THE MANUFACTURING INDUSTRY.

THE progress of the manufacturing industry in Australasia has been somewhat irregular, even in the most advanced states; and although the tabular statement given below shows an increase since 1885 of 91,159 hands in the Commonwealth and 30,533 in New Zealand, a growth proportionately much greater than that of the population, by far the greater part of this extension has taken place during the last eight years. The population of the continent at the present time is not sufficient to maintain industries on an extensive scale, and in past years the field was still further limited by intercolonial tariffs. Now that these barriers have been swept away, and the Australian market secured to a certain extent to the local manufacturer, more rapid progress may reasonably be expected in the manufacturing industry.

The majority of the manufactories of Australasia may be classified as domestic industries—that is to say, industries naturally arising from the circumstances of the population, or connected with the treatment of perishable products; but there are nevertheless a fair number of firmly established industries of a more complex character. A statement of the number of establishments and of the hands employed in Australasia is given below for various years since 1885. The information is obtained annually in the states of the Commonwealth, but only once in every five years in New Zealand:—

Year.	Establishments.		Hands employed.	
	Commonwealth.	New Zealand.	Commonwealth.	New Zealand.
	No.	No.	No.	No.
1885	8,632	1,946	105,265	22,095
1890	8,903	2,254	133,147	25,633
1895	8,247	2,459	133,631	27,389
1900	10,040	3,668	184,160	48,718
1903	11,979	3,960	196,424	52,628

From this it would appear that the number of hands in the Commonwealth increased from 133,631 in 1895 to 184,160 in 1900, but as the returns of the earlier year were not so complete as those of 1900 the figures cannot be accepted as an index of the progress made during the period. The returns for 1900 and 1903 are, however, practically on the same basis, and have accordingly been summarised

so as to show the movement in each branch of the manufacturing industry during the three years.

Class of Industry.	1900.			1903.		
	Hands employed.		H.P. of Machinery used.	Hands employed.		H.P. of Machinery used.
	Males.	Females.		Males.	Females.	
Treating Raw Materials, the Product of Pastoral Pursuits, &c.	7,276	27	6,271	7,432	44	7,890
Oils and Fats, Animal, Vegetable, &c.	1,399	60	2,007	1,650	96	1,801
Processes in Stone, Clay, Glass, &c.	7,308	41	4,820	7,859	85	6,582
Working in Wood	16,413	15	18,505	16,232	30	19,787
Metal Works, Machinery, &c.	35,260	64	15,783	36,285	91	20,659
Connected with Food and Drink, &c.	30,281	4,353	48,113	26,755	4,555	47,421
Clothing and Textile Fabrics and Materials	15,953	27,849	3,852	16,932	36,358	4,908
Books, Paper, Printing, and Engraving	13,448	2,743	3,822	13,756	3,477	4,827
Musical Instruments	141	10	24	239	15	67
Arms and Explosives	176	77	137	135	226	96
Vehicles and Fittings, Saddlery, and Harness, &c.	7,692	86	562	7,457	69	745
Ship and Boatbuilding, &c.	2,117	45	1,186	1,965	14	3,184
Furniture, Bedding, and Upholstery	4,136	378	856	5,012	428	1,158
Drugs, Chemicals, and By-products	961	245	660	1,509	492	1,201
Surgical and other Scientific Instruments	70	15	13	78	19	11
Jewellery, Timepieces, and Plated Ware	786	22	89	1,076	45	81
Heat, Light, and Power	2,668	94	13,789	3,575	91	57,931
Leatherware, not elsewhere included	279	35	51	384	68	135
Minor Wares, not elsewhere included	1,288	349	363	1,314	556	838
Total	147,652	36,508	120,903	149,665	46,759	159,322

Comparing 1900 with 1903, it will be seen that there has been a general increase in the number of persons employed in each of the various classes shown in the foregoing table, with the exception of the industries connected with wood-working, food and drink, the manufacture and repair of vehicles, and the docking and building of ships. The decline in no class of industry was particularly large, except in the industries connected with food. Elsewhere in this volume, the condition of the producing industries during 1903 has been discussed, and it is a natural expectation that with the falling off in the supply of grain there would have been a decrease in the industries connected with milling, while the shortage of fat stock brought about almost a total suspension in certain districts of the large industry of meat-preserving. Queensland was the chief sufferer in regard to the employment in manufactories dependent upon the staple industries. In 1903 there were 2,350 hands employed in meat-preserving and sugar-milling, as

compared with 5,412 hands three years previously. The power of the machinery in average use increased from 120,903 h.p. to 159,322 h.p., but this was largely attributable to the establishment of the electric tramway system in Sydney. As a set-off against this, however, it may be said that the figures of the earlier year include electric-lighting plants in several of the states which were not included in 1903, and the increase of power may be accepted as a satisfactory testimony to the large increase of invested capital.

It is interesting to note the extent to which the employment of female labour has increased during late years.

In 1897, the females engaged in the manufactories of the states which comprise the Commonwealth numbered only 26,837 and represented 17·7 per cent. of the total hands employed; in 1903 their number had increased to 46,759 and the proportion to 23·8 per cent. In New Zealand the experience has been similar, from 4,391 in 1895 the number of females increased to 11,606 in 1903, and their proportion to the total hands employed rose from 16·1 per cent. to 22·2 per cent. The figures are prejudiced to a certain extent by the fact that the returns for the states were not all compiled on the same basis; still there is sufficient evidence that the employment of female labour is increasing, a conclusion borne out also by the information obtained at the Census of 1901 and published in part "Employment and Production" of this volume. The proportion of females employed is largest in Victoria, where there were 23,795 out of a total of 73,229 persons, equal to 32·5 per cent.; South Australia followed with 21·1 per cent., and Western Australia had the lowest proportion with 11·7 per cent. The following table shows the number of males and females employed in the Commonwealth in each year since 1897 :—

Year.	Hands Employed.		Total.
	Males.	Females.	
1897 ...	124,938	26,837	151,775
1898 ...	130,389	28,221	158,610
1899 ...	139,755	31,707	171,462
1900 ...	147,652	36,508	184,160
1901 ...	154,000	39,664	193,664
1902 ...	154,775	45,242	200,017
1903 ...	149,665	46,759	196,424

Too much importance is sometimes attached to this apparent intrusion of woman into what is generally considered to be man's sphere, for it would appear that the increased employment of women is mainly confined to industries concerned with the manufacture of clothing, &c. As evidence of this, it may be mentioned that the number of females engaged in the Commonwealth in clothing, tailoring, and dressmaking establishments increased from 20,928 in 1900 to 25,426 in 1903.

Manufactories of Victoria.

Victoria was the state which first displayed activity in the manufacturing industries. In 1885 there were employed in factories, properly so called, 49,297 hands, and in 1889 there were 57,432 hands; but the number fell away to 41,729 in 1893. Since that year there has been an increase to the extent of 31,500 hands. Of the 73,229 workers employed in 1903, 3,533 may be said to have found occupation in connection with domestic industries for the treatment of perishable produce for immediate use; 34,502 in other industries dependent upon the natural resources of the country, and 35,194 in industries the production from which comes into competition with imported goods:—

Year.	Establishments.	Males.	Females.	Total Hands employed.
1885	2,813	41,542	7,755	49,297
1886	2,770	39,453	6,320	45,773
1887	2,854	42,019	7,065	49,084
1888	2,975	47,335	7,153	54,488
1889	3,137	49,105	8,327	57,432
1890	3,104	47,596	8,773	56,369
1891	3,123	43,627	10,786	54,413
1892	2,934	35,726	9,689	45,415
1893	2,659	32,209	9,520	41,729
1894	2,614	32,638	10,681	43,319
1895	2,724	35,406	12,240	47,646
1896	2,809	37,728	12,669	50,397
1897	2,759	38,620	14,030	52,650
1898	2,869	40,631	14,147	54,778
1899	3,027	44,041	16,029	60,070
1900	3,097	45,794	18,413	64,207
1901	3,249	47,059	19,470	66,529
1902	4,003	49,658	23,405	73,063
1903	4,151	49,434	23,795	73,229

The number of factories and industrial establishments of various sizes, with the number of hands employed in each class, during 1903, will be found below:—

Number of Hands employed by each Establishment.	Number of Establishments.	Total number of Hands.
Under 4 hands	587	1,714
4 hands	487	1,948
5 to 10 hands	1,631	11,293
11 to 20 ,, ...	722	10,509
21 to 50 ,, ...	471	14,520
51 to 100 ,, ...	135	9,109
101 hands and upwards	118	24,136
Total.....	4,151	73,229

The capital invested in these establishments amounted to £20,406,841 sterling, of which the land represented £2,855,174; buildings, £5,112,771; machinery and plant, £5,010,896; and cash and sundries, £7,428,000. The horse-power of the machinery used was 41,091, divided as follows:—Steam engines, 36,727 horse-power; gas, 3,600 horse-power; and oil, 764 horse-power; in addition to which electric engines, of 1,659 horse-power were used, mainly for lighting purposes.

Manufactories of New South Wales.

The manufacturing industries of New South Wales do not cover so wide a field as those of Victoria, nor do they afford employment for as many persons. For the year 1903 the two states compare as follows:—

State.	Establishments.	Hands employed.		Total.
		Males.	Females.	
Victoria	4,151	49,434	23,795	73,229
New South Wales ...	3,476	52,453	13,180	65,633

In Victoria, therefore, there were employed 10,615 females more than in New South Wales, and 3,019 fewer males. In order to trace the progress of the manufacturing industry in New South Wales during the last eleven years, it is necessary to adjust the figures for the five years 1891–95, because in 1896 a change was made in the scope of the returns by the inclusion of dressmakers and milliners who were not previously counted as factory hands. Certain other small changes were made, the object of which was to secure uniformity with Victoria. Making the necessary adjustments, the figures since 1891 are as follows:—

Year.	Establishments.	Males.	Females.	Total Hands employed.
1891	3,056	43,203	7,676	50,879
1892	2,657	42,909	5,007	47,916
1893	2,428	37,832	4,225	42,057
1894	3,070	41,070	5,432	46,502
1895	2,723	41,546	6,484	48,030
1896	2,928	42,908	6,932	49,840
1897	2,826	44,333	7,106	51,439
1898	2,839	44,673	7,845	52,518
1899	2,912	47,063	8,583	55,646
1900	3,077	50,516	10,263	60,779
1901	3,367	54,556	11,674	66,230
1902	3,396	54,326	11,943	66,269
1903	3,476	52,453	13,180	65,633

Up to the year 1891 there had been a fairly regular increase in the employment afforded by the factories of the state; in the following year, owing to causes already discussed in another part of this volume, there was a decrease in the number of persons employed, and, from 50,879 in 1891, the number had fallen to 42,057 in 1893—the year of the bank failures. In the following years there was a rapid recovery, so that the employment in 1897 was greater than in 1891, and each year showed a further improvement until, in 1902, there were 15,390 more hands employed than in 1891, and 24,212 more than in 1893. In 1903 there was a decrease in the number of males employed to the extent of 1873, and an increase of females, numbering 1,237, so that the total number of hands employed was 536 less than in the preceding year.

