

SECTION XIII.

MANUFACTURING INDUSTRIES.

§ 1. General.

1. **Industrial Progress.**—The statistics of manufactures in the Commonwealth during recent years shew that many industries have now been permanently established on a secure basis, and also indicate a consistent progress both in regard to the extension of existing industries and the establishment of new ones. The scale on which many manufactories are established in Australia naturally appears small in comparison with that of similar establishments in older countries of the world; but it should be remembered that the scope of Australian manufactories is necessarily limited by the comparative sparseness of the population, and that, prior to 1901, development was retarded by the existence of intercolonial tariffs.

(i.) *The Gold Discoveries, 1851.* During the period prior to the gold discoveries (1851) little was done in regard to manufacturing industries in Australia. Such industries as had then been established were chiefly connected with the preparation of food-stuffs, and were to a large extent called into being by the isolated position of the country. It was found that, owing to the comparatively high prices which could be obtained for the products of the pastoral industry, those engaged in such pursuits in Australia could compete successfully in the world's markets. Owing to the sparseness of its population and to the distance of Australia from the world's centres of distribution, there was but little incentive towards any decided progress in agriculture, which was accordingly for many years almost entirely subsidiary to sheep and cattle raising. With the adoption of improved methods of agriculture, however, there were signs of an early extension in the cultivation of wheat, when the discovery of gold in 1851 completely changed the economic aspect in Australia and effected a revolution in all industrial relations. The large towns were practically depleted of their male able-bodied population, and the first effect of the gold rush upon manufacturing industries was disastrous. The supply of labour in many occupations was exhausted, and most branches of industry came to a standstill. There was, however, a rapid change. A decline in the activity of the gold-fields threw many immigrants, whose early lives had been passed in English cities, out of employment. The surplus of labour thus engendered accumulated in Melbourne and a few other large towns, establishing incipient artisan communities. This no doubt intensified the early impulses towards industrial employment. In Victoria, in particular, it was sought to encourage the investment of capital in manufacturing enterprises by the establishment of protective customs duties. Manufacturing industries were revived on a larger scale than formerly, and the population attracted by the discovery of gold remained in Australia and furnished the labour necessary to operate the factories thus established.

(ii.) *Later Progress.* Soon after the discovery of gold, the construction of the first railways (1854) and the re-establishment of regular steamship communication with Europe (1856) helped to encourage the nascent industrial activity. The Colonies of New South Wales and Victoria, which had recently (1855) received the benefits.

of responsible government, soon turned their attention to the settlement of an agricultural population on the land. The Acts which were passed had a beneficial effect on the working classes, giving them opportunities for employment not previously open to them, and fostering the manufacturing industries by increasing the measure of primary production. During the following years the various manufacturing industries prospered. The statistics of the States are not sufficiently complete or uniform to enable a statement of the progress of these industries to be given. The following table, however, shewing, so far as returns are available, the number of factories and the number of employes in each State at decennial periods since 1861, will serve to indicate generally the progress which has been made:—

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 to 1911.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
NUMBER OF FACTORIES.							
1861	601	531	...	...	...	...	...
1871	1,813	1,740	...	...	...	...	...
1881	2,961	2,488	571†	823†	...	...	...
1891	3,056	3,141	1,328†	996†	175	...	...
1901	3,367	3,249	2,110†	1,335†	662	420*	11,143†
1911	5,039	5,126	1,657	1,314	710	609	14,455
NUMBER OF EMPLOYEES.							
1861	...	4,395	...	...	...	...	...
1871	13,583	19,569	...	5,629†	...	...	...
1881	31,191	43,209	...	10,995†	...	...	...
1891	50,879	53,525	...	14,099†	...	...	...
1901	66,135	66,529	26,172†	19,283†	12,198	7,466*	197,783†
1911	108,664	111,948	37,156	27,907	15,799	10,298	311,772

* For 1902. † Not on same basis as other States. ‡ Not on same basis for some of States as in 1911.
 NOTE.—In this and all subsequent tables, except where specially mentioned, "Number of Employees" includes working proprietors.

Since the inauguration of the Commonwealth, the throwing open of the whole of the Australian markets to the industrial products of each State has facilitated the internal distribution of the products of Australian industry.

2. Defects in Industrial Statistics.—A complete statistical account of the growth of the manufacturing industries in Australia unfortunately cannot be given for any lengthy period, owing to the fact that the necessary statistics have not been collected in past years by the several States upon a definite and identical basis. Even in respect of either the definition of a "factory" or (so far as they might be included in related returns) the statistics of persons employed therein, there was formerly no common agreement. The relatively minor place that manufacturing industry held in relation to the total activity of Australia was, perhaps, responsible for the fact that the necessity for uniform method was not earlier recognised.

In 1896 it was agreed, as between Victoria and New South Wales, to adopt a common definition of the term "factory," viz., "any factory, workshop, or mill where four or more persons are employed or power is used." This agreement was adopted for the States generally at the Conference of State Statisticians in 1902, when it was decided, however, that the term "factory" should include also "all establishments, whether making for the trade, wholesale or retail, or for export." It was further agreed that

industries should be arranged, as far as possible, under a uniform classification. As a result of the conference of 1902 a higher degree of uniformity in the collection and presentation of industrial statistics was attained in the several States, so that returns upon which anything like a proper comparative study of the development and progress of various manufacturing industries in the Commonwealth may be based date back only as far as the year 1903, when the resolutions of the conference first came to be put into force. All the States did not, however, fall completely into line, and, as may be seen in the succeeding parts of this section, the comparisons afforded by the returns for the years 1903 to 1906 inclusive, are in some cases subject to various limitations. At the Conference of Statisticians held in Melbourne in 1906 special consideration was given to the methods to be adopted for the collection of statistical information regarding primary and secondary production and industry. A definite classification of industries was adopted, and a set of forms for the collection and compilation of industrial statistics on a definite and uniform basis in each State was agreed upon. The States have not, even yet, fallen entirely into line in collecting and classifying the returns. The particulars for the years 1909, 1910, and 1911 are, however, in more complete co-ordination than those for previous years, and it is now possible to give particulars for the several States in greater detail and on a more uniform basis throughout.

3. Classification of Manufacturing Industries.—Under the classification adopted at the Conference of Statisticians held in 1906, factories were placed under nineteen different categories, according to the nature of the industry carried on therein; many of the categories were also subdivided. Where two or more industries are carried on by one proprietor in one building, each industry is, when possible, treated as a separate establishment. The statement given below shews the classification which has been adopted; it must be understood, however, that this classification does not pretend to be exhaustive, but merely serves as a guide for the collection and presentation of statistics in the several States on a definite and uniform basis:—

CLASSIFICATION OF MANUFACTURING INDUSTRIES.

<p>CLASS I.—TREATING RAW MATERIALS, ETC. Boiling-down, Tallow Refining, etc. Tanneries Woolscouring & Fellmongering Chaff-cutting, etc.</p>	<p>Cutlery Engineering Galvanised Iron-working Ironworks and Foundries Lead Mills Railway Carriages Railway and Tramway Work-shops Smelting Stoves and Ovens Tinsmithing Wireworking Other Metal Works</p>	<p>CLASS VII.—CLOTHING AND TEXTILE FABRICS. Woolen and Tweed Mills Boots and Shoes Slop Clothing Clothing (Tailoring) Dressmaking and Millinery—Makers' material Customers' material Dyeworks and Cleaning Furriers Hats and Caps Waterproof and Oilskin Shirts, Ties, and Scarfs Rope and Cordage Tents and Tarpaulins</p>
<p>CLASS II.—OILS AND FAT, ETC. Oil and Grease Soap and Candles</p>	<p>CLASS VI.—FOOD AND DRINK, ETC.</p>	<p>CLASS VIII.—BOOKS, PAPER, PRINTING, ETC.</p>
<p>CLASS III.—STONE, CLAY, GLASS, ETC. Bricks and Tiles Glass (including Bottles) Glass (Ornamental) Lime, Plaster, Cement and Asphalt Marble, Slate, etc. Modelling, etc. Pottery and Earthenware</p>	<p>Bacon Curing Butter Factories Butterine and Margarine Cheese Factories Condensed Milk Meat and Fish Preserving Biscuits Confectionery Corn-flour, Oatmeal, etc. Flour Mills Jam and Fruit Canning Pickles, Sauces, and Vinegar Sugar Mills Sugar Refining Aerated Waters, Cordials, etc. Breweries Condiments, Coffee, Spices, etc. Distilleries Ice and Refrigerating Malting Tobacco, Cigars, etc.</p>	<p>Electrotyping & Stereotyping Paper-making, Paper Boxes, Bags, etc. Photo-engraving Printing and Binding</p>
<p>CLASS IV.—WORKING IN WOOD. Boxes and Cases Cooperage Joinery Saw Mills Wood-turning, etc.</p>		<p>CLASS IX.—MUSICAL INSTRUMENTS, ETC. Musical Instruments and Sewing Machines</p>
<p>CLASS V.—METAL WORKS, MACHINERY, ETC. Agricultural Implements Brass and Copper</p>		<p>CLASS X.—ARMS & EXPLOSIVES Explosives</p>

CLASSIFICATION OF MANUFACTURING INDUSTRIES.—Continued.

<p>CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC. Coach and Wagon Building Cycles Perambulators Saddlery, Harness, etc. Spokes, etc.</p> <p>CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING. Docks and Slips Sailmaking Ship and Boat Building and Repairing</p> <p>CLASS XIII.—FURNITURE, BEDDING, ETC. Bedding, Flock, & Upholstery Billiard Tables Furniture and Cabinet Making Picture Frames Window Blinds</p>	<p>CLASS XIV.—DRUGS AND CHEMICALS, ETC. Chemicals, Drugs, and Medicines Fertilisers Paints, Varnishes, and By-products</p> <p>CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS. Surgical, Optical, and other Scientific Instruments</p> <p>CLASS XVI.—TIMEPIECES, JEWELLERY, & PLATED WARE. Electro-plating Manufacturing Jewellery, etc.</p>	<p>CLASS XVII.—HEAT, LIGHT, AND POWER. Coke Works Electric Apparatus Electric Light and Power Gas Works and Kerosene Lamps and Fittings, etc. Hydraulic Power</p> <p>CLASS XVIII.—LEATHERWARE (N.E.I.) Leather Belting, Fancy Leather, Portmanteaux & Bags</p> <p>CLASS XIX.—MINOR WARES. Basket and Wickerware, Matting, etc. Brooms and Brushware Rubber Goods Toys Umbrellas Other Industries</p>
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§ 2. Number of Manufactories.

1. **General.**—In stating the number of factories in the States of the Commonwealth it is to be remembered that in the collection of statistics, for years prior to 1907, the same basis has not been adopted in each State. In 1907 in Queensland, for example, 366 factories would have been added under the system previously adopted in that State. This would bring the total up to 1725 on the former basis. The factories excluded, however, are those employing only two hands and no power, and the difference in other respects is not material.

In the following table shewing the total number of manufactories in the Commonwealth during the years 1903 and 1907 to 1911, it should be noted that not only are the results affected by differences of classification prior to 1907, but also that the number of factories from year to year does not unequivocally indicate a change in the position of the industry, since amalgamations may account for part of the reduction of the numbers.

MANUFACTORIES OF THE COMMONWEALTH, 1903, and 1907 to 1911.

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
1903...	3,476	4,151	2,001*	906*†	586	431	11,551
1907...	4,492	4,530	1,359	1,086	643	505	12,555
1908...	4,453	4,608	1,371	1,237	627	557	12,853
1909...	4,581	4,755	1,420	1,265	632	576	13,229
1910...	4,823	4,873	1,563	1,278	680	635	13,852
1911...	5,039	5,126	1,657	1,314	710	609	14,455

* Not on same basis as other States. † 1904 results, those for 1903 not available.

(i.) *Classification of Factories in Commonwealth, 1907 to 1911.* The following table shews the total number of factories in the Commonwealth at the end of each year from 1907 to 1911, classified on the basis indicated in § 1, 3 hereof:—

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1907 to 1911.

Class of Industry.	1907.	1908.	1909.	1910.	1911.
	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	807	812	855	855	857
II. Treating oils and fats, animal, vegetable, etc. ...	92	97	94	100	105
III. Processes in stone, clay, glass, etc. ...	626	627	645	703	719
IV. Working in wood ...	1,215	1,322	1,411	1,474	1,625
V. Metal works, machinery, etc. ...	1,504	1,548	1,588	1,620	1,697
VI. Connected with food and drink, etc. ...	2,250	2,253	2,258	2,286	2,310
VII. Clothing and textile fabrics, etc. ...	2,661	2,681	2,774	2,382	3,093
VIII. Books, paper, printing and engraving ...	964	993	1,011	1,062	1,144
IX. Musical instruments, etc. ...	16	17	18	20	19
X. Arms and explosives ...	8	8	9	13	14
XI. Vehicles and fittings, saddlery and harness, etc. ...	1,071	1,105	1,117	1,195	1,208
XII. Ship and boat building and repairing ...	70	76	84	85	87
XIII. Furniture, bedding, and upholstery ...	470	483	512	560	613
XIV. Drugs, chemicals, and by-products ...	144	153	164	176	189
XV. Surgical and other scientific instruments ...	26	28	30	35	41
XVI. Jewellery, timepieces, and platedware ...	142	153	150	155	169
XVII. Heat, light, and power ...	309	307	314	328	351
XVIII. Leatherware, n.e.i. ...	45	54	55	60	62
XIX. Minor wares, n.e.i. ...	135	136	140	143	152
Total ...	12,555	12,853	13,229	13,852	14,455

For the purpose of the returns in the above table the definition of a factory adopted at the Conference of Statisticians in 1902 (see § 1, 2 hereof) is used, viz., "Any factory, workshop or mill where four or more persons are employed or power is used." The total increase in the number of factories according to this table from 1907 to 1911 was 1900, or an average of 475 a year. The state of the manufacturing industries throughout Australia cannot, however, be gauged from a mere enumeration of the number of factories. Some of the factories concerned were practically in their infancy, employing but few hands, while others were developed on a large scale. Also, as pointed out previously, amalgamations may in some instances account for a reduction in the numbers.

(ii.) *Classification of Factories in each State, 1911.* The following table shews the number of factories in each State of the Commonwealth at the end of the year 1911, classified according to the nature of the industry. (See classification given in § 1, 3 hereof):—

CLASSIFICATION OF FACTORIES IN EACH STATE, 1911.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Cwltth.
	No.	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricul. and pastoral pursuits, etc. ...	272	337	42	131	30	45	857
II. Treating oils and fats, animal, vegetable, etc. ...	48	23	18	11	2	3	105
III. Processes in stone, clay, glass, etc. ...	309	215	37	87	43	98	719
IV. Working in wood ...	662	375	280	101	72	135	1,625
V. Metal works, machinery, etc. ...	509	674	214	181	68	51	1,697
VI. Connected with food and drink, etc. ...	769	651	400	241	140	109	2,310
VII. Clothing and textile fabrics, etc. ...	981	1,407	234	226	144	101	3,093
VIII. Books, paper, printing & engraving ...	436	420	138	66	59	25	1,144
IX. Musical instruments, etc. ...	12	5	...	2	...	...	19
X. Arms and explosives ...	5	9	...	...	...	...	14
XI. Vehicles and fittings, saddlery and harness, etc. ...	384	410	154	152	55	53	1,208
XII. Ship and boat building & repairing ...	41	12	12	10	5	7	87
XIII. Furniture, bedding, and upholstery ...	197	242	72	46	34	22	613
XIV. Drugs, chemicals, and by-products ...	82	81	3	12	11	...	189
XV. Surgical and other scientific instruments ...	12	17	6	2	4	...	41
XVI. Jewellery, timepieces, & platedware ...	48	80	12	15	5	9	169
XVII. Heat, light, and power ...	191	83	23	14	26	14	351
XVIII. Leatherware, n.e.i. ...	20	32	3	4	3	...	62
XIX. Minor wares, n.e.i. ...	61	53	9	13	9	7	152
Total ...	5,039	5,126	1,657	1,314	710	609	14,455

2. **Use of Mechanical Power.**—The principal motive power is steam, but the chief towns possess electric power stations owned either by the Government, or by public bodies or private companies. From these many factories find it convenient to derive their motive power.

The following table shews the number of factories in which machinery was worked by steam, gas, oil, or electricity, and the horse-power of engines or motors used, in each State and in the Commonwealth, during the year 1911 :—

UTILISATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1911.

State	Number of Establishments.			Actual Horse-power of Engines Used.				
	Using Machinery worked by Steam, Gas, Oil, or Electricity	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.
New South Wales	3,550	1,489	5,039	113,939	12,201	1,185	20,671	147,996
Victoria ...	3,377	1,749	5,126	54,282	11,862	1,607	11,764	79,515
Queensland ...	1,186	471	1,657	30,470	4,670	812	3,779	39,731
South Australia ...	926	388	1,314	19,962	4,790	1,651	3,481	29,884
Western Australia	510	200	710	24,246	2,082	696	3,612	30,636
Tasmania ...	423	186	609	12,162	284	73	3,269	15,788
Commonwealth	9,972	4,483	14,455	255,061	35,889	6,024	46,576	343,550

A comparison of the above table with that immediately preceding will explain the preponderance of horse-power employed in the New South Wales factories, this State possessing by far the largest number of industries demanding a considerable amount of power; Victoria, on the other hand, has the largest number of establishments, such as those connected with clothing and textile fabrics, wherein much less mechanical power is utilised.

The number of establishments in the Commonwealth using machinery worked by steam, gas, oil, or electricity was 9972, being 68.99 per cent.; 4483 establishments representing 31.01 per cent., used no mechanical power. The total average horse-power in use was 343,550, of which engines in which the motive power was steam formed 74.24 per cent.; gas, 10.45 per cent.; oil, 1.75 per cent.; and electricity, 13.56 per cent. During 1911 there were 708 more establishments using power than in 1910, the increase in horse-power employed being 45,327, or over fifteen per cent.

§ 3. Numbers Employed in Australian Factories.

