an initial horizontal storage unit of 381,871 cubic metres capacity and wheat receipts commenced on 1 December 1969. Construction of the second stage of the terminal has commenced and is scheduled for completion in 1976. This second stage involves the building of a 144-vertical cell storage block, a second horizontal storage unit, a jetty to carry a shiploading gallery, and various connecting galleries. The total cost of the second stage is estimated at \$48 million and on completion the Kwinana terminal will have a capacity of 1,154,706 cubic metres and be capable of loading at a rate of 5,000 tonnes an hour.

At 31 December 1974, storage capacity in the country was 5,797,700 cubic metres and at the ports 2,318,000 cubic metres. The initial storage constructed in 1931 provided for 23,276 cubic metres. The largest seasonal production that Co-operative Bulk Handling Limited has handled was 6,364,463 cubic metres of all grains in the 1973-74 season. By contrast, in the initial season the system handled 46,000 cubic metres.

Marketing of Wheat. The Australian Wheat Board is the sole authority for the marketing of wheat within Australia and of wheat and flour for export. It derives its authority from the provisions of the Wheat Stabilization Plan 1968-69 to 1972-73 established under joint Commonwealth and State legislation to replace similar legislation which expired after the marketing of the 1967-68 crop. The Plan was extended for a further year under the provisions of the *Wheat Industry Stabilization Act 1973* (Commonwealth) to cover the 1973-74 harvest. It was further extended to apply to the season commencing on 1 October 1974 and each of the next six succeeding seasons by the *Wheat Industry Stabilization Act 1974* (Commonwealth) which repealed the earlier Acts of 1968, 1970 and 1973. The principal object of the Plan is to ensure that growers receive a satisfactory income from their wheat and this is achieved by a guaranteed return based on an export price as determined and applicable on up to 5.44 million tonnes of wheat exported each season from Australia. This required the establishment of a fund by levying under authority of the *Wheat Export Charge Act 1974* (Commonwealth), a tax on exports for which a price in excess of the guaranteed price is received. Should the price obtained fall below the guaranteed price it is provided that the difference shall be paid from the fund or, if that source is exhausted, by the Australian Government. A further provision with a stabilising effect on the industry fixes the price at which wheat for home consumption may be sold.

By virtue of the *Wheat Industry Stabilization Act 1974* (Commonwealth) and of the *Bulk Handling Act, 1967-1974*, Co-operative Bulk Handling Limited acts as the licensed receiver for the Australian Wheat Board and handles all wheat produced for marketing in Western Australia.

Under the provisions of the *Wheat Tax Act 1957-1973* (Commonwealth), a levy of 9.186 cents per tonne is made on wheat delivered to the Australian Wheat Board. This money, contributed by the growers, is spent by the Wheat Industry Research Council and

State Wheat Research Committees set up under the provisions of the *Wheat Research Act* 1957. The Australian Government has undertaken to supply additional funds, with a maximum of \$1 for every \$1 of growers' contributions.

Wheat Standards. In 1974-75 the Western Australian Wheat Standards Committee established standards for Australian Standard White (W.A.) wheat and Australian Hard (W.A.) wheat. The procedure approved for determining these standards of wheat provides for samples being drawn progressively at each country receival point and port of shipment during the harvest period. After all samples are assembled they are sorted into zones of origin (Geraldton, Fremantle, Bunbury, Albany and Esperance), the zones being fixed in relation to each siding's natural port terminal. Each zone is then taken separately, the samples from the sidings in the zone being bulked together and thoroughly mixed and it is from these mixtures that each zone's contribution to the main bulk sample for the State is drawn.

Zone contributions are then bulked together and thoroughly mixed, after which ten weighings are taken on a Schopper one-litre scale chondrometer and from the average of those weighings the standards for the season are declared. Subsequently, the wheat is subjected to mechanical and quality tests.

Official standard samples are widely distributed to commercial interests and appropriate Government Departments and instrumentalities both locally and overseas, as being representative of the wheat of the particular season which is on offer to the world grain markets.

Wheat Delivery Quotas Plan. The Australian Wheat Growers' Federation put forward proposals, in March 1969, for the allotment of quotas on deliveries of wheat to the Australian Wheat Board. The Federation's proposals, were mainly designed to bring marketable supplies of wheat more into line with available outlets, following the record Australian and State harvests in 1968-69. The proposals, which first became effective for the 1969-70 harvest, established for Western Australia a quota of 2.3 million tonnes for deliveries of wheat for that season.

State Governments have the responsibility of implementing the quota plan within the States and separate enabling legislation has been enacted in each State. Particulars of the statutory provisions relating to the establishment in Western Australia of a quota scheme with respect to the delivery and marketing of wheat, are contained in the *Wheat Delivery Quotas Act, 1969-1974*.

The States are responsible for determining the method of allocation of individual quotas within their respective boundaries. In Western Australia, the *Wheat Delivery Quotas Act, 1969-1974* provides for the establishment of a Wheat Quotas Committee, consisting of three members appointed by the Minister for Agriculture. Subject to the direction of the Minister, the Committee is empowered under the Act to determine individual quotas for growers, but quotas may be reviewed by the Minister at any time.

The allocation in this State of individual quotas for 'established farms' for the season 1969-70 was made on the basis of the average for the farm of the best five deliveries made in the seven seasons from 1962-63 to 1968-69. Separate provisions applied to wheat growers on 'recently acquired farms' and 'new land farms'.

The allocation of quotas was not regarded as satisfactory by many in the industry and an independent Committee of Enquiry was formed to investigate the basis of allocation and to arrive at a more equitable distribution.

In an endeavour to alleviate various anomalies, a revised method of allocating the total State quota of 2.4 million tonnes was adopted for the 1970-71 season.

Further modifications to the method of allocation were made for the 1971-72 season and again for 1972-73. The State's wheat quotas for these two years were 2.1 and 2.6 million tonnes, respectively.

For the season 1973-74 the State's allocation was set at 3.1 million tonnes. However, complementary State and Commonwealth legislation provided that the Australian Wheat

Board 'may have regard to the possibility that the Australian wheat quota originally determined for that season, may be increased by a quantity not exceeding 544,311 tonnes'.

All wheat accepted as 'quota wheat' is the subject of normal Australian Wheat Board payments within the framework of the Wheat Industry Stabilization Act.

For the 1974-75 season, a similar situation exists and the State's allocation was again set at 3.1 million tonnes. There is also a special pool of 2 million tonnes, which may be allocated by the Australian Minister for Agriculture, should the deliveries in any State exceed their quota.

Wheat Varieties. Of 3,005,813 hectares sown to wheat in 1973-74, whether for grain, hay or green fodder, 1,892,384 hectares or 63.0 per cent were sown to Gamanya. The next most popular variety of wheat, in terms of area sown, was Falcon with 376,956 hectares or 12.5 per cent of the total. Further details of the areas sown to individual varieties of wheat appear in previous issues of the Year Book or in the publication *Statistics of Western Australia—Rural Industries* issued by this Office.

In the next table, holdings growing wheat for grain in 1973-74, and the total area sown to wheat for grain are classified in size groups of the area sown. Of the 20,608 rural holdings of all types in the State, wheat for grain was grown on 8,211. Holdings growing between 1 and 399 hectares of wheat for grain accounted for 66 per cent of the holdings but only 32 per cent of the total area, whereas holdings growing 400 or more hectares accounted for only 34 per cent of holdings but 68 per cent of the total area sown to wheat for grain.

HOLDINGS GROWING WHEAT FOR GRAIN
CLASSIFIED ACCORDING TO AREA SOWN
SEASON 1973-74

Area of wheat for grain	Number of holdings	Total area sown to wheat for grain
hectares		hectares
1 to 9	196	931
10 to 19	155	2,118
20 to 29	189	4,483
30 to 39	155	5,279
40 to 49	222	9,545
50 to 74	357	21,941
75 to 99	393	33,475
100 to 149	803	98,854
150 to 199	689	117,450
200 to 249	867	192,221
250 to 299	492	135,235
300 to 399	942	323,917
400 to 499	837	377,630
500 to 999	1,422	973,166
1,000 to 1,499	336	398,268
1,500 and over	136	283,407
Total	8,211	2,977,920

Oats

Although oats have been grown in Western Australia since the early development of wheat farming, cultivation was somewhat limited until stimulated by the introduction of large-scale sheep raising in the agricultural areas, when their high nutritional worth as stock feed made them a very valuable crop. The area sown to oats for grain increased from 78,301 hectares in 1920 to 111,238 in 1930, to 173,682 in 1940, to 237,025 in 1950 and 538,153 in 1960. It then remained reasonably static until 1972 when the area sown to oats fell to 296,666 hectares. A slight recovery was recorded in 1973 when 324,890 hectares were sown.

In addition to their importance as local stock feed, oats are exported in substantial quantities. In 1973-74 the total sold overseas was 73,119 tonnes, the principal buyers being Japan, Italy, the United Kingdom and the Federal Republic of Germany. Exports to other Australian States are negligible.

Although growers are free to market oats in any way they wish, in practice a large proportion of all sales, whether for export or the local market, is effected through the

Western Australian State Voluntary Oats Pool, which is conducted by the Grain Pool of W.A. under the control of the Minister for Agriculture. Co-operative Bulk Handling Limited as the Pool's licensed receiver, handles all oats marketed through the Pool.

OATS FOR GRAIN—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$
1969-70	461,111	280,562	0.61	5,909,782
1970-71	519,558	519,939	1.00	18,100,046
1971-72	453,885	413,902	0.91	10,255,815
1972-73	296,666	212,001	0.71	5,793,261
1973-74	324,890	383,107	1.18	25,252,625

Barley

Barley grows well on the lighter soils of the wheat belt and is also successful as a first crop on newly-developed land. With the introduction of wheat delivery quotas and because barley was a suitable alternative crop, the area of barley sown for grain in 1971-72 increased to 911,318 hectares from 223,714 hectares in 1968-69. From 1972-73 the area sown to barley has decreased, particularly of the six-row variety.

BARLEY FOR GRAIN—AREA AND PRODUCTION

Season	Two-row				Six-row			
	Area	Production			Area	Production		
		Total	Average yield per hectare	Gross value		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$	hectares	tonnes	tonnes	\$
1969-70	164,993	155,640	0.94	5,535,888	199,300	117,833	0.59	3,338,133
1970-71	315,859	416,120	1.32	20,681,812	316,234	353,212	1.12	13,511,703
1971-72	570,333	678,068	1.19	26,898,012	340,985	322,305	0.95	12,325,100
1972-73	528,392	477,854	0.90	22,414,040	215,756	162,502	0.75	7,109,199
1973-74	377,254	481,948	1.28	37,522,393	132,581	144,260	1.09	10,527,195

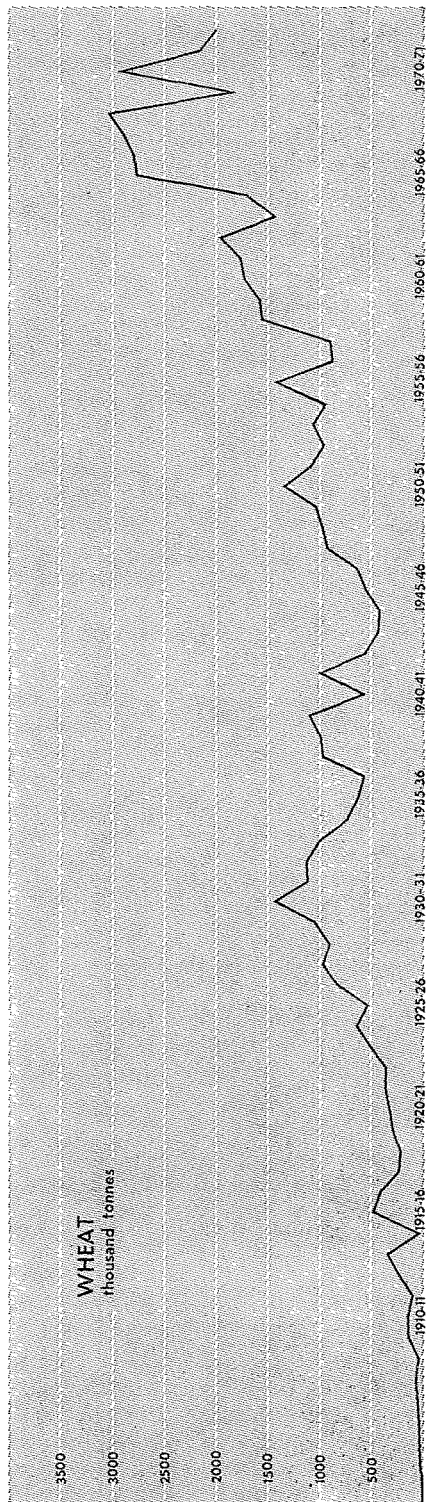
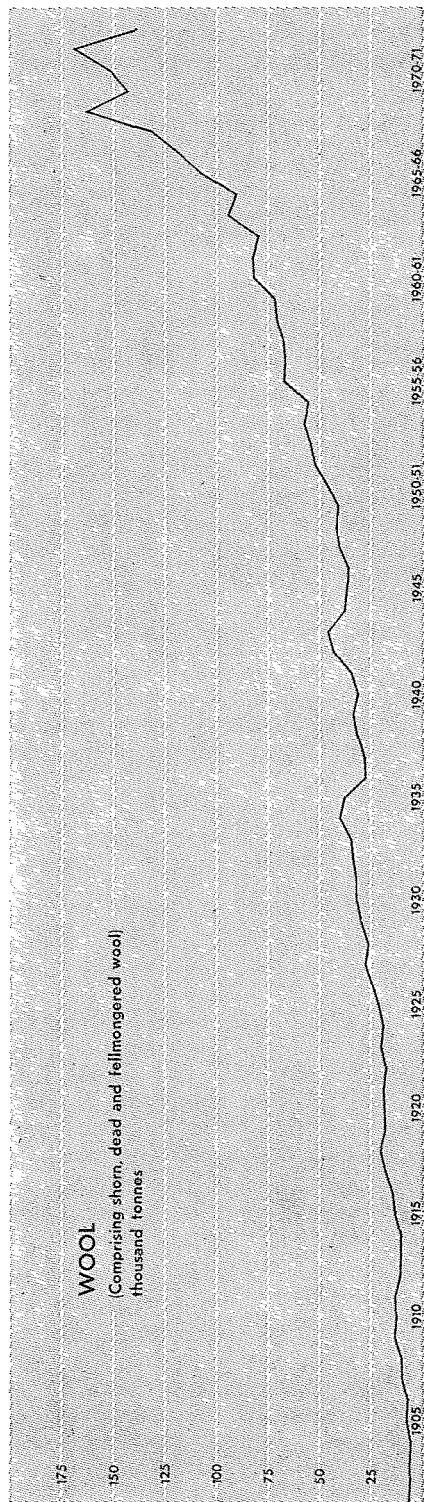
Both 'two-row' and 'six-row' barley are grown and, while a large amount of the grain produced is retained on farms for stock feed, the bulk of the crop is now exported. In 1973-74 the quantity exported overseas was 241,484 tonnes, the principal buyers being Japan and Taiwan. For many years sales of 'two-row' barley were mainly to local maltsters. However, since 1968-69 exports of 'two-row' barley have become increasingly important. Most 'six-row' barley sold continues to be marketed overseas.

The marketing of barley, both for export and for local consumption, is controlled by the Western Australian Barley Marketing Board, Co-operative Bulk Handling Limited acting as the Board's licensed receiver.

Other Grains and Pulse

Increasing interest has been shown in lupin and rape seed production in recent years. Among the factors which have encouraged rapid expansion in area sown are the effect of wheat delivery quotas and the relatively favourable export prospects for oilseeds and their oils and meals. In 1973-74 the area sown to rape fell dramatically due to problems encountered by the spread of Black Leg disease in crops. Production is expected to increase when disease-resistant strains become available. Grain sorghum and rye are grown, but only in small quantities.

Wool and Wheat – Annual Production, 1901 to 1972-73



LUPINS (a) AND RAPE SEED—AREA AND PRODUCTION

Season	Lupins				Rape seed			
	Area	Production			Area	Production		
		Total	Average yield per hectare	Gross value		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$	hectares	tonnes	tonnes	\$
1969-70	(b)	(b)	(b)	(b)	84	57	0.68	5,460
1970-71	(b)	(b)	(b)	(b)	7,465	2,603	0.35	14,262
1971-72	26,628	21,511	0.81	1,172,132	36,756	23,240	0.63	2,307,387
1972-73	44,341	15,126	0.34	960,569	41,566	8,526	0.21	1,010,122
1973-74	64,075	49,313	0.77	3,915,225	2,225	792	0.36	120,081

(a) For processing or feed.

(b) Not available.

Hay

Large quantities of pasture hay are cut from clover and grass pastures, production in 1973-74 being 356,204 tonnes from 104,386 hectares. The principal cereal hay crop is oats and 275,899 tonnes of oaten hay were cut in 1973-74 from 80,483 hectares. Wheat is the only other cereal crop which is used extensively for this purpose and in 1973-74 the production was 67,270 tonnes from 23,340 hectares. Barley, vetches, lucerne, rye and rape are also used for hay making but they are of minor importance only.

HAY—AREA AND PRODUCTION

Season	Pasture		Oaten		Wheaten		Other (a)		Total	
	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
	hectares	tonnes	hectares	tonnes	hectares	tonnes	hectares	tonnes	hectares	tonnes
1969-70	57,450	168,821	88,674	227,675	47,844	96,740	8,462	23,017	202,430	516,252
1970-71	72,795	266,008	82,397	294,727	26,253	84,598	8,339	27,504	189,784	672,838
1971-72	80,311	311,533	69,502	251,912	20,240	65,450	6,703	24,053	176,756	652,947
1972-73	89,253	303,934	92,313	255,122	30,478	72,327	11,873	32,882	223,917	664,265
1973-74	104,386	356,204	80,483	275,899	23,340	67,270	11,740	34,931	219,949	734,304

(a) Mainly barley, vetch, lucerne, rye and rape hay.

Pastures

The first established pastures in the State were cultivated to provide grazing for dairy cattle but, with the rapid increase in the number of sheep carried on wheat farms, by far the greater area is now located in the wheat-growing districts.

Subterranean clover was one of the first pasture species sown in these districts and it is still the most important, although other clovers, medics and a variety of grasses including Wimmera rye grass and perennial rye grasses are also grown extensively. The present practice in the higher-rainfall areas is to sow a mixture of two or more species, selected for their suitability to the type of soil and rainfall, to give a legume grass pasture.

From 0.8 million hectares in 1945-46, the area under sown pasture has increased remarkably to 6.9 million hectares in 1973-74. The top-dressing of pastures with superphosphate has developed to such an extent that this treatment is now general practice.

Western Australia is in a particularly good position to produce seed of annual legumes and grasses on a large scale and during the last few years has produced at least one-third of the total Australian crop.

In recent years considerable areas of new land have been cleared, much of it along the south coast where the growing season is six or seven months. It has been found that if heavier seed and fertiliser applications are used, good subterranean clover seed crops can be grown in the first year on this new land. Similarly, in more inland districts good yields of barrel medic can be obtained on suitable soil types. The paddocks generally

being used are large, open and only gently undulating, and are thus suitable for the operation of modern harvesting machines. Very little, if any, rain falls in the summer months and this ensures ideal harvesting conditions.

The development of suction harvesting machines in recent years has enabled this potential to be exploited. Suction harvesters are now used to harvest most of the more important small-seeded legume crops (subterranean clover, barrel medic and rose clover).

Seed certification schemes are operated by the Department of Agriculture for the main species of pasture seed. These schemes ensure that buyers are in a position to obtain good quality seed of the strain they require free from weed seeds. Certification schemes have assisted greatly in marketing and in allowing the development of a sound export trade.

There is an important export trade in subterranean clover seed and in 1973-74 the total exported was 914,655 kilograms, over 92 per cent of which went to other Australian States.

Details of area and production of pasture seed for the five years 1969-70 to 1973-74 are given in the next table.

PASTURE SEED HARVESTED

Season	Principal pasture seed								Total pasture seed
	Subterranean clover		Lupins		Barrel medic		Wimmera rye grass		
	Area harvested	Pro- duction	Area harvested	Pro- duction	Area harvested	Pro- duction	Area harvested	Pro- duction	Area harvested
	hectares	kilograms	hectares	kilograms	hectares	kilograms	hectares	kilograms	hectares
1969-70	25,664	5,179,481	(a)	(a)	2,036	204,842	314	70,760	30,197
1970-71	14,479	3,405,708	(a)	(a)	2,385	295,652	1,055	180,031	19,690
1971-72	13,079	3,145,300	2,836	1,384,137	1,918	236,684	960	128,276	20,524
1972-73	18,293	3,380,516	4,356	1,037,969	1,242	157,773	1,173	98,207	25,877
1973-74	17,316	3,379,496	3,632	1,386,833	1,881	220,442	1,247	159,826	26,856

(a) Separate details of lupins for pasture seed not available prior to 1971-72.

Green Feed

Large areas of oats are grown for use as green feed for stock. Among other crops which are cultivated for this purpose, but to a far lesser extent, are barley, wheat, field peas, rye and forage sorghum. The total area of crops used for green feed was 113,635 hectares in 1973-74.

GREEN FEED—AREA GRAZED OR CUT
(Hectares)

Season	Oats	Barley	Wheat	Field peas	Forage sorghum	Rye	Other (a)	Total
1969-70	113,247	13,555	7,649	3,423	8,557	2,169	3,643	152,244
1970-71	107,606	17,707	5,996	3,150	4,325	2,835	2,505	144,124
1971-72	104,802	23,382	5,380	3,760	2,437	2,180	2,319	144,259
1972-73	90,107	21,147	3,641	3,573	1,740	1,750	2,296	124,254
1973-74	77,950	23,960	5,431	1,545	1,274	1,260	2,215	113,635

(a) Mainly vetches, millet, grain sorghum and maize.

Cotton

The first commercial crop of cotton was grown at Kununurra in 1962-63 on land irrigated from the Ord River Diversion Dam at Bandicoot Bar. A cotton ginnery to process the seed cotton was installed at Kununurra in 1963 and a second ginnery commenced operations in May 1967.

Under the *Raw Cotton Bounty Act* 1963-1969, the Australian Government paid a bounty on raw cotton of grade higher than 'strict good ordinary' and with a staple length of not less than seven-eighths of an inch which was produced in Australia. Bounty was payable under the Act up to and including the year which commenced on 1 March

1971. Since then, the State Government has supported the Ord cotton growers with payments of up to six cents per kilogram of lint depending upon staple length and grade. Financial assistance to cotton growers was revised for the 1974 crop for which the State Government guaranteed growers a cotton price equal to the minimum cost of production.

COTTON—AREA AND PRODUCTION

Season	Area	Production of seed cotton		
		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$
1969-70	3,370	9,779	2.90	1,680,700
1970-71	2,918	9,435	3.23	1,586,887
1971-72	3,442	12,564	3.65	2,309,958
1972-73	3,861	11,271	2.92	1,332,062
1973-74	3,591	9,197	2.56	1,965,581

Potatoes

The cultivation of potatoes, the State's principal vegetable crop, is confined largely to the higher-rainfall areas of the South-West. Winter crops are planted during June and early July on the frost-free hillsides and drained flats of the coastal areas between Waroona and Donnybrook and on the market garden land in the Perth Statistical Division. Mid-season plantings are made from the middle of July to November on summer-moist areas or on sprinkler-irrigated land in the Shires of Manjimup, Busselton, Albany and Waroona and in market gardens in the Perth Statistical Division. Late crops are planted between mid-November and the end of February in all districts growing early and mid-season crops, other than the Perth Statistical Division.

The average yield of potatoes per hectare in Western Australia is consistently very much greater than that for Australia as a whole, and in 1973-74 comparative yields were 27.0 tonnes and 18.7 tonnes per hectare. This is due mainly to the favourable climatic conditions in Western Australia and the increasing use of sprinkler irrigation. Delaware, the principal variety grown in the State, gives high yields under a wide range of growing conditions. There is a substantial export surplus, the bulk of which usually goes to the other Australian States with smaller consignments being sent overseas, principally to Sri Lanka.

Potato production in Western Australia is controlled, under the provisions of the *Marketing of Potatoes Act, 1946-1974*, by the Western Australian Potato Marketing Board, which is the sole marketing authority for potatoes produced in the State. The object of this provision is to ensure adequate supplies for local consumption and effective marketing of crops.

POTATOES—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$
1969-70	2,562	68,242	26.64	5,390,001
1970-71	2,528	69,150	27.35	6,299,365
1971-72	2,684	68,420	25.49	5,923,475
1972-73	2,378	63,282	26.61	6,271,668
1973-74	2,242	60,603	27.04	8,430,589

Onions

The production of onions is confined largely to the metropolitan and adjacent areas, Spearwood being the main centre. In these districts onions are usually grown on light sandy soils and yields of up to 50 tonnes per hectare are obtained. An increase in area occurred during each season from 1958-59 to 1962-63 when 206 hectares were planted. The

area planted then declined steadily over the next three years, with a slight recovery occurring in 1966-67. In 1973-74 146 hectares were planted for a production of 5,659 tonnes or 39.0 tonnes per hectare.

Onions are imported annually into Western Australia during the winter but a surplus is produced locally during summer months and is exported, in the main, to overseas markets, the most important being Hong Kong.

ONIONS—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$
1969-70	122	4,499	36.88	487,056
1970-71	122	4,546	37.26	558,424
1971-72	139	5,045	36.29	804,686
1972-73	132	4,877	37.06	572,677
1973-74	146	5,659	38.73	1,197,415

Tomatoes

The main centres of production of tomatoes are at Carnarvon and Geraldton and in the districts around Perth. At Carnarvon and Geraldton, because of the warm winter climate, growers are able to produce early crops and take advantage of the high prices ruling on the Melbourne market during the winter and spring. They also supply substantial quantities to the Perth market and there is a consistent export trade with Christmas Island (Indian Ocean) and Singapore.

Supplies to the Perth market from December to June are grown in and near the metropolitan area, principally in the Shire of Wanneroo. Tomatoes are also grown in a number of districts in the South-West and Southern Agricultural Divisions.

The total area under tomatoes reached a peak of 629 hectares in 1944-45 but the average yield per hectare in that year was low and total production was only 755,898 half-bushel cases. Since then, although the area has declined, yields per hectare have improved and production in 1973-74 was 876,489 half-bushel cases from 261 hectares, an average yield of 3,359 half-bushel cases per hectare.

TOMATOES—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average yield per hectare	Gross value
	hectares	half-bushel cases	half-bushel cases	\$
1969-70	233	732,055	3,142	2,023,791
1970-71	242	785,254	3,245	1,915,388
1971-72	250	858,137	3,433	1,974,698
1972-73	245	835,072	3,402	2,386,978
1973-74	261	876,489	3,359	2,321,344

Other Vegetables

In addition to the cultivation of potatoes, onions and tomatoes, previously mentioned, many other vegetables are produced, the bulk of them in or near the metropolitan area where growers benefit not only from proximity to the principal market but also from an abundant supply of water at relatively shallow depths. Small quantities are also produced in many country districts. An important early crop of beans is grown at Carnarvon and transported by road to Perth. Part of this crop is then railed or airfreighted to Adelaide.

Details of the area and production of the principal vegetables other than potatoes, onions and tomatoes for the years 1969-70 to 1973-74 are given in the next three tables.

TURNIPS, CARROTS, PARSNIPS, BEETROOT—AREA AND PRODUCTION

Season	Turnips (swede and white)			Carrots			Parsnips			Beetroot		
	Area	Production		Area	Production		Area	Production		Area	Production	
		Quantity	Gross value		Quantity	Gross value		Quantity	Gross value		Quantity	Gross value
	ha	kg	\$	ha	tonnes	\$	ha	kg	\$	ha	kg	\$
1969-70	39	361,148	42,290	155	5,775	439,942	35	517,266	107,216	21	303,680	38,676
1970-71	47	444,278	58,377	179	6,653	748,911	38	580,698	127,908	19	278,752	34,239
1971-72	47	476,006	44,788	178	6,640	563,317	35	493,767	75,131	6	173,104	19,199
1972-73	41	370,691	45,158	188	7,083	541,212	30	469,183	107,316	8	130,784	17,944
1973-74	32	366,551	65,979	198	7,834	982,305	33	496,850	128,610	4	71,073	12,793

PUMPKINS, BEANS, GREEN PEAS—AREA AND PRODUCTION

Season	Pumpkins			Beans						Green peas		
	Area	Production		French and runner			Broad			Area	Production	
		Quan- tity	Gross value	Area	Production		Area	Production				
					Quan- tity	Gross value		Quan- tity	Gross value		Quan- tity	Gross value
1969-70	ha	'000 bags	\$	ha	kg	\$	ha	kg	\$	ha	kg	\$
1970-71	374	88	249,616	352	2,689,155	858,908	10	52,066	6,887	779	4,207,228	158,494
1971-72	416	105	410,208	370	2,969,488	801,329	12	64,089	8,478	778	7,007,289	222,333
1972-73	363	101	387,749	339	2,818,036	856,474	19	77,479	10,249	735	4,785,045	180,556
1973-74	377	95	422,361	348	2,521,325	709,492	13	56,074	6,729	660	4,936,889	167,000
	344	95	404,670	343	2,790,004	842,740	16	85,404	15,373	730	6,066,366	204,289

CABBAGES, CAULIFLOWERS, LETTUCE—AREA AND PRODUCTION

Season	Cabbages			Cauliflowers			Lettuce		
	Area	Production		Area	Production		Area	Production	
		Quantity	Gross value		Quantity	Gross value		Quantity	Gross value
	hectares	'000 crates	\$	hectares	'000	\$	hectares	'000 crates	\$
1969-70	124	225	323,955	291	3,299	829,059	169	368	831,356
1970-71	139	262	387,140	316	3,851	1,060,693	185	367	773,042
1971-72	130	245	350,164	317	4,025	1,082,538	196	400	808,182
1972-73	138	260	412,322	303	3,666	918,576	209	461	997,506
1973-74	140	260	475,221	281	3,584	1,262,882	201	442	1,169,716

Orchards

Fruit production is largely confined to the temperate regions between Gingin to the north of Perth and Albany on the south coast. The cool, wet winters and warm, dry summers of this area permit the successful cultivation of a wide variety of fruits. In the southern and south-western sections, apples, pears and stone fruits are grown extensively while in the districts around Perth the principal crops are apples, stone fruits, citrus fruits and grapes. Outside this main fruit-growing area, banana plantations have been established at Carnarvon in the North-West.

The following table shows details of production of the principal groups of orchard fruit during the years 1969-70 to 1973-74.

FRUIT (a)—AREA AND GROSS VALUE OF PRODUCTION

Season	Area (b)			Gross value of production				
	Orchard fruit	Plantation and berry fruit	Total	Pome (c)	Citrus (d)	Stone (e)	Other (f)	Total
	hectares	hectares	hectares	\$	\$	\$	\$	\$
1969-70	9,497	267	9,765	8,923,348	1,873,982	1,315,040	2,318,216	14,430,586
1970-71	9,404	224	9,628	9,992,014	1,837,447	1,454,684	604,952	13,889,097
1971-72	8,898	230	9,129	8,497,714	1,518,209	1,149,563	1,709,585	12,875,071
1972-73	8,448	232	8,680	9,245,258	1,572,412	1,378,292	2,052,257	14,248,219
1973-74	7,718	248	7,965	9,422,404	1,780,166	1,844,151	1,813,352	14,860,073

(a) Excludes grapes. (b) Comprises bearing and non-bearing trees and plants. (c) Apples, pears and quinces. (d) Principally oranges, mandarins, lemons and grapefruit. (e) Plums, peaches, apricots, nectarines and cherries. (f) Bananas, loquats, figs, passion fruit, almonds and other minor fruits.

Apples

Apples, which are the principal fruit crop, account for more than half the total orchard area. Manjimup, Donnybrook and Bridgetown (based on number of bearing and non-bearing trees) are the most important centres but other districts in the South-West and in the Darling Range near Perth produce large quantities. In 1973-74 the total number of bearing trees was 933,751 which produced 2,764,948 bushels, the principal varieties being Granny Smith, Jonathan, Yates, Delicious and Cleopatra.

APPLES—NUMBER OF TREES AND PRODUCTION

Season	Number of trees		Production		
	Bearing	Non-bearing	Total	Average yield per bearing tree	Gross value
			bushels	bushels	\$
1969-70	1,002,497	257,371	2,610,151	2.6	8,071,987
1970-71	1,035,728	228,566	3,155,624	3.0	9,167,390
1971-72	1,042,653	205,801	2,750,076	2.6	7,771,602
1972-73	988,636	182,604	2,959,741	3.0	8,214,255
1973-74	933,751	153,286	2,764,948	3.0	8,387,903

There is a valuable export trade and overseas shipments generally exceed well over 1 million bushels annually, with 1.3 million bushels being exported in 1973-74. The United Kingdom is the most important market, followed by Singapore, the Netherlands, the Federal Republic of Germany and Kuwait.

Pears

Pears are usually grown in conjunction with apples but the number of trees planted and the quantity produced are much less, the total number of bearing trees in 1973-74 being 63,428 and the production 201,307 bushels. The bulk of the crop is consumed locally but significant quantities are exported, principally to Singapore and Iran.

PEARS—NUMBER OF TREES AND PRODUCTION

Season	Number of trees		Production		
	Bearing	Non-bearing	Total	Average yield per bearing tree	Gross value
			bushels	bushels	\$
1969-70	71,289	13,998	212,235	3.0	849,312
1970-71	69,135	14,414	177,488	2.6	823,390
1971-72	69,438	18,790	221,567	3.2	725,786
1972-73	68,030	18,667	227,484	3.3	1,030,674
1973-74	63,428	19,845	201,307	3.2	1,034,232

Citrus Fruit

While the Shire of Chittering is the chief citrus fruit producer, there are other important areas near Perth in the Shires of Kalamunda, Swan, Armadale-Kelmscott, the Town of Gosnells and the Shire of Harvey (in order according to number of trees bearing and non-bearing). Although oranges are by far the most important crop, substantial quantities of lemons, mandarins, and grapefruit are also produced.

Production is largely for local consumption but there is some export trade, mainly with Singapore, Mauritius, Malaysia and Christmas Island (Indian Ocean).

ORANGES AND MANDARINS—NUMBER OF TREES AND PRODUCTION

Season	Oranges				Mandarins			
	Number of trees		Production		Number of trees		Production	
	Bearing	Non-bearing	Quantity	Gross value	Bearing	Non-bearing	Quantity	Gross value
			bushels	\$			bushels	\$
1969-70	319,656	56,930	429,640	1,343,708	33,087	21,026	38,307	217,525
1970-71	313,129	56,810	479,890	1,272,479	37,441	17,848	54,615	200,255
1971-72	314,860	54,654	376,461	930,645	38,177	15,848	43,337	253,088
1972-73	311,714	44,034	412,243	984,024	40,797	15,304	54,361	278,328
1973-74	291,712	42,214	389,233	1,179,829	41,370	13,650	51,214	273,824

LEMONS AND GRAPEFRUIT—NUMBER OF TREES AND PRODUCTION

Season	Lemons (a)				Grapefruit			
	Number of trees		Production		Number of trees		Production	
	Bearing	Non-bearing	Quantity	Gross value	Bearing	Non-bearing	Quantity	Gross value
			bushels	\$			bushels	\$
1969-70	40,851	2,582	140,527	256,033	7,885	1,837	17,378	56,291
1970-71	39,331	3,133	148,861	268,646	8,230	2,468	16,545	95,800
1971-72	37,620	4,233	132,676	275,536	7,880	3,690	17,508	58,523
1972-73	36,584	5,959	116,595	255,055	7,915	6,238	16,193	54,914
1973-74	33,864	9,761	119,354	280,649	8,207	7,660	16,877	45,864

(a) Includes limes.

Stone Fruits

Plums, peaches, apricots, nectarines, cherries and loquats are grown in the hills districts in the Darling Range near Perth, in the Swan Valley and in many districts in the South-West. The total number of stone fruit trees (bearing and non-bearing) in 1973-74 was 179,876, comprising 82,208 plum trees, 61,685 peach trees, 16,954 apricot trees, 8,673 nectarine trees, 8,270 cherry trees and 2,086 loquat trees. The bulk of the stone fruit crop is consumed locally but shipments of plums are sent overseas, mainly to Singapore, Malaysia and Kuwait.

PLUMS AND PEACHES—NUMBER OF TREES AND PRODUCTION

Season	Plums and prunes				Peaches			
	Number of trees		Production		Number of trees		Production	
	Bearing	Non-bearing	Quantity	Gross value	Bearing	Non-bearing	Quantity	Gross value
			bushels	\$			bushels	\$
1969-70	78,877	11,808	138,489	662,036	60,246	8,743	126,473	410,794
1970-71	76,460	10,978	121,309	702,455	58,813	8,741	97,166	483,149
1971-72	73,432	9,978	97,635	501,133	55,139	8,790	90,033	373,740
1972-73	72,723	11,673	146,800	759,396	53,403	12,366	106,188	369,667
1973-74	69,904	12,304	127,996	952,398	47,829	13,856	104,044	755,346

APRICOTS AND NECTARINES—NUMBER OF TREES AND PRODUCTION

Season	Apricots				Nectarines			
	Number of trees		Production		Number of trees		Production	
	Bearing	Non-bearing	Quantity	Gross value	Bearing	Non-bearing	Quantity	Gross value
			bushels	\$			bushels	\$
1969-70	18,941	3,304	34,931	125,551	7,006	1,492	14,021	83,752
1970-71	17,892	2,838	26,228	183,873	6,410	1,751	8,381	70,065
1971-72	16,090	2,918	17,392	145,223	6,470	2,319	10,358	68,501
1972-73	15,353	2,632	25,319	136,747	6,531	2,666	14,481	86,307
1973-74	13,664	3,290	17,919	189,941	5,895	2,778	12,894	114,671

Bananas

Production of bananas is confined almost entirely to a narrow strip of land along the Gascoyne River at Carnarvon. The plantations are dependent on water pumped from bores which tap a subterranean flow in the sands of the usually dry river bed. As a surface flow in the river channel results only from heavy rains, which do not occur every year, a problem is presented in the falling-off of water supplies and in the increase in the salt content of the underground water during long dry periods. These conditions and also periodic damage from cyclones cause fluctuations in the area of the plantations and in production.

The crop is transported by road to Perth and sold locally in competition with bananas imported from other Australian States.

In the following table, details are given of the area and production of bananas for the period 1969-70 to 1973-74. In the ten years ended 1973-74, peak production was reached in 1969-70 with a total crop of 255,177 bushels. Production in 1970-71, however, was the lowest recorded over the decade.

BANANAS—AREA AND PRODUCTION

Season	Area		Production		
	Plants of bearing age	Young plants not bearing	Total	Average yield per hectare (a)	Gross value
	hectares	hectares	bushels	bushels	\$
1969-70	189	28	255,177	1,350	2,143,489
1970-71	130	33	64,671	497	367,084
1971-72	140	28	222,728	1,591	1,432,800
1972-73	153	28	199,842	1,306	1,746,901
1973-74	163	40	229,242	1,409	1,479,049

(a) Calculated on the area of bearing plants only.

Vineyards

Almost two-thirds of the State's 2,477 hectares of grape vines are in the Shire of Swan, other important centres being Chittering, Wanneroo, Toodyay and Gosnells.

In the dried vine fruit industry, currants are the main item of production and a high proportion of the crop is exported. In 1973-74, just over 75 per cent of exports went to other Australian States, mainly Victoria, the remainder being purchased primarily by Canada and Malaysia.

Table grapes are grown for the local market and for export overseas, mainly to Singapore and Indonesia. The production of beverage wines has exceeded 2.8 million litres for the past ten years, reaching a record production of over 3.8 million litres in 1968-69. Most of the wine produced is for local consumption although small amounts are exported to the other Australian States and overseas.

Details of the area of vines and the production of grapes, dried vine fruits and wine for the five years 1969-70 to 1973-74 are given in the next table.

GRAPES—AREA AND PRODUCTION

Season	Area		Grapes used for wine making and table use		Dried vine fruits		Wine production	
	Vines of bearing age	Young vines not bearing	Quantity	Gross value	Quantity	Gross value	Beverage (a)	Distillation
	hectares	hectares	tonnes	\$'000	tonnes	\$'000	litres	litres
1969-70	2,477	215	8,445	945	1,093	337	3,497,675	1,117,529
1970-71	2,435	279	8,212	1,021	1,542	437	3,511,782	1,029,358
1971-72	2,392	333	7,328	862	1,270	376	3,266,247	520,609
1972-73	2,220	346	7,236	808	972	438	2,998,232	864,734
1973-74	2,104	373	7,349	990	1,062	607	3,151,631	718,942

(a) Includes spirit produced from distillation wine and used in fortification.

Nurseries

Commercial nurseries are concentrated in the Perth Statistical Division, Kalamunda with 23 per cent of the total area of commercial nurseries being the principal centre. Most nursery production is in the form of potted shrubs, ornamental trees and cut flowers for domestic use but large numbers of fruit trees are produced for planting in orchards.

NURSERIES (a)—AREA AND VALUE OF SALES (b)

Particulars		1969-70	1970-71	1971-72	1972-73	1973-74
Area	hectares	92	105	144	134	159
Sales (year ended 31 March)	\$	1,312,132	1,467,063	1,836,029	2,274,121	3,098,770

(a) Excludes non-commercial nurseries, in marketing.

(b) Value at the holding, after deducting costs incurred

Artificial Fertilisers

Soils in Western Australia are acutely deficient in phosphate, and regular applications of phosphatic fertiliser are required for crop and pasture growth. Newly cleared land may require applications of up to 230 kilograms of superphosphate per hectare for satisfactory crop yields, but annual applications can be reduced as the phosphate content of the soil is improved through the residual effect of the added fertiliser. On established land, applications of 100 kilograms to 120 kilograms of superphosphate per hectare are commonly used in wheat growing.

Nitrogen deficiencies also exist in some areas. Legume pastures have assisted greatly in building up nitrogen in the soil and in some situations appreciable increases in yield may be achieved by applying forms of concentrated nitrogenous fertiliser.

The following table shows details of superphosphate and other artificial fertilisers used on crops and pastures during the years 1969-70 to 1973-74.

ARTIFICIAL FERTILISER USED ON RURAL HOLDINGS

Season	Crops					Pastures				
	Area fertilised	Quantity used				Area fertilised	Quantity used			
		Super-phosphate (a)	Other artificial fertilisers	Total	Average per hectare		Super-phosphate (a)	Other artificial fertilisers	Total	Average per hectare
1969-70	hectares	tonnes	tonnes	tonnes	tonnes	hectares	tonnes	tonnes	tonnes	tonnes
	3,904,810	521,039	98,709	619,748	0.16	5,784,922	790,084	29,840	819,925	0.14
1970-71	3,822,127	460,826	82,290	543,115	0.14	5,033,433	678,453	28,471	706,923	0.14
1971-72	3,650,058	440,285	60,680	500,965	0.14	4,623,661	599,445	38,916	638,362	0.14
1972-73	3,746,075	457,226	65,972	523,198	0.14	5,058,630	681,217	45,065	726,281	0.14
1973-74	4,017,722	487,874	89,704	577,578	0.14	5,780,655	801,534	45,460	846,994	0.15

(a) Includes superphosphate with trace elements.

PASTORAL PRODUCTION

Throughout this section, where mention is made of the 'pastoral areas' the portion of the State referred to comprises the Kimberley, Pilbara, North-West and Central Statistical Divisions together with the Shires of Boulder, Coolgardie, Laverton, Leonora and Menzies, which form part of the Eastern Goldfields Division. The balance of the State, referred to as the 'agricultural areas', comprises the Perth, South-West, Southern Agricultural, Central Agricultural and Northern Agricultural Divisions together with the Shires of Dundas, Esperance, Ravensthorpe and Yilgarn in the Eastern Goldfields Division.

In the early days of settlement, pastoral activities in Western Australia were confined largely to what are now the agricultural areas and were usually associated with the cultivation of crops. However, beginning with Captain George Grey's visit in 1838 to the area known as the West Kimberley, explorers increasingly drew attention to the pastoral possibilities of large sections of the present Kimberley, Pilbara, North-West and Central Statistical Divisions.

In 1857 and 1858, F. T. Gregory noted the existence of good pastoral country in the Murchison and the Gascoyne districts and in the course of a journey further to the north in 1861 he discovered the Ashburton, Fortescue, De Grey and Oakover Rivers. His reports of good grazing lands in the area led to the establishment of sheep stations by pastoralists from the south, the first of such ventures, in 1863, being in the De Grey district of what is now the Pilbara Statistical Division. Graziers were also turning their attention to the south-east and in the 1870s pastoral lands were being taken up in the coastal areas to the south of the Nullarbor Plain. Another development in the extension of pastoral activity began with Alexander Forrest's journey through the Kimberley in 1879 and his favourable reports on the suitability of the country for grazing. Leases along the Fitzroy and the Ord Rivers were stocked not only with livestock shipped from the south and from the other Australian Colonies but also with cattle brought overland to the area, principally from Queensland and New South Wales, by remarkable feats of droving.

Pastoral production, comprising mainly the production of wool and meat, in 1973-74 contributed over 36 per cent of the total net value of Western Australian rural primary production.

Sheep

The following table shows the total numbers of sheep, and their distribution between the agricultural and pastoral areas, in each year from 1955 to 1974.

SHEEP NUMBERS AND DISTRIBUTION

At 31 March—	In agricultural areas		In pastoral areas		State total
	Number	Proportion of State total (per cent)	Number	Proportion of State total (per cent)	
1955	10,273,780	76.6	3,137,502	23.4	13,411,282
1956	10,976,121	77.7	3,152,047	22.3	14,128,168
1957	11,845,409	79.6	3,041,140	20.4	14,886,549
1958	12,704,210	80.8	3,019,753	19.2	15,723,963
1959	13,070,754	80.6	3,144,490	19.4	16,215,244
1960	13,395,527	81.6	3,016,062	18.4	16,411,589
1961	13,940,614	81.3	3,210,770	18.7	17,151,384
1962	14,951,185	81.6	3,362,694	18.4	18,313,879
1963	15,403,902	82.3	3,323,222	17.7	18,727,124
1964	16,608,300	82.4	3,556,568	17.6	20,164,868
1965	18,670,759	83.4	3,721,075	16.6	22,391,834
1966	20,695,040	84.7	3,731,768	15.3	24,426,808
1967	23,525,280	86.0	3,845,106	14.0	27,370,386
1968	26,406,575	87.6	3,754,302	12.4	30,160,877
1969	28,888,450	87.8	4,012,708	12.2	32,901,158
1970	29,844,044	88.7	3,789,913	11.3	33,633,957
1971	31,129,804	89.7	3,579,044	10.3	34,708,848
1972	31,049,873	90.2	3,355,125	9.8	34,404,998
1973	27,777,077	89.8	3,142,103	10.2	30,919,180
1974	29,423,820	90.7	3,027,253	9.3	32,451,073

The present distribution of sheep in the State is the result of two opposite trends operating over many years. In the pastoral, or station areas where the industry is based on long-term pastoral leases, severe droughts led to a decline in the number of sheep, although some recovery has taken place in recent years. In the agricultural, or farming areas, however, the sheep population has steadily risen. Factors contributing to this rise, particularly since the war, have been the increasing use of subterranean clover in the wheat belt, the provision in many areas of more assured water supplies, a taxation policy which, by the provision of special concessions to primary producers, has encouraged farmers to clear and develop new land, the War Service Land Settlement Scheme which developed new areas and the stimulating effect of buoyant wool prices in the post-war period.

The overall result has been a marked upward trend in sheep numbers since the war, and at 31 March 1974, the State total was 32·5 million, compared with 9·77 million at the same date in 1946. Numbers in the agricultural areas increased from 7 million, or 72 per cent of the State total, to 29·4 million or nearly 91 per cent. They also increased in the pastoral areas from 2·74 million to 3·03 million, but as a percentage of the State total this represents a decline from 28 per cent to little more than 9 per cent.

SHEEP FLOCKS AT 31 MARCH 1974
CLASSIFIED ACCORDING TO SIZE OF FLOCK

Size of flock (numbers)	Number of—	
	Flocks	Sheep
1— 99	974	34,976
100— 499	1,044	288,537
500— 999	1,345	1,009,287
1,000— 1,499	1,536	1,913,735
1,500— 1,999	1,515	2,629,463
2,000— 2,999	2,347	5,759,067
3,000— 3,999	1,417	4,852,006
4,000— 4,999	772	3,428,100
5,000— 5,999	459	2,478,996
6,000— 6,999	318	2,034,997
7,000— 7,999	181	1,340,778
8,000— 8,999	129	1,090,555
9,000— 9,999	93	878,297
10,000—14,999	196	2,314,168
15,000—19,999	64	1,104,549
20,000—49,999	44	1,102,969
50,000 and over	2	190,593
Total	12,436	32,451,073

In the preceding table sheep flocks at 31 March 1974, are classified according to the size of flock. Of the 20,608 holdings of all types, sheep were carried on 12,436. Holdings carrying between 1,000 and 3,999 sheep accounted for 55 per cent of the flocks and 47 per cent of the total number of sheep. Those with less than 1,000 sheep accounted for 27 per cent and 4 per cent, respectively, and those with more than 3,999 accounted for 18 per cent and 49 per cent, respectively.

An analysis of collected data relating to breeds of sheep as at 31 March 1974 showed that Merinos accounted for 93 per cent of the total. Corriedales, Polwarths and British breeds, the most important of which are Border Leicester, Dorset Horn, South Down, Suffolk and Romney Marsh, comprised 4 per cent and the remaining 3 per cent was made up of Crossbreds, including Merino Comebacks. With low wool prices operating during the ten years prior to the war, some farmers turned to the production of fat lamb carcasses for export, mainly to the United Kingdom. The industry which developed as a result was based on the use of Corriedale and British breeds of rams, which in 1974 comprised about 14 per cent of the rams in the State. As a result of the high wool prices during the Korean war the 'fat lamb' industry declined sharply in 1950-51 and 1951-52 but recovered in 1952-53. The recovery in the industry was maintained for some years and exports of lamb fluctuated between 1,850 tonnes in 1953-54 and 5,219 tonnes in 1960-61. Increased lamb production in the United Kingdom and variable market prices then led

to a sharp decline in the export of lamb, the total falling to 936 tonnes in 1967-68. A recovery occurred in 1968-69 when 4,161 tonnes were exported but the amount then declined. However exports of lamb again recovered and in 1973-74 totalled 5,170 tonnes.

The following table shows the numbers of each breed of sheep in the State at 31 March 1974.

BREEDS OF SHEEP (a)

Breed	At 31 March 1974			
	Rams (one year and over)	Other sheep	Total	Number of holdings with rams (b)
Merino	374,740	29,962,279	30,337,019	9,543
Other recognised breeds—				
Border Leicester	8,525	306,981	315,506	663
Cheviot	95	775	870	19
Corriedale	11,607	496,671	508,278	533
Dorset Horn	12,933	95,515	108,448	1,192
English Leicester	238	366	604	11
Poll Dorset	3,988	23,252	27,240	237
Polwarth	2,343	123,621	125,964	154
Romney Marsh	792	10,012	10,804	84
Ryeland	422	698	1,120	40
Shropshire	153	522	675	8
South Down	12,399	76,202	88,601	917
South Suffolk	964	4,059	5,023	90
Suffolk	4,707	37,718	42,425	729
Other	579	23,636	24,215	61
Total, Other recognised breeds	59,745	1,200,028	1,259,773	(e)
Merino Comeback (c)	900	251,362	252,262	53
Crossbreds (d) and other mixed breeds	1,245	600,774	602,019	158
GRAND TOTAL	436,630	32,014,443	32,451,073	11,126

(a) Statistics collected triennially. (b) Components do not add to total because more than one breed of ram may be reported by any one holding. (c) Finer than half-breeds. (d) Half-breeds or coarser. (e) Not available; see footnote (b).

Wool

Total wool production in 1973-74 amounted to 149,349 tonnes, compared with 98,236 tonnes ten years earlier. Shorn wool in 1973-74 accounted for 142,100 tonnes. It was shorn from 35·8 million sheep and lambs, the average weight of wool shorn being 4·0 kg, compared with 4·1 kg in the previous season. The balance of the 1973-74 production comprised 1,047 tonnes of dead and fellmongered wool, and 6,292 tonnes of wool exported on skins.

During the war years wool was compulsorily acquired by the Australian Government in accordance with an agreement with the United Kingdom. The scheme was administered by the Central Wool Committee and the price paid was determined by a system of appraisement which, however, operated within limits agreed upon by the two Governments. During this period large stocks of wool were accumulated and after the war an organisation was formed with the object of selling this surplus with the least possible disturbance to ruling prices. Government control of wool ceased after the war and wool auctions operated by members of the National Council of Wool Selling Brokers of Australia were resumed in Perth in 1946. These sales are attended by Australian and overseas buyers who bid for individual lots. Some wool is auctioned at sales conducted independently of the National Council and a significant portion of the clip is purchased on farms by wool dealers who buy direct from producers. In September 1957, auctions were held at Albany for the first time. Sales in Perth were discontinued in 1960 and the selling centre was transferred to Fremantle.

The number of sheep and lambs shorn, the average weight of wool shorn per sheep or lamb, and production of wool for five years to 30 June 1974 are given in the following table. The succeeding table shows the gross value of wool production for the same period.

SHEEP SHORN AND WOOL PRODUCTION

Year	Sheep shorn			Average weight of wool shorn	Wool production (in the grease)			
	Sheep	Lambs	Total		Shorn	Dead and fellmongered	Exported on skins	Total
	'000	'000	'000	kg	tonnes	tonnes	tonnes	tonnes
1969-70	28,541	6,989	35,530	4.0	143,481	1,046	7,434	151,961
1970-71	30,277	6,857	37,134	4.1	151,121	687	7,159	158,967
1971-72	30,838	7,277	38,115	4.4	168,850	1,369	7,943	178,162
1972-73	28,201	8,445	36,645	4.1	138,201	2,448	7,868	148,517
1973-74	28,945	6,818	35,763	4.0	142,100	1,047	6,292	149,439

GROSS VALUES OF WOOL PRODUCTION
\$'000

Year	Shorn wool	Dead wool and fellmongered wool	Wool exported on skins	Total
1969-70	120,266	554	4,010	124,829
1970-71	91,854	156	2,501	94,510
1971-72	134,715	422	2,132	137,269
1972-73	222,186	2,855	6,518	231,559
1973-74	250,352	1,361	7,676	259,389

Although the greater proportion of the wool clip is exported in the grease, scouring or degreasing is done in the State and degreased wool is an appreciable item in the external wool trade. During 1973-74 exports of greasy and degreased wool were 112,536 tonnes and 8,577 tonnes, respectively. The most important buyers of greasy wool were Japan, the Union of Soviet Socialist Republics, France, the Federal Republic of Germany, Italy, India, Yugoslavia and Belgium-Luxembourg. Principal purchasers of degreased wool were Japan, the United Kingdom, the Federal Republic of Germany, Italy, United States of America, Portugal and France. Further details of exports of greasy and degreased wool, both interstate and overseas, are given in Chapter IX, Part 1—*External Trade*.

Cattle

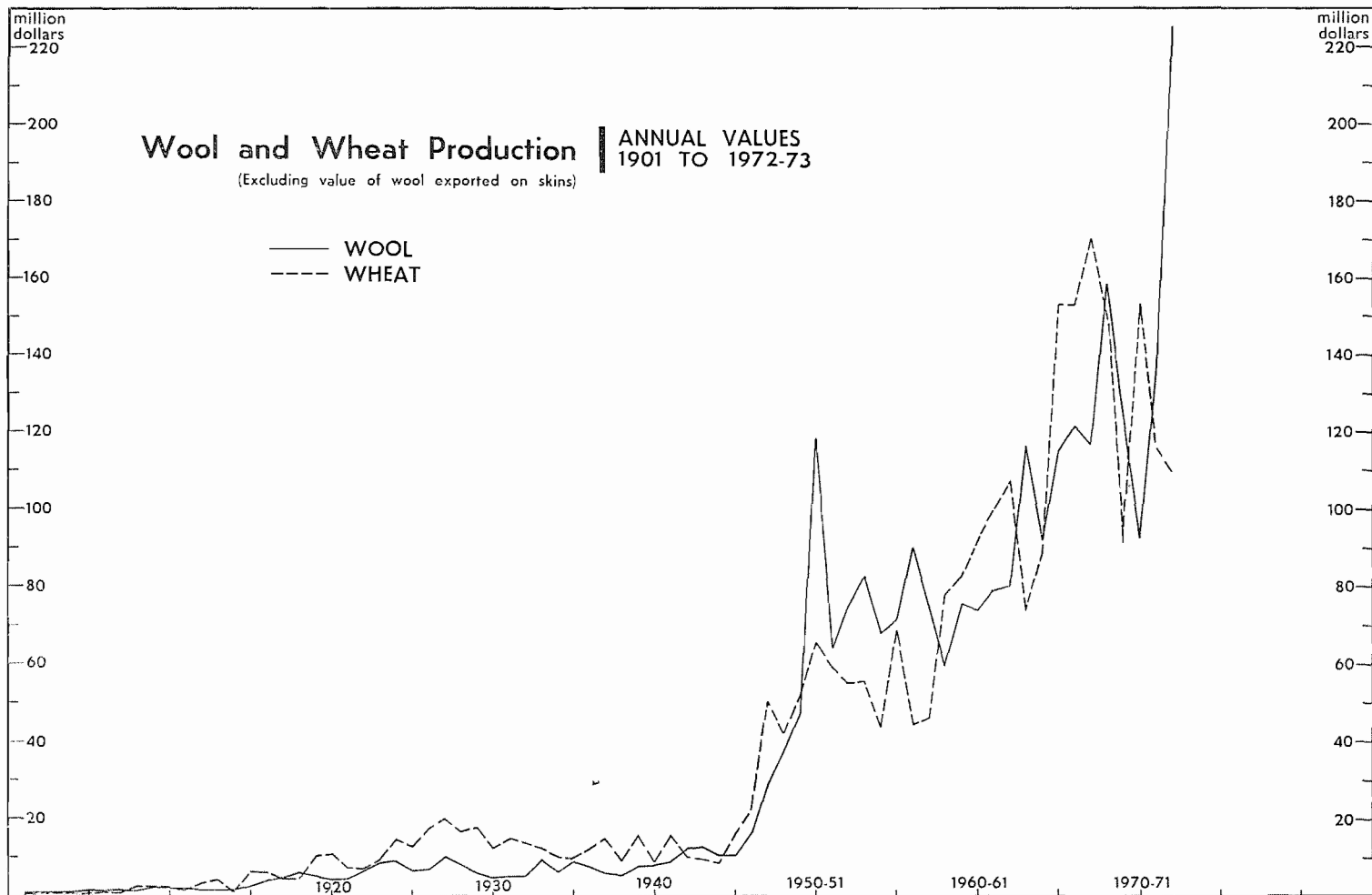
Cattle are classified according to the two main purposes of 'meat production' and 'milk production', irrespective of breed.

The table below shows the numbers of cattle for meat production kept on rural holdings at 31 March 1970 to 1974. The table on page 387 details, for the same period, the numbers kept for milk production. Cattle numbers in each State and Territory at 31 March 1974 are given in the third table on page 389.

In 1974 the Kimberley Statistical Division carried 678,467 head of cattle for meat production, or 31.5 per cent of the State total. Other pastoral areas carried 136,363 head and agricultural areas 1,338,617.

The cattle which were originally shipped or driven overland from the other Australian Colonies to start the industry in the northern pastoral areas were predominantly shorthorn breeds, and these still form the great bulk of all cattle kept for meat production in those areas. Carcass weights, however, have been increased by importing better-type bulls, by improving watering facilities on the cattle stations and by the replacement of droving by the transport of the animals from stations to abattoirs in large road trucks.

Killing and freezing works operate at the ports of Wyndham, Broome and Derby and consignments of frozen and chilled beef from these centres go mainly to overseas destinations. Some of it is sent south for consumption in the metropolitan area and live cattle are also shipped from northern ports to be slaughtered for the metropolitan market. By far the greater proportion of beef consumed in the southern part of the State, however, is supplied from the agricultural areas, some of it being from stock culled from dairy herds.



The following table shows the numbers and proportions of cattle for meat production in agricultural areas and in pastoral areas at 31 March 1970 to 1974. The agricultural areas have become an increasingly important source of meat production in recent years, and now contain more than 62 per cent of the cattle kept for this purpose.

CATTLE FOR MEAT PRODUCTION—NUMBERS AND DISTRIBUTION

Particulars	At 31 March—				
	1970	1971	1972	1973	1974
Number of head—					
In agricultural areas	737,496	861,297	1,048,830	1,211,110	1,338,617
In pastoral areas	761,519	741,334	751,271	792,642	814,830
Total	1,499,015	1,602,631	1,800,101	2,003,752	2,153,447
Proportion of total—	per cent	per cent	per cent	per cent	per cent
In agricultural areas	49.2	53.7	58.3	60.4	62.2
In pastoral areas	50.8	46.3	41.7	39.6	37.8

In the table that follows, herds of cattle kept for meat production are classified according to size of herd and location. In the agricultural areas, holdings with less than 200 cattle for meat production accounted for 81 per cent of the herds, but only 38 per cent of total cattle for meat production in those areas. Within this group, holdings with less than thirty cattle for meat production represented 28 per cent of the holdings but only 3 per cent of the total cattle for meat production. In the pastoral areas, holdings with more than 4,999 cattle for meat production accounted for only 14 per cent of the herds in those areas but over 75 per cent of the total number of cattle at that date.

The table on page 386 gives details of slaughterings in abattoirs, butcheries and on stations and farms. A table showing particulars of pigs slaughtered and pigmeat produced appears on page 389.

CATTLE FOR MEAT PRODUCTION AT 31 MARCH 1974
CLASSIFIED ACCORDING TO SIZE OF HERD AND LOCATION

Size of herd (numbers)	In agricultural areas (a)		In pastoral areas (b)		Whole State	
	Number of—		Number of—		Number of—	
	Herds	Cattle	Herds	Cattle	Herds	Cattle
1— 29	2,779	33,556	39	572	2,818	34,128
30— 49	1,126	44,062	15	566	1,141	44,628
50— 69	1,027	60,403	20	1,149	1,047	61,552
70— 99	1,098	91,662	14	1,193	1,112	92,855
100— 149	1,251	151,860	27	3,239	1,278	155,099
150— 199	764	130,539	13	2,272	777	132,811
200— 299	834	201,853	26	6,360	860	208,213
300— 399	409	140,719	14	4,806	423	145,525
400— 499	209	92,806	18	7,920	227	100,726
500— 699	202	116,532	23	13,650	225	130,182
700— 999	115	93,877	17	14,079	132	107,956
1,000— 1,499	52	62,681	21	25,652	73	88,333
1,500— 1,999	21	34,868	12	20,483	33	55,351
2,000— 4,999	16	46,905	32	97,266	48	144,171
5,000— 9,999	1	8,130	22	161,394	23	169,524
10,000 and over	2	28,164	27	454,229	29	482,393
Total	9,906	1,338,617	340	814,830	10,246	2,153,447

(a) The agricultural areas comprise the Perth, South-West, Southern Agricultural, Central Agricultural and Northern Agricultural Statistical Divisions and the Shires of Dundas, Esperance, Ravensthorpe and Yilgarn. (b) The pastoral areas comprise the Kimberley, North-West, Pilbara and Central Statistical Divisions and the Shires of Boulder, Coolgardie, Laverton, Leonora and Menzies.

Slaughtering

Beef from cattle slaughtered at Wyndham, Broome and Derby in the Kimberley Division is principally for export. The local market for meat is supplied mainly from abattoirs at Midland, Fremantle, Waroona, Harvey, Bunbury, Albany, Geraldton,

Woorloo, Katanning and Kalgoorlie but most of these establishments also slaughter for the export trade. Small establishments operating in country towns also contribute substantially to total production, and most stations and many farms slaughter sufficient for all or part of their own requirements.

LIVESTOCK SLAUGHTERED AND MEAT PRODUCED

Year	Livestock slaughtered (a)								Meat produced (b)	
	Sheep		Lambs		Cattle		Calves		Mutton and lamb	Beef and veal
	Number	Gross value (c)	Number	Gross value (c)	Number	Gross value (c)	Number	Gross value (c)		
1969-70	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000	tonnes	tonnes
1970-71	3,229	10,140	1,371	8,037	384	37,425	20	875	78,047	73,056
1971-72	3,005	8,350	1,486	6,837	342	37,344	8	429	78,643	64,334
1972-73	4,219	10,318	1,898	7,463	386	42,431	5	314	105,119	77,291
1973-74	4,351	27,520	1,320	9,202	465	54,466	15	814	92,918	90,052
1973-74	2,620	30,718	1,189	13,909	479	65,164	10	644	66,157	94,106

(a) Mainly slaughtering for human consumption but also includes quantities condemned and small numbers of livestock slaughtered for boiling down. Details of pigs slaughtered and production of pigmeat are shown on page 389. (b) Dressed carcass weight; excludes condemned carcasses and offal. (c) Value 'on hoof' at principal market.

DAIRYING

Compared with the wheat, wool and meat producing industries, dairying as a major well-organised rural activity is of fairly recent origin. Its growth was retarded initially by the difficulty of clearing heavily-timbered country in the South-West and the need for special methods of pasture establishment, but these problems have been progressively overcome and dairying is now a significant feature of primary production, although only limited development has taken place in recent years.

Until the establishment of the first butter factory at Busselton in 1898, dairy farming in Western Australia was essentially for the production of whole milk, although small quantities of farm butter were marketed. As more factories commenced processing, the industry steadily developed and its growth was further stimulated by the establishment of irrigation areas, the first at Harvey in 1916, and by the introduction of the Group Settlement Scheme in 1921. Another important factor in increasing production was the successful establishment of subterranean clover which resulted in a marked improvement in pastures.

The industry has been assisted by the extensive experimental work carried out by the Department of Agriculture and the advisory service which it provides on all aspects of dairy farming.

Price instability has been one of the major difficulties of the industry and in 1926 the 'Paterson Plan', which was a voluntary scheme of price stabilisation, was introduced. It met with considerable success but weaknesses finally became apparent and it was abandoned in 1934 in favour of the Dairy Products Marketing Regulation Act passed by the State Parliament. On 1 April 1946, Western Australia entered the voluntary butter price equalisation scheme, operated since 1936 by the Commonwealth Dairy Produce Equalisation Committee Limited, and in January 1947 the State extended its participation to include cheese. The Committee, which comprises certain members of the State Dairy Products Boards and other persons representing the industry, enters into agreements with manufacturers to secure to them equal rates from sales of butter and also of cheese, and for this purpose may fix basic prices at which these products sold in Australia or abroad are to be taken into account. The effect is that local and export trade are distributed among manufacturers in equitable proportions. The Committee fixes basic prices and equalises returns to factories through an Equalisation Fund. In addition, subsidies provided by the Australian Government are distributed by the Committee, through factories to dairy farmers, by payments on butter and cheese manufactured. The fifth

five-year stabilisation plan, which came into operation on 1 July 1972, provides a minimum bounty of \$27 million annually for the Australian industry. The actual amount of the assistance provided by the Australian Government each year will be determined at the commencement of the year in the light of the needs of the industry and taking into account action by the States in the adoption of an effective scheme to control production. The average subsidy rates per tonne in 1973-74 were \$84.84 on butter and \$40.55 on cheese.

From 1942 until 30 June 1948, and again from 1 July 1949 to 30 June 1952, a subsidy was paid by the Australian Government on milk supplied for the manufacture of processed milk products. By means of the *Processed Milk Products Bounty Act* 1962, the Australian Government provided for payment of a maximum amount of \$700,000 as a bounty on exports of processed milk products during the year ended 30 June 1963. For the purpose of the Act, processed milk products are goods containing butterfat and produced from cow's milk, but excluding butter, cheese and certain other specified goods. By later amendments to the Act, bounty was continued up to a maximum of \$1,000,000 in respect of exports during 1963-64 and of \$800,000 on those for 1964-65. Subsequent amendments extend the operations of the Act until 30 June 1977, the maximum amount of bounty payable each year being maintained at \$800,000.

The following table shows the numbers of cattle kept for milk production on rural holdings at 31 March 1970 to 1974.

CATTLE FOR MILK PRODUCTION

Particulars	At 31 March—				
	1970	1971	1972	1973	1974
	number	number	number	number	number
Bulls of dairy breeds used or intended for service—					
Aged one year and over	2,666	2,627	2,580	2,689	2,489
Calves (aged under one year)	1,741	1,357	989	937	925
Total	4,407	3,984	3,569	3,626	3,414
Cattle used or intended for production of—					
Milk or cream for sale—					
Cows—In milk and dry	101,094	96,438	96,532	96,896	94,941
Helpers—Aged one year and over	36,530	38,841	35,706	37,175	38,664
Heifer calves—Aged under one year	33,202	32,956	33,516	35,139	33,696
Milk or cream for use on rural holdings—					
House cows and helpers	6,842	6,499	5,885	5,823	5,898
Total	177,668	174,734	171,639	175,033	173,199
Total cattle for milk production	182,075	178,718	175,208	178,659	176,613

CATTLE FOR MILK PRODUCTION AT 31 MARCH 1974
CLASSIFIED ACCORDING TO SIZE OF HERD

Size of herd (numbers)	Number of herds	Total cattle
1- 9	3,049	6,660
10- 19	119	1,599
20- 29	49	1,432
30- 39	56	1,887
40- 49	59	2,632
50- 59	52	2,833
60- 69	68	4,356
70- 79	58	4,324
80- 89	73	6,179
90- 99	68	6,420
100-124	166	18,696
125-149	112	15,416
150-174	96	15,433
175-199	82	15,268
200-249	107	23,825
250 and over	143	49,653
Total	4,367	176,613

In the table above, the number of holdings carrying cattle for milk production at 31 March 1974 are classified by the size of the herds. Almost 70 per cent of the herds contained less than ten cattle for milk production. However, these accounted for only 4 per cent of the total number of such cattle. Holdings carrying 100 or more cattle for milk production accounted for only 16 per cent of herds but 78 per cent of the total cattle for milk production at that date.

The quantity and gross value of whole milk produced in each of the years 1969-70 to 1973-74 are given in the following table.

WHOLE MILK PRODUCTION (a)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Quantity '000 litres	254,002	255,839	254,682	*242,060	239,341
Gross value (b) \$'000	16,255	17,766	17,862	18,482	19,627

(a) Year ended 30 June. Includes milk used for processing into butter, cheese and condensery products. Details of butter and cheese production appear in Part 3 of this Chapter. (b) Includes subsidy paid by the Australian Government. * Revised.

Pig Raising

For many years the rearing of pigs has been carried on in conjunction with the production of butterfat as cream, thus providing a practical means of using the skim milk obtained. This is now on the decline, however, owing to the current trend for whole milk to be supplied in bulk by the dairy farmers direct to processing plants. In the main, pigs are now raised on grain-growing holdings and in 1974 83 per cent of the pigs in the State were in the wheat belt. There are also a number of farmers in the districts around Perth who specialise in pig raising and in fattening for market pigs obtained from country areas.

The principal breeds in Western Australia are the Berkshire, Large White and Landrace and crosses of these breeds. Pigs are reared for bacon and ham as well as pork and, although the greater proportion of production is consumed locally, there is some export trade, mainly to other Australian States. In 1973-74 a total of 3,082,931 kg of pork was shipped interstate and 2,856,378 kg overseas, mainly to Japan, Singapore, Hong Kong, the United Kingdom and the United States of America.

In the following table, pig herds at 31 March 1974 are classified according to the size of the herd. Holdings carrying less than fifty pigs accounted for 48 per cent of the total herds but only 12 per cent of the total number of pigs. Herds containing between fifty and 499 pigs accounted for slightly more than 50 per cent of herds and 71 per cent of total pigs while those with more than 500 pigs accounted for less than 2 per cent of herds but 17 per cent of pigs.

PIG HERDS AT 31 MARCH 1974
CLASSIFIED ACCORDING TO SIZE OF HERD

Size of herd (numbers)	Number of herds	Total pigs
1- 9	411	1,949
10- 19	363	5,115
20- 29	362	8,890
30- 39	332	11,434
40- 49	294	13,063
50- 69	456	27,025
70- 99	476	39,372
100- 149	419	50,760
150- 199	196	33,530
200- 299	196	47,247
300- 499	124	46,208
500- 699	31	18,092
700- 999	10	8,236
1,000 and over	18	32,702
Total	3,688	343,623

In the table below, the numbers of pigs on rural holdings at 31 March are shown for each of the years 1970 to 1974. The number of pigs at 31 March 1974 was 343,623, compared with 476,316 at 31 March 1973, a decrease of 28 per cent.

PIG NUMBERS

At 31 March—	Boars	Breeding sows	Other pigs (a)		Total
			Under six months	Six months and over	
1970	4,174	34,645	211,232		250,051
1971	4,440	41,925	166,697	64,439	277,501
1972	6,213	62,616	269,887	88,345	427,061
1973	5,969	58,476	285,562	126,309	476,316
1974	4,634	41,703	207,279	90,007	343,623

(a) Includes baconers, porkers, suckers, weaners and slips, for which separate age details were not collected prior to 1971.

The next table shows the numbers and gross value of pigs slaughtered in each of the years 1969-70 to 1973-74, together with the quantity of meat produced. Factory production of bacon and ham is also shown. The amount produced in 1973-74 was the highest recorded over the preceding decade, a gradual increase occurring each year over the period.

PIGS SLAUGHTERED (a) AND MEAT PRODUCED

Year	Pigs slaughtered		Pigmeat produced (c)	Bacon and ham produced (d)
	Number	Gross value (b)		
1969-70	317,188	\$'000	tonnes	tonnes
1970-71	317,906	8,813	16,986	4,519
1971-72	368,574	8,612	16,734	4,863
1972-73	541,702	10,051	19,962	5,116
1973-74	499,797	14,726	30,359	* 5,257
		19,023	28,270	5,367

(a) Comprises slaughtering in abattoirs, butcheries and on stations and farms.
 (b) Value 'on hoof' at principal market or at factory door.
 (c) Dressed carcass weight; excludes condemned carcasses and offal but includes quantities used to produce bacon and ham.
 (d) Factory production. * Revised.

LIVESTOCK IN AUSTRALIA

The following table gives details of livestock numbers in each State and Territory of Australia at 31 March 1974.

LIVESTOCK NUMBERS AT 31 MARCH 1974—AUSTRALIA ('000)

State or Territory	Sheep	Cattle				Pigs
		Bulls (1 year and over) used or intended for service	For production of milk or cream	Mainly for meat production	Total	
New South Wales	53,296	143	670	7,643	8,457	835
Victoria	25,895	111	1,905	3,859	5,876	427
Queensland	13,119	192	519	9,585	10,297	441
South Australia	16,431	34	205	1,452	1,692	385
Western Australia	32,451	45	173	2,112	2,330	344
Tasmania	3,964	14	216	653	884	68
Northern Territory	1	34	....	1,286	1,321	8
Australian Capital Territory	143	(a)	1	18	20	(a)
AUSTRALIA	145,300	575	3,692	26,609	30,876	2,509

(a) Less than 500.

POULTRY FARMING

Poultry farming in Western Australia is now mainly a specialist industry and a large proportion of the egg production is on holdings which carry sufficient birds to make the activity the sole or predominant source of income. Most of the commercial poultry farms are situated in the Perth Statistical Division, within a fifty-kilometre radius of Perth, but birds are also kept for commercial production on orchards, dairy farms and wheat farms throughout the agricultural areas.

On specialist poultry farms modern developments in breeding, sexing and nutrition have resulted in considerably higher egg production per bird. Egg-producing birds are largely first-cross hens, bred mainly from White Leghorn cocks and Australorp hens. Production of poultry meat has increased considerably in recent years. It is now predominantly a specialised industry using strains of birds which have been developed specifically for meat production.

Under the *Marketing of Eggs Act, 1945-1970*, all producers in the South-West Land Division are required to market their eggs either through the Western Australian Egg Marketing Board or under the permit system which is administered by the Board. The principal purpose of this legislation is to ensure satisfactory disposal of eggs, including that surplus over local requirements which is consistently produced and which must be sold overseas at prices which usually do not offer a reasonable return to the producer. In order to provide a fund with which to equalise returns from local and export sales the Board, prior to 1 July 1965, made a charge on all eggs sold locally. This charge was subsequently replaced by a levy imposed by Commonwealth legislation which came into operation on 1 July 1965.

The *Poultry Industry Levy Act 1965-1966* provides for the imposition throughout Australia of a levy on hens not less than six months old kept for commercial purposes. Special exemptions are made in respect of 'broiler breeder hens', being hens used to produce chickens for table purposes. The levy, which does not apply to flocks of fewer than twenty-one hens, nor to the first twenty hens in any flock, is payable fortnightly and may not exceed \$1 annually per bird. In June 1975 the levy stood at 4c per fortnight for each hen.

Under the *Poultry Industry Levy Collection Act 1965-1966* the authority responsible for the collection of the levy in this State is the Western Australian Egg Marketing Board. The *Poultry Industry Assistance Act 1965-1966* establishes a Poultry Industry Trust Fund for the receipt of the amount of the levy and other moneys. The Act provides for payment from the Fund to a State, by way of financial assistance, of such amounts as the Federal Minister may determine upon the recommendation of The Council of Egg Marketing Authorities of Australia.

Although the Australian Government levy replaces the egg equalisation levies formerly imposed by the several State authorities for the purpose of equalising returns from local markets and export sales, the State authorities continue to make charges necessary to defray the costs of handling, grading and marketing of eggs.

In 1973-74 Kuwait and Japan were the most important overseas markets for eggs in the shell. Overseas exports of eggs in liquid form (including frozen pulp) in 1973-74 were valued at \$162,196.

Details of poultry numbers, eggs sold and poultry slaughtered for table purposes over the five years ended 31 March 1974 are given in the next two tables.

POULTRY NUMBERS

At 31 March—	Fowls	Ducks	Turkeys
1970	3,230,492	28,005	22,550
1971	3,591,548	34,679	28,575
1972	3,517,749	46,359	7,190
1973	3,657,104	55,411	6,547
1974	4,311,827	38,217	5,021

EGGS SOLD AND POULTRY SLAUGHTERED (a) FOR TABLE PURPOSES

Year ended 31 March—	Eggs sold (b)		Poultry slaughtered for table purposes (c)	
	Quantity	Gross value	Dressed weight	Gross value
	'000 dozen	\$'000	tonnes	\$'000
1970	12,188	6,253	10,735	6,519
1971	13,749	6,724	*12,923	7,584
1972	17,302	7,990	*14,642	*7,986
1973	14,919	7,251	*14,274	*7,719
1974	13,938	7,949	17,243	10,655

(a) Excludes non-commercial production. (b) Figures shown were supplied by the Western Australian Egg Marketing Board. (c) Year ended 30 June. * Revised.

BEE KEEPING

Commercial producers of honey in Western Australia may be divided into three categories. There are a comparatively small number of specialist apiarists, engaged solely or mainly in honey production, who operate on a large scale and transport their hives from district to district. There are also some substantial producers who are engaged in agricultural activities and use their farms as a central site from which they may transport their hives to other areas as necessary. Finally there are the many farmers and orchardists who keep a few hives and produce honey as a minor supplementary activity. This pattern of production is illustrated by the following table.

In 1973-74 exports of honey totalled 1,195 tonnes, the export value being \$913,532. The principal buyers were the United Kingdom, which purchased 528 tonnes; Malaysia, 159 tonnes; and Singapore, 156 tonnes.

BEE KEEPERS, BEEHIVES AND HONEY PRODUCTION (a)—1973-74

Classification of hives (a)	Bee keepers (b)		Productive beehives (c)		Honey production	
	Number	Proportion of total (per cent)	Number	Proportion of total (per cent)	Quantity	Proportion of total (per cent)
5-19	132	38.71	513	1.53	kg 9,210	0.38
20-49	83	24.34	1,242	3.71	27,949	1.16
50-99	32	9.38	1,778	5.32	56,577	2.34
100-199	28	8.21	2,860	8.55	110,216	4.56
200-299	20	5.87	4,213	12.60	218,570	9.05
300-499	27	7.92	9,304	27.82	827,439	34.26
500-799	14	4.11	7,185	21.48	674,884	27.94
800 and over	5	1.47	6,350	18.99	490,598	20.31
Total	341	100.00	33,445	100.00	2,415,443	100.00

(a) Excludes details of bee keepers with less than 5 hives. (b) At 30 June 1974. (c) Represents the number of hives at 30 June 1974 from which honey was taken during the year and excludes hives kept for production but from which no honey was taken, nuclei, pollination hives, etc.

BEEHIVES AND PRODUCTION OF HONEY AND BEES-WAX (a)

Year	Beehives (b)		Honey production		Bees-wax production	
	Productive (c)	Unproduc- tive (d)	Quantity	Gross value	Quantity	Gross value
	number	number	tonnes	\$'000	tonnes	\$'000
1969-70	37,156	7,920	3,361	600	45	58
1970-71	32,648	10,868	(e) 1,372	266	24	29
1971-72	33,537	8,502	2,772	685	39	44
1972-73	34,862	5,712	2,243	1,009	31	36
1973-74	33,445	6,161	2,415	1,280	36	62

(a) Excludes particulars of bee keepers with less than 5 hives. (b) Number at 30 June. (c) Hives from which honey was taken during the year. (d) Includes hives kept for production but from which no honey was taken during the year, nuclei, pollination hives, etc. (e) Lowest recorded since 1954-55.

THE DEPARTMENT OF AGRICULTURE

Brief references have been made earlier in this Part to the important services rendered to rural producers by the Department of Agriculture. The Department is the branch of the State Government Service responsible for bringing scientific advice to farmers and pastoralists, for carrying out research into a wide range of technical problems and for administering Acts of Parliament dealing with agricultural and pastoral matters. Its activities can be classified under the four headings: investigation or research; advisory, now more commonly called 'extension' functions; provision of certain services for the assistance of the man on the land; and regulatory work which consists of carrying out the provisions of some of the laws relating to agriculture.

The operations of the Department are organised into Divisions and Sections or Branches, the heads of which are responsible to the Director of Agriculture. The Divisions are Animal (including sections for animal production, stock inspection, brands and apiculture, the Poultry Branch and the Animal Health Laboratories), Wheat and Sheep (including plant breeding, cereal testing and inspection services, the Sheep and Wool Branch and the Cereal Products and Fleece Testing Laboratories), Dairying (including dairy cattle husbandry, agronomy, dairy products supervision and the Dairy Technology Laboratory), Horticulture (including floriculture, fruit, viticulture and vegetables, and plant quarantine and fruit fly inspection services), Soils (including the Soil Conservation, Irrigation and Drainage, Rangeland Management, and Soil Research and Survey Branches), Plant Research (dealing with plant nutrition, crop and pasture agronomy, horticultural research, weed research, seed quality and certification, and including the Plant Pathology Branch), and Administration which includes the Rural Economics and Marketing, and Information Sections, the Botany and Entomology Branches, and the Library. Close liaison is also maintained with the Agriculture Protection Board.

Sections of government administration known as Departments of Agriculture usually originated in the demands of farmers for government assistance in coping with their technical problems. The Western Australian Department of Agriculture had its origin in a Bureau of Agriculture which was formed in 1894. In 1898 the Department of Agriculture was established and absorbed the staff of the Bureau. Up to this time, some seventy years after the first settlement, agriculture in Western Australia had made little progress. The area of cleared arable land was less than 1 per cent of the present area. Superphosphate had not been used on Western Australian farms and wheat varieties suitable for the drier districts to the east of Northam were not then available. There was little comprehension of the many problems associated with land development and not much public appreciation of the part that science might play in solving them.

The Department's responsibilities and activities have been expanded with the development of agriculture. For the first quarter of a century of its existence, expansion and consolidation of farming in the wheat belt overshadowed other activities. That was only natural as the wheat area expanded from 30,000 hectares in 1900 to more than 1·6 million hectares in 1930—a period when the State's development was almost synonymous with wheat belt expansion. By 1973 the area sown to wheat had grown to over 3·0 million hectares, with almost 325,000 hectares of oats, nearly 510,000 hectares of barley and over 64,000 hectares of grain lupins.

State Farms and Research Stations

Perhaps the most important work in the Department's first ten or fifteen years was that concerned with the establishment of experiment farms, or 'State farms' as they were at first called. The first of these had its origin in plots which were established at Hamel in 1896. Valuable work was carried on at this centre for nearly twenty years in connection with the growing of potatoes, fruit, cereals, hops, fodder crops and pasture, and some success was achieved with wheat breeding.

Government farms were opened at Narrogin in 1901 and Nabawa, forty kilometres north of Geraldton, in 1902. In 1907 a farm at Nangeenan, near Merredin, was taken over from the Lands Department and is now the Merredin Research Station. In the same year a farm was established in the South-West at Brunswick in order to provide object

lessons in dairying, as it was felt that there were great possibilities of expanding the dairying industry. After functioning for several years this farm was closed and the land was subsequently used for closer settlement purposes.

In 1911 a change was made in the policy of the government farms in the wheat belt and their character changed from 'experimental' to 'experiment' farms and ultimately to 'research stations'. Instead of being conducted mainly with the object of producing revenue they were to be used primarily for collecting information concerning local conditions that would be of value to the district. In addition, wheat, oats and barley were bred and pure pedigree seed produced. It would be difficult to over-estimate the subsequent value of the farms in this new role, which is still an important function although the emphasis has now changed to complex experiments which are of value to the study of farms as economic units. In later years more research stations were established and they now number twenty-two.

Research stations at Nabawa, Badgingarra, Wongan Hills, Merredin, Beverley, Mount Barker, Newdegate, Salmon Gums and Esperance deal with agriculture in the cereal-growing and sheep-raising districts and stations at Bramley (though dealing mainly with beef cattle), Denmark and Wokalup serve the dairying districts. Vegetable research stations are situated at Medina and Manjimup, a pig research unit has been established at the Medina station and beef cattle research is taking place at the Northam Research Station. The poultry industry is served by a station at Herdsman Lake. A viticultural research station has been established at Upper Swan and a horticultural research station at Stoneville in the Darling Range to the east of Perth.

The Department has withdrawn from the Kimberley Research Station which was operated in conjunction with the Commonwealth Scientific and Industrial Research Organization and transferred much of its research work to the Kununurra Experimental Farm. The Experimental Farm is concerned with large-scale experimental work with irrigated row crops for tropical areas near the Ord River. Other research stations in the north of the State are located near Fitzroy Crossing, Port Hedland and Carnarvon. The Fitzroy Pastoral Research Station in West Kimberley studies problems of the beef cattle industry while at Abydos, near Port Hedland, regeneration of overgrazed pastoral country and a study of sheep breeding problems are the main concerns. At the Gascoyne Research Station at Carnarvon, problems of growing tropical fruits and winter vegetables, and pastoral problems in the area are being investigated.

A great deal of rangeland regeneration research is also being carried out on the Ord River Regeneration Project area along the Ord River.

Advisory Services

Extension work is perhaps the Department's most important function and has exercised a powerful influence in publicising and accelerating the adoption of better farming methods. It is difficult to assess the results of any educational undertaking in terms of money, but the desirability of having a well-informed farming community, receptive to new ideas, is obvious. Although the best method of taking advice to farmers is for the technical officer to visit farms for discussion with the farmer on his own property, this is unfortunately not always possible as an officer may have between 500 and 1,000 farms in his district. Individual visits often have to be restricted to cases where a specific request has been made or where some urgent action is required.

Extension officers support the formation of farmers' organisations and attend meetings and field days where talks are given to groups of farmers. Many such meetings are held on the Department's research stations but field experiments and demonstrations on farmers' properties also provide venues for extension. Major problems such as farm management, taxation and fertilisers are commonly discussed, along with current difficulties with husbandry practices. Besides such personal contacts, many of the Department's twenty-two district advisory offices send direct-mail materials to farmers in their areas.

Mass media play an important role in extension and about 150 radio broadcasts are given by departmental officers each year. A weekly Press service is also provided and regular publications include the quarterly *Journal of Agriculture* which is distributed to

some 8,000 farmers, the quarterly *Dairy Notes* which reaches all the State's dairy farmers, and a *Rangeland Bulletin* for the State's pastoralists. Recent additions to these services include *Technotes* (a technical advisory service), *Farmnotes* and *Market Information Service*. Television is being increasingly used and twenty programmes were prepared for televising in the South-West during 1973-74.

Advisory work is not concentrated in a single Division but is serviced by most Divisions and Branches/Sections of the Department. Apart from specialist services available from the Department's Head Office at South Perth, advice relevant to country areas is available from officers stationed at district offices at Bridgetown, Busselton, Carnarvon, Denmark, Derby, Esperance, Geraldton, Harvey, Jerramungup, Kalgoorlie, Katanning, Kelmscott, Kununurra, Lake Grace, Manjimup, Meekatharra, Merredin, Midland, Moora, Narrogin, Northam and Three Springs. A recent organisational alteration has been the decentralisation of some services, such as diagnostic tests, to larger offices at Albany and Bunbury.

Research Activities

In the field of investigation and research, problems which have been dealt with would comprise a lengthy list and only a few of the more important can be mentioned here. The value to the State of cereal-breeding activities is well known. Cereal varieties produced by the Department have increased the income of farmers by many millions of dollars over the years in which they have been grown. The introduction of new plant species and varieties, the evaluation of their suitability for local conditions and the determination of rotations for improving yields and maintaining soil fertility are important features of the work in cereal-growing districts.

Research into plant diseases and deficiencies forms another important section of the Department's investigational work. Considerable success has been achieved in the recognition and remedying of deficiencies of trace elements in soils, notably of copper, zinc and molybdenum. As a result of this work, fertilisers containing trace elements have been applied in recent years to extensive areas of the State's farming land. These investigations, together with allied work on superphosphate and sulphur and the establishment of subterranean clover pastures, constitute the technical factors which have made possible the rapid post-war expansion of light land development.

In the pastoral areas of the North-West the sheep-carrying capacity of large tracts of country has been seriously reduced by drought and overgrazing. Recent work by officers of the Department has shown that much of this country can be reclaimed by adopting systems of grazing management different from those employed in the past.

Nutritional disorders and diseases of farm animals cause considerable loss to farmers and pastoralists. Some of the Department's most notable successes have been achieved when dealing with problems in this field, which include enzootic ataxia, enterotoxaemia, toxic paralysis, clover disease in sheep, copper and cobalt deficiencies in cattle, contagious pleuro-pneumonia, Kimberley horse disease, plant poisoning of stock and infertility in dairy cows. Problems of sheep infertility, lupinosis, brucellosis in beef herds, mastitis in dairy cows and rye grass toxicity in cattle and sheep are among major problems at present under investigation.

A soil conservation service was established in the Department in 1947 and since then much information on the incidence and nature of erosion has been collected. Many farmers have developed farm plans and management systems to avoid erosion, and considerable attention has also been given to overcoming the salt-land problem in some areas. Although the main emphasis has been on soil and water conservation in agricultural areas, an increasing amount of research is being carried out concerning the wider aspects of environmental protection, often in co-operation with other Government Departments. Examples include coastal and river protection, studying and reducing the impact of industrial and urban development, and examining possible consequences of activities such as the wood chip industry and the mining of mineral sands. A great deal of attention is also being given to the maintenance of good rangeland condition in pastoral areas, as well as to the regeneration of large areas of land which have suffered erosion following drought or years of overstocking.

Lupin growing and the production of sheep meat for Middle East markets are two highly successful agricultural enterprises with which the Department has been closely associated in recent years. New varieties of sweet lupins bred by the Department have helped expand the area sown to lupins from 26,628 hectares in 1971-72 to 64,075 hectares in 1973-74. Research is also establishing lupins as a source of protein in feeds manufactured for the poultry, pig, sheep and cattle industries. Live sheep exports to Middle East countries have similarly risen, from 235,259 in 1970-71 to 600,992 in 1973-74. Here the Department has been involved with developing management and breeding systems aimed at satisfying the new market requirements, advising on feeding and accommodation during shipping, and discussing market requirements with importers.

Agriculture Protection

For the control, prevention and eradication of vermin and noxious weeds, there is an Agriculture Protection Board which operates in collaboration with the Department of Agriculture. The Board which was established in 1951 following recommendations by a Royal Commission, is constituted under the provisions of the *Agriculture Protection Board Act, 1950-1970*. It comprises the Director of Agriculture as Chairman, the Chief Executive Officer as Deputy Chairman, an officer of the State Treasury, two representatives of the agricultural industry, one representative of the pastoral industry, and five representatives of local government authorities.

The income of the Board consists of appropriations from the Consolidated Revenue Fund and other moneys as prescribed by the Agriculture Protection Board Act.

For the purposes of the Agriculture Protection Board Act, the term 'noxious weeds' means those plants which are so proclaimed or declared under the *Noxious Weeds Act, 1950-1973*. 'Vermin' means any animal, bird or insect proclaimed to be vermin as provided by the *Vermin Act, 1918-1973*, and includes rabbits, foxes, dingoes, sparrows, emus, starlings and grasshoppers.

The Board formulates policies for the control, prevention and eradication of vermin and noxious weeds, advises on methods, directs and assists in general operations, provides services to help local government authorities and landholders in destruction work and conducts scientific research and investigations for the improvement of control techniques and policies. Control work extends to Crown lands, including reserves, for the benefit of adjoining landholders.

Improvements in the control of both noxious weeds and vermin have resulted from the activities of the Agriculture Protection Board and there have been some notable successes, including a great reduction in rabbit numbers effected by the use of myxomatosis virus and by organised drives for their destruction, mainly by warren destruction and poisoning. One of the Board's major programmes at present concerns the eradication of skeleton weed infestations recently discovered at Narembreen, Pithara, Geraldton and Perth. The reported annual cost of this weed to cereal growers in other States is more than \$30 million, and the Agriculture Protection Board and farmers are conducting regular searches of all infested and neighbouring areas to ensure that this most serious weed does not become permanently established in Western Australia.

Other Services

The Department operates certain services which assist the producer to increase his efficiency. Probably the best known is the production of pure pedigree varieties of seed wheat, oats and barley. These are of value to the cereal grower, who is able to obtain his requirements at moderate cost. Sponsoring and supervising the production of approved lines of seed, notably potatoes and beans, has led to the wide use of these specialised lines with a resulting increased yield, and certification of pure lines of pasture seed gives farmers a guarantee of quality in the seed they buy. Assistance to dairy farmers to form herd-testing units, thus enabling them to gauge the performance of their herds, is another service of similar nature. Assistance and technical advice is given to farmers concerned with the installation of irrigation schemes and the preparation of land for irrigation. A superphosphate prediction service should be under way soon to help farmers

decide the best rates of application of superphosphate for their crops and pastures, based on previous fertiliser history. The service will use the 'Decode' method of superphosphate prediction, developed in co-operation with the Commonwealth Scientific and Industrial Research Organization.

Administration of Acts

The Department of Agriculture is responsible for administering some fifty Acts concerning a wide range of subjects. Some of the more important relate to animal and plant disease and insect pests, industry trust funds, soil conservation, vermin control, marketing of agricultural products and registration of feeding stuffs, fertilisers and stock brands.

ARTIFICIAL BREEDING BOARD

The Artificial Breeding Board, established in December 1966, under the provisions of the *Artificial Breeding Board Act, 1965*, consists of a chairman, vice-chairman and three other members including a veterinary surgeon.