Of the 65,633 workers employed in 1903, 29,800 found employment in connection with industries the products from which come into competition with imported goods, 3,624 were engaged in domestic industries for the treatment of perishable produce required for immediate use, and 32,209 in other industries called into existence by the natural resources of the state.

The number of factories and industrial establishments of various sizes, with the number of hands employed in each class during 1903, were as follows:—

Number of Hands employed by each Establishment.	Number of Establishments.	Total number of Hands.
Under 4 hands	588	1,429
4 hands	397	1,588
5 to 10 hands	1,211	8,414
11 to 20 ,,	617	8,906
21 to 50 ,,	424	13,317
51 to 100 ,,	136	9,414
101 hands and upwards	103	22,565
Total	3,476	65,633

The capital invested in these establishments amounted to £19,396,504. The value of the lands, buildings, and fixtures, as ascertained at the census of 1901, was £4,969,698, while the machinery and plant used in 1903 was valued by the proprietors at £7,009,806, and the cash and sundries invested were £7,417,000. The average power of the machinery used was 59,353 horse-power, of which steam-engines represented 56,121 horse-power, gas 2,538 horse-power, water 88 horse-power, oil 205, and turbine 401 horse-power, while electric plants, of 18,039 horse-power, were also in operation, but almost solely for lighting purposes.

Manufactories of Queensland.

In Queensland systematic statistics relating to manufactories have been taken only since 1892. Until the year 1900, no details were available with reference to the employment of males and females, and

the numbers for previous years have therefore been estimated. The figures for the last ten years are as follows :—

Year.	Establishments.	Persons employed.		
		Males.	Females.	Total.
1894	1,323	13,124	2,100	15,224
1895	1,397	16,128	2,600	18,728
1896	1,332	17,013	2,720	19,733
1897	1,682	19,100	3,060	22,160
1898	1,864	20,830	3,340	24,170
1899	2,172	23,440	3,760	27,200
1900	2,019	23,138	3,766	26,904
1901	2,062	23,431	3,692	27,123
1902	1,977	17,595	3,363	20,958
1903	2,001	16,139	3,147	19,286

To stimulate the progress of the staple industries of the State, two Acts were passed—the "Sugar Works Guarantee Act" and the "Meat and Dairy Produce Encouragement Act." The former empowered the Government to make advances to sugar mills at a low rate of interest, and under its provisions £526,136 had been advanced up to 31st December, 1903, the amount of indebtedness on that date being £554,783. Under the Meat and Dairy Act, advances amounting to £117,733 had been made, of which £88,600 was owing on 31st December, 1903. Owing to a series of adverse seasons, the manufacturing industries of Queensland, closely allied as they are with the great pastoral and agricultural industries of the state, have suffered severely.

The output from the two principal manufacturing industries, sugar-refining and meat-preserving, which, in 1901, amounted to £3,405,481, fell away to £2,681,456 in 1903. The figures relating to these two industries are worthy of special attention, and are dealt with at some length in another place.

The value of materials used in Queensland industries, excluding butter and cheese factories, in 1903 was £3,955,000, the wages paid £1,522,000, and the value of production £6,636,000; the value added to materials in the process of manufacture was, therefore, £2,681,000.

The capital invested in the manufacturing industries of the state amounted to £8,541,623, of which lands, buildings, and fixtures represented £2,631,039; machinery and plant, £4,052,584; and cash and sundries, £1,858,000. The machinery in use averaged 27.047 horse-power.

Manufactories of South Australia.

In South Australia returns were obtained from manufactories in 1892, but in the following three years no information was obtained; since 1895, however, the returns have been collected annually. The following are the available figures:—

Year.	Establishments.	Males.	Females.	Total Hands employed.
1892	815	9,642	1,847	11,489
1896	767	10,974	1,811	12,785
1897	768	10,930	2,027	12,957
1898	766	12,296	2,085	14,381
1899	841	12,941	2,214	15,155
1900	1,036	14,800	2,859	17,659
1901	1,129	14,881	3,442	18,323
1902	1,325	16,595	3,943	20,538
1903	1,339	14,703	3,941	18,644

Although no definite information is available as to the invested capital in South Australia, it is probably in the neighbourhood of £5,037,000, of which lands and buildings are estimated to represent £1,676,000; machinery and plant, £1,730,000; and cash and sundries, £1 631,000. The machinery in use averaged 11,756 horse-power.

Manufactories of Western Australia.

In Western Australia, the manufacturing industry has advanced very rapidly in importance, and the hands employed now number nearly twelve thousand. The following are the figures for the last seven years:—

Year.	Establishments.	Males.	Females.	Total Hands employed.
1897	413	8,683	408	9,091
1898	485	8,521	613	9,134
1899	476	8,641	766	9,407
1900	507	9,440	880	10,320
1901	537	10,238	1,062	11,300
1902	575	10,404	1,301	11,705
1903	586	10,494	1,389	11,883

The capital invested amounts to £4,330,001, of which lands and buildings represent £1,245,186; machinery and plant, £1,631,815; and cash and sundries, £1,453,000. The average power of the machinery used is 13,065 horse-power, in addition to electric lighting plant of 911 horse-power

Manufactories of Tasmania.

Tasmania has several long-established industries, but until 1902 little information was available concerning them. A comparison of the information now published in regard to Tasmania with that of former years would convey the idea that a large increase of employment had occurred, but the apparent increase is due to the fact that in 1902, for the first time, complete information was obtained as to the development of the manufacturing industries. The figures for the last two years are :—

	1902.	1903.
Establishments	420	426
Hands—Males	6,181	6,442
Females	1,285	1,307
Total	7,466	7,749

The invested capital amounts to £2,688,155 ; lands and buildings are valued at £994,254 ; machinery and plant, £921,901, and cash and sundries at £772,000. The average power of the machinery used in 1903 was 7,010 horse-power ; while electric lighting plants of 1,354 horse-power were also in operation.

Manufactories of New Zealand.

In New Zealand, information regarding the manufacturing industry is obtained only at the quinquennial census. The figures for the year 1903 have been obtained from the returns of the Department of Labour but, as these include establishments not usually classed as manufactories, certain alterations were deemed necessary, and the figures have been adjusted to bring them into line with those of previous years. The invested capital in 1901 amounted to £13,209,398, of which lands, buildings, &c., represented £4,690,877 ; machinery and plant, £3,962,521; and cash and sundries £4,556,000. The average power of the machinery used was 39,939 horse-power. The values of land and machinery do not include either the Government Railway Workshops or Printing Office. The following statement shows the progress made since 1886 :—

Year.	Establishments.	Hands employed.		
		Males.	Females.	Total.
1886	1,946	19,601	2,494	22,095
1891	2,254	22,664	2,969	25,633
1896	2,440	22,945	4,391	27,336
1901	3,668	38,094	10,624	48,718
1903	3,960	41,022	11,606	52,628

The foregoing figures show very marked progress during the last eight years, and from an analysis of the returns it appears that this progress has been general amongst all classes of industries

Value Added by Processes of Manufacture or Treatment.

Statistics of a more or less exhaustive character are taken annually in all the states in order to show the condition and progress of the manufacturing industry; but it is only at certain periods, usually on the occasion of a general census, that details of the output of factories are obtained. In New South Wales for the year 1901, and in New Zealand for the previous year, elaborate returns were obtained of the output of all branches of manufacturing industries, the value of materials operated on, wages paid, and other particulars. From the information gathered some interesting deductions may be made. As regards New Zealand, it may be remarked that the totals do not agree in all cases with those shown in the New Zealand Year Book, additional information having been supplied by the Statistician of that colony to complete the values of raw materials, wages and output. The following are some of the salient features of the returns :—

	New South Wales.	New Zealand.
	£	£
Raw materials and other materials worked up	12,597,982	9,166,787
Fuel	482,428	243,000
Wages	4,867,917	3,511,590
Value of goods manufactured and work done (including custom work and repairing)	22,820,839	16,339,450

These figures do not take into consideration the returns from butter and cheese factories, the production from which is included elsewhere. From the figures just given the following values are obtained :—

	New South Wales.	New Zealand.
	£	£
Value added to materials and fuel during the process of production	9,740,429	6,929,663
Percentage added to value of materials and fuel	74·5	73·6
Value added to materials, fuel, and wages	4,872,512	3,418,073
Percentage added to materials, fuel, and wages	27·1	26·5

A close examination of the returns of the two countries would probably disclose some discrepancies in details, but these are unavoidable in a general statistical review of the manufacturing operations of separate countries compiled by different persons. Taken as a whole, however, the returns of New South Wales and New Zealand are in very close agreement. The margin above the cost of materials, fuel, and wages includes the interest on land and buildings where these are the property of the manufacturer; repairs and renewals to buildings and fixtures;

rent, where the buildings, etc., are not the property of the manufacturer; interest on capital represented by machinery; renewals and depreciation in machinery and conveyance plant; advertising; and insurance, rates, and taxes not in the nature of excise duty or income tax. These, from a close analysis of the returns for New South Wales were found to be represented during the year 1901 by a total sum of £1,492,000. Assuming that approximately the same proportion of expenses obtains in New Zealand, and taking the two countries together, the following results are arrived at:—

	£
Value of Materials Used	21,764,769
Fuel	725,428
Wages	8,379,507
Miscellaneous Expenses	2,472,367
	33,342,071

As the total output was valued at £39,160,289 there remained, when the foregoing charges were met, the sum of £5,818,218, which provides for the interest on capital embarked in the business, and trade losses and profits. This latter figure represents 17·5 per cent. of all the items included in cost of production, or 14·9 per cent. of the value of the production itself. In other words, for every hundred pounds worth of goods produced in the factories of the two countries, the following were the proportions of the various elements included in the price of the goods as they left the manufactories:—

Materials and Fuel	57·4
Wages	21·4
Miscellaneous Expenses	6·3
Interest, Provision for Trade Losses, Profits, &c.	14·9
	100·0

The voluminous returns of the industrial census of the United States for 1900 give some very interesting figures relating to the manufacturing industries of that country:—

	Million Dollars.
Value of Materials used, including Fuel	7,345·4
Wages	2,726·0
Miscellaneous Expenses	1,027·7
Interest, Provision for Trade Losses, Profits, &c.	1,905·3
Total Output	13,004·4

The proportion of total output borne by each of the above items is given below:—

Value of Materials used, including Fuel	56·5
Wages	21·0
Miscellaneous Expenses	7·9
Interest, Provision for Trade Losses, Profits, &c.	14·6
	100·0

It will be seen that the Australian figures are in close agreement with those of America, nor is this agreement a matter of mere coincidence, for it is characteristic of the great majority of the industries making up the total, and shows that the business of manufacturing tends everywhere to fall into the same lines.

