

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 employees in each State at decennial periods since 1861 and in 1910, will serve to indicate generally the progress which has been made:—

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 to 1910.

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†
1910	4,823	4,873	1,563	1,278	680	605	13,822
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†	19,233†	12,198	7,466*	197,783†
1910	99,746	102,176	33,944	27,010	14,107	9,848	286,831

* For 1902. † Not on same basis as other States. ‡ Not on same basis for some of States as in 1910.

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 and 1910 are, however, in more complete co-ordination than those for previous years, and it will be possible to give particulars for future years 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.

CLASS I.—TREATING RAW MATERIALS, ETC.

Boiling-down, Tallow Refining, etc.
Tanneries
Woolscouring & Fellmongering
Chaff-cutting, etc.

CLASS II.—OILS AND FAT, ETC.

Oil and Grease
Soap and Candles

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

CLASS IV.—WORKING IN WOOD.

Boxes and Cases
Cooperage
Joinery
Saw Mills
Wood-turning, etc.

CLASS V.—METAL WORKS, MACHINERY, ETC.

Agricultural Implements
Brass and Copper

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

CLASS VI.—FOOD AND DRINK, ETC.

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.

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

CLASS VIII.—BOOKS, PAPER, PRINTING, ETC.

Electrotyping & Stereotyping
Paper-making, Paper Boxes, Bags, etc.
Photo-engraving
Printing and Binding

CLASS IX.—MUSICAL INSTRUMENTS, ETC.

Musical Instruments and Sewing Machines

CLASS X.—ARMS & EXPLOSIVES

Explosives

CLASSIFICATION OF MANUFACTURING INDUSTRIES.—Continued.

CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC.

Coach and Wagon Building
Cycles
Perambulators
Saddlery, Harness, etc.
Spokes, etc.

CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING.

Docks and Slips
Sailmaking
Ship and Boat Building and Repairing

CLASS XIII.—FURNITURE, BEDDING, ETC.

Bedding, Flock, & Upholstery
Billiard Tables
Furniture and Cabinet Making
Picture Frames
Window Blinds

CLASS XIV.—DRUGS AND CHEMICALS, ETC.

Chemicals, Drugs, and Medicines
Fertilisers
Paints, Varnishes, and By-products

CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS.

Surgical, Optical, and other Scientific Instruments

CLASS XVI.—TIMEPIECES, JEWELLERY, & PLATED WARE.

Electro-plating
Manufacturing Jewellery, etc.

CLASS XVII.—HEAT, LIGHT, AND POWER.

Coke Works
Electric Apparatus
Electric Light and Power
Gas Works and Kerosene Lamps and Fittings, etc.
Hydraulic Power

CLASS XVIII.—LEATHERWARE (N.E.I.)

Leather Belting, Fancy Leather, Portmanteaux & Bags

CLASS XIX.—MINOR WARES.

Basket and Wickerware, Matting, etc.
Brooms and Brushware
Rubber Goods
Toys
Umbrellas
Other Industries

§ 2. Number of Manufactories.

1. **General.**—In stating the number of factories in the States of the Commonwealth it is to be remembered that in the collection of statistics, for years prior to 1907, the same basis has not been adopted in each State. In 1906 in Queensland, for example, 689 factories would have been added under the system previously adopted in that State. This would bring the total up to 1993 on the former basis. The factories excluded, however, are those employing only two hands and no power, and the difference in other respects is not material.

In the following table shewing the total number of manufactories in the Commonwealth during the years 1903 to 1910, it should be noted that not only are the results affected by differences of classification, but also that the number of factories from year to year does not unequivocally indicate a change in the position of the industry, since amalgamations may account for part of the reduction of the numbers.

MANUFACTORIES OF THE COMMONWEALTH, 1903 to 1910.

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
1903 ...	3,476	4,151	2,001*	906*†	586	431	11,551
1904 ...	3,632	4,208	1,909*	906*	672	444	11,771
1905 ...	3,700	4,264	1,911*	985	649	436	11,945
1906 ...	3,861	4,360	1,304	1,012	665	373	11,575
1907 ...	4,432	4,530	1,359	1,086	643	505	12,555
1908 ...	4,453	4,608	1,371	1,237	627	557	12,853
1909 ...	4,581	4,755	1,420	1,265	632	544	13,197
1910 ...	4,823	4,873	1,563	1,278	680	605	13,822

* Not on same basis as other States. † 1904 results repeated.

(i.) *Classification of Factories in Commonwealth, 1906 to 1910.* The following table shews the total number of factories in the Commonwealth at the end of each year from 1906 to 1910, classified on the basis indicated in § 1.3 hereof:—

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1906 to 1910.