The Artificial Breeding Board Act charges the Board with the responsibility of promoting and developing artificial breeding practices and services. This began when the Board took over the artificial insemination services established by the Department of Agriculture in 1956.

At the present time (1975), daily service sub-centres in the State's southern dairy areas operate 362 days per year. Seasonal sub-centre and group programmes also make services readily available around the State. Port Hedland and East Esperance were extremities of the serviced areas in 1974.

Semen stocks maintained at the Board's Administration and Distribution Centre located at Harvey originate from all parts of the world. Extensive in-store stocks provide breeders with a selective range of sires in each breed.

Artificial breeding is increasingly recognised as a reliable means of expanding genetic selection. Breeder management and enthusiasm coupled with technical efficiency has achieved very good results, which are reflected in a non-return rate of 73.4 per cent for 1973.

FARM MANAGEMENT SERVICE LABORATORY

The University of Western Australia, by resolution of the Senate, approved the establishment of the Farm Management Service Laboratory within the University in 1966. The aims of the Laboratory are to develop concepts and services in management accounting, computer planning and animal breeding which are specially suited to the needs of farmers; to make these developments available to farmers; and to use information processed by the Laboratory for teaching and research at the University of Western Australia.

The Laboratory hires its own staff and computer time, and pays its own operating expenses. Fees are charged to cover costs, though initially the Laboratory drew on capital grants made to it by various firms and institutions through the John Thomson Agricultural Economics Centre at the Institute of Agriculture.

Services provided by the Laboratory include computer techniques for planning farm business and solving farm problems. A set of programmes has been developed to enable farmers to breed at least cost for maximum genetic improvement of economically important traits in sheep flocks and pig and beef herds.

HUNTING

Although hunting has been carried on from the first years of settlement, it has never been an important industry. In 1973-74 the recorded gross value was \$1,739,000 but reliable and complete information is difficult to obtain and this amount could therefore be deficient.

Kangaroos have been destroyed in great numbers from the earliest days, the principal reason for the organised destruction being the damage done to pastures and fencing.

As early as 1849 the export of kangaroo skins for the year was no less than 12,387. The export of kangaroo products was banned by the Australian Government in 1973 but some skins are used in local factories while kangaroo meat is used as pet food.

The earliest recorded export of rabbit skins relates to the year 1900 and the meat and skins of these animals have been a source of income to trappers ever since. In an attempt to reduce the damage done to crops and pastures, various methods of control have been adopted and since the second World War an intensive campaign, using myxomatosis virus, poisons and warren ripping, has met with considerable success. As a result, the quantity of rabbit meat produced and the number of skins exported and treated locally have declined greatly and are now insignificant.

Wild goats are slaughtered and the meat is exported.

The skins of animals other than marsupials and rabbits, together with exports of Western Australian fauna, are taken into account in the value of the hunting industry (see tables on page 361) but these are not significant.

FORESTRY

The Prime Indigenous Forests

Although the prime indigenous forests of Western Australia cover only a small percentage of the area of the State, they are of considerable economic importance. This is not only on account of the durability, strength and general-purpose nature of their hardwood timbers, but also because of their occurrence in the water catchment areas in the high-rainfall and closely-populated section of the State. Being easy to regenerate after cutting, they form a natural and effective protection against soil erosion and provide for the increasing public demand for forest recreation. More than 1.8 million hectares have been permanently dedicated as State Forests and approximately 122,400 hectares of forest land are held as Timber Reserves under the Forests Act and the Land Act.

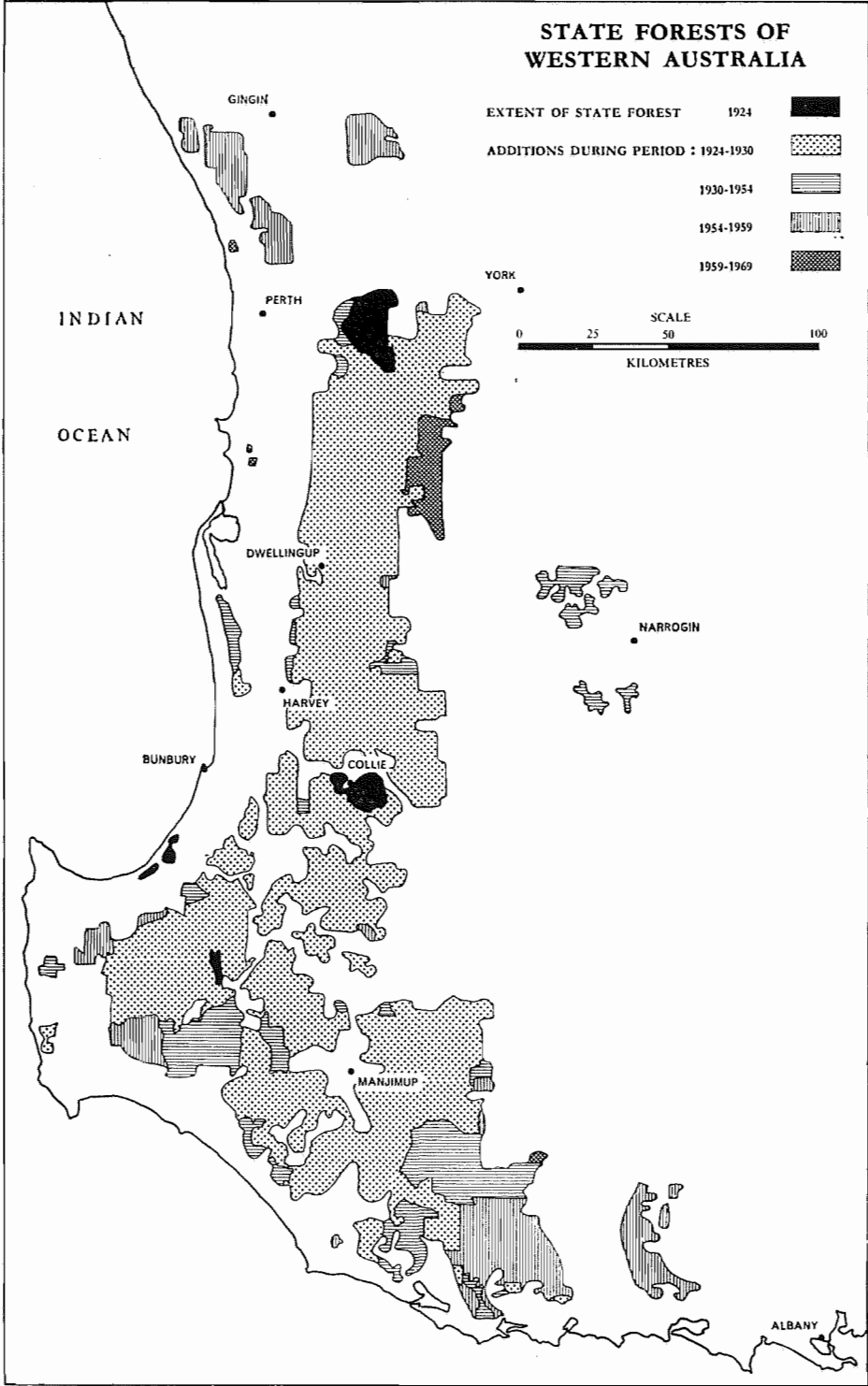
Jarrah (*Eucalyptus marginata*) is the State's principal timber and the prime forest covers over 1.2 million hectares of the State Forests. Karri (*E. diversicolor*) is next in importance and is distributed over some 323,700 hectares but only about 20 per cent of it is in pure stands. Wandoo (*E. wandoo*) accounts for a smaller portion of the dedicated area and Tuart (*E. gomphocephala*), another valuable timber, has a restricted area of about 2,400 hectares. Blackbutt (*E. patens*) occurs in patches throughout the jarrah and karri forests and is an important milling timber with properties and uses similar to jarrah. Marri (*E. calophylla*), the most widespread of the commercial eucalypts, has been widely used as a pole timber and, to a limited extent, for building scantling. Of greatest importance, however, is the potential use of marri as principal raw material for a proposed export wood chip industry based on the Manjimup region.

Other eucalypts and many trees of different genera occur within the prime forest belt but they are not of major economic importance. The main distribution of the prime forests, which are practically confined to the south-western portion of the State, is shown on the accompanying map.

The Inland Forests

Beyond the area of prime forest is an inland sclerophyllous woodland, within which are a number of eucalypts (both tree and mallee form), as well as several types of *Acacia*, such as the wattles and mulgas, tea tree (*Melaleuca spp.*) and casuarinas. Sandalwood (*Santalum spicatum*), indigenous to the wheat belt and semi-arid areas of the State, is still exported to Asian countries but is now obtained only from the semi-arid regions.

While none of the inland woodland can be classed as suitable for sawmilling in the ordinary sense, it forms an important source of timber for mining and agricultural purposes. During recent years, soil conservation in the regions of low rainfall has received increasing attention and the importance of controlling clearing, grazing and firewood cutting has been recognised. The Forests Department maintains a staff to exercise these controls and to advise on tree planting. Work is proceeding with demarcation of areas representing important inland ecotypes for which long-term conservation proposals have been prepared.



Forestry Administration

Scientific forestry was given considerable impetus in Western Australia with the passing of the Forests Act in 1918. Extensive cutting over the previous fifty years had seriously depleted the State's timber resources and adequate provision had not been made for protection and regeneration. Under the Act, however, wide powers are conferred on the Forests Department, which is granted nine-tenths of the net annual government revenue from forestry sources. The sum received, together with various other grants, is used for regeneration, fire control and associated purposes.

The forests are now managed on a long-range working plan to ensure continuity of the industry, trees being approved for cutting and marked accordingly by trained foresters, who work under the direction of the Conservator of Forests and closely control both the indigenous forest and the mallet and pine plantations. The future productivity of the forests is also safeguarded by ensuring that cutting is carried out in such a way as to protect immature growth and to encourage natural regeneration, which is a very important feature of the Department's policy.

Brown Mallet (*Eucalyptus astringens*), the bark of which has a high tannin content, once covered large areas in the wandoo forest belt but was practically exterminated by clearing for farms and by excessive exploitation. Regenerated areas and plantations of mallet now total 7,735 hectares and it is unlikely that this total area will increase.

Plantation methods are being employed to grow pines, principally *Pinus pinaster* and *Pinus radiata*, as the State has no indigenous softwoods of commercial significance. Financial assistance granted by the Australian Government in terms of the *Softwood Forestry Agreements Act 1967* has enabled the State to increase its planting rate to an average 2,400 hectares per annum. It was hoped to lift the rate to 3,200 hectares a year but lack of finance has prevented this. Further financial assistance has been granted by the Australian Government under the *Softwood Forestry Agreements Act 1972* to cover a second five-year programme of softwood planting over the period ending 30 June 1976. Thirteen plantations, with a planted area (including trial plots) of 35,063 hectares have been established to 31 December 1973, and it is planned to provide at least 120,000 hectares by the turn of the century. Much of the land selected for pine planting is of limited value for agriculture but when used for pines it constitutes a valuable long-term investment, with the prospective development of industries for the manufacture of paper, wallboard and similar products.

Because of the hot, dry summers experienced in most of the areas covered by State Forests, there is a considerable risk of damage by fire and intensive precautions are taken by the Department to minimise this danger. Radio-equipped spotter aircraft and key look-out towers provide surveillance of the critical forest areas during prescribed burning periods and during summer. An area of 328,415 hectares was burnt by prescription in 1974 and 74 per cent of this burning was carried out by dropping incendiaries from a low-flying aircraft. Restrictions are placed on all burning operations by farmers and other persons when the fire hazard is high and at such times warnings are issued emphasising the danger. All staff and employees of the Department are available and trained to fill roles in either direct fire fighting or technical support. Fire suppression is planned on the basis of rapid attack with adequate crews for achieving early control.

In association with the system of cutting control, various royalties, licence and permit fees are collected as part of the Consolidated Revenue of the State.

The protection of native flora is also vested with the Forests Department which administers the *Native Flora Protection Act, 1935-1938*. The main provision of the Act is the authority given to the Governor of Western Australia to declare by proclamation that any or all wildflowers or native plants are protected in any specified part of the State.

Penalties are provided under the Act for picking protected wildflowers or plants or for selling or offering them for sale. The Act, however, empowers the Minister for Forests to issue licences to pick protected wildflowers or native plants for scientific or other purposes approved by the Minister.

Prior to 1963, only certain wildflowers and native plants were declared protected in various parts of the State. However, owing to extensive land-clearing operations and the consequent rapid decline in areas of wildflowers, it was decided in 1963 to issue a proclamation protecting all wildflowers and native plants on all Crown lands, State Forests, lands reserved for public purposes, and every road within the South-West and Eucla Land Divisions and on all flora and fauna reserves throughout the rest of the State. Further proclamations have since been issued protecting specific wildflowers and plants throughout Western Australia.

Policing of the Act is carried out by officers of the Forests Department and Honorary Inspectors appointed under the *Native Flora Protection Act, 1935-1938*. Notices prohibiting the picking of wildflowers are supplied by the Forests Department to Shire Councils for erection on road verges.

Principal Forest Products

Sawn timber from jarrah and karri is the principal form of forest production, but there has been a rapid increase in the local use of logs for plywood manufacture during recent years. Karri and locally-grown pine logs are used for this purpose, together with imported logs. Small-size thinnings from coastal plantations of *Pinus pinaster*, supplemented by some *Pinus radiata* thinnings from southern plantations and waste cores and off-cuts from plywood peeling, are used in the manufacture of particle board. This is becoming an increasingly important product and the volume of chipwood logs used in 1973-74 was 54,653 cubic metres.

In addition to these major products, the State's forest wealth includes sandalwood for export, firewood for general purposes, and various seeds and plants for propagation both in Australia and abroad. Wandoo and jarrah are used as a source of charcoal for the high-grade charcoal pig-iron produced at Wundowie. The karri, wandoo, marri and some inland species are important nectar producers for apiarists, who move their bees to various forest sites in following the nectar flow.

The following table gives details of sawn and round timber production from 1969-70 to 1973-74. Production of sawn timber has fluctuated over the ten years to 1973-74, reaching a maximum of 499,618 cubic metres in 1967-68, with a minimum of 404,956 cubic metres in 1972-73. In the same period the output of round timber, which consists mainly of mining timber, piles, poles, fencing posts and rails, ranged between a maximum of 89,431 cubic metres in 1968-69 and a minimum in 1971-72 of 43,776 cubic metres.

TIMBER PRODUCTION (a)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Timber—Sawn cubic metres	450,345	448,976	406,995	*404,956	407,577
Timber—Round cubic metres	60,370	51,202	43,776	45,107	50,566

(a) From local logs and includes railway sleepers and plywood veneers.

* Revised.

Sawmilling is dealt with in greater detail under *Manufacturing* in Part 3 of this Chapter (page 425).

In 1973-74 exports of railway sleepers totalled 17,833 cubic metres, of which 4,012 went to other Australian States and 13,821 to overseas markets, mainly the United Kingdom. In the same year 59,378 cubic metres of other rough, sawn or dressed timber were exported to other Australian States, and 20,989 shipped overseas, the principal markets being the United Kingdom, New Zealand and the Federal Republic of Germany.

FISHERIES (INCLUDING WHALING AND PEARLING)

The fishing industry in Western Australia consists of three distinct activities, the catching of edible species, whaling and pearl-shell production. In addition, pearl culture has been successfully established in the North-West.

General Fisheries

Since the end of the second World War, rock lobsters have become the most important item of production of that section of the industry which is concerned with the catching of edible species. Prior to the war there was a small local market for fresh rock lobsters, but in 1941 production was stimulated by canning for the armed forces. Although canning continued until 1950, it had become far less important by 1947 than another development, the freezing of rock lobster tails for export, mainly to the United States of America. The overseas demand, which developed rapidly in post-war years, gave great impetus to the industry and the take increased greatly after 1947 to a record production of 9,990 tonnes in 1967-68 valued at \$16.9 million. The catch for 1972-73 decreased to 7,261 tonnes, the value for which was \$17.9 million. The highest value of catch ever recorded was \$22.2 million in 1971-72. Overseas and interstate exports of rock lobster tails in 1972-73 totalled 3,171 tonnes with an f.o.b. value of \$20.9 million, while the figures for 1973-74 were 2,656 tonnes and \$18.5 million, respectively.

The most important commercial species of rock lobsters in Western Australian waters is *Panulirus longipes cygnus*, which is fished off the south-west coast between Murchison River and Bunbury. The principal localities around which rock lobsters are caught are Houtman Abrolhos, Geraldton, Dongara, Beagle Island, Green Head, Jurien Bay, Cervantes, Lancelin, Ledge Point and Fremantle. The industry is protected from overfishing by such measures as the declaration of closed seasons; the proclamation of fishing zones; the prohibition of the taking of lobsters of less than a prescribed size or of female rock lobsters having berry (*i.e.* eggs) attached; requiring that every rock lobster pot shall have an escape gap of specified dimensions; the granting only in special circumstances of new licences for boats for rock lobster-fishing; and limiting the number of pots that a boat may carry or use at any one time. The catch is processed either on specially equipped freezer boats or at shore stations licensed under the *Fisheries Act, 1905-1974* as processing establishments.

The large catches of Australian salmon (*Arripis trutta*), which school in the bays on the south and lower south-western coasts, yield a large proportion of the production of inshore and beach fishing and are used almost exclusively for canning. The remainder of the catch from this type of fishing comprises chiefly tailor (*Pomatomus saltator*), sea herring or ruff (*Arripis georgianus*), western sand whiting (*Sillago schomburgkii*), sea mullet (*Mugil cephalus*) and trevally or skipjack (*Usacaranx georgianus*). This is sold mainly as wet fish on the local market, but large quantities of sea herring are canned and there are some exports, principally of whiting, to other Australian States.

The coastal waters northward from the mouth of the Murchison River to North West Cape and Exmouth Gulf are the source of several species of commercial importance. Snapper (*Chrysophrys unicolor*) are caught between the Murchison River and North West Cape, during the northern schooling season from May to August. Cod and Spanish mackerel, though in smaller quantities, are also caught between the Murchison River and North West Cape. At Shark Bay a prawn-fishing industry has been successfully established, the catch being processed at Carnarvon. The species caught are the western king prawn (*Penaeus latisulcatus*) and the brown tiger prawn (*P. esculentus*). A prawn fishery has also been established at Exmouth Gulf, the principal species caught being the brown tiger prawn and the western king prawn. Quantities of endeavour prawn (*Metapenaeus endeavouri*) and banana prawn (*P. merguensis*) are also caught. The catch is processed at Learmonth and on freezer boats. As a conservation measure the number of fishing boats licensed to operate has been limited to thirty-two at Shark Bay and twenty-two at Exmouth Gulf. From a catch of 108 tonnes in 1961-62, the State production of prawns has increased significantly and in 1972-73 was 3,059 tonnes. Production is expected to increase still further due to the establishment of commercial prawn fishing in the Nickol Bay area, near Roebourne, and because of promising experimental trawling being carried out in other areas along the north coast.

The first fishing grounds to be exploited were the estuaries and rivers and, although they are not now as important as other grounds, they still provide substantial quantities of fish of a fairly wide variety. The principal species are cobbler (*Cnidogobius macro-*

cephalus) and yellow-eye mullet (*Aldrichetta forsteri*), most of which are caught in Peel Inlet and the Harvey and Swan estuaries. Other species include garfish (*Hemirhamphus australis*), Perth herring (*Fluvialosa vlaminghi*), sea mullet, tailor, sand whiting, King George whiting (*Sillaginodes punctatus*), and pilchard (*Sardinops neopilchardus*). Crabs (*Portunus pelagicus*), green-tail prawns (*Metapenaeus dalli*) and western king prawns are also caught commercially in these waters. Investigations are being carried out to determine the commercial potential of tuna stocks off the north-west coast.

The principal species of edible fish are shown in the following table with the quantities and value of each species caught in the years 1970-71 to 1972-73.

FISH, CRUSTACEANS AND MOLLUSCS: CATCH AND VALUE (a)

Species—Common name	Quantity (b) (tonnes)			Value (c) (\$'000)		
	1970-71	1971-72	1972-73	1970-71	1971-72	1972-73
Fish—						
Anchovy (Whitebait)	80	42	144	15.8	14.7	44.4
Bream, black	8	19	8	4.1	11.5	5.2
Bream, buffalo	25	23	5	2.7	1.5	0.6
Bream, western yellowfin	13	5	14	3.3	2.0	2.4
Cobbler	174	190	268	53.6	76.2	124.1
Cod	19	23	24	5.8	7.7	8.1
Emperor (North-west snapper)	27	20	55	8.8	6.3	25.3
Emperor, red	17	19	12	6.4	8.6	8.1
Flathead, dusky	8	9	13	1.7	2.1	3.4
Garfish, sea	27	25	20	8.3	7.1	8.0
Groper, blue, brown or red	24	26	29	8.1	9.4	12.1
Herring, Perth	166	236	187	36.7	51.9	41.3
Jewfish, Westralian	132	84	107	116.1	87.0	134.4
Leatherjacket	12	13	35	4.0	3.4	11.6
Mackerel, Spanish	44	30	93	18.2	12.0	44.2
Mullet, sea	314	455	488	89.9	140.4	139.9
Mullet, yellow-eye	305	254	275	60.6	61.6	60.5
Mulloway (River kingfish)	9	6	18	1.4	1.1	3.9
Perch, giant (Barramundi)	14	17	8	3.5	4.3	2.3
Pilchard	225	170	504	65.2	59.8	144.4
Ruff (Sea herring)	733	908	1,208	64.6	100.1	159.8
Salmon, Australian	1,646	1,755	1,491	174.2	216.7	151.4
Samson fish (Sea kingfish)	28	43	50	7.7	7.6	19.3
Shark	469	505	639	149.6	168.1	230.5
Snapper	192	187	312	67.7	59.3	121.0
Tailor	46	45	49	15.3	15.0	14.1
Trevally (Skipjack)	11	14	16	4.2	3.9	5.0
Tuna	557	636	525	86.1	124.0	115.0
Whiting, King George	70	75	42	38.4	59.4	38.6
Whiting, western sand	156	164	197	65.2	101.3	73.9
Other species	47	59	89	12.5	*12.2	25.4
Total Fish	5,597	6,054	6,925	1,199.7	*1,436.5	1,778.3
Crustaceans—						
Crabs	48	53	100	48.1	35.2	61.5
Prawns—						
Banana	146	92	222	144.4	113.7	318.0
Brown tiger	1,166	859	1,072	1,310.8	1,041.1	1,488.9
Endeavour	271	156	236	191.1	71.1	194.4
Green-tail	24	26	28	21.2	34.3	20.6
Western king	1,196	1,436	1,500	1,318.7	1,709.3	2,083.7
Total Prawns	2,803	2,568	3,059	2,986.3	2,969.5	4,105.7
Rock lobsters	8,102	8,316	7,261	18,040.0	22,183.9	17,923.4
Total Crustaceans	10,953	10,938	10,419	21,074.4	25,188.6	22,090.6
Molluscs—						
Abalone	121	245	326	69.7	141.7	254.1
Scallops	1,768	50	283	214.1	6.6	48.7
Other molluscs	12	19	23	5.3	7.6	9.8
Total Molluscs	1,901	314	632	289.1	155.9	312.6
TOTAL, WESTERN AUSTRALIA ....	....	....	....	22,563.2	26,786.2	24,181.5

(a) Excludes aquatic reptiles, details of which are not available for publication.
value paid to fishermen. * Revised.

(b) Live (whole) weight. (c) Gross

There are no indigenous inland or freshwater fish of commercial value. A relatively large crustacean, the marron (*Cherax tenuimanus*), occurs in the streams of the lower South-West and some success has been achieved in stocking farm dams with this species.

Proposals to farm artificially-reared stocks are being investigated. Brown trout, rainbow trout and English perch have been introduced into the streams of the southern districts.

The Western Australian Department of Fisheries and Wildlife, in association with the Commonwealth Scientific and Industrial Research Organization and other State and Commonwealth authorities, is undertaking research on rock lobsters, prawns, whiting, scallops, abalone, tuna and Australian salmon in Western Australian marine waters. These organisations are also involved in research into problems relating to estuaries and freshwaters, including examination of the effects of dredging and damming, the introduction of trout and marron into dams and freshwater streams, the pollution of inland lakes, and the tourist and recreational potential of the estuaries and freshwaters of the State. A special group of Fisheries Department officers is investigating the potential for commercial exploitation of selected species of fish from areas which, to date, have not been commercially exploited.

A marine research centre has been built at Waterman, about twenty-two kilometres north of Fremantle, for the Department of Fisheries and Wildlife. It incorporates eleven separate laboratories and a large aquarium with circulating water, for experiments and studies mainly on rock lobster. Fisheries research workers from the Department of Fisheries and Wildlife, the Commonwealth Scientific and Industrial Research Organization and the University of Western Australia share accommodation at the centre.

A summary of the principal statistics of the fishing industry is given in the following table.

GENERAL FISHERIES

At 31 December—	Boats licensed	Value of boats and equipment	Fishermen licensed (a)	Year	Production			
					Rock lobsters		Other fish (b)	
					Quantity (c)	Value	Quantity (d)	Value
	number	\$'000	number		tonnes	\$'000	tonnes	\$'000
1968	1,412	14,603	2,785	1968-69	8,178	17,801	5,636	922
1969	1,450	18,243	3,005	1969-70	6,956	12,115	5,712	1,019
1970	1,456	19,460	2,895	1970-71	8,102	18,040	5,597	1,200
1971	1,508	20,060	3,169	1971-72	8,316	22,184	6,054	*1,436
1972	1,588	25,642	3,170	1972-73	7,261	17,923	6,925	1,778

(a) Comprises employees and working proprietors.

(b) Excludes crustaceans, edible molluscs and turtles.

weight of whole rock lobsters.

(d) Estimated live weight.

* Revised.

The next table shows, for 1972-73, the quantity of fish, crustaceans, and molluscs caught, according to the method used.

FISH, CRUSTACEANS AND MOLLUSCS: CATCH BY METHOD, 1972-73
(Tonnes)

Particulars	Haul net and beach seining	Hand lining (a)	Trawling	Pot fishing for rock lobsters	Other methods	Total
Fish	3,819	87	....	....	3,019	6,925
Crabs	69	....	....	....	30	100
Prawns	23	....	3,028	....	8	3,059
Rock lobsters	1	....	....	7,250	10	7,261
Molluscs	6	....	34	....	361	401
Total	3,918	87	3,061	7,250	3,429	17,745

(a) Snapper only. Catch of other species by hand lining is included in 'Other methods'.

Whaling

Whaling has been conducted along the Western Australian coast from the first years of settlement and whale oil and whale bone were among the earliest exports from the Colony. Activity since then has fluctuated widely and at times ceased altogether. The

latest large-scale revival of the industry began in 1949, when a station at Point Cloates on the north-west coast was reopened after a lapse of more than twenty years. A treatment plant was established by the Australian Whaling Commission at Babbage Island, near Carnarvon, in 1951 and a plant at Frenchman Bay near Albany was enlarged in the following year. In 1956, the company operating from Point Cloates purchased the Australian Whaling Commission's station at Babbage Island and transferred its activities to that base.

During the 1963 season the two whaling companies operating in Western Australia took only eighty-seven humpback whales, compared with a quota of 550 allocated under the procedure laid down by the International Whaling Commission. At a meeting held in London in July 1963 the Commission decided that more stringent measures should be adopted to prevent further depletion of numbers. Accordingly it imposed a total ban on the taking of humpback whales for an indefinite period in all waters of the Southern Hemisphere. The company operating from Carnarvon, which relied mainly on the taking of humpbacks, ceased whaling activities at its Carnarvon base in August 1963.

Before the 1962 season the whales taken were predominantly humpbacks. The only station now operating is at Frenchman Bay where sperm whaling has been carried on since 1955.

The figures in the following table have been derived from information provided by the Fisheries Branch of the Australian Department of Primary Industry. Since 1963, more whales were taken in 1973 than in any other year but the highest production of oil occurred in 1971.

WHALING

Particulars	1969	1970	1971	1972	1973
Sperm whales taken No.	679	799	860	953	971
Oil produced (a) tonnes	4,427	5,366	6,166	5,865	5,492

(a) 1 tonne = 6 barrels (approximately).

Pearl-shell Fishing and Pearl Culture

Pearl and pearl-shell fishing has been a valuable industry for many years, the main centre being Broome. The pearls obtained were once an important feature of production but the success of the industry now depends almost entirely on the shell produced and the price obtainable for it. Activities were suspended following the outbreak of war with Japan, when valuable luggers and equipment were lost. After the war recovery of the industry was slow because of a shortage of suitable boats and the difficulty in obtaining experienced divers. In 1953 the rate of progress improved when the services of trained Japanese divers again became available. By 1957 production of shell had reached the pre-war level of about 1,000 tonnes but due to the depressed state of the market it fell to 765 tonnes in 1958. Except for a slight recovery in 1960, production declined in each year from 1959 until 1964, when 140 tonnes of shell were raised. Due to the increased demand for shell for pearl culture, production has increased slightly since then.

In 1956 a licence was granted to a company to culture pearls at Kuri Bay in Brecknock Harbour, 209 kilometres north-east of Derby and the initial harvest of pearls was gathered in 1957. Licences have since been issued to two other companies and pearl culture farms have been established in Samson Inlet, Hiro Bay and Mura Bay and in King Sound and at Port Smith, south of Broome. During 1966 approximately 50,000 live shells were shipped from Western Australia to Papua, where they were used to establish the pearl culture industry at Fairfax Harbour. Further consignments followed in 1967, 1968 and 1969, when a total of 100,000 live shells were shipped.

An article by Dr D. A. Hancock, Chief Research Officer of the Western Australian Department of Fisheries and Wildlife, describing the process of pearl culture at Kuri Bay appeared in the *Western Australian Year Book*, No. 13—1974.

Chapter VIII—continued

Part 2—Mining

DESCRIPTION OF MINING IN WESTERN AUSTRALIA

Although the discovery of gold was of particular significance in the early development of the Western Australian economy, renewed importance of the mining industry in the State began mainly with the considerable expansion associated with iron ore and other minerals which occurred in the late 1960s. This recent growth in importance of the industry is demonstrated by the fact that in 1972-73, value added (see definition on page 357) by mining establishments in Western Australia was \$451 million, or 136 per cent more than in 1968-69 when value added data first became available. The 1972-73 figure was almost as much as value added by manufacturing establishments in the State, many of which (e.g. mineral processing plants) are associated directly with the mining industry. Western Australia's value added by mining establishments has been the highest of all the States since 1970-71 and per head of mean population was \$421 in 1972-73 compared with the national average of \$121.

The map on page 408 shows the location of the major operating mining projects in Western Australia at the end of December 1974. The text below describes the development of the mining industry in the State including references to current projects depicted on the map.

The first major developments followed the discovery of *gold* in the Kimberley region of the far north of the State in 1885, although gold had been found in various places previously and other minerals had also been discovered, including copper and lead in the Northampton district, north of Geraldton, and coal at the Irwin River, south of the same town. The Kimberley gold find was followed by extensive prospecting activity resulting in gold strikes between 1887 and 1891 in the Yilgarn, Pilbara, Ashburton and Murchison districts. Rich discoveries in 1892 at Coolgardie and in 1893 at nearby Kalgoorlie were followed by development of the famous 'Golden Mile' between Kalgoorlie and Boulder which became one of the major gold producing areas of the world and remains as the principal source of gold both in the State and in Australia.

Although gold production declined after the exhaustion of surface deposits and the peak production of 64,222,000 grams in 1903, gold mining remained as the major component of the Western Australian mining industry for many years. Output dropped during the depression of the late 1920s, then rose to 37,767,000 grams in 1939. Production fell again during the Second World War and then recovered to 27,210,000 grams in 1958. From 1954 the industry has benefited from subsidy payments from the Australian Government paid under the Gold-Mining Industry Assistance Act but since 1963 production has declined and in 1972-73 was 9,264,000 grams. Recent increases in the price of gold have resulted in a renewed interest in gold mining which is not yet reflected in production figures.

The more recent history of mineral development in Western Australia has seen the importance of gold relegated by the opening up of major iron ore deposits in the north-west of the State and the introduction of important new industries based on nickel, petroleum, bauxite and mineral sands.

Iron ore in the form of hematite has been mined at Cockatoo Island, in Yampi Sound in the north of the State, since 1951 and limonitic ore was mined at Wundowie in the Darling Range east of Perth for some years from 1948. It was not until the early 1960s, however, following the Australian Government's decision to modify its embargo on overseas exports of iron ore, which had been in force since 1938, that widespread interest in developing the State's iron ore resources occurred. The ensuing activity has resulted in iron ore

becoming the major Western Australian mineral with production of 64,434,000 tonnes containing 40,693,000 tonnes of iron, valued at almost \$333 million in 1972-73.

The State's measured, indicated and inferred iron ore reserves with an iron content of more than 55 per cent were assessed by the State Department of Mines as 26,800 million tonnes at September 1974. The deposits mainly occur in the Pilbara, in the north-west of the State, where major production commenced in 1966 and has expanded ever since. All of the production from this area is exported as ore, pellets or fines, mainly to Japan. Ore from Mount Goldsworthy and Shay Gap, east of Port Hedland, is railed to a deep-water port at Finucane Island, just off Port Hedland. Output from Mount Tom Price and Paraburdoo, in the Hamersley Range area south-west of Port Hedland, is railed to Dampier where some of it is pelletised. From Mount Whaleback in the Ophthalmia Range near Newman, ore is railed to Port Hedland. Limonitic ore from Pannawonica in the Robe River valley is railed to Cape Lambert where it is shipped as pellets or fines.

Iron ore is also mined at Koolyanobbing, some 450 kilometres east of Perth, where production commenced in 1952. This ore is used mainly for pig-iron production at Kwinana and Wundowie. The first shipment of ore from the deposits on Koolan Island, adjacent to Cockatoo Island in Yampi Sound, was made in January 1965. Iron ore has also been shipped through Geraldton from a deposit at Koolanooka Hills, near Morawa, to the east of the port.

Nickel was discovered in 1966 at Kambalda to the south of Kalgoorlie and since then there has been rapid expansion in the nickel industry accompanied by a very high level of exploration activity. At the end of 1974 mines were operating at Kambalda, Scotia, Carr-Boyd Rocks, Nepean, Spargoville, Redross and Mount Windarra, which are all in an area within 250 kilometres of Kalgoorlie. Nickel concentrates are exported from Esperance or processed in a smelter at Hampton, near Kalgoorlie, and a refinery at Kwinana for subsequent export in processed form. Production of concentrates was 268,349 tonnes in 1972-73.

In May 1966 Barrow Island, about 100 kilometres north-east of Onslow, was declared a commercial oilfield. The first shipment of *crude oil* from this field was made on 25 April 1967. Production in 1972-73 was 14,924,000 barrels valued at almost \$30 million. In July 1970 a *natural gas* field at Dongara, about 100 kilometres south-east of Geraldton, was declared commercially viable and subsequently a 410-kilometre underground pipeline was constructed to supply gas to domestic and industrial users in Perth and heavy industry in Kwinana and Pinjarra. This supply commenced on 1 December 1971.

Bauxite deposits at Jarrahdale in the Darling Range near Perth were first mined in 1959, and in 1963 the mine began supplying ore to an alumina refinery at Kwinana. Mining commenced further south in the Darling Range in 1972 to supply a new refinery near Pinjarra which began operations in April 1972.

Ilmenite, leucoxene, rutile, zircon, monazite and xenotime concentrates are being produced from *mineral sands* mined near Capel and treated there and nearby at Bunbury. The ilmenite content is of particular importance because it is virtually chrome-free and little difficulty is experienced in producing a concentrate of high quality. Production of ilmenite concentrates commenced in 1956, when recorded production was 3,346 tonnes. In recent years production has been comparatively steady and in 1972-73 amounted to 708,612 tonnes valued at \$8.11 million. In 1974 mineral sands mining commenced at Eneabba, some 250 kilometres north of Perth, and plants extracting ilmenite, rutile and zircon were opened at Eneabba and Geraldton.

The only commercial production of *coal* in Western Australia occurs at Collie in the south-west of the State. The coal is sub-bituminous and there are substantial reserves in the area which have been deep-mined since the 1890s. Surface mining was introduced in 1943, and in 1972-73 production from surface and underground mines totalled 1,154,000 tonnes valued at \$6.42 million.

A recent development in mining has been the large-scale extension of the production of *common salt* (sodium chloride) which occurs extensively in marine lagoons and inland lakes and which has been harvested on a small scale for many years from dry lake beds.

In 1968 large-scale production commenced at Lake Lefroy near Kambalda where the salt deposited has an exceptional purity. More recently, production of salt by the solar evaporation of sea water began at Port Hedland, Lake MacLeod near Carnarvon, Useless Loop in Shark Bay and at Dampier. Most of the salt produced is exported. Production in 1972-73 was 2,913,000 tonnes valued at \$8.98 million. *Gypsum* is also extracted in certain areas associated with salt production.

Among other minerals produced in Western Australia are *tin* and *tantalite* which were discovered at Greenbushes, in the south-west, in 1888. Production of 1,360 tonnes of tin concentrate valued at \$2.75 million was recorded in 1972-73. *Talc* is produced from deposits at Three Springs, south-east of Geraldton, and at Mount Seabrook near the upper Murchison River in the mid-north. Production in 1972-73 totalled 34,716 tonnes. Another new development has been the opening up of a *marble* industry in the Wyloo locality in the north-west. *Copper*, *lead* and *manganese* have been mined in significant quantities in the past but activity has declined in recent years. *Silver* in Western Australia is produced only as a by-product of other minerals, particularly gold and lead.

The quarrying of *construction materials* in Western Australia is an important part of the mining industry. However, materials such as sand and gravel, which are in very plentiful supply, are not included in mining statistics because of difficulties in compiling reliable data. In 1972-73 the value of recorded production of building and monumental stone (mainly limestone, granite and sandstone), crushed and broken stone (used mainly for roads, concrete and rail ballasts) and crushed and broken limestone, was \$9.90 million. A further 1,225,000 tonnes of *limestone* valued at \$1.37 million was produced for other purposes, including agriculture, cement making, glass making, lime burning and iron ore pelletising.

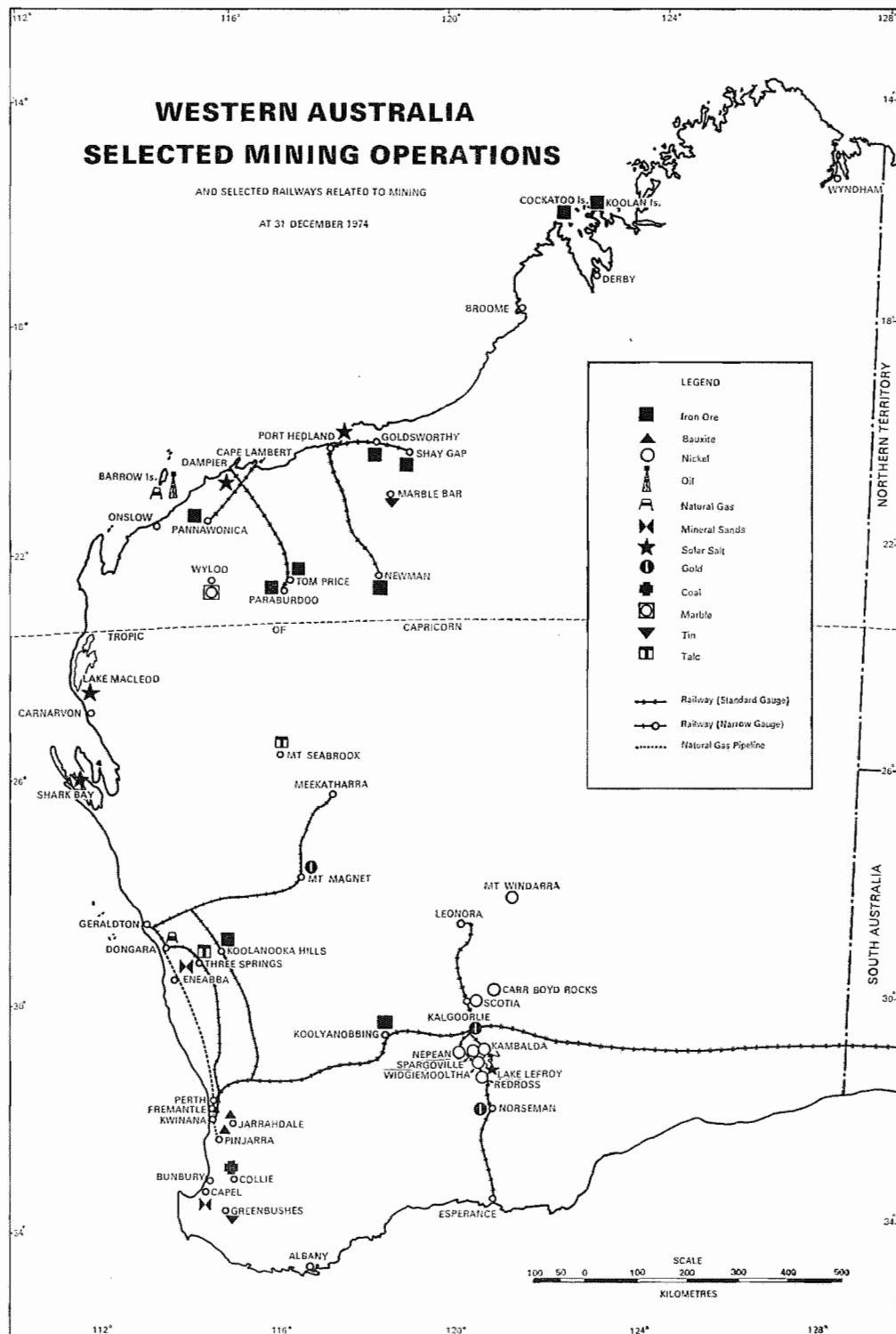
MINING STATISTICS

In the Australian Standard Industrial Classification, 'mining' is used in the broad sense to include the extraction of minerals occurring naturally as solids such as coal and ores, liquids such as crude petroleum, or gases such as natural gas, by such processes as underground mining, open-cut extraction methods, quarrying, operating of wells or evaporation pans, dredging or recovering from ore dumps or tailings. Establishments engaged mainly in dressing or beneficiating ores or other minerals by crushing, milling, screening, washing, flotation, other (including chemical) beneficiation processes and natural gas absorption and purifying are included. Excluded are establishments engaged mainly in the refining or smelting of ores (other than the preliminary smelting of gold), iron ore pelletising and in the manufacture of such products of mineral origin as coke, cement or fertilisers.

Mining statistics presented in the following tables are derived from the integrated economic censuses of mining described in the introduction to this Chapter. Definitions of the items in these tables appear on pages 356-7. It should be noted that the tables relate only to mining establishments (*i.e.* establishments at which mine development has commenced) and exclude mining leases at which only exploration is being carried out. The statistics, however, cover all exploration which continues on leases on which development or production has commenced. Separate details of exploration expenditure both on and off production leases are given in tables on pages 416 and 418.

The next two tables provide details of the major variables by industry sub-division for 1972-73, and comparative data for all mining establishments for each of the five years to 1972-73.

The year-by-year increases in most of the items reflect the continuous expansion of the iron ore industry during the period under review and, to a lesser extent, growth of nickel and bauxite mining. The markedly higher levels of capital expenditure in 1970-71 and 1971-72 coincide with high levels of development on major iron ore mining projects which were completed in 1972-73. Over the five years, although the number of mining establishments remained fairly constant, employment grew from 8,532 to 12,048 and value added increased from \$191 million to \$451 million.



**MINING ESTABLISHMENTS—SUMMARY OF OPERATIONS BY INDUSTRY
SUB-DIVISION: 1972-73**

Industry sub-division		Number of establishments operating at 30 June	Persons employed at 30 June			Wages and salaries
ASIC code (a)	Description		Males	Females	Total	
11	Metallic minerals	67	9,423	663	10,086	\$'000 60,451
12-13	Coal and crude petroleum	5	709	16	725	4,346
14	Construction materials	28	484	52	536	3,053
15	Other non-metallic minerals	31	652	49	701	4,388
	Total mining	131	11,268	780	12,048	72,238

Industry sub-division		Turnover	Stocks		Purchases, transfers in and selected expenses	Value added	Fixed capital expenditure
ASIC code (a)	Description		Opening	Closing			
11	Metallic minerals	\$'000 583,343	\$'000 54,665	\$'000 50,392	\$'000 185,296	\$'000 393,775	\$'000 76,299
12-13	Coal and crude petroleum	45,602	1,578	2,265	4,523	41,766	1,441
14	Construction materials	11,618	869	883	5,133	6,499	642
15	Other non-metallic minerals	12,486	2,903	3,922	4,222	9,283	9,402
	Total mining	653,049	60,015	57,461	199,172	451,323	87,785

(a) Australian Standard Industrial Classification.

MINING ESTABLISHMENTS—SUMMARY OF OPERATIONS

Item	Unit	1968-69	1969-70	1970-71	1971-72	1972-73
Number of establishments operating at 30 June	No.	128	122	125	115	131
Persons employed at 30 June—						
Males	No.	8,189	8,857	10,285	9,816	11,268
Females	No.	343	408	704	621	780
Total	No.	8,532	9,265	10,989	10,437	12,048
Wages and salaries	\$'000	30,851	42,603	55,941	62,388	72,238
Turnover	\$'000	273,186	403,164	527,098	593,944	653,049
Closing stocks	\$'000	28,343	39,093	45,225	66,212	57,461
Purchases, transfers in and selected expenses	\$'000	90,867	125,147	146,904	179,725	199,172
Value added	\$'000	191,098	286,874	386,435	429,731	451,323
Fixed capital expenditure	\$'000	84,692	92,904	186,643	167,174	87,785

The relative importance of metallic mineral mining in Western Australia compared to Australia is clearly illustrated in the table that follows. This table also reflects the greater importance of coal and petroleum mining in some other States compared with Western Australia. The relatively low contribution by construction materials in Western Australia, by comparison with Australia, is partly the result of sand and gravel not being included in the Western Australian figures.

**MINING ESTABLISHMENTS—PERSONS EMPLOYED AND VALUE ADDED BY INDUSTRY
SUB-DIVISION: WESTERN AUSTRALIA AND AUSTRALIA, 1972-73**

Sub-division		Persons employed				Value added			
ASIC code (a)	Description	Western Australia		Australia		Western Australia		Australia	
11	Metallic minerals	No. 10,086	per cent 83.72	No. 31,642	per cent 50.14	\$'000 393,775	per cent 87.25	\$'000 816,454	per cent 51.19
12-13	Coal and crude petroleum	725	6.02	22,427	35.54	41,766	9.25	637,539	39.97
14	Construction materials	536	4.45	6,290	9.97	6,499	1.44	106,735	6.69
15	Other non-metallic minerals	701	5.82	2,748	4.35	9,283	2.06	34,222	2.15
	Total mining	12,048	100.00	63,107	100.00	451,323	100.00	1,594,951	100.00

(a) Australian Standard Industrial Classification.

The table that follows sets out a five-year summary of Western Australian mining, with comparative data for Australia. These comparisons indicate that Western Australian mining establishments are generally larger than those in the rest of Australia, and output per worker is generally higher, due mainly to the comparative magnitude and capital-intensive nature of the mining projects in Western Australia.

MINING ESTABLISHMENTS—SUMMARY OF OPERATIONS WESTERN AUSTRALIA AND AUSTRALIA

Particulars	Year	Number of establishments operating at 30 June	Persons employed at 30 June	Wages and salaries	Turnover	Value added
				\$'000	\$'000	\$'000
Western Australia	1968-69	128	8,532	30,851	273,186	191,098
	1969-70	122	9,265	42,603	403,164	286,874
	1970-71	125	10,989	55,941	527,098	386,435
	1971-72	115	10,437	62,388	593,944	429,731
	1972-73	131	12,048	72,238	653,049	451,323
Australia	1968-69	1,493	55,442	241,292	1,147,881	749,201
	1969-70	1,502	58,850	275,620	1,479,785	1,042,587
	1970-71	1,566	62,642	325,178	1,814,918	1,289,492
	1971-72	1,426	63,179	373,999	1,994,261	1,428,502
	1972-73	1,330	63,107	403,186	2,261,493	1,594,951
Western Australia as a percentage of Australia	1968-69	per cent	per cent	per cent	per cent	per cent
	1969-70	8.57	15.39	12.79	23.80	25.51
	1970-71	8.12	15.74	15.46	27.24	27.52
	1971-72	7.98	17.54	17.20	29.04	29.97
	1972-73	8.06	16.52	16.68	29.78	30.08
		9.85	19.09	17.92	28.88	28.30

MINERAL PRODUCTION—QUANTITY AND EX-MINE VALUE

Mineral	Unit	1970-71		1971-72		1972-73	
		Quantity	Value	Quantity	Value	Quantity	Value
			\$'000		\$'000		\$'000
Barytes	tonne	528	6	....	....	....	....
Bauxite	'000 tonnes	4,207	(a)	4,817	(a)	5,500	(a)
Beryllium ore	tonne	23	7	57	15	118	23
Clays—all kinds (b)	'000 tonnes	1,070	949	1,320	1,231	1,507	1,588
Coal	"	1,190	5,653	1,188	5,855	1,154	6,422
Construction materials—							
Building and monumental stone	"	109	281	326	782	208	664
Crushed and broken stone	"	4,253	10,144	3,827	10,837	3,176	8,324
Crushed and broken limestone	"	1,065	484	1,779	1,948	1,187	911
Copper ore for fertiliser	tonne	93	13	....	....	....	....
Copper concentrate	"	2,624	420	935	229	465	94
Crude oil (c)	'000 barrels	16,535	35,570	15,976	32,111	14,924	29,998
Felspar	tonne	464	7	599	9	243	4
Gold bullion (d)	'000 grams	14,531	13,872	14,370	14,900	12,494	17,021
Gypsum	tonne	200,751	597	178,010	615	140,510	504
Iron ore	'000 tonnes	46,417	279,478	52,666	316,387	64,434	332,520
Lead concentrate	tonne	189	18	(a)	(a)	(a)	(a)
Limestone for industrial purposes (e)	'000 tonnes	1,395	790	1,144	726	1,225	1,373
Magnesite	tonne	2,215	32	91	1	....	....
Manganese	"	144,476	477	111,510	(a)	30,371	(a)
Mineral sands—							
Ilmenite	"	742,634	7,034	690,483	8,016	708,612	8,106
Leucosene	"	12,863	975	12,541	1,089	10,465	722
Monazite	"	3,659	471	2,839	354	2,522	308
Rutile	"	2,495	186	2,957	303	2,745	258
Xenotime	"	42	54	14	18	17	22
Zircon	"	55,141	1,360	52,197	1,147	56,859	1,459
Natural gas	'000 cubic metres	15,404	272	297,823	(a)	845,129	(a)
Nickel concentrate	tonne	304,046	(a)	299,144	(a)	268,349	(a)
Ochre	"	618	6	....	....	551	9
Salt	'000 tonnes	2,729	7,092	2,615	7,695	2,913	8,976
Semi-precious stones	"	....	50	....	63	....	40
Talc	tonne	31,255	483	30,899	555	34,716	(a)
Tantalite concentrate	kilogram	158,786	936	162,018	835	236,831	670
Tin concentrate	tonne	960	1,939	1,457	2,808	1,360	2,746
Other (value only) (f)	"	....	76,986	....	101,820	....	113,623
Total value			446,643		510,353		536,383

(a) Not available for publication; value included in 'Other'. (b) Includes bentonite. (c) Value based on price per barrel published by Ampol Petroleum Limited. (d) Values include amounts realised by the Gold Producers' Association Ltd. on sales of Western Australian gold, and Commonwealth net subsidy paid to gold producers. (e) Comprises limestone for agriculture, cement making, flux, glass making, lime burning and iron ore pelletising. (f) Includes those minerals for which values are not available for publication.

The previous table, which sets out details of quantity and value of mineral production, provides a further illustration of the importance of iron ore in Western Australia. Iron ore surpassed gold as the mineral with the highest annual value of production in 1966 and, since 1967, has accounted for more than half the annual value of minerals produced in this State. The table also shows the increasing value of gold bullion, despite decreasing production. This has resulted from significant increases in the overseas price of gold in the last two years. The considerable increase in natural gas production shown in the table has occurred since the deposits at Dongara were brought into production late in 1971. A decline in production of nickel concentrates in 1971-72 and 1972-73 was more than offset by the higher grade of the concentrates in those years and, as a result, total nickel content of concentrates has increased over the three years.

**MINERAL PRODUCTION
CONTENTS OF SELECTED METALLIC MINERALS**

Mineral in which contained	1970-71	1971-72	1972-73
COPPER (tonnes)			
Copper concentrate	(a) 483	272	139
Copper ore	18	32	....
Copper ore for fertiliser	2,938	2,590	2,659
Nickel concentrate	3,439	2,894	2,798
Total, Copper			
GOLD ('000 grams)			
Copper concentrate	(a) 21	(c)	(c)
Gold bullion	10,717	(c)	(c)
Total, Gold	10,738	10,848	9,264
IRON ('000 tonnes)			
Iron ore	29,338	33,280	40,693
Total, Iron	29,338	33,280	40,693
MANGANESE (tonnes)			
Manganese ore	65,455	47,915	14,525
Total, Manganese	65,455	47,915	14,525
MONAZITE (d) (tonnes)			
Monazite concentrate	3,403	2,657	2,348
Total, Monazite (d)	3,403	2,657	2,348
NICKEL (tonnes)			
Nickel concentrate	34,917	35,559	(e) 36,140
Total, Nickel	34,917	35,559	36,140
SILVER ('000 grams)			
Copper concentrate	(a) 24	(c)	(c)
Gold bullion	3,405	(c)	2,615
Lead concentrate	1	....	(c)
Total, Silver	3,430	3,151	2,616

For footnotes, see end of table.

MINERAL PRODUCTION
CONTENTS OF SELECTED METALLIC MINERALS
—continued

Mineral in which contained	1970-71	1971-72	1972-73
TANTALITE (kilograms)			
Tantalite concentrate	(c)	(c)	84,744
Tin concentrate	(c)	(c)	....
Total, Tantalite	63,799	76,217	84,744
TIN (tonnes)			
Tantalite concentrate	(c)	....	....
Tin concentrate	(c)	1,035	972
Total, Tin	667	1,035	972
TITANIUM DIOXIDE (tonnes)			
Ilmenite concentrate	407,766	391,296	390,928
Leucoxene concentrate	11,304	11,111	9,336
Rutile concentrate	2,273	2,851	2,651
Total, Titanium dioxide	421,343	405,258	402,915
ZIRCONIUM OXIDE (tonnes)			
Zircon concentrate	36,124	34,209	37,337
Total, Zirconium oxide	36,124	34,209	37,337

(a) Includes amounts contained in copper precipitate. (b) Includes amounts contained in lead concentrate. (c) Not available for publication. (d) Phosphate of Rare Earth metals. (e) Includes a small amount contained in nickel ore exported.

FOREIGN PARTICIPATION STATISTICS

Any attempt to provide statistical information on the extent of foreign participation in Australian industry involves problems of concept and measurement. Broadly, there are two approaches to measurement of foreign participation. One is to compare the value of assets of Australian enterprises in which there is significant foreign investment with that of other Australian enterprises. The other is to compare the operations (as expressed in terms of value added, turnover, wages and salaries, etc.) of establishments of Australian enterprises in which there is significant foreign investment with those of the establishments of other Australian enterprises. The second method is the one that has been adopted for a series of studies into foreign participation in the Australian mining industry which were conducted annually between 1963 and 1968. A new series commenced in respect of the year 1971-72 and it is hoped to extend this progressively to all other key sectors of the Australian economy. The statistics are based on data compiled in the Census of Mining Establishments conducted for a fiscal year and on ownership and control characteristics as at 30 June of the same fiscal year obtained from the Survey of Overseas Investment. In order to determine the extent of ownership based on shareholdings necessary in these studies, the widely accepted convention of multiplying ownership links has been adopted. For example, if a shareholder owns 60 per cent of the ordinary shares of enterprise 'A', and enterprise 'A' owns 70 per cent of the ordinary shares of enterprise 'B', the first shareholder is said to own, indirectly, 42 per cent of the ordinary shares in enterprise 'B'.

In analysing the extent of foreign participation in Australian industry it is usual to distinguish between the two aspects of ownership and control.

Ownership

Foreign ownership means that non-residents of Australia have an ownership interest in an enterprise operating in Australia. Ownership characteristics are based on information about ordinary shares (or voting stock) collected in the Survey of Overseas Investment; preference shares which do not carry a general voting entitlement are excluded from consideration. The term 'ordinary shares' is also used in these studies to cover an equivalent type of ownership interest in unincorporated enterprises.

For many reasons it has not proved practicable to measure the extent of foreign ownership by comparing some measure of the value of shares (*e.g.* paid-up value, market value, etc.) owned by foreigners, or the value of dividends received by them, with the corresponding figures for Australian residents. Instead, the extent of foreign ownership is calculated by apportioning separately to Australian and foreign ownership details of value added, employment, etc. for each mining establishment on the basis of the percentage of the number of ordinary shares of the enterprise operating that mining establishment that are held by Australian and foreign owners, respectively. When no foreign ownership of an enterprise is identified, the data for mining establishments of that enterprise are classified wholly to Australian ownership. In calculating foreign ownership of enterprises in Australia, account is taken of foreign investment in enterprises operating mining establishments, made through the larger identified Australian nominees.

The apportionment of data on the operations of mining establishments does not imply that part of the value added, employment, etc. of the individual establishment is actually owned by foreigners. It simply represents a measure of the extent of foreign ownership and is obtained by separately weighting the degree of Australian and foreign ownership of each enterprise by the activity variables for the mining establishments those enterprises operate, and aggregating the results of those calculations. The table below shows, for Western Australia and Australia, the percentage of the major variables recorded in the 1971-72 and 1972-73 Censuses of Mining Establishments attributable to foreign ownership and Australian ownership, respectively.

MINING ESTABLISHMENT STATISTICS APPORTIONED TO FOREIGN OWNERSHIP AND AUSTRALIAN OWNERSHIP—WESTERN AUSTRALIA AND AUSTRALIA (Per cent)

Particulars	Value added	Purchases, transfers in, and selected expenses (a)	Turnover	Fixed capital expenditure (b)	Wages and salaries	Persons employed at 30 June (c)
1971-72						
Western Australia—						
Foreign ownership	57.0	56.1	56.7	62.3	43.5	40.5
Australian ownership	43.0	43.9	43.3	37.7	56.5	59.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Australia—						
Foreign ownership	48.7	44.1	47.3	58.6	38.0	34.2
Australian ownership	51.3	55.9	52.7	41.4	62.0	65.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
1972-73						
Western Australia—						
Foreign ownership	57.9	56.2	57.3	50.6	45.8	44.2
Australian ownership	42.1	43.8	42.7	49.4	54.2	55.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Australia—						
Foreign ownership	49.6	47.0	48.8	50.9	38.2	35.8
Australian ownership	50.4	53.0	51.2	49.1	61.8	64.2
Total	100.00	100.0	100.0	100.0	100.0	100.0

(a) Adjusted for changes in stocks, priors.

(b) Outlay on fixed tangible assets less disposals.

(c) Includes working pro-

Control

Generally, an enterprise is regarded as being foreign controlled if there is evidence that foreigners, acting singly or in a coalition, can determine the key policy decisions of the enterprise. Control can be measured (among other ways) by considering the number of ordinary shares held or the number of voting rights held. However, due to the obvious difficulties of compiling data on the distribution of voting rights, only the ownership of ordinary shares has been used in establishing the degree of foreign control. Other evidence of apparent control such as contractual agreements, licensing arrangements, market power, legislation, etc. have been ignored because of the impossibility of systematically aggregating these factors on a consistent basis and of quantifying some of them.

STATISTICS OF MINING ESTABLISHMENTS OF FOREIGN CONTROLLED ENTERPRISES AND AUSTRALIAN CONTROLLED ENTERPRISES—WESTERN AUSTRALIA AND AUSTRALIA (Per cent)

Particulars	Establishments at 30 June	Value added	Purchases, transfers in, and selected expenses (a)	Turnover	Fixed capital expenditure (b)	Wages and salaries	Persons employed at 30 June (c)
1971-72							
Western Australia—							
Establishments of foreign controlled enterprises	12.2	46.3	45.1	46.0	51.5	29.0	24.6
Establishments of Australian controlled enterprises	87.8	53.7	54.9	54.0	48.5	71.0	75.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Australia—							
Establishments of foreign controlled enterprises	8.4	54.3	45.0	51.7	62.3	40.9	35.4
Establishments of Australian controlled enterprises	91.6	45.7	55.0	48.3	37.7	59.1	64.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972-73							
Western Australia—							
Establishments of foreign controlled enterprises	17.4	49.3	46.3	48.6	42.5	34.7	32.5
Establishments of Australian controlled enterprises	82.6	50.7	53.7	51.4	57.5	65.3	67.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Australia—							
Establishments of foreign controlled enterprises	9.5	57.2	49.1	54.8	58.4	42.7	38.5
Establishments of Australian controlled enterprises	90.5	42.8	50.9	45.2	41.6	57.3	61.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Adjusted for changes in stocks, proprietors.

(b) Outlay on fixed tangible assets less disposals.

(c) Includes working proprietors.

Mining establishments are generally classified, in these studies, as being 'foreign controlled' if, for the enterprise operating the mining establishment:

- (a) that enterprise has been incorporated in Australia and
 - (i) 25 per cent or more of its ordinary shares is held by one individual, an enterprise or a group of related enterprises in the one foreign country, or
 - (ii) 50 per cent or more of its ordinary shares is held by individuals resident in the one foreign country;
- (b) that enterprise is a branch in Australia of an enterprise incorporated in a foreign country;
- (c) that enterprise is a subsidiary (as defined in the relevant companies legislation) of enterprises included in (a) or (b) above.

The foreign investors (including incorporated enterprises) who hold the shares as described in (a) and (b) above are regarded as direct foreign investors.

It should be noted that if an Australian controlled enterprise or resident individual owned a holding of ordinary shares larger than that of the major direct foreign investor the establishment would be classed as 'Australian controlled'. However, if the holdings were equal, the establishment would be classed as 'foreign controlled'.

It is recognised that the classification of control based on the ownership of 25 per cent of the ordinary shares is based on a statistical convention and that effective control (both Australian and foreign) may sometimes be obtained by a less than 25 per cent holding. However, it should be noted that the qualifying level of 25 per cent adopted for these studies is conservative by international standards. Furthermore, data for those mining establishments classified as 'foreign controlled' have been allocated wholly to the foreign category while data for establishments classified as 'Australian controlled' have been allocated wholly to the Australian category. The table above shows, for Western Australia and Australia, the percentage of the major variables recorded in the 1971-72 and 1972-73 Censuses of Mining Establishments attributable to establishments of foreign controlled and Australian controlled enterprises, respectively.

The definitions and explanations of foreign participation statistics given in this section are necessarily condensed. Readers requiring information in greater detail are referred to the mimeographed bulletin *Foreign Ownership and Control of the Mining Industry* (Ref. No. 10.42) published by the Commonwealth Statistician, Canberra.

EXPLORATION FOR MINERALS

Mineral Exploration (other than for Petroleum)

The data in this section have been derived from the annual Mineral Exploration Census (excluding Petroleum Exploration) which is carried out by the Australian Bureau of Statistics. The first census was conducted in respect of the year 1965 and for further information and statistics in greater detail, the reader is referred to the mimeographed publication *Mineral Exploration* issued by the Commonwealth Statistician, Canberra.

For the purposes of the census, mineral exploration consists of the search for and/or appraisal of new ore occurrences and known deposits of minerals (including extensions to deposits being worked) by geological, geophysical, geochemical, and other methods (including drilling). Exploration for water is excluded. The construction of shafts and adits is included if primarily for exploration purposes. Excluded are mine development activities (which include the construction of drives, shafts, winzes, etc.) in underground mines and the preparation of quarrying sites for open-cut extraction (including overburden removal) carried out primarily for the purpose of commencing or extending mining and quarrying operations.

Mineral exploration, which covers a major portion of the State, is concerned chiefly with exploration for iron, nickel, copper, gold, lead, tin, bauxite, mineral sands, uranium and coal, apart from petroleum (see following section).

From 1965, expenditure on private exploration in Western Australia rose from \$3,948,000 to a peak of \$86,082,000 in 1970-71. This peak came as the culmination of a period of activity which was sparked by the discovery of nickel at Kambalda in 1966 and saw a significant increase in expenditure on mineral exploration. From a value of just over \$10 million in 1967, the figure rose by over 700 per cent to more than \$86 million in a matter of three and one-half years. Since then, however, a general decline in the level of private expenditure has occurred and successive decreases were recorded in 1971-72 and 1972-73, the figure for the latter year being \$51,121,000. Expenditure on drilling fluctuated similarly over the five years commencing 1968-69, declining from \$21,507,000 in 1970-71 to \$12,407,000 in 1972-73.

In the next two tables, details are given of private and State Government exploration in Western Australia over the period 1968-69 to 1972-73.

**MINERAL EXPLORATION (OTHER THAN FOR PETROLEUM)
EXPENDITURE AND DRILLING—1972-73**

Particulars	Private exploration			State Government exploration (a)	Total (Incl. State Government)
	On production leases	On other areas	Total		
	\$'000	\$'000	\$'000	\$'000	\$'000
Expenditure—					
Wages and salaries	2,167	11,451	13,617	316	13,933
Materials purchased	1,521	4,441	5,961	19	5,980
Expenditure on fixed tangible assets	320	2,352	2,672	27	2,699
Other expenses (including travelling expenses, office expenses, etc.)	1,434	14,097	15,531	12	15,543
Payments to contractors, consultants, etc.	997	12,342	13,339	....	13,339
Total	6,438	44,682	51,121	375	51,496
Expenditure on drilling	3,110	9,297	12,407	....	12,407
Other expenditure	3,329	35,385	38,714	375	39,089
	metres	metres	metres	metres	metres
Drilling—					
Core	92,352	176,643	268,995	....	268,995
Non-core	277,512	846,324	1,123,836	....	1,123,836
Total	369,864	1,022,967	1,392,831	....	1,392,831

(a) Exploration by the Western Australian Department of Mines.

**MINERAL EXPLORATION (OTHER THAN FOR PETROLEUM) (a)
EXPENDITURE AND DRILLING**

Particulars	Unit	1968-69	1969-70	1970-71	1971-72	1972-73
Expenditure—						
Wages and salaries	\$'000	6,715	10,543	14,669	15,120	13,933
Materials purchased	\$'000	3,876	6,784	7,885	7,363	5,980
Expenditure on fixed tangible assets	\$'000	3,662	7,031	9,433	5,492	2,699
Other expenses (including travelling expenses, office expenses, etc.)	\$'000	7,704	15,525	24,285	18,215	15,543
Payments to contractors, consultants, etc.	\$'000	13,661	20,111	30,044	17,052	13,339
Total	\$'000	35,618	59,993	86,316	63,242	51,496
Expenditure on drilling	\$'000	10,464	14,293	21,507	15,226	12,407
Other expenditure	\$'000	25,154	45,700	64,809	48,016	39,089
Drilling—						
Core	metre	304,540	359,731	367,402	305,342	268,995
Non-core	metre	418,129	1,553,204	1,587,453	1,690,500	1,123,836
Total	metre	722,669	1,912,935	1,954,855	1,995,842	1,392,831

(a) Includes exploration by the Western Australian Department of Mines.

Petroleum Exploration

Petroleum exploration is defined as consisting of the search for, and/or appraisal of, deposits of crude oil and/or gas by geological, geophysical, geochemical and other means, including drilling. Included in the expenditure are the costs of drilling exploratory oil and/or gas wells and the testing of such wells. Also included are the costs of access roads, site construction, permits, licences and similar fees, relevant office buildings and furniture, transportation equipment, storage facilities, plant and equipment and review work if primarily for the purposes of exploration for deposits of crude oil or natural gas. Details of drilling developmental oil and/or gas wells and expenditure on production facilities, and pipelines, and production costs, etc. are excluded.

An extensive programme of oil exploration using modern geophysical and drilling techniques commenced in 1952 and resulted in the discovery of flow oil in the Exmouth Gulf area of the Carnarvon Basin in 1953. The discovery proved to be of non-commercial significance, but it stimulated further exploration for oil in Western Australia. A large area of the State has now been scientifically examined and geophysical and geological surveys



Block by courtesy of the Fremantle Port Authority

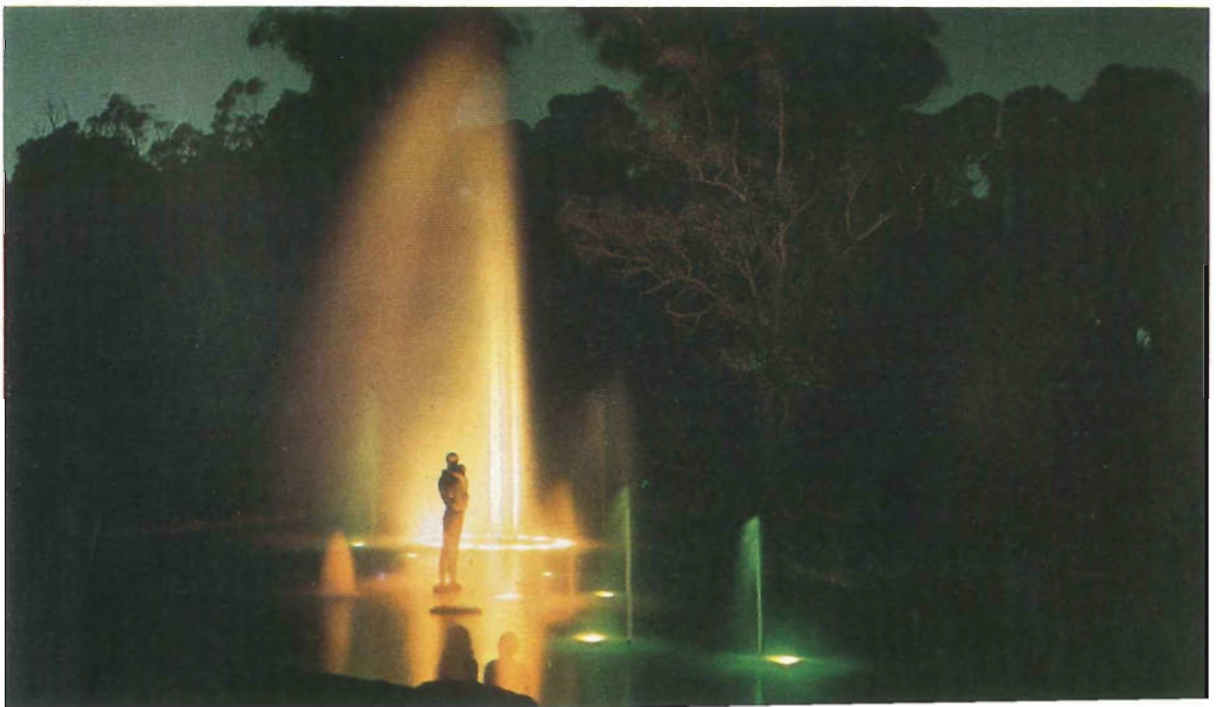
PLATE 15—STATUE OF C. Y. O'CONNOR

Above—Facing the Inner Harbour and the distant goldfields of Kalgoorlie, the statue of C. Y. O'Connor takes pride of place in the forecourt adjacent to the Fremantle Port Authority's administrative building. As Engineer-in-Chief, Charles Yelverton O'Connor designed and constructed the Fremantle harbour, the Goldfields Water Supply from Mundaring to Kalgoorlie, and all railways and other public works throughout Western Australia during 1891-1902.

PLATE 16—PIONEER WOMEN'S MEMORIAL FOUNTAIN, KING'S PARK

Below—A feature of the Botanic Garden, whose cultivated area covers thirty-four of the Park's 403 hectares, is the illuminated fountain and statue in the pool dedicated to the pioneer women of the State. Installation of the fountain was completed in 1967-68 and it has proved to be one of the most popular attractions of King's Park.

Block by courtesy of the King's Park Board





Block by courtesy of 'Australian Fisheries'

PLATE 17—PEARLING LUGGERS AT BROOME

These pearling luggers at Broome on the north-west coast of Western Australia provide a link with a colourful period in Australian fisheries history. Once a fleet of more than 100 luggers worked out of the port, but now the fleet numbers only about a dozen. Those pictured were designed to lie up at low tide or in the off season without damaging the hulls and consequently were very strongly constructed.



Block by courtesy of 'Australian Fisheries'

PLATE 18—PRAWN TRAWLER

The refrigerated prawn trawler *Enemelay*, of 230 gross tons, was built at Fremantle and is shown ready for sea trials. The twenty-eight metre trawler has a storage capacity of 63,500 kilograms and is fitted with a fishfinder, echo sounder, radar and electro-hydraulic automatic pilot.

Over the last decade and a half the State catch of prawns has increased significantly and the value of production now exceeds \$4 million per annum.



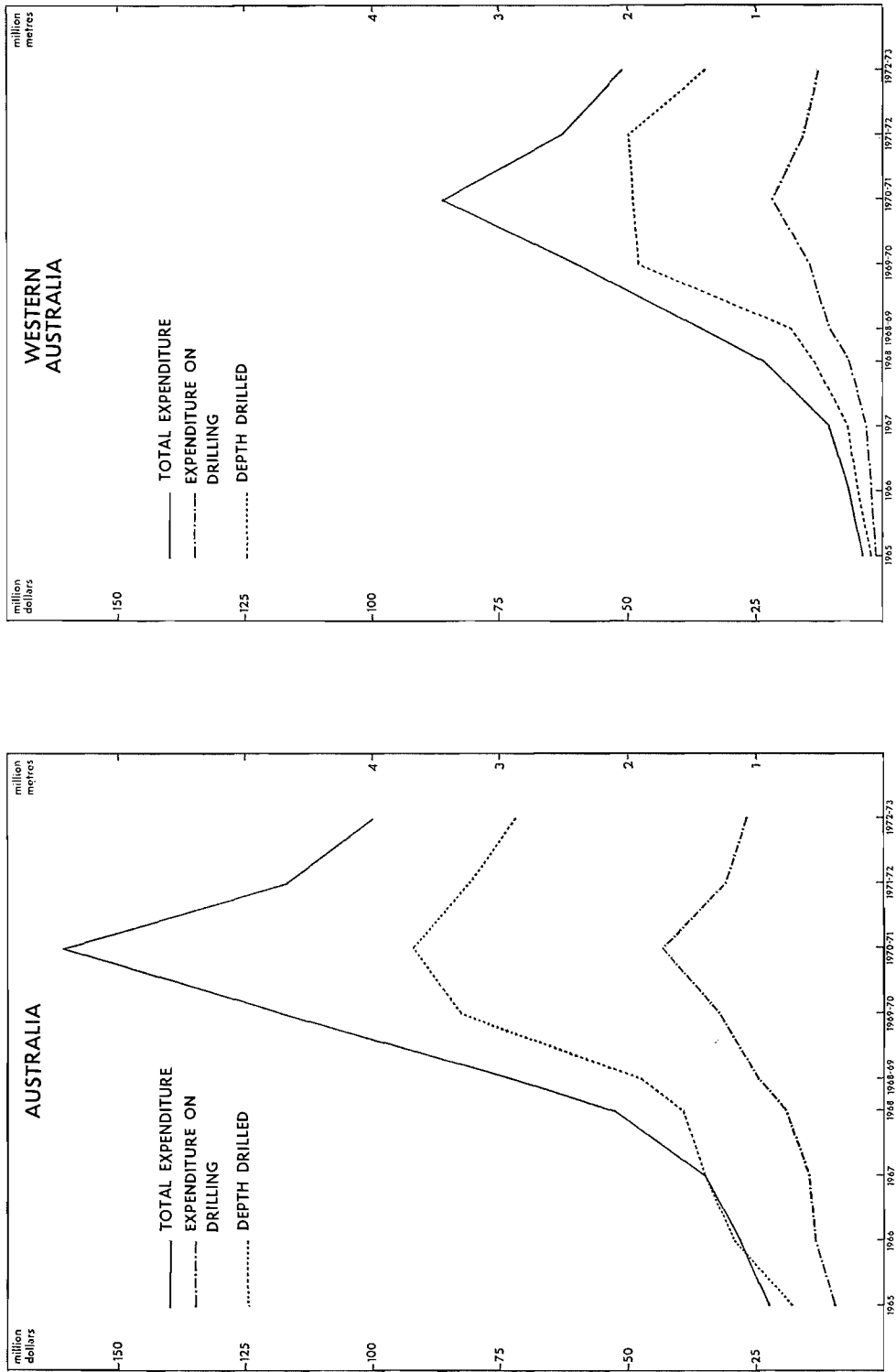
Block by courtesy of the Fremantle Port Authority

PLATE 19—KWINANA ON COCKBURN SOUND

Pictured is the Kwinana industrial complex on the shores of Cockburn Sound in the Port of Fremantle Outer Harbour. Under construction in the foreground may be seen the large grain handling facility and jetty. The grain terminal is planned to come into operation in 1976 and will have a loading capacity of 5,000 tonnes per hour.

Further north may be seen the bulk cargo jetty, the L-shaped oil refinery jetty, the twin steelworks jetties, and the alumina refinery jetty.

Private Mineral Exploration (excluding Petroleum)



are still being carried out. Discoveries of crude oil and/or gas have been made at Barrow Island and Yardarino (1964), at Gingin (1965), at Dongara (1966), at Pascoe Island (1967) and at Mondarra (1968).

In recent years, exploration off the coast of Western Australia has resulted in the discovery of considerable reserves of natural gas over an area of the north-west continental shelf, north of 21° latitude.

Information on petroleum exploration expenditure and on drilling in Western Australia for the five years 1969 to 1973 is given in the tables below. These figures have been compiled from data published by the Bureau of Mineral Resources, Geology and Geophysics.

**PRIVATE PETROLEUM EXPLORATION
EXPENDITURE AND SOURCE OF FUNDS
(\$'000)**

Particulars	1969	1970	1971	1972	1973
Private expenditure (a)—					
Geological	516	801	1,408	727	399
Geophysical	6,684	8,876	9,126	11,629	7,312
Drilling	23,847	21,771	32,162	43,954	43,719
Other	1,432	2,714	2,766	5,803	6,164
Total	32,480	34,161	45,462	62,112	57,594
Source of funds—					
Private sources	26,194	29,557	41,872	57,902	52,364
Government subsidy (b)	6,286	4,604	3,590	4,209	5,230

(a) Includes expenditure financed by payments under the *Petroleum Search Subsidy Act* 1959–1973 (Commonwealth). (b) Comprises payments under the *Petroleum Search Subsidy Act* 1959–1973.

PRIVATE PETROLEUM EXPLORATION—WELLS AND DEPTH DRILLED

Particulars	Unit	1969	1970	1971	1972	1973
Wells—						
Drilled (i.e. those which reached final depth)—						
As oil producers	No.	....	1	....	2	1
As gas producers	No.	1	....	1	6	3
As oil and gas producers (a)	No.	....	....	....	....	2
Plugged and abandoned	No.	22	14	29	37	16
Total	No.	23	15	30	45	22
Average final depth of wells drilled	metre	2,286	2,028	2,549	2,016	3,189
Drilling still in progress at 31 December (uncompleted holes)	No.	1	4	1	6	3
Drilled or drilling over 3,000 metres	No.	9	5	14	16	16
Depth drilled—						
Completed wells	metre	43,327	27,748	67,711	88,717	55,712
Uncompleted holes	metre	3,313	8,759	3,309	14,787	4,579
Total	metre	46,640	36,507	71,020	103,504	60,291

(a) This classification not available prior to 1973.

Chapter VIII—continued

Part 3—Manufacturing

Manufacturing in Western Australia does not have the relative importance to manufacturing in Australia which applies to the State's mining industry (see page 405). Nevertheless, value added (see definition on page 357) by manufacturing establishments in Western Australia in 1972-73 was \$501 million, or slightly more than value added by the State's mining establishments. This value added, however, was only 4·7 per cent of all value added by manufacturing establishments in Australia and was \$471 per head of mean population compared with the national average of \$821.

Owing to the inclusion of manufacturing in the system of integrated economic censuses in 1968-69 (see page 355), it is not possible to compare the statistics in this Part with manufacturing statistics for years prior to 1968-69. The statistics up to 1967-68, however, which are available in the Statistical Summary following Chapter X and in earlier issues of the Year Book, provide a consistent historical record back to the year 1900. At that time 632 factories employing 11,166 persons were recorded, compared with 5,404 factories in 1967-68, employing 67,335 persons.

Up to the early 1950s, manufacturing in Western Australia had grown steadily with some surge in growth during each of the World Wars and a pronounced down-turn during the depression of the early 1930s. Most of the factories were small and medium-sized establishments supplying the small local market and carrying out some processing of the State's primary products for export. The long-established industries such as slaughtering, dairy products processing, brewing, baking, wool scouring, sawmilling, printing, building materials production and the various types of metal fabrication and engineering remain as important components of manufacturing in the State.

Heavy industry and large-scale operations have been a more recent development, although it could be said that heavy industry commenced with the establishment in 1948 of the State Government's wood distillation, charcoal, iron and steel plant at Wundowie, east of Perth in the Shire of Northam. Perhaps the most significant change, however, came when the basis for an integrated industrial complex was established with the opening in 1954 of a large oil refinery at Kwinana, on Cockburn Sound south of Perth. This was followed soon after by a steel rolling mill and later by a series of large plants which have made Kwinana the State's major industrial centre. The interrelated complex of metals, fuels and chemicals plants is served by a fine harbour, a standard gauge railway line linked with mining centres and the other States, and a pipeline from the natural gasfields north of Perth.

The major part of the more recent development of heavy industry in Western Australia has been associated with mineral development (see Part 2 of this Chapter). Three of the plants in the Kwinana complex are directly concerned with metals processing. A blast furnace, which began operating in 1968, uses iron ore from Koolyanobbing, some 480 kilometres to the east. An alumina refinery, which commenced operations in 1964, processes bauxite mined in the Darling Range and railed about forty-eight kilometres from a crushing plant at Jarrahdale. A nickel refinery, which commenced operations in 1970, processes nickel concentrates and matte transported from Kambalda and Kalgoorlie. Major mineral-processing plants outside Kwinana include two plants pelletising iron ore fines in the north-west of the State, one at Dampier and the other at Cape Lambert, which commenced operations in 1968 and 1972, respectively. A nickel smelter, to produce nickel matte from concentrates, commenced operations at Kalgoorlie in 1973 and another

alumina refinery, at Pinjarra, began operating in 1972. A plant at Australind, near Bunbury, which extracts titanium dioxide from ilmenite mined in the surrounding districts, has been in operation since 1963.

Besides providing for heavy industry directly associated with minerals processing, the mining developments of recent years have also given impetus to other manufacturing activity, particularly to industries associated with the provision of capital equipment and other manufactured goods for the major mining projects.

MANUFACTURING STATISTICS

In the Australian Standard Industrial Classification (see page 354) manufacturing is used in the broad sense to relate to the physical or chemical transformation of materials or components into new products. Certain activities, however, which do not fit easily into this definition are included or excluded from manufacturing according to other criteria. Activities which are *included* as manufacturing are grading, testing, filtering, cooling and bulk handling of milk; cotton ginning; publishing, electrotyping, signwriting and book-binding; installation of lifts and escalators; repair activity usually associated with manufacturing (*e.g.* engine reconditioning, repair of industrial machinery, ship repair and major repair of aircraft and railway rolling stock); and blending, assembly, bottling and repacking except where otherwise stated. Activities which are *excluded* from manufacturing are washing, packing and dehydrating of fresh fruit; sun-drying of fruit; cleaning, filleting or freezing of fish; pulping of eggs; bottling of wine and spirits; repacking of flour, cereal food products and dried fruits; blending or repacking of tea; the making or installation of curtains; custom tailoring and dressmaking; boot and shoe repairs; hewing or rough-shaping of railway sleepers, posts, etc. in the forests; installation of joinery and erection of prefabricated wooden buildings; screening, crushing, dressing or other rudimentary treatment of minerals and construction materials; purification of natural gas; blending of lubricating oils and greases; glazing; motor vehicle repair (except engine reconditioning); repair of household appliances, sporting and photographic equipment, watches, clocks and jewellery, etc.; repair of tractors, and farm and construction machinery; and installation of structural steel, air-conditioning and heating equipment, industrial furnaces or shop fittings.

Production and distribution of electricity and gas are not regarded as manufacturing in the Australian Standard Industrial Classification (ASIC) but are included in a separate Industry Division (Division D: Electricity, Gas and Water). Further details of electricity and gas appear on pages 426-7.

The following tables summarise the results for Western Australia of the Census of Manufacturing Establishments conducted in 1968-69 and each subsequent year with the exception of 1970-71, for which year no manufacturing census was conducted. Definitions of the data items used are contained in the introduction to this Chapter on pages 356-7. While the statistics that follow relate mainly to ASIC Industry Sub-divisions, most data items presented are also available at Industry Group and Industry Class levels.

MANUFACTURING ESTABLISHMENTS—SUMMARY OF OPERATIONS (a)

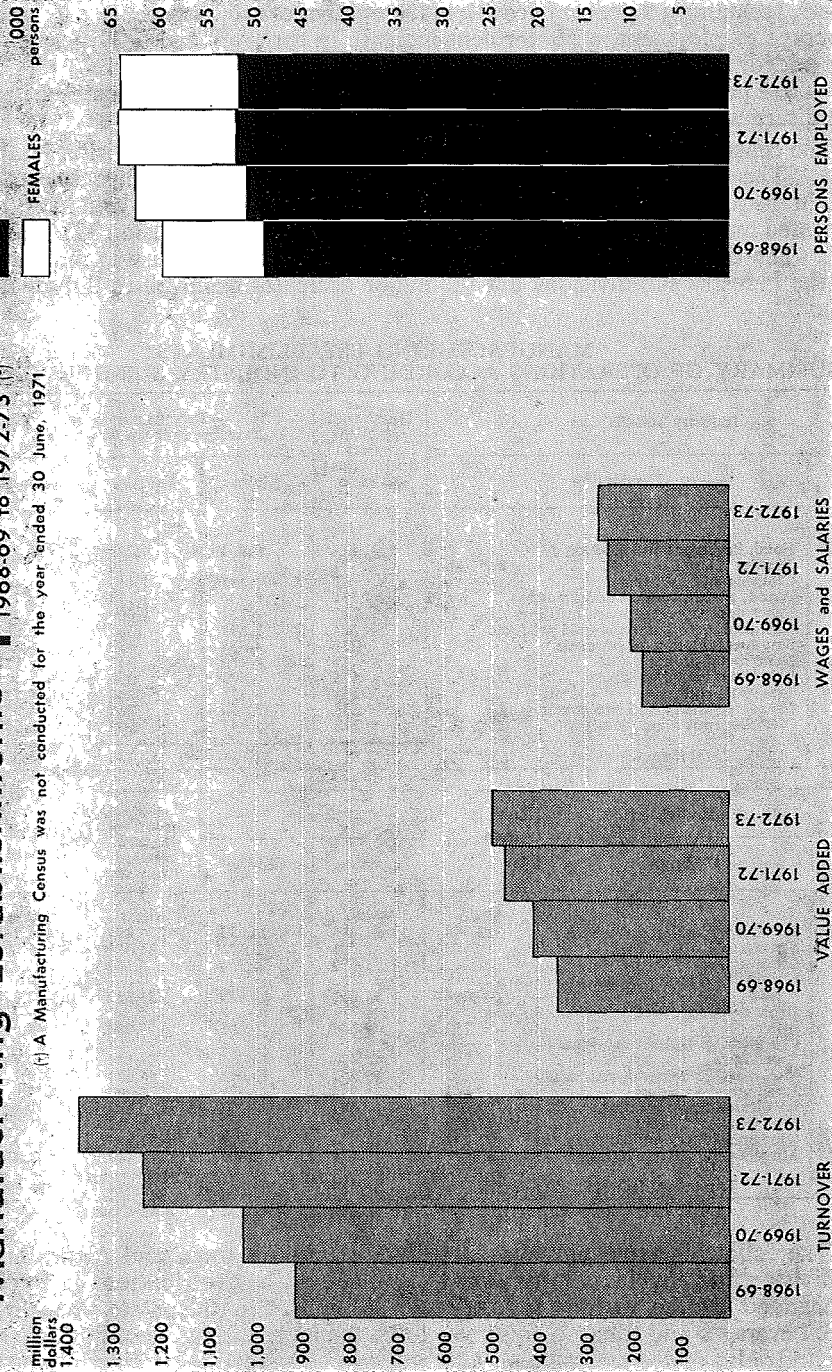
Item	Unit	1968-69	1969-70	1971-72	1972-73
Number of establishments operating at 30 June	No.	2,585	2,705	2,727	2,814
Persons employed (including working proprietors)—average over whole year—					
Males	No.	49,011	50,963	52,049	51,734
Females	No.	10,842	11,634	12,168	12,340
Total	No.	59,853	62,597	64,217	64,074
Wages and salaries	\$'000	183,168	208,410	255,879	275,455
Turnover	\$'000	919,555	1,028,778	1,240,106	1,375,859
Stocks—					
Opening	\$'000	119,817	134,775	160,033	164,330
Closing	\$'000	133,185	152,994	169,400	183,180
Purchases, transfers in, and selected expenses	\$'000	571,450	631,999	777,460	893,674
Value added	\$'000	361,473	414,999	472,013	501,034
Fixed capital expenditure	\$'000	88,722	126,057	171,517	94,361

(a) A manufacturing census was not conducted for the year ended 30 June 1971.

Manufacturing Establishments

PRINCIPAL STATISTICS
1968-69 to 1972-73 (1)

(1) A Manufacturing Census was not conducted for the year ended 30 June, 1971



The previous table and the bar charts on page 421 indicate a steady growth in the operations of manufacturing establishments in Western Australia over the five years commencing 1968-69, including a 9 per cent growth in the number of establishments, a 7 per cent increase in average employment, a 50 per cent increase in turnover and a 39 per cent increase in value added. The only annual decreases in this period occurred from 1971-72 to 1972-73 when a 0.2 per cent drop in average employment and a 45 per cent decrease in fixed capital expenditure were recorded.

The census results for 1972-73 are presented at industry sub-division level in the table below. The decrease of 0.2 per cent in average employment since 1971-72 which was noted in the previous table was due mainly to a decrease of 15.6 per cent in Sub-division 31: Fabricated metal products and a drop of 5.6 per cent in Sub-division 32: Transport equipment. The decrease of 45 per cent in fixed capital expenditure was more widely spread over the industry sub-divisions but the major decreases occurred in Sub-divisions 28, 29, 31 and 32.

MANUFACTURING ESTABLISHMENTS
SUMMARY OF OPERATIONS ACCORDING TO INDUSTRY SUB-DIVISION, 1972-73

ASIC code (b)	Industry sub-division Description	Number of establishments operating at 30 June	Persons employed (average over whole year) (a)			Wages and salaries
			Males	Females	Persons	
21-22	Food, beverages and tobacco	425	9,963	4,249	14,212	\$'000 58,764
23	Textiles	34	488	248	736	2,963
24	Clothing and footwear	68	285	1,417	1,702	4,461
25	Wood, wood products and furniture	574	6,824	1,135	7,959	28,714
26	Paper and paper products, printing	246	4,284	1,600	5,884	25,234
27	Chemical, petroleum and coal products	89	2,692	368	3,060	16,597
28	Non-metallic mineral products	208	4,333	430	4,763	23,116
29	Basic metal products	45	4,780	353	5,133	29,707
31	Fabricated metal products	475	6,498	974	7,472	30,488
32	Transport equipment	154	4,553	206	4,759	20,469
33	Other machinery and equipment	278	5,590	765	6,355	27,595
34	Miscellaneous manufacturing	218	1,444	595	2,039	7,347
	Total manufacturing	2,814	51,734	12,340	64,074	275,455

ASIC code (b)	Industry sub-division Description	Turnover	Stocks		Purchases, transfers in and selected expenses	Value added	Fixed capital expenditure
			Opening	Closing			
21-22	Food, beverages and tobacco	\$'000 373,798	\$'000 21,784	\$'000 26,038	\$'000 256,885	\$'000 121,167	\$'000 26,219
23	Textiles	17,764	2,391	3,691	13,019	6,044	1,074
24	Clothing and footwear	11,517	1,579	1,724	5,140	6,521	236
25	Wood, wood products and furniture	106,504	14,661	15,126	54,892	52,076	3,141
26	Paper and paper products, printing	80,139	9,308	9,639	35,880	44,590	3,697
27	Chemical, petroleum and coal products	111,968	14,436	14,986	64,109	48,409	3,205
28	Non-metallic mineral products	105,784	12,907	13,541	56,671	49,748	6,115
29	Basic metal products	250,063	38,334	47,671	226,390	33,010	39,452
31	Fabricated metal products	124,695	18,443	20,102	72,289	54,065	3,392
32	Transport equipment	68,136	9,345	7,837	38,719	27,908	1,131
33	Other machinery and equipment	96,294	17,470	18,419	52,909	44,333	4,294
34	Miscellaneous manufacturing	29,197	3,671	4,407	16,770	13,164	2,405
	Total manufacturing	1,375,859	164,330	183,180	893,674	501,034	94,361

(a) Includes working proprietors.

(b) Australian Standard Industrial Classification.

The following table presents data for Western Australia and Australia by industry sub-division and enables comparisons to be made of the contributions to employment and value added by the various industry sub-divisions. In this State, Sub-division 21-22: Food, beverages and tobacco continues to be the largest in terms of both average employment and value added and, similarly, Sub-division 23: Textiles continues to be the smallest, although it, too, showed growth in 1971-72 along with most other industry sub-divisions. Notable decreases in value added since 1971-72 were recorded in Sub-divisions 29, 31 and 32 with the last two also showing decreases in average employment.

**MANUFACTURING ESTABLISHMENTS—WESTERN AUSTRALIA AND AUSTRALIA
PERSONS EMPLOYED AND VALUE ADDED ACCORDING TO INDUSTRY SUB-DIVISION
1972-73**

Industry sub-division		Persons employed (average over whole year) (a)				Value added			
ASIC code (b)	Description	Western Australia		Australia		Western Australia		Australia	
		No.	per cent of total	No.	per cent of total	\$'000	per cent of total	\$'000	per cent of total
21-22	Food, beverages and tobacco	14,212	22.18	203,255	15.66	121,167	24.18	1,945,105	18.11
23	Textiles	736	1.15	53,979	4.16	6,044	1.21	377,154	3.51
24	Clothing and footwear	1,702	2.66	111,624	8.60	6,521	1.30	564,079	5.25
25	Wood, wood products and furniture	7,959	12.42	82,834	6.38	52,076	10.39	583,769	5.43
26	Paper and paper products, printing	5,884	9.18	105,995	8.17	44,590	8.90	915,431	8.52
27	Chemical, petroleum and coal products	3,060	4.78	65,489	5.05	48,409	9.66	885,541	8.24
28	Non-metallic mineral products	4,763	7.43	53,025	4.09	49,748	9.93	562,618	5.24
29	Basic metal products	5,133	8.01	95,101	7.33	33,010	6.59	1,004,779	9.35
31	Fabricated metal products	7,472	11.66	115,719	8.92	54,065	10.79	866,015	8.06
32	Transport equipment	4,759	7.43	152,818	11.78	27,908	5.57	1,073,786	10.00
33	Other machinery and equipment	6,355	9.92	184,617	14.23	44,333	8.85	1,388,487	12.92
34	Miscellaneous manufacturing	2,039	3.18	73,337	5.65	13,164	2.63	576,305	5.36
	Total manufacturing	64,074	100.00	1,297,793	100.00	501,034	100.00	10,743,071	100.00

(a) Includes working proprietors.