Classes of Industry.

As the result of a conference between the statisticians of the various states, the information in regard to industrial establishments is now given in the same form, the following classification having been agreed upon. The table shows the number of hands, male and female, employed in 1903 :—

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Treating Raw Materials, the Product of Pastoral Pursuits....	5,570	22	2,286	1	7,856	23
Treating Raw Materials, the Product of Agricultural Pursuits, &c.	1,862	22	216	10	2,078	32
Oils and Fats, Animal, Vegetable, &c.	1,650	96	240	26	1,890	122
Processes in Stone, Clay, Glass, &c.	7,859	85	1,273	2	9,132	87
Working in Wood	16,232	30	6,635	2	22,867	32
Metal Works, Machinery, &c.....	36,285	91	6,259	5	42,544	96
Connected with Food and Drink, &c.	26,755	4,555	7,069	628	33,824	5,183
Clothing and Textile Fabrics and Materials	16,932	36,358	7,687	9,579	24,619	45,937
Books, Paper, Printing, and Engraving	13,756	3,477	2,799	754	16,555	4,231
Musical Instruments	239	15	23	.....	262	15
Arms and Explosives.....	135	226	21	111	156	337
Vehicles and Fittings, Saddlery, and Harness, &c.	7,457	69	2,636	55	10,093	124
Ship and Boat Building, &c.	1,965	14	185	.....	2,150	14
Furniture, Bedding, and Upholstery	5,012	428	1,887	76	6,899	504
Drugs, Chemicals, and By-products...	1,509	492	291	58	1,800	550
Surgical and other Scientific Instruments	98	19	14	2	112	21
Jewellery, Timepieces, and Plated Ware	1,076	45	72	3	1,148	48
Heat, Light, and Power	3,575	91	763	166	4,338	257
Leatherware, not elsewhere included	384	68	43	20	427	88
Minor Wares, not elsewhere included	1,314	556	623	108	1,937	664
Total	149,665	46,759	41,022	11,606	190,687	58,365

Distributing the above total for the Commonwealth amongst the various states, the results shown in the following table are obtained.

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Treating Raw Material, the Product of Pastoral Pursuits....	2,499	1,937	501	468	70	117
Treating Raw Materials, the Product of Agricultural Pursuits, &c.	288	1,039	25	329	37	166
Oils and Fats, Animal, Vegetable, &c.	625	528	165	293	67	68
Processes in Stone, Clay, Glass, &c.	3,073	3,076	422	497	679	197
Working in Wood	5,167	3,713	2,272	424	3,584	1,102
Metal Works, Machinery, &c.....	12,851	10,350	3,215	6,090	2,107	1,763
Connected with Food and Drink, &c.	10,469	10,602	4,926	2,484	1,335	1,494
Clothing and Textile Fabrics and Materials	15,486	26,136	3,785	4,659	1,686	1,538
Books, Paper, Printing, and Engraving	6,135	6,525	1,935	1,166	962	510
Musical Instruments	219	25	1	9	....	....
Arms and Explosives.....	19	342	....	....	....	....
Vehicles and Fittings, Saddlery, and Harness, &c.....	2,102	2,973	844	815	509	283
Ship and Boat Building, &c.	1,501	98	139	111	92	38
Furniture, Bedding, and Upholstery	1,923	1,978	465	563	302	209
Drugs, Chemicals, and By-products	693	987	34	230	57	....
Surgical and other Scientific Instruments	64	35	18	....	....	....
Jewellery, Timepieces, and Plated Ware	257	594	53	133	41	43
Heat, Light, and Power	1,672	988	307	184	313	142
Leatherware, not elsewhere included	133	283	27	....	....	9
Minor wares, not elsewhere included.....	457	1,020	92	189	42	70
Total	65,633	73,229	19,286	18,644	11,883	7,749

Industries treating Raw Materials the Product of Pastoral Pursuits.

A consideration of the details relating to the various classes of industry discloses some very interesting features. The hands employed in the industries treating raw material, the product of pastoral pursuits arranged according to the principal groups, were as follow :—

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Boiling-down and Tallow Refining	208	10	....	....	208	10
Tanneries	5,055	11	2,146	1	7,201	12
Wool-scouring and Fellmongering						
Bone Mills.....	207	1	....	....	207	1
Catgut and Sausage Skins	100	....	140	....	240	....
Total	5,570	22	2,286	1	7,856	23

The horse-power of the machinery in use in the Commonwealth was 5,331, and in New Zealand 1,519, the value of the machinery and plant being £418,125 and £91,423 respectively.

It is difficult to say if the figures for all the states are compiled upon the same basis. In New South Wales and Victoria wool-scouring works on sheep stations are not included, as the hands are employed in such works only during the shearing season, and frequently for not more than a few weeks. In Queensland there are no establishments classed as tallow-refineries, tallow being incidentally extracted in the process of meat-preserving, and the persons engaged therein are included in the latter industry. The hands employed in tallow-refining in New Zealand are included with those engaged in soap and candle-making.

The number of hands employed in treating raw material, the product of the pastoral industries, varies greatly from year to year, and, owing to the decrease in the number of live stock depastured, is much less than in former years. The following is a distribution of the total persons employed in the various states of the Commonwealth :—

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Boiling-down and Tallow Refining	134	84	....	....	....	....
Tanneries	907	1,640	202	339	61	102
Wool-scouring and Fellmongering	1,458		278	79	....	....
Bone Mills.....	....	113	21	50	9	15
Catgut and Sausage Skins	....	100	....	....	....	...
Total	2,499	1,937	501	468	70	117

Tanning, fellmongering, and wool-scouring afford the largest amount of employment amongst industries of this class, and the details show the goods treated or manufactured in tanneries during the latest year available.

State.	Number Tanned.			
	Hides.	Skins.		
		Calf.	Sheep.	Other.
New South Wales	433,299	41,565	3,282,600	32,040
Victoria	397,376	179,425	522,422	107,043
Queensland	*	.....	150,896	.....
Western Australia	16,260	.....	38,800	.....
Tasmania	†91,212	.....	.....	.....
New Zealand	178,075	.....	272,775	.....

* Not available. † Includes skins.

The foregoing information is somewhat imperfect, but will serve to convey an idea of the development of the industry in each state.

The quantity of wool washed in ordinary wool-scouring establishments cannot be stated with exactitude, but the following figures will give some idea of the extent of the industry. The figures represent the weight of clean wool exported from each state or locally consumed, in accordance with the latest annual returns.

	lb.
New South Wales	43,616,860
Victoria	8,961,011
Queensland	19,133,581
South Australia	3,256,361
Western Australia	405,261
Tasmania	884,128
New Zealand	18,003,426

Treating Raw Materials the Product of Agricultural Pursuits.

The principal industry in this class is chaff-cutting, in which 1,914 persons find employment. The hands employed in the Commonwealth and New Zealand were as follow :—

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females
Bark Mills	112	...	...	...	112	..
Chaff-cutting and Corn-crushing	1,750	22	141	1	1,891	23
Grass Seed dressing	...	...	75	9	75	9
Total	1,862	22	216	10	2,078	32

The horse-power of the machinery used in the Commonwealth was 2,559, and in New Zealand, 580, the value of the machinery and plant being £108,148 and £37,565 respectively.

The greatest development of these industries is shown by Victoria, where 1,014 hands are employed in chaff-cutting establishments. The employment afforded by the various industries in each state is shown in the following table :—

Class of Industry.	New South Wales.	Victoria.	Qu'nsland.	South Australia.	Western Australia.	Tasmania.
Bark Mills	..	25	...	50	...	37
Chaff-cutting and Corn-crushing	288	1,014	25	279	37	129
Total	288	1,039	25	329	37	166

Oils and Fats, &c.

There were 2,012 persons employed in factories dealing with oils and fats, the numbers in each industry being as follows :—

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Oil and grease	147	1	.....	.....	147	1
Soap and candles	1,497	95	232	26	1,729	121
Glue	6	.....	8	.....	14	.....
Total	1,650	96	240	26	1,890	122

The horse-power of the machinery used in the Commonwealth was 1,801, and in New Zealand 428, and the value of the machinery and plant was £474,866 and £44,203 respectively.

Of the 1,746 hands employed in the Commonwealth, 1,592 were engaged in soap and candle factories. The employment afforded by other industries was but small, as will be seen from the next table.

Class of Industry.	New South Wales.	Victoria.	Queens-land.	South Aus-tralia.	Western Aus-tralia.	Tas-mania.
Oil and grease	105	43	.....	.....	.....	.....
Soap and candles	520	485	159	293	67	68
Glue	.....	.....	6	.....	.....	.....
Total	625	528	165	293	67	68

In view of the important dimensions attained by the soap and candle-making industry in the several states, the following information regarding the output during the year 1903 may be interesting ; no

information is available as to the production of candles in Queensland, and the New Zealand figures in this and all subsequent tables of a similar character refer to the year 1900 :—

State.	Soap manufactured.	Candles manufactured.
	cwt.	lb.
New South Wales	199,807	3,231,842
Victoria	151,414	5,045,824
Queensland	54,684	.....
Western Australia	27,232	1,789,106
Tasmania	14,320	925,120
New Zealand	92,321	2,989,280

Stone, Clay, Glass, &c.

The industries which are comprised in this class deal with the various processes in stone, clay, and glass, and are each year assuming larger proportions. Brick and tile-making is by far the most important, sixty-two out of every hundred employed being engaged therein.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Bricks and Tiles	4,689	69	995	2	5,684	71
Glass (including Bottles)	957	8	.....	.....	957	8
Glass (Ornamental)	290	3	10	.....	300	3
Lime, Plaster, and Cement	906	3	268	.....	1,174	3
Marble and Slate	650	2	.....	.....	650	2
Modelling, &c.	89	.....	.....	.....	89	.....
Pottery and Earthenware	245	.....	.....	.....	245	.....
Other Industries	33	.....	.....	.....	33	.....
Total	7,859	85	1,273	2	9,132	87

The horse-power of machinery employed in the Commonwealth was 6,582, and in New Zealand 1,166, the value of the machinery and plant being £675,921 and £68,952 respectively.