1. **Total Number Employed.**—Each person employed in and about a factory, in whatever capacity, is now included as a factory employee, consequently every proprietor who works in his business is counted as an employee, and all "outworkers" (see paragraph 6 hereinafter) are also included. The individuals embraced may be classed under the following heads, viz. :—(i.) Working proprietors; (ii.) managers and overseers; (iii.) accountants and clerks; (iv.) enginedrivers and firemen; (v.) skilled and unskilled workers in the factories, mills, or workshops; (vi.) carters and messengers; and (vii.) others.

(i.) *Average Numbers Employed, 1907 to 1911.* The following table shews, for each year from 1907 to 1911 inclusive, (a) the average numbers of persons (including both sexes and all ages) employed in manufacturing industries in each State; (b) the percentage of the numbers employed in each State on the total numbers employed in the Commonwealth; and (c) the numbers employed per ten thousand of the mean population in each State and the Commonwealth :—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES,
1907 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
AVERAGE NUMBER.							
1907	86,467	90,903	27,954	22,701	12,625	8,209	248,859
1908	89,098	93,808	29,200	24,236	12,425	8,727	257,494
1909	91,702	97,355	29,504	25,709	12,826	9,565	266,661
1910	99,746	102,176	33,944*	27,010	14,107	9,980	286,963
1911	108,664	111,948	37,156*	27,907	15,799	10,298	311,772
PERCENTAGE ON COMMONWEALTH TOTAL.							
1907	34.75	36.53	11.23	9.12	5.07	3.30	100.00
1908	34.60	36.42	11.34	9.42	4.83	3.39	100.00
1909	34.39	36.51	11.06	9.64	4.81	3.59	100.00
1910	34.76	35.61	11.83*	9.41	4.91	3.48	100.00
1911	34.85	35.91	11.92*	8.95	5.07	3.30	100.00
PER 10,000 OF MEAN POPULATION.							
1907	560	742	515	611	494	444	603
1908	566	756	527	635	482	465	614
1909	574	772	518	656	487	503	624
1910	611	797	574*	673	521	522	657
1911	654	843	605*	679	551	541	694

* Including a number of drapery and tailoring shops making to order of customer; this class of establishment was omitted in Queensland in years previous to 1910.

(ii.) *Rates of Increase, 1907 to 1911.* From the preceding table it may be seen that there has been a general increase in the average number of persons employed in manufacturing industries during the period referred to. The following table shews the percentage of increase during each year on the average number for the preceding year:—

PERCENTAGES OF INCREASE IN AVERAGE NUMBER EMPLOYED, 1907 to 1911.

Years.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1906-7	11.11	6.66	16.67	11.80	— 2.25	— 3.49	8.80
1907-8	3.04	2.75	4.46	6.90	— 1.44	6.31	3.49
1908-9	2.92	3.78	1.04	6.08	3.23	9.60	3.56
1909-10	8.77	4.95	15.05*	5.06	9.99	4.34	7.61
1910-11	8.94	9.56	9.46*	3.32	11.99	3.19	8.65

Note. (—) signifies a decrease. * See note (*) to preceding table.

2. **Classification of Numbers Employed in Factories in the Commonwealth, 1907 to 1911.**—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1907 to 1911 inclusive:—

AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN THE COMMONWEALTH, 1907 to 1911.

Class of Industry.	1907.	1908.	1909.	1910.	1911.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	8,956	9,042	9,549	9,655	9,805
II. Treating oils and fats, animal, vegetable, etc.	1,727	1,735	1,812	1,872	2,019
III. Processes in stone, clay, glass, etc.	8,909	9,420	9,605	10,737	12,093
IV. Working in wood	19,457	21,310	22,487	24,520	27,948
V. Metal works, machinery, etc.	47,060	48,505	49,753	54,238	60,538
VI. Connected with food and drink, etc.	40,228	40,652	41,006	42,921	45,623
VII. Clothing and textile fabrics, etc.	68,390	70,075	73,567	78,983	83,845
VIII. Books, paper, printing and engraving	20,734	21,448	21,943	23,064	24,292
IX. Musical instruments, etc.	430	444	433	553	607
X. Arms and explosives	323	339	377	431	508
XI. Vehicles and fittings, saddlery and harness, etc.	10,288	10,784	11,366	12,484	13,294
XII. Ship and boat building and repairing....	2,049	2,278	2,220	2,508	2,920
XIII. Furniture, bedding and upholstery	6,819	7,117	7,638	8,434	9,502
XIV. Drugs, chemicals and by-products	2,895	3,086	3,391	3,827	4,165
XV. Surgical and other scientific instruments	170	176	173	190	233
XVI. Jewellery, timepieces, and platedware	1,700	1,771	1,800	1,896	2,142
XVII. Heat, light, and power	5,372	5,754	5,986	6,770	7,691
XVIII. Leatherware, n.e.i.	788	893	924	1,097	1,226
XIX. Minor wares, n.e.i.	2,564	2,665	2,631	2,783	3,321
Total	248,859	257,494	266,661	286,963	311,772

The total increase in the average number of hands employed from 1907 to 1911 was 62,913, or an annual average of 15,728. The increase was general throughout all the various classes of industry. The greatest development took place in Classes VII. and V., the increases being 15,455 and 13,478 respectively.

3. Classification of Numbers Employed in each State, according to Class of Industry, 1911.—The following table shews a similar classification of employees in manufacturing industries in each State for the year 1911:—

AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN EACH STATE, 1911.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	C'wlth.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	3,890	3,543	690	1,078	263	341	9,805
II. Treating oils and fats, animal, vegetable, etc.	889	601	175	272	46	36	2,019
III. Processes in stone, clay, glass, etc.	5,695	3,753	563	1,269	570	243	12,093
IV. Working in wood	8,181	6,654	4,637	1,880	4,517	2,079	27,948
V. Metal works, machinery, etc.	22,862	18,069	6,343	7,971	3,003	2,290	60,538
VI. Connected with food and drink, etc.	14,050	14,432	10,555	3,425	1,572	1,589	45,623
VII. Clothing and textile fabrics, etc.	26,504	39,700	7,791	5,426	2,692	1,732	83,845
VIII. Books, paper, printing & engraving	9,134	8,706	2,775	1,839	1,142	696	24,292
IX. Musical instruments, etc.	387	197	...	23	...	...	607
X. Arms and explosives	33	475	...	...	...	...	508
XI. Vehicles and fittings, saddlery, and harness, etc.	4,416	4,630	1,471	1,673	655	449	13,294
XII. Ship and boat building & repairing	2,429	133	98	161	37	62	2,920
XIII. Furniture, bedding, and upholstery	3,534	3,122	1,083	1,040	437	286	9,502
XIV. Drugs, chemicals, and by-products	1,460	1,672	67	696	270	...	4,165
XV. Surgical and other scientific instruments	96	84	30	7	16	...	233
XVI. Jewellery, timepieces, & platedware	753	975	131	173	68	42	2,142
XVII. Heat, light, and power	2,635	2,808	522	764	353	409	7,691
XVIII. Leatherware, n.e.i.	461	634	70	29	32	...	1,226
XIX. Minor wares, n.e.i....	1,055	1,760	155	181	126	44	3,321
Total	108,664	111,948	37,156	27,907	15,799	10,298	311,772

NUMBERS EMPLOYED IN AUSTRALIAN FACTORIES.

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 83,845 employees, or 26.89 per cent. of the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 233 hands, or 0.07 per cent. of the total number of employees. Classes VI., VII., and VIII. comprise those industries in which female labour is largely employed. (See § 4, 5 hereof.)

4. **Classification of Numbers Employed in each State according to Nature of Employment, 1911.**—In the following table the average numbers of persons employed in each State during the year 1911 are classified according to the nature of their employment:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED
ACCORDING TO NATURE OF EMPLOYMENT, 1911.**

State.	Average Number of Persons Employed.						Total.
	Working Proprietors.	Managers and Overseers	Accountants and Clerks.	Engine-drivers and Firemen.	Workers, Skilled & Unskilled in Factory Mill or Workshop	Carters, Messengers and Others.	
New South Wales ...	4,344	3,323	3,825	2,673	91,995	2,504	108,664
Victoria ...	5,201	3,058	3,524	1,794	94,293	4,078	111,948
Queensland ...	1,428	1,215	1,414	1,444	29,518	2,137	37,156
South Australia ...	1,335	739	1,005	502	23,485	841	27,907
Western Australia ...	523	530	561	437	12,005	1,743	15,799
Tasmania ...	501	455	353	416	8,243	330	10,298
Commonwealth ...	13,332	9,320	10,632	7,266	259,539	11,633	311,772

5. **Classification of Factories according to Number of Hands Employed, 1911.**—The number of factories in each State classified according to the number of hands employed, and the total number of hands employed therein, are shewn in the following table:—

**CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF HANDS EMPLOYED,
1911.**

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
NUMBER OF FACTORIES.							
Under 4 ...	776	727	169	138	108	115	2,033
4 ...	550	550	152	141	64	76	1,533
5 to 10 ...	1,736	1,868	618	522	237	226	5,207
11 to 20 ...	901	901	320	226	148	93	2,589
21 to 50 ...	641	673	241	179	95	61	1,890
51 to 100 ...	242	221	87	68	35	24	677
Over 100 ...	193	186	70	40	23	14	526
Total ...	5,039	5,126	1,657	1,314	710	609	14,455

CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF HANDS—Continued.

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
AVERAGE NUMBER OF HANDS EMPLOYED.							
Under 4 ...	1,829	1,779	410	350	248	269	4,885
4 ...	2,200	2,200	608	564	256	304	6,132
5 to 10 ...	12,153	13,022	4,358	3,660	1,656	1,541	36,390
11 to 20 ...	13,224	13,496	4,753	3,265	2,137	1,300	38,175
21 to 50 ...	19,569	20,396	7,476	5,591	3,141	1,853	58,526
51 to 100 ...	17,218	15,537	6,435	4,836	2,350	1,662	48,038
Over 100 ...	42,471	45,018	13,116	9,641	6,011	3,369	119,626
Total ...	108,664	111,948	37,156	27,907	15,799	10,298	311,772

6. **Outworkers.**—The term "outworker" or "homeworker" has acquired a special meaning in connection with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in the employees' own homes. Individuals working for themselves are not included. The following table gives particulars of the average number of outworkers connected with factories in each State during each year from 1907 to 1911 inclusive:—

NUMBER OF OUTWORKERS* CONNECTED WITH FACTORIES, 1907 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1907 ...	592	1,429	264	66	18	60	2,429
1908 ...	596	1,457	171	74	11	11	2,320
1909 ...	630	1,695	144	65	13	...	2,547
1910 ...	720	1,584	224	68	20	76	2,692
1911 ...	784	1,906	158	88	15	96	3,047

* In all tables relating to number of hands employed in factories outworkers are included.

The Factories Acts in each State contain provisions regulating the employment of outworkers. Generally records of out-work must be kept by factory proprietors, specifying the names and remuneration of workers, and stating the places where the work is done. Further particulars are given in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*)

§ 4. Sex Distribution in Factories.

1. **Employment of Females in Factories.**—In all the States the employment of female labour in factories is now regulated by Act of Parliament. In Victoria the first Act dealing with the subject was passed in the year 1873, and provided that no female should be employed for more than eight hours a day without the permission of the Chief Secretary. The number of working hours for women is now limited to forty-eight per week in all the States overtime being allowed only with the permission of the Departments, and then to a limited extent. The maximum periods of continuous labour, and the intervals of cessation therefrom, are also prescribed by the several Acts. Further reference is made to the restrictions regarding the employment of females in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*)

2. **Distribution of Employees according to Sex, 1907 to 1911.**—In New South Wales the ratio of the number of females employed in factories to the number of males during 1886 was about one to seven; in 1891 one to six; in 1903 it became about one to four; and is now rather lower than one to three. In Victoria the ratio of females to males during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is slightly over one to two. In the remaining States the ratios during 1911 were—Queensland and South Australia—a little under one female employed to every four males, Western Australia one to five, and in Tasmania one to six. The proportion for the whole of the Commonwealth was just over one to three. The employment of women is, however, largely confined to a few trades.

The great prosperity in clothing and textile industries is one of the main causes of increase in female employment. Certain trades are specifically known as women's trades, such as clothing and textile trades, preparation of food, book-binding, and lighter work connected with the drug trade, as for example wrapping. In common with commercial establishments, a considerable number of women are also employed as clerks and typists in factories.

^o(i.) *Average Number of Males and Females Employed, 1907 to 1911.* The following table shews the average number of male and female employees in factories in each State from 1907 to 1911:—

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
MALES.					
New South Wales ...	65,953	67,616	69,184	75,419	82,123
Victoria ...	59,691	60,873	62,822	66,309	73,573
Queensland ...	23,191	24,639	24,877	*27,165	*29,832
South Australia ...	18,423	19,640	20,753	21,864	22,651
Western Australia ...	10,671	10,453	10,703	11,654	13,212
Tasmania ...	6,972	7,334	8,132	8,277	8,737
Commonwealth ...	184,901	190,555	196,471	210,688	230,128
FEMALES.					
New South Wales ...	20,514	21,482	22,518	24,327	26,541
Victoria ...	31,212	32,935	34,533	35,867	38,375
Queensland ...	4,763	4,561	4,627	*6,779	*7,324
South Australia ...	4,278	4,596	4,956	5,146	5,256
Western Australia ...	1,954	1,972	2,123	2,453	2,587
Tasmania ...	1,237	1,393	1,433	1,703	1,561
Commonwealth ...	63,958	66,939	70,190	76,275	81,644

* See Note (*) to § 3, 1 (i).

It will be seen that during the years specified there has been for the whole Commonwealth a total increase in the number of male employees of 45,227, or an annual average of 11,307, and in the number of female employees a total increase of 17,686, or an annual average of 4421.

(ii.) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1907 to 1911.* The following table shews the average number of male and female employees per 10,000 of the mean male and female population respectively in each State from 1907 to 1911:—

**AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF
MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1907 to 1911.**

State.	1907.	1908.	1909.	1910.	1911.
MALES.					
New South Wales ...	811	816	826	883	947
Victoria ...	991	1000	1012	1045	1118
Queensland ...	785	818	801	*843	*892
South Australia ...	980	1015	1040	1071	1084
Western Australia ...	723	707	712	754	805
Tasmania ...	736	765	835	848	900
Commonwealth ...	863	876	887	929	986
FEMALES.					
New South Wales ...	281	288	296	312	334
Victoria ...	501	521	539	554	579
Queensland ...	193	181	178	*252	*262
South Australia ...	233	244	257	261	260
Western Australia ...	181	179	188	210	211
Tasmania ...	137	152	154	182	167
Commonwealth ...	323	332	341	363	379

* See note (*) to § 3. 1 (i).

3. Rate of Increase for each Sex.—The percentages of annual increase during the years 1907 to 1911 in the average number of males and females employed in manufacturing industries in the several States and the Commonwealth are shewn below:—

**PERCENTAGES OF ANNUAL INCREASE IN NUMBERS OF MALE AND FEMALE
EMPLOYEES, 1907 to 1911.**

State.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
MALES.					
	%	%	%	%	%
New South Wales ...	9.96	2.52	2.32	9.01	8.89
Victoria ...	5.95	1.98	3.20	5.55	10.95
Queensland ...	16.18	6.24	0.97	*9.20	*9.82
South Australia ...	11.99	6.61	5.67	5.35	3.60
Western Australia ...	—3.12	—2.04	2.39	8.89	13.37
Tasmania ...	3.43	5.19	10.88	1.78	5.56
Commonwealth ...	8.15	3.06	3.10	7.24	9.23
FEMALES.					
New South Wales ...	14.97	4.72	4.82	8.04	9.10
Victoria ...	8.04	5.52	4.85	3.86	6.99
Queensland ...	19.08	—4.24	1.45	*46.51	*8.04
South Australia ...	15.56	7.43	7.83	3.83	2.14
Western Australia ...	3.83	0.92	7.66	15.54	5.46
Tasmania ...	3.21	12.61	2.87	18.84	—8.34
Commonwealth ...	11.05	4.66	4.86	8.67	7.04

Note.—The minus (—) sign indicates decrease. * See note (*) to § 3. 1 (i).

It will be seen that by far the greater part of the total number of females employed in factories work in one or other of the three classes of industry indicated, Class VII. being the most important. The classification of the employment of females in the several industries in that class, and the ratio they bore to males so employed, is shown in the following table:—

FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII., DURING 1911.

Industry.	New South Wales.			Victoria.			Other States.		
	Males.	Femls.	Femls. Per 100 Males.	Males.	Femls.	Femls. Per 100 Males.	Males.	Femls.	Femls. Per 100 Males.
Woolen & tweed mills	382	569	149	756	919	122	244	330	135
Boots and shoes ...	2,818	1,593	57	4,439	2,562	58	1,574	786	50
Slop clothing Clothing (tailoring) }	3,248	8,507	262	2,402	8,208	342	2,139	6,045	283
Dressmaking & millin'ry	89	5,053	5,678	243	9,652	3,972	51	3,715	7,284
Dyeworks and cleaning	36	32	89	65	82	126	28	18	64
Furriers ...	24	24	100	41	89	217	3	11	367
Hats and caps ...	537	1,029	192	756	1,261	167	95	178	187
Waterproof and oilskin	26	98	377	52	162	312	...	...	...
Shirts, ties, and scarfs	139	1,655	1,191	353	6,543	1,854	117	1,906	1,629
Rope and cordage ...	230	3	1	512	326	64	133	61	46
Tents and tarpaulins...	167	245	147	97	54	56	133	74	56
Other ...	...	...	...	9	117	1,300	...	...	...
Total Class VII....	7,696	18,808	244	9,725	29,975	308	4,517	13,124	291

§ 5. Child Labour in Factories.

1. **Conditions of Child Labour.**—The employment of young persons in factories in each State of the Commonwealth is regulated by Acts of Parliament in a similar manner to the employment of female labour. Excepting under special circumstances, children under a certain age may not be employed in factories. The minimum age in all the States is 14, with the exception of South Australia, where it is 13 years, and Victoria, where the minimum for females is 15 years. Other restrictions on the employment of young persons in factories are more particularly referred to in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation*.) The general object of the restrictions imposed is to assure that a proper period shall be devoted to primary education, and that the early years of toil shall not exhaust the worker before the attainment of full growth.