(b) Australian Standard Industrial Classification.

The relationship between manufacturing in this State and manufacturing in Australia over recent years may be seen from the data in the following table. Western Australia is not a major manufacturing State and although, in recent years, there has been continuous development and expansion in this sector in Western Australia, the rate of expansion and development is only marginally greater than the rate for Australia as a whole.

**MANUFACTURING ESTABLISHMENTS—WESTERN AUSTRALIA AND AUSTRALIA
SUMMARY OF OPERATIONS (a)**

Area	Year	Number of establish- ments operating at 30 June	Persons employed (average over whole year) (b)	Wages and salaries	Turnover	Value added
				\$'000	\$'000	\$'000
Western Australia	1968-69	2,585	59,853	183,168	919,555	361,473
	1969-70	2,705	62,597	208,410	1,028,778	414,999
	1971-72	2,727	64,217	255,879	1,240,106	472,013
	1972-73	2,814	64,074	275,455	1,375,859	501,034
Australia	1968-69	35,939	1,261,277	3,908,078	18,646,479	7,468,477
	1969-70	35,676	1,296,640	4,328,612	20,686,158	8,261,744
	1971-72	36,147	1,302,784	5,256,720	23,636,962	9,703,236
	1972-73	36,433	1,297,793	5,811,792	26,375,613	10,743,071
Western Australia as a percentage of Aus- tralia	1968-69	7.19	4.75	4.69	4.93	4.84
	1969-70	7.58	4.83	4.81	4.97	5.02
	1971-72	7.54	4.93	4.87	5.25	4.86
	1972-73	7.72	4.94	4.74	5.22	4.66

(a) A manufacturing census was not conducted for the year ended June 1971.

(b) Includes working proprietors.

Most of the manufacturing establishments in Western Australia are located in the Perth Statistical Division (see map preceding the *Index*). The table below shows that in 1972-73 this Division had 79 per cent of the State's manufacturing establishments with 85 per cent of value added in all manufacturing establishments. While manufacturing is carried out in most local government areas within the Perth Statistical Division, major concentrations of establishments are found in certain localities. The large industrial complex at Kwinana has already been mentioned (see page 419). The City of Perth, however, had the largest number of establishments of all local government areas in the Division at 30 June 1973 including a brewery, a cement works, a variety of food and clothing factories and several printing and publishing establishments. Factories in the

City of Perth are located mainly in and around the city centre and south of the Swan River. The City of Fremantle contains a major industrial area at O'Connor, east of the city centre, as well as a number of major factories in the North Fremantle and South Fremantle localities. Major industrial areas with a wide range of products are located at Osborne Park in the City of Stirling and at Welshpool in the Town of Canning. The localities of Coogee and Spearwood in the Town of Cockburn have a number of the larger factories, including wool scouring and meat products establishments. The Midland locality in the Shire of Swan contains two large Government factories, an abattoir and the railway workshops, which contribute significantly to employment in the area. Other local government areas with large manufacturing establishments are the Shires of Belmont, Bayswater and Bassen-dean and the City of Subiaco.

Measured in terms of employment, at 30 June 1973, the most important concentrations of manufacturing activity outside the Perth Statistical Division were in the Town of Bunbury and the Shires of Manjimup and Harvey in the South-West Statistical Division, the Town of Albany in the Southern Agricultural Statistical Division and the Town of Geraldton in the Northern Agricultural Statistical Division.

**MANUFACTURING ESTABLISHMENTS—WESTERN AUSTRALIA
SUMMARY OF OPERATIONS BY STATISTICAL DIVISION, 1972-73**

Statistical Division	Number of establishments operating at 30 June	Persons employed (average over whole year) (a)	Wages and salaries	Turnover	Closing stocks	Value added
Perth Statistical Division	2,227	55,412	\$'000 237,199	\$'000 1,140,030	\$'000 154,078	\$'000 425,911
Other Divisions—						
South-West	228	4,054	16,430	95,689	12,815	30,157
Southern Agricultural	90	1,401	5,951	31,504	4,666	12,999
Central Agricultural	82	819	3,164	14,349	1,364	5,675
Northern Agricultural	65	650	2,493	14,281	1,329	5,213
Eastern Goldfields	62	587	2,395	14,713	3,055	4,745
Central	2	(b)	(b)	(b)	(b)	(b)
North-West and Pilbara	44	798	5,473	50,966	5,201	10,654
Kimberley	14	(b)	(b)	(b)	(b)	(b)
Total	587	8,662	38,257	235,828	29,102	75,124
WESTERN AUSTRALIA	2,814	64,074	275,456	1,375,858	183,180	501,034

(a) Includes working proprietors.

(b) Not available for publication.

**PRODUCTION, SALES AND TRANSFERS OUT OF SELECTED
MANUFACTURED COMMODITIES**

Commodity	Unit	1971-72			1972-73		
		Production	Sales and transfers out		Production	Sales and transfers out	
		Quantity	Quantity	Value	Quantity	Quantity	Value
Aerated waters, canned and bottled	'000 litres	68,269	67,747	\$'000 15,505	75,253	73,994	\$'000 17,079
Architectural metal products (a)	.....	(b)	(b)	1,242	(b)	(b)	1,376
Bacon and ham	tonne	5,116	5,079	8,613	5,257	5,203	8,590
Blocks, concrete (c), in terms of 16" x 8" x 8"	'000	7,644	7,514	3,792	6,646	6,509	3,201
Boats and ships, total amount received during the year on vessels 50 tons gross and over	.....	(b)	(b)	3,065	(b)	(b)	3,631
Boats, small (less than 5 tons gross)	number	1,183	1,285	1,789	1,532	1,698	2,331
Boots, shoes, sandals and slippers (d)	pair	697,074	675,295	2,346	624,648	607,904	2,561
Bread—							
900 gram loaves—wrapped	'000	12,075	11,904	17,564	10,454	10,104	19,241
unwrapped	'000	16,151	15,802		14,794	14,346	
680 gram loaves—wrapped	'000	23,092	22,467		26,684	25,846	
unwrapped	'000	2,944	2,938		1,291	1,286	
450 gram loaves—wrapped	'000	13,003	12,532		10,651	10,182	
unwrapped	'000	8,085	7,959		8,998	8,866	
Bread rolls, hamburger buns, etc.	tonne	4,441	4,330		5,146	4,927	
Other sizes	tonne	1,614	1,541		1,320	1,250	

For footnotes, see end of table.

PRODUCTION, SALES AND TRANSFERS OUT OF SELECTED
MANUFACTURED COMMODITIES—continued

Commodity	Unit	1971-72			1972-73		
		Production	Sales and transfers out		Production	Sales and transfers out	
		Quantity	Quantity	Value	Quantity	Quantity	Value
Bricks, clay (all sizes)....	'000	227,581	227,118	\$'000 11,698	278,610	278,304	14,436
Butter	tonne	5,988	5,981	5,531	5,324	5,349	5,571
Cakes, pastries, pies and puddings	(b)	(b)	(b)	8,301	(b)	(b)	9,067
Caravans (e), private or domestic	number	438	449	1,101	308	310	872
Constructional steel, fabricated	tonne	112,308	107,324	39,692	70,629	71,432	26,585
Containers, bags and packets—							
Of paperboard—corrugated fibre....	(b)	(b)	(b)	5,511	(b)	(b)	5,852
solid fibre	(b)	(b)	(b)	1,326	(b)	(b)	1,802
Paper bags and packets	(b)	(b)	(b)	2,298	(b)	(b)	2,182
Cordials and syrups	'000 litres	6,163	5,820	1,610	6,610	6,823	2,344
Detergents, synthetic and other	tonne	4,433	4,300	1,128	5,176	5,172	1,412
Flour, white (incl. sharps) (f)	tonne	84,227	85,152	8,694	77,680	80,051	8,516
Furniture—							
Metal or partly metal	(b)	(b)	(b)	(g)	(b)	(b)	7,228
Wooden (h)	(b)	(b)	(b)	10,291	(b)	(b)	12,559
Other	(b)	(b)	(b)	5,524	(b)	(b)	7,285
Hoists, cranes and lifting machinery (i)	(b)	(b)	(b)	2,046	(b)	(b)	2,316
Hot water systems, domestic (j)	number	20,950	20,876	2,103	24,764	24,738	2,593
Ice cream (k)	'000 litres	16,632	16,589	5,738	16,410	16,582	5,771
Joinery, n.e.i.	(b)	(b)	(b)	15,478	(b)	(b)	17,668
Meat, fresh (for human consumption)—							
Carcasses, whole or butchered	(b)	(b)	(b)	39,700	(b)	(b)	54,638
Boned	(b)	(b)	(b)	36,483	(b)	(b)	57,180
Metal window frames	(b)	(b)	(b)	8,379	(b)	(b)	9,496
Milk, cows'—							
Liquid whole milk—							
Graded and chilled	tonne	107,610	77,929	6,750	108,496	79,532	7,199
Pasteurised (l)—							
Bulk	'000 litres	118,293	6,778	1,043	121,142	6,836	1,095
Packed	'000 litres			16,275			17,774
Yoghurt (incl. flavoured)	tonne	1,412	1,476	661	1,500	1,462	795
Powdered	tonne	4,791	4,972	1,368	5,386	5,066	1,608
Mining and drilling machinery and parts	(b)	(b)	(b)	4,144	(b)	(b)	4,783
Offal, bones, etc.—							
Edible (heart, liver, brains, etc.)	(b)	(b)	(b)	2,623	(b)	(b)	4,330
Inedible (welts, horns, hides, etc.)	(b)	(b)	(b)	2,380	(b)	(b)	5,638
Paints, enamels and clears (m)	'000 litres	4,687	4,733	4,796	5,314	5,329	5,533
Plaster sheets, fibrous	'000 sq m	1,511	1,517	2,752	1,403	1,414	2,798
Plaster goods, other (n)	(b)	(b)	(b)	1,275	(b)	(b)	1,408
Poultry, chickens	tonne	10,110	10,081	9,643	12,068	12,869	12,328
Prefabricated steel garages, carports and sheds, etc.	(b)	(b)	(b)	3,711	(b)	(b)	4,540
Printing and publishing—							
Newspapers and periodicals	(b)	(b)	(b)	7,055	(b)	(b)	7,544
Commercial and job printing, n.e.i.	(b)	(b)	(b)	16,764	(b)	(b)	18,215
Ready-mixed concrete	'000 cu m	915	915	22,662	870	870	19,966
Shop fittings	(b)	(b)	(b)	2,406	(b)	(b)	3,190
Signs and advertising displays (excl. neon)....	(b)	(b)	(b)	1,620	(b)	(b)	2,072
Smallgoods	(b)	(b)	(b)	7,239	(b)	(b)	8,068
Steam, gas and water fittings, valves and parts (non-ferrous metal)	(b)	(b)	(b)	3,532	(b)	(b)	3,222
Stock and poultry foods—							
Meat and bone meal	tonne	34,133	33,790	3,315	41,821	42,625	4,740
Poultry pellets and crumbles	tonne	91,429	84,073	6,321	98,319	95,359	7,940
Tallow, rendered, inedible	tonne	27,337	27,141	3,555	33,780	33,268	4,102
Tanks, vats, storage containers of plate steel	(b)	(b)	(b)	3,558	(b)	(b)	1,988
Timber—							
Undressed (o)—							
Sleepers	cu m	64,042	60,923	2,598	70,082	68,374	3,090
All other (excl. palings) obtained from logs sawn in the mill	cu m	320,268	302,803	16,653	307,444	315,324	17,688
Dressed—							
Floorboards, Australian timber	cu m	22,196	22,682	2,178	29,895	30,836	2,973
Other dressed timber	cu m	16,932	17,187	2,274	16,605	18,047	2,696
Wool, scoured	tonne	17,009	(g)	(g)	11,987	(g)	(g)
Woven or linked wire fabric (p)	(b)	(b)	(b)	1,978	(b)	(b)	2,617

n.e.i. denotes 'not elsewhere included'.

(a) Includes stairs, staircases, railings, gates other than wire, balustrades, ornamental metal work, etc. (b) Only value of sales and transfers out is collected. (c) Basic building and paving blocks for walls, partitions, foundations, flooring, paths, etc. and decorative blocks and similar fancy blocks. (d) Excludes footwear wholly of rubber. (e) Wheeled or with provision for fitting of wheels. (f) Includes atta flour. (g) Not available for publication. (h) Includes prefabricated wooden furniture but excludes in-built furniture. (i) Excludes electric hoists and hydraulic hoists for trucks. (j) Excludes solar absorber units. (k) Includes ice cream combined with other confections including those aerated milk-based confections which contain 10 per cent or more butterfat. (l) Includes homogenised but excludes flavoured and standardised milk. (m) Includes architectural, decorative and industrial paints. Excludes water paints in powder form. (n) Includes cornices, vents, mouldings, etc. and non-fibrous flat sheets. (o) Includes preserved timber. (p) Steel and non-ferrous (including chain wire, link mesh, fencing wire, crimped fabric and fine wire mesh).

The previous table shows the principal products of manufacturing activity in the State. Owing to the confidentiality provisions of the *Census and Statistics Act* 1905-1973, data for some important commodities including petroleum products, refined nickel, pig iron, beer and superphosphate are not available for publication.

ELECTRICITY AND GAS PRODUCTION AND DISTRIBUTION IN WESTERN AUSTRALIA

Electricity

Prior to the establishment of The State Electricity Commission of Western Australia in 1946, electricity was generated and distributed by a large number of independent power stations. A government-owned steam power station at East Perth supplied the metropolitan area, and small units of the same type, but privately-owned, operated in the major mining centres of Collie and Kalgoorlie. With other minor exceptions the country areas were dependent on internal combustion equipment, owned privately or by local government authorities and supplying either alternating or direct current at various voltages. Since 1946 a number of power stations have been absorbed into the Commission's network and, although there are still some independent operators generating electricity for sale or for their own industrial requirements, the Commission now supplies most of the electricity used in the State and all electricity sold in the metropolitan area. The Commission functions under the *State Electricity Commission Act, 1945-1974* and consists of nine members, including the Chairman, appointed by the Governor. Four of the Commissioners are representatives of consumers, one for the metropolitan area, two for the rest of the State and one representing commercial consumers. Of the remaining five, one is the Under Treasurer of the State or his deputy, one represents employees of the Commission and three are required to be qualified engineers.

In Western Australia electricity is generated principally by steam power stations although in areas remote from the interconnected grid system operated by the Commission, internal combustion equipment is mostly used to provide electricity. The Commission operates coal-burning power stations at East Perth (55 MW) and South Fremantle (100 MW) and an oil-burning power station at Kwinana (500 MW) in the metropolitan area. These stations are interconnected in a grid system with coal-burning power stations at Bunbury (120 MW) and Muja (240 MW).

The capacity of the Kwinana power station is being increased by the installation of two 200 MW units due to be operational by 1976. The capacity of the Muja power station is also being increased by the installation of two 200 MW units due to be in service by 1979.

The main interconnections are two 132,000 volt transmission lines from the Bunbury power station and two 132,000 volt lines from the Muja power station to terminal substations in the metropolitan area, and a 132,000 volt line from Muja to the Bunbury power station. Two 330,000 volt transmission lines connecting Muja with the metropolitan area are in the planning stage. From the Kwinana power station, which is interconnected with the grid system at 132,000 volts, a 330,000 volt transmission line is under construction to a terminal in the northern suburbs of Perth. A 132,000 volt transmission system linking substations is being provided to meet the increasing demand for power in the metropolitan area.

In December 1959 an amendment to the State Electricity Commission Act was passed to enable consumers to contribute towards the extension of mains beyond the distance that can be supplied economically by the Commission. At 30 June 1974 over 12,000 consumers had been connected in country and metropolitan areas under the Contributory Extension Scheme.

Minor systems which are privately-owned or controlled by local government authorities are being absorbed as the transmission lines extend into the country areas and when this work is completed all except the more sparsely-populated areas of the State will be provided with electric power of standard frequency and voltage.

Remote towns may join a Country Towns' Assistance Scheme whereby facilities are available to enable the generation and supply of electricity in forty-five such towns to be operated on behalf of the local supply authority by the Commission. At 30 June 1974 twenty towns had been incorporated into the Scheme.

Gas

Town gas production in Western Australia ceased in December 1972 with the completion of the conversion of town gas appliances to burn natural gas from the gasfields in the region of Dongara to the north of Perth. These natural gasfields are estimated to have sufficient reserves to supply a limited industrial and domestic market for at least fifteen years at a daily rate of approximately 2 million cubic metres.

Simulated natural gas is now being produced and supplied in the Bunbury area by the State Electricity Commission, and tempered liquid petroleum gas is supplied in Albany.

ELECTRICITY AND GAS STATISTICS

The electricity and gas industries, which are not included with manufacturing in the Australian Standard Industrial Classification, are the subject of a separate census which was conducted for the years 1968-69, 1969-70 and 1971-72 but is to be carried out only periodically in future. Results of the 1968-69 and 1969-70 Censuses of Electricity and Gas Establishments were presented on page 411 of the 1973 Year Book, and results of the 1971-72 census appear in the table below.

ELECTRICITY AND GAS ESTABLISHMENTS—SUMMARY OF OPERATIONS: 1971-72

Number of establishments operating at 30 June	Persons employed (average over whole year) (a)			Wages and salaries	Turnover	Stocks		Purchases, transfers in and selected expenses	Value added
	Males	Females	Total			Opening	Closing		
48	4,275	331	4,606	\$'000 22,907	\$'000 82,347	\$'000 7,517	\$'000 7,838	\$'000 22,927	\$'000 59,740

(a) Includes working proprietors.

PRODUCTION OF ELECTRICITY AND GAS

Item	Unit	1969-70	1970-71	1971-72	1972-73	1973-74
Electricity generated—Government	million kWh	2,195	2,446	2,671	2,968	3,300
Other	"	(a)	(a)	(a)	(a)	(a)
Gas available for issue through mains (b)	million MJ	1,108	1,242	11,745	31,680	30,188

(a) Not available for publication.

(b) Includes natural gas from October 1971.

CHAPTER IX—TRADE, TRANSPORT AND COMMUNICATION

Part 1—External Trade

Overseas trade statistics are compiled from information contained in documents obtained under the Customs Act and supplied to the Australian Bureau of Statistics by the Department of Police and Customs. Particulars of Western Australia's overseas trade, as presented in this Part, have been prepared from data supplied by the Australian Bureau of Statistics, Canberra. A comprehensive account of the statistics, definitions and details of trade between Australia and overseas countries is given in the annual bulletin *Overseas Trade* and other publications issued by the Commonwealth Statistician, Canberra.

Statistics of Western Australia's trade with other Australian States are compiled by the Western Australian Office from information contained in documents collected under authority of the *Census and Statistics Act* 1905-1973 from importers, exporters and other persons concerned with the distribution of goods.

Classification of Commodities

Overseas imports and exports are classified according to the Australian Import and Export Commodity Classifications of some 6,000 import items and 2,000 export items. These classifications are based on the *United Nations Standard International Trade Classification, Revised*, which is closely related to the Brussels Tariff Nomenclature used in the Australian Customs Tariff (see page 443). The Standard International Trade Classification consists of 10 broad commodity categories designated 'Sections' and comprising 56 commodity 'Divisions' which are further divided into 177 commodity 'Groups'. The structure of the classification serves to provide a summary of data relating to 1,312 basic items of international trade. The numbers and names of Sections and Divisions appear in the list on page 430.

Interstate imports and exports are classified according to Interstate Trade Commodity Classifications which are based on the Australian Commodity Classifications. The basic items of the Australian classifications are compressed or expanded according to their significance in Western Australia's trade. The Interstate Trade Commodity Classifications comprise some 900 items of import and 330 items of export within the structure of commodity Sections, Divisions and Groups of the Standard International Trade Classification.

Valuation of Items of Trade

All values in overseas trade statistics are determined on a 'free on board (f.o.b.) port of shipment' basis. This means that all charges (in particular the cost of freight and insurance) incurred after the goods have been exported from the port of shipment are excluded. Only transport and service charges incurred, or usually incurred, prior to export are included in the determination of trade values.

The procedure adopted to value overseas imports and exports is as follows.

Imports. The recorded value of goods imported is the 'value for duty' as laid down for Customs purposes, *i.e.* the sum of:

- (a) (i) the actual money price paid or to be paid for the goods by the Australian importer plus any special deduction, or
- (ii) the current domestic value of the goods, whichever is the higher; and
- (b) all charges payable or ordinarily payable for placing the goods free on board at the port of export.

In the case of goods consigned for sale in Australia the value for duty shall be the amount which would be the value for duty if the goods were, at the date of exportation, sold to an Australian importer instead of being consigned for sale in Australia.

'Current domestic value' is defined as 'the amount for which the seller of the goods to the purchaser in Australia is selling or would be prepared to sell for cash, at the date of exportation of those goods, the same quantity of identically similar goods to any and every purchaser in the country of export for consumption in that country'.

Exports. The recorded value of goods exported includes the cost of the outside packages and is determined as follows.

(a) Goods sold to overseas buyers before export are valued at the Australian f.o.b. port of shipment equivalent of the actual price at which the goods were sold.

(b) Goods shipped on consignment are valued at the Australian f.o.b. port of shipment equivalent of the price paid for similar goods of Australian origin in the principal markets of the country to which they are dispatched for sale.

The basis of valuation for exports to other Australian States is f.o.b., or its equivalent, at the point of final shipment.

Statistics of imports from other Australian States are recorded in terms of landed cost.

SUMMARY OF TRADE

Statistics of Western Australia's external trade are presented in the following series of tables. Particulars relate, in all cases, to the year ended 30 June. The figures shown for exports do not include ships' stores, details of which are given in the table on page 442.

VALUE OF INTERSTATE AND OVERSEAS TRADE OF WESTERN AUSTRALIA (\$'000)

Direction of trade	1968-69	1969-70	1970-71	1971-72	1972-73
INTERSTATE—					
Imports	562,312	640,189	726,778	787,788	786,177
Exports	149,892	149,861	151,093	138,478	159,327
Excess of—					
Imports over exports	412,421	490,328	575,685	649,310	626,850
OVERSEAS—					
Imports	203,533	242,299	278,344	283,263	227,269
Exports	546,366	675,027	862,421	946,504	1,154,359
Excess of—					
Exports over imports	342,833	432,728	584,077	663,241	927,090
TOTAL—					
Imports	765,846	882,487	1,005,122	1,071,051	1,013,447
Exports	696,258	824,888	1,013,514	1,084,982	1,313,686
Excess of—					
Imports over exports	69,588	57,600	....	....	....
Exports over imports .....	....	....	8,392	13,931	300,239

DIRECTION OF TRADE

The term *Country of Origin*, as used in recording the statistics of overseas trade, means the country of production; *Country of Destination* means the country to which goods were consigned at the time of export. In compiling statistics of Western Australia's interstate imports and exports, goods are classified according to the State or Territory from which or to which they were consigned.

The value of imports from other Australian States accounted for 74.5 per cent of the total value of imports during 1970-71 to 1972-73. Exports to overseas countries represented 86.8 per cent of the total value of exports. Overseas imports during the period were valued at \$789 million, the principal countries of origin being the United Kingdom (18.0 per cent of the total), Japan (17.9 per cent), and the United States of America (17.1 per cent). The value of overseas exports amounted to \$2,963 million and the principal countries of destination were Japan (49.8 per cent), the United States of America (7.96 per cent), and the United Kingdom (7.25 per cent).

SUMMARY OF STATISTICAL CLASSIFICATION OF IMPORTS AND EXPORTS

Section number	Division number	Section and division headings	Section number	Division number	Section and division headings
0		FOOD AND LIVE ANIMALS			CHEMICALS—continued
	00	Live animals		55	Essential oils and perfume materials, toilet, polishing and cleansing preparations
	01	Meat and meat preparations		56	Fertilisers, manufactured
	02	Dairy products and eggs		57	Explosives and pyrotechnic products
	03	Fish and fish preparations		58	Plastic materials, regenerated cellulose and artificial resins
	04	Cereals and cereal preparations		59	Chemical materials and products, n.e.i.
	05	Fruit and vegetables			
	06	Sugar, sugar preparations and honey			
	07	Coffee, tea, cocoa, spices and manufactures thereof			
	08	Feeding-stuff for animals (excluding unmilled cereals)	6		MANUFACTURED GOODS CLASSIFIED CHIEFLY BY MATERIAL
	09	Miscellaneous preparations chiefly for food		61	Leather, leather manufactures, n.e.i., and dressed fur skins
1		BEVERAGES AND TOBACCO		62	Rubber manufactures, n.e.i.
	11	Beverages		63	Wood and cork manufactures (except furniture)
	12	Tobacco and tobacco manufactures		64	Paper, paperboard and manufactures thereof
2		CRUDE MATERIALS, IN-EDIBLE, EXCEPT FUELS		65	Textile yarn, fabrics, made-up articles and related products
	21	Hides, skins and fur skins, undressed		66	Non-metallic mineral manufactures, n.e.i.
	22	Oil-seeds, oil nuts and oil kernels		67	Iron and steel
	23	Crude rubber (including synthetic and reclaimed)		68	Non-ferrous metals
	24	Wood, timber and cork		69	Manufactures of metal, n.e.i.
	25	Pulp and waste paper			
	26	Textile fibres and their waste	7		MACHINERY AND TRANSPORT EQUIPMENT
	27	Crude fertilisers and crude minerals (except coal, petroleum and precious stones)		71	Machinery (except electric)
	28	Metalliferous ores and metal scrap		72	Electric machinery, apparatus and appliances
	29	Crude animal and vegetable materials, n.e.i.		73	Transport equipment
3		MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	8		MISCELLANEOUS MANUFACTURED ARTICLES
	32	Coal, coke and briquettes		81	Sanitary, plumbing, heating and lighting fixtures and fittings
	33	Petroleum and petroleum products		82	Furniture
	34	Petroleum gases and other gaseous hydrocarbons		83	Travel goods, handbags and similar articles
4		ANIMAL AND VEGETABLE OILS AND FATS		84	Clothing and clothing accessories; articles of knitted or crocheted fabric
	41	Animal oils and fats		85	Footwear, gaiters, and similar articles and parts therefor
	42	Fixed vegetable oils and fats		86	Professional, scientific and controlling instruments; photographic and optical goods, watches and clocks
	43	Animal and vegetable oils and fats, processed, and waxes of animal or vegetable origin		89	Miscellaneous manufactured articles, n.e.i.
5		CHEMICALS			
	51	Chemical elements and compounds	9A		COMMODITIES AND TRANSACTIONS OF MERCHANDISE TRADE, NOT ELSEWHERE CLASSIFIED
	52	Mineral tar and crude chemicals from coal, petroleum and natural gas			
	53	Dyeing, tanning and colouring materials	9B		COMMODITIES AND TRANSACTIONS NOT INCLUDED IN MERCHANDISE TRADE
	54	Medicinal and pharmaceutical products			

IMPORTS AND EXPORTS

VALUE OF IMPORTS INTO AND EXPORTS FROM WESTERN AUSTRALIA
CLASSIFIED ACCORDING TO ORIGIN OR DESTINATION
(\$'000)

Origin or destination	Imports			Exports		
	1970-71	1971-72	1972-73	1970-71	1971-72	1972-73
INTERSTATE—						
New South Wales (a)	315,196	348,598	336,541	53,622	48,352	62,660
Victoria	296,605	317,837	325,357	51,430	43,990	46,310
Queensland	22,590	24,214	21,426	6,233	8,142	10,590
South Australia	80,913	87,068	91,577	27,820	25,797	29,040
Tasmania	10,072	9,403	9,078	2,419	3,676	1,770
Northern Territory	1,402	667	2,199	9,569	8,521	8,957
Total, Interstate	726,778	787,788	786,177	151,093	138,478	159,327
OVERSEAS—						
Arab Republic of Egypt ....	....	....	1	9,729	20,372	17,498
Austria	295	526	438	78	254	792
Bahrain ....	....	72	2,533	1,515	6,461	9,341
Bangladesh ....	....	....	122	....	710	926
Barbados ....	....	3	....	....	....	....
Brazil	95	127	211	218	219	599
Canada	15,393	11,139	7,724	15,369	18,328	12,206
Chile	5	4	9	3	4,283	1,869
China, People's Republic of	1,172	1,353	1,295	19,844	8,662	16,364
Christmas Island (Indian Ocean)	2,137	1,771	3,241	2,016	2,123	1,593
Czechoslovakia	346	412	295	957	698	816
Denmark	1,113	587	878	199	155	125
Fiji	(b)	127	45	877	1,254	1,661
Finland	779	840	843	15	17	500
France	2,081	2,200	2,488	19,391	18,775	29,366
Germany, Democratic Republic of	79	94	97	568	305	1,857
Germany, Federal Republic of	11,475	10,833	12,991	40,480	44,600	49,696
Ghana	44	7	110	4	(b)	985
Greece	56	62	82	3,749	5,027	7,987
Hong Kong	2,374	2,371	2,547	5,289	4,519	8,416
India	1,630	1,403	1,111	6,872	7,286	4,836
Indonesia	718	1,031	1,370	1,120	6,087	2,406
Iran	4,270	7,790	5,176	16,790	14,719	7,940
Iraq	3,378	11,017	6,044	5,514	90	306
Ireland	240	262	252	289	1,379	640
Italy	5,368	5,654	4,185	19,232	24,472	33,808
Japan	51,125	53,019	36,941	428,633	457,357	588,466
Korea, Republic of	874	48	173	1,469	8,945	6,776
Kuwait	13,348	9,616	12,649	1,766	2,528	5,398
Malaysia	3,856	2,286	2,099	10,486	15,283	14,548
Mauritius	12	1	4	561	1,428	1,381
Nauru, Republic of	4,558	4,326	5,207	....	....	....
Netherlands	7,534	7,070	2,250	5,564	14,586	18,603
New Zealand	2,953	3,244	4,037	4,306	5,141	8,160
Norway	1,168	1,344	1,418	22	943	1,058
Oman ....	....	....	....	208	376	899
Pakistan, Islamic Republic of	1,810	928	333	5,810	460	2,031
Philippines	182	213	227	594	813	638
Poland	346	49	73	1,290	2,157	8,483
Qatar	7,746	6,086	5,314	443	615	756
Saudi Arabia	25	....	....	974	766	1,389
Singapore	7,931	14,523	10,346	22,000	25,802	32,520
South Africa, Republic of	1,513	1,626	1,721	2,022	1,937	1,730
Spain	1,776	1,552	1,239	1,943	3,344	4,912
Sri Lanka	856	832	627	592	350	206
Sweden	3,421	2,814	3,070	3,163	2,957	4,458
Switzerland	1,835	2,109	1,265	166	221	681
Taiwan	445	655	1,206	7,465	11,965	12,297
Thailand	122	280	376	2,598	546	470
Turkey	26	29	23	1,398	2,229	1,140
Union of Arab Emirates	718	229	440	1,318	1,415	2,668
Union of Soviet Socialist Republics	16	55	39	12,063	20,242	30,385
United Kingdom	50,564	53,856	37,860	73,457	58,496	82,992
United States of America	52,846	45,953	36,473	69,126	81,131	85,559
Yemen, People's Republic of	2,618	4,692	972	....	....	7
Yugoslavia	50	53	53	1,491	895	3,624
Zambia ....	....	2	(b)	1,783	3,445	1,990
Other countries	3,693	3,431	2,801	27,073	27,024	17,397
Other (c)	1,329	2,657	3,945	2,519	2,311	204
Total, Overseas	278,344	283,263	227,269	862,421	946,504	1,154,359
GRAND TOTAL	1,005,122	1,071,051	1,013,447	1,013,514	1,084,982	1,313,686

(a) Statistics relating to trade with the Australian Capital Territory are included with those of New South Wales. (b) Less than \$500. (c) The figures shown for Imports include the items *Australia (re-imported)* and *Origin not known*; those shown for Exports include the items *Destination unknown* and *For orders*.

The following table shows the proportional distribution of Western Australia's trade with overseas countries and with Australian States and Territories during each of the years 1970-71 to 1972-73.

VALUE OF IMPORTS INTO AND EXPORTS FROM WESTERN AUSTRALIA
PROPORTIONS ACCORDING TO ORIGIN OR DESTINATION
(Per cent of total)

Origin or destination	Imports			Exports		
	1970-71	1971-72	1972-73	1970-71	1971-72	1972-73
INTERSTATE—						
New South Wales (a)	43.37	44.25	42.81	35.49	34.92	39.33
Victoria	40.81	40.35	41.38	34.04	31.77	29.07
Queensland	3.11	3.07	2.73	4.13	5.88	6.65
South Australia	11.13	11.05	11.65	18.41	18.63	18.23
Tasmania	1.39	1.19	1.15	1.60	2.65	1.11
Northern Territory	0.19	0.08	0.28	6.33	6.15	5.62
Total, Interstate	100.00	100.00	100.00	100.00	100.00	100.00
OVERSEAS—						
Arab Republic of Egypt ....	...	...	(b)	1.13	2.15	1.52
Austria	0.11	0.19	0.19	0.01	0.03	0.07
Bahrain ....	...	0.03	1.11	0.18	0.68	0.81
Bangladesh ....	...	...	0.05	...	0.08	0.08
Barbados ....	...	(b)	...	...	...	...
Brazil	0.03	0.04	0.09	0.03	0.02	0.05
Canada	5.53	3.93	3.40	1.78	1.94	1.06
Chile	(b)	(b)	(b)	(b)	0.45	0.16
China, People's Republic of	0.42	0.48	0.57	2.30	0.92	1.42
Christmas Island (Indian Ocean)	0.77	0.63	1.43	0.23	0.22	0.14
Czechoslovakia	0.12	0.15	0.13	0.11	0.07	0.07
Denmark	0.40	0.21	0.39	0.02	0.02	0.01
Fiji	(b)	0.04	0.02	0.10	0.13	0.14
Finland	0.28	0.30	0.37	(b)	(b)	0.04
France	0.75	0.78	1.09	2.25	1.98	2.54
Germany, Democratic Republic of	0.03	0.03	0.04	0.07	0.03	0.16
Germany, Federal Republic of	4.12	3.82	5.72	4.69	4.71	4.31
Ghana	0.02	(b)	0.05	(b)	(b)	0.09
Greece	0.02	0.02	0.04	0.43	0.53	0.69
Hong Kong	0.85	0.84	1.12	0.61	0.48	0.73
India	0.59	0.50	0.49	0.80	0.77	0.42
Indonesia	0.26	0.36	0.60	0.13	0.64	0.21
Iran	1.53	2.75	2.28	1.95	1.56	0.69
Iraq	1.21	3.89	2.66	0.64	0.01	0.03
Ireland	0.09	0.09	0.11	0.03	0.15	0.06
Italy	1.93	2.00	1.84	2.23	2.59	2.93
Japan	18.37	18.72	16.25	49.70	48.32	50.98
Korea, Republic of	0.31	0.02	0.08	0.17	0.95	0.39
Kuwait	4.80	3.39	5.57	0.20	0.27	0.47
Malaysia	1.39	0.81	0.92	1.22	1.61	1.26
Mauritius	(b)	(b)	(b)	0.07	0.15	0.12
Nauru, Republic of	1.64	1.53	2.29	...	...	...
Netherlands	2.71	2.50	0.99	0.65	1.54	1.61
New Zealand	1.06	1.15	1.78	0.50	0.54	0.71
Norway	0.42	0.47	0.62	(b)	0.10	0.09
Oman ....	...	...	...	0.02	0.04	0.08
Pakistan, Islamic Republic of	0.65	0.33	0.15	0.67	0.05	0.18
Philippines	0.07	0.08	0.10	0.07	0.09	0.06
Poland	0.12	0.02	0.03	0.15	0.23	0.73
Qatar	2.78	2.15	2.34	0.05	0.06	0.07
Saudi Arabia	0.01	...	...	0.11	0.08	0.12
Singapore	2.85	5.13	4.55	2.55	2.73	2.82
South Africa, Republic of	0.64	0.57	0.76	0.23	0.20	0.15
Spain	0.64	0.55	0.55	0.23	0.35	0.43
Sri Lanka	0.31	0.29	0.28	0.07	0.04	0.02
Sweden	1.23	0.99	1.35	0.37	0.31	0.39
Switzerland	0.66	0.74	0.56	0.02	0.02	0.06
Taiwan	0.16	0.23	0.53	0.87	1.26	1.07
Thailand	0.04	0.10	0.17	0.30	0.06	0.04
Turkey	0.01	0.01	0.01	0.16	0.24	0.10
Union of Arab Emirates	0.26	0.08	0.19	0.15	0.15	0.23
Union of Soviet Socialist Republics	0.01	0.02	0.02	1.40	2.14	2.63
United Kingdom	18.77	19.01	16.66	8.52	6.18	7.19
United States of America	18.99	16.22	16.05	8.02	8.57	7.41
Yemen, People's Republic of	0.94	1.66	0.43	...	...	(b)
Yugoslavia	0.02	1.02	0.02	0.17	0.09	0.31
Zambia ....	...	(b)	(b)	0.21	0.36	0.17
Other countries	1.33	1.21	1.23	3.14	2.86	1.51
Other (c)	0.48	0.94	1.74	0.29	0.24	0.02
Total, Overseas	100.00	100.00	100.00	100.00	100.00	100.00

(a) Statistics relating to trade with the Australian Capital Territory are included with those of New South Wales. (b) Less than 0.005 per cent. (c) The figures shown for Imports include the items *Australia (re-imported)* and *Origin not known*; those shown for Exports include the items *Destination unknown* and *For orders*.

IMPORTS

The following table shows the value of the principal items of interstate and overseas imports into Western Australia during 1971-72 and 1972-73.

VALUE OF PRINCIPAL IMPORTS INTO WESTERN AUSTRALIA
SELECTED COMMODITIES
(\$'000)

Division	Description	1971-72			1972-73		
		Interstate	Overseas	Total	Interstate	Overseas	Total
00	Animals, live	2,612	131	2,743	4,479	68	4,547
11	Beverages, alcoholic	7,984	1,346	9,330	9,449	1,279	10,728
84	Clothing and clothing accessories (a)	56,595	1,600	58,195	58,667	1,736	60,402
27, 56	Fertilisers, crude and manufactured	41	7,146	7,186	221	9,834	10,055
	Food—						
04	Cereals and cereal preparations	8,364	522	8,886	8,514	453	8,967
06, 07	Confectionery	8,328	138	8,466	8,182	134	8,316
03	Fish and fish preparations	964	2,982	3,946	1,237	4,077	5,315
05	Fruit and fruit preparations	9,484	350	9,834	10,754	285	11,039
01	Meat and meat preparations	3,312	142	3,454	3,228	112	3,340
02	Milk and cream	3,456	(b)	3,456	3,442	8	3,450
05	Vegetables, fresh, preserved or prepared	5,968	684	6,651	6,947	604	7,551
	Other food	30,976	4,227	35,204	32,308	2,971	35,279
85	Footwear, galsters, etc. and parts therefor	10,812	1,103	11,915	12,248	585	12,833
82	Furniture	4,678	488	5,166	4,944	593	5,537
66	Glass and glassware	4,498	1,526	6,024	3,280	1,760	5,040
	Machinery—						
72	Electric machinery, apparatus and appliances—						
	Batteries	3,267	221	3,488	3,250	177	3,427
	Domestic electric—						
	Cooking and heating	5,322	117	5,439	6,011	108	6,119
	Refrigerators and parts	5,965	823	6,788	5,664	675	6,339
	Washing machines and parts	4,169	261	4,430	5,501	463	5,963
	Power machinery and switchgear	14,643	8,387	23,030	10,537	4,579	15,116
	Telecommunication apparatus	20,122	3,522	23,644	20,414	2,382	22,796
	Wire and cable, insulated	11,093	527	11,620	7,318	307	7,626
71	Other than electric—						
	Agricultural—						
	Tractors	990	1,838	2,828	1,711	3,477	5,188
	Other	5,571	259	5,830	8,734	534	9,269
	Excavating, levelling, tamping and boring, for earth, minerals or ores	11,382	14,480	25,862	10,946	7,400	18,346
	Internal combustion engines	5,639	5,513	11,152	6,697	3,727	10,424
	Lifting, handling, loading or unloading	8,174	1,769	9,942	3,486	1,267	4,754
	Office	3,499	1,451	4,950	4,668	1,511	6,179
	Pumps for liquids	3,377	1,378	4,756	3,380	637	4,017
54	Medicinal and pharmaceutical products	17,882	1,016	18,898	19,700	551	20,251
69	Metal manufactures, n.e.i.—						
	Household cooking and heating appliances, non-electric	2,754	227	2,982	1,998	240	2,239
	Metals—						
67	Iron and steel—						
	Pig, ingot and other primary forms	6,961	176	7,137	5,612	139	5,751
	Other	48,954	11,583	60,537	45,016	6,997	52,013
68	Non-ferrous	12,543	532	13,075	13,289	272	13,561
66	Mineral manufactures, non-metallic, n.e.i.	5,863	2,743	8,606	5,528	3,639	9,168
64	Paper, paperboard and manufactures thereof	14,966	5,693	20,659	16,066	6,138	22,203
33	Petroleum and petroleum products	5,472	53,339	58,811	3,736	42,542	46,278
53	Pigments, paints, varnishes, etc.	4,917	209	5,126	6,316	256	6,571
89	Plastic articles, n.e.i.	8,084	382	8,466	8,984	617	9,601
58	Plastic materials, regenerated cellulose and artificial resins	10,219	1,812	12,031	14,273	2,511	16,784
89	Printed matter	6,902	3,488	10,390	8,211	3,354	11,565
86	Scientific, medical, optical and photographic equipment	11,664	3,395	15,059	13,581	3,380	16,960
55	Soaps and cleansing preparations	7,787	148	7,935	8,404	439	8,843
65	Textile yarn, fabrics, made-up articles and related products—						
	Bags and sacks	160	2,030	2,189	123	1,561	1,684
	Fabrics	10,967	4,149	15,116	11,927	4,229	16,156
	Floor coverings	6,719	2,146	8,865	10,153	2,331	12,484
24	Timber	60	2,459	2,519	35	2,451	2,486
12	Tobacco and tobacco manufactures	14,305	508	14,812	16,934	415	17,349
55	Toilet preparations (except soaps)	10,651	37	10,688	10,863	74	10,937
69	Tools for use in the hand or in machines	6,507	2,606	9,113	6,045	2,925	8,970
73	Transport equipment—						
	Road motor vehicles and components	109,138	14,936	124,074	102,801	13,456	116,256
	Other	27,088	29,491	56,579	18,090	16,339	34,428
62	Tyres and tubes	11,698	8,133	19,831	12,004	5,059	17,063
	All other commodities	164,242	69,094	233,338	160,273	55,609	215,883
	TOTAL	787,788	283,263	1,071,051	786,177	227,269	1,013,447

n.e.i. denotes 'not elsewhere included'.

(a) Includes articles of knitted or crocheted fabric.

(b) Less than \$500.

The principal imports from each of the Australian States and the Northern Territory are given in the following table.

VALUE OF PRINCIPAL IMPORTS FROM AUSTRALIAN STATES—SELECTED COMMODITIES
(\$'000)

Division	Description	1971-72	1972-73						Total
		Total	N.S.W. (a)	Vic.	Qld	S.A.	Tas.	N.T.	
00	Animals, live—								
	Cattle (including buffaloes)	798	306	392	121	198	14	1,497	2,528
	Horses	n.a.	158	606	13	317	3	7	1,103
11	Sheep and lambs	471	154	51	....	475	47	....	727
84	Beverages, alcoholic	7,984	1,749	2,658	11	5,000	32	....	9,449
	Clothing and clothing accessories and articles of knitted or crocheted fabric	56,595	20,025	35,750	1,461	1,356	74	....	58,667
	Food—								
04	Cereals and cereal preparations	8,364	3,904	3,889	275	328	117	....	8,514
06, 07	Confectionery	8,328	2,604	3,329	....	302	1,948	....	8,182
05	Fruit and fruit preparations—								
	Dried (except citrus)	1,156	67	569	....	557	6	....	1,199
	Fresh (including citrus, dried)	1,345	1,225	35	681	1,137	2	....	3,081
	Other (including nuts)	7,286	498	3,102	1,748	1,412	123	....	6,884
01	Meat and meat preparations	3,312	281	2,733	169	40	5	....	3,228
02	Milk and cream	3,456	330	3,073	39	(b)	....	....	3,442
	Other food	37,463	8,072	21,394	7,123	2,099	1,395	(b)	40,083
85	Footwear, gaiters, etc. and parts thereof	10,812	3,114	7,509	592	996	37	....	12,248
82	Furniture	4,678	931	2,118	3	1,892	....	....	4,944
66	Glass and glassware	4,498	1,807	1,379	9	84	(b)	(b)	3,280
59	Insecticides, fungicides, etc.	3,361	3,276	488	54	48	....	....	3,866
72	Machinery—								
	Electric machinery, apparatus and appliances—								
	Batteries	3,267	1,898	1,113	....	238	....	....	3,250
	Domestic electric—								
	Cooking and heating	5,322	3,371	2,029	22	588	1	....	6,011
	Refrigerators and parts	6,280	3,348	449	3	1,862	1	....	5,664
	Washing machines and parts	4,501	2,792	448	....	2,261	....	....	5,501
	Power machinery and switchgear	14,643	5,063	3,386	383	1,704	1	....	10,537
	Telecommunication apparatus—								
	Radio broadcast receivers	2,645	1,728	556	3	260	....	....	2,546
	Television receivers	3,657	2,783	815	4	....	....	....	3,601
	Other	13,820	8,251	4,953	178	843	41	....	14,266
	Wire and cable, insulated	11,093	3,145	3,871	11	286	5	....	7,318
	Other	12,026	5,586	5,810	43	652	8	(b)	12,099
71	Other than electric—								
	Agricultural—								
	Tractors	990	482	1,085	95	49	....	....	1,711
	Other	5,571	2,640	4,538	113	1,443	....	....	8,734
	Excavating, levelling, tamping and boring, for earth, minerals or ores	11,382	3,858	6,446	144	491	1	7	10,946
	Other	64,562	23,976	22,251	1,549	6,160	3	2	53,942
54	Medicinal and pharmaceutical products....	17,882	14,393	4,669	14	623	1	....	19,700
	Metals—								
67	Iron and steel—								
	Pig, ingot and other primary forms	6,961	2,988	60	....	2,546	19	....	5,612
	Universals, plates and sheets....	22,422	17,487	898	....	4,597	....	....	18,986
	Other	26,531	20,304	1,500	12	4,113	98	2	26,029
68	Non-ferrous	12,543	9,212	3,042	148	387	500	....	13,289
64	Mineral manufactures, non-metallic, n.e.i. thereof	5,863	3,117	2,265	13	125	8	....	5,528
	Paper, paperboard and manufactures thereof	14,966	4,806	6,808	403	1,904	2,144	....	16,066
33	Petroleum and petroleum products	5,472	662	2,848	4	83	65	74	3,736
53	Pigments, paints, varnishes, etc.	4,917	3,819	2,132	75	290	....	....	6,316
58	Plastic materials, regenerated cellulose and artificial resins	10,219	8,571	5,241	6	455	....	....	14,273
86	Scientific, medical, optical and photographic equipment	11,664	7,699	5,454	205	221	1	....	13,581
55	Soaps and cleansing preparations	7,787	6,959	1,408	2	34	....	....	8,404
65	Textile yarn, fabrics, made-up articles and related products—								
	Fabrics	10,967	4,478	6,426	59	730	234	....	11,927
	Floor coverings	6,719	3,077	6,824	10	72	171	....	10,153
	Other	8,330	3,815	5,488	28	943	98	(b)	10,372
12	Tobacco and tobacco manufactures	14,305	5,213	11,709	....	12	....	....	16,934
55	Toilet preparations (except soaps)	10,651	8,985	1,835	2	41	....	....	10,863
69	Tools for use in the hand or in machines....	6,507	2,552	2,992	63	437	1	(b)	6,045
73	Transport equipment—								
	Road motor vehicles and components	109,138	12,580	54,529	1,281	33,995	410	5	102,800
	Other	27,088	14,792	2,213	439	644	(b)	1	18,090
62	Tyres and tubes	11,698	5,138	6,154	43	670	....	....	12,004
	All other commodities	115,492	58,472	44,037	3,768	9,577	1,464	604	117,919
	TOTAL	787,788	336,541	325,357	21,426	91,577	9,078	2,199	786,177

n.a. denotes 'not available', n.e.i. denotes 'not elsewhere included'.

(a) Includes the value of imports from the Australian Capital Territory.

(b) Less than \$500.

VALUE OF OVERSEAS IMPORTS FROM PRINCIPAL COUNTRIES OF ORIGIN
DIVISIONS OF THE IMPORT COMMODITY CLASSIFICATION: 1972-73
(\$'000)

Division	Description	United Kingdom	Japan	United States of America	Germany, Federal Republic of	Singapore	Canada	Other	Total
00	Live animals	67	....	....	....	....	....	1	68
01	Meat and meat preparations	71	1	(a)	3	(a)	2	35	112
02	Dairy products and eggs	2	....	8	21	....	....	275	306
03	Fish and fish preparations	590	867	69	27	64	153	2,308	4,077
04	Cereals and cereal preparations	190	17	9	8	8	....	221	453
05	Fruit and vegetables	99	37	54	5	10	21	977	1,201
06	Sugar, sugar preparations and honey	78	4	2	(a)	(a)	(a)	52	137
07	Coffee, tea, cocoa and spices and manufactures thereof	19	96	21	(a)	16	....	1,373	1,525
08	Feeding-stuff for animals (excluding unmilled cereals)	3	55	228	1	....	....	262	549
09	Miscellaneous preparations chiefly for food	99	20	14	2	33	2	113	283
10	Beverages	863	7	41	69	(a)	13	291	1,284
11	Tobacco and tobacco manufactures	123	....	1	....	....	....	291	415
21	Hides, skins and fur skins, undressed	1	....	....	....	....	....	(a)	1
22	Oil-seeds, oil nuts and oil kernels	22	(a)	(a)	....	(a)	....	31	53
23	Crude rubber (including synthetic and reclaimed)	1	....	26	7	....	....	89	124
24	Wood, timber and cork	(a)	....	111	(a)	20	....	(b)2,338	2,470
25	Pulp and waste paper .....	....	(a)	....	....	....	132	723	855
26	Textile fibres and their waste	73	8	(a)	(a)	....	....	712	793
27	Crude fertilisers and crude minerals (excluding coal, petroleum and precious stones)	36	333	1,611	9	....	3,202	(c)9,520	14,712
28	Metalliferous ores and metal scrap .....	....	8	(a)	....	....	94	3	105
29	Crude animal and vegetable materials, n.e.i.	290	2	29	6	12	15	789	1,143
32	Coal, coke and briquettes .....	....	....	....	23	....	....	2	26
33	Petroleum and petroleum products	31	13	268	30	9,163	2	33,036	42,542
42	Fixed vegetable oils and fats	18	49	(a)	(a)	6	....	(d)259	332
43	Animal and vegetable oils and fats, processed, and waxes of animal or vegetable origin	1	....	(a)	2	....	....	(a)	3
52	Mineral tar and crude chemicals from coal, petroleum and natural gas	(a)	(a)	28	(a)	....	....	(a)	29
53	Dyeing, tanning and colouring materials....	154	29	107	75	....	13	152	531
54	Medicinal and pharmaceutical products	32	54	4	40	(a)	....	420	551
55	Essential oils and perfume materials; toilet, polishing and cleansing preparations	111	25	361	20	(a)	....	370	887
56	Fertilisers, manufactured	(a)	16	717	143	....	1	320	1,198
57	Explosives and pyrotechnic products	5	2	357	....	....	....	56	420
58	Plastic materials, regenerated cellulose and artificial resins	1,033	287	248	169	81	47	645	2,511
59	Chemical materials and products, n.e.i.	1,333	98	1,276	97	....	6	162	2,971
61	Leather, leather manufactures, n.e.i. and dressed fur skins	63	62	5	1	(a)	3	25	160
62	Rubber manufactures, n.e.i.	1,285	1,692	1,518	200	1	6	1,196	5,899
64	Paper, paperboard and manufactures thereof	379	500	132	164	(a)	2,114	(e)2,848	6,138
65	Textile yarn, fabrics, made-up articles and related products	1,881	2,724	576	242	133	218	3,512	9,286
66	Non-metallic mineral manufactures, n.e.i.	1,076	1,649	260	386	330	21	1,678	5,399
67	Iron and steel	596	4,065	1,910	281	27	(a)	257	7,136
68	Non-ferrous metals	75	35	40	34	....	76	12	272
69	Manufactures of metal, n.e.i.	1,334	1,042	2,089	725	46	13	945	6,195
71	Machinery, other than electric	10,654	4,576	9,842	3,137	14	994	(f)4,259	33,476
72	Electric machinery, apparatus and appliances	4,025	3,443	1,185	577	10	210	1,661	11,110
73	Transport equipment	2,183	10,833	7,694	5,236	10	46	3,792	29,794
81	Sanitary, plumbing, heating and lighting fixtures and fittings	80	70	23	24	(a)	(a)	134	332
82	Furniture	113	81	14	12	66	15	292	593
83	Travel goods, handbags and similar articles	19	100	1	3	13	....	169	305
84	Clothing and clothing accessories and articles of knitted or crocheted fabric....	540	78	12	16	18	....	1,072	1,736
85	Footwear, gaiters and similar articles and parts therefor	117	29	17	8	26	....	389	585
86	Professional, scientific and controlling instruments; photographic and optical goods, watches and clocks	565	368	1,381	416	1	53	949	3,733
89	Miscellaneous manufactured articles, n.e.i.	3,736	1,361	1,013	296	82	31	1,612	8,131
	Other	3,797	2,204	3,172	474	152	219	4,305	14,322
	TOTAL	37,860	36,941	36,473	12,991	10,346	7,724	84,935 (g)	227,269

n.e.i. denotes 'not elsewhere included'.

(a) Less than \$500. (b) Includes Malaysia, \$1.47 million. (c) Includes phosphates from Nauru, \$5.21 million; and Christmas Island (Indian Ocean), \$3.24 million. (d) Includes Kuwait, \$12.6 million; Iraq, \$6.00 million; Qatar, \$5.31 million; Iran, \$4.70 million; and Bahrain, \$2.53 million. (e) Includes New Zealand, \$1.84 million. (f) Includes Sweden, \$1.69 million. (g) Includes an amount of \$44.6 million, representing the value of imports detailed in footnotes (b), (c), (d), (e) and (f).

EXPORTS
QUANTITY AND VALUE OF PRINCIPAL EXPORTS FROM WESTERN AUSTRALIA
SELECTED COMMODITIES: 1972-73

Division	Description	Unit	Interstate		Overseas		Total	
			Quantity	Value	Quantity	Value	Quantity	Value
				\$'000		\$'000		\$'000
00	Animals, live—							
	Cattle (including buffaloes)	number	25,210	1,519	655	142	25,865	1,661
	Sheep and lambs	number	6,734	54	716,292	7,904	723,026	7,959
84	Clothing and clothing accessories and articles of knitted or crocheted fabric	n.a.	n.a.	1,376	n.a.	51	n.a.	1,427
26	Cotton fibre	tonne	1,584	873	3,209	1,481	4,793	2,354
	Food—							
04	Cereals and cereal preparations—							
	Barley, unmilled	tonne	(a)	(b)	454,740	20,543	454,740	20,543
	Flour and meal of wheat or maslin	tonne	233	44	9,565	815	9,798	859
	Oats, unmilled	tonne	95	5	23,534	820	23,629	826
	Wheat, unmilled	tonne	....	....	2,249,934	111,744	2,249,934	111,744
03	Fish and fish preparations—							
	Fresh, chilled or frozen—							
	Prawns	tonne	513	1,592	1,471	5,152	1,984	6,744
	Rock lobster tails	tonne	16	100	3,155	20,819	3,171	20,919
	Other	tonne	146	144	339	658	486	802
	Other fish and fish preparations	tonne	747	600	418	1,479	1,165	2,079
05	Fruit—							
	Fresh—							
	Apples	tonne	5	2	25,417	4,662	25,422	4,664
	Other	n.a.	n.a.	135	n.a.	1,335	n.a.	1,471
06	Honey	tonne	1	1	1,659	1,007	1,660	1,008
01	Meat and meat preparations—							
	Fresh, chilled or frozen—							
	Beef and veal	tonne	50	33	33,275	36,582	33,325	36,614
	Lamb	tonne	59	38	4,795	2,724	4,854	2,762
	Mutton	tonne	190	114	34,809	23,226	34,999	23,341
	Pigmeat	tonne	899	711	6,731	5,671	7,630	6,382
	Other (c)	tonne	720	408	8,306	4,972	9,031	5,380
	Other meat and meat preparations	tonne	464	478	273	181	737	659
05	Vegetables, fresh—							
	Potatoes	tonne	(d) 31	(d) 4	4,880	330	(d) 4,911	(d) 334
	Other	n.a.	n.a.	110	n.a.	1,066	n.a.	1,177
	Other food	n.a.	n.a.	2,990	n.a.	4,063	n.a.	7,053
85	Footwear, gaiters, etc. and parts therefor	n.a.	n.a.	2,216	n.a.	1	n.a.	2,217
82	Furniture	n.a.	n.a.	4,594	n.a.	61	n.a.	4,655
99	Gold mint bullion	kg	200	409	8,536	15,272	8,736	15,681
67	Iron and steel	'000 tonnes	162	11,545	633	24,984	796	36,529
	Machinery—							
72	Electric—							
	Power machinery and switchgear	n.a.	n.a.	692	n.a.	106	n.a.	798
71	Other than electric—							
	Agricultural—							
	Tractors	n.a.	n.a.	4,468	n.a.	21	n.a.	4,489
	Other	n.a.	n.a.	1,146	n.a.	13	n.a.	1,159
	Sorting, screening, crushing, mixing, for earth, stone, ores or other mineral substances	n.a.	n.a.	335	n.a.	138	n.a.	473
	Other	n.a.	n.a.	9,252	n.a.	3,711	n.a.	12,963
28	Ores, metalliferous—							
	Copper	tonne	3,115	1,265	....	....	3,115	1,265
	Ilmenite and leucogene (e)	'000 tonnes	53	579	542	7,117	595	7,696
	Iron	'000 tonnes	4,350	25,331	61,686	394,925	66,036	420,255
	Tin	tonne	180	387	936	1,890	1,116	2,277
64	Paper, paperboard and manufactures thereof	n.a.	n.a.	1,348	n.a.	517	n.a.	1,864
33	Petroleum and petroleum products	n.a.	n.a.	23,442	n.a.	9,787	n.a.	33,229
62	Rubber manufactures, n.e.i.	n.a.	n.a.	262	n.a.	77	n.a.	339
27	Salt	tonne	(f)	(f)	2,791,863	8,040	2,791,863	8,040
21	Skins and hides—							
	Bovine and equine	tonne	975	602	6,354	4,086	7,329	4,688
	Sheep and lamb	n.a.	n.a.	95	n.a.	8,559	n.a.	8,654
	Other	n.a.	n.a.	353	n.a.	250	n.a.	603
41	Tallow	tonne	53	6	29,831	4,149	29,884	4,155
24	Timber—							
	Sleepers, railway	'000 cu m	7	439	30	2,481	38	2,919
	Other	'000 cu m	63	3,310	12	857	75	4,167
73	Transport equipment	n.a.	n.a.	4,638	n.a.	19,222	n.a.	23,859
26	Wool—							
	Degreased (washed, scoured, etc.)	tonne	1,184	2,303	9,162	13,960	10,346	16,264
	Greasy (including silpe)	tonne	5,109	7,380	131,001	197,074	136,110	204,455
	Other	tonne	167	104	1,877	5,185	2,044	5,289
	All other commodities (g)	n.a.	n.a.	41,494	n.a.	174,448	n.a.	215,942
	TOTAL	n.a.	n.a.	159,327	n.a.	1,154,359	n.a.	1,313,686

n.a. denotes 'not applicable'.

n.e.i. denotes 'not elsewhere included'.

(a) Less than 500 tonnes. (b) Less than \$500. (c) Includes edible offals, poultry, rabbits and goat and kangaroo meats. (d) Complete details not available; see footnote (f) on page 542. (e) Excludes overseas exports of beneficiated ilmenite which are not available for publication; included in *All other commodities*. (f) Interstate exports are not available for publication; included in *All other commodities*. (g) See footnotes (e) and (f).

The following table shows the value and proportion of the principal items exported overseas and interstate during 1972-73.

VALUE OF PRINCIPAL EXPORTS FROM WESTERN AUSTRALIA
SELECTED COMMODITIES: 1972-73

Division	Description	Value (\$'000)			Proportion of total (per cent)		
		Interstate	Overseas	Total	Interstate	Overseas	Total
00	Animals, live—						
	Cattle (including buffaloes)	1,519	142	1,661	0.95	0.01	0.13
84	Sheep and lambs	54	7,904	7,959	0.03	0.68	0.61
	Clothing and clothing accessories and articles of						
	knitted or crocheted fabric	1,376	51	1,427	0.86	(a)	0.11
26	Cotton fibre	873	1,481	2,354	0.55	0.13	0.18
	Food—						
04	Cereals and cereal preparations—						
	Barley, unmilled	(b)	20,543	20,543	(a)	1.78	1.56
	Flour and meal of wheat or maslin	44	815	859	0.03	0.07	0.07
	Oats, unmilled	5	820	826	(a)	0.07	0.06
	Wheat, unmilled ....	....	111,744	111,744	....	9.68	8.51
03	Fish and fish preparations—						
	Fresh, chilled or frozen—						
	Prawns	1,592	5,152	6,744	1.00	0.45	0.51
	Rock lobster tails	100	20,819	20,919	0.06	1.80	1.59
	Other	144	658	802	0.09	0.06	0.06
	Other fish and fish preparations	600	1,479	2,079	0.38	0.13	0.16
05	Fruit—						
	Fresh—						
	Apples	2	4,662	4,664	(a)	0.40	0.36
	Other	135	1,335	1,471	0.09	0.12	0.11
06	Honey	1	1,007	1,008	(a)	0.09	0.08
01	Meat and meat preparations—						
	Fresh, chilled or frozen—						
	Beef and veal	33	36,582	36,614	0.02	3.17	2.79
	Lamb	38	2,724	2,762	0.02	0.24	0.21
	Mutton	114	23,226	23,341	0.07	2.01	1.78
	Pigmeat	711	5,671	6,382	0.45	0.49	0.49
	Other (c)	408	4,972	5,380	0.26	0.43	0.41
	Other meat and meat preparations	478	181	659	0.30	0.02	0.05
05	Vegetables, fresh—						
	Potatoes	(d) 4	330	(d) 334	(a) (d)	0.03	(d) 0.03
	Other	110	1,066	1,177	0.07	0.09	0.09
	Other food	2,990	4,063	7,053	1.88	0.35	0.54
85	Footwear, gaiters, etc. and parts therefor	2,216	1	2,217	1.39	(a)	0.17
82	Furniture	4,594	61	4,655	2.88	0.01	0.35
99	Gold mint bullion	409	15,272	15,681	0.26	1.32	1.19
67	Iron and steel (e)	11,545	24,984	36,529	7.25	2.16	2.78
	Machinery—						
72	Electric—						
	Power machinery and switchgear	692	106	798	0.43	0.01	0.06
71	Other than electric—						
	Agricultural—						
	Tractors	4,468	21	4,489	2.80	(a)	0.34
	Other	1,146	13	1,159	0.72	(a)	0.09
	Sorting, screening, crushing, mixing, for						
	earth, stone, ores or other mineral sub-						
	stances	335	138	473	0.21	0.01	0.04
	Other	9,252	3,711	12,963	5.81	0.32	0.99
28	Ores, metalliferous—						
	Copper	1,265	....	1,265	0.79	....	0.10
	Ilmenite and leucoxene (f)	579	7,117	7,696	0.36	0.62	0.59
	Iron	25,331	394,925	420,255	15.90	34.21	31.99
	Tin	387	1,890	2,277	0.24	0.16	0.17
64	Paper, paperboard and manufactures thereof	1,348	517	1,864	0.85	0.04	0.14
33	Petroleum and petroleum products	23,442	9,787	33,229	14.71	0.85	2.53
62	Rubber manufactures, n.e.l.	262	77	339	0.16	0.01	0.03
27	Salt	(g)	8,040	(g) 8,040	(g)	0.70	(g) 0.61
21	Skins and hides—						
	Bovine and equine	602	4,086	4,688	0.38	0.35	0.36
	Sheep and lamb	95	8,559	8,654	0.06	0.74	0.66
	Other	353	250	603	0.22	0.02	0.05
41	Tallow	6	4,149	4,155	(a)	0.36	0.32
24	Timber—						
	Sleepers, railway	439	2,481	2,919	0.28	0.21	0.22
	Other	3,310	857	4,167	2.08	0.07	0.32
73	Transport equipment	4,638	19,222	23,859	2.91	1.67	1.82
26	Wool—						
	Degreased (washed, scoured, etc.)	2,303	13,960	16,264	1.45	1.21	1.24
	Greasy (including silpe)	7,380	197,074	204,455	4.63	17.07	15.56
	Other	104	5,185	5,289	0.07	0.45	0.40
	All other commodities (h)	41,494	174,448	215,942	26.04	15.11	16.44
	TOTAL	159,327	1,154,359	1,313,686	100.00	100.00	100.00

(a) Less than 0.005 per cent. (b) Less than \$500. (c) Includes edible offals, poultry, rabbits and goat and kangaroo meats.
(d) Complete details not available; see footnote (f) on page 542. (e) Principally pig-iron, cast iron, basic shapes and sections.
(f) Excludes overseas exports of beneficiated ilmenite which are not available for publication; included in *All other commodities*.
(g) Interstate exports are not available for publication; included in *All other commodities*. (h) See footnotes (f) and (g).

In the table below, details are given of the value of the principal items exported to other Australian States and Territories.

Quarterly statistics of Western Australia's trade with other Australian States and with overseas countries are published in the *Quarterly Statistical Abstract*. Annual statistics, in greater detail, appear in the publications *Statistics of Western Australia—Trade (Overseas)* and *Statistics of Western Australia—Trade (Interstate and Overseas)*. These publications are compiled and issued by the Western Australian Office of the Australian Bureau of Statistics.

VALUE OF PRINCIPAL EXPORTS TO AUSTRALIAN STATES—SELECTED COMMODITIES
(\$'000)

Division	Description	1971-72	1972-73					
		Total	N.S.W. (a)	Vic.	Qld	S.A.	Tas.	N.T.
29	Animal casings (sausage) and the like	347	177	48	7	6	....	....
00	Animals, live—							
	Cattle (including buffaloes)	1,760	14	2	107	368	....	1,027
	Sheep and lambs	1	45	....	....	9	....	....
84	Clothing and clothing accessories and articles of knitted or crocheted fabric....	1,344	391	532	97	322	4	31
29	Clover seed	136	61	112	....	216	....	....
26	Cotton fibre	1,545	873	....	....	....	....	....
	Food—							
02	Butter, butterfats and oils, n.e.i.	292	....	1	....	....	....	306
06	Confectionery, except chocolate	442	141	295	41	69	14	(b)
03	Fish and fish preparations—							
	Fresh, chilled or frozen	664	502	1,114	13	191	17	(b)
	Other fish and fish preparations	515	298	144	4	153	....	1
01	Meat and meat preparations—							
	Fresh, chilled or frozen	1,714	573	334	7	2	....	387
	Other meat and meat preparations	331	89	8	3	51	....	327
05	Vegetables, fresh—							
	Potatoes (c)	109	....	2	....	....	....	4
	Other	177	....	....	....	104	....	3
	Other food	2,580	660	447	169	807	4	222
85	Footwear, gaiters, etc. and parts therefor	1,491	718	860	402	172	56	9
82	Furniture	3,395	1,264	1,498	938	813	44	37
99	Gold mint bullion	1,622	409	....	....	....	....	....
67	Iron and steel (d)	12,873	2,195	2,325	743	5,165	31	1,087
	Machinery—							
72	Electric—							
	Power machinery and switchgear	579	153	464	27	46	(b)	1
	Other	367	51	185	57	74	1	4
71	Other than electric—							
	Agricultural—							
	Tractors	6,364	1,387	1,173	859	1,049	....	....
	Other	541	556	144	254	192	(b)	(b)
	Sorting, screening, crushing, mixing, for earth, stone, ores or other mineral substances	513	117	41	88	65	8	16
	Other	6,172	4,068	2,412	1,345	1,192	91	144
28	Ores, metalliferous—							
	Copper	858	1,265	....	....	....	....	....
	Ilmenite and leucoxene	538	....	....	....	....	579	....
	Iron	16,038	25,327	4	....	....	....	....
	Tin	358	387	....	....	....	....	....
69	Metal manufactures, n.e.i.—							
	Household equipment of base metals....	27	5	(b)	(b)	18	....	4
	Other	1,572	889	340	156	1,514	51	171
33	Petroleum and petroleum products	29,490	5,320	4,792	817	8,244	587	3,682
62	Rubber manufactures, n.e.i.	364	126	51	9	69	2	3
21	Skins and hides—							
	Bovine and equine	397	40	114	15	433	....	....
	Sheep and lamb	39	....	47	....	47	....	....
	Other	272	147	6	172	28	....	....
24	Timber—							
	Sleepers, railway	565	....	....	....	437	....	2
	Other	2,299	734	477	2	1,802	....	295
73	Transport equipment—							
	Road motor vehicles (e)	807	753	486	965	374	4	21
	Other	1,942	350	579	931	56	58	61
26	Wool—							
	Degreased (washed, scoured, etc.)	308	24	2,279	....	....	....	....
	Greasy (including slip)	4,169	....	6,322	17	1,041	....	....
	Other	22	50	16	....	39	....	....
	All other commodities (f)	32,539	12,499	18,657	2,344	3,870	217	1,112
	TOTAL	138,478	62,660	46,310	10,590	29,040	1,770	8,957
								159,327

n.e.i. denotes 'not elsewhere included'.

(a) Includes the value of exports to the Australian Capital Territory. (b) Less than \$500. (c) Complete details for 1972-73 not available; see footnote (f) on page 542. (d) Principally pig-iron, cast iron, basic shapes and sections. (e) Including components. (f) Includes some principal commodities, details of which are not available for publication separately.

The value of overseas exports from Western Australia to the principal countries of destination in 1972-73 is given in the following table.

VALUE OF OVERSEAS EXPORTS TO PRINCIPAL COUNTRIES OF DESTINATION
DIVISIONS OF THE EXPORT COMMODITY CLASSIFICATION: 1972-73
(\$'000)

Division	Description	Japan	United States of America	United Kingdom	Germany, Federal Republic of	Italy	Singapore	Other	Total
00	Live animals	27	.....	.....	.....	.....	1,674	(a)6,860	8,560
01	Meat and meat preparations	19,823	22,750	10,453	291	147	3,146	(b)16,745	73,356
02	Dairy products and eggs	342	.....	.....	.....	.....	207	268	816
03	Fish and fish preparations	5,028	20,860	654	6	.....	154	1,406	28,108
04	Cereals and cereal preparations	36,000	802	14,870	3,352	3,267	8,431	(c)68,266	134,986
05	Fruit and vegetables .....	.....	34	1,746	788	.....	3,192	1,903	7,662
06	Sugar, sugar preparations and honey	19	13	646	40	.....	85	219	1,021
07	Coffee, tea, cocoa and spices and manufactures thereof .....	.....	.....	.....	.....	.....	.....	3	3
08	Feeding-stuff for animals (excluding unmilled cereals)	1,395	.....	.....	271	.....	69	109	1,845
09	Miscellaneous preparations chiefly for food	1	.....	3	.....	.....	1	50	55
11	Beverages	11	16	25	(d)	1	69	240	363
12	Tobacco and tobacco manufactures .....	.....	.....	(d)	.....	.....	.....	24	24
21	Hides, skins and fur skins, undressed	563	117	720	1,453	1,282	27	(e)8,734	12,895
22	Oil-seeds, oil nuts and oil kernels	940	.....	25	.....	.....	.....	.....	964
24	Wood, timber and cork	11	37	2,481	86	6	.....	716	3,338
25	Pulp and waste paper .....	.....	.....	.....	.....	.....	.....	49	49
26	Textile fibres and their waste	106,576	1,342	10,515	20,545	10,786	.....	(f)67,972	217,736
27	Crude fertilisers and crude minerals (excluding coal, petroleum and precious stones)	8,492	102	1	37	.....	170	893	9,695
28	Metalliferous ores and metal scrap	367,026	7,412	11,303	10,717	10,928	240	(g)35,359	442,986
29	Crude animal and vegetable materials, n.e.i.	285	51	160	91	78	279	1,032	1,976
32	Coal, coke and briquettes	63	.....	(d)	.....	.....	.....	(d)	63
33	Petroleum and petroleum products	2,013	(d)	628	.....	.....	342	(h)6,803	9,787
41	Animal oils and fats	761	62	1,043	338	44	544	2,479	5,271
43	Animal and vegetable oils and fats, processed, and waxes of animal or vegetable origin .....	.....	.....	20	.....	.....	.....	.....	20
53	Dyeing, tanning and colouring materials	152	247	17	.....	.....	338	865	1,618
54	Medicinal and pharmaceutical products .....	.....	.....	(d)	.....	1	1	4	6
55	Essential oils and perfume materials, toilet, polishing and cleansing preparations	1	64	62	24	72	30	91	345
56	Fertilisers, manufactured .....	.....	.....	.....	.....	.....	322	832	1,154
57	Explosives and pyrotechnic products .....	.....	.....	.....	.....	.....	.....	10	10
58	Plastic materials, regenerated cellulose and artificial resins	(d)	.....	171	.....	(d)	(b)44	42	42
59	Chemical materials and products, n.e.i. ....	.....	.....	.....	.....	.....	.....	33	248
61	Leather, leather manufactures, n.e.i. and dressed fur skins	1	(d)	8	4	.....	91	224	328
62	Rubber manufactures, n.e.i.	4	.....	1	.....	.....	1	71	77
64	Paper, paperboard and manufactures thereof .....	.....	.....	(d)	1	.....	206	309	517
65	Textile yarn, fabrics, made-up articles and related products	1	(d)	1	.....	.....	4	11	16
66	Non-metallic mineral manufactures, n.e.i.	76	49	5	85	.....	168	421	804
67	Iron and steel	6,841	6	.....	95	6,065	9	(i)11,969	24,984
68	Non-ferrous metals	1,704	4,736	12,558	11,379	1,124	181	(j)16,450	48,131
69	Manufactures of metal, n.e.i.	56	46	26	25	(d)	148	116	417
71	Machinery, other than electric	29	528	179	2	.....	1,269	1,875	3,883
72	Electric machinery, apparatus and appliances	12	41	24	(d)	.....	78	238	394
73	Transport equipment	3,709	82	34	2	.....	9,859	5,535	19,222
81	Sanitary, plumbing, heating and lighting fixtures and fittings	(d)	.....	3	.....	.....	36	151	190
82	Furniture	(d)	.....	.....	.....	.....	14	47	61
84	Clothing and clothing accessories and articles of knitted or crocheted fabric	2	.....	1	(d)	.....	25	22	51
86	Professional, scientific and controlling instruments; photographic and optical goods, watches and clocks	2	234	40	2	.....	196	95	570
89	Miscellaneous manufactured articles, n.e.i.	15	35	77	(d)	(d)	74	216	417
	Other (k)	26,485	25,893	14,493	62	9	795	21,559	89,294
	TOTAL	588,466	85,559	82,992	49,696	33,808	32,520	281,317	1,154,359

(a) Includes Iran, \$2.91 million; and Kuwait, \$2.91 million. (b) Includes Canada, \$2.71 million; Union of Arab Emirates, \$2.30 million; Greece, \$2.23 million; and Kuwait, \$2.17 million. (c) Includes Arab Republic of Egypt, \$16.5 million; U.S.S.R., \$16.3 million; Malaysia, \$7.30 million; People's Republic of China, \$6.17 million; Taiwan, \$5.40 million; Republic of Korea, \$3.29 million; and Hong Kong, \$2.84 million. (d) Less than \$500. (e) Includes France, \$5.49 million. (f) Includes France, \$16.4 million; U.S.S.R., \$14.1 million; Poland, \$8.02 million; Belgium-Luxembourg, \$5.37 million; Taiwan, \$3.96 million; Yugoslavia, \$2.83 million; Republic of Korea, \$2.81 million; and Netherlands, \$2.31 million. (g) Includes Canada, \$8.61 million; Belgium-Luxembourg, \$6.12 million; Greece, \$5.38 million; France, \$5.32 million; Netherlands, \$4.12 million; and Spain, \$2.92 million. (h) Includes New Zealand, \$3.13 million. (i) Includes People's Republic of China, \$9.93 million. (j) Includes Netherlands, \$8.56 million; and Sweden, \$3.97 million. (k) Includes Division 51—Chemical elements and compounds, details of which are not available for publication. (l) Includes an amount of \$192.3 million, representing the value of exports detailed in footnotes (a), (b), (c), (e), (f), (g), (h), (i) and (j).

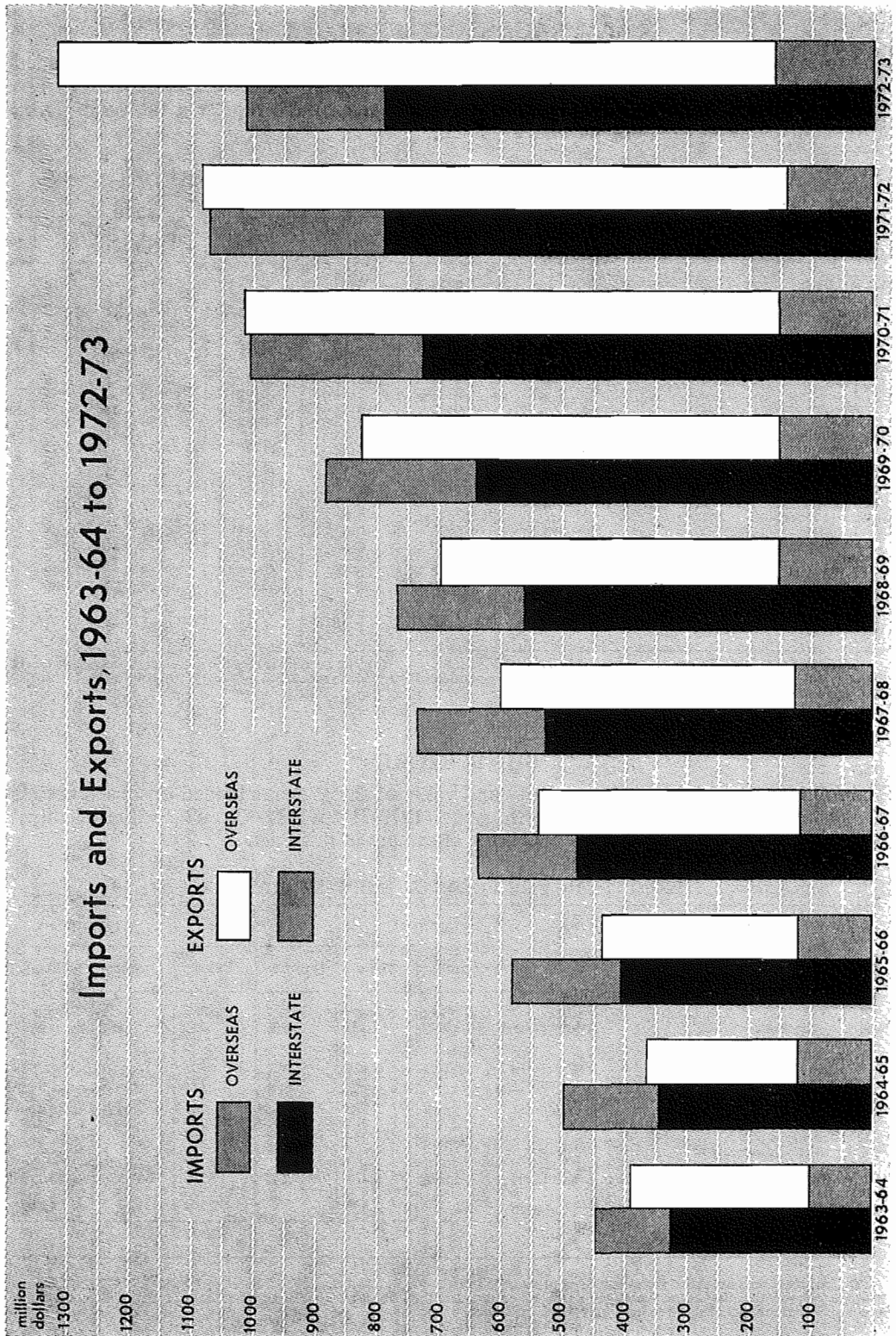
The following table gives a classification of Western Australia's principal export commodities according to their main countries of destination in 1972-73.

VALUE OF OVERSEAS EXPORTS OF PRINCIPAL COMMODITIES
MAIN COUNTRIES OF DESTINATION (a): 1972-73
(\$'000)

Division	Description and destination	Value	Division	Description and destination	Value
04	Food—		28	Ores, metalliferous—	
	Cereals and cereal preparations—			Ilmenite and leucoxene (c)—	
	Barley, unmilled—			United Kingdom	2,206
	Japan	4,511		United States of America	1,781
	Germany, Federal Republic of	3,352		France	1,324
	Korea, Republic of	3,288		Japan	1,091
	Taiwan	3,057		Brazil	248
	Italy	2,812		Iron—	
	United Kingdom	1,484		Japan	339,863
	Norway	892		Italy	10,923
	United States of America	801		Germany, Federal Republic of	10,612
	Vietnam, Republic of	309		United Kingdom	8,704
	Flour of wheat—			Belgium-Luxembourg	5,878
	Mauritius	509		Greece	5,377
	Oats, unmilled—			Netherlands	3,585
	Italy	455		United States of America	3,576
	Wheat, unmilled—			France	3,518
	Japan	30,769		Spain	2,609
	Arab Republic of Egypt	16,534		Tin—	
	Union of Soviet Socialist Republics	16,308		Malaysia	1,582
	United Kingdom	13,357		Spain	308
	Singapore	8,370	33	Petroleum and petroleum products—	
	Malaysia	7,171		New Zealand	3,131
	China, People's Republic of	6,175		Japan	2,013
	Hong Kong	2,737		Fiji	1,569
	Taiwan	2,339		Malaysia	1,158
	Zambia	1,949		United Kingdom	628
	Germany, Democratic Republic of	1,691		Christmas Island (Indian Ocean)	556
	Chile	1,630		Mozambique	354
	Pakistan	1,436		Singapore	342
	Yemen	529	27	Salt—	
	Afghanistan	307		Japan	7,781
	Ireland	306	21	Skins and hides—	
03	Fish, fresh, chilled or frozen—			France	5,455
	Rock lobster tails—			Germany, Federal Republic of	872
	United States of America	20,697		Italy	606
05	Fruit, fresh—			United Kingdom	590
	Apples—		24	Timber—	
	United Kingdom	1,612		United Kingdom	2,481
	Singapore	1,031	26	Wool—	
	Germany, Federal Republic of	788		Degreased (washed, scoured, etc.)—	
	Netherlands	643		United Kingdom	4,705
01	Meat, fresh, chilled or frozen—			Germany, Federal Republic of	3,286
	Beef and veal—			Italy	1,129
	United States of America	21,948		Union of Soviet Socialist Republics	1,050
	United Kingdom	5,270		Japan	726
	Japan	3,631		United States of America	725
	Singapore	1,508		Hong Kong	337
	Greece	996		Iraq	304
	Malta	464		France	303
	Canada	420		Iran	282
	Malaysia	412		Korea, Republic of	270
	Union of Arab Emirates	393		Greasy (including slip)—	
	Saudi Arabia	381		Japan	102,905
	Mutton and lamb—			Germany, Federal Republic of	17,137
	Japan	9,528		France	16,046
	United Kingdom	3,093		Union of Soviet Socialist Republics	13,003
	Canada	2,286		Italy	9,602
	Kuwait	2,003		Poland	8,000
	Union of Arab Emirates	1,815		United Kingdom	5,730
	Greece	1,230		Belgium-Luxembourg	5,232
	Singapore	1,038		Taiwan	3,827
	United States of America	784		Yugoslavia	2,830
	Saudi Arabia	620		Korea, Republic of	2,504
	Iran	596		Netherlands	2,188
	Oman	584		Spain	1,492
	Bahrain	394		India	1,468
	Mauritius	381		Turkey	1,139
	Malaysia	376		Arab Republic of Egypt	845
	Qatar	283		United States of America	617
	Other (b)—			Czechoslovakia	599
	Japan	6,659		Switzerland	563
	United Kingdom	2,091		Hungary	334
	Singapore	536		Portugal	313
	France	290			

(a) See page 436 for total values of overseas exports of the several commodities shown. (b) Comprises pigmeat, edible offals, poultry, poultry livers, rabbits, and goat and kangaroo meat. (c) Excludes overseas exports of beneficiated ilmenite, not available for publication.

Imports and Exports, 1963-64 to 1972-73



AVERAGE EXPORT VALUES

The following table shows the annual average export values, during the five years ended 30 June 1973, of a number of Western Australia's principal export commodities. The figures are based on *total* exports (interstate and overseas) and represent the value f.o.b., or its equivalent, at the point of final shipment.

ANNUAL AVERAGE EXPORT VALUES OF SPECIFIED COMMODITIES (\$)

Description	Unit	1968-69	1969-70	1970-71	1971-72	1972-73
Apples, fresh	kg	0.18	0.20	0.18	0.18	0.18
Cereals and cereal preparations—						
Barley	tonne	42.89	35.76	46.32	40.04	45.18
Oats	"	39.10	34.47	43.08	36.15	34.94
Wheat	"	51.26	47.72	48.88	49.52	49.67
Wheaten flour	"	69.31	72.40	73.41	71.25	87.69
Meat, fresh, chilled or frozen—						
Beef	kg	0.84	0.91	0.87	0.92	1.10
Lamb	"	0.38	0.44	0.42	0.42	0.57
Mutton	"	0.32	0.37	0.38	0.41	0.67
Pork	"	0.88	0.82	0.80	0.80	0.84
Ores, metalliferous—						
Ilmenite	tonne	10.34	10.58	11.78	(a) 12.79	(a) 12.94
Iron (b)	"	8.41	7.78	7.45	7.21	6.40
Manganese	"	20.26	19.25	17.36	(c)	(c)
Potatoes	"	52.35	41.77	54.33	43.19	(d) 67.92
Rock lobster tails	kg	5.64	5.27	6.15	7.19	6.60
Skins and hides—						
Bovine	"	0.33	0.33	0.28	0.32	0.64
Sheep and lamb, with wool	"	0.50	0.51	0.37	0.32	0.78
Timber—						
Railway sleepers	cu m	56.88	62.66	68.08	69.25	77.49
Other (e)	"	57.90	56.87	55.93	58.89	55.66
Wool—						
Greasy (including slip)	kg	1.08	0.98	0.75	0.75	1.50
Degreased (washed, scoured, etc.)	"	1.29	1.36	0.92	0.83	1.57

(a) Excludes values of overseas exports of beneficiated ilmenite. (b) The average values shown relate to overseas exports only. (c) Not available for publication. (d) Not comparable with previous years. See footnote (f) on page 342. (e) Excluding plywood and veneers.

SHIPS' STORES

The following table shows the quantity and value of ships' stores loaded on board vessels at Western Australian ports during the years 1970-71 to 1972-73. The value of ships' stores is excluded from all tables appearing elsewhere in this Part.

EXPORTS IN THE FORM OF SHIPS' STORES (a)

Description	Unit	1970-71		1971-72		1972-73	
		Quantity	Value	Quantity	Value	Quantity	Value
Beverages, alcoholic	'000 litres	957	\$'000 236	908	\$'000 252	608	\$'000 178
Foodstuffs—							
Fresh, chilled or frozen—							
Eggs in shell	'000 dozen	195	127	161	106	89	58
Fish	tonne	105	189	82	145	74	117
Fruit .....	"	.....	118	.....	115	.....	55
Meat	tonne	864	780	820	741	654	666
Vegetables .....	"	.....	267	.....	225	.....	149
All other foodstuffs .....	"	.....	394	.....	509	.....	687
Fuel for ships and aircraft—							
Coal	tonne	77	3	.....	.....	66	2
Other (bunker oil, etc.)	'000 litres	743,850	16,128	840,148	17,548	665,568	13,115
Lubricants .....	"	.....	490	.....	575	.....	566
All other ships' stores .....	"	.....	1,830	.....	2,262	.....	1,949
Total	n.a.	n.a.	20,561	n.a.	22,477	n.a.	17,542

n.a. denotes 'not applicable'.

(a) Includes interstate ships' stores valued at \$1,895,626 in 1970-71, \$1,250,360 in 1971-72 and \$1,355,247 in 1972-73. Where the value of overseas ships' stores recorded in any one entry is less than \$250, the stores concerned are not allocated according to commodity, but are included in the item *All other ships' stores*.

OVERSEAS IMPORTS AND EXPORTS

The following table shows the total value of Australia's overseas imports and exports, together with the proportion handled at Western Australian ports, during each of the years 1963-64 to 1972-73.

OVERSEAS TRADE OF AUSTRALIA—TOTAL VALUE AND PROPORTION HANDLED AT WESTERN AUSTRALIAN PORTS

Year	Value of Australian trade (\$'000)			Proportion handled at Western Australian ports (per cent)		
	Imports	Exports	Total	Imports	Exports	Total
1963-64	2,372,658	2,782,460	5,155,118	5.13	10.30	7.92
1964-65	2,904,703	2,651,449	5,556,152	5.29	9.17	7.14
1965-66	2,939,492	2,720,953	5,660,445	5.98	11.55	8.66
1966-67	3,045,341	3,024,158	6,069,499	5.23	13.93	9.57
1967-68	3,264,473	3,044,675	6,309,148	6.34	15.61	10.81
1968-69	3,468,505	3,374,263	6,842,768	5.87	16.19	10.96
1969-70	3,881,227	4,137,222	8,018,449	6.24	16.32	11.44
1970-71	4,150,028	4,375,757	8,525,785	6.71	19.71	13.38
1971-72	4,008,365	4,896,381	8,904,746	7.07	19.33	13.81
1972-73	4,120,727	6,214,822	10,335,549	5.52	18.57	13.37

CUSTOMS AND EXCISE

The Customs Tariff

The first Commonwealth Customs Tariff was introduced on 8 October 1901, from which date uniform duties came into effect throughout Australia. The Australian Customs Tariff has been developed in conformity with the policy of protecting economic and efficient Australian industries and of granting preferential treatment to imports from certain countries. Duties are imposed on some goods, generally of a luxury nature, for revenue purposes. Customs collections are a major source of revenue, but in its protective character the tariff has an important influence on the Australian economy.

The Australian Customs Tariff currently in use was introduced on 1 July 1965. The nomenclature used in the Tariff is that of the Convention on Nomenclature for the Classification of Goods in Customs Tariffs, an international agreement signed at Brussels on 15 December 1950. The system of naming established by the Convention has come to be known as the 'Brussels Nomenclature'.

The particulars appearing in the tables in this section have been extracted from the bulletin *Overseas Trade* published annually by the Commonwealth Statistician, Canberra. The bulletin contains details showing, for each State and Territory, a dissection of customs revenue according to Customs Tariff Division, and excise revenue according to Excise Tariff Item and rate of duty.

CUSTOMS AND EXCISE—GROSS COLLECTIONS IN WESTERN AUSTRALIA (a)
(\$'000)

Tariff	1968-69	1969-70	1970-71	1971-72	1972-73
Customs duty (a)	21,202	24,649	32,262	30,072	25,714
Excise duty—					
Petroleum products	24,656	26,743	34,372	41,997	44,405
Spirits, potable	1,163	1,252	1,300	1,473	1,592
Tobacco, cigars, cigarettes, etc.	15,250	17,258	20,536	22,939	25,720
Other (b)	28,220	31,384	32,770	35,473	34,336
Total, excise (a) (b)	69,289	76,637	88,978	101,883	106,054
GRAND TOTAL (b)	90,490	101,286	121,240	131,955	131,768

(a) For net collections see page 295.

(b) Includes excise on beer, playing cards and matches, details of which are not available for publication.

The following table shows the rates of excise duty applying to certain commodities during the year 1972-73, the quantities of goods excised in Western Australia and Australia at those rates, and the gross amounts of revenue collected. For a more detailed analysis, including particulars for each State and Territory, the reader is referred to the annual bulletin *Overseas Trade* to which reference is made earlier in this section.

The figures shown in the table refer to amounts *collected* in Western Australia. It is important to note that excise duty levied on a particular commodity may have been paid in a State other than that in which it is consumed. For this reason the amounts shown for Western Australia do not necessarily represent the duty paid in respect of Western Australian consumption.

**EXCISE DUTY—GROSS COLLECTIONS CLASSIFIED ACCORDING TO COMMODITY
WESTERN AUSTRALIA AND AUSTRALIA: 1972-73**

Commodity	Unit of quantity	Rate of duty per unit of quantity	Western Australia		Australia	
			Quantity	Gross collections	Quantity	Gross collections
		\$	'000 units	\$'000	'000 units	\$'000
Alcoholic beverages—						
Beer	litre	0.2528	(a)	(a)	1,654,392	418,775
Spirits (potable)—						
Brandy	1 al	3.08	277	854	3,762	11,588
Gin	"	4.35	36	154	754	3,278
Whisky	"	4.27	38	163	1,071	4,571
Rum	"	4.35	20	88	1,391	6,069
	"	4.39			23	100
Liqueurs	"	4.31	15	64	367	1,581
	"	4.70	(b)		1	24
Vodka	"	4.31	41	178	560	2,416
Flavoured spirituous liquors	"	4.31	21	91	206	887
Other	"	4.70	(b)	(b)	(b)	1
Grape wine for commercial purposes	litre	(c) 0.055	2,353	129	60,912	3,354
Tobacco, cigars, cigarettes, etc.—						
Tobacco, manufactured	kg	1.52	4	7	7	10
	"	5.78			10	57
	"	5.93	238	1,411	2,630	15,595
Cigars, machine-made	"	9.59	10	94	119	1,145
Cigarettes, machine-made	"	11.464	2,104	24,120	27,159	311,353
Cigarette papers and tubes	60 papers or tubes	0.0145	6,117	89	58,374	846
Petroleum products—						
Gasoline—						
Aviation	litre	0.0320	314	10	48,979	1,570
	"	0.0380			81	3
Other	"	0.0380	1,014,648	38,607	11,152,476	424,351
Aviation turbine kerosene	"	0.0284	73,539	2,089	779,619	22,141
Diesel fuel	"	0.0385	96,068	3,699	1,091,960	42,039
Playing cards	doz packs	1.00	(a)	(a)	148	148
Matches	10,000	0.75	(a)	(a)	36,085	2,710
Coal—						
Home consumption	tonne	0.043	1,170	50	23,715	1,020
Export	"	0.043			23,543	1,012
Canned fruit	dozen					
	containers	0.0062			154	1
	"	0.0125			118	1
	"	0.025	10	(b)	2,434	61
	"	0.0375				(b)
	"	0.05	41	2	4,346	217
	"	0.175	1	(b)	173	29
Other	n.a.	n.a.	n.a.	(d) 34,154	n.a.	2,278
Total, Gross collections	n.a.	n.a.	n.a.	106,054	n.a.	1,279,232

n.a. denotes 'not applicable'.