The hands employed in each industry for the different states are shown below. Those engaged in the manufacture of pottery and earthenware can be given only for New South Wales and South Australia ; in the other states they are included with brick and tile makers.

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Bricks and Tiles	1,921	1,581	278	254	550	174
Glass (including Bottles)	234	686	.....	45	.....	.....
Glass (Ornamental)	129	164	.....	.....	.....	.....
Lime, Plaster, and Cement	461	201	45	62	117	23
Marble and Slate	159	374	68	53	.....	.....
Modelling, &c.	7	70	.....	.....	12	.....
Pottery and Earthenware	162	.....	.....	83	.....	.....
Other Industries	.....	.....	33	.....	.....	.....
Total	3,073	3,076	422	497	679	197

The manufacture of pottery is generally associated with brick-making, and in the following table the products of brickyards and potteries for the year 1903 are shown together.

State.	Number of bricks and fire-bricks made.	Value of—	
		Pipes and tiles made.	Pottery, &c., made.
		£	£
New South Wales	202,681,000	73,769	*
Victoria	79,105,831	81,732	34,572
Queensland	12,473,239	11,258	*
Western Australia	45,576,179	.....	....
Tasmania	11,312,895	5,030	*
New Zealand	41,290,316	27,335	7,475

* Included with Pipes and Tiles.

Working in Wood.

The persons employed in these industries numbered 22,899, the largest employment being afforded by saw-mills, but the hands employed in these works have decreased considerably in late years. Owing to the lack of uniformity in the statistics of the various states it is impossible to state the strength of the hands in the various industries, but this has been done as far as practicable.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Boxes and Cases	285	2	.....	.....	285	2
Cooperage	4,244	12	76	.....		
Joinery						
Saw-mills	11,225	15	6,356	2	21,901	29
Wood Turning and Cork Cutting	280	1	203	.....	483	1
Other Industries	198	.....	.....	.....	198	.....
Total	16,232	30	6,635	2	22,867	32

Machinery is largely used in these industries, but it is not of a very valuable character. The horse-power of that employed in the Commonwealth was 19,787 and in New Zealand 9,097, the values being £1,644,278 and £425,695 respectively.

The succeeding table shows the distribution of employment in the various states of the Commonwealth. The figures relating to saw-mills and joinery appear slightly misleading; this is due to the fact that the returns for the different states are not compiled on the same basis. In Western Australia the workers in forest saw-mills number 2,777, while 788 hands are engaged in town saw-mills, cooperages, and joinery works; in New South Wales a number of joiners are also included with the saw-mill employees. In South Australia no information is given concerning them, although there must be a considerable number.

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania
Boxes and Cases	219	.....	49	.....	19	.....
Cooperage	174	87	47	57	788	5
Joinery	731	1,798	429	.....		140
Saw-mills	3,936	1,476	1,747	347	2,777	957
Wood Turning and Cork Cutting	107	154	.....	20	.....	.....
Other Industries	.....	198	.....	.....	.....	.....
Total	5,167	3,713	2,272	424	3,584	1,102

There is no uniformity in the details published by the various states regarding saw-mills; but the information as to the quantity of timber roughly sawn for the latest year available is given below.

	Square feet, 1 inch thick.
New South Wales	100,408,000
Victoria	38,841,322
Queensland	69,508,800
Western Australia	119,465,433
Tasmania	35,196,700
New Zealand	261,583,518

The figures for New South Wales show a great falling off compared with those for 1900, when the quantity operated on was returned as 168,440,000 feet.

Metal Works, Machinery, &c.

Works connected with the treatment of metals, manufacture of machinery, agricultural implements, and railway rolling stock form a large and growing class of industry. The grouping given below is not

by any means satisfactory. Persons engaged in the various processes connected with the extraction of gold from gold-bearing stone are in a sense just as much entitled to be classified in the following tables as those concerned in the reduction of silver, lead, or copper ores. The determination of what constitutes an establishment classifiable as a work or factory is by no means clear. As regards works for the extraction of metals from their ores, the determining factor seems to be the degree of intricacy involved in the process of reduction; and whereas a quartz battery would not be called a factory or work, an establishment using a cyanide plant might be so classified. The distinction is not very logical, but as it has long obtained in these states it is retained here.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Agricultural Implements	1,791	9	669	.....	2,460	9
Brass and Copper	754	.....	.....	.....	754	.....
Cutlery	72	1	6	.....	78	1
Galvanized Iron	1,268	8	261	.....	1,529	8
Engineering, Ironworks and Foundries	14,777	28	3,046	1	17,823	29
Lead Mills	67	1	.....	.....	67	1
Railway Carriages	263	.....	.....	.....	263	.....
Railway and Tramway Workshops	7,547	27	1,626	.....	9,173	27
Smelting	7,455	1	.....	.....	7,455	1
Stoves, Ovens, and Ranges	314	1	167	.....	481	1
Tinsmithing	1,059	2	360	.....	1,419	2
Wireworking	453	5	82	4	535	9
Other Metal Works	465	8	42	.....	507	8
Total	36,285	91	6,259	5	42,544	96

In these industries machinery is very extensively used. The horse-power of the machinery in use in the Commonwealth was 20,659 and in New Zealand 2,780, the values being £3,333,555 and £317,072 respectively.

In considering this and the subsequent tables, several difficulties in making comparisons will be met with. In Queensland, for example, all metal works, except smelting, are grouped in the one line, which is also the case in Western Australia. In Queensland no hands are shown

as being employed in the manufacture and repairs of rolling stock; this, of course, is incorrect, for though little manufacturing may be carried on, each state makes its own repairs. In Victoria 1,777 hands are shown as employed in railway carriage and rolling-stock manufacture and repairs as compared with 3,776 in New South Wales. The employment afforded in railway workshops is chiefly in the nature of repairs, but locomotives, passenger carriages, and goods waggons are built in each state, and it is evident that the repairs in the former state are not on such an extensive scale as in the latter. The number of hands set down as employed in the manufacture of agricultural implements in New South Wales is only 56, few establishments devoting themselves entirely to this business, the manufacture of implements being usually associated with ironworking generally. Included in the 610 workers in tinsmithing in South Australia are a number of plumbers and persons engaged in the manufacture of stoves and ovens. New South Wales and South Australia possess smelting works on a large scale, affording employment to 2,873 hands in the first-named state, and to 2,048 in the latter. The chief smelting works of New South Wales are situated at Cockle Creek, near Newcastle, and at Dapto, in close proximity to the coal-fields. The chief ores treated are copper, tin, silver, and lead, partly the production of the state itself, and partly of Tasmania, South Australia, Western Australia, Queensland, and New Caledonia. The smelting works of South Australia are situated at Port Pirie, and deal with silver and lead ore from Broken Hill. The number of hands employed in each state is shown in the following table:—

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Agricultural Implements	56	1,114	.....	565	46	19
Brass and Copper	212	499	.....	.....	.....	43
Cutlery	16	57	.....	.....	.....	.....
Galvanized Iron	405	788	.....	83	.....	.....
Engineering, Ironworks and Foundries	4,593	4,614	2,406	1,869	979	344
Lead-mills	21	47	.....	.....	.....	.....
Railway Carriages	263	.....	.....	.....	.....	.....
Railway and Tramway Workshops	3,513	1,777	.....	915	1,063	301
Smelting	2,873	769	809	2,048	.....	957
Stoves and Ovens	137	178	.....	.....	.....	.....
Tinsmithing	352	.....	.....	610	.....	99
Wireworking	236	208	.....	.....	14	.....
Other Metal Works	174	299	.....	.....	.....	.....
Total	12,851	10,350	3,215	6,090	2,107	1,763

Industries connected with Food and Drink.

The industries connected with food and drink afford employment for a large number of hands, the distribution into detailed groups being as shown in the following table. The figures for the most part afford their own explanation. Included under the head of cornflour, oatmeal, and arrowroot are, in the case of Victoria, a small number of hands making macaroni, and some starch makers; these last are few in number, and it was not found possible to exclude them from the persons employed in making farinaceous foods, otherwise they could have been classed elsewhere. Owing to an arrangement between the statistical offices of New South Wales and Victoria, factories dealing with milk products have been included in the list of manufactories, although they cannot rightly be considered as such. In New Zealand, malthouses are included with breweries, and probably bacon-curing and refrigerating establishments are included with meat preserving works.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females
Bacon Curing	695	7	....	....	695	7
Butter Factories	2,879	56	1,190	43	4,113	106
Cheese Factories						
Condensed Milk	44	7	....	....		
Meat and Fish Preserving	2,098	41	3,002	58	5,100	99
Biscuits	2,84	1,521	635	375	3,475	1,896
Confectionery						
Cornflour, Oatmeal, &c.	426	212	18	....	444	212
Flour Mills	2,280	26	471	2	2,751	28
Jam and Fruit Canning	2,325	1,047	177	111	2,502	1,158
Pickles, Sauces, and Vinegar						
Sugar Mills	1,996	....	....	....	1,996	....
Sugar Refineries	847	16	212	....	1,059	16
Aerated Waters, Cordials, &c.	3,374	107	437	7	3,811	114
Breweries	3,383	7	814	2	4,197	9
Condiments, Coffee, Spices &c.	661	278	93	3	754	281
Distilleries	178	....	....	....	178	....
Ice and Refrigerating	638	4	....	....	638	4
Malting	220	....	....	....	220	....
Tobacco, Cigars, &c.	1,485	1,217	20	27	1,505	1,244
Salt	265	2	....	....	265	2
Other Industries	121	7	....	....	121	7
Total	26,755	4,555	7,069	628	33,824	5,183

In the preparation of foods and drinks machinery enters largely into use; the capital invested in machinery in the Commonwealth was £6,914,101, and in New Zealand £1,035,939, the average horse-power used being 47,421 and 14,792 respectively.

Distributing the persons shown above as employed in the Commonwealth amongst the various states, the most noticeable point is the strong position of Queensland, due entirely to the development of the sugar and meat-preserving industries.

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Bacon Curing	127	256	93	202	....	24
Butter Factories	872	1,319	391	155	....	119
Cheese Factories	79		....	....	....	
Condensed Milk	51	....	....	....	....	....
Meat and Fish preserving	679	439	940	....	....	81
Biscuits	856	769	261	218	163	112
Confectionery	809	932	241			
Cornflour, Oatmeal, &c.	259	379	....	....	....	....
Flour Mills	751	661	154	504	101	135
Jam, and Fruit Canning	636	1,503	....	217	58	694
Pickles, Sauces and Vinegar	78		153	33	....	....
Sugar Mills	586	....	1,410	....	....	....
Sugar Refineries	415	344	....	104	....	....
Aerated Waters, Cordials, &c.	1,335	1,029	546	137	351	83
Breweries	969	1,063	391	310	460	197
Condiments, Coffee, Spices, &c.	525	245	37	196	21	5
Distilleries	18	34	59	67	....	....
Ice and Refrigerating	389	122	52	24	75	....
Malting	44	176	....	....	....	....
Tobacco, Cigars, &c.	1,011	1,268	114	203	106	....
Salt	....	63	....	204	....	....
Other Industries	....	....	84	....	....	44
Total	10,469	10,602	4,926	2,484	1,335	1,494

There are many important industries in this class the details of which would prove interesting, but only for a limited number is the necessary information available. The most important of these is perhaps the meat-preserving and refrigerating industry, and the following table will give some idea of its development in the various states.