Class of Industry.	1906.	1907.	1908.	1909.	1910.
	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	742	807	812	823	825
II. Treating oils and fats, animal, vegetable, etc.	99	92	97	94	100
III. Processes in stone, clay, glass, etc.	610	626	627	645	703
IV. Working in wood	1,119	1,215	1,322	1,411	1,474
V. Metal works, machinery, etc.	1,394	1,504	1,548	1,588	1,620
VI. Connected with food and drink, etc.	2,177	2,250	2,253	2,258	2,286
VII. Clothing and textile fabrics, etc.	2,335	2,661	2,681	2,774	2,982
VIII. Books, paper, printing and engraving	919	964	993	1,011	1,062
IX. Musical instruments, etc.	10	16	17	18	20
X. Arms and explosives	8	8	8	9	13
XI. Vehicles and fittings, saddlery and harness, etc.	941	1,071	1,105	1,117	1,195
XII. Ship and boat building and repairing	83	70	76	84	85
XIII. Furniture, bedding, and upholstery	418	470	483	512	560
XIV. Drugs, chemicals, and by-products	156	144	153	164	176
XV. Surgical and other scientific instruments	26	26	29	30	35
XVI. Jewellery, timepieces, and platedware	121	142	153	150	155
XVII. Heat, light, and power	272	309	307	314	328
XVIII. Leatherware, n.e.i.	41	45	54	55	60
XIX. Minor wares, n.e.i.	104	135	136	140	143
Total	11,575	12,555	12,853	13,197	13,822

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 1906 to 1910 was 2247, or an average of 562 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, 1910.* The following table shews the number of factories in each State of the Commonwealth at the end of the year 1910, classified according to the nature of the industry. (See classification given in § 1. 3 hereof):—

CLASSIFICATION OF FACTORIES IN EACH STATE, 1910.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Cwllth.
	No.	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	289	324	44	126	25	17	825
II. Treating oils and fats, animal, vegetable, etc.	43	21	17	13	4	2	100
III. Processes in stone, clay, glass, etc.	298	212	39	80	42	32	703
IV. Working in wood	620	350	233	98	63	110	1,474
V. Metal works, machinery, etc.	476	650	301	177	61	55	1,620
VI. Connected with food and drink, etc.	767	633	381	255	147	103	2,286
VII. Clothing and textile fabrics, etc.	936	1,340	228	217	133	128	2,982
VIII. Books, paper, printing & engraving	407	369	133	65	59	29	1,062
IX. Musical instruments, etc.	13	5	...	2	...	...	20
X. Arms and explosives	5	8	...	...	...	...	13
XI. Vehicles and fittings, saddlery and harness, etc.	361	410	149	145	54	76	1,195
XII. Ship and boat building & repairing	42	10	12	7	6	8	85
XIII. Furniture, bedding, and upholstery	176	228	70	38	31	17	560
XIV. Drugs, chemicals, and by-products	76	74	3	12	11	...	176
XV. Surgical and other scientific instruments	11	14	5	2	3	...	35
XVI. Jewellery, timepieces, & platedware	46	69	12	14	5	9	155
XVII. Heat, light, and power	173	77	25	9	26	13	328
XVIII. Leatherware, n.e.i.	21	30	3	4	2	...	60
XIX. Minor wares, n.e.i.	58	49	8	14	8	6	143
Total	4,823	4,873	1,563	1,278	680	605	13,822

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

The 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 1910 :—

UTILISATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1910.

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	3,259	1,534	4,823	103,857	10,123	694	15,991	130,665
Victoria	3,132	1,741	4,873	49,013	9,415	1,316	9,629	69,373
Queensland	1,078	485	1,563	29,386	2,928	383	2,046	34,743
South Australia	999	379	1,278	17,667	4,382	1,730	2,882	26,661
Western Australia	496	184	680	21,037	1,248	735	2,954	25,974
Tasmania	340	265	605	7,564	227	81	2,935	10,807
Commonwealth	9,234	4,588	13,822	228,524	28,323	4,939	36,437	298,223