(a) Not available for publication. (b) Less than 500. (c) Excise duty on this item abolished 7 December 1972. (d) Includes excise duty paid on beer, playing cards and matches; see footnote (a).

Chapter IX—continued

Part 2—Internal Trade

CENSUSES OF WHOLESALE, RETAIL AND SELECTED SERVICE ESTABLISHMENTS

The Australian Standard Industrial Classification, or 'ASIC', which is described on pages 354-5, includes internal trade in Division F, 'Wholesale and Retail Trade'. Wholesale trade is described in ASIC as the re-sale (as agent or principal) of new or used goods to retailers or other wholesalers, or to institutional, government, professional or business users. Retail trade is described as the re-sale of new or used goods to final consumers for personal or household consumption.

Statistics of internal trade in Western Australia are now mainly derived from the programme of integrated economic censuses which was introduced in 1968-69 and is described in more detail on page 355.

CENSUS OF WHOLESALE ESTABLISHMENTS

The first Census of Wholesale Establishments was conducted in 1968-69 and detailed statistics for Western Australia were published in the bulletin *Economic Censuses 1968-69: Wholesale Establishments (Final), Western Australia*. Bulletins relating to each of the other States and Territories and Australia as a whole were also published. The data items were classified variously to each industry class within Sub-division 46-47 'Wholesale Trade' of ASIC; to broad types of operation (i.e. primary produce dealers or agents, wholesale merchants, manufacturers' sales branches holding stocks, commission agents or brokers, petroleum distributors, or repairers and lessors of machinery and equipment; to area (i.e. local government areas and Statistical Divisions) and to size of establishment, based on wholesale sales.

The table below shows details for the major variables collected in the Census of Wholesale Establishments, 1968-69, classified by industry class.

WHOLESALE ESTABLISHMENTS
DETAILS OF OPERATIONS BY INDUSTRY CLASS: 1968-69 (a)

Industry class	Number of establishments operating at 30 June 1969	Persons employed (b)	Salaries and wages (c)	Turnover	Stocks at 30 June 1969	Purchases, transfers in and selected expenses	Value added	Wholesale sales	
								On own account (including transfers out)	On commission (d)
General wholesalers	57	1,308	\$m 3.2	\$m 41.6	\$m 6.8	\$m 36.0	\$m 6.7	\$m 39.9	\$m 20.7
Woolselling brokers, stock and station agents and farm suppliers	297	3,904	11.1	113.7	8.7	89.4	24.6	91.3	248.5
Wool buyers and farm products wholesalers n.e.c.	121	751	2.3	127.7	9.2	119.6	9.0	125.2	85.4
Petroleum and petroleum products wholesalers	265	2,102	6.8	153.9	11.0	121.2	32.8	131.6	133.9
Minerals, metals and chemicals wholesalers—									
Iron and steel	26	406	1.4	32.7	5.4	29.2	4.7	32.3	7.8
Metal scrap	30	220	0.5	6.1	0.9	5.1	1.4	6.1	....
Metals and minerals n.e.c.	10	63	0.2	1.4	0.1	1.0	0.4	1.1	5.9
Chemicals and allied products n.e.c.	28	145	0.4	8.1	1.8	6.8	1.4	7.9	1.6
Total	94	834	2.5	48.2	8.2	42.0	8.0	47.4	15.3

For footnotes, see end of table.

n.e.c. denotes 'not elsewhere classified'

WHOLESALE ESTABLISHMENTS
DETAILS OF OPERATIONS BY INDUSTRY CLASS: 1968-69 (a)—continued

Industry class	Number of establishments operating at 30 June 1969	Persons employed (b)	Salaries and wages (c)	Turnover	Stocks at 30 June 1969	Purchases, transfers in and selected expenses	Value added	Wholesale sales	
								On own account (including transfers out)	On commission (d)
			\$m	\$m	\$m	\$m	\$m	\$m	\$m
Machinery and equipment wholesalers—									
Agricultural and construction machinery	295	3,018	8.0	110.8	26.9	91.6	21.3	99.7	11.9
Tyres and motor vehicle parts	85	1,623	3.9	35.4	10.3	27.0	10.5	32.3	5.5
Professional and scientific equipment	23	212	0.5	4.6	1.1	3.6	1.2	4.4	0.4
Business machines, including computers	44	753	2.4	10.8	2.1	5.4	5.4	7.3	....
Electrical and electronic equipment n.e.c.	78	1,483	3.9	38.7	6.7	31.7	7.7	37.4	6.7
Industrial machinery and equipment n.e.c.	136	1,575	4.8	56.5	12.8	45.2	13.3	53.3	7.6
Total	661	8,664	23.5	256.8	59.8	204.4	59.4	234.5	32.2
Building materials and supplies wholesalers—									
Timber wholesalers	45	970	2.8	30.4	4.7	23.8	6.6	30.1	0.9
Builders hardware and materials n.e.c.	325	3,492	9.0	90.6	12.2	73.5	19.1	84.8	19.4
Total	370	4,462	11.8	121.1	16.9	97.4	25.8	114.9	20.3
Wholesalers of household appliances and hardware, furniture—									
Household appliances, radio and T.V.	50	909	2.7	35.0	4.6	27.6	8.0	32.2	12.5
China, glassware and domestic hardware	39	176	0.4	3.8	0.6	3.0	1.0	3.6	2.9
Furniture and floor coverings	41	232	0.6	8.2	1.2	6.7	1.5	7.6	9.9
Total	130	1,317	3.6	47.1	6.4	37.3	10.6	43.4	25.4
Clothing, footwear and textile wholesalers n.e.c.—									
Men's and boys' clothing	41	230	0.5	7.0	0.6	5.5	1.4	6.4	11.0
Women's, girls and infants' clothing	48	306	0.6	8.9	1.6	7.3	1.6	8.3	11.5
Footwear	15	74	0.1	1.2	0.1	0.9	0.4	0.9	5.4
Textile and textile products n.e.c.	66	550	1.3	13.5	2.9	11.2	2.8	12.5	11.5
Total	170	1,160	2.5	30.6	5.2	24.8	6.2	28.0	39.4
Food, beverages and tobacco products wholesalers—									
Meat	39	337	0.8	48.9	3.6	45.9	4.0	48.4	6.1
Poultry, smallgoods and dairy products	38	214	0.6	14.2	0.5	12.9	1.4	13.7	5.0
Fruit and vegetables	90	1,080	2.7	38.9	0.9	33.5	5.2	36.1	17.6
Fish	39	880	2.0	49.9	4.1	45.6	5.4	48.6	0.5
Eggs	9								
Confectionery and soft drinks	25	262	0.7	9.3	0.9	8.1	1.5	9.2	1.3
Beer, wine and spirits	20	300	0.8	15.3	1.5	12.7	2.9	14.9	0.5
Cigarettes, cigars and tobacco products	6	267	0.9	13.9	1.1	12.5	1.8	13.1	8.3
Groceries and food n.e.c.	93	1,455	3.5	68.8	7.0	58.6	10.7	67.0	12.2
Total	359	4,795	11.9	259.3	19.6	229.7	33.0	251.0	51.5
Other wholesalers—									
Photographic equipment and supplies	16	156	0.4	4.5	0.6	3.0	1.6	4.2	0.6
Watches, clocks and jewellery	25	279	0.5	6.4	1.4	5.1	1.6	5.9	4.2
Toys and sporting goods	26								
Books, periodicals, paper, and paper products	72	771	1.9	19.9	3.7	16.3	3.9	18.4	6.0
Pharmaceutical and toilet preparations	86	847	2.1	25.6	3.0	20.5	5.4	24.8	6.6
Wholesalers n.e.c.	201	842	1.5	15.4	1.8	10.9	4.8	12.1	4.1
Total	426	2,895	6.5	71.8	10.6	55.7	17.3	65.4	21.5
Total wholesale trade	2,950	32,192	85.6	1,271.8	162.4	1,057.7	233.3	1,172.7	694.0

(a) See letterpress immediately preceding table. (b) At the end of June 1969; includes working proprietors. (c) Excludes amounts drawn by working proprietors. (d) Outlay on fixed tangible assets less disposals.

Commodity Statistics

Details of wholesale (and retail) sales of groups of commodities were collected in the 1968-69 Integrated Economic Censuses. It will be noted, however, that the commodity groupings in the retail and wholesale censuses are, in most cases, not identical, and direct comparison is not possible. In addition, the retail and wholesale sales tables differ in scope in that the retail sales figures include sales by mining, manufacturing, and electricity and gas establishments, whereas the wholesale sales tables exclude them.

Wholesale sales were defined as the resale of new and used goods to retailers or other wholesalers, or to institutional (including government), professional or other business users (including builders and farmers). The next table shows wholesale sales made by wholesale and retail and selected service establishments which operated during 1968-69. Data for wholesale sales are not free of duplication, in that they may include, for example, sales of the same goods from wholesaler to wholesaler and wholesaler to retailer, respectively. Wholesale sales on commission by agents are not included in the table.

Total wholesale sales on own account for Australia as a whole amounted to \$15,196.9 million.

INTEGRATED ECONOMIC CENSUSES, 1968-69
VALUE OF WHOLESALE SALES ON OWN ACCOUNT BY COMMODITY ITEM (a)
(\$'000)

Commodity item	Wholesale sales on own account (a)	Commodity item	Wholesale sales on own account (a)
Agricultural and pastoral products and supplies—		Vehicles and transport equipment—continued	
Livestock	2,631	Tyres and wet cell batteries	13,437
Wool	91,781	Other (aircraft, boats, etc.)	4,846
Hides, skins, raw furs, leather and tallow	9,898		
Wheat and other cereal grains	23,575	Household appliances, furniture, etc.—	
Other farm products, n.e.i.	972	Household appliances	33,450
Farm and garden supplies	77,545	China, glassware, kitchenware, etc.	6,066
		Garden equipment	954
Metals and minerals—		Furniture, mattresses and blinds	2,181
Iron and steel	37,170	Floor coverings	5,597
Scrap metal	5,274		
Other metals and minerals	5,782	Clothing, footwear and textile products—	
Machinery and equipment including parts—		Men's and boys' clothing	7,917
Agricultural machinery and implements	63,610	Women's, girls' and infants' clothing	8,249
Construction and earthmoving machinery	39,338	Footwear	1,462
Industrial machinery for use in manufacturing, mining, etc.	54,974	Textiles and textile products, n.e.i.	10,780
Machinery and equipment for commercial and service establishments	7,475		
Professional and scientific equipment	4,740	Foodstuffs—	
Business machines, including computers	7,115	Meat	38,358
Electrical and electronic equipment, n.e.i.	29,190	Dairy products, smallgoods and poultry	15,036
Building materials and supplies—		Eggs and egg pulp	(b)
Timber, plywood and veneers	30,803	Fresh fruit and vegetables	32,736
Glass	4,351	Fish	38,815
Other basic building materials	25,633	Confectionery	10,792
Builders' hardware and supplies	80,421	Groceries—Food lines only	50,245
Pharmaceuticals, toiletries and chemicals—		Tea	3,121
Chemicals and allied products, n.e.i.	9,068	Coffee	2,440
Medical and pharmaceutical products	15,877	Other food	1,545
Toiletries, perfumes and cosmetics	5,516		
Soap and detergents	3,710	Beverages and tobacco products—	
Petroleum, petroleum products and fuel—		Soft drinks	1,134
Petroleum and petroleum products	129,420	Wine and brandy	7,417
Liquefied petroleum gas	1,403	Beer and other spirits	7,512
Coal, coke, briquettes and charcoal		Cigarettes and other tobacco products	17,012
Vehicles and transport equipment—		Miscellaneous—	
Motor vehicles	36,224	Books, periodicals and other printed matter	4,821
Motor cycles and scooters	(b)	Paper, paper products and stationery	14,631
Motor vehicle parts, accessories and engines	21,927	Photographic goods	4,699
		Watches, clocks, jewellery, etc.	2,322
		Sporting goods and bicycles	3,984
		Toys and games	2,776
		Fancy goods, gifts and souvenirs	2,191
		Secondhand goods, excluding motor vehicles	2,627
		Goods not included above	34,513
		Total	1,225,797

n.e.i. denotes 'not elsewhere included'.

(a) See letterpress immediately preceding table. (b) Not available for publication.

Australian Summary

As mentioned on page 445, detailed results of the first Census of Wholesale Establishments conducted in 1968-69 were published for Australia as a whole and for each of the other States and Territories. A summary of the operations of wholesale establishments in Australia, as revealed by the census, follows.

The number of wholesale establishments operating in Australia during 1968-69 totalled 34,613. Persons employed and salaries and wages paid amounted to 358,129 and \$1,043.3 million, respectively. Turnover in 1968-69 was \$15,885.0 million and purchases, transfers in and selected expenses \$13,522.4 million. Value added totalled \$2,758.8 million. Sales or purchases on commission amounted to \$7,005.7 million, stocks at 30 June 1969 \$2,339.2 million and fixed capital expenditure \$189.6 million.

CENSUSES OF RETAIL AND SELECTED SERVICE ESTABLISHMENTS

Five retail censuses had been conducted prior to the inclusion of a Census of Retail and Selected Service Establishments in the system of integrated economic censuses in 1968-69. These earlier censuses related to the years 1947-48, 1948-49, 1952-53, 1956-57 and 1961-62 and covered (i) the retail trading activities of all establishments selling to the general public from fixed premises such as shops, rooms, kiosks and yards and (ii) the service activities of establishments such as motor repair workshops, hairdressers, boot repairers, cafes and restaurants. Licensed clubs and laundries and dry cleaners were included in collections supplementary to retail censuses from 1952-53 onwards and motion picture theatres were included in collections supplementary to the 1956-57 and 1961-62 retail censuses. Statistics from these censuses were published in bulletins for each State and Territory and for Australia as a whole. The censuses were also used to provide a framework for conducting quarterly sample surveys of retail sales (see page 452).

The 1968-69 Census of Retail and Selected Service Establishments included all establishments in Sub-division 48: 'Retail Trade' of ASIC and establishments from selected industry classes in Division L: 'Entertainment, Recreation, Restaurants, Hotels and Personal Services'. The selected industry classes were 9113 Motion Picture Theatres; 9211 Cafes and Restaurants; 9212 Licensed Hotels, Motels and Wine Saloons; 9221 Licensed Bowling Clubs; 9222 Licensed Golf Clubs; 9223 Licensed Clubs n.e.c.; 9310 Laundry and Dry Cleaning Services; 9321 Men's Hairdressing; and 9322 Women's Hairdressing and Beauty Salons.

Since the 1968-69 Census was based on definitions from the ASIC it differed from previous censuses in that it was restricted to establishments primarily engaged in retailing or the selected services and excluded the retailing or service activities of other types of establishments (e.g. wholesalers, manufacturers). The use of ASIC also involved another change in that all the activities of each establishment included in the census were measured, including non-retail or non-service activities, whereas in previous censuses only the retail or service activities were included. For example, for a retail establishment also engaged in wholesaling, all employees were included in the 1968-69 Census whereas in previous censuses the employees engaged in wholesaling would have been excluded.

Detailed results of the 1968-69 Census of Retail and Selected Service Establishments were published in *Economic Censuses: 1968-69, Retail Establishments and Selected Service Establishments* in four parts as follows: *Details of Operations by Industry Class and Area*, *Industry and Commodity Details for Statistical Retail Areas*, *Industry and Commodity Details by Size of Establishment*, and *Commodity Sales*.

Bulletins were also published for each State and Territory and for Australia as a whole. The items were classified variously to each industry class within Sub-division 48 of ASIC and each of the relevant classes in Division L, to area (i.e., local government area, Statistical Retail Area and Statistical Divisions), and to size of establishment based on retail sales or turnover.

A further retail census also based on ASIC principles was conducted for the year 1973-74 but results are not available at time of publication of this Year Book. Details are expected to be published in September 1975.

The following table shows final figures by industry class for the major variables collected in the Census of Retail and Selected Service Establishments, 1968-69. Direct comparisons with figures from previous retail censuses and from retail surveys are not possible due to changes in units, scope and items of data.

RETAIL ESTABLISHMENTS AND SELECTED SERVICE ESTABLISHMENTS
DETAILS OF OPERATIONS BY INDUSTRY CLASS: WESTERN AUSTRALIA, 1968-69 (a)

Industry class	Number of establishments operating at 30 June 1969	Persons employed (b)	Salaries and wages (c)	Turnover	Stocks at 30 June 1969	Purchases, transfers in and selected expenses	Value added	Retail sales
			\$m	\$m	\$m	\$m	\$m	\$m
RETAIL ESTABLISHMENTS—								
Department, variety and general stores—								
Department stores	20	5,853	11.4	82.4	11.5	60.5	21.0	74.7
Variety and general stores	262	3,890	6.0	56.1	7.7	43.7	12.9	49.1
Total	282	9,743	17.4	138.5	19.2	104.2	34.0	123.7
Food stores—								
Supermarkets	55	1,330	2.3	45.2	2.6	39.1	6.3	44.5
Grocers and tobacconists	1,439	5,657	5.8	116.7	8.3	101.5	16.5	113.7
Butchers	707	2,621	4.2	42.4	0.4	31.7	10.8	41.3
Fruit and vegetable stores	260	1,243	1.1	14.8	0.3	11.7	3.2	14.6
Liquor stores	80	334	0.4	11.0	0.7	9.3	1.8	10.6
Confectionery and soft drink stores	490	1,730	1.0	13.1	0.5	9.8	3.4	12.0
Fish, chip and hamburger shops	246	869	0.5	6.8	0.1	4.7	2.1	6.5
Bread and cake shops	111	560	0.7	3.8	0.1	2.4	1.5	3.7
Total	3,388	14,344	16.1	253.8	13.1	210.2	45.5	246.9
Bread and milk vendors—								
Bread vendors	7	68	0.2	0.9	(d)	0.7	0.2	0.5
Milk vendors	298	773	0.2	11.3	(d)	9.4	1.9	11.1
Total	305	841	0.4	12.3	(d)	10.1	2.2	11.6
Clothing, fabrics and furniture stores—								
Furniture and floor covering stores	144	855	2.0	21.8	3.1	16.8	5.3	21.3
Fabrics and household textile stores	122	477	0.6	5.8	1.5	4.3	1.7	5.7
Men's and boys' wear stores	225	1,124	1.7	16.7	3.8	11.9	4.9	16.5
Women's, girls' and infants' wear stores	488	2,192	2.8	27.0	5.5	20.2	7.5	26.9
Footwear stores	109	965	1.4	12.9	3.3	9.4	3.6	11.9
Shoe repairers	79	138	0.1	0.7	(d)	0.2	0.5	0.1
Total	1,167	5,751	8.7	84.8	17.3	62.9	23.6	82.5
Household appliance and hardware stores—								
Household appliance stores.....	221	1,333	3.3	38.2	4.7	29.8	9.1	34.1
Household electric appliance repairers	88	556	1.2	4.0	0.3	1.7	2.3	0.5
China, glassware and domestic hardware stores	78	263	0.3	3.7	0.8	2.8	1.0	3.0
Watchmakers and jewellers	151	593	0.9	6.9	2.1	4.5	2.7	5.9
Musical instrument and record stores	47	128	0.1	1.6	0.3	1.1	0.6	1.4
Total	585	2,873	5.8	54.3	8.2	39.8	15.6	44.9
Motor vehicle dealers, petrol and tyre retailers—								
New motor vehicle dealers and motor vehicle repairers n.e.c.	607	6,515	15.1	232.7	19.7	189.8	43.8	161.0
Used motor vehicle and parts dealers	197	1,033	2.9	55.4	5.5	47.0	9.1	53.1
Tyre and battery retailers and tyre retreaders	134	988	2.6	22.5	2.9	16.7	6.0	16.7
Service stations	803	3,633	4.7	60.9	2.1	47.9	13.3	50.6
Smash repair workshops	333	1,740	2.9	12.0	0.3	5.6	6.5	0.3
Motor cycle dealers	28	140	0.2	2.4	0.5	1.8	0.7	1.7
Boat and caravan dealers	55	284	0.6	10.6	1.5	9.1	1.9	9.2
Total	2,157	14,333	29.0	396.5	32.6	317.8	81.2	292.5
Other retailers—								
Pharmacies	391	1,808	2.6	24.4	4.0	16.4	8.4	24.0
Photographic equipment stores	27	105	0.1	1.6	0.3	1.2	0.5	1.5
Sporting goods, bicycle and toy shops	124	361	0.3	4.3	1.0	3.1	1.3	3.8
Newsagents, stationers and book-sellers	376	1,530	1.2	18.1	2.6	14.0	4.5	17.4
Antique and second hand goods dealers	127	287	0.1	1.8	0.4	1.1	0.8	1.7
Nurserymen and florists	78	258	0.2	1.3	0.1	0.8	0.5	1.2
Retailers n.e.c.	169	468	0.4	3.2	0.4	1.9	1.4	2.6
Total	1,292	4,817	5.0	54.7	8.8	38.6	17.4	52.3
Total, Retail establishments	9,176	52,702	82.4	995.0	99.2	783.6	219.4	854.4

RETAIL ESTABLISHMENTS AND SELECTED SERVICE ESTABLISHMENTS
DETAILS OF OPERATIONS BY INDUSTRY CLASS: WESTERN AUSTRALIA, 1968-69 (a)
—continued

Industry class	Number of establishments operating at 30 June 1969	Persons employed (b)	Salaries and wages (c)	Turnover	Stocks at 30 June 1969	Purchases, transfers in and selected expenses	Value added	Retail sales
			\$m	\$m	\$m	\$m	\$m	\$m
SELECTED SERVICE ESTABLISHMENTS—								
Motion picture theatres	125	954	1.3	6.1	(d)	2.3	3.7	0.8
Restaurants and licensed hotels—								
Cafes and restaurants	301	2,959	3.2	14.6	0.3	7.7	7.0	2.7
Licensed hotels, motels, wine saloons	502	7,178	13.5	84.2	2.9	51.5	33.1	70.5
Total	803	10,137	16.7	98.8	3.1	59.2	40.1	73.2
Licensed clubs—								
Licensed bowling clubs	91	333	0.8	3.7	0.1	2.2	1.5	3.2
Licensed golf clubs	50	265	0.5	1.9	0.1	0.9	1.1	1.1
Licensed clubs n.e.c.	111	729	1.5	7.6	0.3	4.5	3.1	6.2
Total	252	1,327	2.7	13.2	0.5	7.5	5.7	10.5
Laundries and dry cleaners	144	1,383	2.0	5.3	0.1	1.3	4.0	(d)
Hairstressing and beauty salons—								
Men's hairstressing	234	474	0.3	1.6	0.1	0.4	1.2	0.4
Women's hairstressing and beauty salons	443	1,972	1.9	4.7	0.1	0.9	3.8	0.1
Total	677	2,446	2.2	6.3	0.2	1.3	5.1	0.5
Total, Selected service establishments	2,001	16,247	25.0	129.7	3.9	71.6	58.6	85.0
Total, Retail and selected service establishments	11,177	68,949	107.3	1,124.7	103.2	855.3	278.0	939.4

n.e.c. denotes 'not elsewhere classified'.

(a) See letterpress immediately preceding table.

(b) At end of June 1969; includes working proprietors and unpaid helpers working at least 15 hours during the week.

(c) Excludes amounts drawn by working proprietors.

(d) Less than \$50,000.

A summary of operations giving final census figures by industry group for Australia appears in the next table.

RETAIL ESTABLISHMENTS AND SELECTED SERVICE ESTABLISHMENTS
SUMMARY OF OPERATIONS: AUSTRALIA, 1968-69 (a)

Industry group	Number of establishments operating at 30 June 1969	Persons employed (b)	Salaries and wages (c)	Turnover	Stocks at 30 June 1969	Purchases, transfers in and selected expenses	Value added	Retail sales
			\$m	\$m	\$m	\$m	\$m	\$m
Retail establishments—								
Department, variety and general stores	2,715	111,748	227.2	1,625.2	249.6	1,212.0	429.9	1,514.9
Food stores	51,938	211,901	245.1	3,274.8	175.4	2,642.5	648.7	3,216.5
Bread and milk vendors	5,459	14,888	11.5	208.4	0.3	164.6	43.8	199.9
Clothing, fabrics and furniture stores	18,751	78,706	125.7	1,126.8	241.4	814.8	328.0	1,097.7
Household appliance and hardware stores	8,524	42,117	87.2	664.9	119.2	463.1	208.5	538.4
Motor vehicle dealers, petrol and tyre retailers	25,540	168,834	356.5	4,256.6	362.0	3,395.2	898.0	3,148.9
Other retailers	17,003	73,238	99.7	878.4	139.7	602.7	287.6	838.6
Total, Retail establishments	129,930	701,432	1,152.9	12,035.1	1,287.7	9,295.0	2,844.5	10,555.0
Selected service establishments—								
Motion picture theatres	957	9,048	13.3	54.4	0.3	21.2	33.2	5.2
Restaurants and licensed hotels	10,621	124,728	203.7	1,213.0	36.5	732.6	484.6	884.4
Licensed clubs	2,761	37,869	81.6	348.7	8.5	141.8	207.7	168.5
Laundries and dry cleaners	2,160	20,105	35.3	89.7	1.3	22.7	67.1	0.6
Hairstressing and beauty salons	9,842	28,875	28.3	86.6	2.8	17.9	69.0	7.0
Total, Selected service establishments	26,341	220,625	362.2	1,792.5	49.3	936.2	861.7	1,065.8
GRAND TOTAL	156,271	922,057	1,515.1	13,827.6	1,337.0	10,231.2	3,706.2	11,620.8

(a) See letterpress immediately preceding the previous table.

(b) At end of June 1969; includes working proprietors and unpaid helpers working at least 15 hours during the week.

(c) Excludes amounts drawn by working proprietors.

Commodity Statistics

Details of retail (and wholesale) sales of groups of commodities were collected in the 1968-69 Integrated Economic Censuses. It will be noted, however, that the commodity groupings in the retail and wholesale censuses are, in most cases, not identical, and direct comparison is not possible. In addition, the retail and wholesale sales tables differ in scope in that the retail sales figures include sales by mining, manufacturing, and electricity and gas establishments, whereas the wholesale sales tables exclude them.

Retail sales were defined as the sale to final consumers of new or used goods of a type used mainly for household and personal purposes. Sales by retailers of commodities such as basic building materials, builders' hardware and builders' supplies, timber, commercial refrigerators and freezers, agricultural tractors, farm machinery and implements, construction and earthmoving equipment, grain, feed, fertilisers and agricultural supplies, and business machines and equipment, were treated as wholesale sales since the goods are of a type used mainly for commercial purposes.

The table below shows retail sales made by retail and selected service establishments, wholesale, mining, manufacturing, and electricity and gas establishments which were in operation at 30 June 1969. Details of retail sales obtained from the Integrated Economic Censuses differ from those recorded in the quarterly Survey of Retail Establishments (see letterpress on page 452) and from previous censuses due to variations in scope and definition. Direct comparisons with figures from previous censuses and from retail surveys are therefore not possible.

INTEGRATED ECONOMIC CENSUSES, 1968-69—RETAIL SALES (a)
NUMBER OF ESTABLISHMENTS AND VALUE OF RETAIL SALES BY COMMODITY ITEM

Commodity item	Number of establishments at 30 June 1969 (a)	Value of retail sales (a)	Commodity item	Number of establishments at 30 June 1969 (a)	Value of retail sales (a)
Groceries, other food items, etc.—		\$'000	Hardware (b)—		\$'000
Groceries	2,381	122,188	Domestic hardware, china, glassware (including garden equipment)	1,141	16,340
Fresh meat	1,094	45,992	Petrol, motor vehicles, boats, etc. (c)—		
Fresh fruit and vegetables	1,544	21,290	Petrol, oils and motor lubricants, etc.	1,602	50,541
Bread, cakes and pastries	1,932	11,373	New motor vehicles	311	118,700
Delivered bread	25	4,279	New parts and accessories for motor vehicles	1,183	15,957
Delivered milk	312	11,100	Used motor vehicles	381	81,576
Fish (fresh or cooked), chips, hamburgers, etc.	848	7,704	Used parts and accessories for motor vehicles	169	1,666
Confectionery, ice cream, soft drinks, wrapped lunches, etc.	3,851	28,735	New and used motor cycles, motor scooters	127	1,809
Beer, wine and spirits	1,018	87,706	New and used motor tyres, tubes and batterles	1,239	20,042
Cigarettes and other tobacco products	4,861	31,738	Boats, outboard motors, caravans	98	10,325
Furniture and floor coverings—			Miscellaneous—		
Furniture, mattresses, blinds, etc. including installation and repairs	442	23,129	Cosmetics, perfumes, toilet preparations, etc.	1,607	10,096
Floor coverings, carpets, lino, etc. including laying of floor coverings	265	10,503	Patent medicines and therapeutic appliances	1,193	8,991
Fabrics, clothing and footwear—			Prescription medicines	385	10,512
Fabrics, piece goods, manchester, blankets, soft furnishings, etc.	791	20,894	Photographic equipment and supplies	691	3,790
Clothing—			Watches, clocks, jewellery, silverware	668	7,521
Men's and boys'	855	29,854	Sporting goods, bicycles, toys, etc.	916	8,700
Women's, girls' and infants'	955	48,784	Books, stationery, newspapers, etc.	1,391	20,415
Footwear—			Antiques, disposal goods, secondhand goods (excluding goods traded in), etc.	183	2,090
Men's and boys'	607	6,072	Cut flowers, garden seeds, shrubs, etc.	280	1,855
Women's, girls' and infants'	562	10,594	Travel goods, brief cases, etc.	358	1,801
Household appliances—			Bottled liquefied petroleum gas	205	1,969
Radios, radiograms, tape recorders, etc.	436	6,016	Goods not included above	498	5,165
Musical instruments, records, etc.	338	3,850			
Television sets and accessories	284	6,665			
Domestic refrigerators and freezers	307	10,287			
Washing machines, stoves, household heating appliances, etc.	332	8,476			
Other household appliances	677	9,008			
			Total	(d)	966,098

(a) See letterpress immediately preceding table. (b) Excludes basic building materials, builders' hardware and supplies such as tools of trade, paint, etc. See letterpress *Commodity Statistics* preceding table. (c) Excludes tractors, farm machinery and implements, earthmoving equipment, etc. See letterpress *Commodity Statistics* preceding table. (d) Many establishments show takings in more than one commodity item. Accordingly, the sum of the number of establishments showing sales for individual items will exceed the total number of retail and selected service, wholesale, mining, manufacturing and electricity and gas establishments reporting retail sales.

SURVEY OF RETAIL ESTABLISHMENTS

During the periods between retail censuses, quarterly estimates of the value of retail sales by commodity groupings are derived from a representative sample of retailers throughout Australia. The sample is drawn from the population of retail establishments enumerated in the censuses which is maintained by the addition of new businesses and the deletion of businesses which cease trading. Estimates up to and including September quarter 1972 were obtained from a sample based on the 1961-62 Census of Retail Establishments, whereas estimates for December quarter 1972 were the first to be obtained from a new sample based on the 1968-69 Census of Retail and Selected Service Establishments.

The changes introduced in the 1968-69 Census, described in the section *Censuses of Retail and Selected Service Establishments* above, also altered the basis of the sample estimates so that estimates from December quarter 1972 are not comparable with previous estimates. In addition, changes in the content of the commodity groups for which estimates are made also occurred. The nature of these changes was such that it was not possible to compile a continuous series of retail sales by commodity groups by linking the series based on the 1968-69 Census with the series based on the 1961-62 Census. However, an estimate of total retail sales (excluding motor vehicles, parts, petrol, etc.) was made on the new basis for the five quarters back to September quarter 1971 to provide some indication of the effect of the change on total retail sales.

The table below shows estimates of retail sales by commodity group for the years 1969-70 to 1971-72 and 1973-74. Commodity estimates are not available for the year 1972-73 due to the break in series in December quarter, 1972. The link of the old and new series for total retail sales (excluding motor vehicles, parts, petrol, etc.) provided for the year 1971-72 indicates the approximate magnitude of the break in continuity.

RETAIL SALES—COMMODITY GROUPS
(\$ million)

Commodity group	Year (a)				
	1969-70	1970-71	1971-72	1972-73	1973-74 (b)
Groceries	121.6	136.3	152.1	n.a.	212.2
Butchers' meat	51.9	56.4	59.0		73.8
Other food (c)	93.6	106.0	113.1		122.5
Beer, wine and spirits	92.9	102.6	107.3		152.3
Clothing, drapery, etc.	105.1	115.3	123.1		174.1
Footwear	17.7	18.6	18.9		28.2
Hardware, china and glassware (d)	17.9	19.3	21.3		44.6
Electrical goods and musical instruments	43.3	46.9	52.5		87.8
Furniture, floor coverings, mattresses	36.1	37.7	41.0		63.1
Chemists' goods	38.4	41.1	44.7		51.6
Newspapers, books, stationery	20.6	22.7	24.1		32.5
Other goods (e)	69.3	75.3	79.8		94.4
Total—old series	708.4	778.2	836.9	n.a.	n.a.
new series	n.a.	n.a.	878.7 (b)	965.8 (b)	1,137.1 (b)
New and used motor vehicles, parts, petrol, etc.	320.3	348.0	354.3	n.a.	527.7

n.a. denotes 'not available'.

(a) Series based on 1961-62 Census except where otherwise indicated. (b) Series based on 1968-69 Census.
 (c) Includes fresh fruit and vegetables, confectionery, soft drinks, ice cream, cakes, pastry, cooked provisions, fish, etc. (d) Excludes basic building materials, builders' hardware and supplies, such as tools of trade, paint, etc. (e) Includes tobacco, cigarettes, sporting goods, etc. but excludes grain and produce and business machines.

Further information regarding the quarterly estimates of retail sales, together with comparable data for each State and Australia are published by the Commonwealth Statistician in the mimeograph *Retail Sale of Goods* (Reference No. 11.4). Preliminary monthly estimates of total retail sales in Australia (excluding motor vehicles, parts, petrol, etc.), based on a sub-sample of the establishments used to provide the quarterly estimates, appear in *Retail Sales of Goods (Provisional)* (Reference No. 11.6).

Chapter IX—continued

Part 3—Transport

Western Australia's main transport systems are based generally on Perth, the capital, and on Fremantle, the principal port. Subsidiary systems are centred on a number of outports north and south of Fremantle and on some inland towns.

The railway system extends from Fremantle, Perth and Midland for hundreds of kilometres into the mining, agricultural, pastoral and forest areas in the southern half of the State. There is also a well-developed road system in this area, and the coastal towns in the north-west and the north are connected by road with the south and with the pastoral and mining areas of the hinterland. International flights operate through the airport at Perth, which is also the centre of a comprehensive network of airline services to towns in Western Australia and to the capital cities of other States.

In recent years important mineral developments in the north-west have led to the provision of deep-water port facilities and the construction of railways and roads connecting them with the extensive iron ore deposits now being exploited.

The following table shows distances by road, rail, sea and air between Perth and selected towns and localities in Western Australia.

DISTANCES BETWEEN PERTH AND SELECTED TOWNS AND LOCALITIES
IN WESTERN AUSTRALIA

Town or locality	Road (*)	Rail	Sea (a)	Air (b) (*)	Town or locality	Road (*)	Rail	Air (b) (*)
North of 26°S. latitude—	kilo-	kilo-	nautical	route	South of 26°S. latitude—	kilo-	kilo-	route
Coastal—	metres	metres	miles	kilo-	Inland—continued	metres	metres	kilo-
Broome	2,210	.....	1,193	metres	Bruce Rock	240	311	.....
Carnarvon	904	.....	484	824	Collie	203	200	.....
Dampier	1,557	.....	857	(c) 1,287	Coolgardie	558	.....	.....
Denham (Shark Bay)	833	.....	479	.....	Donnybrook	214	212	.....
Derby	2,367	.....	1,358	1,819	Forrest .....	.....	1,260	.....
Exmouth	1,264	.....	683	(d) 1,115	Harvey	140	138	.....
Onslow	1,389	.....	733	.....	Hyden	340	554	.....
Port Hedland	1,658	.....	957	1,323	Kalgoorlie	597	655	536
Roebourne	1,563	.....	(e) 885	.....	Kambalda	629	704	.....
Wyndham	3,224	.....	1,761	.....	Katanning	283	393	.....
Inland—	.....	.....	.....	.....	Koolyanobbing	423	457	.....
Fitzroy Crossing	2,535	.....	.....	2,039	Leonora	834	884	620
Goldsworthy	1,704	.....	.....	1,416	Madura	1,254	.....	.....
Halls Creek	2,849	.....	.....	2,253	Manjimup	307	317	.....
Kununurra	3,211	.....	.....	2,383	Meekatharra	768	978	700
Marble Bar	1,480	.....	.....	1,477	Merredin	261	285	.....
Newman	1,188	.....	.....	1,025	Moora	188	174	.....
Nullagine	1,368	.....	.....	1,561	Mount Barker	359	517	.....
Paraburdoo	1,536	.....	.....	974	Mukinbudin	311	359	.....
Tom Price	1,554	.....	.....	1,046	Mullewa	467	546	.....
Wittenoom Gorge	1,450	.....	.....	1,114	Nannup	286	291	.....
South of 26°S. latitude—	.....	.....	.....	.....	Narrogin	188	291	.....
Coastal—	.....	.....	.....	.....	Newdegate	398	523	.....
Albany	409	581	353	378	Norseman	726	761	554
Augusta	301	.....	.....	.....	Northam	98	122	.....
Bunbury	156	185	104	.....	Pinjarra	87	87	.....
Busselton	208	240	.....	.....	Ravensthorpe	539	.....	.....
Esperance	739	962	560	581	Southern Cross	370	401	.....
Eucla	1,434	.....	.....	.....	Wagin	229	341	.....
Fremantle	18	19	.....	.....	Wiluna	951	.....	789
Geraldton	424	492	215	375	Wyalkatchem	192	238	.....
Inland—	.....	.....	.....	.....	York	97	156	.....
Bridgetown	272	280	.....	.....		

(a) From Fremantle. (b) Shortest regular route. (c) Distance to Karratha. (d) Distance to Learmonth.
(e) Distance to Point Samson. (*) Figures revised since previous issue.

Distances by road, rail, sea and air between Perth and other capital cities in Australia are shown in the next table.

DISTANCES BETWEEN PERTH AND OTHER CAPITAL CITIES

Method of travel	Canberra	Sydney	Melbourne	Brisbane	Adelaide	Hobart	Darwin
Road kilometres	(a) 3,954	(a) 4,175	(a) 3,489	(a) 5,185	2,742	(b) 3,722	4,126
Rail kilometres	(c) 4,273	(d) 3,961	(d) 3,431	(d) 4,947	2,654	.....	.....
Sea nautical miles	.....	(e) 2,141	(e) 1,686	(e) 2,630	(e) 1,347	(e) 1,826	(e) 1,842
Air route kilometres	3,277	3,352	2,800	4,107	2,152	3,417	2,855

(a) Via Adelaide. (b) Via Melbourne and Bell Bay and excludes 250 nautical miles from Melbourne to Bell Bay. (c) Via Melbourne. (d) Via Broken Hill. (e) From Fremantle.

SHIPPING

Western Australia's sea-borne trade is conducted through the Port of Fremantle and a number of outports. Of these, Geraldton, Bunbury, Busselton (see reference on page 457), Albany and Esperance are situated in the more highly developed south-western and southern part of the State. The less closely-settled areas of the north-west and the north are served by ports and other landing points at Useless Loop (Shark Bay), Carnarvon, Cape Cuvier, Exmouth, Onslow (see reference on page 457), Barrow Island, Dampier, Cape Lambert, Point Samson, Port Walcott, Port Hedland, Broome, Derby, Yampi and Wyndham.

The following table shows the number of entrances and the net tonnage of vessels entering each port during the years 1970-71 to 1972-73. The figures exclude particulars of naval vessels; yachts and other craft used for pleasure; foreign fishing vessels that neither load nor discharge cargo; fishing vessels registered in Australia; vessels engaged in geographic, seismic or oceanographic surveys; offshore oil-drilling rigs and vessels servicing them; and vessels of 200 registered net tons and under.

The importance of mineral developments in the north-west of the State is evident in the volume of shipping entered at each port. In 1972-73, the net tonnage for Port Hedland exceeded the figure for the Port of Fremantle for the first time.

The net tonnage of a vessel, expressed in tons of 100 cubic feet, represents the volume of enclosed space that can be used for cargo and passengers.

SHIPPING—ENTRANCES OF VESSELS

Port	Entrances of vessels					
	1970-71		1971-72		1972-73	
	Number	Net tonnage of vessels	Number	Net tonnage of vessels	Number	Net tonnage of vessels
		'000		'000		'000
Port of Fremantle	1,469	10,845	1,524	11,657	1,404	10,503
Other ports—						
Albany	168	967	167	1,021	156	1,041
Barrow Island (a)	62	960	53	802	51	815
Broome	116	300	115	354	129	449
Bunbury	156	807	138	776	135	789
Busselton (b)	1	1	1	1	.....	.....
Carnarvon (c)	101	779	87	740	84	781
Dampier	475	6,918	396	6,522	434	8,942
Derby	72	139	74	167	59	138
Esperance	94	531	67	403	58	362
Exmouth	15	56	10	50	9	50
Geraldton	125	776	123	791	128	813
Onslow (b)	27	52	26	60	20	49
Port Hedland	592	8,155	546	8,718	553	11,855
Port Walcott (d)	75	132	131	361	146	1,971
Wyndham	91	281	96	316	84	284
Yampi	172	1,457	149	1,315	129	1,344
Total	2,342	22,311	2,179	22,396	2,175	29,680
All ports	3,811	33,156	3,703	34,054	3,579	40,183

(a) Buoyed sea terminal.

(b) See page 457

(c) Includes Cape Cuvier and Useless Loop.

(d) Includes Cape Lambert and Point Samson.

Cargo is now recorded on returns either in terms of tonnes or of cubic metres depending on the basis on which freight is charged. In the following table the statistics for cargo recorded in tonnes are shown separately from cargo recorded in cubic metres. The aggregates for weight and measure cargo are not added to a figure for total cargo because they are unlike quantities and comparisons of total cargo between ports, trade routes or periods of time could be affected by variations in the cargo mix and in the basis on which freight is charged.

CARGO DISCHARGED AND SHIPPED AT EACH PORT: 1972-73

Port	Overseas		Interstate		Intrastate		Total	
	Tonnes	Cubic metres	Tonnes	Cubic metres	Tonnes	Cubic metres	Tonnes	Cubic metres
DISCHARGED								
Port of Fremantle	3,857,494	241,204	1,166,627	4,543	1,191,379	9,443	6,215,500	255,190
Other ports—								
Albany	260,127	77	750	...	65,830	...	326,707	77
Barrow Island (a)	...	...	...	...	2,233	989	2,233	989
Broome	28,059	2,552	3,569	304	24,440	14,064	56,068	16,920
Bunbury	212,777	282	...	...	108,615	...	321,392	282
Carnarvon (b)	22,357	...	...	...	13,852	...	36,209	...
Dampier	240,118	...	16,258	20,481	10,714	1,946	267,090	22,427
Derby	19,586	...	...	36	4,901	15,000	24,487	15,036
Esperance	111,677	...	519	...	83,625	...	195,821	...
Exmouth	940	939	...	...	14,717	...	15,657	939
Geraldton	96,321	88	...	...	85,516	...	181,837	88
Onslow (c)	...	...	...	...	59	398	59	398
Port Hedland	44,767	1,756	549	57	129,710	9,258	175,026	11,071
Port Walcott (d)	256,717	10,213	352	7	7,089	2,832	264,158	13,052
Wyndham	14,554	...	4,655	2	16,906	9,572	36,115	9,574
Yampi	...	...	36,532	...	65,305	4,889	101,837	4,889
Total	1,308,000	15,907	63,184	20,887	633,512	58,948	2,004,696	95,742
All ports	5,165,494	257,111	1,229,811	25,430	1,824,891	68,391	8,220,196	350,932
SHIPPED								
Port of Fremantle	4,509,307	324,156	1,773,825	24,772	572,255	73,230	6,855,387	422,158
Other ports—								
Albany	416,564	621	2,889	...	...	...	419,453	621
Barrow Island (a)	41,464	...	819,898	...	1,037,801	54	1,899,163	54
Broome	7,978	15	49	345	1,955	5,215	9,982	5,575
Bunbury	710,586	34,306	52,688	...	4	...	763,278	34,306
Carnarvon (b)	1,833,319	...	21,399	...	...	...	1,854,718	...
Dampier	26,177,183	...	...	...	992	351	26,178,175	351
Derby	349	...	8	211	105	1,538	462	1,749
Esperance	252,055	16,495	...	5,376	...	...	252,055	21,871
Exmouth	65	42	...	...	...	1	65	43
Geraldton	1,475,459	449	...	...	2	3	1,475,461	452
Onslow (c)	...	...	...	...	...	75	...	75
Port Hedland	31,099,811	9	2,406,704	292	365	3,927	33,506,880	4,228
Port Walcott (d)	5,100,386	631	4	63	36,719	865	5,137,109	1,559
Wyndham	19,456	179	295	253	13,559	2,993	33,310	3,425
Yampi	2,626,920	...	717,486	...	54,438	1,719	3,398,844	1,719
Total	69,761,595	52,747	4,021,420	6,540	1,145,940	16,741	74,928,955	76,028
All ports	74,270,902	376,903	5,795,245	31,312	1,718,195	89,971	81,784,342	498,186

(a) Buoyed sea terminal.
Lambert and Point Samson.

(b) Includes Cape Cuvier and Useless Loop.

(c) See page 457.

(d) Includes Cape

Apart from general cargo, overseas and interstate consignments discharged were principally petroleum products, rock phosphate, iron and steel products, coke and sulphur. Outward cargoes, with the exception of refined petroleum products and steel products shipped from the Port of Fremantle (Outer Harbour), consisted largely of primary products, including minerals. Cargo shipped from Esperance comprised mainly cereal grains, nickel ore and salt and from Albany cereal grains, wool and whale oil. From Bunbury the principal cargoes shipped were mineral sands, cereal grains and timber. Iron ore and

cereal grains were the main items shipped from Geraldton. In the northern part of the State, Dampier, Port Hedland and Yampi are the major ports for the shipment of iron ore. The buoyed sea terminal at Barrow Island provides facilities for the loading of crude petroleum. From other ports in the area, cargo shipped consisted mainly of cotton, cotton seed, meat, and minerals, including salt and gypsum.

The Western Australian Coastal Shipping Commission was established in 1965 to carry on the services formerly maintained by the State Shipping Service. The Commission's ships operate along the north-west and northern coasts, calling regularly at ports between Fremantle and Darwin (Northern Territory). Besides general cargo, the freight discharged at north-west and northern ports consists mainly of refined petroleum products, building and construction materials, refrigerated cargo, vehicles and livestock. Cargoes carried south to Fremantle are mainly primary products, such as cotton, meat, livestock, wool, crude petroleum and minerals.

SHIPPING—ENTRANCES AND CLEARANCES: 1972-73

Port	From or to overseas countries			From or to other Australian States		From or to other Western Australian ports	Total	
	Direct	Via other Australian States	Via other Western Australian ports	Direct	Via other Western Australian ports		Number	Net tonnage of vessels ('000)
ENTRANCES								
Port of Fremantle	614	295	233	161	38	63	1,404	10,503
Other ports—								
Albany	49	33	65	1		8	156	1,041
Barrow Island (a)			2	13		36	51	815
Broome	27	9	15	13	5	60	129	449
Bunbury	35	13	76	5		6	135	789
Carnarvon (b)	60		23	1			84	781
Dampier	367	3	13	3	3	45	434	8,942
Derby	7	1		4		47	59	138
Esperance	22	8	23			5	58	362
Exmouth	2	2	3			2	9	50
Geraldton	88	12	21			7	128	813
Onslow (c)						20	20	49
Port Hedland	433	7	8	33	6	66	553	11,855
Port Walcott (d)	82	1	7	1	3	52	146	1,971
Wyndham	11	6	11	9	1	46	84	284
Yampi	46			16	1	66	129	1,344
Total	1,229	95	267	99	19	466	2,175	29,680
All ports	1,843	390	500	260	57	529	3,579	40,183
CLEARANCES								
Port of Fremantle	788	227	128	145	47	64	1,399	10,498
Other ports—								
Albany	54	6	86	3		6	155	1,035
Barrow Island (a)	1		1	15		33	50	792
Broome	10	3	39		15	63	130	454
Bunbury	30	13	83	5		6	137	801
Carnarvon (b)	66	4	11	1			82	739
Dampier	369	2	8			51	430	8,837
Derby			8		27	24	59	138
Esperance	16	10	26			5	57	356
Exmouth			7			2	9	50
Geraldton	58	4	61			6	129	821
Onslow (c)						19	19	46
Port Hedland	417	1	16	44	14	59	551	11,786
Port Walcott (d)	78	1	9		11	45	144	1,900
Wyndham	14		13	25	3	28	83	280
Yampi	42		1	29	1	58	131	1,357
Total	1,155	44	369	122	71	405	2,166	29,391
All ports	1,943	271	497	267	118	469	3,565	39,888

(a) Buoyed sea terminal. Lambert and Point Samson.

(b) Includes Cape Cuvier and Useless Loop.

(c) See page 457.

(d) Includes Cape

In the previous table vessels entered at and cleared from each Western Australian port during 1972-73 are classified according to the direction of the voyage on which each vessel was engaged. 'Direction' is determined by reference to the port of commencement of the inward voyage or the port of termination of the outward voyage.

Administration of Ports

The State Government, through the Harbour and Light Department, controls the ports at Broome, Carnarvon, Derby, Onslow, Port Walcott (Cape Lambert and Point Samson) and Wyndham. The ports at Albany, Bunbury, Esperance, Fremantle, Geraldton and Port Hedland are controlled by separately-constituted authorities established by Act of Parliament. Private operators control the ports (or landing points) at Barrow Island, Cape Cuvier, Dampier, Exmouth, Useless Loop and Yampi.

In terms of a proclamation made under the provisions of the *Shipping and Pilotage Act, 1967*, Busselton ceased to be a port for the purposes of the Act with effect from 1 September 1972. The port of Onslow ceased commercial shipping operations with effect from 1 March 1973.

Description of Principal Ports

A brief description of the principal ports is given below. Reference to previous articles on ports appears in the *Appendix*.

Albany. The Port of Albany (35°S. latitude) is the most southerly port in Western Australia and comprises the waters of Princess Royal Harbour and King George Sound. The effect of tidal movements is negligible and as there is little trouble from fog or storm it is an all-weather port. It embraces an area of 11,800 hectares having an abundance of natural deep water and affording excellent protection to shipping and shore works. Access to Princess Royal Harbour from King George Sound is by means of a channel of 10·1 metres minimum depth and 152 metres wide. Wharfage consists of five berths situated on the northern side of the harbour. A timber jetty, adjacent to the entrance channel, provides two working berths, one of which is 244 metres in length with a depth alongside of 10·1 metres, and the other 183 metres in length with a depth alongside of 7·6 metres. The remaining berths consist of three land-backed berths with a continuous length of 609 metres and a depth alongside of 10·1 metres at No. 1 and No. 2 berths and a depth alongside of eleven metres at No. 3 berth.

Bunbury. The port of Bunbury (33°S. latitude) is situated in Koombana Bay, 104 nautical miles south of Fremantle. It is an all-weather port with a tidal rise and fall of 0·8 metres influenced by weather conditions. The deepest permissible loaded draft, 8·7 metres, is subject to a small increase at the Harbour Master's discretion. Wharf berth accommodation totals 1,465 metres, consisting of six jetties each 183 metres in length, and two land-backed berths each 184 metres in length. A conveyor with a capacity of 860 tonnes per hour is used for loading ilmenite, and a bulk grain loading facility has a capacity of some 300 tonnes per hour. The cargo transit shed has a cool storage capacity of 2,300 cubic metres.

Esperance. The port of Esperance (33°S. latitude) is situated in Esperance Bay on the south coast of Western Australia. The port has two land-backed berths of concrete and steel construction. Together, they provide a continuous structure 457 metres long, dredged to a depth alongside of 11·1 metres, with a land area backing of approximately forty-seven hectares. A timber jetty situated approximately two kilometres north of the harbour is maintained for the discharge of petroleum products. It is 873 metres long with a depth alongside of 9·6 metres.

The approach channel to the land-backed berths is 244 metres wide and is dredged to a depth of 11·1 metres. The deepest permissible loading draft is 10·4 metres. Two privately-owned ship loaders are available; one with a loading capacity rate of 860 tonnes per hour, handles salt and bulk grains, the latter product being drawn from a 133,000 tonne capacity storage terminal. The other conveyor, which has a capacity of some 200 tonnes per hour, is used for the loading of nickel concentrates.

Fremantle. The port of Fremantle (32°S. latitude) is the principal port of Western Australia. It is an all-weather port, virtually tideless and little troubled by storm or fog. The port provides modern facilities for the handling of ships, passengers and cargo and is connected to the road and rail systems of Western Australia and Australia generally. It has an area of 46,600 hectares and comprises an Inner Harbour and an Outer Harbour.

The Inner Harbour is constructed within the mouth of the Swan River, about nineteen kilometres from Perth. It is protected by two breakwaters, one 1,200 metres in length and the other 620 metres. The harbour is approached through a short entrance channel dredged to a depth of eleven metres at low water. It encloses seventy-six hectares of water dredged throughout to eleven metres at low water and is the centre of the general cargo trade of the port. There are twenty land-backed berths, with a total quayside of about 4,000 metres. Transit sheds occupy an area of 54,900 square metres and large paved areas are provided for the open storage of cargo. Conveyor facilities with a maximum loading rate of 1,620 tonnes per hour serve a bulk grain terminal of 250,000 tonnes capacity.

The Outer Harbour has 18,900 hectares of deep water and is protected from the west by islands and reefs. It embraces three main anchorages of depths up to nineteen metres. Gage Roads, the most northerly of these anchorages, serves as an approach to the Inner Harbour. Owen Anchorage is centrally situated between Success and Parmelia Banks. The only operating commercial berth in this anchorage is Woodman Point Jetty, which is used exclusively for handling explosives. The largest and most protected of the anchorages, Cockburn Sound, lies to the south and serves the Kwinana industrial area.

There are five jetties in Cockburn Sound. Four of these are owned and operated by private companies concerned with specialised cargoes. They comprise an oil refinery jetty, two jetties to serve a blast furnace and a steel-rolling mill, and a jetty for the export of refined alumina and the import of caustic soda. The fifth jetty is a common-user facility built by the Fremantle Port Authority.

All Inner Harbour berths are equipped to supply bunker fuel direct to ships from privately-owned storage tanks close to the port and an oil lighter is available to service ships berthed in the Inner Harbour or anchored in the Outer Harbour. Ships can also take on bunker fuel oil at the oil refinery jetty in the Outer Harbour.

Geraldton. The port of Geraldton (28°S. latitude) is situated in Champion Bay on the west coast, 215 nautical miles in a north-westerly direction from Fremantle. The outer harbour, which is 10·7 metres deep, provides a good holding anchorage and the inner harbour, enclosed by a breakwater, affords ample protection for shipping and shore works. The depth of the inner harbour is 9·8 metres, but the rock base of the entrance channel restricts the loaded draught of vessels to 8·7 metres. The port has four concrete-decked land-backed berths with a continuous length of 682 metres and a dredged maximum depth of 9·8 metres. The cargo transit shed has a floor area of 2,230 square metres and extensive paved areas are available for open storage of cargo. Bulk grain-loading facilities with a capacity of 810 tonnes per hour serve a terminal of 150,000 tonnes capacity. A conveyor system used for loading minerals has a rated capacity of 1,220 tonnes per hour.

Port Hedland. Port Hedland (20°S. latitude) is situated on the north-west coast of Western Australia, 957 nautical miles from Fremantle. Access to the harbour is by means of a dredged channel approximately thirteen kilometres in length, 12·8 metres minimum depth and 183 metres wide. The channel, subject to tidal movements, is navigable by vessels drawing up to 16·8 metres. Wharf facilities service six berths. Three privately-owned berths with a total length of 1,039 metres and a depth alongside ranging from 15·8 metres to 18·3 metres are served by three shiploaders, two of them each having a capacity of 6,100 tonnes of iron ore per hour and the third a capacity of 4,570 tonnes per hour. Of the three remaining berths, one is 129 metres in length with a depth alongside of 6·7 metres. Another is 183 metres in length with a depth alongside of 12·2 metres. It is served by a ship loader with a capacity of 1,520 tonnes per hour and is operated by a private company for the shipment of salt. The sixth berth, a land-backed general cargo berth 213 metres long with a depth alongside of 12·2 metres, was completed in 1974.

RAILWAYS

Railways open for general and passenger traffic in the southern part of the State are operated by the Western Australian Government Railways Commission. The system is linked with railways of other States by the Australian Government Trans-Australian Railway between Kalgoorlie in Western Australia and Port Pirie in South Australia. There are, in addition, private railways for the haulage of iron ore in the northern part of the State and timber in the south-west.

Origin and Development

The first railway in the Colony, built in 1871 from Busselton into the nearby forest, was a private line constructed for the transport of timber. By the end of 1900, the Colony had a railway system for general and passenger traffic which comprised 2,181 kilometres of government line and 446 kilometres of privately-owned line. The State Government system reached a maximum of 7,051 kilometres in 1940 but this figure was reduced, particularly during the 1960s, by the closure of certain non-paying lines. A summary of the development of railways in Western Australia appeared in the *Western Australian Year Book*, No. 7—1968 and earlier issues.

At 30 June 1974 there were 6,923 kilometres of railway open for general and passenger traffic in Western Australia. Of this total, 6,192 kilometres were owned by the State Government and operated by the Western Australian Government Railways Commission, and 731 kilometres were owned by the Australian Government and operated by the Commonwealth Railways. The Western Australian Government Railways Commission also operated 21 kilometres of privately-owned line connecting iron ore deposits at Koolanooka with its railway to Geraldton. Other private railways used for the transport of iron ore were those between Newman and Port Hedland (426 kilometres), Shay Gap and Port Hedland (195 kilometres), Paraburdoo and Dampier (384 kilometres), and Pannawonica and Cape Lambert (167 kilometres). In addition, there were 29 kilometres of private railway operated by timber millers.

The Western Australian Government Railways Commission

The *Government Railways Act, 1904-1973* constitutes a Commission, in the person of the Commissioner of Railways, who is responsible, subject to the Minister, for the administration of the Act.

Financial procedure for the Western Australian Government Railways Commission is basically the same as for other Departments. Receipts are paid into the Consolidated Revenue Fund, and finance for its operations and the servicing of debt is provided from the Fund by statutory appropriations. Loan moneys, for the construction and improvement of permanent way, for the purchase of traction units and rolling stock and for other capital outlay, are advanced by the Parliament from the General Loan Fund. The loan liability of the Western Australian Government Railways Commission to the Treasury was \$171,767,504 at 30 June 1974, the net increase during 1973-74 being \$3,922,442.

In addition to its railway services, the Commission operates an extensive system of road services for the carriage of passengers, mail and freight. A map showing the routes operated by the road services appeared in the 1967 issue of the Year Book.

Suburban railway passenger services are operated by the Commission on behalf of and at the direction of the Metropolitan (Perth) Passenger Transport Trust under the provisions of the *Metropolitan (Perth) Passenger Transport Trust Act Amendment Act, 1973* which came into operation by proclamation on 22 March 1974. The Commissioner of Railways, as provided by the Act, is an *ex-officio* member of the Trust.

Administrative and operational control of suburban railway passenger services remains with the Commissioner of Railways but, as from 1 July 1974, the Trust accepted responsibility for finance and policy direction in terms of the 1973 legislation.

Summary of Operations. The following table gives particulars of the financial transactions, railway operations and road service operations of the Western Australian Government Railways for each of the years 1969-70 to 1973-74.

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
FINANCE (a)					
Capital investment at 30 June (b)	\$'000 161,786	\$'000 164,813	\$'000 164,831	\$'000 167,845	\$'000 171,768
Operating revenues—					
Passenger fares	4,104	4,238	4,157	4,430	5,430
Parcels and mails	1,752	1,725	1,621	1,758	2,035
Paying goods and livestock	48,580	52,761	55,597	54,428	67,755
Miscellaneous	2,803	3,193	3,471	4,177	4,641
Total operating revenues	57,240	61,917	64,846	64,793	79,861
Operating expenses	48,550	53,205	57,112	61,011	74,403
Excess of operating revenues over expenses....	8,689	8,713	7,735	3,782	5,457
Depreciation	7,632	7,721	7,974	8,797	9,577
Interest charges	10,631	11,697	11,909	12,041	12,556
Total deficit	9,573	10,705	12,148	17,057	†16,568

RAILWAY OPERATIONS

Route kilometres at 30 June—					
1,067 mm gauge (c)	5,438	5,452	5,391	5,390	5,387
1,435 mm gauge	604	604	604	657	678
Dual gauge	119	119	121	121	127
Employees at 30 June	10,613	10,144	10,167	9,843	9,689
Number of—	'000	'000	'000	'000	'000
Train kilometres run (d)	13,894	14,116	13,681	12,831	13,551
Passenger-journeys—					
Suburban	10,227	10,557	10,800	11,143	11,332
Country	352	362	350	376	416
Total	10,580	10,919	11,150	11,518	11,748
Tonnes of freight—					
Paying goods and livestock	10,836	13,456	13,867	13,706	14,839
Departmental (e)	621	538	463	387	212
Total	11,457	13,994	14,329	14,093	15,051
Tonne kilometres—					
Paying goods and livestock	2,860,102	3,397,825	3,447,757	3,686,128	4,142,536
Departmental	73,874	65,984	50,625	61,166	45,465
Total	2,933,976	3,463,809	3,498,382	3,747,294	4,188,001

ROAD SERVICE OPERATIONS

Route kilometres at 30 June—					
Omnibus	6,629	6,508	6,590	6,590	6,971
Freight vehicle	3,225	3,225	3,243	3,243	3,368
Employees at 30 June	262	269	269	*268	273
Number of—	'000	'000	'000	'000	'000
Kilometres run—					
Omnibus	3,106	3,003	2,851	2,656	2,749
Freight vehicle	1,573	1,581	1,634	1,687	1,846
Total	4,679	4,585	4,485	4,342	4,594
Passenger-journeys	222	207	180	170	176

(a) Includes financial transactions in relation to road services. (b) Including Stores Funds.
(c) Excludes route kilometres of 1,067 mm gauge line which parallels the 1,435 mm gauge line. (d) Revenue and non-revenue train kilometres. (e) Departmental freight comprises mainly oil, ballast, timber and rails.
* Revised. † Actual deficit after adjustment of \$107,536 resulting from revaluation of Australian currency.

Goods and Livestock Carried. The following table shows the quantity of paying goods and livestock carried during each year in the period from 1969-70 to 1973-74. The classification used in the table is that adopted by the Railways Commission in dissecting its freight transport statistics. The actual number of livestock carried in each of the five years is given in the second part of the table.

**WESTERN AUSTRALIAN GOVERNMENT RAILWAYS
PAYING GOODS AND LIVESTOCK CARRIED**

Freight classification	1969-70	1970-71	1971-72	1972-73	1973-74
	tonnes	tonnes	tonnes	tonnes	tonnes
Wheat	2,317,119	2,463,121	2,578,529	1,980,452	2,285,237
Other grain	143,045	590,129	843,975	371,587	384,504
Grain products	44,223	46,026	38,554	36,777	36,239
Fertilisers	568,846	420,405	422,512	585,780	796,802
Fruit and vegetables	103,752	89,520	48,623	52,379	84,350
Wool	128,367	130,977	146,212	116,056	118,486
Timber	338,793	296,263	281,254	284,095	298,436
Coal, etc.	137,297	189,189	194,413	162,754	133,840
Ores and minerals	5,523,038	7,591,167	7,666,687	8,329,301	8,506,419
Oil in tank wagons	270,361	320,777	308,214	336,699	418,322
Other classifications	1,175,933	1,248,595	1,257,310	1,365,523	1,710,173
Livestock (‡)	85,765	70,804	81,208	84,266	66,361
Total	10,836,539	13,456,973	13,867,492	13,705,669	14,839,169
(‡) Number of livestock carried—					
Sheep	1,552,640	1,117,620	1,294,723	1,394,658	975,455
Cattle	46,085	50,562	58,259	58,255	56,194
Pigs	90,696	69,251	73,304	82,605	45,474
Horses	541	460	588	497	287

Railways Rolling Stock. The following table shows the numbers of the various categories of rolling stock of the Western Australian Government Railways in service at 30 June for the years 1970 to 1974.

**WESTERN AUSTRALIAN GOVERNMENT RAILWAYS
ROLLING STOCK IN SERVICE**

Category	At 30 June—									
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974
	1,067 mm gauge					1,435 mm gauge				
Locomotives—										
Steam	154	48	48	2	2	....	....	....	....	....
Diesel—										
Electric	121	136	140	144	144	42	42	42	42	42
Mechanical	4	4	4	4	....	....	....	....	....	....
Hydraulic	11	11	13	16	....	....	....	....	....	....
Total	290	199	205	166	146	42	42	42	42	42
Coaching stock—										
Passenger cars	57	37	35	35	33	....	....	....	....	....
Sleeping cars	52	51	51	50	37	....	....	....	....	....
Lounge, buffet, and dining cars	11	11	11	11	11	....	....	....	....	....
Diesel railcars	46	45	45	45	45	....	....	5	5	5
Railcar trailers	36	36	36	36	36	....	....	3	3	3
Service vehicles (a)	12	12	12	11	11	....	....	....	....	1
Total	214	192	190	188	173	....	....	8	8	9
Goods stock (b)	11,259	11,220	10,998	10,478	10,239	840	1,129	1,145	1,145	1,219
Service stock (c)	875	813	764	585	531	109	98	95	95	56

(a) Consists of inspection, track recorder, ministerial, vice-regal and special cars. (b) Includes brake vans, goods wagons, livestock wagons, mineral wagons, etc. (c) Includes ballast wagons, workmen's vans, ash disposal wagons, water tanks, etc. Excludes service vehicles shown under *Coaching stock*; see footnote (a).

Iron Ore Railways

In recent years the exploitation of extensive inland deposits of iron ore in Western Australia has necessitated the construction of a number of railways for the transport of ore from the mines to the coast. Conditions applying to the construction and operation of these railways are incorporated in agreements made between the State Government and mining companies and ratified by Act of Parliament.

The following summary relates to railways in use for the transport of iron ore at 30 June 1974. The quantity of ore carried on these railways was 37.2 million tonnes in

1970, 45.5 million tonnes in 1971, 52.9 million tonnes in 1972, 73.1 million tonnes in 1973 and 85.3 million tonnes in 1974. At 30 June 1974 there were 105 locomotives and 4,637 ore wagons in service.

RAILWAYS USED FOR TRANSPORT OF IRON ORE

Railway	Enabling Act	Length (route kilometres)	Gauge	Date operative (a)
Westmine-Tilley (b)	No. 104 of 1964 (c)	21	1,067 mm	1966—31 January
Shay Gap-Port Hedland (d)	No. 97 of 1964 (e)	195	1,435 mm	1966—23 May
Paraburdoo-Dampier (d)	No. 24 of 1963 (f)	384	1,435 mm	1966—1 July
Koolyanobbing-Kwinana (g)	No. 27 of 1961 (h)	490	1,435 mm	1967—10 April
Newman-Port Hedland (d)	No. 75 of 1964 (i)	426	1,435 mm	1969—18 January
Pannawonica-Cape Lambert (d)	No. 91 of 1964 (j)	167	1,435 mm	1972—6 July

(a) Date on which first load of iron ore was dispatched from mine. (b) Privately owned, but operated by the Western Australian Government Railways Commission. Connected at Tilley to the Western Australian Government Railways' line to the Port of Geraldton. (c) *Iron Ore (Tallering Peak) Agreement Act, 1964*. (d) Privately owned and operated. (e) *Iron Ore (Mount Goldsworthy) Agreement Act, 1964*. (f) *Iron Ore (Hammersley Range) Agreement Act, 1963*. (g) Part of the Western Australian Government Railways' system; open for general and passenger traffic. (h) *Railways (Standard Gauge) Construction Act, 1961*. See also letterpress on pages 463-4. (i) *Iron Ore (Mount Newman) Agreement Act, 1964*. (j) *Iron Ore (Cleveland-Cliffs) Agreement Act, 1964*.

Commonwealth Railways

The Commonwealth Railways comprise four separate systems. These are the Trans-Australian Railway, operating partly in Western Australia and partly in South Australia; the Central Australia Railway, partly in South Australia and partly in the Northern Territory; the North Australia Railway, wholly in the Northern Territory; and the Australian Capital Territory Railway.

Construction of the Trans-Australian Railway was begun at Port Augusta, the original South Australian terminus of the line, in 1912 and work was completed in 1917. Of the total length of 1,783 kilometres between Kalgoorlie and Port Pirie (South Australia), 731 kilometres are in Western Australia. Although statistical details of activities on each of the four systems are available, it is not possible to give separate particulars of the operations in Western Australia of the Trans-Australian Railway. Some statistics relating to the Commonwealth Railways are shown in the next table.

Operations of Government Railways in Australia

The following table gives a summary of operations during the year ended 30 June 1973 on each of the railway systems owned by the State and Australian Governments.

GOVERNMENT RAILWAYS IN AUSTRALIA—SUMMARY OF OPERATIONS, 1972-73

Railway system of—	Route kilometres at 30 June	Revenue train kilometres run	Passenger- journeys	Goods and livestock carried	Gross earnings	Average number of employees (a)
New South Wales	9,754	'000 59,941	'000 206,125	'000 tonnes 31,044	\$'000 254,070	42,983
Victoria	6,685	33,058	135,189	11,475	111,833	(b) 25,798
Queensland	9,560	29,523	32,145	24,666	137,745	22,605
South Australia	3,884	10,024	14,042	5,781	35,085	8,538
Western Australia	6,167	11,669	11,518	13,706	63,600	(b) 9,714
Tasmania	830	1,960	752	1,554	6,835	2,044
Commonwealth—						
Trans-Australian	1,859	3,952	147	1,137	20,556	2,170
Central Australia	1,218	1,538	24	1,837	7,836	1,369
North Australia	510	342	....	961	2,575	354
Australian Capital Territory	8	27	51	320	275	47
Australia	40,474	152,035	399,993	92,481	640,409	115,622

(a) Excluding construction staff except for Victoria and Western Australia where construction staff are included. (b) See footnote (a).

It will be noted that particulars of route kilometres shown for the New South Wales and Victorian systems differ from the details given for those States in the table in the next section *Railway Gauges*, which is compiled according to the State or Territory in which

the several lengths of line are situated. The Victorian system includes lines extending into New South Wales, the aggregate length of such lines in New South Wales being 328 kilometres.

Railway Gauges

The following table shows route kilometres of government railways of each gauge in each of the Australian States and Territories at 30 June 1973. Except where otherwise indicated, the figures shown relate to lines owned by the several State railway authorities.

GOVERNMENT RAILWAYS IN EACH STATE AND TERRITORY OF AUSTRALIA
ROUTE KILOMETRES OPEN AT 30 JUNE 1973

State or Territory	Route kilometres of gauge—					Total route kilometres
	1,600 mm	1,435 mm	1,067 mm	762 mm	610 mm	
State systems in—						
New South Wales	(a) 328	(b) 9,801	....	....	....	10,129
Victoria	(c) 6,018	325	....	14	....	6,357
Queensland ....	....	111	9,400	....	48	9,560
South Australia	2,527	349	960	....	....	3,836
Western Australia ....	....	776	(d) 5,390	....	....	6,167
Tasmania ....	....	....	830	....	....	830
Commonwealth systems in—						
South Australia ....	....	1,477	591	....	....	2,068
Western Australia ....	....	731	....	....	....	731
Northern Territory ....	....	....	789	....	....	789
Australian Capital Territory	....	8	....	....	....	8
Total route kilometres....	8,873	13,579	17,960	14	48	40,474

(a) Part of the Victorian railway system. (b) Includes 47 kilometres of 1,435 mm gauge line from Broken Hill to Cockburn owned and operated by the South Australian Government Railways. (c) Excludes 325 kilometres of 1,600 mm gauge line which almost parallels the 1,435 mm gauge line between Melbourne and the Murray River. (d) Excludes 121 kilometres of 1,435 mm/1,067 mm dual gauge line which is included in the 1,435 mm gauge line.

Standardisation of gauges on main trunk routes throughout Australia and on some other lines has been the subject of inquiries by the Australian Government and of agreements between the Commonwealth and some States. The principle of standardisation was accepted at a Premiers' Conference in August 1945 following an investigation instituted by the Australian Government in March 1944 and the submission of a favourable report in March 1945. The use of the 1,435 mm gauge was recommended for adoption in a unification plan, one of the projects in which was to be the construction of a line from the Port of Fremantle through Perth to Kalgoorlie. Approval was given to the making of a survey for a route, and field work began in October 1945. The work was continued until December 1947, when it was abandoned pending agreement between the Governments of the Commonwealth and the State on the provision of finance for the unification scheme. In the years immediately following the second World War it became apparent that considerable expenditure would be necessary on the rehabilitation of the Western Australian Government Railways. The urgency and the magnitude of this undertaking were such that all the Departments' available resources of money, labour and materials were absorbed in the programme and, in these circumstances, works associated with the unification plan could not be contemplated but, where possible, works connected with the restoration of the 1,067 mm system were so designed as to make provision for later conversion to the standard gauge.

In March 1956, a committee consisting of members of the Federal Parliament was appointed to re-examine the matter of standardisation. Among its recommendations, submitted in October 1956, was the provision of the standard gauge line between Fremantle and Kalgoorlie, but no immediate action was taken to carry out this work.

During the 1960 session, the Western Australian Parliament passed the Broken Hill Proprietary Company's Integrated Steel Works Agreement Act ratifying an agreement between the Government and the Company relating to the establishment of an

integrated iron and steel industry at Kwinana on the coast south of Fremantle. The Act made the operation of the agreement contingent upon the passage of legislation by the State and Commonwealth Parliaments to provide for the financing, construction and completion before 31 December 1968 of a standard gauge railway between the works site at Kwinana and the terminus of the Trans-Australian Railway at Kalgoorlie. Accordingly the Commonwealth Parliament passed the *Railway Agreement (Western Australia) Act 1961* extending to the State financial assistance for the project. The State Parliament approved this agreement by the *Railway Standardisation Agreement Act, 1961* and gave authority for the construction of the railway by means of the *Railways (Standard Gauge) Construction Act, 1961*. Work on route surveys was begun in 1961 and the construction of earthworks commenced on 5 November 1962. Basic planning and all major surveys required for the project were completed during 1965. The 1,067 mm portion of the dual gauge route between Midland and Northam along the Avon River valley was commissioned for general and passenger traffic on 13 February 1966. In October of the same year, haulage of grain on the standard gauge railway commenced between Merredin and the Port of Fremantle and the first train load of iron ore from Koolyanobbing to Kwinana was hauled in April 1967. The standard gauge line from Kwinana to Kalgoorlie was linked with the Trans-Australian Railway to Port Pirie (South Australia) on 3 August 1968, enabling 'through' freight services to commence in November 1968.

In 1962, the opening of a new 1,435 mm gauge railway between Melbourne (Victoria) and Albury, on the border between Victoria and New South Wales, completed the standard gauge link between Melbourne and South Brisbane (Queensland). Late in 1969 work was completed on the last stage of a standard gauge connection between Sydney (New South Wales) and Perth and Fremantle, through Broken Hill (New South Wales), Port Pirie (South Australia) and Kalgoorlie. The length of this route is 3,961 kilometres (Sydney to Perth). Regular services for freight began in January 1970, and for passengers in March 1970. The passenger service has been named 'The Indian-Pacific' after the oceans it links.

ROADS AND ROAD TRAFFIC

Work connected with road construction and maintenance and associated projects in Western Australia is undertaken by the State Government, through the Main Roads Department, and by local government authorities, comprising City Councils, Town Councils and Shire Councils.

Under the provisions of the Main Roads Act, the Main Roads Department was established in 1930 to replace the Main Roads Board originally constituted as a central road authority in 1926. The Department operates under the *Main Roads Act, 1930-1974* and is administered by a Commissioner of Main Roads responsible to the Minister for Works. The Act makes provision for public roads in the categories of 'main' roads 'controlled-access' roads and 'developmental' roads. An additional category, that of 'important secondary' roads, is used by the Department in determining its works programme.

Main roads are those which provide communication between a large producing area, either actual or potential, and its market or nearest port or railway station; between two or more such areas; between large centres of population; or between the capital city and a large producing area or a large centre of population. Controlled-access roads are those which do not permit direct access from abutting property and may be entered or departed from only at certain selected road connections located at points which are considered to serve best the traffic for which the controlled-access road was designed. Developmental roads are those which serve to develop an area or to increase its development. Important secondary roads are those which, though originally classified as developmental, have come to be used consistently by through traffic and therefore warrant a special allocation of funds by the Main Roads Department. The Act provides that, on the recommendation of the Commissioner, any road may be proclaimed a main road and any main road may cease to be a main road.

The construction and maintenance of main roads and controlled-access roads are the responsibility of the Main Roads Department. The Department also makes substantial financial provision for the construction and maintenance of important secondary roads and for the construction of developmental roads. The construction and maintenance of strategic roads and roads of access to Commonwealth property is undertaken by the Department for the Australian Government.

Within its own district, each local government authority is responsible for the provision and upkeep of roads other than those provided by the Main Roads Department. In addition, the local authority is required by the Main Roads Act to maintain any developmental road situated in its district.

The following table, derived from data provided by the Main Roads Department, shows the length of public roads open for vehicular traffic at 30 June 1974, classified according to Statistical Division (see map of Western Australia preceding the *Index*). Included in the total are 12,495 kilometres of main roads, 31 kilometres controlled-access roads and 8,555 kilometres of important secondary roads.

ROADS OPEN FOR VEHICULAR TRAFFIC AT 30 JUNE 1974
CLASSIFIED ACCORDING TO STATISTICAL DIVISION
(Kilometres)

Statistical Division	Formed roads				Unformed roads (b)	Grand total
	Sealed or primed	Gravel surface	Formed only (a)	Total		
Perth Statistical Division	6,668	729	157	7,555	2,700	10,255
Other Divisions—						
South-West	4,177	3,586	2,550	10,314	20,598	30,911
Southern Agricultural	3,368	4,768	6,895	15,031	2,972	18,003
Central Agricultural	6,084	8,753	9,768	24,605	4,509	29,114
Northern Agricultural	3,928	6,411	5,324	15,663	3,494	19,157
Eastern Goldfields	2,802	3,910	4,910	11,623	8,412	20,035
Central	587	646	6,646	7,878	4,811	12,689
North-West and Pilbara	1,255	1,115	5,495	7,866	6,199	14,064
Kimberley	931	1,279	2,521	4,731	2,859	7,590
Total	23,133	30,469	44,109	97,712	53,852	151,564
WESTERN AUSTRALIA	29,802	31,198	44,267	105,266	56,552	161,819

(a) Comprises roads, mainly of natural surfaces, formed but not metalled or otherwise prepared.

(b) Roads, unprepared except for certain clearing, used for vehicular traffic.

Vehicle Registration, Licences and Traffic Control

The *Traffic Act, 1919-1974* provides for the registration of vehicles, the issue of licences and the regulation of traffic throughout the State, and prescribes the fees payable in respect of the several types of licences required.

The licensing of motor vehicles is the responsibility of the Director of the Department of Motor Vehicles, under the provisions of the *Acts Amendment (Road Safety and Traffic) Act, 1973*, and of local government authorities. The Director is responsible for the licensing of vehicles in the Metropolitan Traffic Area and in each of those local government areas whose Council has voluntarily relinquished such powers to the metropolitan licensing authority under the provisions of the *Traffic Act Amendment Act (No. 2), 1969*. At 31 December 1974 the vehicle licensing powers of twenty-eight Town or Shire Councils had been so transferred. These twenty-eight local authorities comprised Broome and West Kimberley (1 January 1969), Serpentine-Jarrahdale (1 January 1970), Esperance, Manjimup and Ravensthorpe (1 October 1970), Merredin (1 January 1971), Busselton (1 April 1971), Ashburton (now West Pilbara), Lake Grace, Murray and Wyndham-East Kimberley (1 July 1971), Marble Bar and Nullagine (now East Pilbara), Roebourne, and Tableland (now West Pilbara) (1 July 1972), Kondinin (1 August 1972), Northam (Town) and Port Hedland (1 October 1972), Coolgardie (1 January 1973), Halls Creek (1 April 1973), Laverton, Leonora, Menzies and Wiluna (1 July 1973), Tambellup (1 October 1973), Collie, Mandurah,

Albany (Town) and Waroona (1 July 1974), and Geraldton (1 October 1974). The Metropolitan Traffic Area at 31 December 1974 comprised the Cities of Perth, Fremantle, Melville, Nedlands, South Perth, Stirling and Subiaco; the Towns of Canning, Claremont, Cockburn, Cottesloe, East Fremantle, Gosnells and Mosman Park; the Shires of Armadale-Kelmscott, Bassendean, Bayswater, Belmont, Kwinana, Peppermint Grove, Rockingham and Serpentine-Jarrahdale; and part of the Shires of Mundaring and Swan.

The functions of the licensing of drivers of motor vehicles and the licensing of used car dealers were also vested in the Director of the Department of Motor Vehicles under the provisions of the *Acts Amendment (Road Safety and Traffic) Act, 1973*.

Persons who have not previously held a driver's licence under the Act are issued with a probationary licence, the period of probation being three years. At the end of this period the probationary licence becomes an ordinary licence. Persons who have previously held a licence in a place outside the State are issued with an ordinary licence provided that the previous licence had been held for a period of three years.

The Traffic Act provides that the Director of the Department of Motor Vehicles may suspend or cancel a driver's licence under certain conditions, one of them being the number or nature of the convictions under the Act or its Regulations.

Traffic control in general (except for certain powers in relation to the parking of vehicles) is exercised by the Police Department in the Metropolitan Traffic Area and in other areas for which traffic control powers have been conferred on the Commissioner of Police in accordance with the *Traffic Act Amendment Act (No. 2), 1969*. Outside these Police-controlled areas, control is vested by the Traffic Act in the local government authorities.

Considerable changes will occur with the implementation of the *Road Traffic Act, 1974* which was assented to on 3 December 1974. This Act provides for the repeal of the *Traffic Act, 1919-1974*⁽¹⁾, consolidates and amends the law relating to road traffic, and establishes the Road Traffic Authority, a corporate body and a department under and for the purposes of the *Public Service Act, 1904-1973*. The Authority comprises seven members, namely the Commissioner of Main Roads; the Commissioner of Police; the Director General of Transport (or their respective deputies); three persons appointed by the Governor to represent, respectively, the Local Government Association of Western Australia, the Country Shire Councils' Association of W.A., and the Country Town Councils' Association and the permanent head of the Authority appointed under and subject to the *Public Service Act, 1904-1973*.

In addition to vehicle registration and the licensing of drivers of motor vehicles, the Authority is charged with responsibility for the collection and analysis of road traffic statistics and the undertaking of research into the causes and prevention of road accidents. In discharging its functions under the Act, the Authority is required, *inter alia*, to maintain a comprehensive knowledge of significant developments in traffic administration and research projects conducted elsewhere and to achieve the most efficient use of resources by eliminating duplication of work performed by any other body or authority, whether established within the State or elsewhere.

Section 231 of the *Local Government Act, 1960-1975* authorises local authorities to make by-laws in relation to the parking of vehicles and, in the case of the Perth City Council, certain powers in this regard are granted in terms of the *City of Perth Parking Facilities Act, 1956-1970*.

The following table shows the number of motor vehicles, classified according to type, on register in the Perth Statistical Division (see map preceding the *Index*) and in the whole of Western Australia from 1964 to 1973. Vehicles owned by the Australian Government are not licensed under the Traffic Act but are included in the figures. The table also gives the estimated number of vehicles per 1,000 of population and the number of persons per vehicle.

⁽¹⁾ The *Traffic Act, 1919-1974* was repealed in June 1975. The Department of Motor Vehicles was abolished from the same date and its licensing functions were taken over by the Road Traffic Authority

MOTOR VEHICLES ON REGISTER (a) AND RATIO TO POPULATION

At 31 December—	Motor cars and station wagons	Light and heavy commercials, omnibuses	Motor cycles and scooters	Total	Estimated number of vehicles per 1,000 of population		Estimated number of persons per vehicle	
	(¹ 000)	(¹ 000)	(¹ 000)		(¹ 000)	Motor cars and station wagons	All motor vehicles (a)	Motor cars and station wagons	All motor vehicles (a)
PERTH STATISTICAL DIVISION								
1964	132.9	31.6	6.8	171.3	249	321	4.0	3.1
1965	141.9	32.9	6.1	180.9	258	328	3.9	3.0
1966	158.1	36.1	6.1	200.3	276	350	3.6	2.9
1967	171.7	38.2	6.2	216.1	287	361	3.5	2.8
1968	189.9	41.5	6.4	237.8	302	378	3.3	2.6
1969	211.0	45.1	7.0	263.1	320	399	3.1	2.5
1970	230.0	49.3	7.5	286.8	333	416	3.0	2.4
1971	251.0	52.5	8.8	312.3	*350	*435	*2.9	2.3
1972	265.2	55.5	10.9	331.6	361	451	2.8	2.2
1973	282.9	59.6	13.0	355.5	376	472	2.7	2.1

WESTERN AUSTRALIA (b)

1964	191.7	77.9	9.4	279.0	234	341	4.3	2.9
1965	204.5	81.7	8.5	294.7	244	352	4.1	2.8
1966	223.7	85.3	8.4	317.4	259	367	3.9	2.7
1967	241.4	89.3	8.7	339.4	269	378	3.7	2.6
1968	263.6	93.2	9.3	366.1	281	390	3.6	2.6
1969	289.7	98.2	10.2	398.1	297	408	3.4	2.5
1970	311.8	100.2	11.2	423.2	307	417	3.3	2.4
1971	336.6	103.8	13.1	453.5	321	432	3.1	2.3
1972	355.1	107.3	16.2	478.7	333	449	3.0	2.2
1973	377.0	113.0	20.0	510.0	348	470	2.9	2.1

(a) Excluding tractors, trailers, caravans, and plant and equipment such as bulldozers, road graders and rollers, and mobile cranes.

(b) Includes Australian Government-owned vehicles (other than those of the defence services) listed with the Commonwealth Motor Vehicle Registry, Canberra. At 31 December 1973 there were in Western Australia 2,695 such vehicles comprising 294 motor cars, 508 station wagons, 618 light commercials, 1,066 heavy commercials, 42 omnibuses and 167 motor cycles.

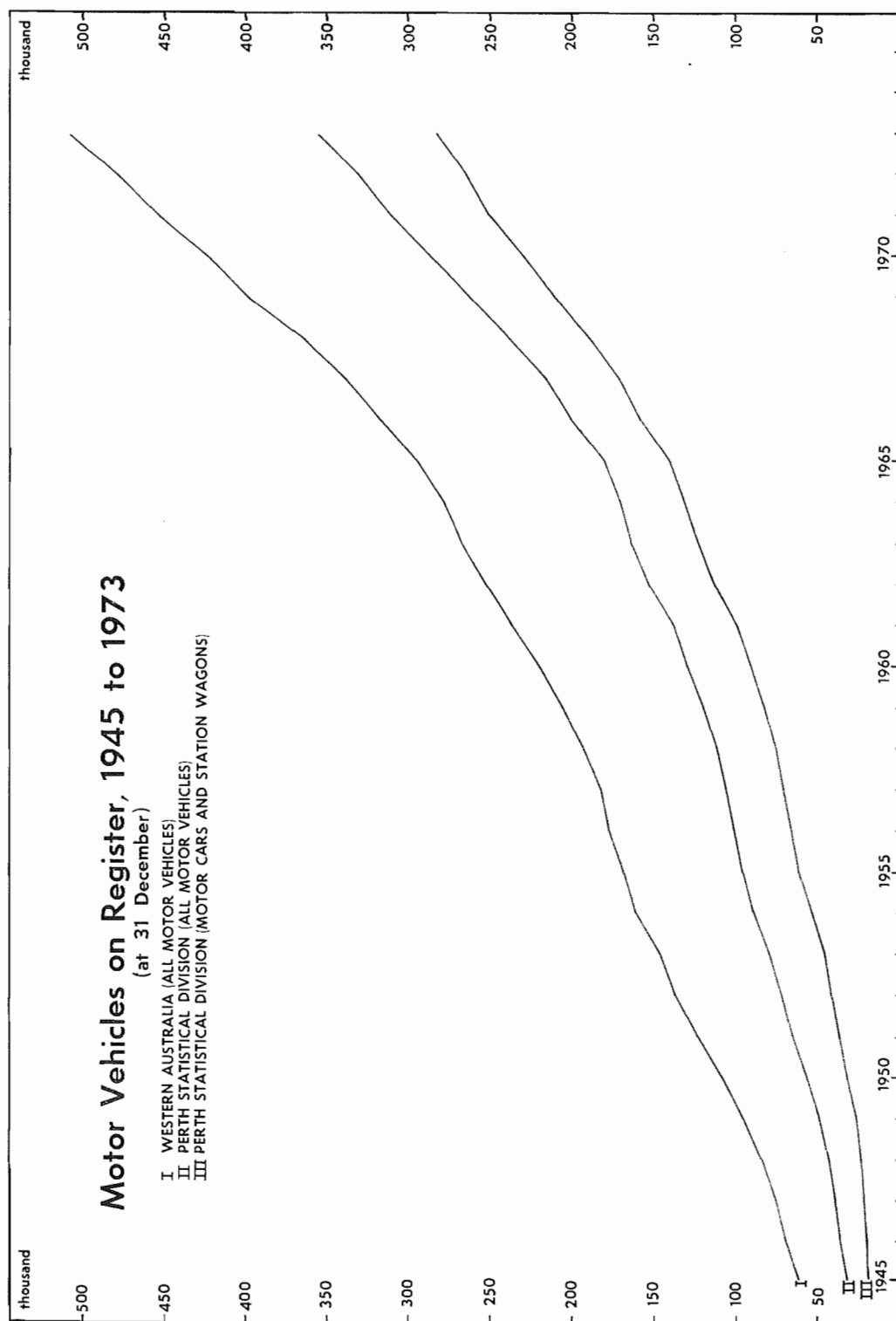
* Revised.

Finance for Roads

The principal source of revenue for road works in Western Australia is in the form of Australian Government financial assistance authorised by a series of Acts, the first of which, the Main Roads Development Act, was passed in 1923. The legislation currently in operation for the provision of grants to the States for or in connection with roads are the *Roads Grants Act 1974*, the *National Roads Act 1974* and the *Transport (Planning and Research) Act 1974*.

The *Roads Grants Act 1974* provides grants to the States for approved expenditures on certain classes of roads, and on minor traffic engineering and road safety improvements. The Act authorises grants of \$700 million for the three-year period from 1 July 1974 to 30 June 1977. Western Australia's share of these moneys amounts to \$113.2 million comprising \$56.2 million for the construction of urban arterial roads, \$27.3 million for the construction and maintenance of rural local roads, \$23.6 million for the construction of rural arterial roads and developmental roads, \$2.5 million for the construction of urban local roads and \$3.6 million for minor traffic engineering and road safety improvements. Payment of moneys provided by the *Roads Grants Act 1974* is contingent on a State's expenditure on roads from its own resources. To qualify for the full amount of the grant Western Australia's 'quota' to be spent on road works during the period to which the Act relates amounts to \$85.8 million.

The *National Roads Act 1974* provides for the allocation of grants to the States to meet the cost of approved construction and maintenance of national highways, export roads and major commercial roads. The Act authorises grants of \$400 million to be made available during the period from 1 July 1974 to 30 June 1977. Of this amount, \$35.4 million is allocated to Western Australia comprising \$26.1 million for the construction of national



highways; \$6·5 million for the maintenance of national highways; and \$2·8 million for the construction and maintenance of export roads and major commercial roads.

The *Transport (Planning and Research) Act* 1974 authorises the Australian Government to grant an amount of \$26 million as financial assistance to the States for approved projects of research or planning in connection with transport during the three-year period from 1 July 1974 to 30 June 1977. The amount of the grants must not exceed two-thirds of the cost of each project. Of the \$26 million, \$11 million was not allocated among the States with the object of imparting some flexibility and allowing projects to be judged on their own merits. Western Australia's share of the balance of \$15 million is \$1·4 million.

The *Traffic Act, 1919-1974* and the *Main Roads Act, 1930-1974* provide for a system of receipt and disbursement of moneys to be spent on roads. Other Western Australian Acts which provide revenue for road purposes are the *Road Maintenance (Contribution) Act, 1965-1972* (see page 298) and the *Transport Commission Act, 1966-1973* (see pages 298 and 476).

The *Traffic Act, 1919-1974* requires that there shall be paid to the Main Roads Trust Account, maintained under the Main Roads Act, all fees received for the issue, renewal and transfer of motor vehicle licences (other than recording fees) and for the issue of excess load permits by local government authorities or by the Director of the Department of Motor Vehicles as the licensing authority in the Metropolitan Traffic Area and other areas for which vehicle licensing powers have been conferred on the Director. These authorities retain the amount of recording fees collected. The Director of the Department of Motor Vehicles is also required to pay into the Account one-half of the fees which he receives on the issue or renewal of drivers' licences.

The *Main Roads Act, 1930-1974* provides that there shall be paid to the Main Roads Trust Account moneys received from the Australian Government as financial assistance in relation to roads; amounts payable under the provisions of the Traffic Act or any other Act; moneys appropriated by the Parliament; and payments by local government authorities in respect of permanent works and the maintenance of main roads and developmental roads. Moneys standing to the credit of the Account are used to meet expenditure by the Commissioner of Main Roads on the administration of the Act and the construction of roads and associated works, and to provide funds to local government authorities for roads and road works.

The *Main Roads Act Amendment Act, 1974* established a system of grants to local government authorities for each of the three financial years during the period ending 30 June 1977. The Act allocates each local government authority to one of four zones and provides for payment, subject to matching expenditure conditions, of a base grant to each local government authority for road construction and maintenance, and for payments of additional grants for approved programmes. The conditions relating to matching expenditures and additional grants varies for each zone. The total amount available to local government authorities in each year is \$14·0 million.

Grants payable from the Main Roads Trust Account constitute the principal revenue available to local government authorities for road construction and maintenance. Other moneys may be provided from the ordinary revenue of a local authority or from loans raised for road purposes.

Beef Cattle Roads. In addition to grants made under the Commonwealth Aid Roads legislation, the Australian Government provided financial assistance, during the six-year period ended 30 June 1967, in terms of a series of Western Australia Grant (Beef Cattle Roads) Acts, the first of which was passed in 1961. The aim of this assistance was to improve the standard of roads used for the transport of beef cattle in the Kimberley. During the period of the programme almost \$17 million was spent, the State Government matching Commonwealth contributions on a dollar for dollar basis. An extension of Commonwealth financial assistance was authorised by the *States Grants (Beef Cattle Roads) Act* 1968. The Act provided a contribution of \$9·5 million as Western Australia's share of funds for a further programme of construction during a period of seven years ended 30 June 1974. The grants were again conditional upon equal expenditure by the State.