The figures show the latest annual output, as far as practicable, although, in several of the states, poultry, fish, tongues, &c., are treated, in addition to the foods shown herein.

State.	Sheep and lambs, frozen.	Beef, frozen and chilled.	Rabbits frozen.	Meat Preserved.		
				Beef.	Mutton.	Rabbits.
	carcases.	lb.	No.	lb.	lb.	lb.
New South Wales	299,131	2,392,880	.....	4,133,263	1,496,470	.....
Victoria	294,906	.....	5,861,741	985,152	810,544	1,433,152
Queensland	102,007	66,483,364	.....	9,773,112	498,416	.....
New Zealand.....	3,348,123	34,285,328	6,040,047	7,867,440		.....

The sugar industry has attained considerable dimensions in New South Wales and Queensland. Some details of the industry for the

year 1903 are given below, but more extended information is given on this subject in the chapter dealing with "Agriculture."

State.	Sugar cane crushed.	Sugar manufactured.	Molasses manufactured.	Spirits distilled.
	tons.	tons.	gallons.	gallons.
New South Wales	224,772	21,786	1,367,020	.....
Queensland	823,875	91,828	2,407,652	174,933

Detailed information regarding flour-mills is available for each state excepting South Australia, and the following items have been selected as being of most value in showing the progress made. The quantity of flour made compared with the wheat ground seems a little inconsistent in some of the states, but the figures are given as they appear in the official records.

State.	Wheat ground.	Other grain ground.	Flour made.
	bushels.	bushels.	tons.
New South Wales	6,030,409	.....	121,074
Victoria	5,762,849	139,702	115,368
Queensland	1,172,908	55,893	23,738
Western Australia	685,652	.....	13,711
Tasmania	1,012,258	86,004	20,656
New Zealand	4,004,789	762,340	83,017

Breweries afford a large amount of employment, and those of Victoria have attained the most importance and have the largest annual output, as the following figures show :—

State.	Beer and Porter made.	Materials used—		
		Sugar.	Malt.	Hops.
	gallons.	cwt.	bushels.	lb.
New South Wales	14,211,888	84,218	571,462	713,451
Victoria	15,473,149	102,651	552,042	569,981
Queensland	4,324,336	.....	.....	.....
Western Australia	4,932,650	27,671	167,177	276,305
Tasmania	1,890,673	.....	.....	.....
New Zealand	7,379,581	21,647	455,035	562,245

Tobacco factories have assumed important dimensions in several of the states, and the output during 1903 was as follows :—

State.	Tobacco Manufactured.	Cigars.	Cigarettes.
	lb.	lb.	lb.
New South Wales	3,329,938	45,297	790,697
Victoria	2,390,976	116,669	134,400
Queensland	342,477	706	.....
Western Australia	94,393	13,832	6,758

Clothing and Textile Fabrics.

Industries connected with the manufacture of clothing and textile fabrics afford more employment than any other class. The females employed largely outnumber the males, and the excess would be still greater if all persons working in their own homes, or in dwelling-houses not classed as factories, had been included. The following table shows the number of males and females employed in this class of industry :—

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Woollen Mills	961	896	727	965	1,688	1,861
Boots and Shoes	8,641	3,923	2,145	748	10,786	4,671
Slop Clothing and Tailoring.....	5,265	25,426	1,500	3,200	6,765	31,626
Dressmaking and Millinery			.....	3,000		
Underclothing	143	3,107	9	224	152	3,331
Dyeworks and Cleaning	95	125	46	26	141	151
Furriers	39	61	.....	.....	39	61
Hats and Caps	758	1,095	110	188	868	1,283
Waterproof and Oilskin	104	312	*	.....	104	312
Shirts, Ties, and Scarfs.....	78	833	39	820	117	1,653
Rope and Cordage	813	264	148	.....	1,250	363
Tents and Tarpaulins.....			289	99		
Flax Mills	.....	.....	2,637	2	2,637	2
Hosiery	35	316	20	259	55	575
Other Industries	.....	.....	17	48	17	48
Total	16,932	36,358	7,687	9,579	24,619	45,937

* Included with Tents and Tarpaulins.

The use of machinery is not extensive in this class, as compared with the number of hands engaged. The value in the Commonwealth was only £848,845, and in New Zealand £340,933, the average horse-power used being 4,908 and 3,644 respectively.

Victoria shows the greatest development in these industries, and employs more hands than any other state in almost every branch of them. The only exceptions are waterproof clothing, where New South Wales employs more hands, and textiles, in which it is surpassed by New Zealand. The colony last named has 1,692 hands employed in

woollen mills compared with 1,138 in Victoria and 280 in New South Wales. New Zealand has also 2,639 hands in flax mills; in no other state has this industry been established. The classification of the minor industries is a matter of some difficulty as in many cases two or more branches are combined; this will account for the variations in such industries as shirt-making, underclothing, &c. The following table shows the distribution of employment in the various states of the Commonwealth :—

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Woollen Mills	280	1,138	87	151	.....	201
Boots and Shoes	4,288	5,267	1,145	1,218	302	344
Slop Clothing and Tailoring	6,040	6,965	1,837	3,106	846	899
Dressmaking and Millinery	2,876	7,149	501		472	
Underclothing	†.....	3,201	.....	.....	49	.....
Dyeworks and Cleaning	51	149	.....	14	.....	6
Furriers	33	62	.....	.....	.....	5
Hats and Caps	543	1,129	131	50	.....	.....
Waterproof and Oilskin	186	207	.....	23	.....	.....
Shirts, Ties, and Scarfs	856	†.....	.....	.....	†.....	55
Rope and Cordage, Mats, &c.	157	479	84	58	.....	3
Tents and Tarpaulins	176	64		39	17	.....
Hosiery	†.....	326	.....	.....	.....	25
Total	15,486	26,136	3,785	4,659	1,686	1,538

† Included elsewhere.

There are important boot and shoe factories in each of the states, and the output is attaining considerable proportions, as will be seen from the figures given below. No output of uppers is recorded from New South Wales or Victoria, although there are some establishments solely devoted to upper making; but the great bulk of the uppers is made in the ordinary boot factories.

State.	Articles manufactured.			Value of Output.
	Boots and Shoes.	Slippers.	Uppers.	
	pairs.	pairs.	pairs.	£
New South Wales	3,166,475	397,531	.....	.....
Victoria	3,574,761	.....	.....	.....
Queensland	682,762	.....	27,472	182,329
Western Australia	220,525	.....	.....	.....
Tasmania	202,249	.....	4,700	64,270
New Zealand	1,161,873	104,583	166,027	529,254

The manufacture of textile fabrics is becoming an important industry, especially in New Zealand, where the hands employed in woollen mills are nearly equal in number to those in the whole of the Commonwealth. Of the Commonwealth states Victoria is the most important, as may be judged by its consumption of wool, which is three and a half times that of New South Wales. The following information shows the output from woollen mills in the various states :—

State.	Wool used.	Articles manufactured.				Value of Output.
		Tweed and Cloth.	Flannel.	Blankets.	Shawls and Rugs.	
	lb.	yds.	yds.	pairs.	No.	£
New South Wales ...	660,002	458,302	3,428	5,000	900	...
Victoria	2,130,100	662,381	3,201,275	77,601	6,565	...
Tasmania	812,000	.....	.....	.....	.....	...
New Zealand.....	3,257,319	1,445,867	1,191,234	49,523	26,806	359,382

Books, Paper, Printing, &c.

The different industries connected with printing, bookbinding, paper-making, &c., afford work to 20,786 persons. The great bulk of these is employed in the various processes of printing, actual manufacturers being comparatively few in number. Australia and New Zealand produce many excellent paper-making materials; nevertheless, only three or four hundred persons are employed in paper-making, and a large proportion of the output of the mills consists of ordinary brown or wrapping papers.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Electrotyping and stereotyping ..	100	10	.....	.....	100	10
Paper, Paper bags, boxes, &c.....	629	786	143	114	772	900
Photo-engraving	106	20	.....	.....	106	20
Printing and bookbinding	12,753	2,658	2,654	640	15,407	3,298
Printing materials	53	2	2	.....	55	2
Engraving	101	1	.....	.....	101	1
Other Industries	14	.....	.....	.....	14	.....
Total	13,756	3,477	2,799	754	16,555	4,231

The machinery employed in the above had a value of £1,769,294 in the Commonwealth, and £381,958 in New Zealand. The average horse-power used was 4,827 and 1,762 respectively.

There are several difficulties in the way of making comparisons regarding these industries. Under the headings of electrotyping and stereotyping there are no returns for any state but New South Wales. It must be presumed, therefore, that persons employed in these pursuits in the other states are included with printing,

bookbinding, &c. Under the head of printing are included the composing and mechanical staff of the newspaper offices—persons whom it takes a very wide definition to bring in under the term "manufacturers." The following table shows the employment afforded in the various states :—

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Electrotyping and stereotyping ..	110	.....	.....	.....	.....	.....
Paper, Paper bags, boxes, &c.....	622	515	85	167	26	.....
Photo-engraving	42	42	.....	.....	42	.....
Printing and bookbinding	5,361	5,811	1,836	999	894	510
Printing materials	.....	55	.....	.....	.....	.....
Engraving	.....	102	.....	.....	.....	.....
Other Industries	.....	.....	14	.....	.....	.....
Total	6,135	6,525	1,935	1,166	962	510

Musical Instruments.

The manufacture of musical instruments is not yet firmly established in Australasia, and until recently the employment afforded was mainly in the direction of fitting and repairs.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Musical Instruments	239	15	23	..	262	5

In New Zealand no machinery was employed, and in the Commonwealth the average horse-power used was only 67, and the value £4,870. New South Wales is the only state which shows much development, 219 persons out of a total for the Commonwealth of 254 being engaged in that state. The greater part of this employment is afforded by one establishment.

Arms and Explosives.