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 8706, being 66.81 per cent.; 4588 establishments, representing 33.19 per cent., used no mechanical power. The total average horse-power in use was 298,223, of which engines in which the motive power was steam formed 76.63 per cent.; gas, 9.50 per cent.; oil, 1.65 per cent.; and electricity, 12.22 per cent. During 1910 there were fifty-two more establishments using power than in 1909, the increase in horse-power employed being 21,259, or nearly eight 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, 1904 to 1910.* The following table shews, for each year from 1904 to 1910 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,
1904 TO 1910.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
AVERAGE NUMBER.							
1904 ...	68,036	76,287	20,058*	18,049	12,685	8,224	203,339
1905 ...	72,175	80,235	21,705*	19,273	12,733	8,468	214,589
1906 ...	77,822	85,229	23,961	20,153	12,897	8,498	228,560
1907 ...	86,467	90,903	27,954	22,701	12,625	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	9,322	266,418
1910 ...	99,746	102,176	33,944†	27,010	14,107	9,848	286,831
PERCENTAGE ON COMMONWEALTH TOTAL.							
1904 ...	% 33.44	% 37.49	% 9.86*	% 8.94	% 6.23	% 4.04	% 100.00
1905 ...	% 33.62	% 37.37	% 10.11*	% 9.03	% 5.93	% 3.94	% 100.00
1906 ...	% 34.03	% 37.26	% 10.47	% 8.88	% 5.64	% 3.72	% 100.00
1907 ...	% 34.75	% 36.53	% 11.23	% 9.12	% 5.07	% 3.30	% 100.00
1908 ...	% 34.60	% 36.42	% 11.34	% 9.42	% 4.83	% 3.39	% 100.00
1909 ...	% 34.42	% 36.54	% 11.08	% 9.65	% 4.81	% 3.50	% 100.00
1910 ...	% 34.78	% 35.62	% 11.83†	% 9.42	% 4.92	% 3.43	% 100.00
PER 10,000 OF MEAN POPULATION.							
1904 ...	472	634	384*	500.	542	449	516
1905 ...	491	665	410*	529	516	459	536
1906 ...	517	702	447	549	507	461	563
1907 ...	560	742	515	611	494	444	603
1908 ...	566	756	527	635	482	465	614
1909 ...	574	772	518	656	487	490	623
1910 ...	611	797	574†	673	521	516	656

* Inclusive of factories with two persons. † Including a number of drapery and tailoring shops making to order of customer; this class of establishment was omitted in Queensland in previous years.

(ii.) *Rates of Increase, 1904 to 1910.* 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, 1904 to 1910.*

Years.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1903-4 ...	3.66	4.18	4.15	...	7.24	5.64	3.84
1904-5 ...	6.08	5.18	8.21	6.67	0.38	3.61	5.52
1905-6 ...	7.82	6.22	10.38	4.70	1.29	0.45	6.52
1906-7 ...	11.11	6.66	16.67	11.80	— 2.25	— 3.49	8.80
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	6.82	3.47
1909-10 ...	8.77	4.95	15.05*	5.06	10.00	5.64	

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

2. Classification of Numbers Employed in Factories in the Commonwealth, 1906 to 1910.—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1906 to 1910 inclusive:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN THE
COMMONWEALTH, 1906 to 1910.**

Class of Industry.	1906.*	1907.	1908.	1909.	1910.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	7,809	8,956	9,042	9,306	9,424
II. Treating oils and fats, animal, vegetable, etc.	1,760	1,727	1,735	1,812	1,872
III. Processes in stone, clay, glass, etc.	8,779	8,909	9,420	9,605	10,737
IV. Working in wood	18,347	19,457	21,310	22,487	24,520
V. Metal works, machinery, etc.	43,431	47,060	48,505	49,753	54,238
VI. Connected with food and drink, etc.	36,720	40,228	40,652	41,006	42,921
VII. Clothing and textile fabrics, etc.	62,594	68,390	70,075	73,567	78,988
VIII. Books, paper, printing and engraving	19,565	20,734	21,448	21,943	23,064
IX. Musical instruments, etc.	386	430	444	433	553
X. Arms and explosives	347	323	339	377	431
XI. Vehicles and fittings, saddlery and harness, etc.	9,027	10,288	10,784	11,366	12,484
XII. Ship and boat building and repairing... ..	2,124	2,049	2,278	2,220	2,506
XIII. Furniture, bedding and upholstery	5,890	6,819	7,117	7,638	8,434
XIV. Drugs, chemicals and by-products	2,600	2,895	3,086	3,391	3,827
XV. Surgical and other scientific instruments	178	170	176	173	190
XVI. Jewellery, timepieces, and platedware	1,397	1,700	1,771	1,800	1,896
XVII. Heat, light, and power	4,834	5,372	5,754	5,986	6,860
XVIII. Leatherware, n.e.i.	731	788	893	924	1,097
XIX. Minor wares, n.e.i.	2,041	2,564	2,665	2,631	2,783
Total	228,560	248,859	257,494	266,418	286,861

* Excluding Queensland Government Railways. For preceding years the Queensland statistics include all establishments where two or more hands were employed except Government Railway workshops.