ROAD PASSENGER TRANSPORT SERVICES

Motor omnibus services (as well as a passenger ferry service) in the metropolitan area are operated by the Metropolitan (Perth) Passenger Transport Trust, constituted under the *Metropolitan (Perth) Passenger Transport Trust Act, 1957-1973*. For the purposes of the Act, the metropolitan area is defined by a proclamation of 6 June 1973 as being 'all the land within a circle having a radius of 50 kilometres from the Perth Town Hall' and in addition, an area bounded by the South Western Highway and the ocean, extending southward to an east-west line 1.6 kilometres south of the town of Pinjarra. The trolley-bus services formerly operated by the Trust were discontinued on 29 August 1969.

Road transport of passengers outside the metropolitan area is provided by the railways road services (see page 459), which cover long-distance routes between Perth and country centres and by The Eastern Goldfields Transport Board, which serves the Kalgoorlie-Boulder urban area under an agreement with the Kalgoorlie and Boulder local government authorities. In addition, at 30 June 1973 thirty-two private operators, employing 209 buses, were licensed to provide tourist, town, area and charter services.

In certain country areas, children are taken to and from school by motor bus at government expense. In 1972-73 the cost to the Government of school transport services was \$3,677,603. The number of omnibuses engaged was 693. They travelled a daily total of 76,075 kilometres and carried 22,150 children daily.

Details of the operations of government and municipal omnibus services in Western Australia during the five years ended 30 June 1973 are given in the following table.

OMNIBUS SERVICES (a)

Year	Route kilometres operated (b)	Omnibuses at end of year	Omnibus kilometres run '000	Passenger-journeys '000	Employees at end of year	Operating revenues (c) \$'000	Operating expenses \$'000	Depreciation \$'000	Interest \$'000
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METROPOLITAN (PERTH) PASSENGER TRANSPORT TRUST (d) (e)

1968-69	1,011	688	31,762	54,713	1,737	7,205	7,320	626	463
1969-70	.....	1,019	688	33,665	55,804	1,752	7,918	8,011	636	505
1970-71	.....	1,204	726	35,440	57,181	1,795	8,410	9,352	664	553
1971-72	.....	1,239	747	36,600	59,356	1,853	8,553	10,885	712	574
1972-73	.....	1,304	770	36,650	59,108	1,867	8,477	12,139	772	631

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS

1968-69	.....	6,510	63	3,151	234	145	596	635	104	66
1969-70	.....	6,629	63	3,107	222	148	613	654	114	73
1970-71	.....	6,508	52	3,004	207	148	645	712	123	83
1971-72	.....	6,590	57	2,851	180	148	623	756	124	75
1972-73	.....	6,590	52	2,656	170	141	614	840	121	65

THE EASTERN GOLDFIELDS TRANSPORT BOARD

1968-69	.....	23	19	442	791	19	84	82	11	(f)
1969-70	.....	23	21	678	899	19	118	126	13	1
1970-71	.....	23	17	809	667	21	130	138	15	.....
1971-72	.....	23	19	676	664	21	133	132	15	.....
1972-73	.....	23	23	717	570	22	158	159	14	.....

(a) Excludes tourist services. (b) Excludes school bus routes. (c) Passenger fares and subsidies only. (d) For passenger ferry operations, see page 473. (e) Includes operations of trolley-buses until 29 August 1969 when the service was discontinued. (f) Less than \$500.

MOTOR VEHICLE USAGE

The most recent information on the usage of motor vehicles was that obtained by means of a sample survey conducted throughout Australia by the Australian Bureau of Statistics in relation to the twelve months ended 30 September 1971.

The sample for the whole survey comprised approximately 51,000 vehicles and some 800 bus fleets. Excluding buses, approximately 80 per cent of the sampled vehicles were trucks and other commercial types, this preponderance being necessitated by the diversity of the truck sector.

Because the survey results are based on a sample, representing some 5.1 million vehicles on register at 30 September 1971, they are subject to sampling variability when compared with results which would have been obtained from a complete census of all registered motor vehicles using the same questionnaires and procedures.

In Western Australia, the survey disclosed an average annual distance travelled of 16,900 kilometres for all vehicles, except buses. Buses averaged 33,500 kilometres, cars and station wagons 16,400, while articulated trucks with carrying capacity of sixteen tonnes and over averaged 70,800 kilometres.

Detailed information appears in the publication *Survey of Motor Vehicle Usage, twelve months ended 30 September 1971 (preliminary)*, reference number 14.4 published by the Commonwealth Statistician, Canberra.

ROAD TRAFFIC ACCIDENTS

Statistics of road traffic accidents are prepared from information concerning accidents in public thoroughfares, as reported to officers of the Police Department in the Metropolitan Traffic Area and other areas as prescribed (see page 466) and, outside those areas, to traffic inspectors employed by local government authorities and/or police officers. Accidents involving casualties are those which result in the death of any person within a period of thirty days after the accident, or in which any person suffers bodily injury to an extent requiring surgical or medical treatment.

The following table shows, for each year during the period 1969 to 1973, the number of accidents involving casualties which occurred in Western Australia and in Australia.

The number of persons injured per 10,000 motor vehicles on register was higher in Australia as a whole than in Western Australia for each of the years shown.

ROAD TRAFFIC ACCIDENTS INVOLVING CASUALTIES WESTERN AUSTRALIA AND AUSTRALIA

Particulars	1969	1970	1971	1972	1973
WESTERN AUSTRALIA					
Accidents involving casualties—					
Total	4,809	5,218	5,178	4,909	5,404
Per 10,000 motor vehicles on register (a)	126	127	118	105	110
Per 100,000 of mean population (b)	503	525	502	465	504
Number of persons killed—					
Total	311	351	332	340	358
Per 10,000 motor vehicles on register (a)	8	8	8	7	7
Per 100,000 of mean population (b)	33	35	32	32	33
Number of persons injured—					
Total	6,788	7,373	7,328	6,751	7,377
Per 10,000 motor vehicles on register (a)	178	179	167	145	150
Per 100,000 of mean population (b)	710	742	710	639	688
AUSTRALIA					
Accidents involving casualties—					
Total	62,597	65,210	65,210	65,750	70,151
Per 10,000 motor vehicles on register (a)	*138	*136	*129	123	124
Per 100,000 of mean population (b)	*510	521	*510	506	533
Number of persons killed—					
Total	3,502	3,798	3,590	3,422	3,679
Per 10,000 motor vehicles on register (a)	8	8	7	6	7
Per 100,000 of mean population (b)	29	30	28	26	28
Number of persons injured—					
Total	87,864	91,554	91,036	89,766	95,204
Per 10,000 motor vehicles on register (a)	*194	*191	*180	168	169
Per 100,000 of mean population (b)	*716	*731	*712	691	723

(a) Based on final results of the census of motor vehicles on register at 30 September 1971. (b) Based on final results of the Population Census of 30 June 1971.

* Revised.

In the next table road traffic accident casualties which occurred in Western Australia during the five years ended 31 December 1973 are classified according to type of road user. The figures shown in the category 'Other' refer to such persons as bystanders, train drivers, riders of horses and drivers of animal-drawn vehicles.

**ROAD TRAFFIC ACCIDENTS
CASUALTIES ACCORDING TO TYPE OF ROAD USER**

Type of road user	1969	1970	1971	1972	1973
PERSONS KILLED					
Drivers of motor vehicles	124	137	136	129	145
Motor cyclists (a)	18	8	5	17	24
Pedal cyclists	9	4	2	4	7
Passengers—					
Pillion	3	3	2	4	2
Other	84	117	116	104	93
Pedestrians	73	74	64	77	86
Other	....	8	7	5	1
Total	311	351	332	340	358
PERSONS INJURED					
Drivers of motor vehicles	2,863	3,247	3,228	2,780	3,134
Motor cyclists (a)	325	361	439	541	615
Pedal cyclists	340	247	242	226	199
Passengers—					
Pillion	51	54	72	86	97
Other	2,468	2,752	2,664	2,420	2,626
Pedestrians	715	689	661	680	687
Other	26	23	22	18	19
Total	6,788	7,373	7,328	6,751	7,377

(a) Includes riders of motor scooters.

The following table gives a classification of casualties according to the ages of persons killed and persons injured during each year of the period from 1969 to 1973.

ROAD TRAFFIC ACCIDENTS—CASUALTIES CLASSIFIED ACCORDING TO AGE

Year	Age last birthday (years)										Total		
	0-4	5-6	7-16	17-20	21-29	30-39	40-49	50-59	60 and over	Not stated			
PERSONS KILLED													
1969	13	6	27	56	70	35	27	21	56	....	311
1970	14	3	31	58	76	34	41	42	52	....	351
1971	10	6	34	52	72	33	29	34	62	....	332
1972	18	6	33	61	89	30	36	21	45	1	340
1973	11	4	31	61	78	44	41	30	58	....	358
PERSONS INJURED													
1969	261	134	867	1,383	1,293	728	608	424	501	589	6,788
1970	238	117	815	1,624	1,524	765	697	480	479	634	7,373
1971	246	116	826	1,619	1,594	785	668	470	481	523	7,328
1972	257	117	724	1,460	1,453	681	563	436	451	609	6,751
1973	239	113	746	1,656	1,552	801	598	456	471	745	7,377

Road traffic accidents during the years ended 31 December 1972 and 1973 are classified in the next table according to nature of accident and type of vehicle involved. It should be noted that, as accidents (and casualties) may involve more than one type of vehicle and, in such cases, are classified to each type involved, it is not appropriate to derive totals by adding the figures shown in the second part of the table.

ROAD TRAFFIC ACCIDENTS NATURE OF ACCIDENT AND TYPE OF VEHICLE INVOLVED

Nature of accident and type of vehicle involved	1972			1973		
	Accidents involving casualties	Casualties		Accidents involving casualties	Casualties	
		Persons killed	Persons injured		Persons killed	Persons injured
NATURE OF ACCIDENT						
Vehicle colliding with—						
Moving or stationary vehicle (a)	2,611	102	3,918	3,048	108	4,542
Railway vehicle	12	1	24	8	5	6
Pedestrian	699	72	653	717	86	677
Parked vehicle	122	3	171	93	7	107
Fixed object	8	....	11	2	....	2
Animal or animal-drawn vehicle	20	....	37	16	....	20
Vehicle overturning or leaving road	1,320	144	1,806	1,396	143	1,885
Passenger accident	25	5	23	27	6	21
Other accidents	92	13	108	97	3	117
Total	4,909	340	6,751	5,404	358	7,377

TYPE OF VEHICLE INVOLVED (b)

Motor vehicle—						
Car, other than taxi	4,103	270	5,785	4,572	273	6,399
Taxi	78	1	101	71	....	108
Van; utility	870	62	1,232	909	57	1,265
Truck	246	23	319	296	26	375
Semi-trailer	58	6	78	47	19	73
Omnibus	58	7	77	59	7	95
Motor cycle, motor scooter	621	20	700	703	26	784
Other (c)	29	11	30	33	6	31
Pedal cycle	229	4	235	205	7	207

(a) Excludes parked vehicles.

(b) See letterpress immediately preceding table.

(c) Includes unidentified vehicles.

For additional information on road traffic accidents in this State, the reader is referred to the mimeographed bulletin *Road Traffic Accidents involving Casualties* issued quarterly and annually by the Western Australian Office of the Australian Bureau of Statistics or to the printed publication *Statistics of Western Australia—Transport and Communication*.

PASSENGER FERRY SERVICE

The Metropolitan (Perth) Passenger Transport Trust operates a passenger ferry service across the Swan River from Perth to South Perth and makes boats available for charter. Particulars of private charter excursions, other than those which relate to operating revenues and expenses, are excluded from the figures in the following table.

PASSENGER FERRY SERVICE

Year	Ferries at end of year	Kilometres run (a)	Passenger-journeys (a)	Employees at end of year	Operating revenues	Operating expenses	Depreciation	Interest
1969-70	5	35,933	367,643	9	\$ 70,079	\$ 58,233	\$ 3,152	\$ 5,098
1970-71	5	36,036	357,372	9	74,393	66,468	3,188	6,276
1971-72	5	36,040	370,366	9	78,018	68,130	3,479	6,066
1972-73	5	35,904	365,184	9	85,675	76,099	3,845	6,030
1973-74	5	35,510	396,802	10	91,334	96,455	4,614	8,979

(a) Excludes private charter operations.

AIR TRANSPORT

The supervision and control of civil air transport throughout Australia is the responsibility of the Australian Department of Transport. Its regulatory functions include the licensing of air crew, engineering staff, airlines, charter and aerial work operators, flying schools and aerodromes; and the establishment and operation of air traffic control procedures. The Australian Minister for Transport has the responsibility for the approval of fares and freight rates. The Department is responsible for the conduct of search and rescue operations; the provision and maintenance of government aerodromes, aeronautical communication systems and radio navigational aids; and the specification of required meteorological services. It also co-operates with the State Transport Commission which has a statutory licensing function in respect of air transport facilities within the State.

An extensive system of regular air services operates in Western Australia for the transport of passengers, freight and mail. The International Airport, twelve road kilometres from central Perth, is used by:

- (i) six international operators providing regular jet service to and from Africa, Europe, the Middle East, India, Indonesia, Malaysia, Singapore, Hong Kong and Japan;
- (ii) two interstate operators providing up to eight jet services per day between Perth and other Australian capital cities;
- (iii) one operator based in Perth providing frequent jet services to eleven other towns in Western Australia and to three towns in the Northern Territory and turbo-prop feeder services from another twenty-one ports to the jet routes; and
- (iv) commuter operators connecting Perth with fourteen country centres.

Other commuter services connect ten townships with ports on jet routes.

During the past ten years the average annual passenger traffic growth at Perth Airport has exceeded 14 per cent.

In addition to the aircraft capacity provided by airline and commuter operators there is a large fleet of light aircraft available for charter work and all kinds of aerial work including aerial surveys, spotting, aerial agriculture, etc. This fleet which includes executive twin-jet type aircraft and helicopters numbered 244 in December 1974 when there were another 272 private (non-commercial) aircraft based in Western Australia.

Perth Airport is equipped with modern electronic and electrical navigation and approach aids to enable operations in periods of low visibility, and thirteen airports in the State have been equipped with visual approach slope indicator lighting systems to permit regular jet operations at those ports. There are eleven communication and flight service centres and three air traffic control establishments at various ports throughout Western Australia.

In December 1974 the Australian Government owned and maintained twenty-three aerodromes in Western Australia and there were forty licensed aerodromes owned privately or by local authorities. Strips suitable for use by light aircraft and scattered throughout the State have been estimated to exceed 500 in number. The Royal Flying Doctor Service, which has occasion to operate to and from many of those strips, has a number of bases in Western Australia and details of its activities are given in Chapter V, Part 3.

Airport Operations. The following table, compiled from information published by the Department of Transport, Air Transport Group, provides a summary of operations at principal airports in Western Australia during each of the years 1971 to 1973. The figures refer only to regular public transport operations on scheduled services by licensed airlines and do not include charter and commuter services, details of which are not available. Commuter service is a term used to describe regular flights by charter firms with small aircraft operating to fixed and published timetables. Information similar to that shown in the table below but on a fiscal year basis appears in *Statistics of Western Australia—Transport and Communication*.

CIVIL AVIATION—TRAFFIC HANDLED AND AIRCRAFT MOVEMENTS
AT PRINCIPAL AIRPORTS

Airport	Passengers (a)			Freight (tonnes) (b)			Aircraft movements (c)		
	1971	1972	1973	1971	1972	1973	1971	1972	1973
Broome	10,691	11,255	17,407	223	203	309	1,576	1,685	2,064
Carnarvon	13,647	11,905	15,134	127	95	102	1,656	1,250	1,339
Derby	16,025	16,334	20,395	1,025	699	744	2,589	2,369	2,477
Geraldton	20,593	21,168	27,401	79	59	69	1,624	1,618	1,545
Kalgoorlie	32,193	23,557	28,448	275	181	209	1,136	636	762
Karratha (d)	65,986	60,872	52,621	826	710	682	2,921	2,576	2,959
Kununurra	15,294	15,218	17,888	431	387	430	1,749	1,627	1,602
Learmonth	7,728	8,067	8,921	200	106	116	1,042	779	859
Newman	22,100	12,808	18,241	292	171	256	1,791	1,582	1,560
Paraburdoo	24,019	19,022	27,425	288	259	402	1,963	1,733	2,247
Perth—									
Internal (e)	541,412	524,258	595,708	9,108	8,331	10,208	11,985	10,447	10,965
International	84,133	105,000	116,705	1,128	1,205	1,377	3,107	3,148	2,569
Port Hedland	51,804	44,312	54,483	1,659	1,146	1,302	4,135	3,324	3,893
Tom Price	15,371	8,389	9,720	167	102	141	1,578	1,282	1,586

(a) Total of embarkations and disembarkations. (b) Total of freight loaded and unloaded. (c) Total of arrivals and departures. (d) Formerly Dampier. (e) Interstate and intrastate.

Casualty Accidents. The following table shows the number of accidents involving civil aircraft which resulted in death or serious injury. The statistics relate to the following classes of operation: regular public transport; charter flights; aerial agriculture; training; other aerial work; private; and gliding.

CIVIL AVIATION—ACCIDENTS INVOLVING CASUALTIES (a)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
WESTERN AUSTRALIA					
Number of—					
Accidents (a)	6	6	3	3	4
Persons killed	2	10	7	2	7
Persons seriously injured	9	3	....	1	....
AUSTRALIA					
Number of—					
Accidents (a)	46	31	28	30	34
Persons killed	49	48	37	41	46
Persons seriously injured	40	24	23	8	19

(a) Accidents involving civil aircraft which resulted in death or serious injury. Excludes parachutists killed on contact with earth after an uninterrupted fall. Excludes accidents outside Australia involving aircraft on the Australian register.

TRANSPORT CO-ORDINATION

State Transport Co-ordination Act

The *State Transport Co-ordination Act, 1966*, which came into operation on 19 June 1967, repeals the *State Transport Co-ordination Act, 1933-1961*. The Act provides for the appointment of a Director General of Transport, a Transport Advisory Council and a Transport Users' Board.

The duties of the Director General are to recommend to the Minister transport policy or changes in transport policy and measures for achieving policy objectives and the co-ordination of the various forms of transport service; to implement such policies and measures; to provide for research in transport planning and operation and in the economics of every form of transport; to co-ordinate capital works programmes for public transport services; to inquire into existing transport services; to recommend the provision of road transport services; to examine and report on any proposal for the construction of a new

railway; to recommend the closure or partial suspension of any transport service, including a railway; and to advise the Minister on the administration of specified Acts relating to transport.

The Transport Advisory Council comprises the Director General of Transport (as Chairman), the Commissioner of Railways, the Commissioner of Main Roads, the Commissioner of Transport, the Chairman of the Metropolitan (Perth) Passenger Transport Trust, the Chairman of the Western Australian Coastal Shipping Commission, a representative of the West Australian Road Transport Association, and a representative of operators of regular air transport services. The duties of the Council are to formulate proposals in respect of, and make recommendations on, any matter referred to it by the Minister or the Director General of Transport, or that it may bring forward of its own motion.

The Transport Users' Board consists of the Director General of Transport (as Chairman) and four persons appointed by the Governor on the nomination of the Minister. These four members must be persons who, in the opinion of the Minister, are capable of assessing the financial and economic effect on transport users of any proposed or existing transport policy, two of them being persons particularly versed in the transport needs of rural industries. The Transport Users' Board is charged with the duty of considering and, where it so resolves, of making recommendations on, any matter affecting a transport service operating in the State, or concerning the lack or inadequacy of a transport service.

Transport Commission Act

The *Transport Commission Act, 1966-1973* provides for the appointment of a Commissioner of Transport. Under the direction of the Minister, the Commissioner is required to call tenders for the provision of road transport where, in the opinion of the Minister, the requirements of a district are not adequately served by any form of transport; to administer and direct the payment of such subsidies with respect to the provision of transport as may be authorised pursuant to the Act; and to consider and determine all applications for licences in respect of public vehicles. In regard to such licences the Commissioner may specify any particular conditions concerning the granting or holding of a licence, and may determine, in respect of any particular licence or group of licences, the conditions that shall be imposed on the granting and holding of such licences.

The public vehicles licensed by the Commissioner are omnibuses (other than those operated by the Metropolitan (Perth) Passenger Transport Trust), commercial goods vehicles, and aircraft.

In the licensing of omnibuses the Commissioner is empowered to prescribe the routes to be operated, the stopping places at which passengers may be picked up or set down, the fares to be charged, the timetables to be observed and the maximum number of passengers to be carried at any one time on any vehicle. The Commissioner may impose such other conditions as he thinks proper in the public interest.

All commercial goods vehicles operating on public roads are required to be licensed, except those which operate solely in the area within a radius of thirty-five kilometres from the General Post Office, Perth, or within a radius of thirty-five kilometres from the owner's place of business (or, where such place of business is situated more than sixty-five kilometres from the General Post Office, Perth, within a radius of forty kilometres). Exemptions from licensing provisions also apply to vehicles used for the transport of specified types of goods, mainly primary produce including forest products, minerals and livestock, or for the transport of goods within particular areas or between particular points.

Aircraft licences issued by the Commissioner relate to regular services and charter flights. Aircraft exempted from the licensing provisions of the Act are those operated solely in connection with the Royal Flying Doctor Service or in the course of aerial spraying, crop dusting, seed sowing, fertiliser distribution, photography, geophysical surveying, dingo baiting or whale or fish spotting.

The *Road and Air Transport Commission Act Amendment Act, 1970* widens the scope of the original Act to include control of the operations of ships engaged in the coasting trade. Under the provisions of the 1970 legislation, ships other than those operated by

the Western Australian Coastal Shipping Commission may not engage in the coasting trade unless authorised to do so by a licence or permit granted by the Commissioner of Transport.

Financial transactions are recorded in a Transport Commission Fund account as required by the Act. The principal revenues of the Fund are receipts from licence and permit fees and amounts received from the Treasury for distribution in the form of subsidy to transport operators and others in certain areas. The expenditure from the Fund includes amounts necessary to meet administration costs, disbursements to the Main Roads Department and to local government authorities for the maintenance and improvement of roads, moneys required to be held in trust for the provision and maintenance of landing grounds, and the payment of subsidies. Subsidies are paid principally on the cartage of grain and fertilisers, but also on the air transport of perishable goods to remote parts of the State and on travel, mainly by air, by students normally resident in those areas.

Taxi-cars (Co-ordination and Control) Act

The *Taxi-cars (Co-ordination and Control) Act, 1963-1973* constitutes a Taxi Control Board of seven members to provide for the co-ordination and control of taxi-cars and the registration and conduct of taxi-car drivers in the Metropolitan Traffic Area and such other areas as may be declared. The Act provides that the Board shall consist of the Commissioner of Transport (as Chairman); a member of the police force appointed by the Commissioner of Police; and five persons, appointed by the Governor, comprising one to represent the interests of local authorities, chosen from a panel of names that is obtained by each local authority submitting the name of one person; one nominated by the W.A. Taxi Operators' Association; one taxi-car owner and one full-time taxi-car driver, each of whom shall be elected by taxi-car owners and operators; and one nominated by the Metropolitan (Perth) Passenger Transport Trust.

The principal functions of the Board are the formulation of schemes for the co-ordination and control of taxis; the determination of the number and kind of taxis to be licensed; the issue of licences; the determination of fares and other charges; the supervision of the operation of taxis and the regulation of stands; the registration of, and the control of the conduct and dress of, drivers; and the enforcement of regulations made under the Act.

It is provided that the number of taxis that may be licensed to operate within the Metropolitan Traffic Area shall not at any time exceed one for every 800 of the population of the area.

The Act establishes a Taxi Control Fund for the receipt of fees payable on the issue, renewal or transfer of licences. The expenses of the administration of the Act are paid from the Fund.

Chapter IX—continued

Part 4—Communication

POSTS, TELEGRAPHS AND TELEPHONES

The first postmasters in the Colony of Western Australia were appointed at Perth and Fremantle in 1830 and a Postal Department was established by the Colonial Government in 1834. Telegraphic communication, between Perth and Fremantle, was inaugurated in 1869 by means of a private line, which was purchased by the Government in 1871. A telephone exchange system, installed and operated by the Government, was opened at Perth in 1887.

In 1901, following the federation of the Australian Colonies, the post, telegraph and telephone services of the State Governments were transferred to the Commonwealth Government. The Post and Telegraph Act of 1901 placed the services under the control of a Commonwealth Minister to be known as the Postmaster-General.

The following table shows the number of persons employed by the Postmaster-General's Department in Western Australia, and the number of post offices and telephone offices throughout the State at 30 June in each year from 1970 to 1974. Full-time employees are those directly under the control of the Department. The remainder, shown as 'Other employees', provide services, which may or may not occupy their full time, under contract or in return for payments appropriate to work performed. 'Non-official' post offices are conducted by persons who are not members of the Australian Public Service, and are frequently operated in conjunction with some other business activity. 'Telephone offices' are those where trunk-line calls and local calls may be made and telegrams lodged by members of the public, but which do not provide postal facilities. Multi-coin public telephones are not included.

**POSTMASTER-GENERAL'S DEPARTMENT
NUMBERS OF EMPLOYEES AND OFFICES—WESTERN AUSTRALIA**

Particulars	At 30 June—				
	1970	1971	1972	1973	1974
Full-time employees—					
Permanent officers	6,001	6,400	6,777	7,353	7,744
Temporary and exempt officers	2,678	2,767	2,530	2,275	2,266
Total	8,679	9,167	9,307	9,628	10,010
Other employees—					
Non-official postmasters and staff	461	444	435	431	418
Telephone office-keepers	161	161	143	139	124
Mail contractors (a)	305	338	297	261	312
Part-time employees	340	391	371	408	416
Total	1,267	1,334	1,246	1,239	1,270
Total, Employees	9,946	10,501	10,553	10,867	11,280
Post offices—					
Official	161	163	161	161	160
Non-official	445	431	422	421	407
Telephone offices	162	159	139	(b) * 46	(b) 42
Total, Offices	768	753	722	* 628	609

(a) Includes persons employed by contractors to drive vehicles on mail runs. (b) Under present definitions Pastoral offices with subscribers are excluded from Telephone offices and are now included only under 'Number of Exchanges' (see page 481). A 'Pastoral office' is an office situated in a remote area, primarily for the benefit of a resident of that area.

* Revised.

The total number of employees of the Postmaster-General's Department for Australia as a whole at 30 June 1974 was 135,585. At the same date there were 6,266 official and non-official post offices.

Figures relating to the cash receipts and expenditure of the Department in Western Australia during each of the financial years 1969-70 to 1973-74 are given in the following table. They represent actual collections and payments in each year, as shown by records kept for Treasury purposes. Some additional items of departmental revenue and expenditure are not apportioned to States and therefore do not appear in the table. As the figures shown relate to actual collections and payments made, they do not represent the net results of the Department's operations for the year.

POSTMASTER-GENERAL'S DEPARTMENT
CASH RECEIPTS AND EXPENDITURE—WESTERN AUSTRALIA
($\$'000$)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
CASH RECEIPTS (a)					
Postal	11,567	13,577	15,716	16,547	18,152
Telephone	30,452	37,631	45,663	51,507	61,240
Telegraph	1,523	1,944	2,246	2,441	2,822
Proceeds of sales	493	480	326	616	938
Recoverable works	2,058	2,156	2,133	2,583	3,119
International services	223	182	314	202	291
Total	46,317	55,970	66,398	73,896	86,562
CASH EXPENDITURE (b)					
Salaries and wages	32,585	37,938	44,778	51,033	62,301
Material	26,203	22,465	23,591	20,019	22,497
Carriage of mails by contractors	781	849	916	970	1,030
Buildings, sites, properties	6,025	4,377	4,121	4,589	4,772
Accommodation services	2,026	2,195	2,454	2,613	2,964
Other administrative expenses (c)	4,224	4,532	4,783	5,361	5,827
Total	71,844	72,356	80,643	84,584	99,391

(a) Actual collections during the year as taken from the cash records of the Department. (b) Actual payments made during the year for all Departmental purposes. (c) Major items within this classification are travelling allowances, repairs to plant, engineering contract works and hire of vehicles.

The annual net results of the operations throughout Australia of each service, for the three years ended 30 June 1974 after providing for working expenses (including depreciation, superannuation and furlough liability) and interest charges are shown in the following table. The amounts appearing under the heading of *Interest* represent interest on funds provided by the Treasury.

POSTMASTER-GENERAL'S DEPARTMENT—PROFIT OR LOSS (a) OF SERVICES
AUSTRALIA
($\$'000$)

Particulars	1971-72			1972-73			1973-74		
	Postal	Tele-communications	All services	Postal	Tele-communications	All services	Postal	Tele-communications	All services
Earnings	213,364	645,129	858,493	226,496	710,565	937,061	244,996	853,435	1,098,431
Working expenses	210,850	456,470	667,319	231,786	517,471	*749,257	280,738	650,995	931,733
Profit or loss before charging interest	2,514	188,659	191,173	*-5,290	193,094	187,804	-35,742	202,440	166,698
Interest	13,767	117,607	131,374	15,602	130,979	146,581	18,776	143,248	162,024
Profit or loss after charging interest	-11,253	71,052	59,799	*-20,892	62,115	41,223	-54,518	59,192	4,674

(a) Minus sign (—) denotes loss.

* Revised.

Posts

In the following table, postal matter handled in Western Australia during each year from 1969-70 to 1973-74 is dissected according to the type of article dealt with, and whether received from overseas or posted for delivery in Australia or to an overseas destination.

POSTAL ARTICLES HANDLED (a)
(Thousands)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Posted for delivery within Australia—					
Ordinary postal articles—					
Letter-form	159,151	158,178	154,859	162,275	162,110
Other	14,104	13,719	12,993	12,757	13,851
Parcels (b)	1,381	1,417	1,193	1,245	1,218
Registered articles (c)	751	718	626	520	510
Posted for delivery overseas—					
Ordinary postal articles—					
Letter-form	9,165	9,724	10,124	10,319	8,778
Other	1,009	878	742	788	579
Parcels (b)	53	46	80	68	72
Registered articles (c)	96	110	103	93	100
Received from overseas—					
Ordinary postal articles—					
Letter-form	5,679	7,036	7,153	6,860	7,318
Other	3,344	2,931	3,084	2,827	3,173
Parcels (b)	133	137	150	168	177
Registered articles (c)	67	65	75	77	83

(a) Excludes matter received from other Australian States.
and duty parcels.

(b) Includes registered, cash on delivery
(c) Excludes registered parcels; see footnote (b).

Telegraphs and Telephones

The next two tables relate to telegraph and telephone services in Western Australia in each financial year from 1969-70 to 1973-74. Telegrams can be lodged at any post office, telephone office or from any public telephone equipped for multi-coin operation. In addition, telegrams can be despatched from any subscriber's telephone or teleprinter exchange (telex) equipment. The number of telegraph offices in the State and of telegrams transmitted from Western Australia during the years 1969-70 to 1973-74 are set out below.

Telephone services comprise ordinary exchange services (*i.e.* those which provide direct access to the exchange system by means of exclusive use of an exchange line), duplex services, party-line services, private branch exchange services and public telephones. The numbers shown as 'Telephone instruments in service' relate to those through which direct access to the exchange system may be obtained.

At 30 June 1974, the pair length of conductors in telegraph and telephone cables in Western Australia was 2,182,224 kilometres. The pair length of aerial wires was 84,412 kilometres and the length of pole routes was 25,496. There were 8,844 tube kilometres of coaxial cable.

The teleprinter exchange service (telex) was introduced in Perth in December 1956. This service enables a subscriber's teleprinter to be connected with that of any other subscriber in the local network or networks in other States. Details of the number of services and internal calls for the five years ended 30 June 1974 appear on page 481.

TELEGRAPHS

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of—					
Offices (a)	768	753	722	723	693
Telegrams—					
Within Australia—Dispatched	'000 2,487	'000 2,259	'000 2,113	'000 2,058	'000 2,035
Beyond Australia—Dispatched	188	181	176	164	193

(a) At 30 June.

TELEPHONES AND EXCHANGES (a)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of—					
Exchanges	746	744	747	744	742
Services—					
Metropolitan (b)	127,199	136,810	143,866	153,611	166,142
Other	58,857	62,748	66,765	71,929	78,502
Total	186,056	199,558	210,631	225,540	244,644
Telephone instruments in service—					
Total	256,303	285,480	304,044	325,851	352,471
Per 100 of population	25.9	27.7	28.9	*30.5	32.3

(a) At 30 June.
Post Office, Perth.

(b) Services connected to exchanges located within 16 kilometres of the General
* Revised.

TELEPRINTER EXCHANGE NETWORK (TELEX)

Particulars	1969-70	1970-71	1971-72	1972-73	1973-74
Number of—					
Services at 30 June	686	887	1,023	1,171	1,434
Internal calls (a)	1,319,886	1,673,421	2,079,802	2,256,590	2,702,379

(a) Includes Post Office official traffic.

RADIOCOMMUNICATION

The Overseas Telecommunications Commission (Australia) is the authority responsible for the operation of telecommunication services between Australia and other countries, with ships at sea and to and between Australia's external Territories.

The Commission was established under the provisions of the *Overseas Telecommunications Act* 1946 which implemented a recommendation of the 1945 Commonwealth Telecommunications Conference for national ownership of the external telecommunications services of the British Commonwealth countries concerned. In 1966 the Commonwealth countries completed a review of the machinery for their collaboration in telecommunications and, as a result, the Commonwealth Telecommunications Organisation was established. The purpose of this body is to promote the efficient exploitation and development of the Commonwealth external telecommunications system.

A number of countries, including Australia, agreed in 1964 to establish a global commercial communications satellite system and Australia, represented by the Commission, is a member of the management body of the sixty-nine nation International Telecommunications Satellite Consortium (INTELSAT).

The Commission operates three 'standard' earth stations (at Carnarvon in Western Australia, Ceduna in South Australia and Moree in New South Wales) which can communicate via satellite with stations in other countries. The standard station at Carnarvon was brought into service on 1 October 1969, enabling a non-standard earth station at Carnarvon to be released for the full-time performance of telemetry, tracking and command functions for the INTELSAT organisation.

The transmission facilities used by the Commission in its external operations are submarine cables, satellites and high frequency radio. It operates a coastal radio service and, in association with the Post Office within Australia and with communication carriers in other Commonwealth and foreign countries, provides public message telegram, telephone, telex, photo-telegram, leased circuit and television services to most countries and places throughout the world.

The coastal radio service provides, as its principal function, essential maritime communications, including distress signals, navigation warnings, air-sea rescue service and radio-medical service messages, meteorological messages and time signals, as well as naval traffic as required. It provides also, by radiotelegraph and radiotelephone, commercial

communications with ships at sea and, by radiotelephone, message communication with small vessels. Western Australian coastal radio stations are located at Perth, Broome, Carnarvon, Esperance and Geraldton.

The licensing of civil radiocommunication stations and the transmission of radio messages within Australia are the responsibility of the Postmaster-General's Department. The Royal Flying Doctor Service of Australia, to which reference is made in Part 3 of Chapter V, provides general telegraph facilities in remote areas through its extensive radio network.

At 30 June 1974 there were 203,254 civil radiocommunication stations authorised throughout Australia. They comprised 5,180 fixed stations, 17,953 land stations, 173,415 mobile stations, 6,698 amateur stations and 8 space services.

The numbers of each type of radiocommunication station authorised to operate in Western Australia at 30 June 1974 are given in the next table. The following definitions are relevant in considering the figures shown in the table. *Fixed Stations*—Stations established at fixed locations for communication with other stations similarly established. *Outposts*—Stations established in outback areas for communication with control stations such as those of the Royal Flying Doctor Service. *Land Stations*—Stations established at fixed locations for communication with mobile stations. *Coast Stations*—Land stations for communication with ocean-going vessels. *Mobile Stations*—Equipment installed in aircraft (aeronautical), motor vehicles (land mobile services), harbour vessels (harbour mobile services) and ocean-going vessels (ship), and mobile equipment of organisations such as the Royal Flying Doctor Service. *Radiodetermination Stations*—Stations employed for the determination of position, or the obtaining of information relating to position, by means of the propagation of radio waves. *Space Services*—Radiocommunication services, between earth stations and space stations, between space stations or between earth stations when signals are re-transmitted by space stations, or transmitted by reflection from objects in space, excluding reflection or scattering by the ionosphere or within the earth's atmosphere.

CIVIL RADIOCOMMUNICATION STATIONS AUTHORISED AT 30 JUNE 1974

Type of station	Number	Type of station	Number
TRANSMITTING AND RECEIVING—		TRANSMITTING AND RECEIVING—cont.	
Fixed stations—		Mobile stations—	
Aeronautical	4	Aeronautical	365
Services with other countries	15	Land mobile services	16,884
Outpost	386	Harbour mobile services	367
Other	393	Outpost	952
Land stations—		Radiodetermination	87
Aeronautical	42	Ship	1,816
Base stations—		Space services	2
Land mobile services	1,947	Amateur	525
Harbour mobile services	36		
Coast	69	TOTAL	23,980
Experimental	61	RECEIVING ONLY (fixed)	106
Repeater	29		
		GRAND TOTAL	24,086

BROADCASTING AND TELEVISION

Broadcasting and television services throughout Australia are controlled by the Australian Broadcasting Control Board under the direction of the Minister for the Media. The Board is constituted under a provision of the *Broadcasting and Television Act 1942-1974*, which places under its general control the National Broadcasting Service, the National Television Service, the Commercial Broadcasting Service and the Commercial Television Service. Other relevant Acts are the *Broadcasting Stations Licence Fees Act 1964-1973*, the *Television Stations Licence Fees Act 1964-1966* and the *Parliamentary Proceedings Broadcasting Act 1946-1974*. Under the last mentioned Act, the Australian Broadcasting Commission is obliged to broadcast the proceedings of the Senate or the House of Representatives as determined by a Parliamentary Joint Committee.

The principal functions of the Australian Broadcasting Control Board, which consists of three full-time and two part-time members, are to ensure that services by broadcasting stations and television stations are in accordance with approved plans, that stations are

operated in accordance with appropriate technical standards, and that adequate and comprehensive programmes are provided by commercial broadcasting and television stations. Subject to the approval of the Minister and of the Treasurer, the Board may give financial and other assistance to commercial broadcasting stations for the purpose of ensuring that programmes of adequate extent, standard and variety are provided in the areas which they serve. The Board is required to hold public inquiries into applications for licences for commercial broadcasting and television stations in areas for which the Minister proposes to grant licences. It is also the responsibility of the Board to determine, subject to any direction of the Minister, the situation, operating power and operating frequencies of broadcasting and television stations.

The Australian Broadcasting Commission, which is constituted under the *Broadcasting and Television Act 1942-1974*, controls the activities of, and provides programmes for, the National Broadcasting Service and the National Television Service which use transmitters operated by the Postmaster-General's Department. The operations of the Commission are financed by appropriations made by the Australian Parliament.

The income of licensees of commercial broadcasting and television stations is derived from advertisements and other forms of publicity.

Commercial broadcasting stations are operated under licences granted and renewed by the Minister for the Media after taking into consideration any recommendations which have been made by the Australian Broadcasting Control Board. The initial period of a licence is five years and renewals are granted for a period of one year.

Commercial television stations are also operated under licences granted and renewed by the Minister for the Media. The initial grant of a licence is for a period of five years and thereafter the licence is renewable annually.

Broadcasting and Television Stations

In 1923, the first radio broadcasting station commenced operations in Australia and, in the following year, station 6WF (Westralian Farmers) opened in Perth.

Television commenced in Australia on 16 September 1956 when station TCN, Sydney began regular transmission. By 30 June 1974 the number of stations in operation had increased to a total of 120, comprising seventy-two national stations and forty-eight commercial stations.

BROADCASTING STATIONS AT 30 JUNE 1974

NATIONAL STATIONS					COMMERCIAL STATIONS				
Type and location	Call sign	Frequency (kHz)	Aerial power (watts)	Hours of service per week (a)	Type and location	Call sign	Frequency (kHz)	Aerial power (watts)	Hours of service per week (a)
Medium frequency—									
Perth	6WF	720	50,000	133	Perth	6IX	1,080	2,000	168
.....	6WN	810	10,000	133	.....	6KY	1,210	2,000	168
Albany	6AL	650	400	133	.....	6PM	1,000	2,000	168
Broome	6BE	670	50	133	.....	6PR	880	2,000	168
Busselton	6BS	680	4,000	133	Albany	6VA	780	2,000	129
Carnarvon	6CA	850	200	133	Bridgetown	6BY	900	2,000	116
Dalwallinu	6DL	530	10,000	133	Bunbury	6TZ	960	2,000	131
Derby	6DB	870	2,000	133	Collie	6CI	1,130	2,000	131
Esperance	6ED	840	1,000	133	Geraldton	6GE	1,010	2,000	117
Exmouth	6XM	1,190	2,000	126	Kalgoorlie	6KG	980	2,000	117
Geraldton	6GN	830	2,000	133	Katanning	6WB	1,070	2,000	116
Kalgoorlie	6GF	660	2,000	133	Merredin	6MD	1,100	2,000	119
Kununurra	6KW	760	100	126	Narrogin	6NA	920	2,000	121½
Northam	6NM	600	200	133	Northam	6AM	860	2,000	120
Port Hedland	6PH	600	2,000	133					
Waglan	6WA	560	50,000	133					
Wyndham	6WH	1,020	100	126					
High frequency—									
Perth	VLW	(b)	(b)	133					

(a) To the nearest quarter hour. (b) The station operates two transmitters, of 10,000 and 50,000 watts. Frequencies are varied as required to obtain optimum results.

The first television station in Western Australia commenced full-scale transmission in Perth on 16 October 1959 and, at 30 June 1974, three metropolitan and fifteen country television stations were operating.

TELEVISION STATIONS AT 30 JUNE 1974

Call sign and channel	Area served	Location of transmitter	Authorised frequencies (mHz)	Polarisation and authorised power (kW e.r.p.) (a)	Hours of service per week (b)	Date of commencement of operations (c)
NATIONAL STATIONS						
ABW-2	Perth	Bickley	Vision 64.25 Sound 69.75	Horizontal Vision 100 Sound 10	88½	7 May 1960
ABAW-2	Southern Agricultural	Mount Barker	Vision 64.24 Sound 69.74	Vertical Vision 100 Sound 10	88½	6 June 1966
ABCW-4	Central Agricultural....	Mawson Trig	Vision 95.26 Sound 100.76	Horizontal Vision 100 Sound 10	88½	28 March 1966
ABCNW-7	Carnarvon	Carnarvon	Vision 182.25 Sound 187.75	Horizontal Vision 0.1 Sound 0.01	88½	30 June 1972
ABDW-10	Dampier	Dampier	Vision 209.25 Sound 214.75	Horizontal Vision 0.02 Sound 0.002	88½	17 December 1973
ABGW-6	Geraldton	Geraldton	Vision 175.24 Sound 180.74	Horizontal Vision 10 Sound 1	88½	8 December 1969
ABKAW-7	Karratha	Karratha	Vision 182.25 Sound 187.75	Horizontal Vision 0.025 Sound 0.0025	88½	17 December 1973
ABKW-6	Kalgoorlie	Kalgoorlie	Vision 175.25 Sound 180.75	Horizontal Vision 8 Sound 0.8	88½	27 January 1970
ABNW-7	Norseman	Norseman Microwave Repeater	Vision 182.24 Sound 187.74	Horizontal Vision 0.05 Sound 0.005	88½	14 April 1971
ABPHW-7	Port Hedland	Finucane Island	Vision 182.25 Sound 187.75	Horizontal Vision 0.34 Sound 0.034	88½	3 October 1973
ABRBW-9	Roebourne	Roebourne	Vision 196.25 Sound 201.75	Horizontal Vision 1.0 Sound 0.1	88½	17 December 1973
ABSW-5	Bunbury	Mount Lennard	Vision 102.25 Sound 107.75	Horizontal Vision 100 Sound 10	88½	10 May 1965
ABSBW-9	Southern Cross-Bullfinch	Ghooli Microwave Repeater	Vision 196.26 Sound 201.76	Horizontal Vision 1.0 Sound 0.1	88½	16 July 1973
COMMERCIAL STATIONS						
STW-9	Perth	Bickley	Vision 196.25 Sound 201.75	Horizontal Vision 100 Sound 10	100½	12 June 1965
TVW-7	Perth	Bickley	Vision 182.25 Sound 187.75	Horizontal Vision 100 Sound 10	101½	16 October 1959
BTW-3	Bunbury	Mount Lennard	Vision 86.24 Sound 91.74	Horizontal Vision 50 Sound 5	40½	10 March 1967
GSW-9	Southern Agricultural	Mount Barker	Vision 196.24 Sound 201.74	Vertical Vision 50 Sound 5	40½	23 August 1968
VEW-8	Kalgoorlie	Kalgoorlie	Vision 189.25 Sound 194.75	Horizontal Vision 8 Sound 0.8	39	18 June 1971

(a) Effective radiated power.

(b) To nearest quarter hour.

(c) Date on which full-scale transmission began.

Television transmissions by means of either a translator station or a repeater station are provided to some areas of the State not served by the stations shown in the above table. Translator stations are low-powered stations which receive signals from a parent station or another translator station and re-transmit those signals on a different frequency channel. They serve mainly isolated areas where there is not satisfactory reception from high-powered stations. Repeater stations are stations of low operating power designed to transmit only programmes recorded on magnetic tape.

At 30 June 1974 four translator stations were in operation in Western Australia, at Kambalda, receiving signals from national station ABKW-6 and commercial station VEW-8 Kalgoorlie, and at Katanning and Wagin receiving signals from the parent station ABW-2 Perth. At the same date television repeater stations were operating at Cockatoo Island, Koolan Island, Mount Nameless, Newman, Paraburdoo and Tom Price. Low-power national television stations are planned for Carnamah, Esperance, Mingenew, Moora and Three Springs. Commercial translator stations have been approved for Albany, Katanning and Wagin and national translator stations for Albany, Manjimup, Merredin, Mullewa, Pemberton and Wongan Hills.

Receiving Licences

Until an amendment to the legislation in 1974, broadcast listeners', television viewers', and combined receiving licences were issued at post offices in accordance with the provisions of the *Broadcasting and Television Act 1942-1973*. A person who had both broadcast and television receivers at the one address was required to take out a combined receiving licence, provision for which was introduced by legislation effective from 1 April 1965.

Provisions in the Act requiring the licensing of domestic broadcast and television receivers were repealed by the *Broadcasting and Television Act 1974*, with effect from 18 September 1974.

The following table shows the number of receiving licences in force in Western Australia at 30 June of each of the five years from 1970 to 1974.

RECEIVING LICENCES

Class of licence	Number in force at 30 June—				
	1970	1971	1972	1973	1974

BROADCAST LISTENERS' LICENCES

Ordinary	28,961	24,574	23,043	22,428	22,662
Hirers'	56	106	101	180	49
Lodging house	1,447	1,590	1,866	920	1,309
Pensioners'	7,236	6,168	5,422	4,937	4,610
Total	37,700	32,438	30,432	28,465	28,630

TELEVISION VIEWERS' LICENCES

Ordinary	10,923	10,385	10,364	10,510	10,580
Hirers'	23,871	27,280	29,655	33,979	34,740
Lodging house	1,804	1,925	1,684	1,151	774
Pensioners'	2,115	2,160	2,282	2,422	2,489
Total	38,713	41,750	43,985	48,062	48,583

COMBINED RECEIVING LICENCES

Ordinary	134,558	141,815	145,319	150,152	155,097
Pensioners'	23,557	25,425	27,527	29,823	33,003
Free (a)	864	892	837	870	874
Lodging house	(b)	(b)	1,115	2,134	3,098
Total	158,979	168,132	174,798	182,979	192,072

(a) Blind persons and schools.
category prior to 1 October 1971.

(b) Combined receiving licences not available for this

Revenue in Western Australia from fees for all receiving licences amounted to \$3,483,474 in 1969-70, \$3,689,269 in 1970-71, \$4,641,543 in 1971-72, \$5,113,606 in 1972-73 and \$5,392,731 in 1973-74.

The total number of receiving licences in force in Australia at 30 June 1974 was 3,326,803, comprising 304,797 broadcast listeners', 475,573 television viewers', and 2,546,433 combined receiving licences. Revenue from licence fees amounted to \$68,458,647 in 1973-74 for Australia as a whole.

Analysis of Programmes

The particulars shown in the following tables have been taken from the Report of the Australian Broadcasting Control Board for the year ended 30 June 1974. Regular surveys are conducted by the Board in order to measure the nature and range of programmes available to the public.

Broadcasting. The analysis of broadcasting programmes for Australia as a whole, as shown in the following table, is based on the combined figures from two surveys conducted by the Board in October 1973 and March 1974. In each case programmes of stations in State capital cities were monitored on a sampling basis for one minute in each ten minutes of transmission between 6.00 a.m. and 10.30 p.m. for a full week.

BROADCASTING STATIONS—ANALYSIS OF PROGRAMMES
METROPOLITAN STATIONS: AUSTRALIA
(Per cent)

Programme category	National (12 stations)	Commercial (25 stations)	All stations (37 stations)
Entertainment—			
Light and popular music	31.9	53.3	46.6
The arts (a)	21.0	0.2	6.7
Variety	1.9	1.3	1.5
Drama	3.6	0.3	1.3
Other	7.1	6.5	6.7
Total	65.5	61.6	62.8
Information and services—			
News	11.2	9.7	10.2
Sport	3.7	6.4	5.5
Information (b)	6.6	1.9	3.4
Religious	1.4	1.1	1.2
Social and political	5.6	3.2	3.9
Family (c)	0.5	1.2	1.0
Educational (d)	3.3	....	1.1
Children's	2.2	....	0.7
Total	34.5	23.5	27.0
Advertisements ....	....	14.9	10.2
GRAND TOTAL	100.0	100.0	100.0

(a) Serious music and opera; readings of prose and poetry; literary and art criticism. (b) Includes such topics as aspects of science; other countries and peoples; agriculture and other industries. (c) Includes programmes dealing with cooking; house and garden; hobbies; care of pets; health and physical fitness. (d) Programmes designed as an aid to formal teaching; kindergarten sessions.

Television. The analysis of television programmes, as shown in the following table, is based on a sample of commercial and national programmes televised during 1973. In this period, the sample amounted to approximately 50 per cent. Details of commercial television programmes are derived from data supplied regularly by each station to the Board and details of national television programmes are obtained from information supplied by the Australian Broadcasting Commission. For the purpose of the table the national programmes analysed are those of ABV-2 Melbourne as they are considered to be reasonably representative of programmes of the national television service.

Colour television was introduced officially into Australia on 1 March 1975. Limited transmissions of programmes in colour had been permitted, however, by the Australian Broadcasting Control Board for several months previously.

TELEVISION STATIONS—ANALYSIS OF PROGRAMMES: AUSTRALIA
(Per cent)

Programme category	Metropolitan stations			Country stations		
	Commercial (a)	National	All stations	Commercial (a)	National	All stations
Drama—						
Serious	0.1	0.6	0.2	0.1	0.6	0.4
Adventure	10.3	4.1	8.9	9.1	4.1	6.2
Crime and suspense	9.4	3.0	7.9	11.1	3.0	6.5
Domestic and comedy	17.1	10.9	15.7	20.8	10.9	15.2
Western	4.0	0.9	3.3	4.5	0.9	2.5
Miscellaneous	8.0	3.1	6.9	6.2	3.1	4.4
Total	48.9	22.6	42.9	51.8	22.6	35.2
Light entertainment—						
Cartoons	6.4	2.6	5.5	4.1	2.6	3.2
Light music	0.5	2.3	0.9	1.0	2.3	1.8
Personality programmes	10.9	1.3	8.7	10.4	1.3	5.3
Talent programmes	0.7	...	0.6	1.7	...	0.7
Variety	4.1	2.0	3.7	3.6	2.0	2.7
Total	22.6	8.2	19.4	20.8	8.2	13.7
Sport	5.8	11.6	7.1	6.6	11.6	9.4
News	4.4	6.7	4.9	8.0	6.7	7.2
Children—						
Kindergarten	5.5	18.8	8.5	1.5	18.8	11.3
Other	4.6	1.4	3.9	3.0	1.4	2.1
Total	20.3	38.5	24.4	19.1	38.5	30.0
Family activities	2.6	0.8	2.2	2.4	0.8	1.5
Information	1.8	4.1	2.3	2.2	4.1	3.3
Current affairs	2.1	8.1	3.5	2.1	8.1	5.5
Political matter	0.1	0.1	0.1	0.1	0.1	0.1
Religious matter	1.0	2.0	1.2	1.2	2.0	1.7
The arts	0.1	0.9	0.3	...	0.9	0.5
Education—						
Formal .....	...	14.5	3.3	...	14.5	8.2
Other	0.5	0.2	0.4	0.3	0.2	0.3
Total	8.2	30.7	13.3	8.3	30.7	21.1
GRAND TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

(a) Excludes time occupied by advertisements. A survey in 1973 showed that, for Melbourne stations, advertisements occupied 15.2 per cent of the total time.

CHAPTER X—INDUSTRIAL CONDITIONS, EMPLOYMENT AND PRICES

Part 1—Industrial Conditions

INDUSTRIAL AUTHORITIES

Federal Authorities

A Commonwealth Court of Conciliation and Arbitration was established under the provisions of the *Commonwealth Conciliation and Arbitration Act* 1904. By an amendment made to the Conciliation and Arbitration Act in 1956 the Commonwealth arbitration system was reorganised by the creation of two separate authorities to deal with matters formerly within the sole jurisdiction of the Court. The amendment had the effect of allocating to a Commonwealth Industrial Court the judicial functions, and to a Commonwealth Conciliation and Arbitration Commission the arbitral functions, previously carried out by the Commonwealth Court of Conciliation and Arbitration.

Under the provisions of the *Conciliation and Arbitration Act* 1973 the name of the Commonwealth Industrial Court was changed to Australian Industrial Court, and that of the Commonwealth Conciliation and Arbitration Commission to Australian Conciliation and Arbitration Commission, with effect from 13 November 1973.

Australian Industrial Court. The Australian Industrial Court, as constituted by the *Conciliation and Arbitration Act* 1904-1974, comprises a Chief Judge and not more than nine other Judges. The Act provides that, except in respect of certain specified matters, the jurisdiction of the Court shall be exercised by not less than three Judges. A single Judge may refer a question of law for the opinion of the Court constituted by not less than three Judges. The Australian Conciliation and Arbitration Commission may also refer a question of law for the opinion of the Court. Appeal from a judgment of the Australian Industrial Court may, in certain circumstances, be made to the High Court of Australia, but only when the High Court grants leave to appeal.

Australian Conciliation and Arbitration Commission. The Australian Conciliation and Arbitration Commission, according to the provisions of the *Conciliation and Arbitration Act* 1904-1974, comprises a President and such numbers of Deputy Presidents and of Commissioners 'as are necessary from time to time'. The President and the Deputy Presidents are described as 'Presidential Members' of the Commission. The powers of the Commission include the prevention or settlement, by conciliation or arbitration, of industrial disputes which extend beyond the limits of any one State, but the Commission is authorised to conciliate or arbitrate in respect of any dispute or industrial matter associated with Australian Government undertakings or projects. A Full Bench of the Commission consists of not less than three members, including at least two Presidential Members. The power to make awards or certify agreements making provision for, or altering, standard hours, rates of wages (including a minimum wage), annual leave or long service leave is exercisable only by a Full Bench, except where the provision or alteration gives effect to matters, or is in accordance with principles, determined by a Full Bench. The Principal Registry of the Commission is in Melbourne, Victoria, and there is a Deputy Industrial Registrar in each State.

Western Australian Authorities

A Court of Arbitration was established in Western Australia in 1901 under the provisions of the *Industrial Conciliation and Arbitration Act, 1900*. The Court comprised a President, a representative of associations of employers and a representative of associations

of workers. The Court of Arbitration was replaced, with effect from 1 February 1964, by the Western Australian Industrial Appeal Court and The Western Australian Industrial Commission, authorities constituted in terms of the *Industrial Arbitration Act, 1912-1973*.

Western Australian Industrial Appeal Court. The Western Australian Industrial Appeal Court consists of three Judges, one of whom is President of the Court. The President and the other members are nominated by the Chief Justice of Western Australia. Certain of the functions, powers and jurisdiction conferred on the Court may be exercised by any member, on the nomination of the President, sitting or acting alone. An appeal lies to the Court from any decision of the Western Australian Industrial Commission or the Commission in Court Session, but only on the ground that such decision is erroneous in law or is in excess of jurisdiction.

The Western Australian Industrial Commission. The Western Australian Industrial Commission consists of a Chief Industrial Commissioner and 'such number of other Commissioners as may, from time to time, be necessary'. At 30 June 1975, the Commission comprised a Chief Industrial Commissioner and six other Commissioners. The Act provides that a Commissioner sitting or acting alone constitutes the Commission and may exercise all the powers and jurisdiction of the Commission.

The Commission is empowered to inquire into any industrial matter or industrial dispute in any industry and to make orders or awards fixing the prices for work done by and the rates of wages payable to workers; fixing the number of hours and the times to be worked in order to entitle those workers to the wages so fixed; limiting the hours of piece workers; fixing the rates for overtime, work on holidays, shift work, week-end work and other special work, including allowances as compensation for overtime; determining any industrial matter; and declaring what deduction may be made from the prices or wages of workers for board or residence or board and residence provided for workers and for any customary provisions or payments in kind conceded to such workers.

The Commission in Court Session is constituted by not less than three Commissioners sitting or acting together. Appeals from decisions of a single Commissioner are heard and determined by the Commission in Court Session. Such appeals are restricted to the evidence and matters raised in the proceedings before the single Commissioner.

The *Industrial Arbitration Act Amendment Act, 1973* provides that a Commissioner shall appoint as mediator a person nominated by the parties to an industrial dispute when so requested by the parties, and subject to the nominated person's acceptance of the appointment.

THE WESTERN AUSTRALIAN INDUSTRIAL COMMISSION

Particulars	At 30 June—				
	1970	1971	1972	1973	1974
Awards in force	384	389	396	395	396
Industrial agreements in force	103	116	134	142	146
Unions of workers—					
Number	100	99	97	92	90
Membership	137,556	149,846	150,910	157,175	167,542
Unions of employers—					
Number	13	13	13	13	13
Membership	1,830	1,864	1,908	1,777	1,745

Western Australian Coal Industry Tribunal. The Western Australian Coal Industry Tribunal, as constituted under the *Mining Act, 1904-1973*, consists of five members appointed by the Governor. One member is chairman of the Tribunal, and there are two members representing employees, and two representing employers. The Tribunal has power to consider and determine industrial disputes, not extending beyond the limits of the State, and other matters relating to the coal-mining industry.

EMPLOYER ORGANISATIONS

The first employers' organisation in Western Australia was the West Australian Chamber of Commerce which was founded in 1853 and was replaced by the Fremantle Chamber of Commerce in 1873. The Perth Chamber of Commerce (Incorporated) was founded in 1890. Other Chambers of Commerce operate in various parts of the State.

The West Australian Chamber of Manufactures (Incorporated) commenced in 1890, but disbanded and was founded in its present form in 1899.

The Western Australian Employers' Federation (Incorporated) was formed in 1913 to handle labour relations for all private industry throughout the State. It is the major employers' organisation handling labour relations issues and specialises in all aspects of this function. Its organisation includes seventy-two affiliated associations and a number of individual industries comprising a membership of more than 20,000 employers. The Federation had also more than 7,000 individual members at 30 June 1974.

The Federation is controlled by a Council of representatives of each member association and of several major industries which have no association. Its subscribing members elect a Finance Board to regulate its daily activities in matters concerning policy.

The Federation represents employers in all aspects of the negotiation of industrial awards and agreements, in the settlement of industrial disputes, including arbitration, and in direct relationships with the trade unions. It is affiliated with the Australian Council of Employers' Federations and is a member of the Central Industrial Secretariat of the Federations and Chambers of Manufactures of each State. Through the Australian Council it has overseas affiliation with the International Organisation of Employers.

From 1 January 1975, the West Australian Chamber of Manufactures (Incorporated) and the Western Australian Employers' Federation (Incorporated) have operated conjointly as the Confederation of Western Australian Industry under the direction of a combined Board.

EMPLOYEE ORGANISATIONS

The trade unions in Western Australia cover all forms of occupations from the unskilled to the professional worker. The great majority of union organisations are national in character with State branches registered with both the Federal and State industrial authorities.

Major organisations include the Trades and Labor Council of Western Australia, the State branches of the Australian Council of Salaried and Professional Associations, the Australian Public Service Federation, and the Council of Commonwealth Public Service Organisations. These four groups cover most of the wage and salary earners employed in the private and governmental sectors of industry and commerce.

The Trades and Labor Council of Western Australia, which is the State branch of the Australian Council of Trade Unions (A.C.T.U.), has provincial councils at Albany, Geraldton, Kalgoorlie and Port Hedland. At 30 June 1974 it had affiliated with it eighty State resident unions having a membership of approximately 96,000.

The Trades and Labour Council, representing the largest group of wage and salary earners, frequently acts on behalf of employees in matters before the Western Australian industrial authorities such as wages, hours, holidays, long service leave, and other associated matters of a standard or uniform nature.

The following table gives particulars of the number of trade unions in Western Australia and the number of members at the end of December of the years 1969 to 1973. The table also shows the estimated proportion of trade union members to total wage and salary earners in employment. As estimates of numbers of wage and salary earners in employment do not include employees engaged in agriculture or in private domestic service (see letterpress *Estimates of Employment* on page 518) the percentages have been calculated on figures obtained by adding to the estimates for December in each year the number of employees in agriculture and private domestic service recorded at the 1966 Population Census.

TRADE UNIONS—NUMBER AND MEMBERSHIP

Date	Number of unions	Number of members ('000)			Proportion of total wage and salary earners (a) (per cent)		
		Males	Females	Persons	Males	Females	Persons
End of December—							
1969	153	122.8	39.3	162.2	55	37	49
1970	155	127.0	41.6	168.6	53	36	48
1971	154	133.5	44.8	178.3	55	37	49
1972	151	135.7	49.1	184.8	57	39	51
1973	154	142.6	54.8	197.4	58	41	52

(a) Approximate; see accompanying letterpress on page 490.

APPRENTICESHIP

The first registration of an apprentice in Western Australia was made on 25 May 1903 to the trade of book binding. At 31 December 1973 the total number of apprentices registered in this State was 10,084 in a wide variety of trades as given in the table that follows.

Apprenticeships in this State are provided for by, and are subject to, awards of The Western Australian Industrial Commission and registered industrial agreements. The Western Australian Industrial Commission functions by authority of the *Industrial Arbitration Act, 1912-1973*.

In the following table, the total number of apprentices registered in this State at 31 December is given for each of the years 1971 to 1973.

APPRENTICESHIP—NUMBER OF EFFECTIVE REGISTRATIONS

Trade	At 31 December—			Trade	At 31 December—		
	1971 (a)	1972 (a)	1973		1971 (a)	1972 (a)	1973
State awards—				State awards—continued			
Baking	76	83	69	Optical	17	20	25
Bootmaking	9	4	2	Pastry cooking	40	50	51
Building—				Printing—			
Bricklaying	128	108	129	Composing	131	122	118
Carpentry and joinery	886	830	734	Letterpress machining	35	34	27
Painting and signwriting	303	302	282	Other	89	97	92
Plastering	86	86	80	Saddlery and leather working	2	3	3
Plumbing	552	521	486	Scientific instrument making	61	56	51
Other	5	5	8	Sheetmetal working	265	300	276
Butchering and smallgoods	434	436	433	Timber machining	38	39	32
Cooking	38	38	82	Vehicle building—			
Dental technician	39	33	26	Bodymaking	116	98	100
Electrical—				Panel beating	428	422	391
Auto-electrical fitting	111	113	120	Spray painting	225	235	228
Electrical fitting	589	568	530	Trimming	36	40	40
Electrical installing	654	632	576	All other	6	10	8
Radio and television servicing	84	96	93	Total, State awards	10,431	10,486	9,787
Furniture—							
Cabinetmaking	340	331	323	Federal awards—			
Upholstery	40	42	42	Aircraft engineering	23	15	10
Woodmachining	77	80	80	Bootmaking	9	4	9
Other	50	46	46	Metal trades	4	21	29
Glazing	50	47	48	Printing—			
Hairdressing—				Composing	52	51	40
Ladies'	952	939	767	Letterpress machining	62	57	48
Men's	76	69	62	Other	22	29	26
Jewellery and watchmaking	23	24	20	Shipwrighting	33	27	25
Metal trades—				All other	1	4	6
Boilermaking	534	527	446	Total, Federal awards	206	208	193
Fitting and first class machin- ing	55	73	81	Australian Government Depart- ments	67	98	104
Fitting and turning	482	468	421	GRAND TOTAL	10,704	10,792	10,084
Fitting	271	297	301				
Turning	59	63	59				
Motor mechanic	1,445	1,517	1,490				
Moulding	47	40	40				
Plant mechanic (b)	24	31	31				
Refrigeration fitting	136	138	132				
Welding	198	203	178				
Other	127	130	128				

(a) Figures revised since previous issue.

(b) Previously described as *Tractor fitting*.

The following table shows the number of new registrations made to various trades during each of the three years 1971 to 1973. As in the previous table, details are given separately for registrations under State awards and Federal awards and in respect of Australian Government Departments.

The number of new registrations declined over the three years in question and the figure for 1973 was the lowest recorded since 1966.

APPRENTICESHIP—REGISTRATIONS TO VARIOUS TRADES

Trade	1971 (a)	1972 (a)	1973	Trade	1971 (a)	1972 (a)	1973
State awards—				State awards— <i>continued</i>			
Baking	26	30	19	Optical	8	5	7
Bootmaking	3	....	....	Pastry cooking	11	20	18
Building—				Printing—			
Bricklaying	20	17	52	Composing	26	20	26
Carpentry and joinery	185	185	156	Letterpress machining	8	8	7
Painting and signwriting	74	61	60	Other	25	20	21
Plastering	13	27	10	Saddlery and leatherworking	1	1	1
Plumbing	125	106	86	Scientific instrument making	16	13	10
Other	2	2	4	Sheetmetal working	82	79	47
Butchering and smallgoods	111	153	115	Timber machining	7	8	4
Cooking ....	....	47	44	Vehicle building—			
Dental technician	8	9	4	Bodymaking	32	20	26
Electrical—				Panel beating	140	110	78
Auto-electrical fittings	46	25	24	Spray painting	70	74	55
Electrical fitting	153	128	135	Trimming	15	10	7
Electrical installing	149	156	114	All other....	8	7	4
Radio and television servicing	25	28	17				
Furniture—				Total, State awards	2,868	2,785	2,277
Cabinetmaking	81	79	83				
Upholstery	16	12	11				
Woodmachining	20	24	22				
Other	11	12	13				
Glazing	14	7	15				
Hairdressing—				Federal awards—			
Ladies'	282	315	229	Aircraft engineering	1	3	1
Men's	22	20	12	Bootmaking	1	....	7
Jewellery and watchmaking	5	5	2	Metal trades	2	18	11
Metal trades—				Printing—			
Boilermaking	185	128	67	Composing	14	4	4
Fitting and first class machin-				Letterpress machining	11	13	5
ing	23	34	19	Other	6	7	5
Fitting and turning	129	111	103	Shipwrighting	3	1	4
Fitting....	95	99	72	All other....	....	3	2
Turning	18	17	12				
Motor mechanic	421	411	347	Total, Federal awards	38	49	39
Moulding	21	8	13				
Plant mechanic (b)	4	14	11	Australian Government Depart-			
Refrigeration fitting	30	34	30	ments	14	52	18
Welding	58	47	37				
Other	44	39	28	GRAND TOTAL	2,920	2,886	2,334

(a) Figures revised since previous issue.

(b) Previously described as *Tractor fitting*.

By definition, an apprentice is a person of either sex not less than fourteen years of age who is apprenticed to learn or to be taught any industry, trade, craft or calling to which the Apprenticeship Regulations apply. All industrial aspects of apprenticeship are within the jurisdiction of the Commission and the Technical Education Division of the Education Department provides the technical training as prescribed by the various awards of the Commission and by industrial agreements.

The Western Australian Apprenticeship Advisory Council, which comprises two representatives each from employers, employees and the State Government, with the Under Secretary for Labour and Industry as Chairman, advises the Minister for Labour and Industry, the Minister for Education and the Commission on matters of policy in respect of apprenticeship.

The Council assigns to Apprenticeship Advisory Boards such matters of an advisory nature relating to its trade or group of trades as considered necessary. Recommendations made to the Council from a Board may, after consideration and approval by the Council, be submitted to the Commission or to the Director-General of Education with a view to their implementation. The Boards consist of representatives from employers and employees,

together with a representative from the Technical Education Division of the Education Department. The assistant Industrial Registrar of The Western Australian Industrial Commission is currently Chairman of all Apprenticeship Advisory Boards.

Technical school attendance is compulsory when the Technical Education Division has suitable classes available in schools within a nineteen-kilometre radius of the apprentice's home. Block release training applies in the following trades: carpentry and joinery, painting, vehicle body building, panel beating, and spray painting. In other cases day release training is prescribed. In the building and vehicle building trades compulsory attendance for intensive training is prescribed for country apprentices and correspondence lessons are available in most other trades.

Federal awards are of much less significance than State awards in apprenticeship matters in Western Australia. The total numbers of apprentices employed in this State at 31 December 1973 under the provisions of the *Conciliation and Arbitration Act 1904-1974* (Commonwealth) and the *Public Service Act 1922-1974* (Commonwealth) were 193 and 104, respectively. Section 52 of the Conciliation and Arbitration Act enables the Australian Conciliation and Arbitration Commission to issue awards covering the rates of pay and conditions of employment of apprentices. In practice, however, the authority in such matters is usually delegated or referred to the State. As a result, the Industrial Registrar of The Western Australian Industrial Commission registers agreements involving apprentices and, on the completion of the term of apprenticeship, issues a Final Certificate, provided the apprentice has met the statutory requirements of the State in respect of examinations conducted by The Western Australian Industrial Commission and the Technical Education Division of the Education Department.

INCIDENCE OF INDUSTRIAL AWARDS

The next table indicates the approximate proportions of Western Australian employees covered by awards, determinations and registered industrial agreements under Federal and State jurisdiction. The proportions not so covered (including those working under unregistered industrial agreements) are also shown. The figures summarise part of the data obtained from surveys of the Australian wage structure in April 1954, May 1963 and May 1968.

The estimates shown in the table were derived from returns collected from:

- (i) a stratified random sample of most private employers subject to pay-roll tax;
- (ii) all public hospitals and marketing boards;
- (iii) all Australian Government and State Government departments and semi-government authorities; and
- (iv) a stratified random sample of local government bodies.

Because of coverage difficulties, certain employees were excluded from the surveys. For further information relating to the survey of May 1968 and for statistics in greater detail, the reader is referred to the annual *Labour Report* published by the Commonwealth Statistician, Canberra, or to the mimeographed publications *Survey of the Incidence of Industrial Awards, Determinations and Collective Agreements, May 1968* and *Survey of the Incidence of Industrial Awards, Determinations and Collective Agreements, May 1968—Bulletin No. 2*.

For a number of reasons, the results of the three surveys are not strictly comparable, and the statistics presented in the following table should therefore be regarded as providing only a broad indication of trends.

The term 'awards, etc.' as used in the table means awards or determinations of, and agreements registered with, Federal or State industrial authorities. Changes in the proportions of employees reported as affected by Federal awards and by State awards reflect changes in industry and occupational structure, including the creation of new industries; changes in the coverage of individual Federal and State awards; and the creation of new awards relating to employees not previously affected by awards.

PROPORTION OF EMPLOYEES AFFECTED BY AWARDS, ETC. (a)
(Per cent)

Particulars	1954—April			1963—May			1968—May		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
Employees affected by awards, etc.—									
Federal	12.5	18.7	13.9	13.3	14.8	13.6	16.9	15.7	16.6
State	77.1	71.8	75.9	76.5	74.4	76.0	70.7	76.1	72.1
Other employees	10.4	9.5	10.2	10.2	10.8	10.4	12.4	8.2	11.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Awards or determinations of, and agreements registered with, Federal or State industrial authorities.

INDUSTRIAL DISPUTES

Statistics of industrial disputes are compiled by the Commonwealth Statistician from data obtained from the following sources: direct collections from employers and trade unions concerning individual disputes; reports from government departments and authorities; reports of State and Federal industrial authorities; and information contained in trade journals, employer and trade union publications, and newspaper reports.

INDUSTRIAL DISPUTES (a)

Year	Number of disputes	Number of workers involved			Number of working days lost	Estimated loss in wages
		Directly	Indirectly (b)	Total		
1969	104	'000 57.0	'000 2.1	'000 59.1	'000 101.4	'000 1,284.2
1970	125	44.4	2.1	46.5	141.1	1,963.3
1971	132	30.8	5.0	35.8	69.4	1,166.4
1972	105	24.2	4.1	28.3	94.6	1,677.2
1973	160	35.3	2.3	37.6	117.3	2,422.3

(a) Excludes disputes involving cessation of work of less than 10 man-days. (b) Persons thrown out of work at the establishments where the stoppages occurred, but not themselves parties to the dispute.

INDUSTRIAL DISPUTES (a)—ACCORDING TO INDUSTRY: 1973

Industry (b)	Number of disputes	Number of workers involved			Number of working days lost	Estimated loss in wages
		Directly	Indirectly (c)	Total		
Agriculture, forestry, fishing and hunting .....	....	'000	'000	'000	'000	'000
Mining—						
Coal mining .....	....	....	....	....	....	....
Other mining	74	19.6	2.1	21.7	83.1	1,820.3
Manufacturing—						
Food, beverages and tobacco	5	0.9	0.1	1.0	3.7	63.4
Paper and paper products, printing and publishing .....	....	....	....	....	....	....
Metal products, machinery and equipment	11	1.2	(d)	1.2	8.3	139.1
Other manufacturing	2	0.2	....	0.2	0.8	11.9
Electricity, gas and water	4	3.0	....	3.0	2.1	40.3
Construction	11	0.7	0.1	0.8	6.0	137.3
Transport and storage; communication—						
Road transport; other transport and storage; communication	4	4.0	....	4.0	5.8	88.9
Railway transport; air transport	2	1.0	....	1.0	0.6	11.0
Water transport—						
Stevedoring services	29	2.1	....	2.1	3.5	53.4
Water transport (except stevedoring services)	7	0.7	....	0.7	1.2	20.3
Other industries	11	1.8	....	1.8	2.1	36.3
Total	160	35.3	2.3	37.6	117.3	2,422.3

(a) Excludes disputes involving cessation of work of less than 10 man-days. on the basis of the *Australian Standard Industrial Classification* (see page 354).
 (b) Persons thrown out of work at the establishments where the stoppages occurred, but not themselves parties to the dispute.

(c) The statistics in this table are compiled on the basis of the *Australian Standard Industrial Classification* (see page 354).
 (d) Less than 50

In the two previous tables details of industrial disputes in Western Australia during the years 1969 to 1973 are given, together with an analysis, according to industry group, of disputes which were in progress in 1973. The statistics exclude disputes involving stoppages of work of less than ten man-days in the establishment where the stoppage occurred. Effects on other establishments resulting from lack of materials, disruption of transport services, power cuts, etc. are not measured by these statistics.

Particulars of all disputes in progress during the year are included in the annual figures, whether the dispute commenced in that year or was in progress at the beginning of the year. Consequently, details of 'the number of disputes' and 'workers involved' in disputes which commenced in any year, and were still in progress during the following year, are included in the figures for both years.

Particulars of some stoppages (*e.g.* those involving a large number of establishments) may be estimated and the statistics therefore should be regarded as giving a broad measure of the extent of stoppages of work (as defined).

INDUSTRIAL DISPUTES (a) ACCORDING TO DURATION—1973

Duration (working days)	Mining	Manufacturing	Construction	Stevedoring	Other industries	All industries
NUMBER OF DISPUTES (a)						
Up to 1 day	31	5	...	14	14	64
Over 1 and up to 2 days	14	1	1	7	6	29
Over 2 and up to 3 days	3	2	3	4	4	16
Over 3 but less than 5 days	11	3	1	2	1	18
5 to less than 10 days	12	5	3	2	3	25
10 to less than 20 days	2	1	3	...	...	6
20 to less than 40 days	1	1	...	...	...	2
Total	74	18	11	29	28	160

WORKERS INVOLVED (b) ('000)

Up to 1 day	6.5	0.8	...	0.9	6.6	14.7
Over 1 and up to 2 days	3.5	0.1	0.1	0.2	3.1	7.0
Over 2 and up to 3 days	1.2	0.3	0.1	0.9	0.5	2.9
Over 3 but less than 5 days	5.7	0.4	(c)	0.1	0.1	6.4
5 to less than 10 days	4.0	0.6	0.3	0.1	0.3	5.3
10 to less than 20 days	0.6	0.1	0.2	...	...	0.9
20 to less than 40 days	0.2	0.1	...	...	...	0.3
Total	21.7	2.4	0.8	2.1	10.6	37.6

WORKING DAYS LOST ('000 MAN-DAYS)

Up to 1 day	11.2	0.8	...	0.4	0.7	13.1
Over 1 and up to 2 days	5.0	0.2	0.2	0.2	5.5	11.0
Over 2 and up to 3 days	2.7	1.3	0.3	1.7	3.5	9.7
Over 3 but less than 5 days	20.2	1.6	0.2	0.3	0.5	22.7
5 to less than 10 days	31.7	4.2	2.5	0.9	1.7	41.0
10 to less than 20 days	6.1	1.1	2.8	...	...	9.9
20 to less than 40 days	6.2	3.6	...	...	...	9.8
Total	83.1	12.8	6.0	3.5	11.8	117.3

ESTIMATED LOSS IN WAGES (\$'000)

Up to 1 day	246.9	12.7	...	5.5	10.8	275.8
Over 1 and up to 2 days	119.3	2.4	3.5	3.4	68.0	196.6
Over 2 and up to 3 days	58.1	22.8	5.9	25.7	72.4	184.8
Over 3 but less than 5 days	489.2	30.1	4.8	4.8	7.2	536.1
5 to less than 10 days	649.6	71.5	54.8	14.1	38.4	828.4
10 to less than 20 days	117.3	17.4	68.4	...	...	203.1
20 to less than 40 days	139.9	57.6	...	...	...	197.5
Total	1,820.3	214.4	137.3	53.4	196.8	2,422.3

(a) Excludes disputes involving cessation of work of less than 10 man-days. (b) Includes workers indirectly involved, *i.e.* persons thrown out of work at the establishments where the stoppages occurred, but not them selves parties to the dispute. (c) Less than 50.

WAGES AND EARNINGS

The Basic Wage

Commonwealth Basic Wage. The *Western Australian Year Book*, No. 7—1968 and earlier issues contain an account of the development of the Commonwealth basic wage from its inception until it was abandoned in 1967. In a unanimous judgment given on 5 June 1967 the Commonwealth Conciliation and Arbitration Commission (see page 488) announced 'the elimination of basic wages and margins and the introduction of total wages'. An increase of \$1 per week was awarded to all adult employees and the judgment stated that 'total wages will be arrived at by adding an amount of \$1 per week to the weekly award wages of all adult males and females . . .' and further, that the Commission had 'on this occasion deliberately awarded the same increase to adult females and adult males'. The increase was declared to become operative from the beginning of the first pay-period commencing on or after 1 July 1967.

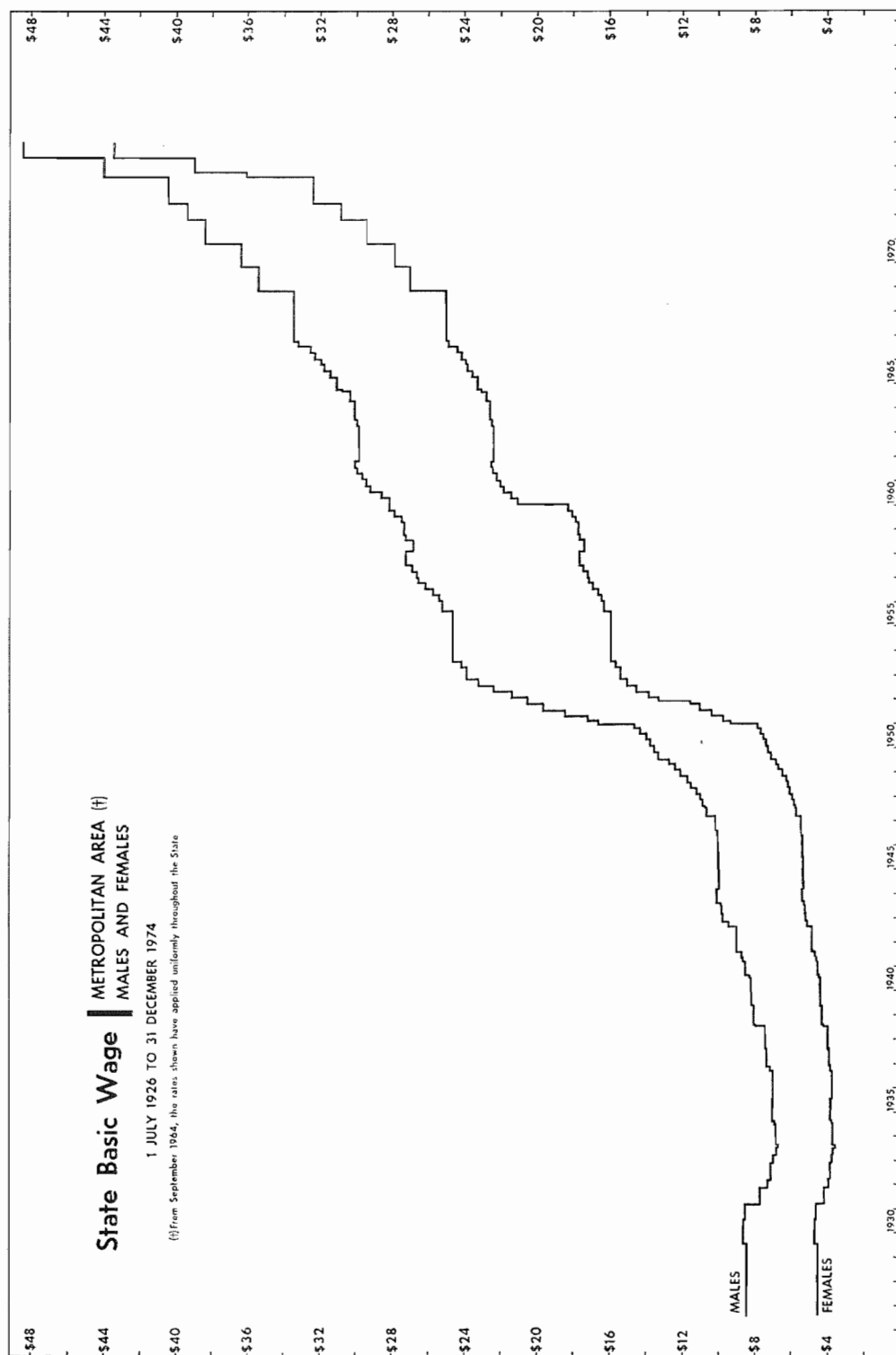
A table showing Commonwealth basic wage rates at 31 December of each year from 1923 to 1966 is given in the *Statistical Summary from 1829* appearing in the *Western Australian Year Book*, No. 9—1970 and earlier issues.

State Basic Wage. Reference is made in the *Western Australian Year Book*, No. 7—1968 and earlier issues to the work of the former Court of Arbitration in the field of wage determination from the declaration of the first State basic wage in 1926.

The Western Australian Industrial Commission came into operation on 1 February 1964, replacing the court of Arbitration as the authority responsible for the State basic wage determinations in Western Australia. The *Industrial Arbitration Act, 1912-1973* requires that such determinations shall be made by the Commission in Court Session. The Commission so constituted made its first adjustment to the basic wage on 27 April 1964, when it prescribed increased rates to apply on and from that date. As a result of this decision, the weekly rates payable to adult males became £15 4s. 2d. (\$30·42) in the Metropolitan Area, £15 2s. 7d. (\$30·26) in the South-West Land Division, and £14 16s. 8d. (\$29·67) in Goldfields Areas and other parts of the State. (For purposes of the basic wage, the 'Metropolitan Area' was the area comprised within a radius of fifteen miles [twenty-four kilometres] from the General Post Office, Perth; the 'South-West Land Division' was the area so described in the Land Act, but excluding the 'Metropolitan Area'; and 'Goldfields Areas and other parts of the State' comprised the area outside the South-West Land Division. Reference to the South-West Land Division will be found on page 157.)

On 15 June 1964 the Trades and Labor Council of Western Australia, acting on behalf of registered unions, addressed to the Commission a request for an inquiry into the basic wage. A preliminary hearing was held on 3 July to consider questions of procedure, representation and related matters. The general inquiry began before the Commission in Court Session on 22 July and was completed on 14 August. Representatives of the unions and of the Western Australian Employers' Federation (Incorporated) made extensive submissions and the Crown Counsel, on behalf of the State Government, intervened in the public interest, as authorised under section 68 of the Industrial Arbitration Act. Judgment was given on 22 September. The Commission was unanimous in its conclusion that one basic wage should apply to the whole State, but was divided as to the amount of the wage. The majority view was that a weekly wage of £15 8s. (\$30·80) should be declared as appropriate to adult male workers, and an order was issued accordingly prescribing this amount for males and an amount of £11 11s. (\$23·10) for females, the rates to operate on and from 22 September 1964 and to apply uniformly throughout the State.

The *Industrial Arbitration Act Amendment Act, 1966*, which came into operation on 23 December 1966, provided that the rates which were current immediately prior to the date of commencement of the Act should remain unaltered until exceeded by the basic wage for the six capital cities as declared by the Commonwealth Conciliation and Arbitration Commission, and that subsequent alterations should be made in accordance with variations of that wage. (At 23 December 1966 the State basic wage for adult males was



\$33·50 per week and for adult females, \$25·13 per week. The corresponding Commonwealth basic wage rates for the six capital cities at the same date were \$32·80 and \$24·60).

Reference is made in the preceding section *Commonwealth Basic Wage* to the decision given by the Commonwealth Conciliation and Arbitration Commission on 5 June 1967 when it announced the elimination of basic wages and margins from its awards, and the introduction of total wages to operate from the beginning of the first pay-period commencing on or after 1 July 1967. This decision provided also that total wages for adult males and adult females were to be increased by \$1 per week from the same date. Following this decision a number of unions in Western Australia applied to the Western Australian Industrial Commission seeking an increase of \$1 per week in margins for adult males and adult females, with proportionate increases for junior workers and apprentices. The Commission delivered its judgment on 27 June 1967. The terms of this decision were that the minimum weekly wage payable to adult male workers under certain awards be increased from \$36·55 to \$37·55; 'that the wage rates for adult workers not in receipt of the "minimum wage" be increased by 60 cents per week; and that other wage rates be adjusted as if the basic wage for males and the basic wage for females had been increased by that amount'. These increases were declared to operate from the beginning of the first pay-period commencing on or after 1 July 1967.

A further increase of \$1·35 per week for adult males and adult females was granted by the Commission in October 1968 to operate from the beginning of the first pay-period commencing on or after 25 October 1968.

The *Industrial Arbitration Act Amendment Act, 1968*, operative from 22 November 1968, restores to The Western Australian Industrial Commission the power to declare a basic wage, which had been removed by the amending Act of 1966. The 1968 amendment provides that the Commission in Court Session may at any time and from time to time, by order, '(a) determine and declare a basic wage for male workers; (b) determine and declare a basic wage for female workers; and (c) vary any basic wage for the time being in force, and any such basic wage so determined and declared or so varied shall be for all purposes, the basic wage for male workers or female workers throughout the State'.

The Act defines the term 'basic wage' as 'that wage or that part of a wage which in the opinion of the Commission, is just and reasonable for a worker to whom it applies, without regard to the circumstances pertaining to the work upon which, or the industry in which, such worker is employed'. In determining a basic wage the Commission is required by the Act to take into consideration the amount that it considers sufficient to enable the average worker to whom that basic wage shall apply to live in reasonable comfort. Although the Commission must also consider the economic capacity of industry, it may not reduce the wage to a level below that required for the maintenance of this standard of 'reasonable comfort'.

The Act prescribed basic wage rates of \$35·45 per week for adult male workers and \$27·08 per week for adult female workers, to apply on and from the date of commencement of the Act (22 November 1968). These amounts comprise the sum of the basic weekly wage rates of \$33·50 for males and \$25·13 for females, operative from 24 October 1966 (before the Commission's power to determine basic wages was removed by the 1966 amendment to the Act), and the subsequent increases of 60 cents per week granted in June 1967 and \$1·35 per week in October 1968.

The Commission is required to review the basic wage, or any variation of the wage, not later than twelve months from the date on which the wage (or variation) came into operation. It is provided by the Act that any variation shall take effect 'only after the expiration of such twelve months, unless in the opinion of the Commission there are special reasons existing in the circumstances of any particular case and it is just and equitable to otherwise determine'.

On 21 November 1969, following the annual review required under the Act, the Commission increased the basic wage for adult males by \$1 per week and for adult

females by 80 cents per week, with effect from the beginning of the first pay-period commencing on or after 24 November 1969.

On 3 August 1970, The Western Australian Industrial Commission began hearing an application by the Trades and Labor Council of Western Australia for an increase in the basic wage to \$48·35 per week for adult males and \$37·00 per week for adult females. The Council's claim was later amended to seek a basic wage of \$61·61 for males and \$47·12 for females, representing increases of \$25·16 and \$19·24 on the rates then current. The hearing of submissions and replies was completed on 7 September and the Commission announced its decision on 19 October.

As a result of the decision the basic wage for adult males became \$38·45 per week and for adult females \$29·40 per week, the new rates to operate from 26 October 1970.

The Commission also announced its intention 'to prescribe in such awards and industrial agreements as it appears proper so to do, a minimum wage for adult males of \$49·00 per week', operative from 26 October 1970.

Further, the Commission stated its intention 'to invite applications to include in such awards and industrial agreements as it may appear proper and appropriate so to do, a provision which will ensure to each employee a minimum payment 10 per cent in excess of the sum of the basic wage and margin prescribed for his particular class of work'.

The following table shows variations, from 22 September 1964, in the State basic wage rates payable to adult male and female workers employed under State industrial awards or registered agreements, or in accordance with the provisions of the Factories and Shops Act.

A similar table showing variations in the rates during the period from 29 January 1951 appears in *Statistics of Western Australia—Labour and Prices*. A table showing rates applying at 31 December of each year from 1926 is given in the *Statistical Summary from 1829* following this Chapter.

STATE BASIC WAGE—ADULT WEEKLY RATES
(\$)

Date of operation	Males	Females	Date of operation	Males	Females
1964—22 September	30·80	23·10	1968—22 November (b)	35·45	27·08
26 October	31·12	23·34	1969—24 November	36·45	27·88
1965—26 April	31·47	23·60	1970—26 October	38·45	29·40
26 July	31·78	23·84	1971—26 October	39·45	30·90
16 November	31·96	23·97	1972—26 June	40·45	32·40
1966—25 January	32·38	24·28	1973—8 June	44·00	36·00
2 May	32·65	24·49	17 September	44·00	39·00
2 August	33·26	24·95	1974—31 May	48·50	43·50
24 October (a)	33·50	25·13			

(a) See letterpress on page 498.
Act, 1968.

(b) Rates prescribed under the provisions of the *Industrial Arbitration Act Amendment*

Equal Pay for Male and Female Workers

State Awards. It is provided in Part X of the *Industrial Arbitration Act, 1912-1973* that, where The Western Australian Industrial Commission 'is satisfied that male and female workers are performing work of the same or a like nature and of equal value, the same rates of wages shall . . . be fixed irrespective of the sex of the workers'.

Federal Awards. Two benches of the Commonwealth Conciliation and Arbitration Commission sat jointly from 25 February to 22 May 1969 to take evidence and hear argument on trade union claims for equal pay between the sexes. Both benches reached a common conclusion and on 19 June 1969 published their decision and reasons for their decision. The Commission stated it was prepared to implement the principle of equal pay for equal work by introducing into Federal awards and determinations the principles contained in State Acts on equal pay. It decided that no increases should be granted to adult females without an examination of the work done and that implementation of equal pay should spread over a period.

On 15 December 1972 the Commonwealth Conciliation and Arbitration Commission, in its decision in the National Wage and Equal Pay Cases 1972, outlined the principle of 'equal pay for work of equal value' to be applied to all Federal awards and determinations. The Commission stated that the principle meant the fixation of award rates of pay for both adult and junior females by a consideration of the work performed irrespective of the sex of the worker, and that the eventual outcome should be a single award rate for an occupational group or classification payable to both male and female employees.

Minimum Wage Rates

The basic wage, as the term implies, establishes a 'base' to which additions may be made to provide rates actually payable in certain industries and occupations and in particular areas. Minimum rates, incorporating these additional payments, may be prescribed by awards of the Western Australian Industrial Commission, or may be negotiated by industrial agreement. These agreements are registered with the Commission and are binding upon the parties. The additions made to the basic wage rate take the form of 'margins' and 'loadings'. Margins are amounts awarded to particular classifications of employees for features attaching to their work, such as skill, experience, arduousness and other like factors. Loadings are amounts awarded for various kinds of disabilities associated with the performance of work, or to meet particular circumstances. They include payments such as industry loadings and other general loadings prescribed in awards, determinations or agreements for the occupation concerned.

Awards of the Australian Conciliation and Arbitration Commission take cognisance of particular features or circumstances such as those mentioned above but no longer contained identifiable components in the form of basic wage, margins, and loadings (see letterpress *Commonwealth Basic Wage* on Page 496).

In its decision of 8 July 1966 in the Basic Wage, Margins and Total Wages Cases of 1966, the Commonwealth Conciliation and Arbitration Commission announced that it intended to grant relief to low-wage earners by inserting a provision in awards prescribing a minimum wage. The provisions inserted in the awards state that no adult male employee shall be paid at less than the prescribed minimum rates as ordinary rates of pay in respect of the ordinary hours of work prescribed in the award. The minimum weekly wage rates prescribed were the appropriate basic wages plus \$3.75 per week. As a result of this decision the minimum weekly wage as prescribed in Federal awards for adult male workers in Perth became \$36.55, with effect from the beginning of the first pay-period commencing on or after 11 July 1966.

In its decision in the National Wage Case 1974, the Australian Conciliation and Arbitration Commission, in prescribing a minimum wage for adult females, also made provision for parity between the minimum wage for adult males and adult females to be achieved in three stages: 85 per cent of the male minimum wage to be paid to adult females from the beginning of the first pay-period commencing on or after 23 May 1974; 90 per cent from the beginning of the pay-period in which 30 September 1974 falls; and 100 per cent from the beginning of the pay-period in which 30 June 1975 occurs. The minimum weekly wage payable to adult males was increased from \$60.10 to \$68.10 with effect from the beginning of the first pay-period commencing on or after 23 May 1974. The minimum weekly wage payable to adult females from that date was therefore \$57.90 (i.e. $0.85 \times \$68.10$).

Reference is made on pages 498 and 499 to minimum wage rates prescribed under awards of the Western Australian Industrial Commission. In terms of orders operative from 31 May 1974, the Commission introduced a minimum wage of \$57.90 per week for adult females employed under specified awards and agreements.

The following table shows variations in the minimum weekly wage rates applicable to adult workers under Federal and State awards.

Further information relating to minimum weekly wage rates in other Australian States appears in the publication *Wage Rates and Earnings* issued monthly by the Commonwealth Statistician, Canberra.