2. **Average Number of Children Employed in Factories, 1907 to 1911.**—In the statistical compilations of the various States the term "child" may be taken to denote any person under sixteen years of age, excepting in New South Wales, where it denoted, for years prior to 1907, any person under fifteen. The following table shews the average number of children of each sex employed in manufacturing industries in each State during the years 1907 to 1911. During the period under review, there was an increase in the average number employed in every State, with the exception of Victoria and South Australia, there being a decrease of 1780 in the former and 53 in the latter State.

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
MALES.					
New South Wales	2,406	2,475	2,433	2,452	2,474
Victoria	3,253	3,049	2,817	2,753	2,623
Queensland	1,119	1,034	1,001	*1,031	*1,176
South Australia	1,127	1,179	1,094	1,082	999
Western Australia	216	289	289	340	368
Tasmania	214	239	258	282	230
Commonwealth	8,335	8,265	7,892	7,940	7,920
FEMALES.					
New South Wales	1,880	1,859	1,973	2,025	2,267
Victoria	3,095	3,065	2,496	2,174	1,937
Queensland	576	583	556	*733	*818
South Australia	480	568	577	702	555
Western Australia	159	251	242	266	293
Tasmania	97	135	128	96	131
Commonwealth	6,287	6,461	5,972	5,996	6,001
TOTAL.					
New South Wales	4,286	4,334	4,406	4,477	4,741
Victoria	6,348	6,114	5,313	4,927	4,560
Queensland	1,695	1,617	1,557	*1,764	*1,994
South Australia	1,607	1,747	1,671	1,784	1,554
Western Australia	375	540	531	606	661
Tasmania	311	374	386	378	411
Commonwealth	14,622	14,726	13,864	13,936	13,921

* See Note (*) to § 3. 1 (i).

3. Percentage of Children to Total Persons Employed.—The foregoing table shews a general increase in several of the States in the number of children employed in factories during the past quinquennial period. These increases, however, when examined in conjunction with the total number of persons employed, shew that in every state a fairly regular decrease in the percentage of child labour is in evidence. The 1908 and subsequent returns for Western Australia shew a considerable increase over the 1907 figures; this increase occurred mainly in clothing and other light industries in 1908, and has since shewn a slight diminution.

PERCENTAGE OF CHILDREN IN FACTORIES TO TOTAL NUMBER OF EMPLOYEES, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
	%	%	%	%	%
New South Wales	4.96	4.86	4.80	4.49	4.36
Victoria	6.98	6.52	5.46	4.82	4.07
Queensland	6.06	5.54	5.28	5.20	5.37
South Australia	7.08	7.21	6.50	6.60	5.57
Western Australia	2.97	4.35	4.14	4.30	4.18
Tasmania	3.79	4.29	4.04	3.79	3.99
Commonwealth	5.88	5.72	5.20	4.86	4.47

4. Industries Employing Child Labour, 1911.—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the table below, which shews the average number of children of each sex employed in the several industries indicated in each State during the year 1911:—

NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1911.

Class.	Industry.	N.S.W.		Victoria.		Q'land.		S. Aust.		W.A.		Tas.		C'w'lth.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III.	Bricks, tiles, pottery and earthenware ...	67	3	35	1	16	...	29	...	10	1	7	...	164	5
IV.	Joinery, boxes, cases, etc. ...	99	...	79	...	39	4	45	...	12	...	11	...	285	4
V.	Engineering, ironworks, and foundries ...	218	...	261	2	76	...	70	...	53	...	6	...	684	2
"	Galvanised iron-working and tinsmithing ...	71	2	99	12	64	1	44	4	...	...	3	...	281	19
"	Railway carriages, railway & tramway work-shops ...	50	...	64	...	34	...	37	...	21	...	4	...	210	...
VI.	Biscuits, cakes, etc. ...	178	110	67	6	18	9	5	5	8	8	10	1	256	139
"	Confectionery ...	42	67	25	24	23	39	25	15	6	13	...	...	121	158
"	Jams, pickles, sauces, etc. ...	56	16	44	38	22	...	34	32	3	1	38	19	197	106
"	Aerated waters, cordials, etc. ...	58	6	28	1	54	2	18	...	12	...	3	...	173	9
"	Tobacco, cigars, etc. ...	61	71	25	16	2	1	4	4	1	3	...	...	93	95
VII.	Boots and shoes ...	126	172	173	174	62	65	30	25	6	12	7	8	404	456
"	Clothing (tailoring and slop) ...	99	604	92	368	69	295	33	183	12	72	8	23	313	1,545
"	Dressmaking and millinery ...	1	463	8	509	3	125	...	98	1	98	...	64	13	1,357
"	Hats and caps ...	28	98	53	49	1	5	9	2	...	...	...	...	91	154
"	Shirts, ties, scarfs, etc. ...	2	156	8	345	9	132	1	69	2	39	...	...	22	741
"	Woollen, tweed, and cotton mills ...	18	50	91	77	11	23	4	10	...	...	5	2	129	162
VIII.	Electrotyping, printing and binding ...	334	154	439	100	237	77	73	17	65	29	51	11	1,199	388
"	Paper making, paper boxes, etc. ...	37	117	21	31	2	11	20	60	1	6	...	...	81	225
XI.	Coach & wagon building, etc. ...	75	...	137	...	44	...	47	...	13	...	12	...	328	...
XIII.	Billiard tables, cabinet making and furniture ...	65	...	69	2	54	2	45	...	16	...	15	...	264	4

5. **Apprenticeship.**—It is obvious that the age of apprenticeship in each State must be limited by the conditions governing the employment of child labour in factories. The early Apprentices' Acts in some of the States are apparently in conflict on this point with the Factories Acts. The statutes limiting the age at which children may begin to work may be regarded as applicable by way of preventing too early apprenticeship, so also may those directing that education be continued up to a certain age or standard.

Indentures must be entered into specifying the conditions of the employment. Apprenticeships may not exceed seven years in duration, and become inoperative at twenty-one years of age, or in the case of women, on marriage.

The Arbitration Courts and Wages Boards have power to limit the number of apprentices which may be taken into a factory. No general statistics of the number of apprentices in Australia have been collected up to the present time. Other enactments relating to child labour are referred to in Section XXVII. of this book, *Industrial Unionism and Industrial Legislation*.

§ 6. Amount of Wages Paid and Value of Production.

1. **Introduction.**—The importance of the manufacturing industries of the Commonwealth is indicated by the fact that the total value of the output for 1911 was £133,186,560, of which amount the sum of £79,041,576 represents the value of the raw materials used. The difference between these two amounts, viz., £54,059,984, represents the amount by which the value of the raw materials was enhanced in the process of manufacture. The total amount of salaries and wages paid in factories during 1911 was £27,531,876.

2. Amount of Salaries and Wages Paid, 1911.—The total amount of salaries and wages paid during the year 1911 in various classes of factories in the Commonwealth (excluding all sums drawn by working proprietors) is shewn in the following table.

It has been found impracticable to shew satisfactorily in this book the rates of wages paid to employees in various classes of manufacturing industries in Australia, owing to the facts—firstly, that the rates in many industries vary very considerably in different parts of the country; and secondly, that the necessary particulars are not collected by the several States on a uniform basis; while for some of the States the information given is meagre and unsatisfactory.

AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES IN COMMONWEALTH, 1911.*

Class of Industry.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	326,218	288,285	67,999	89,870	19,258	16,102	807,732
II. Treating oils and fats; animal, vegetable, etc. ...	67,228	59,119	18,856	22,926	3,964	2,793	174,886
III. Processes in stone, clay, glass, etc. ...	601,936	367,770	52,178	122,810	62,709	18,030	1,225,493
IV. Working in wood ...	732,465	638,875	393,345	194,679	708,628	178,343	2,851,335
V. Metal works, machinery, etc. ...	2,728,286	1,899,277	610,288	969,201	384,292	237,424	6,828,768
VI. Connected with food and drink, etc. ...	1,301,676	1,273,381	949,176	321,550	199,861	108,668	4,154,312
VII. Clothing and textile fabrics, etc. ...	1,633,509	2,100,633	407,337	311,764	192,446	91,657	4,737,346
VIII. Books, paper, printing and engraving ...	868,868	812,196	287,555	164,619	169,876	75,732	2,378,846
IX. Musical instruments, etc. ...	43,755	20,482	...	1,637	...	...	65,874
X. Arms and explosives ...	1,971	36,210	...	...	...	...	38,181
XI. Vehicles and fittings, saddlery and harness, etc. ...	391,955	349,675	118,812	146,145	75,343	31,815	1,113,745
XII. Ship and boat building and repairing ...	305,932	14,248	11,526	20,706	4,872	4,476	361,760
XIII. Furniture, bedding and upholstery ...	354,368	274,679	69,608	94,801	48,450	17,845	879,751
XIV. Drugs, chemicals, and by-products ...	124,844	146,913	4,507	60,873	31,918	...	369,055
XV. Surgical and other scientific instruments ...	8,202	6,957	2,434	875	1,179	...	19,697
XVI. Jewellery, timepieces, and plated ware ...	75,042	91,587	11,590	18,918	8,528	3,854	209,519
XVII. Heat, light, and power ...	374,046	345,066	69,830	88,330	59,807	38,550	976,249
XVIII. Leatherware, n.e.i. ...	36,789	33,972	5,001	2,407	2,545	...	86,714
XIX. Minor wares, n.e.i. ...	74,101	145,874	8,743	12,675	9,117	2,303	252,613
(Total ...	10,051,161	8,911,019	3,113,835	2,645,386	1,982,883	827,592	27,531,876

* Excluding all amounts drawn by working proprietors.

The maximum amount of salaries and wages paid in any particular class was in Class V., the amount being £6,828,768, or 24.78 per cent. on the total amount; the minimum amount was in Class XV., £19,697, or 0.07 per cent. on the total amount. The State in which the largest amount was paid was New South Wales. The following statement shews the total amount of salaries and wages paid, and the average amount paid per employee in each State, during each of the years 1907 to 1911; the figures are exclusive of the amounts drawn from the business by working proprietors:—

AMOUNT OF SALARIES AND WAGES PAID AND AVERAGE AMOUNT PER ANNUM PAID PER EMPLOYEE, 1907 TO 1911.

Year.	Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wth.
		£	£	£	£	£	£	£
1907	Total amount paid ...	6,650,715	5,982,677	1,923,639	1,731,394	1,380,708	651,844	18,323,977
	Average per employee ...	80.63	69.32	72.09	80.00	114.11	84.35	77.32
1908	Total amount paid ...	7,218,556	6,380,296	2,192,015	1,924,974	1,474,934	693,592	19,884,367
	Average per employee ...	84.72	71.59	78.28	83.55	123.56	84.43	80.99
1909	Total amount paid ...	7,665,125	6,897,851	2,324,005	2,028,691	1,506,360	779,624	21,111,656
	Average per employee ...	87.27	73.57	82.09	83.08	122.08	86.44	82.97
1910	Total amount paid ...	8,691,386	7,600,932	2,830,704	2,323,398	1,683,657	740,463	23,870,540
	Average per employee ...	90.83	78.18	86.79	90.44	123.93	78.81	87.06
1911	Total amount paid ...	10,051,161	8,911,019	3,113,835	2,645,386	1,982,883	827,592	27,531,876
	Average per employee ...	96.35	83.48	87.15	99.56	129.80	84.47	92.25

In comparing the figures in the above table regard should be paid to the nature of certain industries which are carried on to a greater extent in some States than in others (see § 2 hereof). In Victoria, for instance, where the average is lowest, there are a large number of factories and hands employed in Class VII., and in that class wages are low, a great many women and children being employed. The position occupied by Western Australia is no doubt partly due to the higher cost of living in that State.

It will be noted that—except in Tasmania—there has been a persistent increase in the average wage paid per employee in each of the States during the period under review, despite the tendency of the number of females employed in certain industries to increase at a higher ratio than males. Taking the Commonwealth as a whole, during the period 1907-11 there has been an increase of 50.25 per cent. on the total amount of wages paid and 19.31 per cent. on the average paid per employee.

The following tables shew the approximate amount paid in salaries and wages to males and females in each class of industry in certain States during 1911, and total amounts paid to each sex in New South Wales and Victorian factories during 1909, 1910 and 1911, and in South Australia and Tasmania during 1911. Similar information for Queensland and Western Australia is not available:—

AMOUNT OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS EMPLOYED IN EACH CLASS OF INDUSTRY IN CERTAIN OF THE STATES OF THE COMMONWEALTH, DURING 1911.*

Class of Industry.	N. South Wales.		Victoria.		Sth. Australia.		Tasmania.	
	Males.	Fe- males.	Males.	Fe- males.	Males.	Fe- males.	Males.	Fem.
	£	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	322,857	3,361	287,007	1,278	89,727	143	16,070	32
II. Treating oils and fats, animal, vegetable, etc. ...	59,750	7,478	57,850	1,269	22,490	436	2,585	208
III. Processes in stone, clay, glass, etc. ...	599,344	2,562	365,882	1,888	122,556	254	18,030	...
IV. Working in wood ...	729,344	3,121	636,992	1,863	194,258	421	177,941	402
V. Metal works, machinery, etc. ...	2,720,892	7,394	1,890,277	9,000	966,861	2,340	236,956	468
VI. Connected with food and drink, etc. ...	1,164,474	137,202	1,109,611	163,770	308,192	13,358	103,017	5,651
VII. Clothing and textile fabrics, etc. ...	822,186	811,323	909,853	1,190,780	138,165	173,599	49,498	42,159
VIII. Books, paper, printing and engraving ...	775,975	92,893	723,323	88,873	147,244	17,375	72,777	2,955
IX. Musical instruments, etc. ...	42,343	1,412	20,001	481	1,637	...	...	...
X. Arms and explosives ...	1,829	148	20,695	15,515	...	...	...	...
XI. Vehicles and fittings, saddlery and harness, etc. ...	387,413	4,542	345,315	4,360	145,019	1,126	31,111	704
XII. Ship and boat building and repairing ...	305,856	76	14,248	...	20,706	...	4,476	...
XIII. Furniture, bedding and upholstery ...	338,496	15,872	262,501	12,178	93,286	1,515	17,433	412
XIV. Drugs, chemicals and by-products ...	103,811	21,033	133,606	13,307	58,542	2,331	...	...
XV. Surgical and other scientific instruments ...	7,194	1,008	6,566	391	875	...	...	...
XVI. Jewellery, timepieces and platedware ...	70,520	4,522	88,245	3,342	18,473	445	3,854	...
XVII. Heat, light and power ...	371,548	2,498	330,953	14,133	88,235	695	38,446	104
XVIII. Leatherware, n.e.i. ...	33,815	2,974	31,819	8,153	2,055	352	...	...
XIX. Minor wares, n.e.i. ...	63,441	10,660	122,901	22,883	11,942	733	1,706	597
Total ...	8,921,082	1,130,079	7,357,735	1,553,284	2,430,263	215,123	773,800	53,692

* Exclusive of amount drawn by working proprietors.

**AMOUNT OF SALARIES AND WAGES PAID TO MALES AND FEMALES IN FACTORIES
IN CERTAIN STATES, 1909, 1910, AND 1911.***

Particulars.	N. South Wales.		Victoria.		Sth. Australia.		Tasmania.	
	Males.	Fe- males.	Males.	Fe- males.	Males.	Fe- males.	Males.	Fem.
1909. Amount paid ...	£6,823,732	841,393	5,607,703	1,200,148	...	...	...	...
Per cent. on total	89.02	10.98	82.37	17.63	...	...	...	...
Average per employee ...	£103.96	37.91	95.61	35.41	...	...	...	...
1910. Amount paid ...	£7,728,689	962,697	6,273,921	1,327,011	...	...	...	...
Per cent. on total	88.92	11.08	82.54	17.46	...	...	...	...
Average per employee ...	£107.84	40.08	101.20	37.67	...	...	...	...
1911. Amount paid ...	£8,921,082	1,130,079	7,357,735	1,553,284	2,430,263	215,123	773,900	53,692
Per cent. on total	88.76	11.24	82.57	17.43	91.87	8.13	93.51	6.49
Average per employee ...	£114.22	43.10	106.62	41.16	113.66	41.44	93.67	34.98

* Exclusive of amount drawn by working proprietors.

3. Value of Fuel and Light used in Factories, 1911.—The amount expended in factories on fuel and light is of considerable importance; in 1911 it amounted to £2,752,950, being an increase on the previous year's figures of £117,639. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £916,694; Class VI., Connected with Food, Drink, etc., £545,799; Class XVII., Heat, Light, Power, etc., £453,987, of which amount £374,271 was expended on generating electric light and power; and Class III., £355,037, of which £278,460 was represented in brick and pottery works, etc., and glass factories. The following tables shew the value of fuel and light used in the different classes of industry in the several States of the Commonwealth during 1911, and of the total used for each of the five years ended 1911 as far as the figures are available:—

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH, 1911.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	£ 38,481	£ 29,872	£ 1,907	£ 10,810	£ 2,346	£ 1,307	£ 84,723
II. Treating oils and fats, animal, vegetable, etc. ...	15,464	11,414	2,435	6,437	448	344	36,542
III. Processes in stone, clay, glass, etc. ...	173,720	99,407	7,257	48,592	20,443	5,618	355,037
IV. Working in wood... ..	15,826	10,947	8,273	3,712	1,506	742	41,006
V. Metal wks., machinery, etc. ...	491,913	134,899	36,552	156,179	22,846	74,305	916,694
VI. Connected with food and drink, etc. ...	156,430	166,870	129,805	52,410	29,300	10,984	545,799
VII. Clothing and textile fabrics, etc. ...	29,476	57,618	6,350	8,080	3,326	1,848	106,698
VIII. Books, paper, printing, and engraving ...	24,601	33,796	10,353	7,241	5,058	1,014	82,063
IX. Musical instruments, etc. ...	526	192	...	24	...	...	742
X. Arms and explosives ...	44	1,414	...	...	...	...	1,458
XI. Vehicles and fittings, saddlery and harness, etc. ...	11,132	12,264	1,455	4,868	2,814	684	33,217
XII. Ship and boat building and repairing ...	10,841	736	181	442	46	23	12,269
XIII. Furniture, bedding, and upholstery ...	5,201	5,949	2,110	2,718	1,193	604	17,775
XIV. Drugs, chemicals, and by-products ...	17,313	11,801	349	8,057	4,092	...	41,612
XV. Surgical and other scientific instruments ...	189	328	68	20	51	...	656
XVI. Jewellery, timepieces, and plated ware ...	1,535	2,650	322	602	175	91	5,375
XVII. Heat, light, and power ...	245,068	45,377	14,905	22,081	82,833	43,223	453,987
XVIII. Leatherware, n.e.i. ...	985	1,355	102	18	51	...	2,511
XIX. Minor wares, n.e.i. ...	3,868	10,108	136	514	131	29	14,786
Total	1,242,613	637,497	222,560	332,805	176,659	140,816	2,752,950

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1907 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	843,686	498,454	208,775	281,532	*	*	*
1908 ...	876,565	538,571	196,908	307,883	141,349	*	*
1909 ...	940,840	566,768	194,776	269,646	140,111	115,864	2,228,005
1910 ...	1,184,282	639,135	216,890	313,731	150,311	130,962	2,635,311
1911 ...	1,242,613	637,497	222,560	332,805	176,659	140,816	2,752,950

* Figures not available.