The manufacture of small arms and explosives is of great importance in connection with the defence of these shores, but so far little attention has been devoted to the industry, only 493 hands being employed, these being occupied exclusively in the manufacture of explosives.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Explosives	135	226	21	111	156	337

The horse-power of the machinery used in the Commonwealth was 96, and in New Zealand 39, the value of the plant being £52,766 and £10,650 respectively.

Of the Commonwealth states, Victoria alone shows much development in this industry, and 342 hands are engaged in the manufacture of explosives, the remaining 19 hands being employed in New South Wales.

Vehicles, Saddlery, and Harness.

In connection with the manufacture and repair of vehicles, saddlery, harness, &c., there are 10,217 hands employed. The great bulk of the work done in connection with coaches and waggons consists of repairing; but there are establishments in all the states where vehicles of all classes are manufactured.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Coach and Waggon Building	5,723	24	1,200	.....	7,609	33
Cycles			686	9		
Perambulators	49	4	.....	.....	49	4
Saddlery and Harness	1,575	39	750	46	2,325	85
Spokes, &c.	65	1	.....	.....	65	1
Whips	30	1	.....	.....	30	1
Other Industries	15	.....	.....	.....	15	.....
Total	7,457	69	2,636	55	10,093	124

The employment of machinery in this class is mainly in tyre-setting. The horse-power of the machinery used in the Commonwealth was 745, and in New Zealand 226, the values being £171,829 and £38,868 respectively.

Victoria shows by far the greatest progress in this class, no less than 2,973 hands being employed in that state.

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Coach and Waggon Building	1,518	2,210	425	406	345	151
Cycles	75	358		153	46	60
Perambulators	19	34	.....	.....	.....	.....
Saddlery and Harness	416	348	404	256	118	72
Spokes, &c.	66	.....	.....	.....	.....	.....
Whips, &c.	8	23	.....	.....	.....	.....
Other Industries	.....	.....	15	.....	.....	.....
Total	2,102	2,973	844	815	509	283

Ship and Boat-building and Repairing.

The industries depending upon shipping have not attained large dimensions in any of the states, and as regards ship-building itself, the use of iron instead of wood for the frames and hulls of vessels has injuriously affected a promising industry, as the woods of Australia are eminently fitted for ship-building purposes. The following is a statement of the persons employed :—

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Docks and Slips ..... Sails..... Ship and boat-building and repairs	1,965	14	185	.....	2,150	14
Total	1,965	14	185	.....	2,150	14

The use of machinery of a powerful character is necessary for the purpose of quickly emptying docks, although it is not in constant requisition. The value in the Commonwealth was £276,905, and in New Zealand £209,878, the average horse-power in use being 3,184 and 484 respectively.

In industries connected with ship-building and repairing, New South Wales has a far larger number of hands employed than any other state, mainly due to the fact that Sydney is the terminal port of most of the great lines of steamers trading with Australia. The chief portion of the business is in connection with the docking and repairing of ships, although there are several establishments engaged exclusively in ship and boat building.

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Docks and Slips	696	98	139	111	92	.....
Sails.....	42					12
Ship and boat-building and repairs	763					26
Total	1,501	98	139	111	92	38

Furniture, Bedding, &c.

Although Australia and New Zealand produce various kinds of wood admirably adapted to the requirements of the furniture trades, it can hardly be said that the industry has attained a development equal to its opportunities. As showing the possibilities of the industry, it may be mentioned that the value of furniture, imported into the

Commonwealth during 1903 was £167,366, and into New Zealand, £43,489. The employment afforded by the industry was :—

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Bedding, Flock, and Upholstery..	747	313	13	1	760	314
Billiard Tables	32	.....	13	.....	45	.....
Chair-making	57	.....	.....	.....	57	.....
Furniture and Cabinet-making ..	4,082	114	1,700	69	5,872	186
Picture Frames			90	3		
Window Blinds.....	94	1	71	3	165	4
Total	5,012	428	1,887	76	6,899	504

The value of the machinery employed in the Commonwealth was £113,132, and in New Zealand £28,249, the average horse-power used being 1,158 and 464 respectively.

The manufacture of furniture, bedding, &c., in the Commonwealth affords employment to 5,440 persons, of whom 1,923 are in New South Wales and 1,978 in Victoria. The distribution in the various states is as follows :—

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Bedding, Flock, and Upholstery..	382	509	136	.....	*	33
Billiard Tables	32	.....	.....	.....	.....	.....
Chair-making	57	.....	.....	.....	.....	.....
Furniture and Cabinet-making ..	1,309	1,296	329	521	283	159
Picture Frames	104	120		42	19	14
Window Blinds.....	39	53	.....	.....	.....	3
Total	1,923	1,978	465	563	302	209

* Included elsewhere.

The manufacture of billiard tables is an established industry in Victoria, but the number of hands employed cannot be given separately, as they are included amongst those shown in furniture and cabinet-making.

Drugs and Chemicals and By-Products.

In all the states there are establishments engaged in making chemicals or medicines of some description, while the manufacture of fertilisers is also an established industry in every state.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Chemicals, Drugs, &c.	939	294	166	57	1,205	351
Fertilisers			100	.....		
Essential Oils	197	13	.....	.....	197	13
Paints and Varnishes.....	138	63	25	1	163	64
Blacking, Blue, &c.	235	122	.....	.....	235	122
Total	1,509	492	291	58	1,800	550

The horse-power of the machinery used in the Commonwealth was 1,201, and in New Zealand 319, the values of the plant being £233,955 and £32,963 respectively.

The classification for individual states will be found below :—

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Chemicals, Drugs, and Medicines..	487	514	34	67	30	.....
Fertilisers	101	.....	.....			
Essential Oils	.....	115	.....	95	27	.....
Paints and Varnishes	105	60	.....	9		
Blacking, Blue, Washing Powders, &c.	.....	298	.....	59	.....	.....
Total	693	987	34	230	57	.....

Surgical and Scientific Appliances.

The employment afforded in these industries is not great, and the major portion of the work is in connection with the manufacture of spectacles, etc.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Surgical, Optical, and other Scientific Instruments	98	19	14	2	112	21

The machinery employed was valued at £4,043, and the average horse-power used was 11.

In only four of the Commonwealth states are these industries established, and in none of them have they attained any important dimensions. A few persons engaged in making optical instruments in Western Australia are included with those in the following class, watchmaking, etc.

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Surgical, Optical, and other Scientific Instruments	64	35	18	.....	.....	.....

Timepieces, Jewellery, and Plated Ware.

There are 1,196 hands engaged in this class, mostly employed in connection with jewellery. The persons shown as engaged in electro-plating

for New Zealand include engravers, and the remaining 24 persons are lapidaries.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Electro-plating	1,076	45	51	.....	1,148	48
Manufacturing Jewellery			21	3		
Total	1,076	45	72	3	1,148	48

The horse-power of the machinery employed in the Commonwealth was 81, and in New Zealand 14, the values of the plant being £27,966 and £3,822 respectively.

In each of the states certain persons are returned as being engaged in the manufacture of jewellery, but it is extremely doubtful if as many as are set down are employed solely in this industry. It is more than probable that the numbers include some hands principally engaged in the repair of watches and clocks.

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Electro-plating	74	.....	53	22	.....	43
Manufacturing Jewellery	183	594		111	41	
Total	257	594	53	133	41	43

Industries connected with the Production of Light.

Industries connected with the production of fuel, heat, and light do not afford employment to many hands. The following table shows 4,595 hands, of whom 2,643 are employed in gas-works, 1,243 in electric-lighting works, and 323 in coke-making. Gas supply gives employment to far more persons than the table shows—possibly to twice as many—but the additional hands are not employed in gas making, but in laying down pipes and other work connected with gas supply.

Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Coke-works	323	.....	.....	.....	323	.....
Electric Apparatus	1,120	3	120	.....	1,240	3
Electric Light and Power						
Gas-works and Kerosene	2,038	.....	605	.....	2,643	.....
Lamps and Fittings, &c.	27	40	2	23	29	63
Hydraulic Power	34	.....	.....	.....	34	.....
Matches, Firekindlers, &c.	33	48	36	143	69	191
Total	3,575	91	763	166	4,338	257

Machinery of a very powerful and valuable character is required in these industries, as will be seen from the fact that the value of the plant

in the Commonwealth was £3,205,496, and in New Zealand £871,653, the average horse-power used being 37,931 and 2,419 respectively.

Only in New South Wales is the number of hands employed in each industry specified. The coke-workers in Victoria are included with hands employed in gas-works, while the hands employed in establishments other than gas-works are grouped together in Queensland. The number of hands employed in manufacturing candles is not included in the following table. The soap and candle industries are usually worked together, so that it is not possible to separate the hands employed, which are accordingly classified under the heading of soap and candle workers, in the second group of the series. The manufacture of matches is carried on in Victoria, but the number of hands employed is not disclosed in the official statistics.

Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Coke-works	323	.....	.....	.....	.....	.....
Electric Apparatus	48	68	6	.....	219	.....
Electric Light and Power	434	149	108	91		
Gas-works and Kerosene	781	679	249	93	94	142
Lamps and Fittings, &c.	67	.....	.....	.....	.....	.....
Hydraulic Power	19	15	.....	.....	.....	.....
Matches, Firekindlers, &c.	.....	77	4	.....	.....	.....
Total	1,672	988	367	184	313	142

In view of the magnitude attained by gas-works in the various states, the following particulars as to the quantity of coal used and gas made during 1903, may prove interesting :—

State.	Coal used.	Cubic feet of gas produced.
	tons.	
New South Wales	212,059	2,487,807,000
Victoria	166,018	1,628,889,400
Queensland	35,270	328,698,400
Western Australia	5,580	54,434,300
Tasmania	10,865	106,004,900
New Zealand	80,610	786,531,150

LEATHERWARE.

In view of the fact that the tanning industry has assumed such important dimensions, it is unsatisfactory to find that only 515 hands are employed in connection with the manufacture of leatherware.

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Leather Belting, Fancy Leather, Portmanteaux, and Bags.	384	68	43	20	427	88

The machinery employed in the Commonwealth was valued at £12,093, and the average horse-power in use was 135.

The largest development of the industry is in Victoria, where 283 hands are employed, the majority of them—125 males and 48 females—being engaged in the manufacture of fancy leather.

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Leather Belting, Fancy Leather, Portmanteaux, and Bags.	133	283	27	.....	.....	9

Minor Wares.

All industries which could not properly be brought under the foregoing classification are included here. The more important of the industries are shown separately, but owing to their varied nature it is impossible to show them all, so that a number of separate industries have been brought together under the comprehensive title of "Other Industries."