**MINIMUM WEEKLY WAGE RATES
FEDERAL AND STATE AWARDS
(\$)**

Federal awards		State awards	
Perth		Western Australia	
Date of operation	Amount	Date of operation	Amount
Adult males (a)—		Adult males—	
1966—11 July	36.55	1967— 5 April (a)	36.55
1967— 1 July	37.55	1967— 1 July (a)	37.55
1968—25 October	38.90	1968—25 October (a)	38.90
1969—19 December	42.40	1969—19 December (a)	42.40
1971— 1 January	46.40	1970—26 October	49.00
1972—19 May	51.10	1971—26 October	51.50
1973—29 May	60.10	1972—26 June	53.50
1974—23 May	68.10	1973— 8 June	57.00
1975— 1 January	76.10	1973—17 September	61.50
		1974—31 May	69.00
Adult females—		Adult females—	
1974—23 May (a)	57.90	1974—31 May	57.90
30 September (b)	61.30		
1975— 1 January (a)	68.50		

(a) Rates operative from beginning of first pay-period commencing on or after the date shown. (b) Rate payable from beginning of pay-period in which 30 September 1974 occurred.

The statistics shown in the following table, which refers to Western Australian experience, relate generally to wages and hours prescribed in awards or determinations of the Federal and State industrial authorities or in agreements registered with them.

The minimum wage rates and index numbers shown in the table embrace a representative range of occupations and are based on the occupation and industry structures in Australia in 1954. The weekly wage rates given in the table, and used in the compilation of the indexes, represent the lowest rates payable for a full week's work (excluding overtime), as prescribed in representative industrial awards, determinations and agreements. The hourly wage rates are obtained by relating the weekly wage rates and the weekly hours of work prescribed in awards, etc. The rural industries are excluded from the table, because of coverage difficulties.

Because the indexes are designed to measure movements in prescribed minimum rates of 'wages' as distinct from 'salaries', those awards, determinations and agreements which relate solely or mainly to salary-earners are excluded.

The wage rates shown should not be regarded as actual current averages, but as indexes expressed in money terms, indicative of trends.

A more detailed description of the minimum wage rates index and more extensive tables are published by the Commonwealth Statistician in the monthly bulletin *Wage Rates and Earnings*.

A table showing minimum rates of wages payable in a selection of occupations in Western Australia at 30 June 1973 appears in *Statistics of Western Australia—Labour and Prices: 1973* (pages 5-9).

WEIGHTED AVERAGE MINIMUM WEEKLY AND HOURLY WAGE RATES

Date	Weekly wage rates		Hourly wage rates		Index numbers (a)			
	Adult males	Adult females (b)	Adult males (c)	Adult females (b)	Weekly wage rates		Hourly wage rates	
					Males	Females (b)	Males (c)	Females (b)
End of June—	\$	\$	cents	cents				
1970	51.09	37.14	127.56	93.35	180.9	186.5	180.3	186.1
1971	58.07	41.61	145.24	104.60	205.6	209.0	205.3	208.5
1972	63.89	49.21	159.62	123.70	226.2	247.2	225.6	246.6
1973	*72.64	57.73	*180.55	145.12	*257.2	290.0	*255.2	289.3
1974 (d)	90.42	75.41	225.00	189.55	320.1	378.8	318.0	377.8

(a) Base of series: weighted average weekly wage rate—Australia, 1954 = 100. (b) Excludes mining and quarrying, and building and construction. (c) Excludes shipping and stevedoring. (d) Preliminary figures; subject to revision.
* Revised.

Average Weekly Earnings

Statistics of average weekly earnings are derived from information concerning employment and wages and salaries as recorded on Pay-roll Tax returns, from other direct collections, and from estimates of the unrecorded balance. The figures relate to civilians only.

Particulars of wages and salaries paid are not available separately for males and females from these sources. Average weekly earnings have therefore been calculated for each State in terms of male units, *i.e.* total male employees plus a proportion of female employees, the proportion being determined by the estimated ratio of female to male average earnings.

The figures used in calculating the averages shown in the following table comprise: award and over-award wages and salaries; earnings of employees not covered by awards; overtime earnings; bonuses and allowances; commissions; directors' fees; and payments made retrospectively or in advance during the years specified. Earnings of part-time as well as full-time employees, and of juniors as well as adults, are included. *It is important to bear in mind that the figures relate to the whole civilian wage and salary earner field and therefore comprise payments to all grades of employees from junior workers to persons at the highest levels of executive and administrative activity.*

AVERAGE WEEKLY EARNINGS PER EMPLOYED MALE UNIT: AUSTRALIAN STATES

Figures revised since previous issue

(\$)

Year	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Australia (a)
1966-67	63.30	64.10	57.30	57.30	59.40	58.50	61.90
1967-68	66.70	67.80	60.30	60.60	64.10	62.00	65.50
1968-69	72.30	72.40	64.50	64.80	69.00	65.70	70.40
1969-70	78.50	78.40	69.40	70.30	75.70	70.90	76.30
1970-71	87.30	86.40	78.00	77.20	84.90	78.50	84.80
1971-72	95.90	93.60	87.00	85.30	93.70	86.80	93.00
1972-73	104.30	102.50	97.00	93.00	99.00	94.40	101.50
1973-74	120.80	118.40	112.60	110.80	115.40	110.30	118.00

(a) Includes figures for Northern Territory and Australian Capital Territory.

Quarterly figures corresponding to those shown in the above table are published by the Commonwealth Statistician in the bulletins *Average Weekly Earnings* and *Wage Rates and Earnings*, in the *Monthly Review of Business Statistics* and in the *Quarterly Summary of Australian Statistics*.

SURVEY OF WEEKLY EARNINGS AND HOURS

Sample surveys in respect of most private employers subject to pay-roll tax (*i.e.* those paying more than \$400 per week in wages and salaries) have been conducted as at the last pay-period in October during recent years.

In addition to obtaining data for the calculation of average weekly earnings, average weekly hours paid for, and average hourly earnings, the surveys obtained information on overtime and ordinary-time earnings and hours for full-time employees (other than managerial, etc. staff).

The results of the surveys are based on returns from stratified random samples of private employers subject to pay-roll tax. Employees in rural industry and in private domestic service are excluded because most employers in these industries are not subject to pay-roll tax. Also excluded from the surveys are employees of government and semi-government authorities, and employees of religious, benevolent and other similar organisations exempt from pay-roll tax.

Definitions of the terms used in the following tables may be found in the publication *Survey of Weekly Earnings and Hours, October 1973*, published by the Commonwealth Statistician, Canberra.

The two following tables refer to the results for Western Australia.

**AVERAGE EARNINGS AND HOURS (a)—PRIVATE EMPLOYMENT
ALL INDUSTRY GROUPS (b)**

Particulars	October—				
	1969	1970	1971	1972	1973
Average weekly earnings (c)—	\$	\$	\$	\$	\$
Adult males	77·30	85·20	96·10	98·50	112·80
Junior males	34·30	37·90	39·60	41·80	51·90
Adult females	43·40	47·40	52·00	57·30	71·70
Junior females	27·30	30·00	33·70	36·00	44·60
Average weekly hours paid for (c)—	hrs	hrs	hrs	hrs	hrs
Adult males	45·5	45·4	45·8	44·2	44·0
Junior males	41·8	41·9	41·9	41·0	40·9
Adult females	39·9	39·7	39·9	39·9	39·4
Junior females	39·6	39·0	38·9	38·9	39·0
Average hourly earnings (c)—	\$	\$	\$	\$	\$
Adult males	1·70	1·88	2·10	2·23	2·56
Junior males	0·82	0·90	0·94	1·02	1·27
Adult females	1·09	1·19	1·31	1·44	1·84
Junior females	0·69	0·77	0·87	0·93	1·14

(a) Excludes managerial, professional and higher supervisory staff. Full-time employees only are included. (b) Excludes rural industry and private domestic service. (c) Last pay-period in October.

The following table analyses total earnings for Western Australia to show their over-time component in October 1972 and 1973.

**AVERAGE WEEKLY OVERTIME AND ORDINARY-TIME EARNINGS (a)
PRIVATE EMPLOYMENT (b)
(\$)**

Particulars	Average weekly overtime earnings (a)		Average weekly ordinary-time earnings (a)		Average weekly total earnings	
	October—		October—		October—	
	1972	1973	1972	1973	1972	1973
Adult males—						
Manufacturing—						
Founding, engineering, vehicles, etc.	13·00	19·80	79·10	88·20	92·10	108·00
Other	14·30	18·20	76·00	85·80	90·30	104·00
Total Manufacturing	13·80	18·90	77·30	86·80	91·10	105·80
Non-manufacturing	17·80	20·80	85·20	96·20	103·00	117·00
All industry groups (c)	16·30	20·10	82·20	92·70	98·50	112·80
Junior males—all industry groups (c)	2·90	4·00	38·90	47·90	41·80	51·90
Females—all industry groups (c)—						
Adult	2·30	2·60	54·90	69·10	57·30	71·70
Junior	0·70	0·70	35·30	43·90	36·00	44·60

(a) Averages for all employees represented in the survey. Full-time employees only are included. (b) Excludes managerial, professional and higher supervisory staff. (c) Excludes rural industry and private domestic service.

HOURS OF WORK AND LEAVE PROVISIONS

Standard Hours of Work. In the fixation of weekly wage rates most industrial tribunals prescribe the number of hours constituting a full week's work for the wages specified.

Following applications for the introduction of a working week of forty hours, in place of the existing general standard of forty-four hours, the Commonwealth Court of Conciliation and Arbitration began hearing evidence in October 1945. In its judgment given on 8 September 1947 the Court granted the reduction to forty hours from the beginning of the first pay-period commencing in January 1948. On 6 November 1947 the Western Australian Court of Arbitration approved that, on application, provision for a working week of forty hours could be incorporated in awards of the Court with effect from 1 January 1948.

The forty-hour week has operated in Australia generally from 1 January 1948 (in New South Wales from 1 July 1947). However, the number of hours constituting a full week's work (excluding overtime) differs between occupations and/or between States. The weighted average standard hours of work (excluding overtime) prescribed in awards, determinations and agreements for a full working week, in respect of adult male workers in all industry groups except rural, and shipping and stevedoring, at 1 August 1974 were: New South Wales, 39·77; Victoria, 39·96; Queensland, 39·88; South Australia, 39·95; Western Australia, 39·83; Tasmania, 39·91; Australia, 39·86. Corresponding figures for adult female workers at 1 August 1974 were: New South Wales, 39·53; Victoria, 39·81; Queensland, 39·70; South Australia, 39·77; Western Australia, 39·78; Tasmania, 39·63; Australia, 39·67.

Annual Leave and Public Holidays. On 18 April 1963 the Commonwealth Conciliation and Arbitration Commission gave a judgment which had the effect of granting a general increase from two weeks to three weeks in the period of paid annual leave for employees covered by Federal awards.

In December 1971, the Commission announced its findings on claims for (i) an increase from three weeks to four weeks in the standard period of annual leave, (ii) a bonus of an extra week's pay to employees on annual leave, and (iii) an increase in the award amount of weekly payment when on annual leave. The first two claims were rejected and a decision on the third claim was deferred until after the hearing of the National Wage Cases 1971-72. On 7 June 1972 the Commission gave its decision on this claim. It decided that, in general, payments for annual leave should include over-award payments for ordinary hours of work, shift-work premiums, service grants and certain allowances, in addition to normal award rates of pay. For those awards under which the application was made in this case, the date of operation was set as 1 November 1972.

As from 1 January 1973 employees of the Australian Government and the State Government were granted four weeks' annual leave.

Following a general inquiry concerning annual leave and public holidays, the Western Australian Court of Arbitration in June 1963 adopted three weeks as the new standard for the normal period of annual leave in State awards, with four weeks for seven-day shift workers. Existing awards and agreements which already provided annual leave in excess of this standard were to be examined separately to ascertain whether special circumstances existed to justify leave greater than the normal standard.

In the inquiry the State Government sought a reduction in the number of public holidays and a review of other conditions where these were more favourable than the Court's standard. Private employers opposed any increase in annual leave but, alternatively, submitted that, if there was to be an increase, then the new standard should be two weeks and four days per annum or the number of public holidays in each year should be reduced by one. Both these submissions were rejected and the standard number of public holidays was retained at ten with the provision that, where an award provided for more than ten public holidays a year, that award, unless the union consented to a reduction to ten, would be excluded from the order amending the annual leave provisions until it was established that special circumstances justified the continuance to the greater number of holidays.

In November, 1963 the Court refused an application by employers for the right to split the annual leave into two parts, since it decided to follow the decision of most other State tribunals and allow the additional leave in conformity with conditions similar to those prescribed by the Commonwealth Conciliation and Arbitration Commission. The right to split the leave would be allowed by the Court only in exceptional circumstances, unless all the parties concerned agreed to the inclusion of such a provision.

Long Service Leave. The *Long Service Leave Act, 1958-1973* (State) confers entitlement to long service leave with pay on employees for whom such leave is not otherwise provided. Entitlement accrues only in relation to continuous service with one employer, but continuity of service is not affected by the transfer of a business from one employer to another.

Leave of thirteen weeks on ordinary pay is granted in respect of the first fifteen years of service. For each subsequent ten years the entitlement is eight and two-thirds weeks, with *pro rata* conditions applying in the case of death or termination of employment for any reason other than serious misconduct. An employee who has completed at least ten years' service but less than fifteen years is entitled to *pro rata* leave, on the basis of thirteen weeks for fifteen years, if his employment is terminated by death; by the employer for any reason other than serious misconduct; or by the employee on account of sickness, injury, or domestic or other pressing necessity. An employee forfeits his right to long service leave if he engages in alternative employment for reward during the period of leave.

The *Long Service Leave Act Amendment Act, 1973*, which came into operation on 1 March 1974, provides that the 'standard' period of thirteen weeks' leave after fifteen years' service may be varied as the result of an agreement between the Western Australian Employers' Federation (Incorporated) and the Trades and Labor Council of Western Australia or by a determination of the Western Australian Industrial Commission in Court Session.

WORKERS' COMPENSATION

The *Workers' Compensation Act, 1912-1973* (State) provides compensation to workers in Western Australia for injuries suffered in the course of their employment, for death resulting from such injuries, and for disabilities due to specified industrial diseases associated with their employment. The provisions of the Act do not extend to employees of the Australian Government, for whom compensation is provided by the *Compensation (Australian Government Employees) Act 1971-1974*.

Every employer, other than a self insurer, is required to effect insurance with an approved insurer for the full amount of the liability to pay compensation under the Act to all workers in his employment.

The Act establishes a Workers' Compensation Board of three members, including a chairman, appointed by the Governor. The Chairman, who has the status of Judge, must be a legal practitioner of not less than eight years' practice and standing. Of the remaining members, one is nominated by the Western Australian Employers' Federation (Incorporated), and one by the Trades and Labor Council of Western Australia. The Board has exclusive jurisdiction to inquire into, hear, and determine all questions and matters arising under the Act, and its actions and decisions are final, except that where any questions of law arises in any proceedings before the Board, it may state a case for the decision of the Full Court of the Supreme Court.

The amounts of payments, allowances and benefits under the Act are calculated by reference to a 'prescribed amount' as defined in section 5 of the Act. The prescribed amount is the sum ascertained by multiplying by 208 the estimate, as published each year by the Commonwealth Statistician, of the average weekly earnings per employed male unit for the June quarter in Western Australia. In the following paragraphs the amounts shown are those which were in operation at 1 July 1974, the prescribed amount at that date being \$26,229 (*i.e.* 208 x \$126.10).

Where total incapacity for work results from the injury the weekly payment is an amount equal to the weekly earnings computed as being the amount of the ordinary wage or salary (including any over-award payment) which the worker would have received for the ordinary hours he would have worked had he not been incapacitated as a result of the injury. In the case of partial incapacity the weekly payment is the amount by which the weekly earnings so computed exceed the weekly amount which the worker is earning or is able to earn in some suitable employment or business after the accident.

The total liability of the employer in respect of weekly payments is limited to \$26,229. Additional compensation is payable up to a maximum of 10 per cent of the prescribed amount, *i.e.* \$2,622.90 (or more, if the Board finds that, in particular circumstances, this amount is inadequate) for expenses incurred in respect of first aid and ambulance ser-

vices, medicines, medical or surgical attendance, hospital treatment and the like. In the event of the death of the worker, funeral expenses are compensable up to a maximum of \$250.

The Act provides for compensation in the form of a lump-sum payment, up to a maximum of \$26,229, in respect of specified injuries resulting in such disabilities as loss of sight, hearing or mental powers, or loss of a limb or limbs. Lump-sum payments are made only by election of the injured worker, after which all right to weekly payments ceases.

Where death results from the injury and the worker leaves any dependants who were wholly dependent on his earnings, the maximum amount of compensation is 85 per cent of the prescribed amount, *i.e.* \$22,294.65, together with an additional weekly payment of \$7.50 in respect of each dependent child or step-child. It is provided that if a worker leaves a widow, a mother, or a child or step-child wholly dependent on his earnings, the minimum payment shall be 25 per cent of the prescribed amount, *i.e.* \$6,557.25. If a worker dies leaving no dependants, reasonable expenses in connection with medical attendance and burial are payable to the person by whom the expenses were properly incurred.

Disability or death caused by certain specified industrial diseases due to the nature of a worker's employment is compensable at the same rates and under the same conditions as those applying in the case of injury.

INDUSTRIAL ACCIDENTS

Statistics of industrial accidents in Western Australia are compiled on two bases, namely (i) those which resulted in absence from work for one day or more, and (ii) those which resulted in absence from work for one week or more. This allows comparison to be made with information relating to other States or countries, which publish statistics compiled variously on one or other of these bases.

The statistics contained in the following tables are derived from details of claims for workers' compensation paid by insurers and self-insurers. They relate to claims *reported to have been closed* during the year ended 30 June 1974.

The figures do not represent all industrial accidents which actually occurred during the year because: (i) they refer to claims closed; (ii) in the case of non-fatal accidents, they include only those which resulted in absence from work for one day or more (or one week or more); (iii) only accidents coming within the scope of the *Workers' Compensation Act, 1912-1973* are included in the statistics, which therefore exclude industrial accidents resulting in the death of, or injury to, self-employed persons and persons employed by the Australian Government. (Compensation for Australian Government employees is provided by the *Compensation (Australian Government Employees) Act 1971-1974.*); and (iv) the statistics include only accidents occurring at work site or in the course of the worker's normal duties and do not therefore include 'journey' cases, *i.e.* death of, or injury to, an employee while travelling between his place of residence and the place of employment. During the year ended 30 June 1974, 461 claims were reported closed in respect of 'journey' cases resulting in absence from work for one day or more, the total time lost being 2,256.4 weeks and the cost of claims, \$151,477. In respect of 'journey' cases resulting in absence from work for one week or more, 302 cases were reported closed. The total time lost was 2,184.0 weeks and the cost of claims was \$145,502.

The statistics relate only to accidents, and particulars of cases of industrial disease are therefore excluded.

For the purpose of these statistics, each claim is treated as a separate industrial accident and data are prepared from details of claims reported closed during the year under review (in this instance, the year ended 30 June 1974). In respect of reopened claims, the additional time lost and additional costs are excluded in the tables but, to avoid duplication, such cases have been excluded from the numbers of accidents shown. Reopened claims reported closed in 1973-74 numbered 1,282 and represented 2,477 weeks' time lost.

The following definitions should be borne in mind when considering the data shown in the tables. *Cost of claims* means the *total* amount of payments made (principally in the form of compensation for loss of wages, and for medical and hospital expenses, and lump

sum settlements) in respect of claims reported closed during the year. The figures do not therefore necessarily represent amounts actually paid in the year under review. *Time lost* means the *total* time lost (*i.e.* from date of injury) in respect of claims reported closed during the year. The term is therefore not necessarily restricted to time lost during the year under review, since the accident may have occurred in an earlier year.

INDUSTRIAL ACCIDENTS—1973-74

Particulars	Accidents resulting in absence from work for—					
	One day or more			One week or more		
	Males	Females	Persons	Males	Females	Persons
Fatal accidents—						
Number	15	....	15	15	....	15
Cost of claims (a)—						
Total	164	....	164	164	....	164
Average per accident	10,905	....	10,905	10,905	....	10,905
Non-fatal accidents—						
Number	26,475	2,970	29,445	14,505	1,738	16,243
Cost of claims (a)—						
Total	5,569	468	6,037	5,043	426	5,469
Average per accident	210	158	205	348	245	337
Time lost (a)—						
Total	65,924	8,021	73,945	59,948	7,388	67,336
Average per accident	2.5	2.7	2.5	4.1	4.3	4.1

(a) See definitions immediately preceding table.

INDUSTRIAL ACCIDENTS—INDUSTRY GROUPS: 1973-74

Industry group	Fatal accidents		Non-fatal accidents			
	Number	Cost of claims (a) (\$'000)	Number	Per cent of total	Cost of claims (a) (\$'000)	Time lost (a) (weeks)

TIME LOST—ONE DAY OR MORE

Primary production—						
Mining and quarrying	5	69	1,998	6.8	555	6,811
Other	2	14	1,137	3.9	382	4,662
Manufacturing	2	28	12,041	40.9	2,078	23,500
Electricity, gas, water and sanitary services (b)	2	13	882	3.0	203	2,671
Building and construction	1	(c)	5,237	17.8	1,138	12,828
Transport, storage and communication	3	39	2,430	8.3	614	8,049
Finance and property .....	....	....	73	0.2	14	213
Commerce .....	....	....	2,153	7.3	401	5,061
Public authority (n.e.i.), community and business services (including professional) .....	....	....	2,031	6.9	384	6,073
Amusement, hotels and other accommodation, cafes, personal service, etc. ....	....	....	1,314	4.5	242	3,736
Other, including industry not stated .....	....	....	149	0.5	25	339
Total	15	164	29,445	100.0	6,037	73,945

TIME LOST—ONE WEEK OR MORE

Primary production—						
Mining and quarrying	5	69	1,167	7.2	512	6,403
Other	2	14	853	5.3	369	4,509
Manufacturing	2	28	6,065	37.3	1,830	20,565
Electricity, gas, water and sanitary services (b)	2	13	462	2.8	184	2,459
Building and construction	1	(c)	2,807	17.3	1,025	11,606
Transport, storage and communication	3	39	1,541	9.5	575	7,597
Finance and property .....	....	....	27	0.2	12	191
Commerce .....	....	....	1,192	7.3	363	4,545
Public authority (n.e.i.), community and business services (including professional) .....	....	....	1,200	7.4	353	5,670
Amusements, hotels and other accommodation, cafes, personal service, etc. ....	....	....	856	5.3	225	3,492
Other, including industry not stated .....	....	....	73	0.4	22	299
Total	15	164	16,243	100.0	5,469	67,336

n.e.i. denotes 'not elsewhere included'.

(a) See definitions immediately preceding previous table.

(b) Production, supply and maintenance.

(c) Less than \$500.

NON-FATAL ACCIDENTS—DURATION OF TIME LOST (a): 1973-74

Duration of time lost	Males		Females		Persons		
	Number	Time lost (weeks)	Number	Time lost (weeks)	Number	Time lost	
						Weeks	Per cent of total
1 day but under 1 week	11,970	5,976	1,232	633	13,202	6,609	8.9
1 week but under 2 weeks	7,338	9,364	893	1,128	8,231	10,493	14.2
2 weeks but under 4 weeks	3,886	10,133	480	1,256	4,366	11,389	15.4
4 weeks but under 6 weeks	1,279	6,031	137	643	1,416	6,674	9.0
6 weeks but under 8 weeks	658	4,439	74	494	732	4,933	6.7
8 weeks but under 13 weeks	652	6,441	60	586	712	7,027	9.5
13 weeks but under 26 weeks	439	7,645	58	981	497	8,626	11.7
26 weeks but under 52 weeks	169	5,910	25	895	194	6,805	9.2
52 weeks but under 104 weeks	68	4,925	7	488	75	5,413	7.3
104 weeks but under 156 weeks	10	1,274	2	226	12	1,499	2.0
156 weeks or more	6	1,503	2	497	8	2,000	2.7
Total—One day or more	26,475	63,641	2,970	7,827	29,445	71,468	96.7
Reopened claims (b)	....	2,283	....	194	....	2,477	3.3
Total	26,475	65,924	2,970	8,021	29,445	73,945	100.0

(a) See definition immediately preceding first table on page 507.
 appropriate groups. The number of reopened claims reported was 1,282.

(b) Additional time lost which cannot be allocated to

Statistics in greater detail, as well as analyses according to additional characteristics, are available in the publications, *Industrial Accidents (Series A)*, which relates to accidents resulting in death or absence from work for one day or more, and *Industrial Accidents (Series B)*, relating to accidents resulting in death or absence from work for one week or more. These publications, which are in mimeograph form, are issued annually by the Western Australian Office of the Australian Bureau of Statistics.

Chapter X—continued

Part 2—Employment

NOTE. In addition to the employment data appearing in this Part, references to the numbers of persons engaged in particular activities are to be found elsewhere in the Year Book. In Chapter V, for example, Part 1 shows numbers engaged in teaching, Part 3 contains details of hospital staffs, and employment in building appears in Part 4. In Chapter VIII, Part 1 gives employment in fishing, Part 2 provides information on employment at mines, and Part 3 includes tables relating wholly, or in part, to employment in factories. Chapter IX, Part 2 gives numbers employed in Wholesale, Retail and Selected Service Establishments, and Part 3 shows numbers engaged in various types of transport undertakings.

Reference is made on page 144 to the repeal, with effect from 10 August 1967, of section 127 of the Australian Constitution. As a consequence of this repeal, particulars derived from the 1971 Census refer to total population (i.e. including Aborigines). Persons having Aboriginal blood to a degree greater than one-half had previously been excluded from census tabulations in accordance with the requirements of the section now repealed.

The most detailed and comprehensive statistics of employment of the population are those which are derived from the periodic Population Census. Among the most useful of the tabulations based on these enumerations are those which classify the population according to occupational status, industry, and occupation.

THE LABOUR FORCE

The term *labour force*, as used in the 1971 Census tabulations, replaces the term *work force* previously used. The labour force comprises persons aged fifteen years and over who were in one of the following categories: those who worked for payment or profit at any time during the week preceding the census enumeration; those who had a job from which they were temporarily absent; those who were temporarily laid off without pay for the whole of the week; and those who did not work, did not have a job and were actively looking for work.

Persons helping but not receiving wages or salary who usually worked less than fifteen hours per week are excluded from the labour force. Bonded trainees (including trainee teachers) and cadets engaged in full-time study at educational institutions are also excluded, even though the institution is conducted by their employer.

The unemployed members of the labour force are those persons who did no work during the week preceding the census enumeration and either looked for work (having no job) or were temporarily laid off from a job.

The approach adopted at the 1971 Census in determining the labour force conforms closely to the recommendations of the Eighth International Conference of Labour Statisticians held at Geneva in 1954 and to the approach used at the 1966 Census. Accordingly, any labour force activity, however little, during the week preceding the enumeration results in the person being counted in the labour force. Thus many persons whose main activity is not a labour force one (e.g. housewife, full-time student) are drawn into the labour force by virtue of part-time or occasional labour force activity in that week. On the other hand, the definition excludes persons who may frequently or usually participate in the labour force but who, during that week, happened to have withdrawn from the labour force.

The comprehensive tables resulting from the 1971 Census include detailed analyses of the labour force according to such characteristics as age, marital status, birthplace, occupational status, industry and occupation. Only some of these tables, in condensed form, have been included in this Chapter. The reader requiring greater detail is referred to the census bulletins published by the Commonwealth Statistician, Canberra.

Population classified according to Occupational Status

OCCUPATIONAL STATUS—CENSUS, 30 JUNE 1971

Occupational status	Males	Females	Persons	Percentage of population		
				Males	Females	Persons
In labour force—						
Employed—						
Employer	20,027	5,155	25,182	3.79	1.03	2.44
Self-employed	27,202	6,344	33,546	5.14	1.27	3.26
Employee on wage or salary	246,028	113,676	359,704	46.50	22.67	34.91
Helper, unpaid	1,002	2,296	3,298	0.19	0.46	0.32
Total employed	294,259	127,471	421,730	55.62	25.42	40.93
Unemployed—						
Looking for first job	687	589	1,276	0.13	0.12	0.12
Other unemployed	4,674	2,702	7,376	0.88	0.54	0.72
Total unemployed	5,361	3,291	8,652	1.01	0.66	0.84
Total in labour force	299,620	130,762	430,382	56.63	26.08	41.77
Not in labour force—						
Usual major activity—						
Working in a job	14,398	4,329	18,727	2.72	0.86	1.82
Home duties		185,768	185,768		37.05	18.03
Child not yet at school	59,131	55,990	115,121	11.18	11.17	11.17
Child at school	113,050	105,854	218,904	21.37	21.11	21.24
Full-time student	6,815	5,498	12,313	1.29	1.10	1.19
Other	36,052	13,202	49,254	6.81	2.63	4.78
Total not in labour force	229,446	370,641	600,087	43.37	73.92	58.23
TOTAL POPULATION	529,066	501,403	1,030,469	100.00	100.00	100.00

OCCUPATIONAL STATUS—STATES AND TERRITORIES: CENSUS, 30 JUNE 1971

Occupational status	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Australia
MALES									
In labour force—									
Employed—									
Employer	72,921	57,778	38,202	19,468	20,027	6,841	939	1,616	217,792
Self-employed	97,423	86,545	48,599	29,713	27,202	8,442	888	1,610	300,422
Employee on wage or salary	1,140,731	828,082	412,867	275,292	246,028	90,627	26,715	38,330	3,058,672
Helper, unpaid	2,880	2,584	1,785	1,009	1,002	277	39	64	9,640
Total employed	1,313,955	974,989	501,453	325,482	294,259	106,187	28,581	41,620	3,586,526
Unemployed—									
Looking for first job	2,880	2,187	1,227	868	687	226	81	81	8,237
Other unemployed	15,585	11,891	6,644	3,814	4,674	1,560	374	334	44,876
Total unemployed	18,465	14,078	7,871	4,682	5,361	1,786	455	415	53,113
Total in labour force	1,332,420	989,067	509,324	330,164	299,620	107,973	29,036	42,035	3,639,639
Not in labour force	974,790	760,994	412,341	255,887	229,446	88,469	19,591	31,554	2,773,072
Total males	2,307,210	1,750,061	921,665	586,051	529,066	196,442	48,627	73,589	6,412,711

FEMALES

In labour force—									
Employed—									
Employer	19,333	16,338	10,674	5,832	5,155	1,727	243	344	59,646
Self-employed	24,732	22,584	13,128	8,302	6,344	1,892	221	434	77,637
Employee on wage or salary	563,896	429,310	181,439	135,712	113,676	39,649	9,474	21,142	1,494,298
Helper, unpaid	6,942	5,953	3,934	2,240	2,296	760	67	129	22,321
Total employed	614,903	474,185	209,175	152,086	127,471	44,028	10,005	22,049	1,653,902
Unemployed—									
Looking for first job	2,709	2,068	1,118	927	589	277	46	90	7,824
Other unemployed	10,097	7,671	4,305	2,746	2,702	984	208	410	29,123
Total unemployed	12,806	9,739	5,423	3,673	3,291	1,261	254	500	36,947
Total in labour force	627,709	483,924	214,598	155,759	130,762	45,289	10,259	22,549	1,690,849
Not in labour force	1,666,261	1,268,366	690,802	431,897	370,641	148,682	27,504	47,925	4,652,078
Total females	2,293,970	1,752,290	905,400	587,656	501,403	193,971	37,763	70,474	6,342,927

**LABOUR FORCE—EMPLOYMENT STATUS, MARITAL STATUS AND AGE
CENSUS, 30 JUNE 1971**

Employment status and marital status	Age last birthday (years)							Total
	15-19	20-24	25-34	35-44	45-54	55-64	65 and over	

MALES								
Employed—								
Never married	28,312	25,793	13,893	5,281	3,445	2,264	568	79,556
Now married	618	16,089	55,699	52,674	42,936	28,147	5,498	201,661
Widowed	7	23	108	301	758	1,227	682	3,106
Other marital status (a)	10	468	2,221	2,640	2,602	1,657	338	9,936
Total	28,947	42,373	71,921	60,896	49,741	33,295	7,086	294,259
Unemployed—								
Never married	1,084	942	457	154	111	57	13	2,818
Now married	21	270	609	499	399	277	68	2,143
Widowed	....	2	5	9	18	21	19	74
Other marital status (a)	1	24	74	81	81	56	9	326
Total	1,106	1,238	1,145	743	609	411	109	5,361
Total in labour force—								
Never married	29,396	26,735	14,350	5,435	3,556	2,321	581	82,374
Now married	639	16,359	56,308	53,173	43,335	28,424	5,566	203,804
Widowed	7	25	113	310	776	1,248	701	3,180
Other marital status (a)	11	492	2,295	2,721	2,683	1,713	347	10,262
TOTAL IN LABOUR FORCE	30,053	43,611	73,066	61,639	50,350	33,706	7,195	299,620

FEMALES								
Employed—								
Never married	23,143	11,769	4,411	1,707	1,400	1,088	335	43,853
Now married	1,437	11,056	18,095	21,315	15,155	5,013	546	72,617
Widowed	1	19	173	571	1,583	1,751	616	4,714
Other marital status (a)	47	535	1,486	1,671	1,627	806	115	6,287
Total	24,628	23,379	24,165	25,264	19,765	8,658	1,612	127,471
Unemployed—								
Never married	809	386	108	35	14	12	4	1,368
Now married	97	412	481	374	212	58	12	1,646
Widowed	....	....	5	17	35	20	17	94
Other marital status (a)	4	33	48	41	41	13	3	183
Total	910	831	642	467	302	103	36	3,291
Total in labour force—								
Never married	23,952	12,155	4,519	1,742	1,414	1,100	339	45,221
Now married	1,534	11,468	18,576	21,689	15,367	5,071	558	74,263
Widowed	1	19	178	588	1,618	1,771	633	4,808
Other marital status (a)	51	568	1,534	1,712	1,668	819	118	6,470
TOTAL IN LABOUR FORCE	25,538	24,210	24,807	25,731	20,067	8,761	1,648	130,762

PERSONS								
Employed—								
Never married	51,455	37,562	18,304	6,988	4,845	3,352	903	123,409
Now married	2,055	27,145	73,794	73,989	58,091	33,160	6,044	274,278
Widowed	8	42	281	872	2,341	2,978	1,298	7,820
Other marital status (a)	57	1,003	3,707	4,311	4,229	2,463	453	16,223
Total	53,575	65,752	96,086	86,160	69,506	41,953	8,698	421,730
Unemployed—								
Never married	1,893	1,328	565	189	125	69	17	4,186
Now married	118	682	1,090	873	611	335	80	3,789
Widowed	....	2	10	26	53	41	36	168
Other marital status (a)	5	57	122	122	122	69	12	509
Total	2,016	2,069	1,787	1,210	911	514	145	8,652
Total in labour force—								
Never married	53,348	38,890	18,869	7,177	4,970	3,421	920	127,595
Now married	2,173	27,827	74,884	74,862	58,702	33,495	6,124	278,067
Widowed	8	44	291	898	2,394	3,019	1,334	7,988
Other marital status (a)	62	1,060	3,829	4,433	4,351	2,532	465	16,732
TOTAL IN LABOUR FORCE	55,591	67,821	97,873	87,370	70,417	42,467	8,843	430,382

(a) Comprises the categories *Permanently separated* and *Divorced*.

Classification according to Industry

For census purposes, industry may be defined as the *branch of productive activity, business or service carried out by the establishment in which a person is employed*. It is concerned with the activity of persons, firms or businesses considered as a group producing the same commodity, performing the same process or providing the same service. All persons engaged in any such branch of economic activity are classified industrially as belonging to that particular branch irrespective of their personal occupation within the industry. Examples are: *Mining*, which includes, in addition to miners and prospectors, such persons as laboratory technicians, transport workers and office staff employed by mining companies; *Water Transport*, which covers staff members of shipping companies and agencies, as well as ships' crews; and professional activities such as law and architecture which include not only qualified practitioners but also persons employed by them as, for example, receptionists, law clerks and draftsmen.

Classification according to industry at the 1971 Census has been made on the basis of the 1969 preliminary edition of the *Australian Standard Industrial Classification*, prepared by the Commonwealth Statistician, Canberra. For the Population Census an 'undefined' category was added to certain Divisions of the classification to facilitate the coding of imprecise or generalised descriptions of industrial activities on the census schedules. The classification divides the labour force into thirteen Divisions which are in turn divided into Sub-Divisions, Groups and Classes.

In the table below, the employed population is classified according to occupational status within each of the thirteen industry divisions. The table on page 513 gives a classification according to industry divisions and the principal sub-divisions, and a geographical distribution according to the main industry divisions appears on page 514.

EMPLOYED POPULATION—OCCUPATIONAL STATUS AND INDUSTRY CENSUS, 30 JUNE 1971

Industry division	Occupational status				Total
	Employer	Self-employed	Employee on wage or salary	Helper, unpaid	
MALES					
Agriculture, forestry, fishing and hunting	5,845	13,284	12,832	634	32,595
Mining	65	192	15,239	7	15,503
Manufacturing	1,429	927	49,257	21	51,634
Electricity, gas and water	6	4	4,214	....	4,224
Construction	2,970	4,079	34,791	25	41,865
Wholesale and retail trade	5,234	3,385	39,955	48	48,622
Transport and storage	699	2,351	19,858	13	22,921
Communication	5	13	6,201	1	6,220
Finance, insurance, real estate and business services	1,500	1,050	13,888	25	16,463
Public administration and defence	....	....	15,394	....	15,394
Community services	880	187	17,035	118	18,220
Entertainment, recreation, restaurants, hotels and personal services	1,181	1,075	6,112	31	8,399
Non-classifiable establishments	213	655	11,252	79	12,199
Total males employed	20,027	27,202	246,028	1,002	294,259
FEMALES					
Agriculture, forestry, fishing and hunting	1,188	2,621	1,854	1,050	6,713
Mining	9	14	1,532	3	1,558
Manufacturing	319	250	11,019	52	11,640
Electricity, gas and water	....	....	419	....	419
Construction	297	198	1,682	64	2,241
Wholesale and retail trade	2,064	1,817	29,761	293	33,935
Transport and storage	123	197	2,432	35	2,787
Communication	2	8	2,034	....	2,044
Finance, insurance, real estate and business services	202	275	11,083	36	11,596
Public administration and defence	....	....	6,031	....	6,031
Community services	142	308	28,839	376	29,665
Entertainment, recreation, restaurants, hotels and personal services	783	512	12,695	109	14,099
Non-classifiable establishments	26	144	4,295	278	4,743
Total females employed	5,155	6,344	113,676	2,296	127,471

EMPLOYED POPULATION—INDUSTRY: CENSUS, 30 JUNE 1971

Industry division and sub-division (a)	Males	Females	Persons	
			Number	Per cent of total
Agriculture, forestry, fishing and hunting—				
Agriculture	27,870	6,413	34,283	8.13
Other and undefined	4,725	300	5,025	1.19
Total—Agriculture, forestry, fishing and hunting	32,595	6,713	39,308	9.32
Mining—				
Metallic minerals	10,857	751	11,608	2.75
Other and undefined	4,646	807	5,453	1.29
Total—Mining	15,503	1,558	17,061	4.05
Manufacturing—				
Food, beverages and tobacco	8,139	3,646	11,785	2.79
Wood, wood products and furniture (except sheet metal)	7,183	969	8,152	1.93
Paper and paper products, printing and publishing	3,957	1,538	5,495	1.30
Glass, clay and other non-metallic mineral products	4,251	426	4,677	1.11
Basic metal products	4,898	345	5,243	1.24
Fabricated metal products	7,061	955	8,016	1.90
Transport equipment	5,310	232	5,542	1.31
Other industrial machinery and equipment and household appliances	5,818	856	6,674	1.58
Other and undefined	5,017	2,673	7,690	1.82
Total—Manufacturing	51,634	11,640	63,274	15.00
Electricity, gas and water	4,224	419	4,643	1.10
Construction—				
General construction	26,667	1,328	27,995	6.64
Special trade contracting	14,194	899	15,093	3.58
Total—Construction (b)	41,865	2,241	44,106	10.46
Wholesale and retail trade—				
Wholesale trade	21,537	8,081	29,618	7.02
Retail trade	27,073	25,845	52,918	12.55
Total—Wholesale and retail trade (b)	48,622	33,935	82,557	19.58
Transport and storage—				
Road transport	10,228	1,340	11,568	2.74
Railway transport	4,988	332	5,320	1.26
Water transport	4,061	178	4,239	1.01
Other and undefined	3,644	937	4,581	1.09
Total—Transport and storage	22,921	2,787	25,708	6.10
Communication	6,220	2,044	8,264	1.96
Finance, insurance, real estate and business services—				
Finance and investment	5,230	4,197	9,427	2.24
Insurance	2,687	1,975	4,662	1.11
Real estate and business services	8,523	5,418	13,941	3.31
Total—Finance, insurance, real estate and business services (b)	16,463	11,596	28,059	6.65
Public administration and defence—				
Public administration	11,427	5,687	17,114	4.06
Defence	3,959	341	4,300	1.02
Total—Public administration and defence (b)	15,394	6,031	21,425	5.08
Community services—				
Health	5,365	17,223	22,588	5.36
Education, libraries, museums and art galleries	7,078	9,677	16,755	3.97
Other and undefined	5,777	2,765	8,542	2.03
Total—Community services	18,220	29,665	47,885	11.35
Entertainment, recreation, restaurants, hotels and personal services—				
Restaurants, hotels and clubs	4,157	8,485	12,642	3.00
Personal services	1,787	3,417	5,204	1.23
Other and undefined	2,455	2,197	4,652	1.10
Total—Entertainment, recreation, restaurants, hotels and personal services	8,399	14,099	22,498	5.33
Non-classifiable establishments	12,199	4,743	16,942	4.02
TOTAL—EMPLOYED POPULATION	294,259	127,471	421,730	100.00

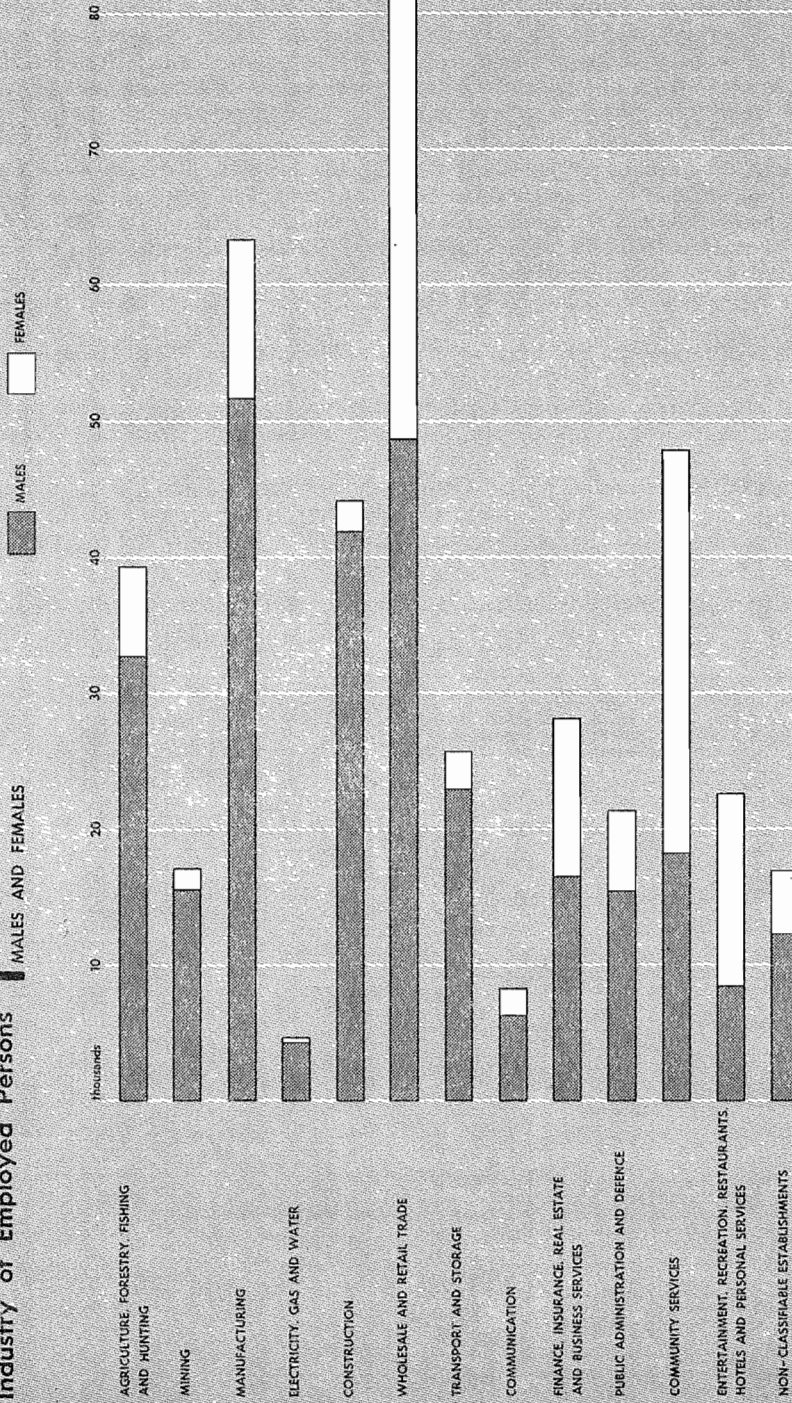
(a) Only those sub-divisions in which more than 4,217 persons (1 per cent of the total) were recorded are shown separately.
 (b) Including 'undefined', i.e. persons who could not be accurately assigned to one of the sub-divisions shown.

EMPLOYED POPULATION—INDUSTRY: CENSUS, 30 JUNE 1971
CLASSIFICATION ACCORDING TO STATISTICAL DIVISION

Statistical Division	Primary (including mining)	Manu- factur- ing	Con- struc- tion	Whole- sale and retail trade	Trans- port, storage, and commu- nication	Com- munity services	Enter- tain- ment, resta- urants, hotels, etc. (a)	Other indus- tries (b)	Total (all indus- tries)
MALES									
Perth Statistical Division	6,469	43,476	25,620	38,078	20,079	14,036	5,986	36,511	190,255
Other Divisions—									
South-West	6,361	3,548	3,038	2,758	1,883	889	510	2,415	21,402
Southern Agricultural	5,774	1,077	1,325	1,803	1,086	560	315	1,267	13,207
Central Agricultural	7,164	949	1,761	1,863	1,507	698	300	1,385	15,627
Northern Agricultural (c)	5,648	799	1,551	1,516	1,190	539	256	1,289	12,788
Eastern Goldfields	6,338	640	1,571	1,391	1,056	535	325	1,441	13,297
Central	1,873	76	1,050	103	137	78	55	350	3,722
North-West	1,328	81	533	308	264	270	113	877	3,774
Pilbara	5,165	575	4,472	554	858	174	455	2,112	14,365
Kimberley	1,954	365	937	233	386	433	77	433	4,818
Total	41,605	8,110	16,238	10,529	8,367	4,176	2,406	11,569	103,000
Total, all Divisions	48,074	51,586	41,858	48,607	28,446	18,212	8,392	48,080	293,255
Migratory (d)	24	48	7	15	695	8	7	200	1,004
Total males employed	48,098	51,634	41,865	48,622	29,141	18,220	8,399	48,280	294,259
FEMALES									
Perth Statistical Division	2,072	10,457	1,743	26,866	3,513	22,866	9,968	18,735	96,220
Other Divisions—									
South-West	1,116	443	87	1,891	256	1,591	906	981	7,271
Southern Agricultural	1,126	235	65	1,134	213	913	511	600	4,797
Central Agricultural	1,377	157	49	1,194	226	1,264	585	672	5,524
Northern Agricultural (c)	889	112	44	1,004	208	908	550	523	4,238
Eastern Goldfields	598	112	55	1,017	149	863	687	557	4,033
Central	132	4	14	56	21	95	96	55	473
North-West	242	16	15	260	46	227	191	225	1,222
Pilbara	309	42	131	329	125	351	427	273	1,987
Kimberley	404	62	35	177	63	561	169	151	1,622
Total	6,193	1,183	495	7,062	1,307	6,773	4,122	4,037	31,172
Total, all Divisions	8,265	11,640	2,238	33,928	4,820	29,639	14,090	22,772	127,392
Migratory (d)	6	....	3	7	11	26	9	17	79
Total females employed	8,271	11,640	2,241	33,935	4,831	29,665	14,099	22,789	127,471
PERSONS									
Perth Statistical Division	8,541	53,933	27,363	64,944	23,592	36,902	15,954	55,246	286,475
Other Divisions—									
South-West	7,477	3,991	3,125	4,649	2,139	2,480	1,416	3,396	28,673
Southern Agricultural	6,900	1,312	1,390	2,937	1,299	1,473	826	1,867	18,004
Central Agricultural	8,541	1,106	1,810	3,057	1,733	1,962	885	2,057	21,151
Northern Agricultural (c)	6,537	911	1,595	2,520	1,398	1,447	806	1,812	17,026
Eastern Goldfields	6,936	752	1,626	2,408	1,205	1,398	1,012	1,998	17,335
Central	2,005	80	1,064	159	158	173	151	405	4,195
North-West	1,570	97	548	568	310	497	304	1,102	4,996
Pilbara	5,474	617	4,603	883	983	525	882	2,385	16,352
Kimberley	2,358	427	972	410	449	994	246	584	6,440
Total	47,798	9,293	16,733	17,591	9,674	10,949	6,528	15,606	134,172
Total, all Divisions	56,339	63,226	44,096	82,535	33,266	47,851	22,482	70,852	420,647
Migratory (d)	30	48	10	22	706	34	16	217	1,083
Total persons employed	56,369	63,274	44,106	82,557	33,972	47,885	22,498	71,069	421,730

(a) Includes Sport and recreation and Personal services. (b) Comprises Electricity, gas and water; Finance, insurance, real estate and business services; Public administration and defence; and Non-classifiable establishments. (c) Includes Houtman Abrolhos (unincorporated). (d) Comprises persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.

Industry of Employed Persons

CENSUS, 30 JUNE 1971
MALES AND FEMALES

Classification according to Occupation

Occupation is defined as the nature of the work which a person performs, and implies *personal* performance. It may be based on the material treated, the process carried out or the type of service rendered by an *individual* worker. Thus the occupation of a person is the kind of work that he or she personally performs, as distinct from industry, which is defined as the *branch of productive activity, business or service carried out by the establishment in which a person is employed* and is not concerned with the nature of personal performance.

The Classification of Occupations used in the tabulation of the 1971 Census data has been adapted from and closely adheres to the principles embodied in the International Standard Classification of Occupations issued by the International Labour Office, Geneva, 1958 and as revised in 1968. The International Standard Classification of Occupations was prepared after extensive discussions and research by world experts in this field to provide an adequate classification framework for countries interested in occupational classification and, at the same time, provide a basis for international comparison of occupational data obtained mainly from Censuses of Population. The Australian Classification of Occupations contains 11 Major Groups, 72 Minor Groups and 367 Occupation Codes. In accordance with the International Standard Classification, occupations have been grouped according to the general similarity of the characteristics of the work which they entail.

Complete descriptions of Major Groups, Minor Groups and Codes, together with a list of occupation titles included under each heading, are contained in the *Classification and Classified List of Occupations—Revised: June 1971*, published by the Commonwealth Statistician, Canberra.

EMPLOYED POPULATION—OCCUPATIONS: CENSUS, 30 JUNE 1971

Major and minor group	Males	Females	Persons
Professional, technical and related workers—			
Architects, engineers and surveyors, professional	1,166	6	1,172
Chemists, physicists, geologists and other physical scientists	935	61	996
Biologists, veterinarians, agronomists and related scientists	630	77	707
Medical practitioners and dentists	1,281	138	1,419
Nurses, including probationers or trainees	334	6,869	7,203
Professional medical workers, n.e.c.	677	442	1,119
Teachers	5,377	6,473	11,850
Clergy and related members of religious orders	848	223	1,071
Law professionals	458	24	482
Artists, entertainers, writers and related workers	1,432	807	2,239
Draftsmen and technicians, n.e.c.	8,239	1,478	9,717
Other professional, technical and related workers	3,166	984	4,150
Total	24,543	17,582	42,125
Administrative, executive and managerial workers—			
Administrative and executive officials, government, n.e.c.	1,196	12	1,208
Employers, workers on own account, directors, managers, n.e.c.	23,483	3,423	26,906
Total	24,679	3,435	28,114
Clerical workers—			
Book-keepers and cashiers	3,403	3,664	7,067
Stenographers and typists .....	.....	13,144	13,144
Other clerical workers	19,654	23,597	43,251
Total	23,057	40,405	63,462
Sales workers—			
Insurance, real estate salesmen, auctioneers and valuers	2,637	138	2,775
Commercial travellers and manufacturers' agents	3,608	180	3,788
Proprietors and shopkeepers, workers on own account, n.e.c., retail and wholesale trade, salesmen, shop assistants and related workers	9,712	18,328	28,040
Total	15,957	18,646	34,603
Farmers, fishermen, hunters, timber getters and related workers—			
Farmers and farm managers	19,706	3,854	23,560
Farm workers, including farm foremen	12,265	1,985	14,250
Wool classers	248	5	253
Hunters and trappers	65	.....	65
Fishermen and related workers	1,497	39	1,536
Timber getters and other forestry workers	882	25	907
Total	34,663	5,908	40,571

n.e.c. denotes 'not elsewhere classified'.

EMPLOYED POPULATION—OCCUPATIONS: CENSUS, 30 JUNE 1971—*continued*

Major and minor group	Males	Females	Persons
Miners, quarrymen and related workers—			
Miners, mineral prospectors and quarrymen	4,654	14	4,668
Well drillers, oil, water and related workers	258	1	259
Mineral treaters	738	...	738
Total	5,650	15	5,665
Workers in transport and communication—			
Deck and engineer officers, ship	518	1	519
Deck and engine room hands, ship and boatmen	852	...	852
Aircraft pilots, navigators and flight engineers	321	4	325
Drivers and firemen, rail transport	1,091	...	1,091
Drivers, road transport	13,762	1,112	14,874
Guards and conductors, railway	419	...	419
Inspectors, supervisors, traffic controllers and dispatchers, transport	1,864	15	1,879
Telephone, telegraph and related telecommunication operators	354	2,147	2,501
Postmasters, postmen and messengers	1,720	343	2,063
Workers in transport and communication, n.e.c.	634	132	766
Total	21,535	3,754	25,289
Tradesmen, production-process workers and labourers, n.e.c.—			
Spinners, weavers, knitters, dyers and related workers	244	125	369
Tailors, cutters, furriers and related workers	941	1,770	2,711
Leather cutters, lasters, sewers (except gloves and garments) and related workers	269	221	490
Furnacemen, rollers, drawers, moulders and related metal making and treating workers	1,222	...	1,222
Precision instrument makers, watchmakers, jewellers and related workers	1,095	56	1,151
Toolmakers, metal machinists, mechanics, plumbers and related metal workers	28,332	73	28,405
Electricians and related electrical and electronics workers	10,298	17	10,315
Metal workers, metal and electrical production-process workers, n.e.c.	3,997	489	4,486
Carpenters, woodworking machinists, cabinetmakers and related workers	11,091	310	11,401
Painters and decorators	4,094	33	4,127
Bricklayers, plasterers and construction workers, n.e.c.	10,357	2	10,359
Compositors, printing machinists, engravers, bookbinders and related workers	2,042	519	2,561
Potters, kilnmen, glass and clay formers and related workers	647	77	724
Millers, bakers, butchers, brewers and related food and drink workers	5,461	1,500	6,961
Chemical, sugar and paper production process workers	1,027	96	1,123
Tobacco preparers and tobacco product makers .....	...	1	1
Paper products, rubber, plastic and production process workers, n.e.c.	1,458	484	1,942
Packers, wrappers, labellers	592	1,196	1,788
Stationary engine, excavating and lifting equipment operators	7,374	20	7,394
Storemen and freight handlers	8,348	362	8,710
Labourers, n.e.c.	14,766	638	15,404
Total	113,655	7,989	121,644
Service, sport and recreation workers—			
Fire brigade, police and other protective service workers	3,136	105	3,241
Housekeepers, cooks, maids and related workers	1,774	10,285	12,059
Waiters, bartenders	759	3,481	4,240
Building caretakers, cleaners	2,260	3,668	5,928
Barbers, hairdressers and beauticians	552	1,774	2,326
Laundresses, dry cleaners and pressers	262	1,241	1,503
Athletes, sportsmen and related workers	285	83	368
Photographers and camera operators	258	50	308
Undertakers and crematorium workers	71	2	73
Service, sports, recreation workers, n.e.c.	1,640	3,259	4,899
Total	10,997	23,948	34,945
Members of armed services	3,141	86	3,227
Occupation inadequately described or not stated	16,382	5,703	22,085
TOTAL, EMPLOYED POPULATION	294,259	127,471	421,730

n.e.c. denotes 'not elsewhere classified'.

Labour Force Survey

Estimates of the civilian labour force are prepared each quarter by the Commonwealth Statistician. They are based on the results of the population survey, which is carried out on a sample basis throughout Australia in February, May, August and November each year. Selected private dwellings (houses, flats, etc.) and other dwellings (hotels, motels, etc.) are visited in the course of each survey. Information is obtained by means of personal interviews carried out by specially trained enumerators. The results of the survey are published by the Commonwealth Statistician in the quarterly and annual releases entitled *The Labour Force* and in the annual *Labour Report*. All published figures related to Australia as a whole, and particulars for individual States were not available until the issue in May 1975 of *The Labour Force, November 1974* which gave details for each State and Territory.

ESTIMATES OF EMPLOYMENT

In addition to employment data provided by the census and the labour force survey, there are available monthly estimates of the number of wage and salary earners in civilian employment. The prime purpose of this series is to measure, as nearly as possible with available data, *current monthly trends* in employment in the defined field.

The figures shown in the next two tables have been taken from publications produced by the Commonwealth Statistician, Canberra, which contain detailed particulars for each of the Australian States and for Australia as a whole. These are *Employed Wage and Salary Earners: July 1969 to June 1971* (issued 11 January 1972), and the regular monthly release *Employment and Unemployment*.

The estimates, except those relating to government employment (see page 520) are based on comprehensive data, referred to as 'benchmarks', derived for the purpose from the Population Census of 30 June 1966. Month-to-month changes shown by current returns are linked to the benchmark data to derive the monthly estimates. The figures used for this purpose are obtained from three main sources: (i) current pay-roll tax returns, which are lodged by all employers paying more than \$400 per week in wages, other than those specifically exempted under the pay-roll tax legislation; (ii) current returns from government bodies; and (iii) some other current returns of employment (*e.g.* for hospitals). The balance, *i.e.* unrecorded private employment, is estimated.

The figures relate only to civilian wage and salary earners, not to the total labour force. They therefore exclude employers, self-employed persons, unpaid helpers and members of the defence forces. Employees in agriculture and in private domestic service are not included in the estimates because the available data are inadequate.

The industry classification used is that of the Population Census of 30 June 1966. The estimated monthly changes are derived mainly from returns from employers relating to establishments or enterprises, while the benchmark figures were derived from particulars recorded for individuals on population census schedules, which do not in all cases provide sufficiently precise information to allow accurate coding of industry. Industry dissections of the census totals of wage and salary earners were therefore adjusted to make them consistent as far as possible with industry coding at the establishment level.

Current data supplied by reporting enterprises or establishments generally refer to persons on the pay-roll for the last pay-period in each month. Persons who are on paid leave or who work during part of the pay-period and are unemployed or on strike during the rest of the period are generally counted as employed. Those not shown on employers' pay-rolls because they are on leave without pay, on strike or stood down for the entire period are excluded.

Employment estimates for months prior to June 1966 are not comparable with those for later months, because of (a) the adoption of a new definition of the labour force at the 1966 Population Census (from which the benchmarks for the current series were derived) and (b) the inclusion of full-blood Aborigines. The new definition resulted in the inclusion of a number of part-time employees (mostly females) who had previously been excluded.

As the results of each successive population census become available it is the practice to derive from them new benchmarks for the monthly employment series, and to revise the published estimates for all periods subsequent to the date of the previous census. It is intended to use the results of the 1971 Census to establish new benchmarks and to revise the current series from July 1966.

Employment according to Industry

The table on page 519 shows the number of wage and salary earners in civilian employment in Western Australia in various industry groups and sub-groups. The figures appearing against the item 'Other' under the heading 'Other industries' comprise employees in the industry sub-groups *Law, order and public safety; Religion and social welfare; Other community and business services; Amusement, sport and recreation; Hotels, boarding houses, etc. and restaurants; and Other personal services.*

WAGE AND SALARY EARNERS IN CIVILIAN EMPLOYMENT—INDUSTRY GROUPS
(Excluding defence forces and employees in agriculture and private domestic service)
(Thousands)

Industry group and sub-group	1970		1971		1972		1973		1974
	June	Dec.	June	Dec.	June	Dec.	June	Dec.	June

MALES									
Forestry, fishing and trapping	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Mining and quarrying	11.7	12.6	13.5	13.7	13.4	14.9	15.9	16.2	17.2
Manufacturing	56.2	57.0	57.9	59.1	56.8	56.3	57.2	59.0	59.0
Electricity, gas, water and sanitary services	6.7	7.0	7.1	7.3	7.7	8.0	8.0	8.0	8.3
Building and construction	30.9	32.1	34.6	32.9	29.9	26.6	27.9	27.3	28.5
Transport and storage—									
Road transport and storage	8.8	9.2	9.4	9.4	9.3	9.4	9.3	9.4	9.4
Shipping and stevedoring	4.6	4.6	4.5	4.5	4.1	4.1	3.7	3.8	3.8
Rail and air transport	7.8	7.8	7.7	7.8	7.7	7.6	7.4	7.6	7.6
Communication	7.2	8.3	7.5	8.3	7.6	8.4	7.8	8.6	8.1
Finance and property—									
Banking	4.1	3.9	4.2	4.0	4.1	4.1	4.1	4.2	4.4
Other	4.5	4.7	4.6	4.6	4.8	4.9	5.0	5.2	5.4
Commerce—									
Retail trade	15.1	15.7	15.7	16.3	16.1	16.8	17.4	18.2	18.1
Wholesale and other commerce	18.3	19.4	18.4	19.8	18.0	18.9	17.8	19.5	18.6
Public authority activities, n.e.i.	10.8	11.2	11.4	11.5	11.8	12.0	12.2	12.4	12.9
Other industries—									
Health, hospitals, etc.	3.8	4.1	4.2	4.3	4.5	4.6	4.7	5.0	5.2
Education (a)	7.7	7.4	8.1	7.3	8.3	8.0	8.8	8.5	9.4
Other (b)	16.8	18.2	18.8	18.6	18.5	18.7	19.0	20.1	20.3
Total (a)	216.5	224.6	229.1	231.0	224.2	224.7	228.0	234.5	237.7

FEMALES									
Forestry, fishing and trapping	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Mining and quarrying	0.9	1.1	1.2	1.2	1.2	1.3	1.4	1.4	1.6
Manufacturing	13.2	13.1	13.0	13.4	12.8	13.0	13.4	14.1	14.4
Electricity, gas, water and sanitary services	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6
Building and construction	1.7	1.9	2.2	2.1	1.9	1.7	1.8	1.9	1.9
Transport and storage—									
Road transport and storage	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.0
Shipping and stevedoring	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Rail and air transport	0.7	0.8	0.8	0.8	0.8	0.7	0.7	0.8	0.8
Communication	2.0	2.2	2.3	2.3	2.4	2.4	2.4	2.5	2.6
Finance and property—									
Banking	2.7	2.7	2.9	2.9	3.0	3.1	3.2	3.4	3.5
Other	4.1	4.2	4.1	4.0	4.1	4.2	4.3	4.4	4.6
Commerce—									
Retail trade	20.7	21.9	21.0	22.4	21.6	23.3	23.3	25.6	25.1
Wholesale and other commerce	7.2	7.3	7.4	7.5	7.3	7.3	7.4	7.9	8.1
Public authority activities, n.e.i.	4.4	4.7	4.9	4.9	5.1	5.1	5.3	5.5	6.0
Other industries—									
Health, hospitals, etc.	15.8	16.3	17.2	18.3	19.5	20.1	21.4	22.1	22.7
Education (a)	11.7	9.8	12.9	8.8	12.6	10.0	13.6	11.6	15.4
Other (b)	20.7	22.6	23.3	23.6	24.0	24.2	25.2	26.8	27.1
Total (a)	107.5	110.2	114.8	114.1	118.0	118.3	125.3	129.9	135.9

PERSONS									
Forestry, fishing and trapping	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7
Mining and quarrying	12.6	13.7	14.7	14.9	14.6	16.1	17.3	17.6	18.7
Manufacturing	69.3	70.1	71.0	72.5	69.6	69.4	70.6	73.1	73.4
Electricity, gas, water and sanitary services	7.2	7.5	7.6	7.7	8.2	8.5	8.6	8.7	9.0
Building and construction	32.6	34.0	36.8	34.9	31.7	28.3	29.7	29.1	30.4
Transport and storage—									
Road transport and storage	9.6	10.0	10.2	10.4	10.2	10.3	10.3	10.4	10.4
Shipping and stevedoring	4.9	4.9	4.8	4.8	4.4	4.4	4.0	4.1	4.1
Rail and air transport	8.5	8.5	8.5	8.7	8.4	8.3	8.2	8.4	8.4
Communication	9.2	10.5	9.8	10.6	9.9	10.8	10.3	11.1	10.7
Finance and property—									
Banking	6.8	6.6	7.1	6.9	7.1	7.1	7.3	7.6	7.9
Other	8.6	8.9	8.7	8.6	8.9	9.2	9.3	9.7	10.0
Commerce—									
Retail trade	35.9	37.6	36.7	38.7	37.8	40.1	40.7	43.8	43.2
Wholesale and other commerce	25.5	26.7	25.7	27.3	25.3	26.1	25.2	27.4	26.7
Public authority activities, n.e.i.	15.3	15.9	16.2	16.4	16.9	17.1	17.5	17.9	18.8
Other industries—									
Health, hospitals, etc.	19.6	20.4	21.3	22.7	24.1	24.7	26.1	27.1	27.9
Education (a)	19.4	17.2	21.0	16.1	20.9	18.0	22.4	20.1	24.8
Other (b)	37.5	40.8	42.1	42.2	42.5	42.9	44.2	46.9	47.5
Total (a)	324.0	334.8	343.9	345.1	342.2	343.0	353.3	364.4	373.6

(a) See letterpress immediately preceding next table.

(b) See letterpress *Employment according to Industry* on previous page.

Government Employment

Employees of government and semi-government authorities are included in the figures shown in the table on page 519. Estimates of the numbers employed by Australian Government, State Government, and local government authorities are available separately. They include not only those engaged in administrative activities but also employees on services such as railways, road transport, air transport, shipping, education, health, hospitals and institutions, migrant hostels, banks, post office, broadcasting and television, police, factories, electricity generation and supply, water conservation, irrigation, road and bridge construction, harbour works and other public works. In the following table, government employment so defined is shown for the months of June and December in the period from June 1970 to June 1974.

At the Population Census of 30 June 1971 trainee teachers were, for the first time, classified as not being in the labour force. They have been excluded from the employment estimates from July 1971 onwards, and there is consequently a break in series between the figures for June 1971 and those for July 1971 and later months. The approximate numbers excluded from the estimates for July 1971 were 400 males and 1,500 females.

GOVERNMENT AUTHORITIES—CIVILIAN EMPLOYEES IN WESTERN AUSTRALIA (a) (Thousands)

Month	Australian Government (b)			State Government (b) (c)			Local government (c)			Total (b)		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
1970—												
June	14.3	4.7	19.0	45.9	17.1	63.1	5.7	1.0	6.7	65.9	22.8	88.8
Dec.	15.3	4.8	20.1	46.7	16.0	62.7	5.7	1.0	6.8	67.7	21.9	89.6
1971—												
June	14.7	5.1	19.7	47.7	18.7	66.5	5.6	1.0	6.7	68.0	24.8	92.9
Dec. (d)	15.5	5.1	20.7	47.5	15.5	63.0	5.8	1.1	6.9	68.9	21.7	90.6
1972—												
June	15.0	5.3	20.3	50.2	18.7	69.0	6.5	1.1	7.6	71.7	25.1	96.8
Dec.	15.9	5.5	21.4	50.4	16.9	67.3	7.0	1.2	8.2	73.3	23.5	96.8
1973—												
June	15.5	5.7	21.2	51.2	20.2	71.4	6.7	1.2	7.8	73.4	27.1	100.5
Dec.	16.4	5.9	22.3	51.1	18.8	69.9	6.4	1.2	7.6	73.9	25.9	99.8
1974—												
June	16.1	6.2	22.3	53.2	22.5	75.7	6.5	1.2	7.7	75.9	29.9	105.8

(a) Included in the figures shown in the table on page 519. (b) Includes employees of semi-government authorities.
(c) Excludes a small number of employees engaged in agriculture. (d) A line drawn across a column between two consecutive figures indicates a break in continuity in the series; see letterpress immediately preceding table.

UNEMPLOYMENT

A full count of unemployed persons in Western Australia is available only from population censuses. For the purpose of the Census of 30 June 1971, unemployed members of the labour force were those persons who did no work during the week preceding the census enumeration and either looked for work (having no job) or were temporarily laid off from a job. The number of persons recorded in this category in Western Australia was 8,652 (5,361 males and 3,291 females), equivalent to 2.01 per cent of the labour force. Numbers of males and females unemployed in each of the Australian States and Territories and Australia as a whole are given in the table on page 510.

Department of Labor and Immigration

Monthly figures are compiled by the Department of Labor and Immigration from the operations of its Commonwealth Employment Service. These data provide indicators of movement in the level of unemployment and the number of unfilled vacancies.

The department makes a count of the number of persons, registered with the Employment Service for employment on the Friday nearest to the end of the month, who claimed at the time of registering that they were not employed and who were seeking full-time employment. Included in the figures are persons who have been referred to employers but whose employment was still unconfirmed, and those who had recently obtained em-

ployment without notifying the department. Also available from the Department of Labor and Immigration is the number of vacancies, registered by employers, which were recorded as unfilled at the end of the month.

The following table gives a classification according to occupational group of unemployed persons and unfilled vacancies in Western Australia at the end of June of the years 1972 to 1974. The figures are taken from the *Monthly Review of the Employment Situation*, which is published by the Department of Labor and Immigration and contains similar statistics, together with additional information, for each of the Australian States and for Australia as a whole.

The numbers of unemployed persons shown in the table for June 1974 are not strictly comparable with those for earlier dates, due to a change in definition of 'school leaver' which became effective from July 1973. School leavers are now defined as comprising all persons aged under twenty-one years who, at the time of registering with the Commonwealth Employment Service, had ceased full-time primary or secondary education within the preceding six months. Previously, school leavers comprised all persons aged under twenty-one years who, at the time of registering with the Commonwealth Employment Service, either (a) had ceased full-time primary or secondary education within the preceding three months, or (b) were still at school but had notified the Commonwealth Employment Service that they would leave school before the end of the school year if a full-time job were available. The effect of the change in definition was to reduce from 289 to 185 the number of school leavers registered for employment in Western Australia at the end of July 1973, and to reduce the total number of registered persons at the same date from 8,060 to 7,956.

UNEMPLOYED PERSONS AND UNFILLED VACANCIES CLASSIFIED ACCORDING TO OCCUPATIONAL GROUP

Occupational group	At end of June (a)—								
	1972			1973			1974 (b)		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
UNEMPLOYED PERSONS (c) (d)									
Rural	256	3	259	255	3	258	365	1	366
Professional and semi-professional	76	96	172	59	70	129	173	80	253
Clerical and administrative	937	1,705	2,642	723	1,433	2,156	599	1,505	2,104
Skilled building and construction	524	.....	524	211	.....	211	182	1	183
Skilled metal and electrical	1,032	1	1,033	357	1	358	206	.....	206
Other skilled (e)	220	9	229	107	11	118	84	21	105
Semi-skilled	2,704	442	3,146	1,487	275	1,762	1,220	336	1,556
Unskilled manual.....	2,624	10	2,634	2,130	7	2,137	1,866	11	1,877
Service occupations (f)	639	798	1,437	513	819	1,332	380	752	1,132
Total	9,012	3,064	12,076	5,842	2,619	8,461	5,075	2,707	7,782
UNFILLED VACANCIES (g)									
Rural	57	2	59	108	3	111	105	3	108
Professional and semi-professional	32	165	197	52	158	210	107	146	253
Clerical and administrative	88	198	286	159	381	540	174	292	466
Skilled building and construction	73	.....	73	142	.....	142	161	.....	161
Skilled metal and electrical	205	3	208	525	.....	525	642	2	644
Other skilled (e)	52	3	55	170	10	180	128	20	148
Semi-skilled	244	76	320	738	168	906	751	145	896
Unskilled manual.....	140	5	145	302	16	318	247	27	274
Service occupations (f)	35	186	221	76	294	370	82	270	352
Total	926	638	1,564	2,272	1,030	3,302	2,397	905	3,302

(a) At the Friday nearest to the end of June. (b) See letterpress immediately preceding table. (c) Persons who claimed when registering with the Commonwealth Employment Service that they were not employed and who were seeking full-time employment. Includes those referred to employers but whose employment was still unconfirmed, and those who had recently obtained employment without notifying the Commonwealth Employment Service. Includes also persons receiving unemployment benefit. (d) Includes persons seeking apprenticeships, cadetships and other forms of training. (e) Includes skilled workers in mining and in the following trades: stone, glass, chemicals, leather, rubber, clothing, textiles, footwear, food, drink, tobacco, wood, furnishing, paper and printing. (f) Includes hairdressers; private domestic, hotel and guest-house workers; caretakers and cleaners; and protective service occupations. (g) Includes apprenticeships, cadetships and other forms of training.

Applications for unemployment benefit are received by the Department of Labor and Immigration acting on behalf of the Department of Social Security. Persons seeking unemployment benefit must register with the Commonwealth Employment Service (see below), which is responsible for certifying that suitable employment is not available before benefits can be paid. Statistics of the number of persons receiving unemployment benefits are given on page 259.

COMMONWEALTH EMPLOYMENT SERVICE

The Commonwealth Employment Service is established under the provisions of the *Re-establishment and Employment Act 1945-1973*. The main functions of the Service are to assist people seeking employment to obtain positions best suited to their training, experience, abilities and qualifications, and to assist employers seeking labour to obtain employees best suited to the kinds of work being offered.

Specialised facilities are provided for young people, including training and the payment of living-away-from-home allowances for apprentices; persons with physical and mental handicaps; former members of the defence forces; Aborigines; rural workers; and persons with professional and technical qualifications. Vocational guidance is provided without charge by a staff of qualified psychologists. Guidance is available to any person, but is provided particularly for young people, ex-servicemen and the physically handicapped. A Career Reference Centre has been established in Perth to enable students to obtain information on courses and provide them with the opportunity of investigating at leisure their career choices. The Centre provides information in a more extensive manner than is possible in an employment interview or when a visit is made to a school.

The Commonwealth Employment Service administers the National Employment and Training System which came into operation on 1 October 1974. The system provides subsidised training in the form of full-time, part-time and in-plant courses covering a wide range of occupations and industries. Correspondence courses are also available. Provision is made for the payment to trainees of living allowances, reimbursements of expenditure on fees, books and equipment, and certain other benefits. Employers who provide properly supervised training are eligible for a subsidy from the Australian Government.

The Commonwealth Employment Service is responsible for placing in employment migrant workers sponsored by the Australian Government under migration schemes. This function includes arranging for them to move to their initial employment and for their admission, if necessary, to Australian Government migrant hostels.

In association with placement activities, regular surveys of the labour market are carried out, and detailed information is supplied to interested Australian Government and State Government departments and instrumentalities and to the public. Employers, employees and other interested persons are advised on labour availability, industrial training and employment opportunities in various occupations and areas and on other matters concerning employment.

In Western Australia at 30 June 1975, the Commonwealth Employment Service operated eight offices in Perth and suburbs, and there were offices at Albany, Bunbury, Collie (part-time), Esperance, Geraldton, Kalgoorlie, Kwinana, Manjimup, Merredin, Northam and Port Hedland.

The Commonwealth Employment Service has a Professional Employment Office in Perth, which deals with the placement of the more highly qualified executive and professional applicants. Experts for overseas service under technical aid programmes are recruited by the Service.

Chapter X—continued

Part 3—Prices

RETAIL PRICES AND PRICE INDEXES

Prices of a limited range of commodities are recorded in the Blue Books of Western Australia from the early years of settlement. Retail prices of food and groceries and average rentals of houses for years extending back to 1901 have been collected by the Commonwealth Statistician, but it was not until 1911 that a systematic collection of retail price statistics was begun. These statistics were used to compile the 'A' Series Index, which covered food, groceries and house rents and was first compiled in 1912 with the year 1911 as base = 1,000. Four other indexes covering a wider range of commodities and services were compiled by the Commonwealth Statistician at different times before the current Consumer Price Index was introduced in 1960 (retrospectively to the September quarter of 1948).

Retail price indexes aim to measure the changes which occur in the general level of prices in a selected field. The basic principle of a price index is to select commodities and services representative of the field to be covered, and to combine their prices at regular intervals by the use of 'weights' which represent the relative importance of the several commodities and services in the selected field taken as a whole.

Information concerning retail price indexes and their development in Australia is given in the *Official Year Book of Australia* and the *Labour Report*, published by the Commonwealth Statistician, Canberra.

The Consumer Price Index. The purpose of the Consumer Price Index is to measure quarterly variations in retail prices of goods and services representing a high proportion of the expenditures of wage-earner households. The weighting pattern relates to estimated aggregates of household expenditures and not to estimated expenditures of an 'average' or individual household of specified size, type, or mode of living.

The index covers a wide range of commodities and services arranged in five major groups, comprising Food; Clothing and Drapery; Housing; Household Supplies and Equipment; and Miscellaneous. With certain exceptions, the weights for individual items comprising these groups are derived from estimates of average household consumption or expenditure for the community as a whole.

The Consumer Price Index is designed essentially to measure the proportionate change in prices as combined in the individual groups, and more particularly, the total of the groups. Consumer (retail) price indexes are sometimes loosely called 'cost of living indexes' and are thought to measure changes in the 'cost of living'. While they may be used as indicating proportional variations in cost of a constant standard of living, they do not measure the absolute cost of any standard of living, nor the absolute cost of changes in the standard of living. The change in prices of goods and services is nevertheless a very important part of the change in the cost of living and this part is measured by consumer (retail) price indexes.

The incidence and frequency of changes in the pattern of household expenditure since 1950 have been such as to make it necessary to construct not one but a series of new indexes introducing additional items and changes in weighting patterns at short intervals. The Consumer Price Index therefore consists of a sequence of short-term retail price indexes linked to form one continuous series. At times of linking, the weighting pattern is altered and new items which have become significant in household expenditure are introduced. In each period between links the items and weighting remained unchanged.

The most recent link in the series was made as at the December quarter of 1973. The weighting of this seventh linked index has been derived from analyses of data from the 1971 Census of Population and Housing, the 1968-69 Census of Retail Establishments, the 1971 Motor Vehicle Usage Survey, from recent statistics and estimates of production, consumption, etc., and from several special purpose sample surveys. Weights of all items have been reviewed and are now broadly based on the estimated pattern of consumption in 1971-72. Further information is contained in the mimeographed release *Consumer Price Index—March Quarter 1974* issued by the Commonwealth Statistician, Canberra.

Changes from the previous (sixth) linked series include: the extension of the regimen of the Food Group to form a new sub-group 'Snacks, Take Away Food'; the inclusion of new sub-groups 'Recreational Goods and Services' and 'Wines and Spirits' in the Miscellaneous Group; the revision of weights for the motoring section of the Miscellaneous Group to take account of data from the 1971 Survey of Motor Vehicle Usage; the re-weighting of the price of houses in the Housing Group to include estimated expenditure on major alterations and additions to private houses; and the dissection of the All Groups index into the components 'Goods' and 'Services' and publication of separate index numbers for these components.

The Consumer Price Index is compiled for each of the six State capital cities and for Canberra. The separate city indexes measure price movements within each city individually. They enable comparisons to be drawn between cities as to differences in the degree of price movement, but not as to differences in the price level.

In tables dealing with the Consumer Price Index, the figures appearing after the decimal point have little significance for general statistical purposes. They are inserted to avoid distortions that would occur in rounding off the figures to the nearest whole number.

Details of movements in the Consumer Price Index are published quarterly by the Commonwealth Statistician, Canberra for the five groups individually and for all groups combined. In addition, index numbers for the Food Group and its component sub-groups are issued monthly in the publication *Consumer Price Index—Monthly Food Group Index Numbers*.

CONSUMER PRICE INDEX
(Base of each Index: Year 1966-67 = 100·0)

Year	Group index numbers					Combined index (All groups)
	Food	Clothing and drapery	Housing	Household supplies and equipment	Miscellaneous	
PERTH						
1948-49	38·4	50·6	36·1	60·4	45·4	44·0
1953-54	74·0	84·8	62·0	92·7	66·8	74·6
1958-59	80·3	90·8	75·0	96·3	79·6	83·2
1963-64	87·4	95·7	89·8	95·7	86·2	89·8
1966-67	100·0	100·0	100·0	100·0	100·0	100·0
1969-70	108·1	107·8	120·1	103·7	109·8	109·4
1970-71	112·5	112·3	125·7	107·7	114·8	114·1
1971-72	116·4	118·9	133·7	112·7	124·5	120·7
1972-73	124·5	126·1	139·7	117·4	130·4	127·3
1973-74	141·7	143·3	149·1	125·7	141·6	140·6

SIX STATE CAPITAL CITIES COMBINED (a)

1948-49	38·2	48·9	40·5	58·3	44·7	43·9
1953-54	73·2	84·3	58·5	88·3	67·1	73·5
1958-59	81·6	90·5	72·9	94·4	81·4	83·6
1963-64	89·0	95·3	89·1	96·4	87·3	90·6
1966-67	100·0	100·0	100·0	100·0	100·0	100·0
1969-70	108·1	107·5	115·5	104·1	111·6	109·4
1970-71	112·4	111·9	123·5	107·4	117·8	114·6
1971-72	116·8	118·5	133·0	111·7	131·0	122·4
1972-73	125·7	125·8	142·4	115·4	137·5	129·8
1973-74	149·5	143·0	157·8	125·0	150·6	146·6

(a) Weighted average.

The following table shows the 'All groups' index numbers for the six State capital cities, separately and combined, for selected years during the period 1948-49 to 1973-74.

CONSUMER PRICE INDEX—'ALL GROUPS' INDEX NUMBERS
SIX STATE CAPITAL CITIES, SEPARATELY AND COMBINED
(Base of each Index: Year 1966-67 = 100·0)

NOTE. The separate city indexes measure price movements within each city individually. They enable comparisons to be drawn between cities as to differences in degree of price movement, but not as to differences in price level.

Year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted average of six State capital cities
1948-49	44·4	43·3	43·1	45·0	44·0	43·0	43·9
1953-54	74·5	72·5	70·9	74·7	74·6	74·4	73·5
1958-59	84·6	82·9	82·1	83·6	83·2	84·1	83·6
1963-64	91·4	90·4	89·6	90·2	89·8	91·7	90·6
1966-67	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1969-70	110·6	108·7	108·4	108·2	109·4	108·5	109·4
1970-71	116·8	113·1	114·2	112·5	114·1	112·6	114·6
1971-72	126·3	119·7	121·6	119·2	120·7	119·9	122·4
1972-73	133·9	127·2	128·6	126·5	127·3	126·7	129·8
1973-74	151·3	144·0	146·1	143·9	140·6	142·6	146·6

Retail Price Index Numbers, 1901 to 1974. The index numbers shown in the following table are presented as a continuous series, but they give only a broad indication of long-term trends in retail price levels. They are derived by linking a number of indexes that differ greatly in scope. The successive indexes used are: from 1901 to 1914, the 'A' Series Retail Price Index; from 1914 to 1946-47, the 'C' Series Retail Price Index; from 1946-47 to 1948-49, a composite of Consumer Price Index Housing Group (partly estimated) and 'C' Series Index excluding Rent; from 1948-49 onwards, the Consumer Price Index.

RETAIL PRICE INDEX NUMBERS, 1901 TO 1974
SIX STATE CAPITAL CITIES COMBINED
(Base: Year 1911 = 100)

Year	Index number	Year	Index number	Year	Index number
1901	88	1926	168	1951	313
1902	93	1927	166	1952	367
1903	91	1928	167	1953	383
1904	86	1929	171	1954	386
1905	90	1930	162	1955	394
1906	90	1931	145	1956	419
1907	90	1932	138	1957	429
1908	95	1933	133	1958	435
1909	95	1934	136	1959	443
1910	97	1935	138	1960	459
1911	100	1936	141	1961	471
1912	110	1937	145	1962	469
1913	110	1938	149	1963	472
1914 (a)	114	1939	153	1964	483
1915 (a)	130	1940	159	1965	502
1916 (a)	132	1941	167	1966	517
1917 (a)	141	1942	181	1967	534
1918 (a)	150	1943	188	1968	548
1919 (a)	170	1944	187	1969	564
1920 (a)	193	1945	187	1970	586
1921 (a)	168	1946	190	1971	621
1922 (a)	162	1947	198	1972	658
1923	166	1948	218	1973	720
1924	164	1949	240	1974	829
1925	165	1950	262		

(a) November.

Retail Prices. The average retail prices of selected items of food and groceries in Perth are shown in the following table.

AVERAGE RETAIL PRICES OF FOOD AND GROCERIES—PERTH
(Cents)

Commodity	Unit	1970	1971	1972	1973	1974
GROCERIES						
Bread, ordinary white, delivered	2 lb	21.0	21.4	22.8	25.3	28.4
Flour, plain	1 kg pkt (a)	16.1	16.8	17.4	18.6	24.8
" self-raising	" (b)	19.4	20.5	21.1	21.8	27.6
Tea	$\frac{1}{2}$ lb pkt	28.7	30.4	32.4	31.4	32.4
Sugar	2 kg pkt (c)	40.5	40.0	40.0	45.5	46.5
Rice	500 g pkt (d)	15.2	15.6	15.9	19.0	21.9
Jam, apricot	$1\frac{1}{2}$ lb	36.0	38.2	39.9	41.4	46.3
Oats, rolled	$1\frac{1}{2}$ lb pkt	27.7	29.7	30.7	30.7	(e)
Peaches, canned	29 oz	35.4	36.4	36.6	37.5	44.8
Pears, canned	"	35.4	35.8	35.3	36.8	44.8
Potatoes	7 lb	47.2	51.3	51.0	59.1	81.2
Onions, brown	lb	10.7	12.1	10.3	15.5	15.9
Soap, laundry	500 g pkt (f)	34.6	35.8	*31.8	35.7	(e)
DAIRY PRODUCE						
Butter	lb	53.2	54.3	55.5	55.6	58.9
Cheese, processed	8 oz pkt	24.5	25.7	27.7	29.0	32.1
Eggs, 55 grams (g)	dozen	66.1	66.0	63.9	64.4	76.1
Milk, evaporated	$14\frac{1}{2}$ oz tin	17.5	18.0	19.5	19.5	21.1
" fresh, bottled, delivered	quart (h)	20.0	21.8	23.3	24.0	28.7
MEAT						
Beef (fresh)—						
Rib (without bone)	lb	57.0	57.2	60.4	70.7	70.6
Steak, rump	"	113.4	119.5	123.0	135.8	135.8
" T-bone (i)	"	89.7	95.9	103.1	111.2	107.9
" chuck	"	62.2	63.7	64.7	75.1	73.9
Beef (corned)—						
Silverside	"	63.5	66.6	69.0	78.6	80.4
Brisket	"	47.6	46.8	47.0	57.4	(e)
Mutton (fresh)—						
Leg	"	33.6	32.8	35.6	48.6	(e)
Chops, loin	"	28.9	27.7	29.7	45.9	(e)
" leg	"	30.1	29.5	32.9	49.1	(e)
" forequarter	"	24.4	23.6	24.2	41.2	(e)
Lamb (fresh)—						
Leg	"	52.1	49.2	53.3	67.4	82.7
Chops, loin	"	52.7	47.6	54.9	71.3	84.7
" leg	"	53.8	50.3	56.6	72.4	85.9
" forequarter	"	45.1	41.4	46.8	62.9	76.0
Pork (fresh)—						
Leg	"	65.3	66.9	67.3	69.2	90.2
Loin	"	65.7	67.4	68.0	69.5	90.4
Chops	"	65.5	68.1	68.2	70.4	91.6
Processed meat—						
Bacon rashers, prepacked	$\frac{1}{2}$ lb	44.1	45.0	44.8	47.0	59.2
Sausages	lb	26.2	26.9	25.1	31.2	39.3

(a) Flour, plain, 2 lb pkt prior to 1974.
1973.

(d) Rice, 1 lb pkt prior to 1973.

(b) Flour, self-raising, 2 lb pkt prior to 1974.

(e) Not available.

(f) Soap, 20 oz pkt prior to 1972.

(c) Sugar, 4 lb pkt prior to 1973.

(g) Eggs, 24 oz

prior to 1972.

(h) Price for two 1-pint bottles.

(i) With fillet; T-bone without fillet prior to June quarter 1972. *Revised.

WHOLESALE PRICE INDEXES OF MATERIALS USED IN BUILDING

House Building. The Wholesale Price Index of Materials used in House Building is compiled by the Commonwealth Statistician and was first published in November 1970 (retrospectively to July 1966). Index numbers are produced monthly for each State capital city and for the six State capital cities combined.

The index measures changes in prices of selected materials used in the construction of houses. Its composition is in accordance with the usage of materials in actual houses which were selected as representative for the purpose. The index does not purport to represent buildings of any kind other than houses. The house building construction types included are those which use brick, brick veneer, timber, or asbestos-cement sheeting as the principal material for the outer walls. In all cases the selection of materials was based on local usage. The index includes some fifty items which are combined in eleven groups in addition to the 'All groups' index. Some items carry the weight of similar items not directly priced. They are described in terms of fixed specifications with the aim of recording price changes for representative materials of constant quality.

The reference base of the index is the year 1966-67 = 100.0, the same as that used for the Wholesale Price Index of Materials used in Building other than House Building (see below). The index is a fixed-weights index and is calculated by the method known as 'the weighted arithmetic mean of price relatives'. The items and weights were derived from reported values of each material used in selected representative houses constructed in or about the year 1968-69 in each State capital city. The selection took account, within the four major construction types, of a range of characteristics of these houses, e.g. internal partitions, windows, roofing, etc., as well as whether such things as paths and fences were included in the job.

Data obtained in each State capital city were used to construct for that city its own list of items and its individual weighting pattern. The weighting pattern derived for the weighted average of the six State capital cities is an aggregation of the individual city patterns, the weight given to each item being proportional to its estimated importance in materials usage in houses of the specified types completed in the six capital cities in 1968-69. In that year the four major construction types (*i.e.* brick, brick veneer, timber, asbestos-cement sheeting) constituted more than 99 per cent of all house building (in the six State capital cities) for which indexes have been prepared.

Price series used in the index relate to specified standards of each commodity and are obtained in all State capital cities from representative suppliers of materials used in house building. In the main they are collected as at the mid-point of the month to which the index refers.

The index has been compiled for each month from July 1966 and for the financial years from 1966-67. Figures are published to one decimal place to avoid distortions that would occur in rounding off the index numbers to the nearest whole number.

WHOLESALE PRICE INDEX OF MATERIALS USED IN HOUSE BUILDING GROUP INDEX NUMBERS

(Base of each Index: Year 1966-67 = 100.0)

Year	Concrete mix, cement and sand	Cement products	Clay bricks, tiles, etc.	Timber, board and joinery	Steel products	Other metal products	Plumbing fixtures, etc.	Electrical installation materials	Installed appliances	Plaster and plaster products	Miscellaneous materials	All groups
PERTH												
1966-67	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	102.3	104.5	103.5	105.8	101.6	105.3	101.3	103.3	101.4	103.0	103.5	104.0
1968-69	102.8	106.5	106.2	107.5	106.2	107.5	102.7	105.2	101.1	107.1	104.7	105.9
1969-70	105.3	109.1	111.4	111.1	110.8	118.4	108.1	115.1	102.6	109.4	107.7	110.3
1970-71	110.6	113.8	118.5	115.5	115.5	115.4	109.0	115.5	102.8	109.8	110.2	113.9
1971-72	117.2	121.9	129.5	121.3	128.8	119.7	114.6	120.7	107.5	110.6	117.7	121.1
1972-73	121.7	127.7	135.1	126.9	136.6	124.8	121.9	128.1	110.7	113.1	126.7	126.9
1973-74	129.1	138.3	151.5	146.9	153.4	146.9	131.2	150.6	116.2	115.6	136.7	141.8

SIX STATE CAPITAL CITIES COMBINED (a)

1966-67	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	101.6	102.8	103.6	103.0	101.9	103.9	101.7	103.3	100.0	101.7	102.9	102.7
1968-69	103.8	107.0	107.8	108.6	104.8	106.3	102.0	105.2	99.7	103.0	104.5	106.3
1969-70	107.1	112.6	112.4	113.5	110.0	111.8	108.7	115.8	102.2	105.1	107.4	110.9
1970-71	113.4	121.8	118.0	118.5	115.0	112.4	113.6	115.0	103.8	109.4	111.0	115.7
1971-72	121.2	132.0	124.5	124.8	127.9	118.5	122.6	120.2	107.4	116.9	116.4	122.7
1972-73	127.0	139.9	130.7	137.0	136.8	124.9	129.6	126.2	108.3	118.7	124.9	131.1
1973-74	137.5	154.3	146.8	169.1	153.8	146.3	143.2	146.4	117.7	122.2	135.0	151.3

(a) Weighted average.

The separate city indexes measure price movements in each State capital city individually. They enable comparisons to be drawn between capitals as to differences in degree of price movement from period to period, but not as to differences in price level.

Further information concerning the method of compiling the index, as well as detailed group index numbers for each State capital city, is given in the annual *Labour Report* and the monthly publication, *Wholesale Price Indexes—Price Index of Materials used in House Building*, both of which are issued by the Commonwealth Statistician, Canberra.

WHOLESALE PRICE INDEX OF MATERIALS USED IN HOUSE BUILDING
'ALL GROUPS' INDEX NUMBERS

(Base of each Index: Year 1966-67 = 100·0)

NOTE. The separate city indexes measure price movements within each city individually. They enable comparisons to be drawn between cities as to differences in degree of price movement, but not as to differences in price level.

Year	State capital city						Weighted average of six State capital cities
	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	
1966-67	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1967-68	103·4	101·3	103·4	102·1	104·0	101·8	102·7
1968-69	109·3	103·6	105·6	107·0	105·9	104·1	106·3
1969-70	115·2	107·2	109·4	112·4	110·3	107·7	110·9
1970-71	119·8	112·3	115·2	116·7	113·9	114·3	115·7
1971-72	126·1	118·9	124·8	124·8	121·1	120·7	122·7
1972-73	135·6	126·5	133·8	134·8	126·9	130·8	131·1
1973-74	158·0	147·8	152·2	157·2	141·8	145·5	151·3

Other Building. The Wholesale Price Index of Materials used in Building other than House Building is compiled by the Commonwealth Statistician and was first published in April 1969 (retrospectively to July 1966). Index numbers are produced monthly for each State capital city and for the six State capital cities combined.