4. Value of Raw Materials used in Factories, 1911.—The total value of raw materials worked up (*i.e.*, exclusive of fuel, lubricants, etc.) in factories in the Commonwealth during 1911 was £79,041,576, which represents 59.35 per cent. of the total value of the finished products. (See next paragraph hereof.) The following table shows the value of the raw materials worked up in various classes of industry in each State during the year 1911 :—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH, 1911.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	3,903,225	2,202,360	1,156,457	581,960	185,998	145,619	8,175,619
II. Treating oils and fats, animal, vegetable, etc. ...	697,214	425,771	75,069	146,946	52,612	9,860	1,407,472
III. Processes in stone, clay, glass, etc. ...	261,061	176,482	10,832	39,394	12,526	6,076	528,391
IV. Working in wood ...	1,875,068	963,785	602,923	763,244	74,363	85,516	4,364,899
V. Metal wks., machinery, etc.	6,849,103	2,596,349	930,519	2,198,174	388,030	861,969	13,824,144
VI. Connected with food and drink, etc. ...	13,866,037	10,906,765	4,841,567	2,396,495	681,324	614,211	33,306,399
VII. Clothing and textile fabrics, etc. ...	2,741,126	4,159,441	724,165	536,162	283,668	115,887	8,560,449
VIII. Books, paper, printing, and engraving ...	805,018	827,281	142,583	157,336	93,473	36,925	2,062,618
IX. Musical instruments, etc. ...	69,461	12,607	...	1,651	...	...	83,719
X. Arms and explosives ...	9,047	76,642	...	...	...	...	85,689
XI. Vehicles and fittings, saddlery and harness, etc. ...	457,671	373,408	121,889	192,053	82,316	37,943	1,265,280
XII. Ship and boat building and repairing ...	165,786	9,723	6,133	9,523	5,775	2,004	198,944
XIII. Furniture, bedding, and upholstery ...	525,717	470,630	94,067	101,565	69,043	20,278	1,281,300
XIV. Drugs, chemicals, and by-products ...	493,145	603,093	14,407	275,680	82,992	...	1,469,317
XV. Surgical and other scientific instruments ...	7,587	8,703	2,115	800	175	...	19,380
XVI. Jewellery, timepieces, and platedware ...	113,758	181,361	15,419	22,478	13,614	3,640	350,270
XVII. Heat, light, and power ...	509,222	310,964	26,153	62,246	20,019	9,993	938,597
XVIII. Leatherware, n.e.i. ...	142,214	180,227	10,930	4,763	3,164	...	341,298
XIX. Minor wares, n.e.i. ...	190,911	541,983	13,107	19,267	10,254	2,319	777,791
Total ...	33,702,391	25,029,525	8,788,335	7,509,739	2,059,346	1,952,240	79,041,576

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £33,306,399. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £13,824,144 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £19,380. The year 1910 was the first for which reliable and complete returns were collected in every State relating to the value of raw materials worked up in factories; the following table, however, gives particulars for the five years ended 1911, so far as information is available :—

**VALUE OF RAW MATERIAL WORKED UP IN FACTORIES IN COMMONWEALTH
DURING THE YEARS 1907 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	22,746,162	17,926,128	6,490,086	5,379,636	*	†	†
1908 ...	25,507,414	18,662,070	6,946,550	6,690,976	1,592,216	†	†
1909 ...	27,314,486	19,706,530	7,658,195	6,004,459	1,529,211	‡3,053,979	65,266,860
1910 ...	31,416,579	21,941,255	9,476,819	6,695,255	1,809,959	1,456,369	72,796,236
1911 ...	33,702,391	25,029,525	8,788,335	7,509,739	2,059,346	1,952,240	79,041,576

* Details too incomplete for publication. † Figures not available. ‡ 1909 being the first year in which an attempt was made to collect this information in Tasmania, the returns cannot be accepted as being reliable and are probably overstated.

5. **Total Value of Output of Manufacturing Industries, 1911.**—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State during the year 1911 is shewn in the following table. The figures given represent not only the increased value due to the process of manufacture, but also include the value of the raw materials used. The difference between the value of the materials used and the total output (see paragraph 6 hereof) is the real value of production from manufactories.

TOTAL VALUE OF OUTPUT OF COMMONWEALTH, 1911.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'lh.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural & pastoral pursuits, etc.	4,591,465	2,785,665	1,467,255	723,132	226,500	184,471	9,983,488
II. Treating oils and fats, animal, vegetable, etc.	978,772	635,718	123,184	221,698	68,230	14,701	2,042,303
III. Processes in stone, clay, glass, etc.	1,538,773	863,256	107,670	278,412	135,012	40,464	2,963,587
IV. Working in wood	3,059,327	1,959,959	1,366,156	1,084,110	1,021,743	341,823	8,353,018
V. Metal works, machinery, etc.	12,205,898	5,566,641	1,912,832	3,967,375	853,407	1,344,401	25,855,554
VI. Connected with food and drink, etc.	17,744,466	14,313,109	7,637,832	3,299,911	1,236,030	900,883	45,122,240
VII. Clothing and textile fabrics, etc.	5,287,762	7,488,500	1,430,040	1,048,592	549,661	249,602	16,054,157
VIII. Books, paper, printing, and engraving	2,269,792	2,412,379	674,889	414,388	382,373	153,431	6,307,250
IX. Musical instruments, etc.	146,583	39,371	...	4,056	...	...	190,012
X. Arms and explosives	11,622	135,068	...	...	...	...	146,690
XI. Vehicles and fittings, saddlery and harness, etc.	1,076,110	905,384	324,766	443,640	188,326	82,771	3,020,997
XII. Ship and boat building and repairing	547,117	39,661	22,283	35,458	12,138	7,306	663,963
XIII. Furniture, bedding, and upholstery	1,047,000	898,764	235,996	243,864	134,971	53,807	2,614,402
XIV. Drugs, chemicals, and by-products	910,912	1,026,646	24,026	424,755	149,306	...	2,535,646
XV. Surgical and other scientific instruments	26,948	23,175	7,073	2,400	1,803	...	61,399
XVI. Jewellery, timepieces, and plated ware	240,554	347,102	30,107	53,514	30,420	10,028	711,725
XVII. Heat, light, and power	2,127,822	1,214,515	251,525	293,215	287,912	136,124	4,310,513
XVIII. Leatherware, n.e.i.	210,572	266,801	17,056	9,062	5,760	...	509,251
XIX. Minor wares, n.e.i.	324,616	826,149	22,972	38,268	23,065	5,275	1,240,365
Total ...	54,346,011	41,747,863	15,675,662	12,580,851	5,311,086	3,525,087	133,186,560

It may be seen that the State of New South Wales far outstrips the other States in the total value of the output of her factories, the value being £54,346,011, or 40.80 per cent. on the total for the Commonwealth. The next State in order of value is Victoria, which produced 31.35 per cent.; the value of the output of Queensland was 11.77 per cent.; of South Australia 9.44 per cent.; of Western Australia 3.99 per cent.; and of Tasmania 2.65 per cent. The four most important classes in order of value of output (Classes VI., V., VII. and I.) are the same as in order of value of raw materials used.

The following statement shows the value of output of factories in each State during the five years ended 1911 so far as particulars are available:—

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1907 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	37,231,012	29,693,634	11,209,515	8,923,004	*	†	†
1908 ...	40,163,826	30,787,760	11,182,009	10,471,671	4,056,365	†	†
1909 ...	42,960,689	32,898,235	12,823,695	9,923,105	4,008,604	14,882,430	107,501,758
1910 ...	49,615,643	36,660,854	15,792,109	11,184,695	4,533,611	3,073,246	120,860,158
1911 ...	54,346,011	41,747,663	15,675,662	12,580,851	5,311,086	3,525,087	133,166,560

PER HEAD OF MEAN POPULATION.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	24.12	24.23	20.65	24.02	*	†	†
1908 ...	25.53	24.82	20.60	27.44	15.73	†	†
1909 ...	26.88	26.09	23.16	25.33	15.23	†25.67	25.15
1910 ...	30.38	28.59	26.69	27.88	16.73	16.09	27.66
1911 ...	32.70	31.62	25.52	30.59	18.52	18.52	29.66

* Details too incomplete for publication. † Figures not available.

‡ See note (1) to last table § 6, 4.

6. Value of Production of Manufacturing Industries, 1911.—The difference between the figures given in paragraph 5 and the corresponding figures in paragraph 4 hereof represents the amount added to the value of the raw materials by the process of manufacture. This is the real measure of the value of production of manufacturing industries. The following table shows the value added in this manner in each State during the year 1911 for the various classes of factories:—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1911.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	Cwealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	688,240	583,305	310,798	146,172	40,502	38,852	1,807,869
II. Treating oils and fats, animal, vegetable, etc. ...	281,558	209,947	48,115	74,752	15,618	4,841	634,831
III. Processes in stone, clay, glass, etc. ...	1,257,692	684,774	96,838	239,018	122,486	34,388	2,435,196
IV. Working in wood ...	1,184,159	996,174	783,233	320,866	947,380	256,307	4,488,119
V. Metal works, machinery, etc. ...	5,356,795	2,970,292	982,313	1,769,201	470,377	482,432	12,031,410
VI. Connected with food and drink, etc. ...	3,878,429	3,406,344	2,796,265	893,416	554,715	286,672	11,815,841
VII. Clothing and textile fabrics, etc. ...	2,546,636	3,329,059	705,875	512,430	265,993	133,715	7,493,708
VIII. Books, paper, printing, and engraving ...	1,464,774	1,585,098	532,306	257,048	288,900	116,506	4,244,632
IX. Musical instruments, etc. ...	77,122	26,764	...	2,407	...	...	106,293
X. Arms and explosives ...	2,575	58,426	...	...	...	...	61,001
XI. Vehicles and fittings, saddlery and harness, etc. ...	618,439	531,976	202,877	251,587	106,010	44,828	1,755,717
XII. Ship and boat building and repairing ...	381,331	29,933	16,150	25,935	6,363	5,302	465,019
XIII. Furniture, bedding, and upholstery ...	521,283	428,134	141,929	142,299	65,928	33,529	1,333,102
XIV. Drugs, chemicals, and by-products ...	417,767	423,553	9,619	149,076	66,314	...	1,066,329
XV. Surgical and other scientific instruments ...	19,361	14,472	4,958	1,600	1,628	...	42,019
XVI. Jewellery, timepieces, and plated ware ...	126,796	165,741	14,688	31,036	16,806	6,388	361,455
XVII. Heat, light, and power ...	1,618,600	903,551	225,372	230,969	267,293	126,131	3,371,916
XVIII. Leatherware, n.e.i. ...	68,358	86,574	6,126	4,299	2,596	...	167,953
XIX. Minor wares, n.e.i. ...	133,705	284,216	9,865	19,001	12,831	2,956	462,574
Total ...	20,643,620	16,718,338	6,887,327	5,071,112	3,251,740	1,572,847	54,144,984

It may be seen that the amount of the value added in each State is in the same order as in the case of value of output. The value added to raw material by process of manufacture and amount per head of mean population is shown in the following statement for the years 1907 to 1911:—

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH,
1907 to 1911.**

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tas.	C'wealth.
VALUE.							
	£	£	£	£	£	£	£
1907 ...	14,484,850	11,767,506	4,719,429	3,543,368	*	†	†
1908 ...	14,656,412	12,125,690	4,235,459	3,780,695	2,464,149	†	†
1909 ...	15,646,203	13,191,705	5,165,500	3,923,646	2,479,393	‡1,828,451	42,234,698
1910 ...	18,199,064	14,719,599	6,315,290	4,489,440	2,723,652	1,616,877	48,063,922
1911 ...	20,643,620	16,718,338	6,887,327	5,071,112	3,251,740	1,572,847	54,144,984
PER HEAD OF MEAN POPULATION.							
1907 ...	9.38	9.60	8.70	9.54	*	†	†
1908 ...	9.32	9.77	7.80	9.91	9.56	†	†
1909 ...	9.79	10.46	9.33	10.01	9.42	‡9.61	9.88
1910 ...	11.14	11.48	10.68	11.19	10.05	8.47	11.00
1911 ...	12.42	12.66	11.21	12.33	11.34	8.26	12.06

* Details too incomplete for publication. † Figures not available. ‡ See note (t) to last table § 6, 4.

It may thus be seen that in 1911 the positions of the two leading States, New South Wales and Victoria, as also those of Queensland and Western Australia, in regard to total value of output of factories per head of mean population, do not coincide in regard to value added per head. The other two States retain their relative positions.

As the total value of the output for the Commonwealth was estimated at £133,186,560, there remained, after payment of £79,041,576, the value of the raw materials used, of £27,531,876 for salaries and wages, and of £2,752,950 for fuel, the sum of £23,860,158 to provide for all other expenditure and profits. The following table gives corresponding particulars for each State, expressed absolutely and as percentages of the total value of the output:—

**VALUE OF OUTPUT AND COST OF PRODUCTION IN COMMONWEALTH
FACTORIES, 1911.**

State.	Raw Materials Used.	Fuel and Light.	Salaries and Wages.	All other Expenditure Interest, and Profits.	Total Value of Output.
VALUE AND COST, ETC.					
	£	£	£	£	£
New South Wales ...	33,702,391	1,242,613	10,051,161	9,349,846	54,346,011
Victoria ...	25,029,525	637,497	8,911,019	7,169,822	41,747,863
Queensland ...	8,788,335	222,560	3,113,835	3,550,932	15,675,662
South Australia ...	7,509,739	332,805	2,645,336	2,092,921	12,580,851
Western Australia ...	2,059,346	176,659	1,982,883	1,092,198	5,311,086
Tasmania ...	1,952,240	140,816	827,592	604,439	3,525,087
Commonwealth ...	79,041,576	2,752,950	27,531,876	23,860,158	133,186,560
PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.					
	%	%	%	%	%
New South Wales ...	62.01	2.29	18.50	17.20	100.00
Victoria ...	59.95	1.53	21.35	17.17	100.00
Queensland ...	56.06	1.42	19.86	22.66	100.00
South Australia ...	59.69	2.65	21.03	16.63	100.00
Western Australia ...	38.77	3.33	37.33	20.57	100.00
Tasmania ...	55.38	3.99	23.48	17.15	100.00
Commonwealth ...	59.35	2.07	20.67	17.91	100.00

§ 7. Land, Buildings, Plant and Machinery.

1. **General.**—As an indication of the permanent character and stability of the industries which have been established in the Commonwealth, it may be noted that the values of land and buildings and of plant and machinery used in the factories are rapidly increasing. Thus, for the whole Commonwealth the total value of land and buildings and plant and machinery has increased from 1906 to 1911 by £17,273,655, *i.e.*, from £46,824,439 to £64,098,144, or at the rate of £3,454,731 per annum.

The following statement shews for the year 1911 the values of land and buildings and of plant and machinery used in connection with manufacturing industries in each State:—

VALUE OF LAND, BUILDINGS, PLANT AND MACHINERY IN CONNECTION WITH MANUFACTURING INDUSTRIES, 1911.

Value of—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lh.
	£	£	£	£	£	£	£
Land and buildings ...	13,474,455	9,921,520	3,277,776	2,954,855	1,819,342	1,050,987	32,498,935
Plant and machinery ...	12,510,600	8,336,373	4,947,259	2,506,000	2,082,777	1,216,200	31,599,209
Total ...	25,985,055	18,257,893	8,225,035	5,460,855	3,902,119	2,267,187	64,098,144

It may be seen from the above table that the total capital invested in land, buildings, plant, and machinery in manufacturing industries in the Commonwealth during the year 1911 was approximately £64,098,144 (or £14.27 per head of mean population); of that sum £32,498,935 was invested in land and buildings occupied as manufactories, the remaining £31,599,209 being the value of the plant and machinery used in connection therewith.

2. **Value of Land and Buildings.**—The value of the land and buildings occupied in connection with manufacturing industries may be conveniently classified according to the nature of the industry conducted therein.

(i.) *Total Value in Commonwealth, 1907 to 1911.* The following table shews for the whole Commonwealth the approximate values of land and buildings occupied in connection with manufacturing industries of various classes during each year from 1907 to 1911 inclusive:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH, 1907 to 1911.