Class of Industry.	Commonwealth.		New Zealand.		Australasia.	
	Males.	Females.	Males.	Females.	Males.	Females.
Baskets and Wickerware, Mats, &c.	684	192	227	35	1,024	277
Brooms and Brushware			113	50		
Rubber Goods	474	167	.....	.....	474	167
Toys	6	.....	21	1	27	1
Umbrellas	96	189	20	22	116	211
Other Industries	54	8	242	.....	296	8
Total	1,314	556	623	108	1,937	664

The horse-power of the machinery employed in the Commonwealth was 838, and in New Zealand 206, the values of the plant being £66,814 and £22,028 respectively.

The returns of the various states are each compiled on a different basis, so that it is impossible to give accurate information regarding the several industries. The manufacture of brooms and brushware is, however, the most important, while umbrella-making also employs a considerable number of hands. Included in the hands shown for Victoria are a number of persons engaged in making rubber tires. In

Western Australia a few employees at a butter factory are included with the broom makers in order to conceal individual returns.

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
Baskets and Wickerware, Mats, &c.	57	44	92	175	42	19
Brooms and Brushware	199	218				.....
Rubber Goods	48	593		.....		51
Toys	6	.....		.....		.....
Umbrellas	106	165		14		.....
Other Industries	41	.....		.....		.....
Total	457	1,020	92	189	42	70

Industries Dependent on Natural Resources, and Other Industries.

The relative development of the industries of the states may be measured by the information shown in the following table, in which the industries are arranged in three classes, viz. :—First, those connected with the treatment of perishable products for domestic consumption ; second, those dependent upon the natural resources of the country ; and, third, those the production from which comes into competition with imported goods :—

State.	Employed in domestic industries for the treatment of perishable products for immediate use.		Employed in industries dependent upon the natural resources of the country.		Employed in industries the production from which comes into competition with imported goods.	
	Males.	Females.	Males.	Females.	Males.	Females.
New South Wales..	3,573	51	26,513	5,696	22,367	7,433
Victoria	3,490	43	20,772	13,730	25,172	10,022
Queensland	1,337	43	8,394	2,263	6,408	841
South Australia ...	794	11	6,717	3,106	7,192	824
Western Australia.	883	3	6,567	1,097	3,044	289
Tasmania	378	21	3,935	723	2,129	563
Commonwealth..	10,455	172	72,898	26,615	66,312	19,972
New Zealand	2,441	52	21,173	2,029	17,408	9,525
Australasia	12,896	224	94,071	28,644	83,720	29,497

Plant Employed in Manufactories.

The character of the industry chiefly determines the horse-power required and the value of the plant. Thus, in the clothing and allied industries, the average number of persons per 100 horse-power is 825 ; in industries connected with the preparation of food and drink, the

average is only 63. The value of the plant, compared with the horse-power, also varies greatly in the different industries. In industries working in wood, the value of plant is only about £70 per horse-power, while in gas-making it is about £1,200. The following is a statement of the amount of horse-power and value of plant employed in the various groups of industries, according to the classification used in the foregoing pages :—

Class of Industry.	Commonwealth.		New Zealand.	
	Horse-power.	Value of plant.	Horse-power.	Value of plant.
Treating raw material—	No.	£	No.	£
(*a*) The product of pastoral pursuits..	5,331	418,125	1,519	91,423
(*b*) Do agricultural do ..	2,559	108,148	580	37,565
Oils and fats, &c.	1,801	474,866	428	44,203
Processes in stone, clay, glass, &c.	6,582	675,921	1,166	68,952
Working in wood	19,787	1,044,278	9,097	425,695
Metal works, machinery, &c.....	20,659	3,333,555	2,780	317,072
Connected with food and drink, &c. ..	47,421	6,914,101	14,792	1,035,939
Clothing and textile fabrics, &c.	4,908	848,845	3,644	340,933
Books, paper, printing, &c.	4,827	1,769,294	1,762	381,958
Musical instruments.....	67	4,870	.....	.....
Arms and explosives	96	52,766	39	10,650
Vehicles, saddlery, and harness	745	171,829	226	38,868
Ship and boat building, &c.	3,184	276,905	484	209,878
Furniture, bedding, and upholstery ..	1,158	113,132	464	28,249
Drugs, chemicals, and by-products....	1,201	233,955	319	32,963
Surgical and other scientific instruments	11	4,043	.....	.....
Jewellery, platedware, &c.....	81	27,966	14	3,822
Heat, light, and power	37,931	3,205,496	2,419	871,653
Leatherware not elsewhere included ..	135	12,093	.....	670
Minor wares not elsewhere included ..	838	66,814	206	22,028
Total	159,322	20,357,002	39,939	3,962,521

There is a slight inaccuracy in the returns that it is well should be pointed out. The horse-power quoted represents the average power actually used, and is exclusive of electric lighting plants, while the value of machinery and plant represents that of all the usable machinery that the establishments contain.

Similar information for each state of the Commonwealth is given below :

HORSE POWER.

Class of Industry.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
	No	No.	No.	No.	No.	o.
Treating raw material—						
(*a*) The product of pastoral pursuits	1,891	2,213	721	261	143	102
(*b*) The product of agricultural pursuits	285	1,513	43	551	24	143
Oils and fats, &c.	568	308	123	673	81	43
Processes in stone, clay, glass, &c.	3,329	2,013	328	328	403	181
Working in wood	6,268	3,905	4,307	338	3,637	1,332
Metal works, machinery, &c.	9,023	4,839	1,836	1,868	561	2,532
Connected with food and drink, &c.	13,218	12,648	14,255	4,434	1,413	1,453
Clothing and textile fabrics, &c.	998	3,094	284	330	38	164
Books, paper, printing, &c.	1,937	1,746	483	470	129	62
Musical instruments	66	1	.....	.....	.....	.....
Arms and explosives	6	90	.....	.....	.....	.....
Vehicles, saddlery, and harness	174	276	52	164	59	20
Ship and boat building, &c.	2,642	210	112	116	20	84
Furniture, bedding, & upholstery	265	520	89	250	21	13
Drugs, chemicals, and by-products	417	500	21	241	22	.....
Surgical and other scientific instruments	4	2	5	.....	.....	.....
Jewellery, platedware, &c.	27	42	8	4	.....	.....
Heat, light, and power	18,094	6,410	4,368	1,865	6,514	880
Leatherware not elsewhere included	51	84	.....	.....	.....	.....
Minor wares not elsewhere included	90	677	7	63	.....	1
Total	59,353	41,091	27,047	11,756	13,065	7,010

VALUE OF PLANT.

	£	£	£	£	£	£
Treating raw material—						
(*a*) the product of pastoral pursuits	166,770	142,225	72,640	20,645	4,350	11,495
(*b*) the product of agricultural pursuits	18,236	54,402	1,843	22,315	1,470	9,882
Oils and fats, &c.	132,901	107,761	33,210	183,594	10,000	7,400
Processes in stone, clay, glass, &c.	354,488	160,052	59,574	33,226	53,791	14,790
Working in wood	368,512	182,902	277,410	19,334	703,788	92,332
Metal works, machinery, &c.	1,356,969	858,943	399,976	311,209	139,420	267,038
Connected with food and drink, &c.	2,241,324	1,345,488	2,314,575	651,749	219,905	141,060
Clothing and textile fabrics, &c.	225,194	442,157	71,425	55,704	16,649	37,716
Books, paper, printing, &c.	607,730	663,209	182,781	163,983	119,366	32,225
Musical instruments	3,470	1,200	200	.....	.....	.....
Arms and explosives	468	52,298	.....	.....	.....	.....
Vehicles, saddlery, and harness, &c.	38,606	53,042	22,154	37,179	17,061	3,787
Ship and boat building, &c.	187,702	47,880	19,775	14,568	4,700	2,280
Furniture, bedding, and upholstery	33,672	37,652	11,821	23,775	3,902	2,310
Drugs, chemicals, and by-products	80,739	91,094	5,650	45,597	10,875	.....
Surgical and other scientific instruments	1,800	1,148	695	.....	400	.....
Jewellery, plated ware, &c.	8,434	14,474	2,520	1,321	650	567
Heat, light, and power	1,167,297	701,654	574,716	141,026	325,318	295,485
Leatherware not elsewhere included	4,100	7,380	289	.....	80	244
Minor wares not elsewhere included	11,394	45,935	1,330	4,775	90	3,290
Total	7,009,806	5,010,896	4,052,584	1,730,000	1,631,815	921,901

The average value of plant per horse-power of machinery employed ranges from £99 in the case of New Zealand to £149 for Queensland, the average for Australasia being £112. The average for each state was as follows:—New South Wales £96, Victoria £117, Queensland £149, South Australia £147, Western Australia £117, and Tasmania £110. A mere statement of values, however, has no special meaning, since the difference in the figures is compatible with two opposite conditions—either the same plant is put to greatest use in the case of New Zealand, or it is of superior character in the case of Queensland.

Capital Employed in Manufacturing Industries.

The capital employed in the manufacturing industries of Australia aggregates £60,400,000, of which the sum of £19,484,000 is invested in land and buildings, £20,357,000 in machinery and plant, and £20,559,000 represents cash and sundries. In New Zealand, the total capital invested in manufactories is £13,209,398, of which £4,690,877 is the estimated sum in buildings, &c., £3,962,521 in machinery and plant, and £4,556,000, cash and sundries. As regards the item cash and sundries, in some of the states the information obtained is in sufficient detail to enable correct estimates to be arrived at; in other states direct information is wanting, and the amount has been made up on the basis of the capital required by like industries in other states for which information is available. The amount of capital employed in each state of the Commonwealth and New Zealand is shown in the following table:—

State.	Capital.			Total.
	Land, Buildings, &c.	Machinery and Plant.	Cash and Sundries.	
	£	£	£	£
New South Wales	4,969,698	7,009,806	7,417,000	19,396,504
Victoria	7,967,945	5,010,896	7,428,000	20,406,841
Queensland	2,631,039	4,052,584	1,858,000	8,541,623
South Australia	1,676,000	1,730,000	1,631,000	5,037,000
Western Australia	1,245,186	1,631,815	1,453,000	4,330,001
Tasmania	994,254	921,901	772,000	2,688,155
Commonwealth	19,484,122	20,357,002	20,559,000	60,400,124
New Zealand	4,690,877	3,962,521	4,556,000	13,209,398
Australasia	24,174,999	24,319,523	25,115,000	73,609,522

The total value added to materials, as set out in the foregoing table, shows a considerable falling-off on the figures of the previous year. In many respects the year 1903 was an unfortunate one throughout Australia. There was a great shortage in the grain crop, with a consequent diminishing employment in flour-mills and other establishments treating grain. The pastoral industry also gave diminished

returns in all the states, and the decreased production in these industries reacted prejudicially upon other industries which depend more or less for support on the prosperity of the two great producing industries. There were other causes also for diminished production, which have been discussed in the chapter of this volume dealing with industrial progress.