The index measures changes in prices of selected materials used in the construction of buildings other than houses and 'low-rise' flats (in general, those up to three storeys). Its composition is in accordance with the materials usage in actual building projects which were selected as representative for the purpose. The building 'use-types' (e.g. office building, factory, etc.) directly represented are 'high-rise' flats (in general, those of more than three storeys); offices; factories; health buildings (i.e. hospitals, nurses' quarters, clinics, etc.); education buildings (i.e. schools, universities, kindergartens, etc.); and commercial premises including hotels, hostels, etc., shops, and other business premises. The index includes seventy-two items, which are combined in eleven groups as shown in the next table.

Although the selected materials (or many of them) are also used in house (and low-rise flat) building, in building repair, maintenance and alteration work, and in 'engineering construction' work (e.g. projects such as roads, dams, bridges and the like), the weighting pattern of the index, being designed for the specific purpose mentioned earlier, is not applicable to these other activities of the Construction industry. In addition, since the weights are based on an average materials usage over the stated range of building use-types, the index is not necessarily applicable to any specific building or any of the separate use-types.

The reference base of the index is the year 1966-67 = 100·0. The index is a fixed-weights index and is calculated by the method known as 'the weighted arithmetic mean of price relatives'. The items and weights were derived from reported values of each material used in selected representative buildings constructed in or about the year 1966-67. The selection took account of building use-type and construction characteristics (e.g. type of frame, wall, floor, etc.) within use-types.

A single weighting pattern, relating to the whole of Australia, is applied (with minor exceptions) to local price measures in calculating indexes for each State capital city. The index for the six State capital cities combined is a weighted average of individual city indexes. The relative weighting of the capitals is in proportion to the estimated value on completion of building other than house building in the separate States during the three years ended June 1967.

Price series used in the index relate to specified standards of each commodity and are obtained in all State capital cities from representative suppliers of materials used in building. In the main they are collected as at the mid-point of the month to which the index refers.

The index has been compiled for each month from July 1966 and for the financial years from 1966-67. Figures are published to one decimal place to avoid distortions that would occur in rounding off the index numbers to the nearest whole number.

The separate city indexes measure price movements in each State capital city individually. They enable comparisons to be drawn between capitals as to differences in degree of price movement from period to period, but not as to differences in price level.

Further information concerning the method of compiling the index, as well as detailed group index numbers for each State capital city, is given in the annual *Labour Report* and the monthly publication, *Wholesale Price Indexes—Price Index of Materials used in Building other than House Building*, both of which are issued by the Commonwealth Statistician, Canberra.

WHOLESALE PRICE INDEX OF MATERIALS USED IN BUILDING
OTHER THAN HOUSE BUILDING—GROUP INDEX NUMBERS
(Base of each Index: Year 1966-67 = 100.0)

Year	Concrete mix, cement, sand, etc.	Cement products	Bricks, stone, etc.	Timber, board and joinery	Steel and iron products	Aluminium products	Other metal products	Plumbing fixtures	Miscellaneous materials	Electrical installation materials (a)	Mechanical services components (b)	All groups
PERTH												
1966-67	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	100.6	104.3	103.0	104.1	101.7	99.7	105.7	101.7	102.7	100.9	101.4	102.0
1968-69	101.4	108.1	106.2	108.0	104.2	101.8	106.4	103.4	103.9	102.1	107.5	104.7
1969-70	102.8	111.3	111.4	111.3	107.1	102.6	127.0	110.8	107.8	112.2	111.5	108.9
1970-71	107.0	118.3	119.0	115.4	112.9	105.8	117.4	112.7	111.8	110.9	118.7	113.3
1971-72	113.6	119.8	128.8	119.6	125.1	115.0	114.4	118.3	119.2	114.7	127.3	121.3
1972-73	118.4	127.5	133.3	126.4	129.2	118.2	118.4	127.1	125.6	120.5	132.0	126.3
1973-74	125.0	141.1	147.8	151.1	151.0	128.4	146.8	136.6	133.5	138.3	143.6	142.9

SIX STATE CAPITAL CITIES COMBINED (c)

Year	Concrete mix, cement, sand, etc.	Cement products	Bricks, stone, etc.	Timber, board and joinery	Steel and iron products	Aluminium products	Other metal products	Plumbing fixtures	Miscellaneous materials	Electrical installation materials (a)	Mechanical services components (b)	All groups
1966-67	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	101.5	102.2	103.7	103.0	102.3	101.4	105.9	102.8	102.3	100.9	101.4	102.2
1968-69	103.5	106.8	108.2	107.2	106.1	103.9	106.8	103.3	103.2	102.1	107.7	105.6
1969-70	106.9	111.7	112.6	111.2	110.1	107.4	126.3	113.7	105.8	112.2	111.8	110.5
1970-71	113.0	118.0	118.6	117.0	115.8	113.0	121.4	121.3	110.3	110.9	119.0	115.5
1971-72	120.6	126.1	124.2	123.4	125.4	119.3	120.6	134.3	116.9	114.7	127.7	123.0
1972-73	124.5	135.0	130.1	132.9	130.3	125.4	126.4	143.5	124.5	120.5	132.4	128.9
1973-74	136.0	147.7	146.3	160.2	148.8	138.4	158.5	159.6	134.2	138.3	143.9	145.8

(a) Based on Sydney and Melbourne prices. (b) In the main based on Sydney and Melbourne prices. (c) Weighted average.

WHOLESALE PRICE INDEX OF MATERIALS USED IN BUILDING
OTHER THAN HOUSE BUILDING—'ALL GROUPS' INDEX NUMBERS
(Base of each Index: Year 1966-67 = 100.0)

NOTE. The separate city indexes measure price movements within each city individually. They enable comparisons to be drawn between cities as to differences in degree of price movement, but not as to differences in price level.

Year	State capital city						Weighted average of six State capital cities
	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	
1966-67	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	102.6	101.7	102.2	101.8	102.0	102.3	102.2
1968-69	106.5	105.0	105.1	105.0	104.7	105.1	105.6
1969-70	111.7	109.8	110.3	109.4	108.9	109.7	110.5
1970-71	116.4	115.1	116.4	113.9	113.3	115.0	115.5
1971-72	122.4	123.9	124.4	122.7	121.3	122.6	123.0
1972-73	127.2	131.2	130.4	129.8	126.3	129.7	128.9
1973-74	144.1	148.0	149.0	145.8	142.9	143.8	145.8

OTHER PRICE INDEXES

In addition to the price indexes already described, the Commonwealth Statistician compiles indexes relating to prices of electrical installation materials, metallic minerals, and selected export commodities. Data are published in the monthly releases *Wholesale Price Indexes—Price Index of Electrical Installation Materials*, *Wholesale Price Indexes—Price Indexes of Metallic Minerals*, and *Export Price Index*. Further reference to these indexes will be found in the *Official Year Book of Australia* and the *Labour Report*, published by the Commonwealth Statistician, Canberra.

In July 1975, a new price index was introduced by the Commonwealth Statistician in the monthly bulletin *Wholesale Price Indexes—Price Index of Materials used in Manufacturing Industry*. It constitutes a further step in the publication of a range of price indexes of materials used by important and defined sectors of the Australian economy.

STATISTICAL SUMMARY FROM 1829

In the next twenty-one pages, a historical summary of some of the more important statistics relating to Western Australia is shown. This is intended to present a general picture of the development of the State, with details being given (wherever they are available) for the year 1829, for every tenth year in the period 1830-1910, and for each single year from 1920. Figures for the periods 1901-1909 and 1911-1919 have been omitted from the tables in several instances owing to insufficient space. In these cases, the figures are available, if required, from the *Western Australian Year Book*, No. 7—1968 and earlier issues, and the *Statistical Register of Western Australia*.

ESTIMATED POPULATION, NATURAL INCREASE AND MIGRATION (a)

NOTE. A line drawn across a column indicates a break in continuity in the series. Figures above the line exclude full-blood Aborigines; those below the line refer to total population, i.e. including Aborigines. See also NOTE on page 143.

Year	Population at 31 December			Population increase				Mean population		Population of Perth Statistical Division (f)
	Males	Females	Persons	Recorded natural increase (b)	Estimated net migration (c)	Total increase (d)		Year ended—		
						Number	Per cent (e)	30 June	31 December	
										(⁰ 000)
1829	769	234	1,003	(g)	(g)	(g)	(g)		(g)	
1830	877	295	1,172	(g)	(g)	169	16.85		(g)	
1840	1,434	877	2,311	34	123	157	7.29		(g)	
1850	3,576	2,310	5,886	132	1,109	1,241	26.72		(g)	
1860	9,597	5,749	15,346	379	130	509	3.43	(g)	15,092	
1870	15,511	9,624	25,135	475	7	482	1.96		24,894	
1880	16,985	12,576	29,561	551	129	422	1.45		29,350	
1890	28,854	19,648	48,502	1,021	1,821	2,842	6.22		47,081	20
1900	110,088	69,879	179,967	3,214	6,495	9,709	5.70		175,113	73
1910	157,971	118,861	276,832	4,845	6,312	11,157	4.20	266,686	271,019	115.7
1920	176,895	154,428	331,323	4,761	1,298	3,463	1.06	327,152	330,023	167.0
1921	178,968	157,580	336,548	4,327	898	5,225	1.58	331,973	334,084	171.0
1922	184,471	161,073	345,544	4,964	4,032	8,996	2.67	337,269	341,375	178.1
1923	191,131	165,728	356,859	4,924	6,391	11,315	3.27	345,891	350,772	191.8
1924	197,676	170,648	368,324	5,038	6,427	11,465	3.21	356,751	363,152	199.9
1925	202,554	174,973	377,527	4,870	4,333	9,203	2.50	368,525	372,970	203.0
1926	206,797	178,436	385,233	4,951	2,755	7,706	2.04	376,933	380,930	208.4
1927	215,851	184,046	399,897	5,089	9,575	14,664	3.81	385,780	392,071	216.2
1928	225,072	189,549	414,621	5,064	9,660	14,724	3.68	399,777	407,576	222.4
1929	231,361	195,276	426,637	5,121	6,895	12,016	2.90	414,489	420,756	229.0
1930	232,868	198,742	431,610	5,426	453	4,973	1.17	425,785	429,079	235.1
1931	232,397	201,289	433,686	4,868	2,792	2,076	0.48	431,022	432,347	239.9
1932	233,049	203,271	436,320	4,250	1,616	2,634	0.61	433,596	435,041	238.9
1933	234,744	205,898	440,642	4,084	238	4,322	0.99	436,798	438,780	232.1
1934	236,140	207,589	443,729	3,725	638	3,087	0.70	440,736	442,354	234.3
1935	238,739	210,884	449,623	4,001	1,893	5,894	1.33	444,275	446,874	237.7
1936	240,827	213,373	454,200	4,249	328	4,577	1.02	449,728	452,294	241.0
1937	244,050	216,492	460,542	4,544	1,798	6,342	1.40	454,532	457,328	244.4
1938	246,943	219,741	466,684	4,907	1,235	6,142	1.33	460,642	463,808	247.7
1939	249,065	223,315	472,380	4,696	1,000	5,696	1.22	466,896	469,780	252.2
1940	248,734	225,342	474,076	4,598	2,902	1,696	0.36	472,060	473,397	255.5
1941	246,842	226,371	473,213	4,906	5,769	863	0.18	474,180	473,988	260.0
1942	246,816	229,839	476,655	3,791	349	3,442	0.73	474,833	476,619	265.6
1943	246,389	231,875	478,264	5,137	3,528	1,609	0.34	476,989	476,745	272.3
1944	249,301	235,474	484,775	5,857	654	6,511	1.36	478,271	481,498	281.2
1945	251,590	238,498	490,088	5,418	105	5,313	1.10	484,720	487,510	289.0
1946	255,310	241,663	496,973	7,277	392	6,885	1.40	489,982	492,771	297.9
1947	261,653	247,109	508,762	8,119	3,670	11,789	2.37	497,006	502,951	307.3
1948	268,304	253,695	521,999	8,246	4,991	13,237	2.60	508,747	514,621	315.8
1949	280,273	263,911	544,184	8,721	13,464	22,185	4.25	521,932	532,603	331.4
1950	294,758	277,891	572,649	9,170	19,295	28,465	5.23	545,134	557,878	351.7
1951	304,454	285,885	590,339	9,506	8,184	17,690	3.09	570,346	580,317	362.8
1952	316,700	296,235	612,935	10,204	12,392	22,596	3.83	589,887	600,615	378.1
1953	326,372	305,371	631,743	10,790	8,018	18,808	3.07	611,191	621,034	390.1
1954	334,342	314,365	648,707	10,564	6,400	16,964	2.69	630,705	639,963	402.2
1955	343,838	324,771	668,609	11,244	8,658	19,902	3.07	648,222	657,323	416.8
1956	350,333	330,935	681,268	11,344	1,315	12,659	1.89	666,898	674,459	427.4
1957	356,195	339,039	695,234	11,627	2,339	13,966	2.05	680,949	687,448	438.9
1958	361,441	345,755	707,196	11,177	785	11,962	1.72	693,568	699,915	449.3
1959	366,253	352,438	718,691	11,614	119	11,495	1.63	705,869	711,737	459.5
1960	372,665	358,368	731,033	11,229	1,113	12,342	1.72	717,316	722,900	470.3
1961	384,773	370,440	755,213	11,349	2,571	13,920	1.90	729,770	737,596	482.7
1962	395,891	381,357	777,248	11,254	10,499	22,035	2.92	755,770	766,205	500.3
1963	407,024	391,871	798,895	11,314	10,068	21,647	2.79	777,413	788,457	517.8
1964	417,023	401,098	818,121	10,256	8,705	19,226	2.41	798,824	808,300	534.0
1965	427,330	410,918	838,248	9,912	9,963	20,127	2.46	817,157	826,481	550.9
1966	440,913	423,180	864,093	10,292	15,553	25,845	3.08	837,290	849,189	571.8
1967	458,438	438,550	896,988	11,244	21,651	32,895	3.81	863,539	879,815	597.7
1968	479,938	457,862	937,800	12,073	28,739	40,812	4.55	896,761	915,757	629.2
1969	500,378	476,242	976,620	13,404	25,416	38,820	4.14	935,985	955,660	659.7
1970	520,174	493,878	1,014,052	14,075	23,357	37,432	3.83	975,063	994,201	689.6
1971	537,781	511,116	1,048,897	16,433	18,412	34,845	3.44	1,013,455	1,031,614	718.2
1972	544,918	520,845	1,065,763	14,736	2,130	16,866	1.61	1,046,627	1,056,508	734.8
1973	554,342	530,057	1,084,399	12,665	5,971	18,636	1.75	1,064,207	1,072,680	752.8
1974	(g)	(g)	1,116,100	12,429	(h)19,272	(h)31,701	2.92	1,084,650	1,097,600	(h)780.1

(a) Estimates for years prior to 1971 are based on final census results; those for 1971 and later years are subject to revision after the next census. (b) Excess of births over deaths, including deaths of defence personnel, whether in Australia or overseas, between September 1939 and June 1947. (c) Interstate and overseas. (d) Minus sign (—) denotes decrease. (e) The rates represent total increase in population during the year expressed as a proportion per cent of the population at the end of the previous year. (f) At 31 December. (g) Not available. (h) Provisional.

VITAL STATISTICS

See NOTE at head of previous table.

Year	Marriages registered	Live births registered	Deaths registered (b)	Natural increase (c)	Rate per 1,000 of mean population (a)				Infant mortality	
					Marriages	Births	Deaths (h)	Natural increase (c)	Number (d)	Rate (e)
1840	25	54	20	34	(f)	(f)	(f)	(f)	(f)	(f)
1850	37	186	54	132	(f)	(f)	(f)	(f)	(f)	(f)
1860	151	588	209	379	10.01	38.96	13.85	25.11	(f)	(f)
1870	153	853	378	475	6.15	34.27	15.18	19.08	100	117.23
1880	214	933	382	551	7.29	31.79	13.02	18.77	72	77.17
1890	278	1,561	540	1,021	5.90	33.16	11.47	21.69	140	89.69
1900	1,781	5,454	2,240	3,214	10.17	31.15	12.79	18.35	688	126.15
1910	2,107	7,585	2,740	4,845	7.77	27.99	10.11	17.88	593	78.20
1920	2,932	8,149	3,388	4,761	8.88	24.69	10.27	14.42	538	66.02
1921	2,656	7,807	3,480	4,327	7.95	23.37	10.42	12.95	611	78.26
1922	2,446	8,131	3,167	4,964	7.17	23.82	9.28	14.54	452	55.59
1923	2,376	7,854	2,930	4,924	6.77	22.39	8.35	14.04	442	56.28
1924	2,596	8,301	3,263	5,038	7.15	22.86	8.99	13.87	414	49.87
1925	2,746	8,185	3,315	4,870	7.36	21.95	8.89	13.06	463	56.57
1926	2,844	8,301	3,350	4,951	7.47	21.79	8.79	13.00	409	49.27
1927	3,108	8,482	3,393	5,089	7.93	21.63	8.65	12.98	389	45.86
1928	3,309	8,704	3,640	5,064	8.12	21.36	8.93	12.43	419	48.14
1929	3,367	9,051	3,930	5,121	8.00	21.51	9.34	12.17	508	56.13
1930	3,205	9,200	3,774	5,426	7.47	21.44	8.80	12.64	430	46.74
1931	2,741	8,549	3,681	4,868	6.34	19.77	8.51	11.26	355	41.53
1932	2,904	7,965	3,715	4,250	6.68	18.31	8.54	9.77	355	44.57
1933	3,374	7,874	3,790	4,084	7.69	17.95	8.64	9.31	290	36.83
1934	3,682	7,801	4,076	3,725	8.32	17.64	9.21	8.42	319	40.89
1935	3,940	8,119	4,118	4,001	8.82	18.17	9.22	8.95	326	40.15
1936	4,242	8,479	4,230	4,249	9.38	18.75	9.35	9.39	358	42.22
1937	4,169	8,609	4,065	4,544	9.12	18.82	8.89	9.94	323	37.52
1938	4,153	9,141	4,234	4,907	8.95	19.71	9.13	10.58	309	33.80
1939	4,195	9,036	4,336	4,700	8.93	19.23	9.23	10.00	369	40.84
1940	5,234	9,121	4,486	4,635	11.06	19.27	9.48	9.79	403	44.18
1941	5,077	10,118	4,769	5,349	10.71	21.35	10.06	11.29	357	35.28
1942	5,441	9,901	5,076	4,825	11.42	20.77	10.65	10.12	365	36.86
1943	4,528	10,481	4,587	5,894	9.50	21.98	9.62	12.36	342	32.64
1944	4,506	10,870	4,478	6,392	9.36	22.58	9.30	13.28	354	32.57
1945	3,788	10,672	4,712	5,960	7.77	21.89	9.67	12.23	315	29.52
1946	5,171	12,105	4,753	7,352	10.49	24.57	9.65	14.92	376	31.06
1947	5,282	12,874	4,723	8,151	10.50	25.60	9.39	16.21	398	30.92
1948	5,186	12,931	4,685	8,246	10.08	25.13	9.10	16.02	331	25.60
1949	4,951	13,511	4,790	8,721	9.30	25.37	8.99	16.37	357	26.42
1950	5,434	14,228	5,058	9,170	9.74	25.50	9.07	16.44	386	27.13
1951	5,390	14,794	5,288	9,506	9.29	25.49	9.11	16.38	425	28.73
1952	5,389	15,413	5,209	10,204	8.97	25.66	8.67	16.99	384	24.98
1953	5,032	15,862	5,072	10,790	8.10	25.54	8.17	17.37	378	23.83
1954	5,204	15,928	5,364	10,564	8.13	24.89	8.38	16.51	359	22.54
1955	5,145	16,623	5,379	11,244	7.83	25.29	8.18	17.11	373	22.44
1956	5,080	16,916	5,572	11,344	7.53	25.08	8.26	16.82	384	22.70
1957	4,897	16,924	5,297	11,627	7.12	24.62	7.71	16.91	357	21.09
1958	5,038	16,731	5,554	11,177	7.20	23.90	7.94	15.97	360	21.52
1959	5,387	17,111	5,497	11,614	7.57	24.04	7.72	16.32	345	20.16
1960	5,323	16,926	5,697	11,229	7.36	23.41	7.88	15.53	366	21.62
1961	5,150	17,078	5,729	11,349	6.98	23.15	7.77	15.39	336	19.67
1962	5,466	17,064	5,810	11,254	7.23	22.58	7.69	14.89	380	22.27
1963	5,755	17,290	5,976	11,314	7.40	22.23	7.68	14.55	353	20.42
1964	6,023	16,685	6,429	10,256	7.55	20.93	8.06	12.86	328	19.66
1965	6,448	16,186	6,274	9,912	7.91	19.85	7.70	12.16	351	21.68
1966	7,002	17,194	6,902	10,292	8.25	20.25	8.13	12.12	343	19.95
1967	7,430	18,023	6,779	11,244	8.44	20.48	7.71	12.78	314	17.42
1968	8,086	19,541	7,468	12,073	8.83	21.34	8.16	13.18	398	20.37
1969	8,993	20,754	7,350	13,404	9.41	21.72	7.69	14.03	453	21.83
1970	9,227	21,618	7,543	14,075	9.28	21.74	7.59	14.16	459	21.23
1971	9,382	24,239	7,806	16,433	9.09	23.50	7.57	15.93	464	19.14
1972	9,120	22,177	7,441	14,736	8.63	20.99	7.04	13.95	348	15.69
1973	9,102	20,510	7,845	12,665	8.49	19.12	7.31	11.81	394	19.21
1974	9,295	20,207	7,778	12,429	(g) 8.47	(g) 18.41	(g) 7.09	(g) 11.33	327	16.18

(a) Rates for years prior to 1971 are based on final census results; those for 1971 and later years are subject to revision after the next census.

(b) Excludes deaths of defence personnel, whether in Australia or overseas, between September 1939 and June 1947.

(c) Excess of Live births registered over Deaths registered; see also note (b).

(d) Deaths under 1 year of age; included in Deaths registered.

(e) Per 1,000 live births.

(f) Not available.

(h) Provisional.

PUBLIC REVENUE AND EXPENDITURE: CONSOLIDATED REVENUE FUND
(\$'000)

Year (a)	Revenue					Total revenue	Expenditure					Total expenditure
	Common-wealth funds	Public utilities	Departmental (b)	Taxation	Territorial (c)		Public utilities	Interest and sinking fund	Departmental			
									Education	Health	Other	
1840					5	34			n.a.			30
1850					4	38		n.a.	n.a.			33
1860					35	140			3			123
1870	n.a.	n.a.	n.a.	n.a.	40	196	n.a.		7	n.a.	n.a.	226
1880					72	360		40	19			409
1890					217	829		144	23			803
1900		2,612	182	244	380	5,751	1,863	880	138	198	2,049	5,231
1910	1,407	3,916	551	673	649	7,315	2,440	2,006	367	328	1,533	6,895
1920	1,197	6,364	1,188	1,688	818	11,727	5,156	4,124	829	642	1,931	13,063
1921	1,188	7,517	1,618	1,911	875	13,579	6,290	4,459	980	590	2,231	14,953
1922	1,168	7,787	1,822	1,762	870	13,814	6,120	4,875	1,112	540	2,172	15,278
1923	1,166	8,000	2,092	1,975	807	14,415	5,847	5,150	1,126	538	2,100	15,226
1924	1,171	8,776	2,173	2,347	925	15,731	6,065	5,668	1,161	544	2,229	16,190
1925	1,176	9,154	2,576	2,448	1,004	16,763	6,195	6,193	1,171	587	2,191	16,880
1926	1,177	9,280	2,831	2,836	1,083	17,616	6,577	6,596	1,010	610	2,400	17,815
1927	2,306	9,941	3,274	2,423	1,102	19,502	6,958	6,590	1,294	604	3,351	19,445
1928	1,618	10,589	3,205	2,593	1,222	19,616	7,467	6,358	1,337	606	3,246	19,669
1929	1,623	10,772	3,312	2,740	1,029	19,896	7,885	6,671	1,358	634	3,278	20,448
1930	1,547	10,596	3,134	2,906	950	19,501	8,073	6,891	1,385	649	2,872	20,537
1931	1,547	9,228	3,279	2,269	678	17,374	6,654	7,243	1,346	486	3,950	20,215
1932	1,547	8,818	2,766	2,014	585	16,071	5,724	7,015	1,098	328	4,543	19,186
1933	1,947	8,873	2,701	2,257	558	16,664	5,682	7,009	1,108	333	3,761	18,392
1934	2,147	8,867	2,240	2,737	626	16,963	5,870	7,095	1,153	309	3,560	18,541
1935	2,413	9,837	1,562	3,804	812	18,663	6,391	7,100	1,225	326	3,342	18,997
1936	2,617	10,366	1,677	4,372	767	20,067	6,756	7,135	1,331	341	3,595	19,891
1937	2,013	10,633	1,727	4,807	773	20,371	7,247	7,237	1,432	381	4,024	21,113
1938	2,097	11,148	1,980	5,190	749	21,638	7,249	7,579	1,474	380	4,158	21,659
1939	2,087	11,159	1,786	5,728	634	21,899	7,857	7,779	1,514	401	3,992	22,340
1940	2,137	11,102	1,942	5,992	632	22,240	7,662	8,021	1,545	416	4,070	22,534
1941	2,247	11,366	1,916	6,255	638	22,864	7,534	8,114	1,568	421	4,262	22,842
1942	2,207	12,133	2,204	6,222	620	23,880	8,282	8,204	1,662	436	4,293	23,877
1943	7,852	13,518	2,497	1,330	634	26,303	9,377	8,183	1,627	458	5,564	26,254
1944	7,935	13,626	2,868	1,553	700	27,178	9,870	8,185	1,777	506	5,780	27,102
1945	8,044	13,618	3,402	1,715	697	27,908	10,064	8,251	1,778	485	6,261	27,899
1946	9,960	13,303	2,519	1,936	709	28,815	10,825	8,168	2,005	1,010	5,621	28,815
1947	11,461	11,769	3,105	2,138	1,053	29,962	10,866	8,012	2,447	1,369	5,910	30,057
1948	14,515	13,242	3,575	2,354	1,202	35,421	13,996	8,089	3,298	1,841	7,280	36,125
1949	17,136	15,032	4,564	2,683	1,106	41,121	16,720	8,215	3,519	2,613	9,942	42,756
1950	22,975	17,792	5,733	3,240	1,225	51,622	20,237	8,508	4,160	3,633	13,096	51,574
1951	25,343	19,085	5,911	3,912	1,230	56,312	21,974	8,994	5,269	4,465	13,180	55,994
1952	29,923	24,335	6,863	4,633	1,300	67,910	27,490	9,741	7,262	6,269	15,696	69,094
1953	39,056	22,385	8,557	5,247	1,513	77,768	32,044	10,611	8,686	6,926	17,639	78,784
1954	38,342	29,860	8,378	6,468	1,929	86,292	35,234	12,147	9,503	7,675	18,797	86,497
1955	38,759	32,645	9,433	7,258	2,014	91,440	36,089	13,857	11,217	8,026	19,838	92,408
1956	43,373	33,969	9,779	8,036	2,498	99,225	39,184	15,451	12,482	9,344	21,501	102,886
1957	46,759	37,133	12,548	9,027	2,433	108,662	42,022	17,043	13,636	10,067	33,645	112,487
1958	51,808	34,525	13,640	10,729	2,516	114,108	40,103	19,303	15,172	11,026	25,572	116,355
1959	55,496	36,080	14,522	10,368	2,783	120,136	40,317	20,844	15,819	11,967	29,244	123,506
1960	58,871	38,575	15,696	11,834	2,878	128,776	42,418	23,053	17,282	13,565	29,861	131,587
1961	65,519	40,830	16,372	12,079	2,797	138,665	41,072	24,628	19,541	15,018	35,160	141,075
1962	73,430	42,456	16,549	12,926	3,283	149,852	42,097	27,250	21,417	14,935	40,131	151,780
1963	75,847	43,559	18,134	14,762	3,501	157,182	42,267	29,980	22,850	16,073	41,254	158,687
1964	78,988	45,376	20,948	17,604	3,751	167,888	44,247	31,771	25,880	18,705	43,430	170,681
1965	88,565	39,778	26,712	19,512	4,107	180,143	43,360	34,669	29,133	21,160	49,401	184,840
1966	103,459	45,683	28,753	22,574	4,598	206,655	47,106	37,926	34,016	23,086	56,869	206,665
1967	106,748	52,787	31,461	27,536	7,655	228,146	53,182	41,662	36,746	26,429	61,512	228,174
1968	112,617	56,226	33,135	34,916	11,845	250,738	60,728	43,864	41,224	29,294	65,362	249,909
1969	126,621	54,407	33,035	41,602	17,301	275,081	64,016	47,083	46,441	33,613	74,822	276,137
1970	141,326	62,921	36,905	50,865	23,633	318,189	71,166	51,427	55,839	41,343	87,660	318,901
1971	170,396	68,350	45,583	48,434	32,187	367,252	79,717	54,178	66,341	52,575	107,129	371,620
1972	180,132	73,446	54,131	78,490	34,992	423,999	82,410	62,029	82,472	59,862	125,260	424,890
1973	200,633	69,158	66,711	97,141	37,162	473,840	88,372	65,280	94,547	71,866	144,005	477,330
1974	232,111	85,291	76,306	126,929	43,346	567,683	104,178	69,200	115,982	100,841	168,122	573,414

n.a. denotes 'not applicable' or 'not available'.

(a) From 1900, year ended 30 June. (b) Reimbursements, fees, etc. (c) Revenue from sales, leases, licences and royalties relating to land, mining and timber.

NET EXPENDITURE FROM LOAN FUNDS; PUBLIC DEBT
(\$'000)

Year (a)	Net expenditure from loan funds on public works and services (b)							Public debt (at end of year)	
	Railways, tramways and omnibuses	Electricity supply	Harbours, rivers, light- houses, etc.	Water supplies, sewerage, drainage and irrigation	Public buildings	Other	Total	Gross amount outstand- ing	Sinking fund
1860	4	....
1870
1880	(c) 549	(d) 38	....	....	(e) 802	....	722	(e) 170
1890	3	6	2	(f) 76	(e) 32	....	2,735	754
1900	302	395	949	....	110	1,757	23,349	5,139
1910	908	174	199	152	626	2,058	46,575	13,656
1920	242	204	94	21	4,765	5,327	93,644	15,283
1921	398	237	427	50	4,061	5,173	98,079	16,740
1922	1,207	183	435	89	2,996	4,910	109,920	17,562
1923	1,359	240	402	37	4,740	6,779	116,972	18,747
1924	1,303	278	871	177	5,244	7,874	125,532	19,970
1925	1,243	362	1,301	182	5,110	8,198	128,987	21,309
1926	1,540	439	1,357	156	4,667	8,157	140,022	17,514
1927	1,559	382	884	235	4,901	7,960	141,212	17,798
1928	1,902	530	1,132	256	4,577	8,397	152,856	1,983
1929	1,825	528	1,092	182	4,255	7,882	(g) 138,711	2,081
1930	1,819	529	610	108	4,226	7,291	142,389	2,621
1931	878	257	420	Cr. (h)	1,457	3,012	153,130	2,618
1932	263	155	1,152	....	1,055	2,624	159,416	2,693
1933	374	485	1,355	69	1,838	4,121	167,029	743
1934	659	492	1,606	196	2,344	5,297	171,696	1,048
1935	997	610	2,155	213	1,103	5,076	177,180	1,138
1936	946	602	2,487	169	700	4,903	180,688	1,292
1937	491	352	2,303	178	741	4,064	184,666	614
1938	950	201	1,843	183	1,144	4,321	187,424	719
1939	441	184	1,777	230	640	3,272	190,945	608
1940	200	104	1,615	732	974	3,624	192,461	1,147
1941	214	18	152	306	480	2,819	195,583	535
1942	110	25	111	70	437	1,359	194,718	347
1943	157	92	133	100	55	754	193,976	140
1944	49	31	Cr. 143	75	166	34	212	192,957
1945	140	11	61	150	241	492	1,094	191,790
1946	142	208	75	473	451	276	1,625	193,852
1947	535	332	173	1,453	772	821	4,087	198,005
1948	676	1,471	316	1,388	1,097	125	5,074	200,549
1949	913	2,131	449	1,626	1,099	942	7,161	207,377
1950	4,496	4,691	804	2,002	1,357	2,859	16,209	219,100
1951	3,723	6,591	1,164	4,091	2,003	3,081	20,653	246,374
1952	15,198	6,684	2,694	4,803	2,729	3,409	35,517	276,577
1953	13,533	179	2,422	4,858	5,432	8,787	35,213	306,144
1954	11,295	1,406	2,328	3,939	3,144	6,276	28,388	331,565
1955	9,752	1,410	1,920	5,661	3,993	6,726	29,462	355,763
1956	6,139	2,049	1,638	5,516	4,187	7,098	26,629	377,465
1957	5,519	4,200	950	7,119	5,599	9,169	32,556	410,290
1958	4,209	2,480	1,398	7,694	5,891	6,599	28,272	436,857
1959	5,711	2,200	1,428	8,395	7,410	7,199	32,342	464,237
1960	4,953	1,553	1,373	9,547	8,723	6,355	32,504	493,575
1961	4,221	400	1,966	10,314	10,479	8,037	35,418	523,070
1962	5,432	300	2,587	10,952	12,032	6,449	37,751	555,130
1963	6,204	500	2,438	10,770	13,420	5,563	38,894	587,336
1964	7,496	....	3,028	10,537	15,630	6,409	43,100	626,045
1965	6,800	794	2,822	10,957	19,948	5,457	46,779	665,620
1966	7,628	1,434	2,583	12,667	19,908	3,580	47,800	705,514
1967	9,068	2,427	1,746	13,642	18,230	5,902	51,015	748,601
1968	7,750	4,542	2,402	14,552	18,816	5,115	53,177	792,969
1969	10,547	5,679	1,190	12,560	20,116	4,765	54,859	840,343
1970	6,331	4,566	2,055	13,330	24,627	8,594	59,504	886,778
1971	7,194	27	2,202	15,176	25,549	13,492	63,640	924,111
1972	5,919	3,666	1,902	18,369	23,994	32,606	86,456	975,958
1973	4,179	4,104	2,371	23,598	32,872	21,882	89,006	1,030,060
1974	5,569	3,467	2,505	26,708	34,324	3,291	75,863	1,074,111

(a) From 1900, year ended 30 June. Sinking fund at 31 March from 1900 to 1928. (b) From 1928 includes expenditure from Loan Suspense Account. (c) Total amount for the years 1877 to 1881. (d) Total amount for the years 1872 to 1881. (e) Not available. (f) Includes expenditure prior to 1890. (g) Reduction due to operation of Financial Agreement Act of 1928. (h) Less than \$500.

NATIONAL WELFARE FUND: EXPENDITURE IN WESTERN AUSTRALIA FROM INCEPTION

NOTE. The National Welfare Fund was established, with effect from 1 July 1943, in terms of the *National Welfare Fund Act 1943*. During the first two years of operation, only maternity allowances and funeral benefits were paid from the Fund. Expenditure on these items in Western Australia was \$341,014 in 1943-44 (maternity allowances \$322,710, funeral benefits \$18,304) and \$374,302 in 1944-45 (maternity allowances \$348,164, funeral benefits \$26,138). Under the provisions of the *National Welfare Fund Act 1945*, effective from 1 July 1945, expenditure on age pensions (introduced in 1909), invalid pensions (1910), widows' pensions (1942), and child endowment (1941) became a charge on the Fund. Unemployment sickness, and special benefits came into operation on 1 July 1945. Hospital benefit was first paid in 1945-46 (in respect of public hospitals from 1 January 1946, and private hospitals from 18 February 1946).

The principal expenditures from the Fund are shown separately in the table below. Details of all payments during the five-year period ended 30 June 1973 are shown in the table on pages 292-3.

(\$'000)

Year ended 30 June	Social services				Total expend- iture on social services	Health services					Total expend- iture on health services (c)	Total expend- iture from National Welfare Fund (d)
	Pensions		Child endow- ment (a)	Un- employ- ment, sickness, and special benefits		Hospital and nursing home benefits	Medical benefits	Pharma- ceutical benefits	Tuber- culosis cam- paign (b)	Milk for school children		
	Age and invalid	Wid- ows'										
1946	3,721	405	2,570	144	7,186	248	....	....	....	248	7,435
1947	4,010	391	2,958	339	8,165	716	....	....	20	736	8,901
1948	5,131	484	2,898	203	9,150	730	....	....	2	732	9,883
1949	5,842	561	3,620	165	10,644	979	....	24	22	1,025	11,670
1950	6,176	594	4,607	306	12,215	1,000	....	69	148	1,244	13,477
1951	6,877	632	6,539	242	14,882	1,044	14	496	473	2,047	16,955
1952	8,213	733	6,956	118	16,620	1,023	151	1,004	627	134	2,970
1953	9,634	808	8,106	444	19,681	1,102	237	1,108	1,201	185	3,867
1954	10,750	870	7,766	399	20,435	1,314	590	1,396	1,214	213	4,763
1955	11,519	902	8,138	286	21,516	1,491	1,156	1,537	967	253	5,432
1956	13,363	1,062	9,368	374	24,887	1,559	1,461	1,626	1,017	273	5,958
1957	14,508	1,225	8,923	896	26,281	1,544	1,590	1,624	1,123	316	6,222
1958	16,154	1,415	9,143	1,265	28,725	1,858	1,746	2,006	1,041	305	6,933
1959	17,244	1,601	10,396	1,673	31,681	2,571	1,917	2,794	1,272	364	8,948
1960	19,833	1,827	9,720	1,504	33,652	3,351	2,241	3,178	1,163	458	10,427
1961	21,586	2,104	11,402	1,309	37,180	3,817	2,339	3,630	1,111	448	11,386
1962	24,344	2,371	10,205	1,887	39,575	3,996	2,455	4,809	873	526	12,695
1963	25,582	2,377	10,485	2,006	41,203	4,189	2,657	5,161	885	584	13,501
1964	27,373	3,115	12,994	1,978	46,223	4,705	2,808	5,242	839	615	14,238
1965	29,413	3,463	13,406	1,401	48,450	4,987	3,716	5,294	822	637	15,486
1966	30,760	3,602	13,624	872	49,648	5,286	4,345	5,870	758	619	16,906
1967	33,794	4,011	15,498	855	55,001	5,881	4,944	6,719	600	698	18,998
1968	36,418	4,346	14,845	758	57,295	6,598	5,265	7,117	862	850	20,860
1969	39,404	4,786	15,540	795	61,729	7,401	5,600	8,702	645	797	23,340
1970	44,637	5,600	17,894	1,039	70,725	9,153	6,373	9,836	828	797	27,262
1971	48,979	6,172	16,423	1,699	75,279	10,256	9,782	11,215	800	835	33,246
1972	57,374	7,180	18,188	4,298	89,623	14,492	13,800	12,418	907	997	43,032
1973	76,188	10,064	21,407	8,372	119,622	19,062	15,958	13,258	824	1,086	50,827
1974	98,011	13,409	19,009	8,314	147,040	21,222	16,478	16,153	803	596	56,535

(a) A number of endowments are paid every twelve weeks. Although in most years there are four such payments, there are some years in which five payments are made.

(b) Comprises amounts paid to individuals in the form of allowances and to the State Government as reimbursements for expenditure incurred in the provision and maintenance of facilities.

(c) Excludes some relatively minor expenditure not allocable among States. In 1973-74 such costs, for Australia as a whole, amounted to \$4.39 million and comprised \$1.32 million for the supply of blood products; radio-active isotopes, \$1.61 million; hearing aids for school children and pensioners, \$0.90 million; poliomyelitis vaccine, \$0.15 million; and other vaccines, \$0.41 million.

d) See footnote (c).

SOCIAL SERVICE BENEFICIARIES AND REPATRIATION PENSIONS: WESTERN AUSTRALIA

Year ended 30 June	Social service benefits							Repatriation pensions				
	Pensioners (a)				Endowed children (a)			Un-employment benefit (g)	War		Service	
	Age (b) (c)	Invalid (b) (c)	Total	Widow	Under 16 years of age (d) (e)	Students (f)	Total		Number (a) (h)	Amount paid \$'000	Number (a) (i)	Amount paid \$'000
1910	2,361	n.a.	2,361									
1911	2,976	179	3,155									
1912	3,224	374	3,598						n.a.	n.a.		
1913	3,484	574	4,058									
1914	3,909	766	4,675									
1915	4,153	935	5,088									
1916	4,199	1,057	5,256						521	17		
1917	4,353	1,200	5,553						3,654	148		
1918	4,401	1,313	5,714						9,836	469		
1919	4,518	1,500	6,018						17,488	922		
1920	4,791	1,788	6,579						22,311	1 087		
1921	5,002	2,004	7,006						23,235	1,501		
1922	5,316	2,022	7,338						23,561	1,468	n.a.	n.a
1923	5,599	2,063	7,662						23,878	1,430		
1924	6,099	2,250	8,349						24,301	1,430		
1925	6,448	2,392	8,840						25,138	1,439		
1926	6,940	2,632	9,572						25,927	1,521		
1927	7,326	2,699	10,025	n.a.	n.a.		n.a.	n.a.	26,689	1,535		
1928	7,713	2,866	10,579						27,495	1,545		
1929	8,256	3,029	11,285						28,084	1,575		
1930	8,913	3,284	12,197						28,407	1,586		
1931	10,461	3,554	14,015						28,063	1,575		
1932	11,458	3,790	15,248						26,345	1,397		
1933	11,097	3,827	14,924						25,475	1,259		
1934	11,854	4,122	15,976						24,940	1,255		
1935	12,840	4,290	17,130						24,436	1,304		
1936	13,740	4,482	18,222						23,882	1,326	375	5
1937	14,453	4,634	19,087			n.a.			22,886	1,361	923	47
1938	15,332	4,863	20,195						23,375	1,379	1,204	73
1939	16,278	5,116	21,394						22,617	1,394	1,454	92
1940	19,024	3,454	22,478						21,449	1,370	1,489	103
1941	19,423	3,425	22,848						20,388	1,343	1,545	112
1942	19,156	3,557	22,713		68,533		68,533		19,757	1,337	1,561	129
1943	18,575	3,580	22,155	2,596	65,777		65,777		20,245	1,506	1,454	147
1944	18,109	3,443	21,552	2,796	66,938		66,938		22,511	1,884	1,369	144
1945	17,713	3,414	21,127	2,894	68,316		68,316		27,686	2,105	1,343	144
1946	18,797	3,538	22,335	2,870	69,325		69,325	422	37,921	2,530	1,403	173
1947	21,162	4,002	25,164	2,570	71,968		71,968	1,095	42,127	2,856	1,580	192
1948	22,210	4,387	26,597	2,719	75,186		75,186	409	44,818	3,000	1,715	290
1949	23,739	4,340	28,079	2,883	79,693		79,693	126	46,785	3,516	1,832	301
1950	24,316	4,294	28,610	2,876	133,557		133,557	267	48,878	3,776	1,953	331
1951	24,317	4,184	28,501	2,789	172,186		172,186	60	51,027	4,545	2,022	369
1952	24,782	3,964	28,746	2,676	183,257		183,257	57	52,071	5,429	2,136	449
1953	25,679	3,996	29,675	2,686	192,991		192,991	844	52,607	5,843	2,343	556
1954	27,248	4,101	31,349	2,753	202,098		202,098	427	53,352	6,174	2,468	605
1955	28,833	4,191	33,024	2,848	212,025		212,025	157	54,117	6,877	2,692	723
1956	30,244	4,425	34,669	3,015	220,792		220,792	473	54,427	6,902	3,648	964
1957	32,192	5,039	37,231	3,243	230,922		230,922	1,940	54,987	7,169	4,306	1,095
1958	33,124	5,519	38,643	3,542	237,732		237,732	2,330	55,251	8,017	4,672	1,395
1959	34,629	5,941	40,570	3,833	245,090		245,090	2,852	56,008	7,893	5,009	1,552
1960	36,575	6,152	42,727	4,039	250,449		250,449	2,512	56,644	8,471	5,344	1,751
1961	37,656	6,945	44,601	4,348	257,037		257,037	2,154	57,123	9,310	6,101	2,102
1962	39,104	7,826	46,930	4,570	266,067		266,067	2,932	57,947	10,177	7,115	2,687
1963	40,661	8,170	48,831	4,486	270,736		270,736	2,674	57,580	10,527	7,526	2,927
1964	41,819	8,306	50,125	4,734	275,910	7,865	283,775	2,677	57,047	11,564	7,754	3,177
1965	42,706	8,615	51,321	4,926	279,642	8,844	288,486	1,679	55,920	11,447	7,780	3,320
1966	43,876	8,575	52,451	5,071	286,534	8,769	295,303	785	54,560	12,637	7,757	3,571
1967	45,741	8,307	54,048	5,228	295,628	10,697	306,325	718	52,967	11,889	7,674	3,612
1968	48,850	8,310	57,160	5,482	306,492	10,999	317,491	608	51,193	11,934	7,586	3,777
1969	50,432	8,413	58,845	5,559	318,147	11,446	329,593	524	49,526	13,061	7,298	4,071
1970	56,017	7,933	63,950	6,086	322,058	11,539	333,597	474	47,993	12,811	7,783	4,491
1971	58,224	8,155	66,379	6,392	333,848	13,737	347,585	872	46,514	13,140	7,767	4,769
1972	60,523	8,485	69,008	6,795	343,455	15,452	358,907	2,808	45,079	14,413	7,864	5,298
1973	68,701	9,518	78,219	7,948	346,769	17,821	364,590	4,960	44,093	15,462	9,599	7,394
1974	76,124	10,406	86,530	8,763	343,404	17,585	360,989	2,863	42,807	17,363	10,669	10,191

n.a. denotes 'not applicable'.

(a) Number at 30 June. (b) Figures for dates prior to 30 June 1957 exclude pensioners in benevolent homes. (c) During 1939-40 all invalid pensions in force were specially reviewed, and at 30 June 1940 all those pensioners who had become qualified for age pension by reason of age and residence were transferred to the age pensioner category. (d) Endowed children in institutions are excluded from figures shown for dates prior to 30 June 1957; at that date there were 3,347 such children. (e) From the commencement of the child endowment scheme on 1 July 1941 until 20 June 1950, endowment was not paid in respect of the first or only child of a family. (f) Persons aged 16 and under 21 years who are receiving full-time education at a school, college or university and are not in employment or engaged in work on their own account. (g) Average of number of persons on benefit at end of each week. (h) Includes pensions paid to incapacitated ex-servicemen and to the dependants of incapacitated or deceased ex-servicemen; particulars of ex-servicemen are included where relevant. (i) Comprises pensions paid to ex-servicemen and ex-servicewomen, and their dependants.

BANKING AND INSURANCE

Year	Trading banks			Savings banks (c)		Insurance			
	De-positors' balances (a)	Loans (other than loans to authorised dealers in the short-term money market), advances and bills discounted (a)	Weekly debits to customers' accounts (b)	Operative accounts at end of year	Depositors' balances at end of year	Life		General (e) (f)	
						Sum insured under policies existing at end of year (d)		Premiums	Claims
						Ordinary (including super-annuation)	Industrial		
1870	\$'000	\$'000	\$m		\$'000	\$'000	\$'000	\$'000	\$'000
1880	(g)	(g)		895	27	(g)	(g)		
1890	(g)	(g)		1,299	45	(g)	(g)		
1900	1,904	2,809		3,014	69	(g)	(g)	(g)	(g)
1910	8,781	5,514		33,646	2,598	6,916	439		
1920	12,627	12,228		84,262	6,955	12,717	1,170		
	24,742	21,594		211,415	14,516	21,640	4,089	1,080	368
1921	24,004	21,833		226,468	15,433	24,183	4,699	1,112	684
1922	24,519	21,531		237,505	15,519	25,586	5,189	1,195	658
1923	25,349	22,796		250,214	16,067	27,544	5,707	1,242	435
1924	26,245	23,313		264,842	16,436	29,310	6,360	1,528	543
1925	27,200	24,095		277,701	16,608	31,739	6,811	1,669	724
1926	(h) 28,887	(h) 25,745	(g)	292,353	17,940	33,970	7,317	1,832	901
1927	29,301	29,233		309,176	13,389	36,279	8,042	(h) 831	(h) 432
1928	31,025	30,592		330,284	21,291	38,926	8,750	2,111	1,200
1929	26,811	34,480		350,046	23,218	41,268	9,366	2,391	1,205
1930	25,524	41,773		367,665	23,457	41,656	9,003	2,452	1,163
1931	24,455	41,635		371,662	21,735	39,906	8,353	1,914	971
1932	28,563	39,292		206,997	20,435	39,181	8,585	1,693	655
1933	29,785	38,433		194,095	20,129	39,447	8,918	1,786	796
1934	32,853	38,742		192,915	20,798	40,631	9,394	1,746	801
1935	36,206	41,061		197,611	21,858	42,899	9,945	1,929	910
1936	38,731	43,232		208,990	23,034	45,608	10,688	2,176	1,015
1937	39,463	44,532		217,247	23,670	48,857	11,373	2,410	1,366
1938	41,230	45,141		225,118	24,075	51,653	11,944	2,641	1,526
1939	41,181	47,774		232,564	24,792	53,853	12,609	2,746	1,462
1940	42,219	47,529		233,649	23,720	54,708	13,086	2,884	1,460
1941	47,099	45,617		238,820	25,042	55,842	13,875	2,792	1,236
1942	51,918	43,638		250,153	27,642	55,881	15,311	2,806	1,245
1943	61,135	37,827		279,469	37,769	57,865	16,656	2,347	1,014
1944	71,529	33,462		301,225	51,581	61,380	17,962	2,369	897
1945	74,846	31,504		316,565	63,526	66,254	19,024	2,565	1,154
1946	(i) 66,652	(i) 33,726	(j) 11·6	340,737	76,578	77,608	21,036	2,890	1,223
1947	72,490	45,388		349,091	73,250	88,016	23,054	3,503	1,737
1948	82,032	48,754		358,709	72,365	98,891	25,139	4,188	2,089
1949	100,971	49,904		365,130	75,070	111,213	27,127	5,071	2,053
1950	116,458	55,301		378,670	79,225	126,332	29,503	5,913	2,440
1951	149,244	66,680	38·6	392,790	89,345	148,724	32,460	7,360	3,341
1952	170,923	83,353	43·6	403,678	94,342	171,007	35,257	9,358	5,261
1953	170,234	87,353	44·2	414,288	99,589	195,499	38,110	10,736	5,453
1954	181,863	106,429	50·8	422,480	105,229	221,568	40,240	11,427	5,276
1955	180,895	137,830	52·4	426,637	107,258	251,543	41,487	12,563	6,281
1956	174,070	142,156	53·9	446,419	115,868	282,139	42,114	13,546	7,126
1957	185,576	135,074	57·1	473,548	125,386	317,264	42,535	13,792	8,202
1958	186,478	141,198	60·4	497,690	131,896	352,360	43,003	15,601	7,807
1959	180,300	147,106	61·5	527,079	142,998	396,322	43,279	17,169	9,165
1960	192,076	142,064	69·7	550,966	157,246	459,740	44,325	19,951	10,671
1961	190,094	146,244	75·7	577,619	161,424	523,636	44,745	21,607	12,770
1962	209,274	139,204	80·4	625,070	181,056	597,892	46,754	22,914	12,255
1963	219,952	153,528	88·2	683,417	208,812	679,161	47,983	24,761	14,723
1964	242,268	164,878	96·4	736,009	239,766	774,550	50,588	26,285	15,629
1965	272,430	186,000	106·3	786,340	261,654	881,652	53,565	28,224	16,108
1966	310,432	195,190	122·4	848,562	292,871	1,005,119	57,916	32,385	18,247
1967	355,899	212,023	138·6	905,349	330,807	1,164,613	63,960	36,535	20,995
1968	398,837	252,627	169·1	970,120	373,602	1,383,330	69,961	41,724	24,218
1969	462,559	280,147	209·0	1,036,180	412,984	1,651,918	75,605	47,566	28,769
1970	558,017	323,824	246·4	1,096,466	431,877	1,948,690	83,255	55,641	31,237
1971	544,732	351,110	295·3	1,153,420	464,611	2,307,828	91,293	63,873	35,793
1972	552,546	357,410	318·4	1,205,448	511,457	2,670,637	95,137	71,061	40,025
1973	693,456	443,330	355·9	1,250,576	608,133	(k)	(k)	73,558	42,420
1974	829,002	604,460	439·4	1,327,699	684,974	(k)	(k)	91,263	54,813

(a) Average based on amounts as at close of business each week. From 1927, year ended 30 June. (b) Weekly average for year ended 30 June. Excludes debits to Australian Government accounts at city branches. From 1946-47 includes The Rural and Industries Bank of Western Australia (Rural Department). (c) From 1900, year ended 30 June. (d) Actual date varies according to the financial year of individual insurance companies. (e) From 1927, year ended 30 June. (f) Excludes transactions of The Motor Vehicle Insurance Trust, which became the sole insurer in respect of motor vehicle (third party) insurance from 1 July 1949. (g) Not available. (h) Six months ended 30 June. (i) Average for nine months to 30 June. (j) Ten months ended June 1946. (k) Not available at time of publication.

TRANSPORT; CUSTOMS AND EXCISE

Year	State Government railways (a)				Private railways	Customs and excise revenue (b)			Shipping (b) (c)	
	Route kilometres at end of year (d)	Operating revenue (e)	Operating expenses (e)	Paying goods and livestock carried (e)	Route kilometres at end of year (b) (f)	Customs	Excise	Total	Clearances to ports outside the State	
									Number	Net tons
		\$'000	\$'000	'000 tonnes		\$'000	\$'000	\$'000		'000
1870						81		81	131	68
1880	55	5	8	2	61	186		186	168	126
1890	303	90	103	62	620	356		356	267	420
1900	2,181	2,519	1,723	1,406	1,003	1,889	63	1,952	747	1,606
1910	3,452	3,275	2,194	2,278	1,452	1,543	213	1,756	726	2,372
1920	5,695	4,584	4,001	2,656	1,477	1,311	799	2,110	729	2,659
1921	5,695	5,440	4,844	2,646	1,440	2,018	1,176	3,194	789	2,826
1922	5,695	5,656	4,658	2,589	1,413	1,550	1,148	2,698	874	3,231
1923	5,721	5,832	4,421	2,666	1,392	2,005	1,145	3,150	709	3,088
1924	5,840	6,455	4,596	3,072	1,307	2,377	1,190	3,567	673	3,101
1925	6,008	6,719	4,710	3,338	1,374	2,707	1,177	3,884	805	3,658
1926	6,220	6,675	5,018	3,289	1,423	2,791	1,249	4,040	685	3,256
1927	6,305	7,216	5,371	3,494	1,403	3,356	1,332	4,688	799	3,797
1928	6,400	7,716	5,822	3,757	1,349	3,454	1,429	4,883	812	3,806
1929	6,565	7,600	6,111	3,729	1,355	3,788	1,431	5,219	808	3,674
1930	6,616	7,318	6,226	3,587	1,363	3,882	1,527	5,409	794	3,932
1931	6,729	6,398	5,222	3,204	1,329	2,166	1,304	3,470	742	3,686
1932	6,816	5,845	4,247	2,893	1,336	2,117	1,327	3,444	694	3,530
1933	6,981	5,864	4,223	2,886	1,360	2,430	1,719	4,149	691	3,564
1934	7,017	5,839	4,373	2,695	1,374	2,574	1,628	4,202	683	3,568
1935	7,015	6,624	4,765	2,950	1,399	2,766	1,736	4,502	730	3,775
1936	7,014	6,892	4,976	2,933	1,416	3,239	1,830	5,069	725	3,831
1937	7,012	6,924	5,240	2,843	1,405	3,504	1,926	5,430	761	3,754
1938	7,042	7,356	5,420	3,111	1,374	3,710	1,955	5,665	866	4,111
1939	7,046	7,198	5,823	2,905	1,358	3,381	2,218	5,599	930	4,327
1940	7,051	7,112	5,657	2,702	1,337	3,769	2,395	6,164	805	3,751
1941	7,051	7,144	5,516	2,646	1,312	2,934	3,149	6,083	556	3,087
1942	7,051	7,993	6,052	2,681	1,316	2,273	3,757	6,030	492	2,508
1943	7,051	8,836	6,895	2,545	1,366	1,646	5,569	7,215	312	1,467
1944	7,051	8,773	7,592	2,601	1,334	1,661	6,225	7,886	385	1,580
1945	7,051	8,552	7,529	2,951	1,284	1,783	5,705	7,488	382	1,528
1946	7,051	8,213	8,053	2,771	1,136	2,707	6,508	9,215	490	2,473
1947	6,997	8,092	8,848	2,618	1,221	4,377	6,894	11,271	572	2,646
1948	6,997	9,198	11,140	2,903	1,189	5,784	9,264	15,048	752	3,431
1949	6,954	10,430	13,405	2,781	1,181	6,987	10,254	17,241	950	4,678
1950	6,843	12,944	15,003	2,889	1,246	10,166	10,943	21,109	1,006	5,272
1951	6,804	14,392	17,238	3,082	1,210	10,839	11,973	22,812	1,060	5,552
1952	6,619	18,327	21,331	3,112	1,210	14,045	16,312	30,357	1,045	5,524
1953	6,611	15,945	24,175	2,661	1,165	9,908	18,395	28,303	1,025	5,407
1954	6,616	22,749	27,512	3,257	1,220	12,241	19,447	31,688	1,005	5,320
1955	6,616	25,061	27,871	3,461	1,204	12,196	21,812	34,008	1,136	6,144
1956	6,629	26,548	29,986	3,854	1,168	8,473	24,092	32,565	1,268	6,776
1957	6,629	28,088	32,023	4,291	1,136	5,504	30,078	35,582	1,244	6,531
1958	6,626	25,950	29,685	3,647	925	5,476	32,547	38,023	1,219	6,499
1959	6,626	27,400	29,865	3,976	925	4,800	32,398	37,198	1,282	6,607
1960	6,630	30,077	30,816	4,605	832	5,614	33,634	39,248	1,403	7,234
1961	6,635	33,076	31,103	4,911	755	7,470	33,835	41,305	1,598	8,547
1962	(g) 6,198	35,608	31,527	5,428	(h) 898	7,156	35,705	42,861	1,687	8,962
1963	(g) 6,111	33,429	31,150	4,870	888	8,996	35,944	44,940	1,528	8,252
1964	(g) 5,918	35,190	32,250	5,271	665	10,369	37,839	48,208	1,580	8,627
1965	6,008	36,686	32,920	5,313	(i) 34	10,692	43,349	54,041	1,560	8,593
1966	6,030	43,669	35,985	6,486	(j) 460	15,251	53,536	68,787	1,711	9,528
1967	6,140	49,120	40,170	7,999	455	13,569	58,176	71,745	1,690	10,977
1968	6,140	52,773	42,623	9,053	455	19,468	62,903	82,371	1,770	12,916
1969	6,157	50,558	44,503	9,078	(k) 882	21,202	69,289	90,490	1,848	15,372
1970	6,161	57,240	48,550	10,837	884	24,649	76,637	101,286	2,165	21,005
1971	6,175	61,917	53,205	13,457	884	32,262	88,978	121,240	2,499	27,765
1972	6,116	64,846	57,112	13,867	884	30,072	101,883	131,955	2,425	28,734
1973	6,167	64,793	61,011	13,706	(l) 1,220	*25,714	*106,054	*131,768	2,481	34,291
1974	6,192	79,861	74,403	14,839	1,222	30,612	141,837	172,448	2,653	40,122

(a) From 1900, year ended 30 June. (b) From 1915, year ended 30 June. (c) From 1966-67 excludes vessels of 200 net tons and under. (d) Open for general and passenger traffic. (e) From 1942 includes operations of Railway Road Services, which began in November 1941. (f) From 1900 to 1964 includes 446 kilometres of line open for general and passenger traffic. (g) Decrease due to proclamations of closure issued by authority of the *Railways (Cue-Big Bell and other Railways) Discontinuance Act, 1960*. (h) Increase due to the transfer of all government-operated timber railways to private control. (i) Decrease due to transfer of Midland Railway Company to Western Australian Government Railways and to closure of timber and mining railways. (j) Increase due to opening of Goldsworthy-Port Hedland, Tom Price-Dampier and Westmine-Tilley iron ore railways. (k) Increase due to opening of Newman-Port Hedland iron ore railway. (l) Increase due to opening of Pannawonica-Cape Lambert iron ore railway and extensions to Goldsworthy and Tom Price railways. * Revised.

MOTOR VEHICLE REGISTRATIONS; EXPORTS OF WHEAT

Year	New motor vehicles registered (a)				Motor vehicles on register (b)				Wheat exports (c)	
	Motor cars (d)	Light and heavy commercial; omnibuses	Motor cycles (e)	Total	Motor cars (f)	Light and heavy commercial; omnibuses	Motor cycles (e)	Total	Quantity (tonnes)	Value (\$'000)
1860									1	(g)
1870									408	8
1880					n.a.				27	(g)
1890									54,839	813
1900									249,049	5,083
1920					3,404					
1921					4,181	n.a.	n.a.	n.a.	178,969	5,860
1922					4,403				281,871	6,076
1923					7,280				145,957	2,942
1924					11,162				297,330	5,085
1925					15,261				407,852	10,316
1926	n.a.	n.a.	n.a.	n.a.	20,011				358,565	8,373
1927					19,451	5,819			444,430	9,334
1928					24,205	8,104			712,884	13,989
1929					27,174	9,767			710,081	13,384
1930					31,130	11,358	7,707	50,195	679,109	12,258
1931					27,741	10,880	6,777	45,398	1,155,028	10,577
1932					28,608	12,094	6,700	47,402	1,003,383	10,647
1933					27,969	12,626	6,700	47,295	835,381	9,323
1934					28,761	13,937	6,284	48,982	635,755	6,834
1935					30,578	15,530	6,597	52,705	678,647	7,844
1936					32,329	17,362	6,861	56,552	405,430	5,607
1937					34,180	19,919	6,977	61,076	375,030	7,255
1938					36,386	22,596	7,079	66,061	599,776	9,667
1939	3,297	1,814	568	5,679	38,039	24,441	7,199	69,679	615,452	6,055
1940	2,871	1,517	399	4,787	38,907	25,026	6,789	70,722	417,214	4,669
1941	1,015	632	200	1,847	36,995	24,788	6,704	68,487	404,314	5,858
1942	250	353	74	677	29,022	21,625	4,057	54,704	266,005	4,021
1943	218	151	57	426	29,750	21,189	3,935	54,874	139,833	2,111
1944	19	1,102	109	1,230	30,295	22,459	4,324	57,078	328,138	5,813
1945	40	597	192	829	30,635	23,943	4,501	59,079	642,015	14,955
1946	101	456	271	828	31,408	28,904	6,799	67,111	367,682	11,696
1947	1,354	1,126	678	3,158	32,879	32,097	8,199	73,175	185,102	8,964
1948	2,963	1,975	1,059	5,997	35,596	35,285	8,877	79,758	525,857	33,809
1949	4,684	3,122	1,769	9,575	40,119	38,901	10,974	89,994	500,793	28,100
1950	8,926	4,707	2,346	15,979	48,632	43,206	12,897	104,735	585,406	33,384
1951	8,201	6,610	2,802	17,613	56,235	47,908	14,535	118,678	830,346	51,688
1952	8,836	5,750	2,740	17,326	64,277	52,627	16,047	132,951	730,002	45,728
1953	6,879	4,881	1,416	13,176	69,917	56,445	15,565	141,927	634,639	40,347
1954	9,926	5,601	1,258	16,785	78,312	60,362	15,243	153,917	185,066	11,272
1955	12,394	5,993	1,202	19,589	90,255	63,870	14,662	168,787	526,212	27,478
1956	10,100	5,203	1,089	16,392	99,206	62,809	12,959	174,974	619,779	28,860
1957	9,321	4,418	1,192	14,931	104,506	63,315	12,731	180,552	1,273,578	61,291
1958	10,140	5,562	1,702	17,404	111,825	63,598	12,631	188,054	725,131	40,861
1959	10,389	5,140	2,071	17,600	119,957	65,588	12,814	198,359	639,647	33,113
1960	13,492	5,695	1,949	21,136	130,476	68,702	12,876	212,054	999,164	49,442
1961	15,161	5,542	1,080	21,783	141,612	70,974	12,589	225,175	1,428,272	71,280
1962	17,082	5,833	902	23,817	155,447	74,224	12,390	242,061	2,010,766	104,356
1963	23,175	6,367	754	30,296	169,800	75,500	11,500	256,800	1,380,372	72,197
1964	24,958	7,013	628	32,599	186,200	77,700	10,200	274,100	1,497,453	77,881
1965	23,304	6,897	553	30,754	197,800	78,500	8,900	285,200	1,102,420	56,955
1966	23,418	9,170	706	33,294	212,600	83,300	8,400	304,300	1,887,996	96,515
1967	27,922	9,404	1,158	38,484	231,200	86,300	8,400	325,900	2,312,777	126,918
1968	33,368	10,448	1,525	45,341	252,300	90,800	8,900	352,000	2,373,195	121,764
1969	35,379	11,018	1,539	47,936	275,300	94,500	9,600	379,400	1,521,376	77,987
1970	37,764	11,138	1,945	50,847	301,000	99,900	10,800	411,700	1,814,787	86,593
1971	37,769	10,872	2,718	51,359	328,500	104,900	12,200	445,600	2,670,890	130,564
1972 (h)	37,274	9,819	3,985	51,078	346,346	105,402	14,458	466,206	2,587,504	128,132
1973 (h)	36,904	11,425	4,914	53,243	364,241	109,427	17,390	491,058	2,249,934	111,744
1974 (h)	40,302	12,241	7,062	59,605	389,083	116,004	22,004	527,091	2,139,973	211,333

n.a. denotes 'not applicable' or 'not available'.

(a) Year ended 30 June. (b) From 1929, at 30 June; for earlier years, at various dates. For years before 1946, excludes Australian Government-owned vehicles; from 1946, includes Australian Government-owned vehicles other than those of defence services. From 1956, new series based on the results of the periodic census of motor vehicles. (c) From 1920, year ended 30 June. (d) From 1959, includes station wagons previously included with commercial vehicles. (e) Including motor scooters. (f) From June 1956, includes station wagons previously included with commercial vehicles. (g) Less than \$500. (h) Figures for motor vehicles on register are based on final results of the census of motor vehicles on register at 30 September 1971.

EXPORTS OF CERTAIN COMMODITIES—continued

Year (a)	Wool				Meats—Fresh, chilled or frozen					
	Greasy (b)		Degreased		Beef and veal		Mutton and lamb		Pigmeat	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	tonnes	\$'000	tonnes	\$'000	tonnes	\$'000	tonnes	\$'000	tonnes	\$'000
1840	23	5	—	—	....	....	....	....	....	....
1850	141	31	—	—	....	....	....	....	....	....
1860	298	99	—	—	....	....	....	....	....	....
1870	811	179	(c)	(c)	....	....	....	....	....	....
1880	1,970	543	—	—	....	....	....	....	....	....
1890	3,161	523	—	—	....	....	....	....	....	....
1900	3,927	505	198	36	(d)	(d)	(d)	(d)	(d)	(d)
1910	11,692	1,894	191	40	....	....	....	....	....	....
1920	25,530	7,218	1,504	657	300	33	....	....	....	....
1921	19,073	4,593	492	183	2,614	248	54	7	20	5
1922	24,726	5,673	1,896	731	1,124	79	....	....	....	....
1923	17,815	5,986	1,202	479	4,516	305	393	55	(e)	(f)
1924	19,214	8,028	688	446	4,829	272	202	26	....	....
1925	15,296	7,030	586	443	3,223	198	....	....	....	....
1926	21,783	6,703	756	353	3,683	240	....	....	....	....
1927	23,646	6,694	752	342	3,038	198	....	....	....	....
1928	27,398	9,734	381	192	5,001	272	103	15	....	....
1929	25,493	7,615	382	207	4,224	226	....	....	....	....
1930	28,022	5,422	465	136	5,162	272	....	....	....	....
1931	31,478	4,652	629	121	5,132	244	388	35	95	7
1932	29,298	4,540	892	151	5,098	235	958	103	554	53
1933	30,931	4,871	1,222	236	6,534	276	174	15	430	37
1934	31,751	9,131	1,237	491	5,716	234	613	49	303	29
1935	36,537	6,479	1,565	348	5,476	233	2,258	236	542	55
1936	35,602	8,892	1,398	451	7,727	321	2,521	282	703	65
1937	26,455	7,854	1,110	475	5,092	249	2,066	247	592	67
1938	24,245	5,877	1,227	446	5,191	314	3,949	470	373	52
1939	31,030	6,072	1,636	469	7,485	497	5,341	638	580	80
1940	29,610	7,603	1,655	661	4,826	329	4,665	533	2,263	324
1941	9,064	2,601	1,270	518	5,583	407	4,396	496	6,015	851
1942	34,355	9,836	2,235	1,030	3,576	327	3,684	435	4,670	682
1943	12,934	4,163	1,239	594	(g)	(f)	3,985	458	1,053	155
1944	31,145	10,842	2,095	917	1,445	190	6,664	763	1,568	238
1945	23,613	8,082	2,216	1,025	1,202	168	4,002	410	1,697	254
1946	49,070	17,136	5,328	2,778	4,317	558	2,269	275	3,401	545
1947	49,104	15,561	7,918	4,960	6,358	691	4,081	409	1,306	248
1948	36,380	27,801	7,291	5,443	6,353	604	5,079	584	303	53
1949	38,972	36,717	6,163	6,352	8,056	840	4,607	608	624	179
1950	37,832	40,071	7,934	10,852	8,625	1,183	2,392	485	163	59
1951	36,619	96,493	5,014	16,066	7,699	1,221	939	217	279	113
1952	41,483	57,291	5,150	10,389	6,028	1,135	1,044	301	424	232
1953	45,772	67,759	5,717	11,363	5,016	1,437	6,589	1,463	463	303
1954	45,677	71,346	5,406	10,914	6,148	1,748	3,309	875	215	152
1955	43,796	59,296	6,015	11,267	6,776	2,038	3,225	1,328	1,049	532
1956	51,387	57,894	7,595	12,419	7,601	2,343	6,602	2,156	743	482
1957	49,252	71,251	8,503	16,259	4,127	1,221	5,788	1,741	733	588
1958	43,750	57,224	8,417	15,462	11,025	3,302	5,083	1,900	2,324	1,462
1959	50,408	46,313	9,872	12,224	10,535	4,342	9,944	3,177	1,983	1,178
1960	50,396	58,137	12,442	19,820	13,597	6,742	8,735	2,378	1,188	953
1961	59,830	59,290	11,851	15,552	12,413	6,141	11,367	3,901	1,894	1,501
1962	62,094	68,177	11,490	15,688	12,544	6,299	8,468	2,436	3,151	2,025
1963	59,617	66,401	11,441	15,706	17,268	9,382	7,428	2,401	2,061	1,404
1964	72,240	97,138	10,388	17,101	20,528	11,497	5,385	1,895	861	718
1965	68,861	83,030	10,245	15,264	19,360	11,730	5,040	1,981	571	516
1966	87,853	101,905	9,845	13,223	18,115	12,108	10,319	4,357	420	376
1967	97,098	114,052	9,788	12,943	16,912	11,987	9,652	3,723	565	470
1968	113,224	113,868	11,484	12,549	16,821	12,995	13,153	4,745	547	474
1969	132,034	142,065	12,354	15,885	20,210	16,939	21,523	7,218	642	564
1970	120,224	117,952	12,554	17,024	23,645	21,508	29,661	11,271	1,437	1,175
1971	119,137	89,752	9,251	8,537	20,257	17,626	24,244	9,396	1,126	895
1972	145,803	109,263	13,481	11,197	24,435	22,528	42,994	17,645	2,503	1,995
1973	136,110	204,455	10,346	16,264	33,325	36,614	39,853	26,103	7,630	6,382
1974	112,536	242,357	8,577	20,973	34,745	42,999	27,189	23,682	5,939	5,772

(a) From 1920, year ended 30 June. (b) For 1890 and earlier years includes degreased wool for which figures are not available separately. (c) See note (b). (d) Separate particulars not available. Total exports of fresh meats were 84 tonnes valued at \$9,164. (e) Less than 500 kg. (f) Less than \$500.

EXPORTS OF CERTAIN COMMODITIES—continued

Year (a)	Flour (b)		Butter		Potatoes		Fresh fruit (c)	Cattle	Sheep
	Quantity	Value	Quantity	Value	Quantity	Value	Value	Value	Value
	tonnes	\$'000	tonnes	\$'000	tonnes	\$'000	\$'000	\$'000	\$'000
1860	11	(d)	....	....	71	1	....	....	4
1870	....	....	....	....	26	(d)	....	....	(d)
1880	(e)	2	....	....	....	....	....	....	(d)
1890	....	....	....	....	....	....	....	1	2
1900	47	1	4	1	113	1	1	(d)	2
1910	2,559	49	77	12	18	(d)	11	16	9
1915	2,622	52	1	(d)	70	1	93	75	11
1916	15,622	426	4	1	524	11	44	142	9
1917	34,244	843	12	4	6	(d)	164	45	4
1918	52,285	1,377	134	48	7	(d)	71	177	29
1919	95,420	2,583	74	29	58	1	114	18	44
1920	117,254	5,045	38	17	1,637	54	300	73	28
1921	48,355	2,144	20	10	344	7	243	44	23
1922	50,943	2,046	12	6	298	5	352	96	70
1923	54,162	1,338	1	(d)	1,566	32	476	118	45
1924	70,733	1,644	6	2	3,443	90	378	60	40
1925	67,956	1,923	....	(d)	443	5	493	5	8
1926	83,333	2,581	....	(d)	1,647	43	464	30	31
1927	85,294	2,314	1	(d)	1,540	44	669	32	50
1928	77,208	2,009	1	(d)	436	12	32	70	58
1929	72,265	1,780	36	14	1,327	32	1,067	38	52
1930	62,659	1,540	21	7	5,037	151	312	1	46
1931	77,713	1,266	20	5	4,897	47	604	3	25
1932	80,061	1,156	663	179	724	14	861	3	28
1933	78,159	1,105	1,042	280	487	5	665	1	35
1934	58,599	781	1,000	195	1,708	17	673	(d)	26
1935	77,986	1,127	1,042	148	2,375	49	826	1	44
1936	60,633	972	1,033	246	8,440	121	905	1	47
1937	78,150	1,662	738	183	7,107	119	670	1	56
1938	73,629	1,605	1,642	472	5,030	55	549	(d)	74
1939	80,766	1,165	1,875	462	14,961	282	1,175	1	73
1940	83,159	1,301	1,873	490	11,953	214	740	(d)	65
1941	107,588	2,185	1,748	460	18,501	373	282	2	112
1942	77,087	1,681	1,676	428	10,452	213	114	1	97
1943	70,412	1,581	1,69	47	6,410	139	139	1	(d)
1944	96,941	2,344	919	262	772	22	96	27	(d)
1945	92,438	2,505	964	369	17,939	581	132	2	1
1946	106,088	4,667	1,283	502	13,219	446	488	2	91
1947	117,661	7,628	920	383	12,939	484	1,445	27	362
1948	127,002	11,326	2,043	1,000	18,623	681	1,688	10	347
1949	119,025	10,516	2,075	1,047	13,723	431	1,452	11	374
1950	105,065	8,335	1,475	864	10,090	384	1,780	5	426
1951	144,914	11,774	498	312	11,181	506	2,295	9	616
1952	146,584	13,669	144	93	13,314	733	2,853	23	631
1953	159,883	15,090	155	126	12,860	750	4,556	23	501
1954	134,126	11,704	170	141	16,026	1,300	3,300	29	568
1955	109,172	7,219	168	142	9,020	512	3,845	68	612
1956	117,409	7,766	255	206	2,275	171	3,393	177	625
1957	115,658	7,474	177	156	7,728	736	4,598	243	923
1958	101,448	6,907	200	169	13,998	832	3,725	308	841
1959	94,854	6,337	178	166	8,577	368	3,609	396	764
1960	79,697	5,100	191	183	9,612	436	2,437	325	845
1961	122,839	7,840	303	247	7,821	437	4,636	318	881
1962	88,889	5,891	756	532	10,328	632	2,818	55	1,254
1963	67,652	4,645	247	228	18,032	810	4,982	160	1,495
1964	62,677	4,396	138	126	9,925	353	4,016	331	1,433
1965	83,826	5,926	166	159	12,935	841	5,165	427	1,376
1966	49,130	3,378	1,062	732	21,362	1,393	4,838	283	1,633
1967	34,804	2,507	192	201	17,478	692	5,704	381	1,771
1968	41,918	2,944	225	232	13,142	622	4,068	1,229	2,191
1969	35,100	2,433	231	254	21,944	1,149	6,552	972	2,943
1970	31,173	2,257	216	243	19,888	831	6,054	760	2,876
1971	26,670	1,958	266	325	9,390	510	7,208	1,159	2,710
1972	18,882	1,345	234	297	8,600	371	5,245	1,865	3,871
1973	9,798	859	237	311	(f) 4,911	(f) 334	6,135	1,661	7,959
1974	11,232	1,380	228	278	(g) 9,576	(g) 1,113	5,835	2,111	12,579

(a) From 1915, year ended 30 June. (b) From 1972-73, figures include meal and flour of wheat or maslin. (c) Includes tomatoes for 1932-33 and earlier years. (d) Less than \$500. (e) Not available. (f) Some interstate details for 1972-73 included in 1973-74. (g) See footnote (f).

EXPORTS OF CERTAIN COMMODITIES—*continued*

Year (a)	Skins and hides		Timber (b)		Rock lobster tails (c)		Pearl-shell (d)		Iron and steel (e)
	Value	Quantity	Value	Quantity	Value	Quantity	Value	Value	
	\$'000	'000 cu m	\$'000	tonnes	\$'000	tonnes	\$'000	\$'000	
1850	1	2	2	....	....	....	....	....
1860	(g)	2	10	....	....	....	....	....
1870	(g)	6	35	....	....	75	19	....
1880	8	19	133	....	....	731	79	....
1890	49	33	164	....	....	1,257	173	....
1900	150	162	916	....	....	749	173	7
1910	482	342	1,945	....	....	1,488	492	5
1920	1,246	143	931	....	....	1,702	671	16
1921	759	278	2,274	....	....	1,171	470	26
1922	730	235	2,082	....	....	1,546	508	16
1923	1,092	224	1,995	....	....	1,294	429	18
1924	1,040	315	2,735	....	....	1,447	487	6
1925	955	335	2,956	....	....	1,182	469	13
1926	883	340	3,046	....	....	1,309	465	9
1927	752	371	3,316	....	....	1,245	425	10
1928	1,106	294	2,531	....	....	969	332	7
1929	1,101	216	1,921	....	....	1,093	345	3
1930	738	186	1,615	....	....	984	331	3
1931	539	117	1,015	....	....	1,032	334	2
1932	395	87	722	....	....	622	194	1
1933	480	63	523	....	....	1,049	294	1
1934	771	115	972	....	....	856	196	7
1935	640	151	1,270	....	....	987	189	3
1936	1,061	159	1,356	....	....	984	214	3
1937	1,143	161	1,397	....	....	928	247	7
1938	985	214	1,860	....	....	1,259	336	12
1939	736	162	1,436	....	....	1,149	212	15
1940	745	143	1,251	....	....	856	153	31
1941	580	172	1,546	....	....	696	153	35
1942	772	148	1,369	....	....	590	142	19
1943	348	100	1,189	....	....	6	1	5
1944	680	103	1,216	....	....	2	1	23
1945	537	81	1,131	....	....	....	....	100
1946	1,274	96	1,429	....	....	13	8	9
1947	2,131	98	1,719	....	....	127	120	99
1948	2,048	102	2,230	....	....	342	340	89
1949	2,134	91	1,986	(h)	(h)	415	367	59	
1950	2,329	81	1,949	518	463	355	248	95	
1951	5,294	66	1,783	1,436	1,517	345	274	83	
1952	3,194	68	2,075	1,311	1,861	417	406	58	
1953	3,942	112	4,147	1,329	2,085	535	612	357	
1954	3,295	109	4,480	1,461	2,342	623	708	279	
1955	2,921	99	3,847	1,532	2,490	700	820	602	
1956	3,274	129	5,598	1,601	3,022	811	999	530	
1957	4,650	132	6,215	1,618	3,514	1,101	1,391	1,174	
1958	3,898	158	7,496	2,136	3,965	1,147	1,381	2,470	
1959	3,489	183	8,415	2,715	5,281	789	772	4,218	
1960	4,767	174	7,760	2,996	6,499	637	707	11,198	
1961	3,828	157	7,175	2,316	5,881	573	502	12,781	
1962	4,580	161	7,528	3,607	9,778	453	320	13,826	
1963	4,339	155	7,241	3,490	8,910	388	289	15,107	
1964	4,966	149	6,813	3,416	9,211	168	112	15,029	
1965	4,177	133	6,279	2,672	10,592	162	133	17,933	
1966	5,447	69	3,687	3,193	13,821	155	123	14,458	
1967	5,377	139	7,475	3,643	13,873	218	189	15,658	
1968	4,699	85	4,947	3,919	17,989	212	147	11,442	
1969	6,013	88	5,068	3,038	17,133	212	125	27,002	
1970	7,968	96	5,666	2,976	15,695	255	173	34,306	
1971	5,395	79	4,808	3,155	19,413	196	132	34,571	
1972	5,356	101	6,440	3,425	24,626	202	123	36,415	
1973	13,945	*113	7,087	3,171	20,919	218	131	36,529	
1974	13,536	100	7,407	2,656	18,511	145	105	60,811	

(a) From 1920, year ended 30 June. (b) Excludes plywood and veneers and small quantities of timber for which details are not recorded. For the years 1910 to 1921, figures are approximate. (c) Figures for the years 1949–50 to 1951–52 represent overseas exports only and exclude small consignments to other Australian States. Those for 1952–53 to 1959–60 include small consignments of cooked whole rock lobsters to other Australian States. (d) From 1972–73, figures represent overseas exports only. (e) Principally pig-iron, cast iron and basic shapes and sections of iron and steel. (f) Less than 500 cu m. (g) Less than \$500. (h) Precise information not available, but it is known that the value of exports was about \$500,000 * Revised.

EXPORTS OF CERTAIN COMMODITIES—continued

Year (a)	Gold mint bullion (b)		Lead and zinc ores (c) (d)	Tin ore and concentrates	Asbestos (crude and fibre)		Manganese ore and concentrates		Iron ore and concentrates		Ilmenite concentrates (including leucocene)	
	Quantity	Value (e)			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	kg	\$'000	\$'000	\$'000	tonnes	\$'000	'000 tonnes	\$'000	'000 tonnes	\$'000	'000 tonnes	\$'000
1850	....	....	(f)	....	....	....	....	....	....	....	....	....
1860	....	....	2	....	....	....	....	....	....	....	....	....
1870	....	....	29	....	....	....	....	....	....	....	....	....
1880	....	....	31	....	....	....	....	....	....	....	....	....
1890	715	173	4	11	....	....	....	....	....	....	....	....
1900	31,103	7,589	(f)	76	....	....	....	....	....	....	....	....
1910	10,389	2,835	4	93	....	....	....	....	....	....	....	....
1920	1,275	452	102	129	....	....	....	....	....	....	....	....
1921	2	1	67	41	132	13	(g)	(f)	....	....	....	....
1922	....	....	10	89	8	8	(g)	(f)	....	....	....	....
1923	....	....	47	18	....	....	(g)	(f)	....	....	....	....
1924	2,830	767	108	38	....	....	(g)	(f)	(g)	(f)	....	....
1925	1,120	305	186	29	....	....	(g)	(f)	....	....	....	....
1926	1,555	386	186	23	....	....	....	....	....	....	....	....
1927	2,830	711	109	28	....	....	(g)	1	....	....	....	....
1928	435	121	8	24	....	....	(g)	1	....	....	....	....
1929	311	81	11	30	....	....	(g)	(f)	(g)	(f)	....	....
1930	4	1	19	29	....	....	(g)	(f)	....	....	....	....
1931	....	....	2	10	....	....	....	....	....	....	....	....
1932	16,018	7,336	1	6	....	....	(g)	(f)	....	....	....	....
1933	19,440	9,376	(f)	7	....	....	....	....	....	....	....	....
1934	20,311	10,624	(f)	11	....	....	....	....	....	....	....	....
1935	18,320	10,258	(f)	17	....	....	....	....	....	....	....	....
1936	23,981	13,385	....	18	....	....	....	....	....	....	....	....
1937	28,273	15,819	....	16	....	....	....	....	....	....	....	....
1938	33,436	18,598	1	20	281	37	....	....	....	....	....	....
1939	36,360	21,240	1	11	272	26	....	....	....	....	....	....
1940	36,329	24,056	2	14	188	17	....	....	....	....	....	....
1941	37,386	25,096	2	12	148	15	....	....	....	....	....	....
1942	30,326	20,590	2	6	74	7	....	....	....	....	....	....
1943	23,514	15,744	1	5	89	8	....	....	....	....	....	....
1944	10,855	7,250	1	6	92	8	....	....	....	....	....	....
1945	....	....	1	5	386	36	....	....	....	....	....	....
1946	....	....	(f)	8	1,081	104	....	....	....	....	....	....
1947	....	....	5	12	637	65	....	....	....	....	....	....
1948	11,073	7,656	146	17	1,201	148	....	....	....	....	....	....
1949	....	....	235	31	1,178	179	2	....	....	....	....	....
1950	2	2	272	49	894	204	10	22	126	....	....	....
1951	....	....	263	62	1,568	378	11	154	....	....	....	....
1952	12,286	13,143	1,369	107	2,620	709	8	115	53	102	....	....
1953	23,608	24,798	1,681	153	3,006	990	14	256	553	1,079	....	....
1954	13,001	13,230	270	97	3,200	986	27	829	592	1,157	....	....
1955	19,222	19,338	108	146	3,792	788	35	804	589	1,149	....	....
1956	12,752	12,842	888	322	7,534	1,440	56	1,271	480	936	....	....
1957	23,950	24,119	960	293	10,727	2,140	59	1,551	334	649	....	....
1958	6,470	6,511	410	166	11,743	2,920	76	2,501	446	870	89	1,011
1959	4,106	4,118	238	304	10,737	2,166	57	1,628	598	1,169	66	648
1960	18,662	18,738	229	415	15,407	3,111	80	2,224	809	1,601	90	713
1961	78,754	79,271	83	325	10,776	2,364	48	1,267	1,035	2,101	132	1,198
1962	14,090	12,195	45	563	12,850	2,753	110	2,945	1,069	2,209	159	1,441
1963	12,970	13,048	33	532	12,610	2,799	53	1,390	1,495	2,898	183	1,717
1964	11,975	12,045	18	1,080	8,069	1,767	27	695	1,381	2,743	263	2,571
1965	15,956	16,127	662	1,229	11,131	2,210	77	1,747	1,562	3,040	330	3,194
1966	25,909	26,147	124	1,521	8,064	1,702	106	2,404	2,657	6,967	430	4,181
1967	14,930	15,107	177	2,214	5,985	1,229	193	4,161	8,530	50,890	443	4,440
1968	11,602	11,816	58	2,330	(h)	(f)	164	3,408	14,563	104,506	462	4,645
1969	11,228	12,701	161	1,843	65	8	179	3,624	19,898	151,797	557	5,751
1970	12,037	13,874	41	1,386	56	4	161	3,086	31,542	233,580	573	6,068
1971	2,986	3,041	....	1,511	45	10	159	2,755	46,273	341,702	563	6,631
1972	3,359	4,125	....	2,043	40	3	(i)	(i)	48,658	347,500	585	8,337
1973	8,736	15,681	6	2,277	....	....	(i)	(i)	66,036	420,255	(j) 595	(j) 7,696
1974	893	2,484	15	2,732	....	....	(i)	(i)	79,286	488,239	(j) 728	(j) 9,774

(a) From 1915, year ended 30 June. (b) Gold sold abroad before consignment is not recorded as an export until actually shipped. (c) Includes silver-lead and silver-lead-zinc ores and concentrates. (d) From 1972-73, figures exclude interstate exports of lead ores and concentrates. (e) Includes additional premiums on sales of industrial gold. (f) Less than \$500. (g) Less than 500 tonnes. (h) Less than 500 kg. (i) Not available for publication. (j) Excludes overseas exports of beneficiated ilmenite.

EXTERNAL TRADE
(\$'000)

Year (a)	Imports			Exports (b)			Excess of—		Ships' stores
	Overseas	Interstate	Total	Overseas	Interstate	Total	Imports	Exports	
1850	(c)	(c)	125	(c)	(c)	44	80	....	(c)
1860	318	20	338	160	16	175	163	....	3
1870	260	167	427	348	46	394	33	....	8
1880	349	358	707	736	252	988	....	280	11
1890	1,025	724	1,749	961	369	1,330	419	....	14
1900	6,574	5,350	11,924	11,246	2,250	13,496	....	1,572	208
1910	8,750	7,067	15,817	11,679	4,627	16,306	....	489	294
1920	9,918	14,819	24,737	28,918	2,392	31,311	....	6,574	827
1921	14,439	15,239	29,678	20,790	2,724	23,514	6,165	....	1,004
1922	8,616	15,459	24,076	21,594	4,522	26,116	....	2,041	1,141
1923	13,001	14,555	27,555	19,359	2,252	21,611	5,944	....	599
1924	13,325	15,363	28,688	24,825	2,928	27,753	935	....	493
1925	16,053	16,095	32,148	25,719	2,623	28,342	3,806	....	987
1926	15,792	17,133	32,925	25,223	2,876	28,100	4,826	....	1,064
1927	18,894	17,858	36,752	26,135	2,810	28,946	7,806	....	1,358
1928	18,023	18,553	36,575	32,505	2,674	35,179	1,396	....	1,302
1929	18,906	21,201	40,108	30,603	2,411	33,014	7,094	....	1,358
1930	17,758	19,805	37,563	32,009	2,213	34,223	3,341	....	1,316
1931	9,165	13,639	22,804	33,306	1,550	34,856	....	12,052	1,095
1932	6,926	15,854	22,780	29,633	1,826	31,459	....	8,679	1,133
1933	9,542	16,740	26,282	28,037	1,916	29,953	....	3,671	1,122
1934	8,889	18,554	27,443	31,132	2,427	33,559	....	6,116	1,024
1935	10,203	20,290	30,493	30,002	2,650	32,652	....	2,158	1,106
1936	12,688	22,073	34,761	33,023	3,665	36,689	....	1,928	1,095
1937	14,144	24,742	38,886	34,592	6,361	40,953	....	2,067	1,029
1938	15,986	25,879	41,865	38,944	6,057	45,001	....	3,135	1,200
1939	12,275	25,329	37,604	34,149	10,815	44,964	....	7,360	1,049
1940	12,568	27,450	40,017	19,256	28,518	47,774	....	7,756	1,380
1941	9,710	27,519	37,229	16,900	30,808	47,708	....	10,479	1,971
1942	10,391	26,110	36,501	23,157	25,241	48,398	....	11,897	2,305
1943	7,383	24,803	32,186	10,625	20,117	30,741	1,445	....	1,983
1944	7,770	26,628	34,399	22,845	13,472	36,317	....	1,919	2,747
1945	9,215	26,863	36,079	24,765	11,533	36,298	....	219	2,508
1946	11,018	32,238	43,256	38,917	11,662	50,579	....	7,322	2,511
1947	18,929	42,253	61,182	46,015	11,459	57,474	3,708	....	1,966
1948	34,311	51,329	85,640	97,389	11,599	108,989	....	23,349	2,474
1949	44,075	61,182	105,258	96,982	9,495	106,477	....	1,220	4,710
1950	68,844	70,044	138,887	106,590	12,421	119,011	19,876	....	4,720
1951	80,517	95,828	176,345	197,686	18,780	216,466	....	40,122	7,249
1952	120,474	124,209	244,683	151,562	35,404	186,966	57,717	....	8,419
1953	59,748	137,213	196,961	166,286	49,659	215,945	....	18,984	10,321
1954	85,051	165,374	250,425	136,849	39,190	176,039	74,386	....	7,266
1955	101,295	182,110	283,405	137,013	47,310	184,323	99,082	....	7,865
1956	92,963	177,952	270,915	152,286	68,466	220,752	50,164	....	10,592
1957	80,423	188,680	269,103	216,599	81,545	298,144	....	29,041	12,902
1958	91,775	195,103	286,879	179,516	79,836	259,352	27,527	....	11,602
1959	89,972	202,430	292,402	174,585	68,919	243,504	48,898	....	9,482
1960	92,363	246,696	339,059	231,766	77,278	309,043	30,016	....	8,954
1961	110,531	245,474	356,005	309,332	89,922	399,254	....	43,249	10,285
1962	100,178	245,208	345,386	287,619	84,626	372,245	....	26,859	9,379
1963	112,640	313,712	426,351	246,823	91,636	338,459	87,892	....	7,904
1964	121,677	323,176	444,854	286,132	101,811	387,943	56,911	....	9,733
1965	153,540	343,899	497,439	243,078	119,954	363,033	134,407	....	9,009
1966	175,690	403,054	578,744	314,404	119,619	434,023	144,721	....	10,058
1967	159,390	474,852	634,242	421,325	116,030	537,355	96,887	....	10,936
1968	206,980	527,052	734,031	475,260	124,505	599,765	134,266	....	14,824
1969	203,533	562,312	765,846	546,366	149,892	696,258	69,588	....	14,327
1970	242,299	640,189	882,487	675,027	149,861	824,888	57,600	....	15,092
1971	278,344	726,778	1,005,122	862,421	151,093	1,013,514	....	8,392	20,561
1972	283,263	787,788	1,071,051	946,504	138,478	1,084,982	....	13,931	22,477
1973	227,269	786,177	1,013,447	1,154,359	159,327	1,313,686	....	300,239	17,542
1974	368,910	939,361	1,308,272	1,414,968	197,299	1,612,267	....	303,995	29,224

(a) From 1920, year ended 30 June.

(b) Excludes ships' stores.

(c) Not available.