Class of Industry.	1907.	1908.	1909.	1910.	1911.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	781,733	847,113	870,588	921,785	978,978
II. Treating oils & fats, animal, vegetable, etc. ...	343,424	359,624	370,681	394,079	445,499
III. Processes in stone, clay, glass, etc. ...	820,332	937,753	956,733	1,073,612	1,228,889
IV. Working in wood ...	1,090,551	1,195,581	1,285,267	1,492,673	1,668,045
V. Metal works, machinery, etc. ...	3,709,314	4,378,755	4,415,525	4,554,693	5,000,274
VI. Connected with food and drink, etc. ...	6,708,611	7,161,845	7,191,976	7,399,625	8,167,496
VII. Clothing and textile fabrics, etc. ...	3,396,599	3,377,905	3,809,148	4,191,488	4,601,924
VIII. Books, paper, printing, and engraving ...	2,357,799	2,483,693	2,642,029	2,779,754	2,964,466
IX. Musical instruments, etc. ...	27,405	31,054	33,314	75,632	82,168
X. Arms and explosives ...	31,152	34,586	33,016	38,763	41,462
XI. Vehicles & fittings, saddlery & harness, etc. ...	1,079,859	1,172,556	1,186,750	1,325,152	1,453,077
XII. Ship and boat building and repairing ...	991,907	988,141	1,033,513	1,052,868	1,163,299
XIII. Furniture, bedding, and upholstery ...	633,237	666,289	697,273	764,170	898,093
XIV. Drugs, chemicals, and by-products ...	444,060	531,765	543,507	687,162	760,441
XV. Surgical and other scientific instruments ...	31,779	33,054	56,378	56,149	61,703
XVI. Jewellery, timepieces, and platedware ...	204,734	226,352	232,483	271,834	300,717
XVII. Heat, light, and power ...	1,855,438	1,928,734	2,026,611	2,112,220	2,320,348
XVIII. Leatherware, n.e.i. ...	57,043	91,036	83,578	100,096	111,506
XIX. Minor wares, n.e.i. ...	193,797	218,840	210,325	220,984	250,550
Total ...	24,758,774	26,664,676	27,678,695	29,512,739	32,498,935

It may be seen from the above table that the total net increase during the four years was £7,740,161, or an annual average of £1,935,040. The largest increases were in Classes V. and VII., and amounted to £1,290,960 and £1,205,325 respectively.

(ii.) *Value in each State, 1911.* The following table gives similar information for each State up to the 31st December, 1911:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1911.

Class of Industry.	N.S.W.	Victoria.	Q'land	S.A.	W.A.	Tas.	C'w'lth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	386,309	397,764	50,653	97,378	29,570	17,299	978,978
II. Treating oils and fats, animal, vegetable, etc. ...	237,032	113,721	23,531	57,765	8,350	4,950	445,499
III. Processes in stone, clay, glass, etc. ...	671,210	352,995	29,555	93,894	52,094	24,140	1,228,889
IV. Working in wood ...	801,240	316,234	164,410	134,729	174,853	76,579	1,668,045
V. Metal works, machinery, etc. ...	2,259,799	1,169,173	531,360	510,941	468,826	60,175	5,000,274
VI. Connected with food and drink, etc. ...	2,650,960	2,469,360	1,350,618	712,584	407,096	576,878	8,167,496
VII. Clothing and textile fabrics, etc. ...	1,986,901	1,668,060	289,824	384,427	163,830	108,882	4,601,924
VIII. Books, paper, printing and engraving ...	1,193,411	877,265	399,430	277,310	174,018	43,032	2,964,465
IX. Musical instruments, etc. ...	57,635	21,383	...	3,100	...	...	82,168
X. Arms and explosives ...	5,600	35,862	...	...	...	...	41,462
XI. Vehicles and fittings, saddlery and harness, etc. ...	565,963	402,648	130,891	216,700	86,455	50,415	1,453,077
XII. Ship and boat building and repairing ...	617,224	473,900	8,835	59,390	2,030	1,950	1,163,399
XIII. Furniture, bedding and upholstery ...	363,774	313,695	79,179	71,123	40,710	29,612	898,093
XIV. Drugs, chemicals, and by-products ...	241,977	292,150	10,500	136,717	79,097	...	760,441
XV. Surgical and other scientific instruments ...	26,848	14,895	12,410	4,520	3,030	...	61,703
XVI. Jewellery, timepieces, and platedware ...	109,452	115,809	19,766	35,740	7,150	9,800	300,717
XVII. Heat, light, and power ...	1,145,694	747,492	161,309	117,585	104,093	44,175	2,320,348
XVIII. Leatherware, n.e.i. ...	42,993	47,303	8,300	7,160	5,250	...	111,506
XIX. Minor wares, n.e.i. ...	110,378	91,810	6,580	25,792	12,890	3,100	250,550
Total ...	13,474,465	9,921,520	3,277,776	2,954,855	1,819,342	1,050,987	32,498,935

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £8,167,496, or 25.13 per cent. on the total value. The next classes in importance were Classes V., VII., VIII., and XVII., in which the values were £5,000,274, £4,601,924, £2,964,466, and £2,320,348 respectively. The sum of the values for the five classes mentioned amounted to £23,054,508, or 70.94 per cent. on the total value for all classes.

(iii.) *Total Value in each State, 1907 to 1911.* The following table shows the total value of land and buildings occupied as manufactories in each State at the end of each year from 1907 to 1911 inclusive:—

TOTAL VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1907 to 1911.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1907...	9,508,259	8,376,642	2,261,539	2,140,516	1,637,207	834,611	24,758,774
1908...	10,390,260	8,589,027	2,763,085	2,311,650	1,565,756	1,044,898	26,664,676
1909...	11,014,362	8,642,344	2,888,923	2,432,655	1,522,692	1,177,719	27,678,695
1910...	12,108,776	9,012,263	3,045,974	2,648,658	1,674,953	1,022,115	29,512,739
1911...	13,474,465	9,921,520	3,277,776	2,954,855	1,819,342	1,050,987	32,498,935

It may be seen that since 1907 there has been a general, though in two States an irregular increase; the temporary fall in Western Australia was probably due to the general reduction in values of real estate in that State during the past few years. The fall in Tasmania for 1910 was due to the closing down of a large pyrites works.

3. Value of Plant and Machinery.—The following table shews for the whole Commonwealth the approximate value of plant and machinery used in connection with factories at the end of each year from 1907 to 1911 inclusive:—

**VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH,
1907 to 1911.**

Class of Industry.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	644,597	671,015	754,556	829,255	877,820
II. Treating oils & fats, animal, vegetable, etc. ...	331,595	349,997	349,479	360,660	435,315
III. Processes in stone, clay, glass, etc. ...	752,084	833,809	801,193	1,109,139	1,299,774
IV. Working in wood ...	1,506,933	1,583,496	1,623,497	1,852,296	2,207,708
V. Metal works, machinery, etc. ...	4,237,810	4,633,656	4,941,632	5,255,575	5,722,956
VI. Connected with food and drink, etc. ...	7,340,941	7,744,682	7,772,770	8,212,440	8,570,565
VII. Clothing and textile fabrics, etc. ...	1,132,083	1,153,698	1,280,102	1,403,135	1,533,062
VIII. Books, paper, printing, and engraving ...	1,993,135	2,091,168	2,207,330	2,362,268	2,481,399
IX. Musical instruments, etc. ...	7,829	9,124	11,263	16,443	17,924
X. Arms and explosives ...	45,613	46,113	45,940	47,012	56,255
XI. Vehicles & fittings, saddlery & harness, etc. ...	195,271	204,138	220,746	249,973	283,470
XII. Ship and boat building, and repairing ...	352,486	432,803	434,905	443,429	478,012
XIII. Furniture, bedding, and upholstery ...	106,613	117,461	126,000	150,774	177,924
XIV. Drugs, chemicals, and by-products ...	332,349	398,028	435,019	517,781	602,276
XV. Surgical and other scientific instruments ...	6,340	8,144	9,215	9,929	11,158
XVI. Jewellery, timepieces, and platedware ...	45,927	46,160	43,980	49,490	61,765
XVII. Heat, light, and power ...	5,555,544	5,481,759	5,561,353	5,961,816	6,611,770
XVIII. Leatherware, n.e.i. ...	16,523	18,989	19,555	24,651	25,565
XIX. Minor wares, n.e.i. ...	82,435	96,503	116,097	120,669	138,896
Total ...	24,686,108	25,927,763	26,855,212	28,976,735	31,599,209

It may be seen that during the period in question there has been a steady and substantial net increase amounting in all to £6,913,101, or an annual average of £1,728,275. The increase has occurred in all classes of industry, the largest increase being in Class V., "Metal Works, Machinery, etc.," amounting to £1,485,146, while the two next largest were in Class VI., "Connected with Food and Drink, etc.," amounting to £1,229,624, and Class XVII., "Heat, Light, and Power," with an increase of £1,056,226.

(i.) *Total Value in each State, 1907 to 1911.* The classified figures in the preceding table for the whole Commonwealth are shewn below for each State. It will be seen that the progress in value referred to is general throughout the States. New South Wales shews by far the largest increase, viz., £3,354,828; while Victoria comes next with £1,564,915.

VALUE OF PLANT AND MACHINERY IN FACTORIES, 1907 to 1911.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1907	9,155,772	6,771,458	3,989,679	1,900,744	1,893,351	975,104	24,686,108
1908	9,718,842	6,957,606	4,470,145	2,064,097	1,744,652	972,421	25,927,763
1909	10,330,724	7,140,304	4,457,314	2,135,203	1,728,207	1,063,460	26,855,212
1910	11,578,620	7,601,085	4,631,519	2,225,718	1,893,602	1,046,191	28,976,735
1911	12,510,600	8,336,373	4,947,259	2,506,000	2,082,777	1,216,200	31,599,209

(ii.) *Classified Value in each State, 1911.* The following table shews the value of plant and machinery used in factories in each State during the year 1911, classified according to the nature of the industry in which used:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1911.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	349,418	283,339	116,122	66,620	21,920	40,401	877,820
II. Treating oils and fats, animal, vegetable, etc.	243,434	125,035	40,209	18,602	6,600	1,435	435,315
III. Processes in stone, clay, glass, etc.	808,049	291,067	56,467	90,053	40,026	14,112	1,299,774
IV. Working in wood ...	693,017	377,250	423,234	71,291	433,121	209,790	2,207,703
V. Metal wks, machinery, etc.	2,894,994	1,166,721	485,195	465,612	331,198	379,236	5,722,956
VI. Connected with food and drink, etc.	2,855,174	1,852,023	2,838,527	531,910	344,782	148,149	8,570,565
VII. Clothing and textile fabrics, etc.	485,056	761,098	128,410	85,479	26,956	51,063	1,538,062
VIII. Books, paper, printing, and engraving ...	984,767	812,758	254,774	195,319	172,112	62,269	2,481,999
IX. Musical instruments, etc.	10,834	6,300	...	790	...	...	17,924
X. Arms and explosives ...	1,000	55,255	...	...	...	...	56,255
XI. Vehicles and fittings, saddlery and harness, etc.	99,196	83,976	32,746	42,199	17,926	7,427	283,470
XII. Ship and boat building and repairing ...	387,503	64,386	11,143	11,640	1,110	2,230	478,012
XIII. Furniture, bedding, and upholstery ...	53,118	55,969	23,531	29,260	10,882	5,164	177,924
XIV. Drugs, chemicals, and by-products ...	196,370	176,637	4,400	118,336	106,533	...	602,276
XV. Surgical and other scientific instruments ...	4,400	3,396	1,467	1,000	895	...	11,158
XVI. Jewellery, timepieces, and plated ware ...	23,470	28,073	3,502	4,453	1,147	1,120	61,765
XVII. Heat, light, and power ...	2,344,592	2,112,853	525,363	770,600	565,067	293,295	6,611,770
XVIII. Leatherware, n.e.i.	13,087	10,446	1,097	240	695	...	25,565
XIX. Minor wares, n.e.i.	63,121	69,791	1,072	2,596	1,807	509	138,896
Total ...	12,510,600	8,336,373	4,947,259	2,506,000	2,082,777	1,216,200	31,599,209

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £8,570,565, or 27.12 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," which amounts to £6,611,770, or 20.92 per cent. on the total; followed by Class V., "Metal Works, Machinery, etc.," amounting to £5,722,956, or 18.11 per cent. on the total value. The total for the three classes just specified amounts to £20,905,291, or 66.15 per cent. on the total value for all classes.

§ 8. Individual Industries.

1. **General.**—The preceding remarks and tables furnish a general view of the recent development of particular classes of industries in Australia treated under the nineteen categories referred to in § 1, 3 hereof. In order to make the information complete, it must necessarily be supplemented by details exhibiting the development of individual industries. This alone will furnish adequate information as to the channels into which the main efforts of Australian manufacture flow. While it is not possible, within the limits of this article, to give anything like a detailed account of the manufacturing industries of the Commonwealth, it is proposed to deal herein with such particular industries as are of special importance by reason of the number of persons employed, the number of factories, the amount of capital invested therein, the value of the production, or other features of special interest. In cases where there are only one or two establishments of a particular class in any State, returns relative to output are not published, in order to avoid disclosing information as to the operations of individual factories.

2. **Tanning Industry.**—In Class I. (see § 1. 3 hereof) the most important industry is tanning. Until recent years the production of tanneries in Australia was confined to the coarser class of leathers, but lately the tanning of the finer skins has been undertaken with satisfactory results. The position of the industry in the several States in 1911 was as follows:—

TANNERIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
Number of factories	76	56	19	14	4	7	176
" employees	1,039	1,616	230	223	68	71	3,247
Actual horse-power of engines employed ...	1,044	1,401	321	208	97	97	3,168
Approx. value of lands and buildings £	107,422	170,949	16,620	25,054	14,320	9,549	343,914
Approx. value of plant and machinery £	52,241	113,027	17,364	11,432	8,850	5,331	241,245
Total amount of wages paid during year £	104,695	163,446	23,735	25,396	7,701	7,233	332,206
Value of fuel used	7,160	10,724	980	1,784	635	428	21,711
Value of raw material worked up ...	£ 786,817	974,552	149,993	111,895	34,588	41,184	2,099,034
Total value of output	£ 982,023	1,258,431	202,220	155,265	46,974	53,337	2,698,250
Value added in process of manufacture £	195,206	253,879	52,222	43,370	12,386	12,153	599,216

(i.) *Progress of Tanning, etc. Industries, 1907 to 1911.* For years prior to 1908 returns for tanneries are not generally available separately, but are grouped with the wool-scouring and fellmongering industries. The development of the tanning, fellmongering, and wool-scouring industries during the period 1907 to 1911 is shewn in the following table, from which it will be seen that though the number of factories is almost stationary, the number of employees shews a satisfactory increase, amounting to 14.35 per cent. during the period under consideration.

DEVELOPMENT OF TANNING, Etc., INDUSTRIES, 1907 to 1911.

State.	Number of Factories.					Number of Employees.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
N. S. Wales ...	152	146	147	140	135	2,507	2,396	2,544	2,640	2,642	159,850	167,071	188,820	245,082	242,441
Victoria ...	90	92	93	89	88	1,893	2,001	1,999	1,956	2,123	124,064	133,376	142,429	141,702	165,964
Queensland ...	37	39	36	40	37	615	585	667	769	659	81,225	91,492	88,337	96,811	109,193
S. Australia ...	12	14	15	17	17	294	341	288	286	274	9,197	11,991	14,161	13,986	14,677
West. Australia ...	3	3	4	4	4	64	69	69	67	68	5,500	5,640	5,508	6,070	8,850
Tasmania ...	6	9	8	8	7	67	78	68	66	71	6,550	7,476	7,600	7,150	8,331
Commonwealth	300	303	303	298	288	5,440	5,570	5,635	5,784	5,837	386,386	417,046	446,855	510,801	549,456

(ii.) *Production of Tanneries, 1911.* The quantity of raw materials used and the quantity and value of leather produced in tanneries in each State during the year 1911 are shewn in the following table:—

RAW MATERIALS USED AND LEATHER PRODUCED IN TANNERIES, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
RAW MATERIALS USED.							
Hides ... No. (,000 omitted)	530	524	92	87	25	19	1,277
Felts treated No. ...	4,643	*	*	58	...	*	*
Bark Tons	11,681	10,856	1,909	1,590	557	556	27,149
LEATHER AND BASIS PRODUCED.							
LEATHER— Quantity lbs. (,000 omitted)	13,907	15,341	2,849	2,378	942	419	35,836
Value £	790,919	875,000	185,066	150,826	46,975	36,040	2,083,926
BASIS— Quantity lbs. (,000 omitted)	4,324	576	*	55	...	18	*
Value £	159,211	28,000	9,088	3,400	...	849	200,548

* Not available.

3. Soap and Candle Factories.—In Class II. (see § 1. 3 hereof) the manufactures of soap and candles are the most important industries. These two manufactures are frequently carried on in the same establishments, so that separate returns cannot be obtained; it may, however, be said generally that the manufacture of soap is the more important of the two. The following table gives particulars of soap and candle factories in each State during the year 1911:—

SOAP AND CANDLE FACTORIES, 1911.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Cwth.
Number of factories	37	16	18	6	2	2	81
“ employees	658	538	175	221	46	30	1,668
Actual horse-power of engines employed	585	381	145	115	17	23	1,266
Approximate value of land and buildings plant and machinery	£ 166,408	100,000	23,681	44,585	8,350	4,800	347,824
Total amount of wages paid during year	£ 150,453	113,694	40,209	14,262	6,600	1,085	326,273
Value of fuel used	£ 49,555	53,474	18,556	20,545	3,964	2,198	148,592
Value of raw material worked up	£ 12,205	10,177	2,435	6,092	*	*	31,701
Total value of output	£ 359,096	378,393	75,069	143,847	*	*	1,018,757
Value added in process of manufacture	£ 597,544	572,000	123,184	213,782	*	*	1,588,416
Value added in process of manufacture	£ 238,448	193,607	48,115	69,935	*	*	569,659

* As there are only two soap and candle factories in each of these States, returns relative to output, etc., are not disclosed.

(i.) *Development of Soap and Candle Factories, 1907 to 1911.* The following table gives particulars for the last five years regarding the number of factories and employees and the value of plant and machinery in these industries in each State:—

DEVELOPMENT OF SOAP AND CANDLE FACTORIES, 1907 to 1911.