Value of Production of Manufactories.

The value of the articles produced in the manufactories has been carefully estimated for each of the states and is given below. For New South Wales and Queensland the information is now obtained annually; but although this is not the case in the other states, there is no difficulty in arriving at a satisfactory estimate, owing to the ample data at command. The production from butter, cheese, and bacon factories and creameries has not been taken into consideration, as it has already been included under the pastoral and dairying industries. The total value of the output of all factories was £87,237,000, of which £51,280,000 represents the value of materials and fuel used, and £35,957,000 the value added in the processes of treatment. Of the latter sum, £17,857,000 was paid in wages, leaving a balance of £18,100,000, which accrued to the proprietors, and out of which rent, insurance, depreciation, &c., had to be paid, the remainder representing profits on the business. The difference between the value of materials and fuel used and the total output is the real value of production from manufactories; this sum has been stated above as £35,957,000, and the amount in each state was as follows :—

State.	Value of Production.	Value per Inhabitant.
	£	£ s. d.
New South Wales	9,600,000	6 14 11
Victoria	9,368,000	7 14 11
Queensland	2,681,000	5 3 5
South Australia	2,729,000	7 8 5
Western Australia	2,874,000	12 19 9
Tasmania	1,276,000	7 3 9
Commonwealth	28,528,000	7 5 8
New Zealand	7,429,000	9 1 2
Australasia	35,957,000	7 11 10

The above table would seem to indicate that, in proportion to population, Western Australia holds the premier position; but the position occupied by that state is due to the higher prices obtained for the products rather than from any great development of the manufacturing

industries. New Zealand stands second, and its position is ample evidence of the great expansion that has occurred in the manufacturing industries of the colony during the last few years.

Wages paid in Manufactories.

A comparison of the wages paid in the manufactories of the various states would be decidedly interesting, but unfortunately the figures are available only for New South Wales, Victoria, and New Zealand, and even in these states they are not compiled on the same basis. What information is available has, however, been prepared and is presented in the form of a table showing the average weekly wages paid in the various industries where a sufficient number of hands is employed to enable a fair average rate to be stated. The figures for the Commonwealth states refer to the year 1903, and were obtained from returns furnished in connection with the Factories and Shops' Acts; while the New Zealand figures were obtained from the census returns published by the Government Statistician. The average weekly wages of males are given hereunder:—

Industry.	Average Weekly Wages—Males.			
	New South Wales.	Victoria.	Queensland (Brisbane).	New Zealand.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Boiling-down and tallow refineries	1 18 8	.....	.....	.....
Tanneries	1 18 0	1 14 6	1 9 0	1 11 3
Wool scouring and fellmongery	1 18 5	1 16 10	.....	
Chaff cutting	1 13 5	1 12 9	1 15 2	.....
Oil and grease	2 0 9	.....	.....	.....
Soap and candles	1 12 4	1 10 7	1 6 11	1 12 8
Bricks and tiles	2 6 3	2 4 6	1 18 11	1 9 0
Glass (including bottles)	1 12 5	1 11 4	.....	.....
Glass (ornamental)	1 18 5	1 14 10	.....	.....
Lime, plaster, and cement	2 0 6	1 16 0	.....	1 14 9
Marble and slate	1 14 5	.....	.....	.....
Pottery and earthenware	1 12 9	1 15 8	1 9 8	.....
Boxes and cases	1 12 11	.....	.....	.....
Cooperage	2 5 0	2 4 6	2 0 4	1 10 7
Joinery	2 3 10	2 3 0	.....	.....
Saw-mills	1 15 7		1 13 3	1 9 0
Wood-turning	1 16 11	.....	1 14 8	1 9 5
Agricultural implements	1 7 10	.....	.....	1 15 6
Brass and copper	1 9 8	1 9 8	1 9 4	
Galvanised iron	1 12 0	.....	1 8 10	1 12 0
Ironworks and foundries	1 18 3	1 15 7	.....	
Engineering	1 14 9	.....	1 16 0	1 13 0
Railway carriage works	1 13 4	.....	.....	.....
Smelting	2 8 8	.....	.....	.....
Stoves and ovens	1 12 3	1 12 8	0 17 8	1 13 9
Tinsmithing, sheet ironworks	1 6 2	1 7 7	1 3 7	1 6 5

Industry.	Average Weekly Wages—Males.			
	New South Wales.	Victoria.	Brisbane.	New Zealand.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Other metal works	1 19 4	.....	.....	1 10 4
Wire working	1 13 2	1 2 10	.....	.....
Bacon curing	2 2 3	1 18 6	.....	1 8 11
Butter factories	1 14 1	1 14 9	.....	1 11 6
Meat preserving	1 14 0	2 1 8	1 17 3	1 15 1
Biscuits	1 2 5	1 1 11	1 5 8	1 9 0
Confectionery	1 4 11	1 11 10	1 4 4	1 7 1
Cornflour, oatmeal, &c.	1 14 4	1 7 4	.. ..	.....
Flour-mills	1 17 0	2 1 7	1 14 0	1 17 0
Jam and fruit canning	1 0 10	1 6 1	1 2 2	1 8 7
Pickles, sauces, and vinegar	1 7 3		1 5 4	1 3 1
Sugar refineries	2 0 6	1 15 3	.....	.....
Aerated waters, cordials, &c.	1 10 3	1 6 8	1 4 9	1 8 0
Breweries	1 16 1	1 17 10	1 10 3	2 7 5
Condiments, coffee, and spices	1 8 6	.....	.....	.....
Distilleries	2 1 4	1 17 3	.....	.....
Ice and refrigerating	1 18 9	2 1 10	2 6 7	.....
Malting	.....	2 4 11	.....	1 19 9
Tobacco, cigars, &c.	1 9 7	1 14 0	1 12 9	.....
Woollen mills	1 3 7	1 3 6	.....	1 15 9
Boots and shoes	1 12 9	1 15 1	1 7 6	1 13 4
Slop clothing	2 0 3	2 0 7	1 9 3	.....
Clothing (tailoring)	2 4 5	.....	1 18 2	1 15 0
Dressmaking and millinery	1 8 2	1 11 8	.....	1 17 5
Hats and caps	1 15 3	1 19 2	1 2 5	1 7 5
Waterproof and oilskin	1 17 5	1 15 7	.....	1 6 9
Shirts, ties, and scarfs	1 14 9	1 14 3	1 0 0	1 6 3
Rope and cordage	1 3 7	1 4 2	.....	1 6 4
Tents and tarpaulins	1 5 9	1 10 4	2 1 3	.....
Paper bags, boxes, &c.	1 3 5	1 5 6	0 18 7	.....
Printing and bookbinding	1 18 1	1 18 6	1 19 6	1 19 3
Musical instruments	1 17 11	1 13 5	2 3 0	.....
Explosives	1 4 10	1 10 4	.....	.....
Coach and wagon building	1 10 11	1 10 7	1 13 5	1 7 1
Cycles	1 11 8	1 7 1	1 2 5	1 1 3
Ship and boat building	2 4 10	.....	.....	1 4 7
Iron bedsteads	1 9 4	1 15 1	.....	.....
Furniture and cabinetmaking	1 16 4	1 19 9	1 6 5	1 7 6
Picture frames	1 11 8	1 6 3	1 1 1	.....
Chemicals, drugs, and medicines	1 10 10	1 7 0	1 5 2	.....
Manufacturing jewellery	1 17 5	2 7 4	1 14 4	.....
Electric light and power	2 2 10	1 19 0	1 11 2	.....
Gasworks	2 4 9	.. ..	.....	2 7 8
Leather belting	1 14 10	1 9 9	.. ..	.....
Fancy leather, portmanteaux, and bags	1 6 9	1 7 5	1 0 4	.....
Brooms and brushware	1 11 7	1 13 4	1 0 5	1 6 8
Saddlery and harness	1 15 3	1 14 3	1 5 0	1 4 11
Basket and perambulator factories	1 6 8	1 15 4	.....	1 3 5

The average weekly wages of females in the different industries enumerated were as follows :—

Industry.	Average Weekly Wages—Females.			
	New South Wales.	Victoria.	Queensland (Brisbane).	New Zealand
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Soap and candles	0 10 7	.....	.....	.....
Meat preserving	0 12 2	.....	.....	0 16 3
Biscuits	0 13 2	0 12 2	0 8 1	0 11 2
Confectionery	0 9 3	0 13 4	0 7 4	0 8 2
Cornflour, oatmeal, &c.	0 12 9	0 12 2	.....	0 9 5
Jam and fruit canning	0 12 3	0 13 10	0 10 3	0 8 3
Pickles, sauces, and vinegar	0 8 11		0 11 5	0 13 3
Aerated waters, cordials, &c.	0 17 3	0 15 0	0 11 5	.....
Condiments, coffee, and spices	0 11 1	.....	0 11 5	.....
Tobacco, cigars, &c.	0 16 6	1 1 1	0 15 8	.....
Woollen mills	0 12 11	0 17 8	.....	0 16 11
Boots and shoes	0 12 3	0 14 0	0 12 10	0 13 3
Slop clothing	0 14 9	0 18 0	0 10 11	.....
Clothing (tailoring)	1 1 8	.....	0 13 10	0 15 11
Dressmaking and millinery	0 10 5	0 11 9	0 10 0	0 10 3
Hats and caps	0 13 4	0 15 0	0 14 0	0 13 3
Waterproof and oilskin	0 12 11	0 18 2	.....	0 9 6
Shirts, ties, and scarfs	0 12 1	0 14 10	0 11 1	0 10 5
Rope and cordage	0 11 0	0 11 8	.....	.....
Tents and tarpaulins	0 12 2	0 16 4	0 14 6	.....
Paper bags, boxes, &c.	0 10 7	0 11 4	0 10 5	.....
Printing and bookbinding	0 11 0	0 13 2	0 11 6	0 12 7
Bedding, flock, and upholstery	0 18 4	0 14 5	.....	.....
Chemicals, drugs, and medicines	0 10 10	0 15 8	0 11 4	.....
Fancy leather, portmanteaux, and bags	0 12 4	0 12 4	0 8 9	.....
Brooms and brushware	0 13 7	0 16 2	0 13 7	0 10 11
Saddlery and harness	0 16 2	0 15 9	0 10 0	0 17 2

These figures must be accepted with a certain degree of caution. In each state a considerable number of juvenile workers is employed, but only in Victoria is their actual strength ascertained, and as the average weekly wage paid in any establishment would depend to a large extent on the proportion of juvenile labour employed, a fair comparison is impossible while that information is lacking.