LAND TENURE; LIVESTOCK; WOOL PRODUCTION

Year	Land alienated and land in process of alienation (a)	Land held under lease or licence (a) (b)	Livestock (c)				Wool production (d)	
			Horses	Cattle	Sheep	Pigs	Quantity	Gross value (e)
	'000 hectares	'000 hectares	'000 (f)	'000 (f)	'000 (f)	'000 (f)	tonnes (g)	\$'000 (g)
1829	212	....	(f)	1	8	2	298	(g)
1830	256	....	(f)	2	31	3	811	(g)
1840	647	....	(f)	13	128	11	811	(g)
1850	538	(f)	3	32	260	13	1,970	(g)
1860	614	2,251	10	45	609	24	3,161	(g)
1870	593	4,953	22	64	1,232	29	4,323	(g)
1880	860	18,179	35	131	2,525	62	13,210	2,141
1890	2,159	42,388	44	339	2,434	58	18,947	4,552
1900	2,679	35,360	68	825	5,159	61	19,542	4,482
1910	7,013	67,667	134	850	6,533	63	18,535	6,294
1920	9,317	104,252	179	893	6,506	61	20,541	8,665
1921	9,806	104,614	180	940	6,664	66	19,697	9,151
1922	10,423	108,303	181	954	6,596	66	21,903	6,800
1923	10,953	106,088	182	892	6,397	74	25,007	7,148
1924	11,470	84,959	175	836	6,862	70	28,441	10,170
1925	11,696	94,290	171	827	7,459	60	26,701	8,027
1926	12,253	93,306	166	847	8,447	65	30,459	5,952
1927	12,845	94,762	165	838	8,943	65	32,451	4,829
1928	13,485	96,085	161	837	9,557	101	32,484	5,007
1929	14,326	98,633	160	813	9,883	118	34,086	5,198
1930	14,585	99,307	157	827	10,098	91	35,573	9,404
1931	14,653	87,667	156	857	10,417	98	40,820	6,422
1932	14,516	83,432	157	886	10,322	98	38,876	8,886
1933	14,386	80,260	160	912	11,197	76	28,820	7,306
1934	14,201	81,176	162	883	11,083	65	29,365	5,832
1935	13,807	82,396	160	793	9,008	83	32,874	7,581
1936	13,353	82,541	155	740	8,732	150	34,201	7,889
1937	13,356	82,985	151	768	9,178	218	32,362	7,889
1938	13,358	83,363	144	799	9,574	163	35,211	8,328
1939	13,261	83,247	139	789	9,516	152	43,417	11,935
1940	13,127	84,733	130	840	9,773	164	46,611	12,741
1941	12,995	84,968	124	831	10,424	164	38,166	10,512
1942	12,895	85,607	113	871	11,013	138	37,225	10,424
1943	12,812	85,810	107	853	10,050	102	36,525	16,094
1944	12,797	86,076	97	834	9,766	93	40,609	29,277
1945	12,836	85,928	88	812	9,787	81	42,533	37,720
1946	12,861	85,860	81	816	10,444	79	42,071	47,237
1947	13,061	87,910	75	864	10,873	90	46,680	118,068
1948	13,016	90,169	69	865	10,923	86	52,681	64,027
1949	13,178	91,256	59	841	11,362	76	54,760	75,121
1950	13,515	82,101	55	846	12,475	101	58,497	82,567
1951	13,902	82,918	53	830	13,087	107	56,324	67,985
1952	14,296	83,587	50	861	13,411	99	67,932	69,642
1953	14,911	83,218	49	897	14,128	140	67,301	90,283
1954	15,213	84,432	47	957	14,887	151	68,504	75,228
1955	15,385	86,450	45	997	15,724	115	71,376	59,407
1956	15,507	87,332	45	1,000	16,215	131	72,979	75,302
1957	15,746	89,111	44	1,030	16,412	176	82,652	73,863
1958	15,925	88,388	41	1,100	17,151	174	83,159	79,283
1959	16,180	92,311	41	1,298	18,727	131	80,366	80,071
1960	16,343	92,640	40	1,299	20,165	128	95,053	116,331
1961	16,637	94,479	40	1,258	22,392	137	91,170	93,275
1962	17,079	99,722	39	1,271	24,427	144	108,116	115,183
1963	17,484	99,364	39	1,357	27,370	161	119,681	121,509
1964	17,848	99,771	37	1,427	30,161	183	131,379	116,653
1965	18,287	99,444	35	1,546	32,901	220	164,307	158,264
1966	18,737	99,764	(g)	1,681	33,634	250	144,527	120,819
1967	19,192	100,581	(g)	1,781	34,709	278	151,808	92,009
1968	19,504	100,976	(g)	1,975	34,405	427	170,219	135,137
1969	19,620	100,716	29	2,182	30,919	476	140,649	225,041
1970	19,761	102,957	(g)	2,330	32,451	344	143,147	251,712
1971	19,545	103,389	(g)					
1972	19,531	103,218	(g)					
1973	19,539	102,711	(g)					

(a) From 1907 to 1946 at 30 June; for earlier years and from 1947 at 31 December. (b) Comprises allocations by Lands Department and certain leases and licences issued by Mines and Forests Departments. Apparent decrease in 1950 due mainly to revisions in records of Lands Department. (c) At 31 December for 1941 and earlier years; from 1942, the figures shown relate to 31 March in the following year. (d) Comprises shorn, dead and fleeced wool. Excludes wool exported on skins. For 1947 and earlier, year ended 31 December; figures shown for 1948 to 1964 are for the year ended 31 March in the following year. From 1965 figures relate to the year ended 30 June in the following year. (e) Figures for 1949 and 1951 to 1955 exclude distributions of profits under the 1939-1945 War-time Wool Disposals Plan aggregating \$13,869,934. Separate State figures are not available for distributions made from 1956 to 1958 when payments were virtually complete. (f) Less than 500. (g) Not available.

AGRICULTURE

Year (a)	Total area used for crops (b)	Area and production of principal grain crops							
		Wheat				Oats		Barley	
		Area	Production			Area	Production	Area	Production
			Yield per hectare	Total	Gross value				
	'000 hectares	'000 hectares	tonnes	'000 tonnes	\$'000	'000 hectares	'000 tonnes	'000 hectares	'000 tonnes
1840	1	1	1.11	1		(c)	(c)	(c)	(c)
1850	3	2	(c)	(c)		(c)	(c)	(c)	(c)
1860	10	6	1.00	6	(c)	(c)	(c)	(c)	(c)
1870	22	11	0.79	9		(d) 1	1	1	1
1880	26	11	0.62	7		(d)	(d)	(c)	(c)
1890	28	14	0.92	13		1	1	2	2
1900	81	30	0.70	21	310	2	2	1	1
1910	346	236	0.68	161	2,162	25	14	1	1
1920	730	516	0.65	333	11,023	78	37	4	3
1921	770	541	0.70	378	7,532	66	37	3	2
1922	921	628	0.60	377	6,986	87	41	4	2
1923	940	671	0.77	515	8,987	98	52	4	2
1924	1,097	756	0.86	650	14,532	129	77	5	4
1925	1,187	855	0.65	557	12,837	113	53	5	4
1926	1,346	1,040	0.81	846	17,217	95	49	6	3
1927	1,505	1,214	0.82	990	19,842	95	53	5	3
1928	1,724	1,353	0.68	920	16,473	132	65	6	4
1929	1,848	1,444	0.74	1,064	17,721	156	74	10	6
1930	1,939	1,601	0.91	1,456	12,201	111	60	7	4
1931	1,604	1,278	0.88	1,130	14,430	108	64	6	4
1932	1,725	1,371	0.83	1,137	13,554	116	65	6	3
1933	1,707	1,288	0.79	1,015	12,004	139	72	10	7
1934	1,554	1,119	0.66	734	10,123	166	77	11	5
1935	1,508	1,028	0.62	635	9,747	181	83	13	9
1936	1,559	1,042	0.56	586	11,902	187	63	16	10
1937	1,687	1,225	0.81	986	14,830	156	79	18	13
1938	1,895	1,381	0.73	1,003	8,984	172	85	30	21
1939	1,735	1,202	0.93	1,112	15,526	183	96	34	22
1940	1,614	1,062	0.54	573	8,648	174	59	27	16
1941	1,545	1,073	0.95	1,021	15,615	165	97	28	22
1942	1,127	709	0.79	561	10,080	138	66	20	12
1943	1,110	634	0.71	450	9,531	145	72	25	16
1944	1,115	614	0.71	434	8,319	163	70	31	20
1945	1,163	743	0.77	570	15,871	160	74	27	15
1946	1,429	982	0.66	648	22,048	172	66	27	12
1947	1,593	1,117	0.84	939	50,265	200	98	25	17
1948	1,660	1,161	0.85	987	42,122	215	127	26	22
1949	1,737	1,171	0.89	1,048	51,339	237	132	28	22
1950	1,834	1,289	1.05	1,358	65,328	237	144	24	21
1951	1,824	1,253	0.87	1,089	58,984	266	140	23	16
1952	1,877	1,214	0.80	965	55,194	337	189	43	40
1953	1,812	1,168	0.93	1,030	55,423	297	174	85	62
1954	2,041	1,206	0.77	933	43,655	354	174	105	64
1955	2,118	1,170	1.24	1,449	68,840	442	300	136	106
1956	2,080	1,119	0.78	874	44,055	425	189	139	85
1957	2,230	1,197	0.75	901	45,912	467	250	124	81
1958	2,434	1,332	1.18	1,569	77,639	538	410	130	123
1959	2,583	1,505	1.06	1,597	82,361	502	356	170	161
1960	2,734	1,627	1.07	1,739	92,290	538	396	219	193
1961	2,823	1,773	1.01	1,788	100,023	498	366	199	165
1962	2,965	1,944	1.01	1,973	107,023	476	367	158	137
1963	2,714	1,878	0.76	1,424	74,389	455	324	121	92
1964	2,950	2,085	0.82	1,717	88,557	466	254	123	84
1965	3,419	2,489	1.12	2,780	153,050	502	422	167	147
1966	3,463	2,569	1.09	2,809	153,157	487	401	151	152
1967	3,595	2,690	1.08	2,911	170,102	469	359	168	159
1968	3,840	2,952	1.04	3,060	151,306	442	416	224	208
1969	3,916	2,747	0.66	1,815	90,961	461	281	364	273
1970	3,831	2,361	1.25	2,957	153,227	520	520	632	769
1971	3,751	2,042	1.06	2,165	115,934	454	414	911	1,000
1972	3,855	2,437	0.82	2,003	109,399	297	212	744	640
1973	4,133	2,978	1.41	4,211	443,770	325	383	510	626

(a) Figures shown for 1942 and earlier are for the year ended last day of February in the following year; those shown for 1943 and later are for the season ended 31 March in the following year. (b) Excludes pasture hay and from 1967 also excludes lucerne. (c) Not available. (d) Less than 500.

PRIMARY PRODUCTION—MISCELLANEOUS

Year	Hay (all kinds) (a)		Gold production (b) (c)		Coal production (c)		Average values f.o.b.	
	Area	Production	Quantity	Value (d)	Quantity	Value	Wool (greasy) per kg (e)	Wheat per tonne (f)
	'000 hectares	'000 tonnes	'000 grams	\$'000	'000 tonnes	\$'000	cents	\$
1860	2	8	....	....	....	....	19.83	....
1870	7	21	....	....	....	....	....	....
1880	8	20	....	....	....	....	....	....
1890	9	25	622	171	....	....	(g)	18.37
1900	42	106	43,980	12,015	120	110	....	5.51
1910	71	182	45,753	12,494	266	227	16.20	14.85
1920	108	268	19,222	6,951	469	701	28.26	26.33
1921	136	375	17,231	5,907	477	814	24.07	26.94
1922	175	464	16,734	5,052	445	763	22.95	20.21
1923	134	374	15,707	4,464	428	738	33.60	18.53
1924	161	456	15,085	4,512	429	727	41.78	17.45
1925	158	361	13,717	3,749	444	726	45.97	22.35
1926	145	431	13,592	3,715	483	789	30.78	23.04
1927	144	424	12,690	3,469	510	816	28.31	20.29
1928	168	429	12,224	3,342	536	840	35.52	20.05
1929	170	435	11,726	3,204	554	853	29.87	18.60
1930	161	500	13,001	3,729	509	770	19.37	16.69
1931	154	460	15,894	5,996	439	672	14.77	8.42
1932	169	493	18,849	8,807	423	541	15.50	11.48
1933	194	520	19,813	9,773	465	580	15.74	11.18
1934	167	470	20,248	11,118	508	557	28.75	10.79
1935	200	513	20,186	11,404	546	636	17.73	11.79
1936	193	420	26,314	14,747	574	663	24.98	14.62
1937	175	457	31,135	17,488	563	681	29.70	20.29
1938	165	445	36,329	20,726	615	750	24.25	15.08
1939	160	484	37,760	23,686	567	726	19.58	8.95
1940	169	381	37,044	25,393	548	729	25.68	11.19
1941	132	421	34,494	23,703	566	779	28.70	14.49
1942	102	282	26,376	17,731	590	923	28.64	15.12
1943	114	319	16,982	11,421	541	979	32.19	15.09
1944	133	344	14,494	9,800	567	1,166	34.81	17.71
1945	114	292	14,588	10,021	552	1,146	34.24	23.30
1946	112	284	19,191	13,280	652	1,460	34.92	31.81
1947	93	272	21,897	15,151	743	1,680	45.74	48.42
1948	92	281	20,684	14,314	745	1,760	76.41	64.33
1949	87	276	20,155	15,926	763	1,944	94.20	56.11
1950	72	231	18,973	18,933	827	2,575	105.91	57.03
1951	70	215	19,533	19,451	862	3,434	263.50	62.25
1952	92	295	22,706	23,696	843	4,915	138.10	62.64
1953	89	299	25,629	26,598	900	6,146	148.04	63.57
1954	117	310	26,469	26,627	1,034	7,178	156.20	60.90
1955	109	390	26,189	26,749	919	6,179	135.39	52.22
1956	98	293	25,256	26,405	843	5,448	112.66	46.57
1957	137	392	27,900	29,102	852	5,105	144.67	48.12
1958	135	462	26,967	28,357	885	4,561	130.80	56.35
1959	129	440	26,967	28,388	926	4,713	91.87	51.76
1960	115	387	26,625	28,140	937	4,878	115.37	49.48
1961	119	402	27,122	28,584	778	3,361	99.10	49.91
1962	138	460	26,717	28,115	934	3,962	109.80	51.90
1963	117	395	24,881	26,375	917	3,970	111.38	52.30
1964	123	396	22,177	23,383	1,003	4,679	134.47	52.01
1965	118	421	20,497	22,381	1,010	4,410	120.58	51.66
1966	119	424	19,564	23,316	1,078	4,562	116.00	51.12
1967	129	428	17,916	21,690	1,079	4,765	117.46	54.88
1968	138	508	15,925	19,407	1,104	4,817	105.69	51.31
1969	202	576	14,961	19,040	1,120	4,853	107.60	51.26
1970	190	673	12,310	15,811	1,178	5,407	98.11	47.72
1971	177	653	11,178	14,237	1,190	5,653	75.33	48.88
1972	224	664	10,862	14,855	1,188	5,855	74.94	49.52
1973	220	734	9,305	16,790	1,154	5,422	150.21	49.67
1974	(h)	(h)	7,194	19,239	1,197	7,237	215.36	98.75

(a) See footnote (a) on preceding page. (b) Comprises gold refined at the Mint and gold contained in gold-bearing materials exported. (c) From 1969 figures relate to year ended 30 June. (d) Includes amounts, totalling \$30,072,806 for the years 1952 to 1974, distributed by the Gold Producers' Association Ltd. from premiums on sales of Western Australian gold. Also includes net subsidy payments by the Commonwealth Government, under the *Gold Mining Industry Assistance Act 1954-1972*, totalling \$29,409,311 in the years 1955 to 1974. (e) From 1915 figures relate to year ended 30 June. (f) Prior to 1940 averages generally are based on exports of the previous season's wheat; from 1940 they relate to exports during the year ended 30 June. (g) Not available. (h) Not available at time of publication.

VALUE OF PRIMARY PRODUCTION
(Excluding Mining)
(\$'000)

Year (a)	Gross value of primary production (excluding mining) (b)							Net value of primary production (excluding mining) (c) (e)
	Agri- culture	Dairying, poultry farming and bee keeping	Pastoral (c)	Hunting	Forestry	Fisheries (d)	Total	
1914	6,194	1,122	\$ 4,115					
1915	13,059	1,173	\$ 6,060					
1916	11,779	1,383	\$ 7,340					
1917	8,513	1,332	\$ 8,959					
1918	9,516	1,396	\$ 9,088		(g)	(g)	(g)	(g)
1919	18,133	1,687	\$ 9,544					
1920	17,466	2,065	\$ 9,008					
1921	13,853	2,265	\$ 8,032					
1922	12,992	2,350	\$ 10,584					
1923	15,076	2,483	\$ 13,027			642		
1924	22,367	2,726	\$ 13,419			764		
1925	19,510	2,507	\$ 11,537		4,126	970	38,651	26,790
1926	24,187	2,503	\$ 11,262		3,367	580	41,899	29,222
1927	26,068	2,687	\$ 14,687		2,906	516	46,865	33,088
1928	23,884	2,936	\$ 13,501		2,463	561	43,344	28,930
1929	24,504	3,443	\$ 10,800		2,159	544	41,450	23,733
1930	17,756	3,170	\$ 8,845		1,809	485	32,066	13,977
1931	20,985	3,311	\$ 8,023		1,312	427	34,058	18,918
1932	20,495	3,338	\$ 8,057		1,183	430	33,502	17,709
1933	19,022	3,315	\$ 13,369		1,648	406	37,759	22,238
1934	16,336	3,927	9,329	127	2,399	373	32,491	19,174
1935	17,045	3,897	12,439	200	2,653	372	36,606	22,976
1936	18,871	4,170	11,016	421	3,032	465	37,974	24,841
1937	21,071	4,494	9,947	193	2,957	592	39,254	24,479
1938	17,077	4,716	9,326	131	2,899	561	34,711	19,407
1939	23,198	4,855	11,463	139	2,660	562	42,877	27,254
1940	14,760	5,230	11,460	241	3,160	539	38,391	20,765
1941	22,219	5,960	11,958	276	2,950	479	43,843	27,630
1942	18,106	7,664	16,155	190	3,277	255	45,647	30,961
1943	18,505	7,971	18,156	225	3,150	347	48,353	33,073
1944	20,856	8,473	15,385	215	3,152	330	48,411	33,907
1945	26,310	8,709	15,948	281	3,358	438	55,044	39,418
1946	32,635	8,933	21,986	465	3,305	635	67,959	50,237
1947	64,699	9,790	37,036	395	3,649	1,135	116,703	95,440
1948	58,785	11,964	46,254	517	4,024	1,379	122,924	96,436
1949	69,686	12,975	58,687	393	4,501	1,432	147,674	118,334
1950	87,752	14,155	131,921	499	6,741	1,649	242,716	204,544
1951	86,791	18,778	79,955	488	8,517	2,505	197,034	151,452
1952	87,127	21,289	90,639	461	7,155	3,286	209,956	156,303
1953	86,533	22,328	101,567	609	7,678	3,808	222,523	166,211
1954	77,164	21,762	87,435	335	8,116	4,383	199,195	140,799
1955	109,709	22,433	89,293	361	10,474	4,915	237,185	172,142
1956	80,170	23,240	112,885	277	10,305	5,563	232,441	168,050
1957	87,293	23,500	94,118	175	11,046	6,530	222,662	153,299
1958	126,672	22,838	81,639	125	10,903	7,818	249,995	171,083
1959	131,052	24,696	100,255	288	10,919	8,621	275,831	194,365
1960	140,003	25,917	101,051	579	11,082	8,569	287,201	201,580
1961	148,765	26,400	105,310	511	11,104	10,689	302,779	216,761
1962	157,948	27,387	107,280	376	10,877	11,219	315,087	223,576
1963	123,342	28,723	148,701	632	11,462	10,187	323,047	235,973
1964	139,426	30,884	125,837	775	12,093	15,218	324,233	234,564
1965	215,949	32,899	159,249	836	12,731	15,733	435,397	328,298
1966	218,206	33,022	159,857	986	13,300	16,525	441,895	323,275
1967	234,020	35,405	158,754	1,236	14,076	21,954	465,524	330,396
1968	218,854	38,801	210,780	1,211	13,465	23,717	506,828	358,460
1969	153,805	40,459	176,387	1,098	13,632	19,660	405,041	263,629
1970	256,862	42,330	146,198	834	16,174	25,127	487,525	337,158
1971	216,969	45,170	199,443	838	14,660	30,817	507,896	362,324
1972	203,417	50,137	321,111	2,132	14,607	28,158	619,561	474,276
1973	587,628	59,648	369,636	1,739	15,264	30,494	1,064,408	863,045

(a) Figures generally are for the season or financial period ending in the following year. (b) Represents the estimated value of recorded production based on wholesale prices realised at the principal market. (c) In addition the following amounts were paid as interim distribution of profits under the 1939-1945 War-time Wool Disposals Plan: in 1949, \$3,629,478; in 1951, \$3,629,478; in 1952, \$2,325,324; in 1953, \$368,104; in 1954, \$2,120,460; and in 1955, \$1,797,090. Separate State figures are not available for distributions made from 1956 to 1958 when payments were virtually complete. (d) Includes pearling and whaling. (e) Net value of production is derived by deducting from the gross value all marketing costs and the cost of certain goods (seeds, fertiliser, pickling, sprays, dips, fodder, fuel and oil, etc.) used in the process of production. (f) Separate details not available. (g) Not available.

FACTORIES (a)

Year (b)	Factories	Persons employed (c)	Wages and salaries (d)	Output (e)	Net production (f)	Production of selected commodities							
						Bricks (g)	Fibrous plaster sheets	Timber from local logs (h)	Bacon and ham	Butter (i)	Flour (plain)	Cheese (j)	Scoured wool
	No.	No.	\$'000 (k)	\$'000 (k)	\$'000 (k)	'000 (k)	'000 sq m	'000 cu m	tonnes	tonnes	tonnes	tonnes	tonnes
1897	487	9,689				36,564		201		123	6,635		
1898	595	9,895				26,811		243		120	7,675		
1899	603	10,206	2,496	(k)	(k)	18,565		279		134	9,110		
1900	632	11,166	2,589			25,234		266	(k)	132	11,375		
1910	822	14,894	3,532	10,158	5,472	23,162		412		291	33,401		
1920	998	16,942	6,073	26,283	9,708	31,838		325	850	553	108,976		
1921	1,099	18,151	7,136	25,689	10,479	23,548		433	784	695	74,523		
1922	1,323	18,743	7,426	25,741	11,580	28,509		423	814	689	85,562		
1923	1,307	19,805	7,731	27,409	12,257	34,864		454	985	778	97,967		
1924	1,293	21,671	8,673	31,453	13,917	34,930	(k)	489	1,183	753	110,851	(k)	(k)
1926 (f)	1,170	20,667	13,175	42,890	19,222	53,336		776	1,905	849	172,700		
1927	1,216	19,403	8,303	31,343	13,814	45,204		541	1,141	1,118	121,489		
1928	1,398	20,435	9,003	33,996	15,380	52,992		537	1,176	1,129	115,436		
1929	1,469	20,913	9,351	34,909	15,937	60,568		411	1,106	1,643	108,454		
1930	1,466	19,643	8,310	33,783	14,976	47,720		377	1,180	2,143	109,402		
1931	1,455	14,619	5,774	24,707	10,562	13,630		265	1,321	3,222	119,830		
1932	1,490	13,392	4,671	22,375	9,212	15,101		136	1,318	3,787	118,991		
1933	1,499	14,810	5,083	24,655	10,124	25,673		140	1,567	4,292	115,733		
1934	1,606	16,154	5,505	25,755	10,889	31,717		228	1,932	4,456	110,677	129	1,324
1935	1,658	17,769	6,222	29,283	12,570	37,552		308	2,068	5,072	112,609	291	1,633
1936	1,946	20,972	7,408	35,057	15,008	50,498		366	2,411	4,975	107,356	391	1,533
1937	2,032	22,712	8,315	36,626	15,893	53,270	906	416	1,972	4,827	111,332	458	1,129
1938	2,066	23,133	8,803	39,288	17,125	57,598	797	417	1,976	6,215	113,826	400	1,358
1939	2,129	23,211	9,147	39,097	17,551	53,062	737	381	1,911	6,647	124,786	443	1,673
1940	2,129	22,967	9,150	40,615	18,055	43,786	656	360	2,106	6,351	127,776	382	2,459
1941	2,056	22,734	9,441	43,650	18,034	45,505	696	347	2,325	6,454	136,010	431	3,867
1942	1,938	23,980	10,999	47,904	20,201	34,247	413	345	2,773	7,103	122,777	589	2,709
1943	1,799	25,813	12,956	53,475	22,906	8,926	153	328	4,172	6,549	114,554	735	3,455
1944	1,807	28,101	14,835	58,417	25,023	6,296	203	287	4,391	6,254	144,967	804	4,437
1945	1,931	29,146	15,228	63,481	25,920	10,003	305	275	5,051	5,767	146,683	835	4,274
1946	2,280	30,256	15,768	68,046	27,653	24,150	547	278	4,646	5,694	151,310	824	3,899
1947	2,615	33,806	18,210	76,540	31,497	37,758	917	330	4,677	6,052	160,323	1,033	5,417
1948	2,788	35,967	21,471	91,252	36,768	44,986	1,018	351	4,018	7,086	177,352	1,035	5,334
1949	2,925	38,354	25,856	106,835	42,948	50,378	1,209	336	3,610	7,078	164,623	884	6,467
1950	3,023	40,733	30,586	127,956	52,088	58,943	1,384	363	3,599	6,878	144,691	712	7,110
1951	3,111	43,761	39,316	168,862	68,441	67,312	1,729	416	3,615	6,906	197,172	760	5,828
1952	3,267	45,097	50,769	213,143	85,491	76,884	2,153	471	3,739	6,813	201,255	634	5,884
1953	3,424	45,188	56,687	238,620	98,383	86,043	2,037	527	3,752	6,584	203,509	909	6,162
1954	3,523	47,459	63,181	269,174	110,294	101,240	1,964	569	3,503	6,241	170,513	1,224	6,914
1955	3,727	49,314	69,476	299,169	121,912	115,412	2,105	593	3,369	7,260	150,381	1,100	7,226
1956	3,871	50,108	74,413	350,293	139,466	102,359	1,816	578	3,283	7,523	162,715	775	9,483
1957	3,935	48,748	73,833	375,272	146,884	101,209	1,248	539	3,103	7,582	153,800	1,201	11,044
1958	3,941	48,462	75,870	392,525	150,624	111,082	1,257	550	2,999	6,916	134,398	1,033	11,708
1959	4,125	48,417	77,464	392,405	157,524	101,521	1,128	561	3,002	6,265	126,736	1,200	12,791
1960	4,279	49,651	83,285	431,165	172,747	110,359	1,190	532	3,228	7,494	136,780	1,466	15,271
1961	4,334	50,666	90,255	481,140	193,262	119,998	1,249	496	3,214	7,784	152,622	1,373	13,420
1962	4,418	51,033	92,840	486,988	196,083	119,868	1,209	505	3,556	7,603	128,007	1,386	14,459
1963	4,492	53,435	99,880	517,899	216,422	131,176	1,319	486	3,899	7,075	123,296	1,462	13,312
1964	4,609	55,705	108,515	555,058	230,511	155,792	1,373	517	3,841	7,026	129,996	1,530	12,464
1965	4,734	58,097	119,978	616,422	260,637	146,057	1,335	550	4,047	7,887	121,906	1,838	12,040
1966	4,905	60,282	134,171	678,751	288,803	140,611	1,435	552	4,357	8,225	103,115	1,230	12,107
1967	5,167	63,757	153,597	765,224	335,788	163,166	1,457	533	4,654	6,529	91,725	1,726	12,148
1968	5,404	67,335	175,100	887,372	388,257	207,575	1,634	557	5,173	6,009	100,418	1,983	12,662
1969(m)	2,585	59,853	183,168	919,555	361,473	273,078	1,759	444	5,591	*6,332	96,641	2,022	14,415
1970(m)	2,705	62,597	208,410	1,028,778	414,999	288,949	1,956	450	5,399	*5,915	92,635	1,718	14,940
1971 (n)	(k)	(k)	(k)	(k)	(k)	240,323	1,553	449	4,863	5,425	96,411	1,917	10,724
1972(m)	2,727	64,217	255,879	1,240,106	472,013	*227,581	*1,511	407	*5,116	*5,988	*84,227	1,979	*17,009
1973(m)	2,814	64,074	275,455	1,375,859	501,034	*278,610	*1,403	405	*5,257	*5,324	*77,680	1,869	*11,987

(a) Prior to 1968-69 a factory was defined for statistical purposes as any establishment engaged in the processes of manufacturing, assembling, treating or repairing and in which 4 or more persons were employed during any period of the year or power other than manual was used. See also footnote (m). (b) For 1924 and earlier, calendar year; from 1927, year ended 30 June. See also note (f). (c) Average over the whole year; includes working proprietors and, up to and including 1925-26, fallers and haulers employed by sawmills. (d) Figures for 1929-30 and later years exclude amounts drawn by working proprietors. (e) Selling value 'at the factory'. (f) Value added in course of manufacture, representing sum available for payment of wages, rent, depreciation, other sundry expenses and for interest and profit. (g) For years prior to 1964-65, figures include all types of standard size bricks. Prior to 1925-26, they also include firebricks and blocks. From 1964-65 figures represent clay bricks only (all sizes). (h) Prior to 1968-69, figures obtained from the annual manufacturing census. For 1968-69 and later years figures derived from the monthly collection of timber statistics. Includes plywood veneers and hewn timber produced by agencies other than 'Factories'. (i) For 1917 and earlier years, includes butter made on farms. (j) Source: 1933-34 to 1967-68, annual manufacturing census; 1968-69 to 1970-71, Commonwealth Dairy Produce Equalisation Committee Limited; from 1971-72, Western Australian Department of Agriculture. (k) Not available. (l) Eighteen months ended 30 June. (m) Direct comparisons of statistics of number of factories, persons employed, wages and salaries, output and net production with those for 1968 and earlier years are not possible (for details see page 419). (n) A census of manufacturing establishments was not conducted in respect of the year ended 30 June 1971. * Revised.

INDUSTRIAL DISPUTES; WAGE RATES; UNEMPLOYMENT BENEFIT

Year	Industrial disputes (a)				State basic wage per week (b)		Minimum wage rate index numbers (c)		Unemployment benefit (d)
	Number of disputes	Workers involved (e)	Working days lost (man-days)		Perth (f)		Adult males (g)		Persons on benefit (h)
			Number	Average per worker involved	Adult males	Adult females	Weekly	Hourly	
1913	9	'000 1.0	'000 12.5	No. 12.92	\$	\$			
1914	18	4.4	124.2	28.16					
1915	6	0.6	4.1	6.30					
1916	24	9.1	102.1	11.22					
1917	23	2.9	102.3	34.70					
1918	22	4.8	22.4	4.67					
1919	20	10.0	348.7	34.96	(i)	(i)			
1920	45	12.0	166.6	13.87					
1921	12	12.1	145.1	12.03					
1922	8	0.8	43.5	53.94					
1923	6	4.0	72.3	18.04					
1924	13	3.5	66.7	19.08					
1925	10	4.1	98.9	23.93			(j)	(j)	
1926	9	0.6	9.1	15.11	8.50	4.59			
1927	20	3.4	23.8	7.02	8.50	4.59			
1928	11	2.5	54.9	21.72	8.50	4.59			(j)
1929	4	0.9	2.7	3.05	8.70	4.70			
1930	2	0.5	27.1	57.85	8.60	4.64			
1931	13	3.9	24.0	6.12	7.35	3.97			
1932	8	2.7	11.1	4.16	7.05	3.81			
1933	10	3.9	16.9	4.31	6.92	3.74			
1934	10	3.5	17.8	5.11	7.10	3.83			
1935	11	3.6	72.0	19.98	7.05	3.81			
1936	19	4.7	32.4	6.87	7.38	3.98			
1937	12	1.7	14.4	8.65	7.49	4.04			
1938	7	3.6	43.8	12.01	8.11	4.38			
1939	7	1.3	14.1	11.25	8.22	4.43	35.6	32.0	
1940	4	3.0	7.4	2.44	8.53	4.61	36.8	33.1	
1941	3	0.3	0.8	2.79	9.04	4.88	39.0	35.4	
1942	8	1.8	8.9	4.89	9.78	5.28	41.5	37.6	
1943	10	2.5	38.4	15.11	10.11	5.46	42.8	38.8	
1944	30	11.0	90.0	8.16	9.99	5.39	42.6	38.6	
1945	16	3.8	32.5	8.55	10.01	5.41	42.6	38.7	
1946	11	6.4	69.6	10.94	10.21	5.51	43.6	39.5	422
1947	7	1.8	6.1	3.44	11.08	5.98	48.4	44.1	1,095
1948	9	2.4	7.8	3.33	12.16	6.57	53.9	53.9	409
1949	16	5.7	26.3	4.64	13.59	7.34	59.6	59.7	126
1950	15	2.0	5.7	2.93	16.65	9.41	71.0	71.7	267
1951	10	4.2	5.1	1.22	20.57	13.37	85.5	85.7	60
1952	21	19.2	127.8	6.67	23.85	15.50	97.5	97.7	57
1953	11	3.7	5.0	1.36	24.65	16.02	100.4	100.7	844
1954	15	5.5	21.7	3.94	24.65	16.02	101.7	101.9	427
1955	16	9.8	9.6	0.97	25.24	16.41	106.3	106.6	157
1956	14	11.1	31.9	2.87	26.52	17.23	110.8	111.0	473
1957	14	5.4	3.1	0.57	27.28	17.72	113.9	114.1	1,940
1958	20	11.0	3.0	0.27	27.34	17.78	114.7	114.9	2,330
1959	20	11.2	11.2	1.00	28.15	18.30	120.7	120.8	2,852
1960	43	25.7	27.3	1.06	29.46	22.09	126.8	127.1	2,512
1961	22	9.7	23.2	2.40	29.88	22.41	128.8	129.0	2,154
1962	28	8.4	6.3	0.75	29.88	22.41	129.5	129.7	2,932
1963	28	42.6	32.0	0.75	30.15	22.61	132.8	133.0	2,674
1964	26	6.2	7.1	1.16	31.12	23.34	137.5	137.6	2,677
1965	33	12.6	10.0	0.79	31.96	23.97	143.4	143.5	1,679
1966	25	2.9	6.2	2.17	33.50	25.13	153.6	153.8	785
1967	26	5.1	6.0	1.18	(k)	(k)	159.6	159.9	718
1968	70	18.7	21.8	1.16	35.45	27.08	169.0	168.7	608
1969	104	59.1	101.4	1.72	36.45	27.88	179.5	179.3	524
1970	125	46.5	141.1	3.03	38.45	29.40	198.2	198.0	474
1971	132	35.8	69.4	1.94	39.45	30.90	219.5	219.4	872
1972	105	28.3	94.6	3.34	40.45	32.40	*234.2	*232.5	2,808
1973	160	37.6	117.3	3.12	44.00	39.00	(l)*267.9	(l)*266.3	4,960
1974	257	188.1	256.9	1.37	48.50	43.50	(l) 357.6	(l) 356.4	2,863

(a) Excludes disputes involving cessation of work of less than 10 man-days. Details of the number of disputes and workers involved in disputes which commenced in any year and were still in progress during the following year are included in the figures for both years. (b) At 31 December. (c) End of December. Base: weighted average wage rate for Australia, 1954 = 100. (d) Payment commenced 1 July 1945. (e) Includes workers indirectly involved, i.e. those thrown out of work at an establishment where a stoppage occurred but not themselves parties to the dispute. (f) The rates shown for 1964 and later apply uniformly throughout the State. (g) Excludes workers in rural industry. (h) Year ended 30 June; average number of persons on benefit at end of each week. (i) The first State basic wage operated from the beginning of the first pay-period commencing on or after 1 July 1926. (j) Not available. (k) Special loading of 60 cents a week added to award rates for adult males and adult females operative from the beginning of the first pay-period commencing on or after 1 July 1967. Loading increased to \$1.95 operative from the beginning of the first pay-period commencing on or after 25 October 1968 until 22 November 1968 when loading was absorbed in basic wage. (l) Preliminary; subject to revision. * Revised.

CONSUMER PRICE INDEX (a)

(Base of each Index: Year 1966-67 = 100)

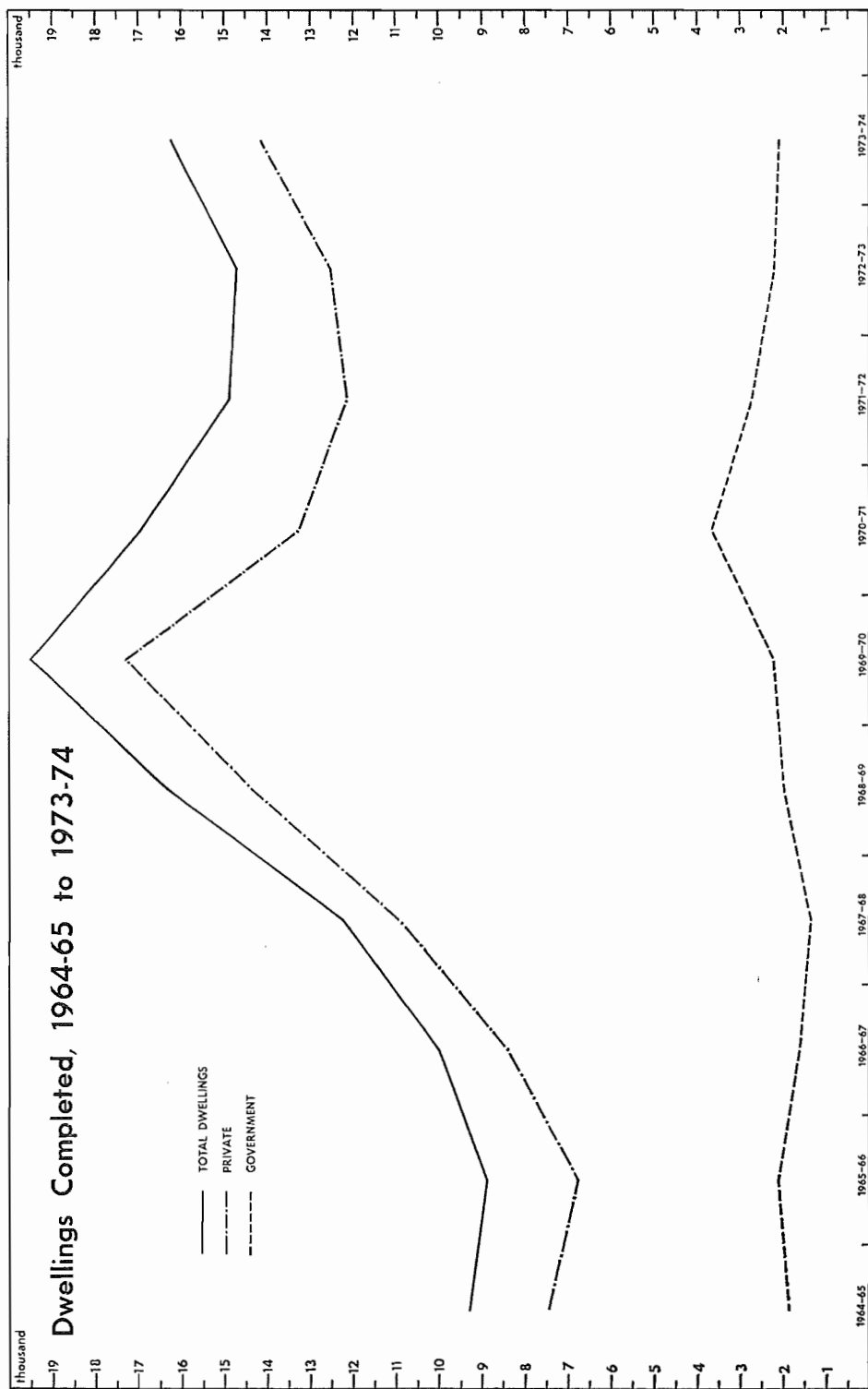
Year (b)	Group index numbers— Perth (Metropolitan Area)					Combined Index (all groups)— Capital Cities						
	Food	Clothing and drapery	Housing	House- hold supplies and equip- ment	Miscel- laneous	Perth	Sydney	Mel- bourne	Bris- bane	Adel- aide	Hobart	Six capital cities (c)
1949	38.4	50.6	36.1	60.4	45.4	44.0	44.4	43.3	43.1	45.0	43.0	43.9
1950	42.5	58.3	38.2	64.6	46.6	48.0	48.1	47.1	46.6	48.4	45.8	47.6
1951	48.8	66.7	42.9	71.0	50.4	53.9	54.6	53.1	52.2	54.6	51.9	53.8
1952	60.8	80.8	50.2	84.2	60.8	65.6	67.4	64.7	63.8	66.8	64.0	65.9
1953	69.7	84.8	57.6	90.9	67.1	72.5	73.4	71.1	69.5	73.1	70.9	72.1
1954	74.0	84.8	62.0	92.7	66.8	74.6	74.5	72.5	70.9	74.7	74.4	73.5
1955	76.1	84.9	68.6	92.8	66.8	76.3	75.0	72.5	71.4	75.6	74.3	74.0
1956	77.4	86.0	70.4	92.7	70.8	78.3	77.5	76.8	73.8	78.1	78.1	77.0
1957	80.9	87.4	71.1	95.0	78.5	81.8	82.8	81.0	77.8	81.2	82.8	81.5
1958	79.7	89.6	72.5	96.0	79.4	82.4	84.0	81.3	79.4	81.8	82.9	82.3
1959	80.3	90.8	75.0	96.3	79.6	83.2	84.6	82.9	82.1	83.6	84.1	83.6
1960	82.5	91.7	76.9	97.3	81.1	84.8	86.5	85.3	84.2	86.2	85.6	85.7
1961	86.7	93.9	81.6	97.5	84.0	87.9	89.6	89.5	87.1	89.8	90.3	89.2
1962	86.1	94.7	84.3	97.6	84.0	88.2	89.9	89.8	88.4	89.5	90.7	89.6
1963	86.4	95.0	86.9	97.3	84.2	88.7	90.4	89.7	88.7	89.1	90.7	89.8
1964	87.4	95.7	89.8	95.7	86.2	89.8	91.4	90.4	89.6	90.2	91.7	90.6
1965	91.0	96.8	92.1	96.7	90.0	92.6	94.5	94.0	93.0	93.9	94.6	94.0
1966	95.2	97.9	95.4	98.3	95.3	96.1	97.7	97.5	97.5	97.0	98.0	97.4
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	102.9	102.1	105.8	100.7	103.2	102.9	103.2	103.7	103.3	102.9	104.6	103.3
1969	104.5	104.5	112.7	102.1	105.6	105.5	106.2	106.2	105.5	105.3	106.1	106.0
1970	108.1	107.8	120.1	103.7	109.8	109.4	110.6	108.7	108.4	108.2	108.5	109.4
1971	112.5	112.3	125.7	107.7	114.8	114.1	116.8	113.1	114.2	112.5	112.6	114.6
1972	116.4	118.9	133.7	112.7	124.5	120.7	126.3	119.7	121.6	119.2	119.4	122.4
1973	124.5	126.1	139.7	117.4	130.4	127.3	133.9	127.2	128.6	126.5	126.7	129.8
1974	141.7	143.3	149.1	125.7	141.6	140.6	151.3	144.0	146.1	143.9	142.6	146.6

(a) The index numbers shown are so designed as to measure periodically the movement in retail prices of the specified group of items in each capital city individually. They do not provide a measure of differences in absolute price level as between capital cities, nor of comparative costs of the groups of items. (b) Year ended 30 June. (c) Weighted average.

BUILDING COMPLETED

Year ended 30 June—	Houses		Other dwellings (a)		Other building (b)				Total, all building (b)
	Number	Value (b)	Number	Value (b)	Factories	Offices	Education	Total, 'Other building'	
1946	860	\$'000 1,452	2	\$'000 4	\$'000 144	\$'000	\$'000	\$'000 492	\$'000 1,948
1947	1,792	3,516	4	98	176			716	4,232
1948	2,771	5,784	176	440	872			872	6,656
1949	3,244	7,592	440	1,822	9,414			1,822	9,414
1950	3,509	8,974	101	194	446			1,536	10,704
1951	5,160	15,032	305	606	410	(c)	(c)	2,258	17,896
1952	6,577	24,466	215	300	1,402			4,086	28,852
1953	7,965	37,988	100	334	1,668			7,514	45,836
1954	7,627	39,768	212	834	1,734			10,968	51,570
1955	8,792	48,422	316	1,176	6,250			18,594	68,192
1956	7,760	45,084	584	2,564	3,756	842	2,162	19,708	67,356
1957	5,030	29,054	365	1,502	2,210	2,002	1,162	16,292	46,848
1958	6,196	36,526	171	712	2,526	3,906	1,110	17,286	54,524
1959	5,846	34,410	212	840	2,792	2,384	4,584	25,274	60,524
1960	5,997	35,454	263	986	2,368	1,544	5,838	23,800	60,240
1961	5,973	38,102	440	1,580	4,736	4,118	7,956	32,368	72,050
1962	6,082	39,470	265	1,342	3,038	2,902	6,014	27,260	68,072
1963	6,593	45,780	642	2,984	4,912	1,588	7,724	37,664	86,428
1964	7,276	51,774	1,295	5,596	5,384	5,996	6,226	35,498	92,868
1965	7,445	57,238	1,841	9,046	6,816	2,820	8,044	40,816	107,100
1966	7,265	58,089	1,624	9,096	9,631	10,576	8,459	62,993	130,178
1967	8,272	78,078	1,742	9,322	9,841	7,093	10,477	74,735	162,135
1968	9,858	97,370	2,392	12,577	15,061	14,608	12,051	85,456	195,403
1969	12,840	133,276	3,491	22,406	15,845	10,885	14,122	99,152	254,833
1970	13,933	151,300	5,596	40,519	16,615	14,294	13,297	111,577	303,397
1971	11,921	149,671	5,013	39,964	18,006	39,736	20,589	175,377	365,012
1972	13,287	166,736	1,595	13,914	21,336	19,360	16,325	150,790	331,440
1973	13,780	165,237	920	7,308	15,594	21,245	24,767	151,468	324,013
1974 (d)	12,695	178,994	3,564	33,007	23,430	19,034	21,846	139,163	351,164

(a) Individual living units. (b) Excludes the value of land. (c) Not available. (d) From July 1973 dwellings have been classified as either 'houses' or 'other dwellings'. Separate 'house' and 'other dwelling' statistics are not comparable to the separate 'house' and 'flat' statistics shown for periods prior to July 1973. 'Total dwellings' statistics are directly comparable to 'total houses and flats' shown previously.



WESTERN AUSTRALIA IN RELATION TO AUSTRALIA

Particulars	Unit	Date or period	Western Australia	Australia	Percentage (a)
Area	sq km	n.a.	2,525,500	7,682,300	32.9
Proportion of area having rainfall—					
Under 250 mm	per cent	n.a.	58.0	39.0	n.a.
250 mm and under 500 mm	per cent	n.a.	29.2	31.8	n.a.
500 mm and over	per cent	n.a.	12.8	29.2	n.a.
Population	number	June 1974	1,094,721	13,338,315	8.2
Population increase	number	1973-74	26,252	206,716	12.7
Rate of population increase	per cent	1973-74	2.46	1.57	n.a.
Births registered	number	1973-74	20,337	243,677	8.3
Deaths registered	number	1973-74	7,947	110,296	7.2
Marriages registered	number	1973-74	9,417	113,115	8.3
Divorce—Dissolutions granted	number	1973	1,424	16,095	8.8
Wage and salary earners (c)	'000	May 1975	380.4	4,811.8	7.9
Average weekly earnings per employed male unit	\$	1973-74	115.40	118.00	n.a.
Unemployed on benefit	number	June 1975	11,011	160,748	6.8
Industrial disputes—Working days lost	'000	1974	256.9	6,292.5	4.1
Trade union membership	'000	1974	216.4	2,773.6	7.8
Rural holdings	number	1973-74	20,608	(b)240,775	8.6
Area under crop	'000 hectares	1973-74	4,133	(b) 15,102	27.4
Area under sown pasture	'000 hectares	1973-74	6,940	(b) 27,087	25.6
Area under irrigation	'000 hectares	1973-74	31	1,307	2.4
Area of—					
Wheat for grain	'000 hectares	1973-74	2,978	7,604	39.2
Oats for grain	'000 hectares	1973-74	325	1,186	27.4
Barley for grain	'000 hectares	1973-74	510	1,894	26.9
Hay	'000 hectares	1973-74	220	(b) 1,635	13.5
Fruit and vineyards	'000 hectares	1973-74	11	(b) 178	6.2
Cotton	'000 hectares	1973-74	4	(b) 43	9.3
Livestock—					
Sheep	'000	Mar. 1974	32,451	145,173	22.4
Cattle	'000	Mar. 1974	2,330	30,839	7.6
Pigs	'000	Mar. 1974	344	2,505	13.7
Wool production (d)	tonne	1973-74	149,439	700,108	21.3
Meat production (e)	'000 tonnes	1973-74	189	1,978	9.6
Whole milk production	mil. litres	1973-74	(b) 241	(b) 6,876	3.5
Butter production	million kg	1973-74	5.2	175.5	3.0
Fish (live weight)	tonne	1972-73	6,925	59,428	11.7
Crustaceans (live weight)	tonne	1972-73	10,419	30,297	34.4
Sawn timber produced (f)	'000 cu m	1973-74	408	3,459	11.8
Net value of primary production (excluding mining)—					
Agriculture	\$m	1972-73	134	1,157	11.6
Pastoral	\$m	1972-73	275	2,070	13.3
Other primary	\$m	1972-73	65	775	8.4
Mining establishments—Value added (g)	\$m	1973-74	483	1,995	24.2
Gold bullion production	'000 grams	1972-73	12,494	17,930	69.7
Iron ore production	'000 tonnes	1973-74	82,404	91,354	90.2
Bauxite production	'000 tonnes	1973-74	(h) 6,278	18,642	33.7
Black coal production	'000 tonnes	1973-74	(h) 1,197	59,462	2.0
Crude oil production	'000 barrels	1973-74	(i) 14,417	145,685	9.9
Manufacturing establishments (j)—					
Number .....	.....	1972-73	2,814	36,437	7.7
Employment (average over whole year)	'000	1972-73	64.1	1,297.6	4.9
Wages and salaries paid	\$m	1972-73	275.5	5,820.0	4.7
Value added	\$m	1972-73	501.0	10,746.0	4.7
Total dwellings commenced	number	1973-74	16,269	168,691	9.6
Value of all building commenced	\$m	1973-74	429.0	4,567.3	9.4
Overseas imports	\$m f.o.b.	1973-74	368.9	6,085.0	6.1
Overseas exports	\$m f.o.b.	1973-74	1,415.0	6,894.5	20.5
Overseas cargo discharged	'000 tonnes	1973-74	8,903	63,027	14.1
Overseas cargo shipped	'000 cu m	1973-74	483	10,983	4.4
Motor vehicles on register	'000	June 1974	527.1	5,986.1	8.8
New motor vehicles registered	'000	1974	58.8	669.1	8.8
Road traffic accidents—Persons killed	number	1974	334	3,572	9.4
Television viewers' licences (k)	'000	Aug. 1974	244.2	3,112.7	7.8
Retail sales (excluding motor vehicles, etc.) (l)	\$m	Dec. qr 1974	362.2	(m) 4,409.6	(n)8.2
Installment credit for retail sales—Balances outstanding	\$m	Mar. 1975	176.7	2,044.1	8.6
Savings bank deposits per head	\$	Mar. 1975	678	911	n.a.
Household income per head	\$	1972-73	2,350	2,542	n.a.
Age and invalid pensions	number	June 1974	86,530	1,184,365	7.3
War and service pensions	number	June 1974	53,476	640,360	8.4
Student enrolment—					
Government schools	number	Aug. 1974	188,914	2,257,846	8.4
Non-government schools	number	Aug. 1974	43,199	618,481	7.0
Universities	number	Apr. 1974	9,982	(b) 142,859	7.0
Colleges of Advanced Education	number	1974	(b) 14,001	(b) 107,192	13.1

n.a. denotes 'not applicable'.

(a) Proportion of Western Australia to Australia. (b) Preliminary. (c) In civilian employment. Excludes defence forces and employees in agriculture and private domestic service, and trainee teachers. (d) In terms of greasy wool. Comprises shorn wool, dead wool, fellmongered wool and wool exported on skins. (e) Dressed carcass weight. Excludes offal. (f) From local logs. Includes plywood veneers and railway sleepers. (g) See definition on page 357. (h) Mine production as reported to Department of Mines. (i) As reported to Department of Mines. (j) See definitions on pages 356-7. Excludes electricity and gas establishments. (k) Including combined receiving licences. (l) Series not comparable with that published in 1974 issue and earlier. Figures now exclude motor vehicles, etc. (m) Excludes details of Australian Capital Territory and Northern Territory. (n) See footnote (m).

APPENDIX

CHAPTER I—COLONISATION, EARLY SETTLEMENT AND EXPLORATION

page 4

The first vessels to sail for the Swan River Settlement were the H.M.S. 'Sulphur' and the hired transport 'Parmelia' which arrived in the Colony on 8 June and 6 June 1829, respectively. A number of vessels followed at relatively short intervals, a total of eighteen arriving during the remainder of 1829 and thirty-eight over the next twelve months.

A list of these vessels, showing the cargo and number of passengers carried, is given below.

SWAN RIVER SETTLEMENT: SHIPPING ARRIVALS, 1829 AND 1830

Date of arrival	Name	Tonnage	Cargo	Stock	Passengers
1829					
5 August	Calista	316	General	14 horses, 200 sheep	73 men, women, and children
6 August	Saint Leonard	352	General	26 horses, 11 cows, 61 bullocks, 70 sheep	Nil
23 August	Marquis of Anglesea	351	General	2 horses, 1 cow, 4 calves, 50 sheep	104 men, women, and children
20 September	Thomson	266	Government stores	7 head cattle, 6 sheep, 1 lamb	Nil
22 September	Amity	175	Government stores	Nil	Nil
5 October	Georgiana	403	Nil	Nil	Nil
6 October	Lotus	397	General	3 horses, 7 head cattle, 48 sheep	60 men, women, and children
9 October	Ephemina	288	Tea and sundries	4 horses, 5 cows, 155 sheep, and fowls	12 men, women, and children
12 October....	Orelia	382	General	3 horses, 17 cows, 127 sheep	11 men and women
12 October....	Caroline	329	General	12 horses, 9 cows, 1 bull, 182 sheep, 24 pigs	66 men, women, and children
12 October....	Cumberland	444	Wheat	Nil	4 men, women, and children
17 October....	Governor Phillips	....	Government stores	2 working bullocks	Nil
19 October....	Atwick	341	General	5 horses, 4 cows, 37 sheep, 20 goats	72 men, women, and children
22 October....	Admiral Gifford	43	Spirits and corn	Nil	Nil
11 November	Lion	275	General	15 cows, 400 sheep	Nil
14 November	Dragon	134	Nil	200 sheep, 4 pigs	Nil
28 November	H.M.S. Success	....	....	....	....
15 December	Gilmore	500	General	3 horses, 4 cows, 3 calves, pigs, fowls, etc.	182 men, women, and children
1830					
9 January	Norfolk	536	Nil	60 head of cattle	A detachment of H.M. 30th Regiment
9 January	Nancy	382	General	3 horses, 4 cows, 10 pigs	68 men, women, and children
15 January	Leda	188	Spirits and wood	40 head cattle	3 men
17 January....	Skerne	121	General	5 horses, 19 head cattle, 120 sheep, and pigs	12 men, women, and children
17 January	H.M.S. Cruizer	....	....	....	....

SWAN RIVER SETTLEMENT : SHIPPING ARRIVALS, 1829 AND 1830—*continued*

Date of arrival	Name	Ton- nage	Cargo	Stock	Passengers
1830					
20 January	Minstrel	351	General	60 sheep, 6 pigs	46 men, women, and children
20 January	Industry	87	Provisions	60 sheep, 10 pigs, and fowls	Nil
21 January	Parmelia (from Java)	443	Grain	Cattle and pigs	Nil
25 January	Eagle	107	General	1 cow, 6 sheep, 6 pigs	19 men, women, and children
28 January	Lady of the Lake	243	General	30 head cattle, 460 sheep	6 men
30 January	Wanstead	364	General	3 horses, 2 cows, 120 sheep, and dogs	88 men, women, and children
3 February....	Tranby	264	General	7 horses, 8 oxen, 26 sheep, 6 pigs	39 men, women, and children
12 February	Hooghly	465	General	2 bulls, 4 cows	116 men, women, and children
13 February	Egyptian	359	General	2 horses, 3 cows, 64 sheep	78 men, women, and children
16 February	Thomson	266	Nil	76 head cattle, 200 sheep	Nil
16 February	Thames	366	Nil	16 head cattle, 1,089 sheep	Nil
26 February	Protector	382	General	1 horse, 18 head cattle, 55 sheep	64 men, women, and children
12 March	Warrior	478	General	3 horses, 4 cows, 22 sheep	106 men, women, and children
15 March	Emily Tailor	207	Wheat	1 horse	5 men
15 March	Prince Regent	527	Nil	1,700 sheep	Nil
18 March	Emelia and Ellen	83	General	Nil	9 men and women
31 March	Bussorah Mer- chant	530	Nil	110 head cattle, 1,100 sheep	7 men, women, and children
30 April	James Pattison	510	Nil	Nil	Detachments of Regiment in India
6 May	Britannia	190	General	13 sheep	38 men, women, and children
8 May	Bombay	315	General	4 horses, 10 sheep, 16 goats	16 men, women, and children
8 May	James	196	General	Nil	70 men, women, and children
8 May	Eliza	391	Provisions	4 bullocks, 700 sheep	3 men
14 May	Rockingham	423	General	Nil	175 men, women, and children
19 May	Orelia	382	Sugar and spirits	Nil	Nil
7 June	William	337	General	31 head cattle, 700 sheep	8 men
6 July	Medina	467	General	Nil	52 men, women, and children
16 July	Skerne	121	General	Nil	Nil
24 August	Edward Loomb	347	General	Nil	21 men and women
September	H.M.S. Comet				
22 September	Thistle	57	Sundries	Nil	1 man
12 November	Orelia	382	General	Nil	3 men and women
29 November	Faith	135	General	Nil	Nil
28 December	Nimrod	231	General	Nil	1 man

CHAPTER III—CONSTITUTION AND GOVERNMENT

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The Governor of Western Australia

By proclamation in the *Government Gazette of Western Australia* dated 4 April 1975, the Lieutenant-Governor, Commodore J. M. Ramsay, C.B.E., D.S.C., announced his assumption of the Office of Administrator of the Government of the State, with effect from 3 April 1975, in consequence of the office of Governor becoming vacant. His Excellency was sworn in as Administrator at Government House by the Chief Justice, Sir Lawrence Jackson, on 3 April 1975.

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The State Parliament

From 5 June 1975 the Liberal-Country Party Ministry was reconstituted as shown in the following table.

THE MINISTRY FROM 5 JUNE 1975

Name of Minister	Title of office
Hon. Sir Charles Walter Michael Court, O.B.E., M.L.A.	Premier, Treasurer, and Minister Co-ordinating Economic and Regional Development
Hon. Desmond Henry O'Neil, M.L.A.	Deputy Premier, Minister for Works, Water Supplies, and the North-West
Hon. Neil McNeill, B.Sc. (Agric.), M.L.C.	Minister for Justice, Chief Secretary, and Leader of the Government in the Legislative Council
Hon. Richard Charles Old, M.L.A.	Minister for Agriculture
Hon. Raymond James O'Connor, M.L.A.	Minister for Transport, Police and Traffic
Hon. Graham Charles MacKinnon, M.L.C.	Minister for Education, Cultural Affairs, and Recreation
Hon. William Leonard Grayden, M.L.A.	Minister for Labour and Industry, Consumer Affairs, and Immigration
Hon. Andrew Mensaros, M.L.A.	Minister for Industrial Development, Mines, and Fuel and Energy
Hon. Edgar Cyril Rushton, M.L.A.	Minister for Local Government, and Urban Development and Town Planning
Hon. Keith Alan Ridge, M.L.A.	Minister for Lands, Forests, and Tourism
Hon. Norman Eric Baxter, M.L.C.	Minister for Health, and Community Welfare
Hon. Peter Vernon Jones, M.L.A.	Minister for Housing, Conservation and the Environment, and Fisheries and Wildlife

The principal executive office of government was redesignated Premier, Treasurer, Minister Co-ordinating Economic and Regional Development, and Minister for Federal Affairs on 18 June 1975.

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The Judicature

The Senior Puisne Judge, Sir John Virtue, retired from the judiciary on 25 April 1975.

To fill the vacancy caused by his retirement, Mr G. D. Wright was appointed a Judge of the Supreme Court of Western Australia as from 28 April 1975.

The Senior Puisne Judge is now The Honourable F. T. P. Burt.

pages 136-7

Overseas Representation in Western Australia

In the period 31 December 1974 to 6 August 1975 a number of changes in consular representatives in Western Australia took place as listed below.

Britain—The address of the consulate was changed to Prudential Building, 95 St George's Terrace, Perth 6000.

Finland—The address of the consulate was changed to Hale House, 1152 Hay Street, West Perth 6005.

France—Miss M. P. Ryan was appointed Honorary Consular Agent on 12 March 1975. The address of the French Consular Agent is 569 Wellington Street, Perth 6000.

Indonesia—Mr W. W. G. Meecham was appointed Indonesia's first Honorary Consul on 12 May 1975. The consulate commenced operating the same day from Mercantile Mutual Building, 179 St George's Terrace, Perth 6000.

Portugal—Mr C. G. Dudley, C.B.E. has resigned as Honorary Vice-Consul and the position is now vacant.

Yugoslavia—Mr R. Sarenac took up the position of Consul on 3 April 1975.

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Local Government Districts

The Shire of Bassendean was declared to be a Town under the name of the Town of Bassendean, with effect from 1 July 1975.

Following this change in designation there were 7 Cities, 14 Towns and 117 Shires in Western Australia.

CHAPTER V—SOCIAL CONDITIONS

PART 5—SOCIAL BENEFITS, PENSIONS AND WELFARE SERVICES

pages 257-9, 263-5

Social Services and Repatriation Benefits

The *Social Services Act 1975* and the *Repatriation Acts Amendment Act 1975* provided for increases in certain pensions, benefits and allowances to come into operation during May and June 1975. The increases applied to age and invalid pensions, service pensions, sheltered employment allowances, widows' pensions, war widows' pensions, supporting mothers' benefits, unemployment, sickness and special benefits, pensions for ex-servicemen and the allowance for dependent children. The weekly rate of payment of pensions for ex-servicemen was increased from \$64.10 to \$68.10 for the Special (T.P.I.) Rate, from \$44.55 to \$48.05 for the Intermediate Rate and from \$25 to \$28 for the maximum rate of the General Rate pension. The maximum weekly rate of payment for all other pensions and benefits and for the sheltered employment allowance was increased from \$31 to \$36 in the case of a single person and from \$51.50 to \$60 in the case of a married couple. The allowance for a dependent child was increased from \$5.50 to \$7 weekly.

The age limit for payment of age and service pensions free of means test was further reduced to seventy years of age and in respect of service pensions the provisions relating to persons still subject to the means test were liberalised.

Provision was also made for the payment of unemployment, sickness and special benefits weekly in advance in certain circumstances, for payment of special benefits to persons newly discharged from gaol and for ex-servicemen and women from Commonwealth countries other than Australia to be eligible for service pensions subject to certain residential and service conditions.

pages 265-70

National Health Services

The *Health Insurance Act 1973-1975* introduced a health insurance programme, commonly referred to as 'Medibank', to be financed from Consolidated Revenue. The medical benefits portion of the programme came into effect throughout Australia on 1 July 1975 and provides for the payment of a medical benefit of a minimum of 85 per cent of the fee specified by the Act. The hospital benefits portion of the programme provides for free standard ward treatment in public hospitals by payment of a subsidy to the hospitals and cost-sharing arrangements with State authorities. The subsidy, which consists of \$16 per day paid from the Health Insurance Fund, is also available, together with medical benefits, to people who choose to be treated as private or intermediate patients in public hospitals or in private hospitals. Western Australia joined the hospital benefits portion of the programme from 1 August 1975.

CHAPTER X—INDUSTRIAL CONDITIONS, EMPLOYMENT AND PRICES**PART 1—INDUSTRIAL CONDITIONS**

page 501

Wages and Earnings

The following table, which shows minimum weekly wage rates applicable to adult workers under Federal and State awards, incorporates variations which occurred between 1 January 1975 and 20 August 1975.

**MINIMUM WEEKLY WAGE RATES
FEDERAL AND STATE AWARDS
(\$)**

Federal awards		State awards	
Perth		Western Australia	
Date of operation (a)	Amount	Date of operation	Amount
Adult males—		Adult males—	
1966—11 July	36.55	1967—5 April (a)	36.55
1967—1 July	37.55	1967—1 July (a)	37.55
1968—25 October	38.90	1968—25 October (a)	38.90
1969—19 December	42.40	1969—19 December (a)	42.40
1971—1 January	46.40	1970—26 October	49.00
1972—19 May	51.10	1971—26 October	51.50
1973—29 May	60.10	1972—26 June	53.50
1974—23 May	68.10	1973—8 June	57.00
1975—1 January	76.10	1974—17 September	61.50
15 May	80.10	1974—31 May	69.00
Adult females—		1975—1 May (a)	82.50
1974—23 May	57.90	Adult females—	
30 September (b)	61.30	1974—31 May	57.90
1975—1 January	68.50	1975—1 May (a) (c)	72.10
15 May	72.10	30 June (d)	80.10
30 June (d)	80.10		

(a) Rates operative from beginning of first pay-period commencing on or after the date shown.
 (b) Rate operative from the beginning of the pay-period in which 30 September occurred. (c) On 29 April 1975 The Western Australian Industrial Commission increased the female rate to \$68.50, and to \$72.10 on 9 May 1975 in order to maintain parity with Federal awards. The latter rate applies from the first pay-period on or after 1 May 1975. (d) Rate operative from the beginning of the pay-period in which 30 June occurs.

LIST OF SPECIAL ARTICLES AND MISCELLANEOUS MATTER CONTAINED IN PREVIOUS ISSUES (a)

This list refers to special articles and other more or less important miscellaneous matter which have appeared in previous issues of the Year Book but which are not included, or are included in an abbreviated form only, in the present issue. Owing to considerations of space, the deletions are necessary to make room for new material and the list will be revised each year to provide readers with a cumulative index of special articles or topics. In cases where an article was published in more than one previous issue, the reference to its last appearance only is given, as earlier references can be traced back in the List of Special Articles in the 1969 or 1970 Year Book.

Article or Topic	Year Book
Albany, Port of	1971, pp. 449-51
ANZAAS Congress: Perth, 1973	1973, pp. 562-4
Basic wage, historical summary—	
Commonwealth	1968, pp. 396-401
State	1968, pp. 403-5
Captain Stirling's 'Narrative of Operations', text of	1974, pp. 533-41
Censuses of population and housing, 1911 to 1966	1972, pp. 547-70
Computer Service Centre, Perth	1969, p. 504
Conservation of the flora	1970, pp. 59-61
Cyclones, tropical	1969, pp. 43-50
Discovery of Western Australia	1974, pp. 1-10
Education Department, history of	1972, pp. 117-21
Electoral Divisions (Commonwealth)	1971, pp. 97-8
Electoral Divisions (Commonwealth), origin of names of	1970, p. 530
Electoral Provinces and Electoral Districts (State)	1969, pp. 102-3
Esperance, Port of	1973, pp. 444-6
Export price index	1970, p. 507
Flora of Western Australia—	
Acacia	1965, pp. 59-60
'Christmas tree' (<i>Nuytsia floribunda</i>)	1962, p. 51
Economic value of the flora	1968, pp. 54-5
Orchids	1968, pp. 48-9
Proteaceae family in Western Australia	1974, pp. 52-4
Rutaceae family in Western Australia	1972, pp. 53-5
Special features of the flora	1962, pp. 51-2
Fremantle, Port of	1970, pp. 441-3
Geraldton, Port of	1972, pp. 447-9
Government administration, Commonwealth	1973, p. 542
Governor Darling's letter to the Earl of Bathurst, text of	1974, pp. 541-2
Governors and Administrators of Western Australia—	
1828 to 1951	1957, p. 65
1901 to 1959	1960, p. 81
1901 to 1963	1968, p. 89
Governor Stirling's Commission dated 4 March 1831, text of	1965, pp. 452-4
Historical review—chronological notes from 1829	1967, pp. 2-33
Historical Survey of Western Australia	1973, pp. 1-15
Industrial Development, Department of	1974, p. 403
Integrated Economic Censuses, 1968-69	1971, pp. 552-64
Kuri Bay pearls	1974, pp. 558-9
Labour Force Survey	1971, pp. 508-10
Land—methods of alienation	1969, pp. 276-8
Land—methods of leasing	1969, pp. 278-83
Land settlement schemes, government	1968, pp. 244-6
Land tenure system, origin and development of	1960, pp. 198-9

LIST OF SPECIAL ARTICLES AND MISCELLANEOUS MATTER CONTAINED IN PREVIOUS ISSUES (a)—continued

Article or Topic	Year Book
Legislation, summary of—	
1957 and 1958	1960, pp. 87-9
1959 and 1960	1962, pp. 89-96
1961 and 1962	1964, pp. 104-11
1963 and 1964	1965, pp. 107-14
1965	1967, pp. 111-15
1966	1968, pp. 99-106
1967	1969, pp. 108-15
1968	1970, pp. 111-17
1969	1971, pp. 105-8
1970	1972, pp. 104-8
1971	1973, pp. 110-12
1972	1974, pp. 104-8
Linseed, area and production	1973, pp. 349-50
Local government in Western Australia, development of	1971, pp. 565-70
McNess Housing Trust	1969, p. 205
Manufacturing—selected industries	1973, pp. 407-8
Meteorites, Western Australian	1973, pp. 34-5
Meteorological services—	
History of	1960, pp. 34-5
Provision of	1966, pp. 46-7
Metric conversion for Australia	1972, pp. 571-4
Overseas arrivals and departures	1971, pp. 145-6
Parliamentary procedure and administrative machinery	1970, pp. 106-9
Pest control without insecticides	1973, pp. 93-5
Pesticides, effect on beneficial forms of life	1969, pp. 90-1
Pesticides, use of in Western Australia	1971, pp. 87-90
Poisonous plants of Western Australia	1970, pp. 56-9
Police Department, history of	1973, pp. 113-16
Population in local government areas	1972, pp. 542-3
Port Hedland, Port of	1974, pp. 435-8
Premier's Department, history of	1974, pp. 109-113
Principal events of 1970	1971, p. 571
Public Works Department, history of	1971, pp. 116-19
Pyrites, production of	1973, pp. 393-4
Railways—	
Origin and development	1968, pp. 360-1
Private	1965, p. 365
Timber	1968, pp. 363-4
Rainfall in agricultural areas, 1969	1970, p. 529
Rents (weekly) of unfurnished houses and flats	1973, p. 216
Satellites and Meteorology	1973, pp. 51-4
Sporting organisations	1970, pp. 196-200
State Government Departments, functions of	1972, pp. 108-16
Third Party Claims Tribunal	1973, p. 254
Tornadoes	1970, pp. 48-51
Trade, constitutional provisions and legislation	1973, p. 412
Trade, historical summary of	1967, pp. 346-7
Trade, overseas, encouragement of	1973, pp. 412-13
University—principal benefactions	1969, p. 173
Use of pesticides in Western Australia	1971, pp. 87-90
West Australian Economy, 1959 to 1973	1973, pp. 565-71
Wheat, development of production	1968, p. 270

LIST OF MAPS CONTAINED IN PREVIOUS ISSUES (a)

Map (b)	Year Book
Air routes at 31 December 1956	1957, p. 289
Air routes at 30 June 1969	1970, <i>between</i> p. 448 and p. 449
Areas of current development	1970, <i>facing</i> p. 336
Electoral Divisions (Commonwealth)	1971, <i>between</i> p. 96 and p. 97
Electoral Provinces and Electoral Districts (State)	1969, <i>between</i> p. 96 and p. 97
Electricity supplies	1967, <i>facing</i> p. 320
Epicentres of large earthquakes	1971, p. 33
General map of the State showing Statistical Divisions, local government areas, roads, railways, air routes and isohyets	1973, <i>inside back cover</i>
Perth Statistical Division	1968, <i>facing</i> p. 112
Port of Fremantle (Outer and Inner Harbour)	1970, <i>facing</i> p. 448
Port of Port Hedland	1974, p. 437
Production, main areas of	1957, p. 73
Railways and road services—routes operated	1967, <i>facing</i> p. 384
Railways road services—routes operated	1964, p. 354
Rainfall	1969, <i>facing</i> p. 32
Rainfall in agricultural areas, 1969	1970, p. 529
Roads, main and important secondary	1968, <i>facing</i> p. 368
Vegetation Provinces of Western Australia	1974, p. 56

(a) Commencing with New Series: No. 1—1957.

(b) All maps listed refer to Western Australia.

NOTE ON STATISTICAL DIVISIONS

Western Australia is divided into a number of municipal districts for the purposes of local government administration. At 31 December 1974 there were 138 such districts, which are used as the basis of presentation of data derived not only from the population census but also from many of the regular statistical collections. Information presented in this way is valuable when considering activities in particular local government areas but is often more detailed than is required for a broader geographical assessment. For this reason, the municipal districts are combined into Statistical Divisions which provide significant areas for the publication of statistics in a convenient and readily appreciable summary form.

The partition of the Australian States into Statistical Divisions originated from a resolution of a conference of 1928 between the Federal Health Council of Australia and the Statisticians of the Commonwealth and the States concerning the need for the delineation of areas appropriate for the purposes of statistical tabulation. They first became operative in 1929 after consultation between the Commonwealth Statistician, the Statisticians of the States in collaboration with the State health authorities, and the Commonwealth Department of Health. Although Statistical Divisions were devised initially for use in the compilation and presentation of vital statistics, the advantages of extending the system to other fields of statistical investigation were recognised at once and it soon came to have general application in cases where consideration of geographic areas was relevant.

The Statistical Divisions of Western Australia and their component local government areas at 31 December 1974 are listed on the following pages and are shown on the accompanying maps. The population of each Division as recorded at each of the five most recent Population Censuses is shown in the following table. The areas of the Divisions at 30 June 1974 are also given. As the formation of the Shires of East Pilbara and West Pilbara, with effect from 27 May 1972, altered the common boundary between the former North-West and Pilbara Statistical Divisions, separate figures for these divisions are not now available. Consequently, on page 564 the component local government areas have been listed alphabetically under the single heading 'North-West and Pilbara Statistical Divisions'.

STATISTICAL DIVISIONS—POPULATION (a) AND AREA

Statistical Division	Population at Census of 30 June—					Area at 30 June 1974 (b)
	1947	1954	1961	1966	1971	
	persons	persons	persons	persons	persons	square kilometres
Perth	302,968	395,049	475,398	559,298	703,199	5,368
South-West	51,973	68,553	71,637	72,983	77,347	28,570
Southern Agricultural	24,948	36,125	41,623	44,808	45,281	57,099
Central Agricultural	43,790	55,924	57,594	58,820	53,661	78,400
Northern Agricultural	24,665	32,068	35,785	38,817	42,804	82,985
Eastern Goldfields	37,722	34,578	34,142	35,062	42,769	644,943
Central	6,370	4,794	3,959	4,620	7,420	561,272
North-West	2,638	4,220	4,563	9,046	11,784	} (c) 647,541
Pilbara	1,651	2,650	3,243	8,907	28,985	
Kimberley	2,774	3,543	5,668	12,700	14,602	
Migratory (d)	2,981	2,267	3,017	3,039	2,617	....
WHOLE STATE	502,480	639,771	736,629	848,100	1,030,469	2,525,500

(a) Figures for 30 June 1961 and earlier exclude full-blood Aborigines; those for 1966 and 1971 refer to total population (i.e. including Aborigines). See NOTE on page 143. (b) See page xiv. (c) See letterpress immediately preceding table. (d) Refers to persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.

LIST OF STATISTICAL DIVISIONS

with component Local Government Areas at 31 December 1974

(See also page 563)

PERTH

Cities

FREMANTLE
MELVILLE
NEDLANDS
PERTH
SOUTH PERTH
STIRLING
SUBIACO

Towns

CANNING
CLAREMONT
COCKBURN
COTTESLOE
EAST FREMANTLE
GOSNELLS
MOSMAN PARK

Shires

Armadale-Kelmscott
Bassendean
Bayswater
Belmont
Kalamunda
Kwinana
Mundaring
Peppermint Grove
Rockingham
Serpentine-Jarrahdale
Swan
Wanneroo

SOUTH-WEST

Town

BUNBURY

Shires

Augusta-Margaret River
Boddington
Boyup Brook
Bridgetown-Greenbushes
Busselton
Capel
Collie
Dardanup
Donnybrook-Balingup
Harvey
Mandurah
Manjimup
Murray
Nannup
Waroona

SOUTHERN AGRICULTURAL

Town

ALBANY

Shires

Albany
Broomehill
Cranbrook
Denmark
Dumbleyung
Gnowangerup
Katanning
Kent
Kojonup
Lake Grace
Plantagenet
Tambellup
Wagin
West Arthur
Woodanilling

CENTRAL AGRICULTURAL

Towns

NARROGIN
NORTHAM

Shires

Beverley
Brookton
Bruce Rock
Corrigin
Cuballing
Cunderdin
Dowerin
Goomalling
Kellerberrin
Kondinin
Koorda
Kulin
Merredin
Mount Marshall
Mukinbudin
Narembeen
Narrogin
Northam
Nungarin
Pingelly
Quairading
Tammin
Toodyay
Trayning
Wandering
Westonia
Wickepin
Williams
Wyalkatchem
York

NORTHERN AGRICULTURAL

Town

GERALDTON

Shires

Carnamah
Chapman Valley
Chittering
Coorow
Dalwallinu
Dandaragan
Gingin
Greenough
Irwin
Mingenew
Moora
Morawa
Mullewa
Northampton
Perenjori
Three Springs
Victoria Plains
Wongan-Ballidu

EASTERN GOLDFIELDS

Town

KALGOORLIE

Shires

Boulder
Coolgardie
Dundas
Esperance
Laverton
Leonora
Menzies
Ravensthorpe
Yilgarn

CENTRAL

Shires

Cue
Meekatharra
Mount Magnet
Murchison
Sandstone
Wiluna
Yalgoo

NORTH-WEST AND PILBARA

Shires

Carnarvon
East Pilbara
Exmouth
Port Hedland
Roebourne
Shark Bay
Upper Gascoyne
West Pilbara

KIMBERLEY

Shires

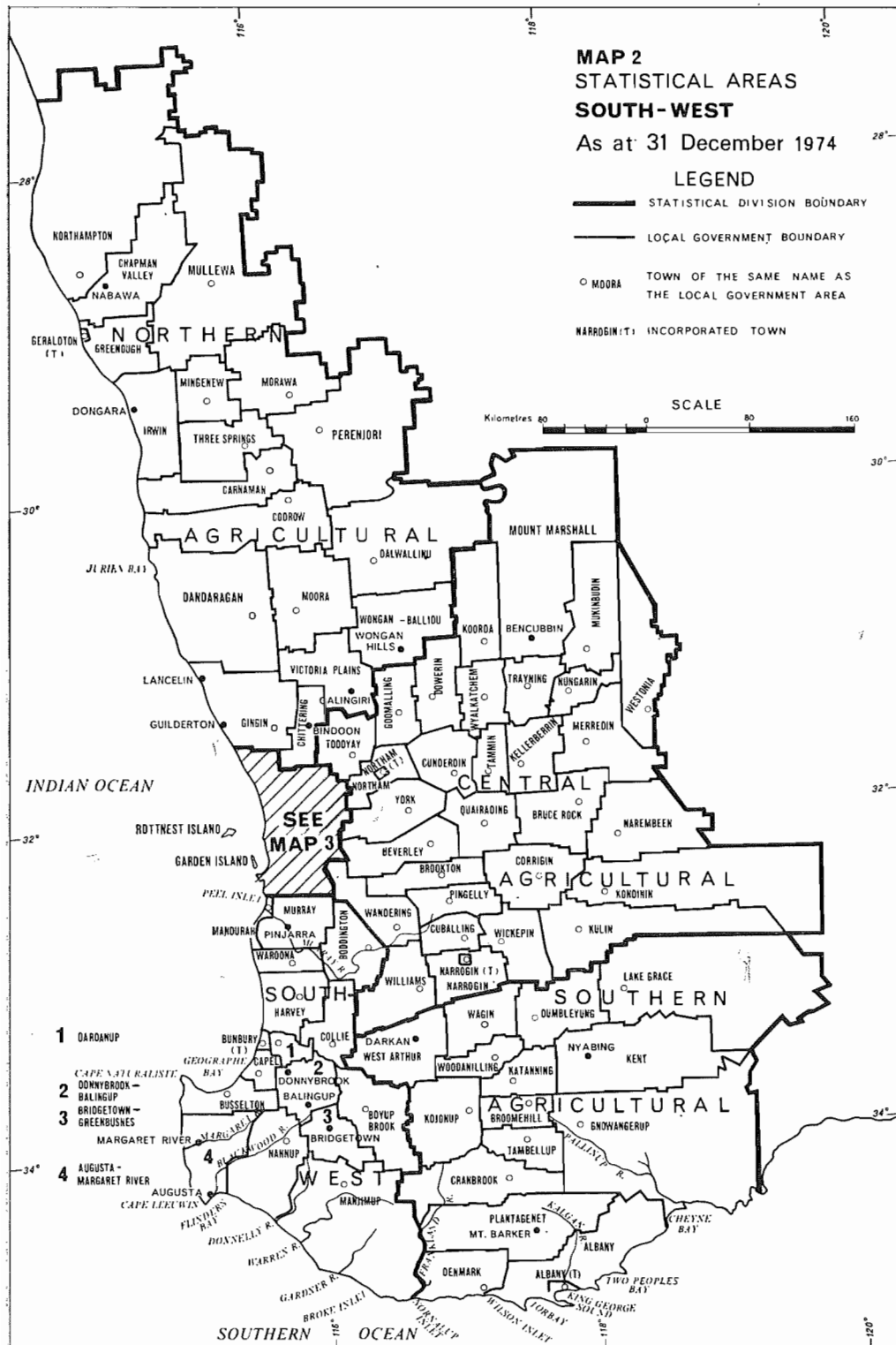
Broome
Halls Creek
West Kimberley
Wyndham-East Kimberley

LIST OF LOCAL GOVERNMENT AREAS at 31 December 1974

(See also page 563)

Local government area	City (C) Town (T) Shire (S)	Statistical Division in which situated	Local government area	City (C) Town (T) Shire (S)	Statistical Division in which situated
ALBANY	T.	Southern Agricultural	Mandurah	S.	South-West
Albany	S.	Southern Agricultural	Manjimup	S.	South-West
Armada-Kelmscott	S.	Perth	Meekatharra	S.	Central
Augusta-Margaret River	S.	South-West	MELVILLE	C.	Perth
Bassendean	S.	Perth	Menzies	S.	Eastern Goldfields
Bayswater	S.	Perth	Merredin	S.	Central Agricultural
Belmont	S.	Perth	Mingenew	S.	Northern Agricultural
Beverley	S.	Central Agricultural	Moora	S.	Northern Agricultural
Boddington	S.	South-West	Morawa	S.	Northern Agricultural
Boulder	S.	Eastern Goldfields	MOSMAN PARK	T.	Perth
Boyup Brook	S.	South-West	Mount Magnet	S.	Central
Bridgetown-Greenbushes	S.	South-West	Mount Marshall	S.	Central Agricultural
Brookton	S.	Central Agricultural	Mukinbudin	S.	Central Agricultural
Broome	S.	Kimberley	Mullewa	S.	Northern Agricultural
Broomehill	S.	Southern Agricultural	Mundaring	S.	Perth
Bruce Rock	S.	Central Agricultural	Murchison	S.	Central
BUNBURY	T.	South-West	Murray	S.	South-West
Busselton	S.	South-West	Nannup	S.	South-West
CANNING	T.	Perth	Narebreen	S.	Central Agricultural
Capel	S.	South-West	NARROGIN	T.	Central Agricultural
Carnamah	S.	Northern Agricultural	Narrogin	S.	Central Agricultural
Carnarvon	S.	North-West and Pilbara	NEDLANDS	C.	Perth
Chapman Valley	S.	Northern Agricultural	NORTHAM	T.	Central Agricultural
Chitterling	S.	Northern Agricultural	Northam	S.	Central Agricultural
CLAREMONT	T.	Perth	Northampton	S.	Northern Agricultural
COCKBURN	T.	Perth	Nungarin	S.	Central Agricultural
Collie	S.	South-West	Peppermint Grove	S.	Perth
Coolgardie	S.	Eastern Goldfields	Perenjori	S.	Northern Agricultural
Coorow	S.	Northern Agricultural	PERTH	C.	Perth
Corrigin	S.	Central Agricultural	Pingelly	S.	Central Agricultural
COTTESLOE	T.	Perth	Plantagenet	S.	Southern Agricultural
Cranbrook	S.	Southern Agricultural	Port Hedland	S.	North-West and Pilbara
Cuballing	S.	Central Agricultural	Quairading	S.	Central Agricultural
Cue	S.	Central	Ravensthorpe	S.	Eastern Goldfields
Cunderdin	S.	Central Agricultural	Rockingham	S.	Perth
Dalwallinu	S.	Northern Agricultural	Roebourne	S.	North-West and Pilbara
Dandaragan	S.	Northern Agricultural	Sandstone	S.	Central
Dardanup	S.	South-West	Serpentine-Jarrahdale	S.	Perth
Denmark	S.	Southern Agricultural	Shark Bay	S.	North-West and Pilbara
Donnybrook-Balingup	S.	South-West	SOUTH PERTH	C.	Perth
Dowerin	S.	Central Agricultural	STIRLING	C.	Perth
Dumbleyung	S.	Southern Agricultural	SUBIACO	C.	Perth
Dundas	S.	Eastern Goldfields	Swan	S.	Perth
EAST FREMANTLE	T.	Perth	Tambellup	S.	Southern Agricultural
East Pilbara	S.	North-West and Pilbara	Tammin	S.	Central Agricultural
Esperance	S.	Eastern Goldfields	Three Springs	S.	Northern Agricultural
Exmouth	S.	North-West and Pilbara	Toodyay	S.	Central Agricultural
FREMANTLE	C.	Perth	Trayning	S.	Central Agricultural
GERALDTON	T.	Northern Agricultural	Upper Gascoyne	S.	North-West and Pilbara
Gingin	S.	Northern Agricultural	Victoria Plains	S.	Northern Agricultural
Gnowangerup	S.	Southern Agricultural	Wagin	S.	Southern Agricultural
Goomalling	S.	Central Agricultural	Wandering	S.	Central Agricultural
GOSNELLS	T.	Perth	Wanneroo	S.	Perth
Greenough	S.	Northern Agricultural	Waroona	S.	South-West
Halls Creek	S.	Kimberley	West Arthur	S.	Southern Agricultural
Harvey	S.	South-West	West Kimberley	S.	Kimberley
Irwin	S.	Northern Agricultural	Westonia	S.	Central Agricultural
Kalamunda	S.	Perth	West Pilbara	S.	North-West and Pilbara
KALGOORLIE	T.	Eastern Goldfields	Wickepin	S.	Central Agricultural
Katanning	S.	Southern Agricultural	Williams	S.	Central Agricultural
Kellerberrin	S.	Central Agricultural	Wiluna	S.	Central
Kent	S.	Southern Agricultural	Wongan-Ballidu	S.	Northern Agricultural
Kojonup	S.	Southern Agricultural	Woodanilling	S.	Southern Agricultural
Kondinin	S.	Central Agricultural	Wyalkatchem	S.	Central Agricultural
Koorda	S.	Central Agricultural	Wyndham-East Kimberley	S.	Kimberley
Kulin	S.	Central Agricultural	Yalgoo	S.	Central
Kwinana	S.	Perth	Yilgarn	S.	Eastern Goldfields
Lake Grace	S.	Southern Agricultural	York	S.	Central Agricultural
Laverton	S.	Eastern Goldfields			
Leonora	S.	Eastern Goldfields			





MAP 3

PERTH STATISTICAL DIVISION

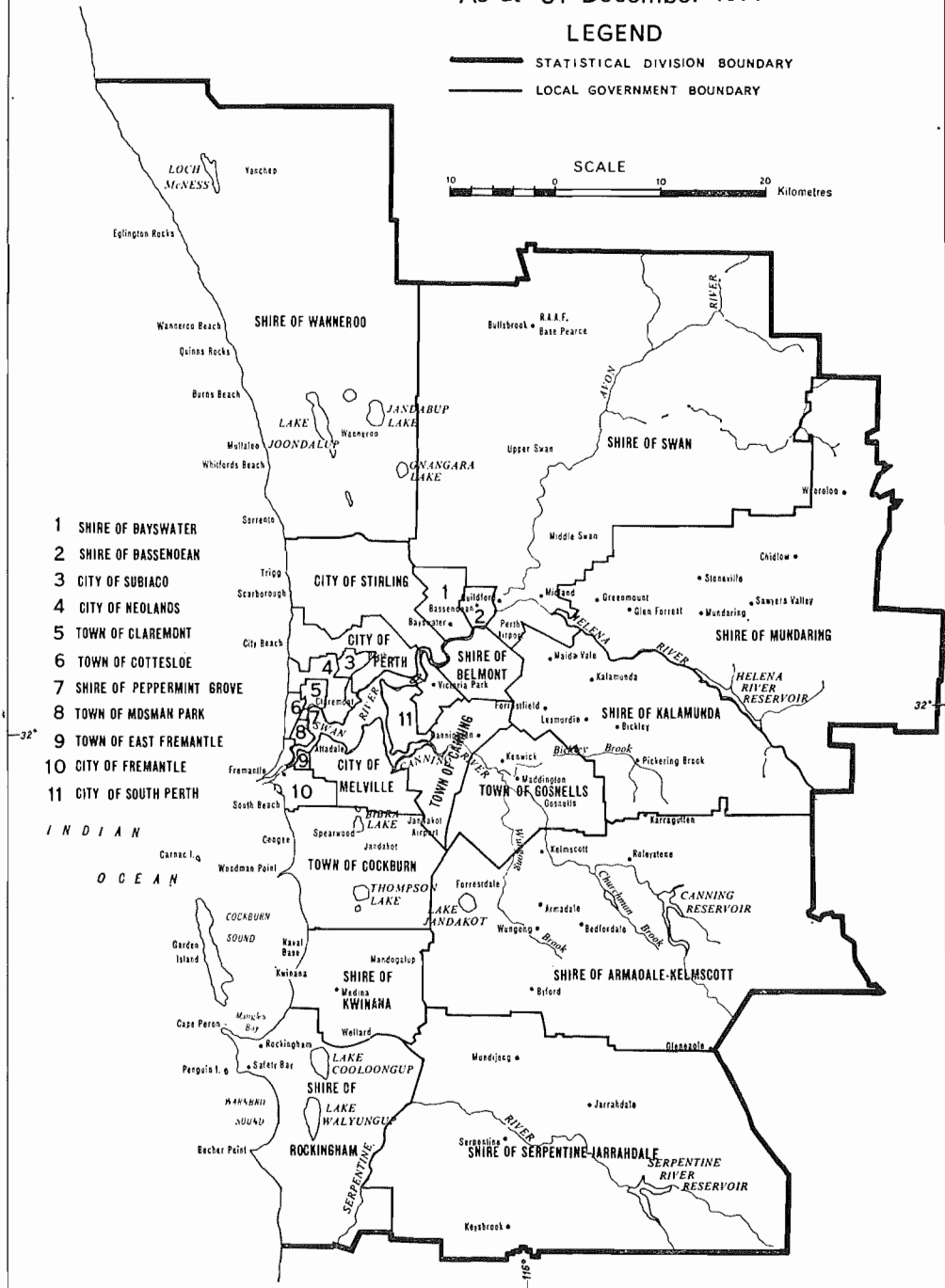
As at 31 December 1974

LEGEND

- STATISTICAL DIVISION BOUNDARY
 — LOCAL GOVERNMENT BOUNDARY

SCALE

10 0 10 20 Kilometres



INDEX

Information on the same subject appearing on succeeding pages, whether in letterpress, tabular or diagrammatic form, has generally been indexed only to the first of such pages.

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589

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			Excluding postage	Including postage (a)
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WESTERN AUSTRALIAN POCKET YEAR BOOK (c)	No. 56, 1974	Oct. 1974	0.20	0.50
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Road Traffic Accidents involving Casualties (a)	Annually	1974	June 1975
BUILDING—			
Building Operations (a)	Quarterly	Mar. qr 1975	June 1975
Building Approvals (a)	Monthly	June 1975	July 1975
Number of Dwellings (preliminary estimates)	Quarterly	June qr 1975	July 1975
EMPLOYMENT—			
Wage and Salary Earners in Civilian Employment	Annually	June 1966 to June 1974	Oct. 1974
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Mineral Exploration	Annually	1973-74	May 1975
Mineral Exploration (other than for Petroleum) in Western Australia: Preliminary Statement	Annually	1973-74	Jan. 1975
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Motor Vehicle Registrations (a)	Annually	1973	Dec. 1974
POPULATION AND VITAL STATISTICS—			
Divorce	Annually	1974	May 1975
Hospital In-patient Statistics	Annually	1974	June 1975
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Population, Dwellings and Vital Statistics (Local Government Areas and Statistical Divisions) (a)	Annually	1971 and 1974	July 1975
Population (Estimated) of Local Government Areas and Statistical Divisions (Provisional) (a) (†)	Annually	30 June 1974	Feb. 1975

(a) Includes statistics for individual local government areas.

(†) New issue.

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MIMEOGRAPHED PUBLICATIONS—continued

Subject	Frequency of issue	Latest issue at 31 July 1975	Month of issue
PRIMARY PRODUCTION—			
Agricultural and Pastoral Statistics (general summary)	Annually	1973-74	July 1975
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Nursery and Flower Production Statistics	Annually	1973-74	Feb. 1975
Pasture Seed (a)	Annually	1973-74	Jan. 1975
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Wheat for Grain (a)	Annually	1973-74	Sept. 1974
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Economic Census—Manufacturing Establishments: Summary of Operations by Industry Class	Annually	1972-73	Oct. 1974
Economic Census—Manufacturing Establishments: Industry, Area and Commodity Data (a)	Annually	1971-72	May 1974
Economic Censuses—Manufacturing Establishments: Selected Items of Data classified by Industry and Employment Size	Irregular	1968-69	June 1973
TRADE (EXTERNAL)—			
Quarterly Summary of Overseas Trade Statistics	Quarterly	To Dec. 1974	Apr. 1975
TRADE (INTERNAL)—			
Economic Censuses—Retail Establishments and Selected Service Establishments: Details of Operations by Industry Class and Area (a)....	Irregular	1968-69	Oct. 1973
Economic Censuses—Retail Establishments and Selected Service Establishments: Industry and Commodity Details for Statistical Retail Areas (a)	Irregular	1968-69	Apr. 1974
Economic Censuses—Retail Establishments and Selected Service Establishments: Industry and Commodity Details by Size of Establishment	Irregular	1968-69	May 1974
Economic Censuses—Retail Establishments and Selected Service Establishments: Commodity Sales (†)	Irregular	1968-69	Aug. 1974
Economic Censuses—Wholesale Establishments (a)	Irregular	1968-69	Oct. 1973
Wholesale Sales and Stocks of Wine and Brandy	Annually	1972-73 and 1973-74	Oct. 1974
GENERAL—			
Monthly Statistical Summary	Monthly	July 1975	July 1975

(a) Includes statistics for individual local government areas.

(†) New issue.

NOTE. In addition to the preceding publications, a number of bulletins which deal exclusively with this State are produced by the Commonwealth Statistician, Canberra, who also issues many publications which contain particulars for Western Australia as a component of Australian totals. A complete list of all publications currently issued by the Central and the various State Offices of this Bureau appears in 'Publications of the Australian Bureau of Statistics' issued by the Commonwealth Statistician, copies of which are available free of charge from the Western Australian Office at the address shown on page 589.

MAP OF WESTERN AUSTRALIA

Scale: 1 Inch to 50 Miles

Projection: Modified Polyconic
Prepared by the Mapping Branch, Surveyor General's Division, Department of Lands and Surveys,
Perth, Western Australia.



Antarctic
Principal Roads
Secondary Roads
Tracks

Government + Licensed +
Homesteads +

Homesteads +