State.	Number of Factories.					Average Number of Employees.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	34	29	26	33	37	553	553	571	624	658	£ 127,311	£ 135,786	£ 127,437	£ 132,004	£ 150,453
Vic. ...	15	17	17	16	16	510	535	563	540	538	106,326	109,768	111,252	113,416	113,664
Q'land...	15	16	18	17	18	142	159	174	168	175	35,562	35,794	40,102	39,202	40,209
S. Aus....	7	6	7	6	6	166	164	185	192	221	11,896	12,484	14,224	13,128	14,262
W. Aus...	3	3	3	4	2	57	50	50	46	46	6,938	4,910	3,200	6,725	6,600
Tas.	2	2	2	2	2	35	35	39	32	30	3,600	4,000	3,800	1,216	1,085
C'wth....	76	73	73	78	81	1,463	1,496	1,582	1,606	1,668	291,633	302,742	300,015	305,693	326,273

(ii.) *Production of Soap and Candles, 1907 to 1911.* The subjoined statement shews that, taking the Commonwealth as a whole, there has been a considerable and consistent increase in the output of soap during the past four years. The quantity of candles produced during 1911 shews a falling off as compared with the two previous years, but a slight increase over the output of 1908.

PRODUCTION OF SOAP AND CANDLES, 1907 to 1911.

State.	Soap.					Candles.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	cwt. 225,217	cwt. 217,321	cwt. 206,678	cwt. 245,538	cwt. 269,019	lbs. 5,656,354	lbs. 5,566,776	lbs. 6,922,488	lbs. 6,689,875	lbs. 5,388,848
Vic. ...	153,478	162,757	176,162	187,433	189,048	5,341,056	4,222,960	5,091,520	5,014,016	4,654,384
Q'land...	59,900	67,755	73,446	74,338	71,936	*	1,028,160	557,312	985,040	1,188,880
S. Aus....	56,745	61,614	66,043	66,800	70,080	1,975,075	1,806,725	1,678,900	1,788,224	1,771,175
W. Aus...	31,774	29,767	35,419	34,707	†	1,300,625	1,259,214	1,309,066	1,225,356	†
Tas.	9,679	10,500	9,900	8,642	†	672,000	448,000	537,600	495,040	†
C'wth....	536,793	549,714	567,648	617,458	639,458	14,945,110	14,331,835	16,096,886	16,197,551	14,573,662

* Not available. † Incomplete. ‡ Figures not available for publication.

(iii.) *Raw Material Used, 1911.* The following statement shews the quantity of certain raw materials used in soap and candle factories in each State during the year 1911 :—

RAW MATERIALS USED IN SOAP AND CANDLE FACTORIES, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lh.
Tallow cwt.	113,893	143,167	35,640	48,696	*	*	356,471
Alkali "	56,202	40,133	21,373	9,006	*	*	133,675
Cocoonut oil gal.	349,026	124,677	...	31,909	...	...	505,612

* Figures not available for publication.

In addition to the above, Queensland returns shew 4 cwt. and Tasmanian returns 90 cwt. of copra.

4. *Saw Mills, etc.*—The most important industry in Class IV. is that of saw-milling. As separate particulars of forest saw mills are not available for some of the States, both forest and other saw mills as well as joinery, moulding and box factories have been combined in the following table.

SAW MILLS, FOREST AND OTHER, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lh.
Number of factories	615	321	264	89	72	133	1,494
" employees	7,733	6,144	4,543	1,777	4,517	2,071	26,785
Actual horse-power of engines employed	13,801	7,087	6,334	1,432	3,480	2,405	34,539
Approx. value of land and buildings £	736,467	266,117	153,470	126,734	174,853	74,979	1,632,620
" plant and machinery £	654,220	356,727	420,059	67,991	433,121	209,765	2,141,883
Total amount of wages paid during year £	693,738	594,857	593,201	184,054	706,628	177,731	2,749,209
Value of fuel used £	14,888	8,938	7,805	3,411	1,506	740	37,308
Value of raw material worked up	£1,810,817	901,571	587,827	748,543	74,363	85,212	4,206,333
Total value of output £	2,937,269	1,821,600	1,359,197	1,054,995	1,021,743	340,796	6,535,900
Value added in process of manufacture £	1,126,452	920,229	771,370	306,452	947,330	255,584	4,327,467

5. *Agricultural Implement Factories.*—The manufacture of agricultural implements is an important industry in Australia, and is of particular interest owing to the fact that it is one of the first industries to which what has been called the "New Protection" system was sought to be applied (see Section XXVII. hereof). The nature of the machines manufactured may be gathered from the machines scheduled in the Customs tariff, 1906-7, which includes stripper harvesters, strippers, stump-jump ploughs, disc cultivators, winnowers, corn-shellers and baggers, drills, and other implements usually employed in agriculture. The stripper-harvester, which combines the stripper with a mechanism for winnowing and bagging grain, is an Australian invention, and is exported to many countries.

The following table gives particulars of the agricultural implement works of Australia for the year 1911 :—

AGRICULTURAL IMPLEMENT WORKS, 1911.

Items.	N.S.W.	Victoria	Q'land.	S.Aust.	W.A.	Tas.	C'w'lh.
Number of factories	20	59	3	63	7	3	155
" employees	615	2,717	89	1,616	97	22	5,156
Actual horse-power of engines employed	170	921	46	1,125	79	6	2,347
Approx. value of land and buildings £	61,944	126,755	3,139	80,916	10,915	800	284,469
" plant and machinery £	18,360	140,133	3,672	73,294	8,951	615	245,025
Total amount of wages paid during year £	63,318	297,824	7,424	170,609	11,059	688	550,922
Value of fuel used £	1,855	19,299	367	9,776	1,018	27	32,342
Value of raw material worked up	£247,098	345,665	13,272	163,308	41,393	586	811,322
Total value of output £	341,780	831,474	25,350	490,439	55,352	1,929	1,656,364
Value added in process of manufacture £	94,682	485,809	12,078	237,191	13,939	1,343	845,042

(i.) *Development of Agricultural Implement Works.* The following table shews the progress of this industry during the years 1907 to 1911 :—

AGRICULTURAL IMPLEMENT WORKS, 1907 to 1911.

State.	Number of Factories.					Number of Employees.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
											£	£	£	£	£
N.S.W.	21	20	21	21	20	499	434	481	600	615	16,426	16,008	18,063	18,575	18,360
Vic. ...	55	52	52	50	59	1,618	1,441	1,892	2,255	2,717	66,492	69,335	84,067	105,429	140,133
Q'land	4	2	4	4	3	142	108	284	364	89	9,444	8,244	12,121	14,283	3,672
S. Aus.	49	54	59	60	63	827	1,092	1,346	1,544	1,616	34,034	38,157	49,405	62,315	73,294
W. Aus.	2	3	5	6	7	15	25	49	73	97	3,450	4,259	5,277	6,663	8,951
Tas. ...	13	9	7	9	3	45	34	29	32	22	796	235	845	920	615
C'wth	144	140	148	150	155	3,146	3,134	4,061	4,868	5,156	130,642	136,238	169,778	208,185	245,025

6. **Engineering, Ironworks, and Foundries.**—The classification in these industries is not very satisfactory. Generally, engineering shops, ironworks, and foundries are included, as also are factories for making nails, safes, patterns, meters, and springs. Railway workshops, agricultural implement factories, cyanide, smelting, pyrites, and metallurgical works, galvanised iron, stoves and ovens, and wire working establishments are not included. The combination of industries is rendered necessary by the limited classification still adopted by some of the States.

ENGINEERING, IRONWORKS, AND FOUNDRIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	263	336	96	53	51	21	830
" employees	8,586	7,867	2,768	1,834	1,062	422	22,539
Actual horse-power of engines employed	7,452	5,237	1,068	1,226	676	356	16,015
Approx. value of land and buildings	£ 751,914	471,524	152,671	85,936	26,990	30,890	1,579,925
" " plant and machinery	£ 718,691	602,035	166,699	101,860	72,149	44,971	1,706,405
Total amount of wages paid during year	£ 908,267	806,657	253,356	207,375	127,071	39,377	2,342,603
Value of fuel used	£ 56,396	81,240	14,371	16,025	7,876	2,638	178,546
Value of raw materials worked up	£ 1,137,894	1,013,530	280,765	233,494	133,317	33,181	2,832,181
Total value of output	£ 2,558,847	2,371,027	749,933	526,453	318,958	89,317	6,614,535
Value added in process of manufacture	£ 1,420,953	1,357,497	469,168	292,959	185,641	56,136	3,782,354

In addition to engineering works which supply local domestic requirements, there are now a number of large and important establishments which engage in the manufacture of special classes of machinery and implements. The manufacture of mining and smelting machinery and apparatus forms an important section of this industry, and many Australian mines have been locally equipped.

7. **Railway Carriages and Rolling Stock, Railway and Tramway Workshops.**—The railway workshops of Australia form an important item in the metal and machinery class, and are chiefly State institutions. The following table gives the details concerning them, but includes also private establishments manufacturing rolling stock :—

RAILWAY CARRIAGES AND ROLLING STOCK, RAILWAY AND TRAMWAY WORKSHOPS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Number of factories	26	15	9	8	7	7	72
" employees	7,236	4,127	1,941	1,984	1,818	319	17,425
Actual h.p. of engines employed	3,307	1,099	1,449	505	1,875	138	8,373
Approx. value of land and buildings	£ 840,344	301,765	233,495	236,753	366,761	7,060	2,036,178
Approx. value of plant and mach'ny	£ 546,727	214,500	187,222	162,635	249,218	72,791	1,433,093
Total amt. of wages paid during year	£ 914,234	527,386	202,492	235,117	243,694	40,537	2,163,460
Value of fuel used	£ 21,207	17,910	6,564	9,458	13,910	870	69,919
Value of raw material worked up	£ 616,067	736,476	177,194	174,946	210,780	24,014	1,939,477
Total value of output	£ 1,690,600	1,391,070	372,942	630,026	477,484	70,444	4,632,566
Value added in process of manuf'ct're	£ 1,074,533	654,594	195,743	455,030	266,704	46,430	2,638,089

8. **Smelting Works.**—The subjoined table gives particulars of metal smelting, cyanide, pyrites, and metallurgical works. The classification of these works does not appear to be carried out on an uniform basis in the several States, and the combination of industries is, therefore, somewhat unsatisfactory. The returns do not include particulars of plants used on mines.

SMELTING, CYANIDE, PYRITES, Etc., WORKS, 1911.

Items.	N. S. W.	Vic.	Q'land.	S. A.	W. A.	Tas.	C'w'lth.
Number of factories	34	87	11	6	...	5	143
" employees	3,364	640	995	1,413	...	1,324	7,036
Actual horse-power of engines employed	12,682	595	1,135	3,871	...	5,194	23,480
Approx. value of land and buildings	£ 282,359	16,721	16,036	21,579	...	7,000	343,695
" " plant and machinery	£ 1,423,211	67,934	77,100	71,883	...	255,656	1,900,684
Total am't of wages paid during year	£ 563,531	46,864	48,330	242,116	...	141,748	1,042,589
Value of fuel used	£ 401,039	5,970	13,043	117,288	...	70,448	607,768
Value of raw material worked up	£ 4,141,049	88,530	259,111	1,347,590	...	781,390	6,617,670
Total value of output	£ 6,414,729	188,354	396,291	1,973,073	...	1,136,641	10,109,088
Value added in process of manufacture	£ 2,273,680	99,824	137,180	625,483	...	355,251	3,491,418

* See third paragraph below.

In New South Wales and Queensland the above figures represent smelting works; those for Victoria include seventy-seven cyanide works, three metallurgical, five pyrites, and two smelting works; South Australia four cyanide and two smelting; and Tasmania three smelting and two pyrites works.

The largest output for the year under review was in New South Wales, viz., £6,414,729, or 63.46 per cent. on the total output for the Commonwealth. South Australia came next with £1,973,073, or 19.52 per cent.; this amount is made up of £1,968,440 smelting and £4633 cyanide. Of the total for Tasmania the output of smelting was £1,043,758, the balance £92,883 representing that obtained from pyrites works. The output in Victoria was £96,440, £10,955, £53,534, and £27,425 from cyanide, metallurgical, pyrites, and smelting works in the order named.

In Western Australia all the plants are worked on the mines and are therefore not collected.

9. **Bacon-curing Factories.**—The following table gives particulars of factories engaged in bacon-curing in each State during the year 1911:—

BACON-CURING FACTORIES, 1911.

Items.	N. S. W.	Vic.	Q'land.	S. A.	W. A.	Tas.	C'w'lth.
Number of factories	21	26	5	11	3	7	73
" employees	181	380	211	86	20	34	912
Actual horse-power of engines employed	279	304	148	61	36	31	859
Approx. value of land and buildings	£ 58,005	43,925	51,165	9,042	9,410	6,592	178,139
" " plant and machinery	£ 26,222	31,374	16,755	3,978	1,170	3,326	83,825
Total amount of salaries and wages paid	£ 24,997	39,044	26,489	8,465	3,398	2,305	104,695
Value of fuel used	£ 3,935	4,640	2,180	702	246	417	12,120
Value of raw material worked up	£ 322,383	460,002	236,000	77,367	70,739	19,047	1,185,538
Total value of output	£ 383,788	549,748	380,407	95,548	77,847	26,001	1,513,339
Value added in process of manufacture	£ 61,405	89,746	144,407	18,181	7,108	6,854	327,801

Further information regarding the bacon-curing industry may be found in Section IX., *Farmyard and Dairy Production*.

(i.) *Quantity and Value of Production, 1911.* The following table shews the number of pigs killed and the quantity and value of the production of bacon-curing factories in each State during the year 1911:—

PRODUCTION OF BACON-CURING FACTORIES, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.*	Tasmania.	C'wealth.
QUANTITY. (,000 omitted).							
Bacon & ham lbs.	13,394	15,190	10,726	3,072	...	638	43,220
Lard ... lbs.	691	717	582	131	...	56	2,177
VALUE.							
Bacon & ham £	341,300	517,748	338,592	91,021	...	22,365	1,311,026
Lard ... £	13,772	18,000	11,347	2,917	...	1,025	47,061
Other products £	11,465	14,000	30,468	1,610	...	2,671	60,214
PIGS KILLED.							
Number ...	143,316	177,029	134,227	33,850	...	12,193	505,615

* In Western Australia all bacon and hams treated in factories are imported and subsequently smoked in that State.

10. **Butter, Cheese, and Condensed Milk Factories.**—The subjoined table gives particulars of butter, cheese, and condensed milk factories in each State during the year 1911. The returns are exclusive of butterine and margarine factories.

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lh.
Number of factories ...	180	199	83	46	3	29	540
" employees ...	1,081	1,547	752	208	10	132	3,750
Actual horse-power of engines employed	2,269	2,841	1,116	361	27	204	6,618
Approximate value of land and buildings	£ 207,331	£ 304,835	£ 103,103	£ 37,249	£ 2,746	£ 21,875	£ 677,139
plant & machinery	£ 243,580	£ 321,496	£ 158,772	£ 27,372	£ 3,725	£ 23,947	£ 775,792
Total amount of wages paid	£ 120,381	£ 147,897	£ 80,945	£ 15,329	£ 1,236	£ 9,453	£ 375,221
Value of fuel used	£ 25,427	£ 26,423	£ 12,113	£ 2,531	£ 118	£ 943	£ 67,555
Value of raw material worked up	£ 3,312,973	£ 3,564,977	£ 1,050,200	£ 282,111	£ 8,277	£ 122,582	£ 8,341,125
Total value of output	£ 3,607,634	£ 3,964,312	£ 1,363,170	£ 328,269	£ 9,675	£ 159,062	£ 9,432,122
Value added in process of manufacture	£ 294,656	£ 399,335	£ 312,970	£ 46,158	£ 1,398	£ 36,480	£ 1,090,997

(i.) *Development of Factories, 1907 to 1911.* The following table shows the progress of the factories in this industry from 1907 to 1911 :—

DEVELOPMENT OF BUTTER, Etc., FACTORIES, 1907 to 1911.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	188	183	181	181	180	1,023	979	1,014	1,046	1,081	£ 244,438	£ 247,678	£ 229,940	£ 231,679	£ 243,580
Vict. ...	223	215	211	203	199	1,449	1,294	1,190	1,261	1,547	311,241	282,012	281,630	280,103	321,496
Q'land	83	82	80	82	83	1,376	1,238	760	814	752	133,861	145,531	136,049	147,396	158,772
S. Aust.	57	54	53	53	46	213	212	216	232	208	25,224	27,539	29,353	23,620	27,272
W. Aust.	2	2	3	3	3	5	6	10	8	10	2,300	2,300	4,117	4,070	3,725
Tas. ...	23	24	22	26	29	81	95	93	118	132	8,199	11,618	11,040	16,371	20,947
C'w'lh.	576	560	550	548	540	4,147	3,824	3,283	3,479	3,730	725,263	716,678	694,129	708,239	775,792

(ii.) *Quantity and Value of Production, 1911.* The following table shows the quantity and value of butter, cheese, and condensed milk produced, and the quantity of milk used in butter, cheese, and condensed milk factories in each State during 1911 :—

PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
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QUANTITY (,000 OMITTED).

Butter lbs.	78,422	81,267	26,017	6,023	182	3,317	185,228
Cheese "	3,486	3,047	3,634	1,521	...	480	12,168
Condensed and concentrated milk ... lbs.	3,058	13,698	6,228	...	...	...	22,984

VALUE (,000 OMITTED).

Butter £	3,431	3,623	1,160	288	10	147	8,653
Cheese £	85	78	87	40	...	13	302
Condensed and concentrated milk ... £	41	260	116	...	...	...	417

MILK USED (,000 OMITTED).

Butter factories ...gals.	190,250	183,661	54,141	12,643	474	8,294	449,463
Cheese " ... "	3,682	3,038	3,686	1,512	...	483	12,401
Condensed milk factories ... "	859	4,429	1,514	...	...	...	6,802

The butter, cheese and condensed milk industries are dealt with more fully in Section IX., *Farmyard and Dairy Production*.

11. Meat and Fish Preserving, Ice and Refrigerating Works.—These industries are now of considerable importance in Australia. The freezing of various kinds of produce for export has long been an established industry. Large freezing works have been installed at many ports in the Commonwealth for the purpose of freezing produce chiefly for export, and insulated space for the carriage of frozen produce is provided by a number of steamship companies trading between Australia and other parts of the world. Particulars regarding the export of frozen beef and mutton may be found on pages 340 and 344 hereof respectively. Special terms have been made by the Commonwealth Government in its English mail contract for the provision by the contractors of ample cold-storage facilities. The export of frozen produce is stated to be capable of considerable expansion. The particulars given in the subjoined table include ice-making and freezing works, and also meat-canning factories, separate particulars for each item for all the States not being available.

MEAT AND FISH-PRESERVING, ICE AND REFRIGERATING WORKS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	96	35	38	12	10	6	197
" employees	2,179	1,440	2,110	299	93	25	6,146
Actual horse-power of engines employed	4,391	4,282	4,275	720	714	108	14,490
Approx. value of land and buildings	£ 479,630	412,742	421,266	153,042	57,230	5,100	1,529,010
" plant and machinery	£ 514,971	211,791	274,975	84,824	41,025	3,290	1,130,877
Total amount of wages paid during year	£ 222,831	131,898	217,788	33,812	13,329	2,446	622,104
Value of fuel used	£ 37,383	27,428	34,047	5,498	5,598	915	110,269
Value of raw material worked up	£ 3,546,960	817,029	1,154,000	114,964	1,799	2,161	5,636,913
Total value of output	£ 4,198,269	1,067,651	1,574,673	165,347	33,611	6,344	7,045,895
Value added in process of manufacture	£ 651,309	250,622	420,673	50,383	31,812	4,183	1,408,982

The following table gives particulars, so far as available, of various classes of meat preserved during the year 1911:—

MEAT-PRESERVING WORKS—PARTICULARS OF ANIMALS TREATED, 1911.

Particulars.		N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Sheep treated ... No.		925,475	1,578,133	303,932	22,000	...	...	2,829,540
Cattle " ... No.		61,596	17,354	200,256	...	...	...	279,206
Pigs " ... No.		...	1,609	1,636	...	...	...	3,245

Large quantities of rabbits, hares, and poultry were treated in freezing works, for which, however, complete returns are not available. Exclusive of Victoria, for which State particulars are not available, the returns shew that 58,433 tons of ice, valued at £121,326, were manufactured in the Commonwealth in 1911.

12. **Biscuit Manufactories.**—The following table gives particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the year 1911:—

BISCUIT MANUFACTORIES, 1911.

Items.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.*	C'with,
Number of factories		6	4	13	3	3	8	37
" employees		1,360	1,229	356	122	118	144	3,329
Actual horse-power of engines employed		556	139	101	51	105	62	1,014
Approx. value of land and buildings	£	95,050	55,390	31,750	15,950	8,672	22,550	229,362
" plant and machinery	£	86,192	46,950	21,471	9,261	12,150	10,283	186,307
Total amount of wages paid during year	£	70,055	78,330	36,432	10,723	11,397	8,623	215,560
Value of fuel used	£	7,104	7,798	1,561	1,658	1,316	1,050	20,487
Value of raw material worked up	£	332,341	281,002	75,903	21,587	44,057	28,392	783,282
Total value of output	£	529,108	467,114	159,256	51,093	67,390	47,189	1,321,150
Value added in process of manufacture	£	196,767	186,112	83,353	29,506	23,333	18,797	537,868

* Including confectionery.

13. **Jam and Fruit Preserving, Pickles, Sauces, and Vinegar Manufactories.**—The jam and fruit preserving industry has increased in importance of late years, consequent on the extension of fruit-growing. As an exporting industry it is comparatively young, but is of increasing value, and is stated to be capable of considerable expansion. The subjoined table gives particulars of factories at which these industries were carried on in each State during the year 1911. Separate returns for the individual industries are not available for most of the States.

JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR MANUFACTORIES, 1911.

Items.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories		33	28	8	26	7	18	120
" employees		1,155	1,601	201	436	84	875	4,352
Actual horse-power of engines employed		253	396	63	113	51	326	1,202
Approx. value of land and buildings	£	87,270	110,776	10,886	20,907	8,600	48,200	286,639
" plant and machinery	£	35,585	44,613	5,637	10,610	3,399	22,880	122,724
Total amount of wages paid during year	£	68,791	99,825	10,392	18,423	6,011	45,847	246,289
Value of fuel used	£	3,554	7,668	580	2,139	386	2,929	17,256
Value of raw material worked up	£	326,376	481,324	34,587	105,810	14,747	166,902	1,129,746
Total value of output	£	477,472	725,311	56,579	151,267	24,874	262,470	1,697,973
Value added in process of manufacture	£	151,096	243,967	21,992	45,457	10,127	95,568	568,227

(i.) *Quantity and Value of Production, 1911.* The following table shews the quantity and value of jams, pickles, and sauces manufactured in each State during the year 1911:—

QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCE MANUFACTURED, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
QUANTITY (,000 OMITTED).							
Jam lbs.	25,489	32,093	4,295	6,206	339	14,740	83,162
Pickles pints	2,388	1,617	350	225	218	24	4,823
Sauce pints	2,048	4,349	201	1,228	448	145	8,419
VALUE.							
Jam £	325,855	555,000	47,932	78,555	5,166	17,373	1,182,881
Pickles £	44,738	35,000	5,611	4,374	5,056	517	95,796
Sauce £	41,113	90,000	3,598	21,118	8,797	2,404	167,030

14. **Confectionery.**—The following table shows the position of the confectionery industry in 1911, and its growth will be apparent when it is stated that at the close of 1900 there were in New South Wales 16 establishments, with 706 employees, and in Victoria 16 establishments, employing 731 persons, using plant and machinery valued at £2815 in the former and £19,070 in the latter State.

CONFECTIONERY FACTORIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.*	C'w'lt'h.
Number of factories	41	31	12	7	4	...	95
" employees	1,241	1,495	383	251	110	...	3,480
Actual horse-power of engines employed	484	411	64	102	60	...	1,121
Approx. value of land and buildings	£ 181,892	69,507	21,127	32,065	14,640	...	319,231
" plant and machinery	£ 64,270	55,320	17,369	24,404	9,770	...	171,133
Total amount of wages paid during year	£ 83,953	95,620	22,574	18,236	8,832	...	223,215
Value of fuel used	£ 3,762	6,688	1,200	2,156	1,036	...	14,842
Value of raw material worked up	£ 338,905	380,686	45,365	52,867	25,694	...	843,517
Total value of output	£ 543,688	554,552	114,701	98,262	40,072	...	1,351,275
Value added in process of manufacture	£ 204,783	173,866	69,336	45,395	14,378	...	507,758

* Included with biscuit factories.

15. **Flour Mills.**—The following table shows the position of the flour-milling industry in year 1911 :—

FLOUR MILLS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lt'h.
Number of factories	73	61	15	51	16	17	233
" employees	967	832	241	562	180	133	2,915
Actual horse-power of engines employed	4,670	4,680	946	2,869	1,097	673	14,935
Approx. value of land and buildings	£ 363,680	218,453	67,568	118,373	63,263	49,905	881,242
" plant and machinery	£ 340,316	253,513	73,361	144,352	61,425	37,000	909,967
Total am'nt of wages paid during year	£ 123,491	93,503	23,810	64,539	23,297	13,394	342,034
Value of fuel used	£ 24,648	24,600	3,560	17,395	5,515	2,844	78,562
Value of raw material worked up	£ 2,211,263	2,123,757	305,919	879,686	347,508	209,978	6,078,111
Total value of output	£ 2,538,331	2,456,533	366,671	1,056,979	412,383	251,445	7,082,342
Value added in process of manufacture	£ 327,068	332,776	60,752	177,293	64,875	41,467	1,004,231

(i.) *Production of Flour Mills, 1907 to 1911.* The production of flour by the mills in each State of the Commonwealth in the years 1907 to 1911 was as follows :—

FLOUR MILLS—PRODUCTION, 1907 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tasmania.	C'wealth.
	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*
1907	237,442	235,185	28,532	105,395	28,353	17,056	651,963
1908	180,843	192,687	22,266	107,742	31,424	17,426	552,388
1909	214,426	215,547	29,451	97,967	24,878	21,419	603,688
1910	242,813	225,282	27,559	95,885	36,818	20,925	649,282
1911	253,556	247,434	27,960	100,374	40,642	21,335	691,301

* Tons of 2000 lbs.

The total production of flour for the Commonwealth for 1911, viz., 691,301 tons, was valued at £5,532,361; in addition 299,657 tons of bran and pollard, valued at £1,430,710, were made. The total quantity of wheat ground in 1911 was 34,489,478 bushels.

16. **Sugar Mills.**—The following table shews the position of the cane-crushing branch of the sugar-making industry in 1911. This industry is carried on in Queensland and New South Wales, the only States of the Commonwealth in which the sugar-cane is grown.

SUGAR MILLS, 1911.

Items.	N.S.W.	Queensland.	Total.
Number of factories	4	49	53
„ employees	469	4,295	4,764
Actual horse-power of engines employed ...	3,000	10,255	13,255
Approximate value of land and buildings £	52,480	328,492	380,972
„ „ plant and machinery £	467,976	1,841,837	2,309,813
Total amount of wages paid during year £	38,004	365,836	403,840
Value of fuel used	£ 8,162	49,249	57,411
Value of raw material worked up	£ 107,600	1,107,451	1,215,051
Total value of output	£ 206,277	2,000,232	2,206,509
Value added in course of manufacture £	98,677	892,781	991,458

The product of the sugar mill is raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. Part of the molasses produced is used in distillation, part is turned into food cake for cattle, and part is used for manuring land, but the greater part produced is put to no use whatever. The following tables shew the progress of this industry in each State from the dates at which information is first obtainable :—

SUGAR MILLS, NEW SOUTH WALES, 1870 to 1911.

Items.	1870.	1877.	1886.	1891.	1896.	1901.	1908.	1909.	1910.	1911.
No. of factories ...	27	50	64	33	23	12	4	4	4	4
„ employees ...	*	1,065	2,259	1,621	1,475	695	543	529	506	469
Cane crushed tns	*	*	*	*	*	*	144,760	131,083	160,311	167,799
Sugar produced tons	677	7,537	13,750	16,033	28,557	19,519	14,996	14,810	20,115	17,299
Molasses produced gals.	...	345,543	507,000	1,074,080	2,520,580	1,300,909	922,549	1,072,400	918,900	796,440

The reduction in the number of New South Wales mills is due chiefly to the tendency towards concentration of cane-crushing in mills fitted with modern machinery, and the consequent closing of the small home mill. On the north coast of New South Wales some land formerly devoted to sugar-growing has been turned into pastures in connection with the dairying industry.

SUGAR MILLS, QUEENSLAND, 1868 to 1911.

Items.	1868.	1876.	1886.	1891.	1896.	1901.	1908.	1909.	1910.	1911.
No. of factories	10	70	118	68	63	52	51	46	49	49
„ employees ...	...	*	*	*	3,796	*	3,964	3,848	4,036	4,295
„ acres crushed	...	7,245	40,756	36,821	66,640	78,160	1,433,315	1,163,569	1,840,447	1,534,451
Sugar produced tons	...	8,214	59,225	51,219	100,774	120,858	151,098	134,584	210,756	173,296
Molasses produced gals.	68,622	416,415	1,784,266	1,640,662	2,195,470	3,679,952	5,950,433	4,763,635	7,329,870	6,451,192

* Not available. † 1890. ‡ Tons of cane crushed.

Information regarding the cultivation of sugar-cane and the bounties payable on cane grown by white labour may be found in the section of this book dealing with *Agricultural Production*. (See pages 392 to 396.)

17. **Sugar Refineries.**—The establishment of the sugar-refining industry considerably antedates the establishment of the sugar-milling industry, the raw material operated upon being originally brought chiefly from Mauritius and the East. In 1911 there were two sugar refineries in each of the States of Victoria and Queensland, and one in each of the States of New South Wales and South Australia. The returns for the individual States cannot be disclosed.

In the six refineries in the Commonwealth, an average number of 1602 hands was employed during the year 1911. The approximate value of land and buildings was £466,210; of plant and machinery, £847,082; and the total amount of wages paid during the year was £204,306.

As regards production, the amount of crude sugar used was 236,417 tons, and of refined sugar produced 229,593 tons, valued at £3,514,844.

18. **Breweries.**—Established at an early date in Australia, the main feature of the history of the brewing industry has been the change from the small local brewery in every township of moderate size to the large centralised city brewery. A recent amalgamation in Melbourne resulted in the closing of several large breweries. A workmen's co-operative brewery has been opened in Sydney and a co-operative brewery has been opened in Melbourne by a number of "free" hotelkeepers.

The following table gives particulars of breweries in each State during the year 1911:—

BREWERIES, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lt'h.
Number of factories ...	37	33	11	14	19	7	121
" employees ...	912	1,031	495	331	522	159	3,450
Actual horse-power of engines employed ...	648	2,358	254	366	1,206	176	5,008
Approx. value of land and buildings ...	£ 307,065	£ 357,952	£ 104,281	£ 111,865	£ 185,236	£ 403,050	£ 1,469,449
Approx. value of plant and machinery ...	£ 281,316	£ 318,072	£ 93,772	£ 73,399	£ 160,951	£ 43,108	£ 970,618
Total amount of wages paid during year ...	£ 120,340	£ 146,388	£ 55,809	£ 47,231	£ 94,114	£ 19,511	£ 483,393
Value of fuel used ...	£ 17,794	£ 23,306	£ 6,228	£ 6,704	£ 13,111	£ 2,141	£ 69,284
Value of raw material worked up ...	£ 494,219	£ 381,032	£ 154,349	£ 89,350	£ 111,708	£ 42,864	£ 1,273,522
Total value of output ...	£ 1,140,151	£ 912,629	£ 425,917	£ 303,297	£ 425,797	£ 110,946	£ 3,318,937
Value added by process of manufacture ...	£ 645,932	£ 531,797	£ 271,568	£ 213,947	£ 314,089	£ 68,082	£ 2,045,415

(i.) *Production and Materials Used, 1911.* The following table shews the quantity and value of ale and stout brewed and the quantity of raw materials used in each State during the year 1911:—

PRODUCTION AND MATERIALS USED IN BREWERIES, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
ALE AND STOUT BREWED.							
Quantity gallons	19,352,995	19,077,420	6,238,721	4,657,055	5,112,958	1,907,114	56,346,263
Value ... £	905,916	900,000	438,597	296,393	414,306	110,946	3,066,158
RAW MATERIALS USED.							
Malt ... bush.	667,457	548,341	208,766	125,066	154,969	68,431	1,772,990
Hops ... lbs.	790,866	619,802	315,632	175,447	236,671	106,496	2,375,004
Sugar ... cwt.	88,435	111,314	52,155	24,068	27,659	8,955	312,586
RAW MATERIALS USED PER 1000 GALLONS OF ALE AND STOUT PRODUCED.							
Malt ... bush.	34.49	28.74	33.46	26.84	30.31	35.88	31.47
Hops ... lbs.	40.87	34.07	50.59	37.67	46.29	55.84	40.38
Sugar ... cwt.	4.57	5.83	8.36	5.17	5.41	4.70	5.55

19. **Distilleries.**—The subjoined table gives particulars of distilleries in each State during the year 1911. There are no distilleries in either of the States of Western Australia or Tasmania.

DISTILLERIES, 1911.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wth.
Number of factories	3	7	4	18	...	...	32
" employees	19	89	40	72	...	...	220
Actual horse-power of engines employed ...	101	175	66	181	...	...	523
Approximate value of land and buildings £	15,999	90,215	9,765	22,522	...	...	138,501
Approx. value of plant and machinery £	42,049	64,950	17,433	20,250	...	...	144,682
Total amount of wages paid during year £	3,331	11,250	3,867	6,225	...	...	24,673
Value of fuel used	945	2,553	2,053	1,919	...	...	7,470
Value of raw materials worked up £	27,743	26,590	8,849	52,114	...	...	115,296
Total value of output	50,062	45,082	67,260	81,179	...	...	246,583
Value added in process of manufacture £	22,319	21,492	58,411	29,065	...	...	131,287

(i.) *Production of Spirits and Materials Used, 1911.* The total quantity of brandy distilled in 1911 was 196,493 proof gallons, and of other spirits was 2,210,029 proof gallons. The materials used comprised 466,628 cwt. of molasses and 2,070,008 gallons of wine. Particulars for the separate States are not available for publication.

20. **Tobacco, Cigars and Cigarettes.**—During the year 1911 there were thirty-three establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. There were no factories engaged in this industry in Tasmania.

TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1911.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wth.
Number of factories	10	15	3	3	2	...	33
" employees	1,431	2,012	120	146	21	...	3,730
Actual horse-power of engines employed	530	465	24	22	5	...	1,046
Approx. value of land and buildings £	183,622	169,066	6,050	12,414	2,743	...	373,895
" plant and machinery £	92,138	103,247	7,573	11,138	480	...	214,576
Total amount of wages paid during year £	131,323	191,533	7,429	14,175	1,798	...	346,258
Value of fuel used	1,067	2,518	252	648	3	...	4,488
Value of raw material worked up £	776,302	633,436	35,078	21,508	1,888	...	1,468,212
Total value of output	1,250,748	1,155,047	63,208	44,975	4,970	...	2,518,946
Value added in process of manufacture £	474,446	521,611	28,128	23,467	3,082	...	1,050,734

(i.) *Quantity of Goods Produced, and Tobacco Leaf Used, 1911.* The following table shews the quantity of goods produced in tobacco factories in each State, and the quantities of imported and Australian-grown leaf used during the year 1911 :—

PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wth.
QUANTITY (,000 OMITTED).							
Manufact'ed tobacco lbs.	3,997	5,519	205	325	2	...	10,048
Cigars	88	246	2	14	6	...	356
" No.	8,076	20,979	159	1,159	446	...	30,719
Cigarettes	1,899	264	...	...	1	...	2,164
" No.	835,704	113,949	...	...	382	...	950,035

TOBACCO LEAF USED (,000 OMITTED).

Australian leaf... lbs.	745	178	850	118	1	...	1,892
Imported leaf ... lbs.	4,618	4,947	1	194	10	...	9,770

(ii.) *Development of Industry.* This industry was among the first to be established in Australia. In 1861 New South Wales had eleven factories, producing 177,744 lbs. of manufactured tobacco; in the same year there was one factory in Victoria, but the quantity of tobacco manufactured is not available. The Australian market has for many years been largely supplied with local manufactures. The quantities imported into Australia during 1911 were—manufactured tobacco 2,208,908 lbs., cigars 990,320 lbs. and cigarettes 130,925 lbs., while the quantities manufactured in Australian factories were respectively 10,048,396 lbs., 356,127 lbs. and 2,163,729 lbs. The following tables shew the development of the tobacco industry in the several States and the Commonwealth during recent years :—

DEVELOPMENT OF TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1907 to 1911.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	11	12	15	13	10	1,103	1,309	1,250	1,412	1,431	£	£	£	£	£
Vic. ...	13	13	14	14	15	2,019	2,542	2,449	2,248	2,012	111,296	119,019	119,676	125,703	92,138
Q'land	2	2	2	2	3	71	79	90	87	120	88,341	100,880	104,973	106,521	103,247
S. Aus.	3	3	3	3	3	174	175	180	154	146	2,020	2,300	4,350	5,318	7,573
W. Aus.	3	3	3	3	2	23	32	22	22	21	12,716	12,084	12,084	12,101	11,138
Tas.* ...	...	...	...	...	...	...	...	...	...	...	265	297	291	708	480
C'wth.	32	33	37	35	33	3,390	4,137	3,991	3,923	3,730	214,638	234,573	241,374	250,351	214,576

PRODUCTION.

State.	Tobacco made.					Cigars made.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	lbs. 3,899,196	lbs. 3,916,388	lbs. 3,694,918	lbs. 3,850,154	lbs. 3,996,471	lbs. 54,048	lbs. 57,716	lbs. 57,148	lbs. 73,194	lbs. 87,818
Vic. ...	4,781,888	5,330,953	5,160,728	5,507,524	5,519,264	176,704	199,847	210,766	229,315	246,400
Q'land	90,317	152,331	187,059	195,752	204,921	...	...	...	...	1,784
S. Aus.	348,168	434,636	393,913	377,556	325,300	10,956	9,733	10,001	11,594	14,191
W. Aus.	2,005	3,807	3,549	2,100	2,440	6,373	7,527	7,415	5,800	5,934
Tas.* ...	...	...	...	...	...	...	...	...	...	...
C'wth.	9,121,574	9,838,115	9,440,167	9,933,087	10,048,396	248,061	274,823	285,330	319,903	356,127
State.	Cigarettes made.					Leaf used.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	lbs. 972,875	lbs. 1,119,269	lbs. 1,300,045	lbs. 1,548,872	lbs. 1,899,462	lbs. 4,304,763	lbs. 4,589,875	lbs. 4,417,173	lbs. 4,945,868	lbs. 5,363,161
Vic. ...	328,448	402,548	323,086	310,711	263,297	4,770,521	5,802,567	4,934,548	5,390,921	5,125,386
Q'land	...	...	...	...	...	120,045	152,188	225,706	256,860	850,481
S. Aus.	1,146	...	...	...	...	341,019	427,588	363,564	346,259	312,038
W. Aus.	340	581	548	2,595	970	10,607	17,591	17,659	10,867	10,690
Tas.* ...	...	...	...	...	...	...	...	...	...	...
C'wth.	1,302,809	1,522,398	1,623,679	1,862,178	2,163,729	9,546,955	10,989,809	9,959,650	10,950,775	11,661,756

* There are no tobacco factories in Tasmania.

21. Woollen and Tweed Mills.—The manufacture of woollens and tweeds was established in Australia at a comparatively early period in its industrial history, the first

record in Victoria dating back to 1867. The following table, which gives particulars of the mills in each State during the year 1911, shews that the industry is now well established:—

WOOLLEN AND TWEED MILLS, 1911.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	13	10	3	2	...	4	32
" employees	951	1,675	173	169	...	232	3,200
Actual horse-power of engines employed	937	2,108	139	150	...	110	3,444
Approx. value of land and buildings	£ 98,691	144,924	12,100	7,300	...	20,100	283,115
" " plant and machinery	£ 122,927	267,932	30,300	18,750	...	38,950	478,859
Total amount of wages paid during year	£ 66,536	107,682	8,794	9,827	...	10,355	203,194
Value of fuel used	£ 4,632	12,647	970	†	...	1,264	19,513†
Value of raw material worked up	£ 143,915	251,365	14,410	†	...	20,034	429,724†
Total value of output	£ 271,465	473,686	34,009	†	...	44,824	823,984†
Value added in process of manufacture	£ 127,550	222,321	19,599	†	...	24,790	394,260†

* Including one cotton ginning establishment. † As there are only two factories in South Australia particulars of output, etc., are not disclosed. ‡ Exclusive of South Australia.

(i.) *Progress of Industry, 1907 to 1911.* The progress of woollen and tweed manufacturing during the last five years is shewn in the following table for each State in which mills were in operation:—

DEVELOPMENT OF WOOLLEN MILLS IN AUSTRALIA, 1907 to 1911.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery. *				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
											£	£	£	£	£
N.S.W.	5	5	7	8	13	395	455	628	748	951	39,433	43,933	82,117	109,473	122,927
Vic.	9	9	9	9	10	1,589	1,757	1,717	1,657	1,675	259,740	263,100	265,008	247,791	267,932
Q'land.	1	1	*2	*2	*3	119	97	*165	*175	*173	19,364	19,364	*28,634	*30,144	*30,300
S. Aus.	2	2	2	2	2	149	145	177	172	169	13,850	11,200	10,763	10,763	18,750
W. Aus.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tas.	4	4	4	4	4	257	263	278	278	232	45,413	33,250	37,250	38,750	38,950
C'wlth.	21	21	24	25	32	2,509	2,717	2,965	3,030	3,200	377,300	370,847	423,772	436,921	478,859

* Including one cotton ginning establishment.

(ii.) *Quantity and Value of Production, 1911.* The production of the woollen mills of Australia consists chiefly of tweed cloths, flannels, and blankets, all of which have acquired a reputation for purity and durability. Detailed particulars for the several States are not available for publication. The total length of tweed and cloth manufactured was over 2,000,000 yards, valued at, approximately, £300,000. In New South Wales 1,054,845 yards of tweed and cloth, in Victoria 901,348 yards, and in Tasmania 24,732 yards were manufactured. The production of flannel in the Commonwealth in 1911 amounted to about 5,000,000 yards, valued at £300,000, and of blankets, shawls, and rugs upwards of 750,000, valued at about £200,000, were manufactured.

No cotton spinning or weaving or linen weaving is carried on in Australia. Cotton ginning has been carried on at periods far apart in the northern States, and a mill was lately reopened at Ipswich in Queensland. For particulars of the quantity ginned on which bounties were paid, see § 17, 1, page 405.

22. **Boots and Shoes.**—Among the manufactories of Australia the boot and shoe industry holds an important place both in respect to the employment afforded by it and the range of its output. The following table shews particulars of this industry for each State during the year 1911:—

BOOT AND SHOE FACTORIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lh.
Number of factories	106	154	29	26	11	15	341
" employees	4,411	7,001	1,073	802	213	272	13,772
Actual horse-power of engines employed	855	1,063	230	160	50	68	2,406
Approx. value of land and buildings £	230,628	204,002	41,250	60,245	10,190	19,420	565,738
" plant and machinery £	156,643	159,538	33,031	24,858	7,510	8,299	369,879
Total amt. of wages paid during year £	367,605	542,707	78,411	68,727	20,039	19,086	1,096,575
Value of fuel used	£ 5,298	8,936	866	1,217	323	152	16,792
Value of raw material worked up	£ 709,818	1,103,653	142,205	125,117	41,012	29,296	2,151,101
Total value of output	£ 1,221,748	1,878,308	265,068	225,353	63,414	60,057	3,713,948
Value added in process of manufacture £	511,930	774,655	122,863	100,236	22,402	30,761	1,562,847

(i.) *Progress of Industry, 1907 to 1911.* The progress of the industry in the last five years is shewn in the following table :—

DEVELOPMENT OF BOOT AND SHOE FACTORIES, 1907 to 1911.

State.	No. of Factories.					No. of Persons Employed.					Approximate Value of Plant and Machinery.				
	1907	1908	1909	1910	1911	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
											£	£	£	£	£
N.S.W.	102	105	102	106	106	4,786	4,650	4,460	4,475	4,411	131,884	134,575	141,822	149,228	156,643
Victoria	139	139	136	144	154	6,303	6,348	6,894	6,832	7,001	123,347	123,204	129,411	136,195	159,538
Q'land.	32	27	25	30	29	1,134	1,094	1,135	1,120	1,073	22,078	26,552	25,712	34,651	33,031
S. Aust.	21	24	23	23	26	1,162	1,077	1,069	882	802	28,352	30,748	29,644	30,079	24,858
W. Aust.	12	10	11	10	11	249	185	204	203	213	7,232	5,967	6,735	6,100	7,510
Tas. ...	23	23	18	24	15	281	252	261	298	272	4,859	3,185	4,410	4,565	8,299
C'wealth	329	328	315	337	341	13,915	13,606	14,023	13,810	13,772	316,752	324,331	337,734	360,818	389,879

(ii.) *Value and Quantity of Production, 1911.* The number and value of boots and shoes and slippers made at factories in each State during the year 1911 are shewn in the following table :—

PRODUCTION OF BOOT AND SHOE FACTORIES, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lh.
QUANTITY (,000 OMITTED).							
Boots and shoes ... Pairs	3,729	5,198	779	691	210	180	10,787
Slippers ... Pairs	439	164	60	24	...	3	680
Uppers ... Pairs	70	14	10	19	4	3	120
VALUE.							
Boots and shoes ... £	1,146,417	1,845,000	249,424	201,642	59,958	56,109	3,558,550
Slippers ... £	40,431	25,000	5,141	4,108	...	516	75,196
Uppers ... £	14,379	3,000	2,845	5,125	1,445	791	27,585

23. **Hats and Caps.**—The manufacture of hats and caps is now well established in the Commonwealth. The position of the industry in the several States in 1911 is shewn in the following table :—

HAT AND CAP FACTORIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wth.
Number of factories	32	43	4	2	1	...	82
" employees	1,566	2,017	142	125	5	...	3,856
Actual horse-power of engines employed	433	415	17	52	...	...	917
Approx. value of land and buildings	£ 112,122	94,912	9,300	4,764	780	...	221,878
" " plant and machinery	£ 60,807	51,849	7,330	4,687	100	...	124,773
Total amount of wages paid during year	£ 96,498	141,762	7,614	11,252	298	...	257,424
Value of fuel used	£ 4,376	5,514	206	*	*	...	11,009
Value of raw material worked up	£ 127,494	208,941	11,904	*	*	...	363,806
Total value of output	£ 293,591	422,963	24,220	*	*	...	768,416
Value added in process of manufacture	£ 166,097	212,022	12,316	*	*	...	404,610

* As there are only two factories in South Australia and one in Western Australia, details relating to output, etc., are not available for separate publication; the amounts, however, are included in the totals for the Commonwealth.

(i.) *Progress of Industry, 1907 to 1911.* As appears from the following table, which shows the progress of this industry in the States in which it was carried on during the years 1907 to 1911, there has been a considerable investment of capital in these establishments in New South Wales and Victoria during recent years, and the industry is now in a flourishing condition in both these States.

DEVELOPMENT OF HAT AND CAP FACTORIES, 1907 to 1911.

State.	Number of Factories.					No. of Persons employed.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	22	26	30	29	32	1,094	1,221	1,349	1,398	1,566	£ 35,653	£ 34,315	£ 39,966	£ 52,057	£ 60,807
Vic.	33	34	35	42	43	1,404	1,520	1,688	1,890	2,017	28,452	29,650	35,427	43,447	51,849
Q'land.	3	4	5	5	4	140	129	173	147	142	7,142	7,662	7,420	7,591	7,330
S. Aust.	1	1	2	2	2	60	57	144	166	126	3,180	3,721	5,182	5,064	4,687
W Aust.	...	...	1	1	1	...	...	7	5	5	...	...	50	30	100
C'wth.	59	65	73	79	82	2,698	2,927	3,361	3,606	3,856	74,427	75,348	88,045	108,189	124,773

(ii.) *Quantity and Value of Production, 1911.* Particulars regarding the quantity and value of the production of hat and cap factories in each State are not available for separate publication. The total value of hats and caps made in Australia in 1911 was £753,865.

24. **Coach and Wagon Building Works.**—This industry forms the principal branch of manufacture in Class XI. (see § 1, 3 above). The subjoined table gives particulars of factories in this branch of industry in each State during the year 1911. The returns include establishments for the manufacture of wheels, spokes, etc.

COACH AND WAGON BUILDING WORKS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wth.
Number of factories	254	261	90	102	37	24	768
" employees	2,765	2,872	841	996	371	185	8,030
Actual horse-power of engines employed	776	489	239	339	128	34	2,005
Approx. value of land and buildings	£ 312,112	222,306	61,048	115,457	41,730	19,350	772,003
" " plant and machinery	£ 69,068	50,765	25,673	24,801	13,267	2,312	186,386
Total amount of wages paid during year	£ 241,225	211,070	68,031	80,312	44,318	14,117	659,073
Value of fuel used	£ 8,797	8,687	1,233	3,356	2,374	428	24,875
Value of raw material worked up	£ 260,734	247,609	65,705	85,919	46,482	13,515	719,964
Total value of output	£ 626,492	572,850	183,377	215,686	106,736	33,488	1,738,629
Value added in process of manufacture	£ 365,758	325,241	117,672	129,767	60,254	19,973	1,018,665

25. **Furniture and Cabinet Making and Billiard Table Making.**—These industries constitute the principal manufactures in Class XIII. (see § 1, 3 above). The following table gives particulars for 1911:—

FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE MAKING, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	139	161	61	30	24	11	426
" employees	2,561	1,932	996	883	339	207	6,918
Actual horse-power of engines employed	806	448	411	533	205	57	2,460
Approx. value of land and buildings	£ 249,912	218,465	67,717	45,900	29,810	22,535	634,339
" plant and machinery	£ 41,327	28,749	21,957	26,230	7,166	3,139	128,568
Total amount of wages paid during year	£ 272,011	185,068	84,709	81,461	37,499	12,989	673,737
Value of fuel used	£ 3,879	2,234	1,833	2,357	869	295	11,567
Value of raw material used	£ 269,186	250,905	85,501	73,859	47,158	10,002	736,611
Total value of output	£ 633,855	523,993	218,759	191,378	95,233	32,349	1,700,567
Value added in process of manufacture	£ 369,669	273,088	133,258	117,519	48,075	22,347	963,956

26. **Electric Light and Power Works.**—Particulars of the electric light and power works of the Commonwealth in the year 1911 are given in the subjoined table. In 1907 there were 128 establishments employing 1569 hands whose salaries and wages amounted to £202,490: in 1911 these had increased to 164 establishments, 2432 hands, salaries and wages £325,049, while the value of plant and machinery had increased during the four years from £2,576,431 to £3,123,062.

ELECTRIC LIGHT AND POWER WORKS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	104	20	6	3	20	11	164
" employees	929	590	103	300	242	268	2,432
Actual horse-power of engines employed	54,592	15,819	6,063	8,166	18,026	4,534	107,220
Approx. value of land and buildings	£ 449,300	186,888	29,859	94,568	88,854	13,525	841,993
" plant and machinery	£ 1,257,173	733,769	85,251	417,373	492,708	138,778	3,123,062
Total amount of wages paid during year	£ 134,884	75,722	16,578	32,023	45,067	20,775	325,049
Value of fuel used	£ 183,248	41,881	8,832	19,912	79,812	40,586	374,271
Total value of output	£ 896,607	370,498	63,860	100,629	239,426	92,165	1,663,185

27. **Gas and Coke Works.**—There are gas works in operation in nearly all the chief towns in the Commonwealth. In New South Wales there are thirteen and in Queensland four coke factories which are worked as separate industries. The subjoined table gives particulars of gas and coke works in each State:—

GAS AND COKE WORKS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	*60	47	†17	5	4	3	136
" employees	1,478	1,601	419	384	102	141	4,125
Actual horse-power of engines employed	2,356	735	126	167	36	24	3,444
Approx. value of land and buildings	£ 617,625	470,164	191,451	8,446	33,999	31,650	1,293,275
" plant and machinery	£ 1,045,624	1,269,343	442,102	350,954	71,859	154,517	3,334,399
Total amount of wages paid during year	£ 204,096	230,626	53,252	51,172	13,947	17,775	570,868
Value of fuel used	£ 59,634	—	6,073	1,865	2,990	2,637	73,199
Value of raw material used	£ 384,327	235,987	26,153	47,531	12,054	9,346	715,398
Total value of output	£ 1,099,108	810,414	137,655	174,800	46,386	43,959	2,362,332
Value added in process of manufacture	£ 714,781	574,427	161,512	127,269	34,332	34,613	1,646,934

* Including 13 coke factories. † Including 2 coke factories.

INDIVIDUAL INDUSTRIES.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1911 :—

PRODUCTION OF GAS AND COKE WORKS, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wth.
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QUANTITY.

Gas made ... 1000 cub. ft.	4,275,039	2,813,160	564,326	500,081	101,616	155,166	8,409,388
Coke tons	441,415	155,488	35,025	20,125	5,412	7,467	664,932

VALUE.

Gas £	678,307	710,000	158,259	132,656	33,156	39,167	1,751,545
Coke £	277,554	95,000	21,323	19,992	9,984	5,792	429,645

COAL USED.

Coal tons	*711,536	261,848	65,622	44,842	9,331	12,890	1,106,069
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* Also 55,621 tons shale.