The total increase in the average number of hands employed from 1906 to 1910 was 58,271, or an annual average of 14,568. The increase was general throughout all the various classes of industry. The greatest development took place in Classes VII. and V., the increases being 16,389 and 10,807 respectively.

3. Classification of Numbers Employed in each State, according to Class of Industry, 1910.—The following table shews a similar classification of employees in manufacturing industries in each State for the year 1910:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN EACH
STATE, 1910.**

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.	3,986	3,298	796	1,011	217	116	9,424
II. Treating oils and fats, animal, vegetable, etc.	765	596	168	261	50	32	1,872
III. Processes in stone, clay, glass, etc.	4,882	3,472	517	1,120	509	237	10,737
IV. Working in wood	7,423	5,938	3,797	1,716	3,922	1,734	24,520
V. Metal works, machinery, etc.	20,703	15,721	5,534	7,854	2,475	1,951	54,238
VI. Connected with food and drink, etc.	13,118	13,363	9,792	3,447	1,501	1,700	42,921
VII. Clothing and textile fabrics, etc.	24,597	37,173	7,320	5,427	2,577	1,869	78,988
VIII. Books, paper, printing & engraving	8,642	8,220	2,547	1,792	1,033	776	23,064
IX. Musical instruments, etc.	383	150	...	20	...	...	553
X. Arms and explosives	45	386	...	...	...	...	431
XI. Vehicles and fittings, saddlery, and harness, etc.	4,055	4,244	1,365	1,728	598	494	12,484
XII. Ship and boat building & repairing	1,905	122	189	110	37	55	2,506
XIII. Furniture, bedding and upholstery	3,218	2,700	982	893	363	278	8,434
XIV. Drugs, chemicals, and by-products	1,342	1,501	68	642	274	...	3,827
XV. Surgical and other scientific instruments	87	57	26	7	13	...	190
XVI. Jewellery, timepieces, & platedware	658	838	144	157	56	43	1,896
XVII. Heat, light, and power	2,516	2,426	481	596	342	508	6,860
XVIII. Leatherware, n.e.i.	392	586	70	29	20	...	1,097
XIX. Minor wares, n.e.i.	939	1,335	148	200	120	41	2,783
Total	99,746	102,176	33,944	27,010	14,107	9,848	286,831

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 78,983 employees, or 27.54 per cent. of the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 190 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 hereof.)

4. **Classification of Numbers Employed in each State according to Nature of Employment, 1910.**—In the following table the average numbers of persons employed in each State during the year 1910 are classified according to the nature of their employment:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED
ACCORDING TO NATURE OF EMPLOYMENT, 1910.**

State.	Average Number of Persons Employed.						Total.
	Working Pro- priators.	Managers and Overseers	Account- ants and Clerks.	Engine- drivers and Firemen.	Workers, Skilled & Unskilled in Factory Mill or Workshop	Carters, Messen- gers and Others.	
New South Wales ...	4,057	3,158	3,505	2,578	84,618	1,830	99,746
Victoria ...	4,953	2,877	3,245	1,587	85,680	3,834	102,176
Queensland ...	1,329	1,129	1,405	1,246	26,624	2,211	33,944
South Australia ...	1,321	644	912	505	22,549	1,079	27,010
Western Australia ...	521	513	507	414	10,966	1,186	14,107
Tasmania ...	574	399	359	325	7,807	384	9,848
Commonwealth ...	12,755	8,720	9,933	6,655	238,244	10,524	286,831

5. **Classification of Factories according to Number of Hands Employed, 1910.**—The number of factories in each State classified according to the number of hands employed, and the total number of hands employed in each class of factory, are shown in the following table:—

**CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF HANDS EMPLOYED,
1910.**

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 ...	750	703	161	138	116	183	2,051
4 ...	519	584	167	136	58	45	1,509
5 to 10 ...	1,691	1,736	558	507	230	180	4,902
11 to 20 ...	860	883	304	220	132	96	2,495
21 to 50 ...	597	602	215	172	93	64	1,743
51 to 100 ...	238	194	93	61	31	21	638
Over 100 ...	168	171	65	44	20	16	484
Total ...	4,823	4,873	1,563	1,278	680	605	13,822

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 ...	1,755	1,722	376	348	256	359	4,816
4 ...	2,076	2,336	668	544	232	180	6,036
5 to 10 ...	11,777	12,102	3,883	3,547	1,588	1,298	34,195
11 to 20	12,618	12,869	4,352	3,181	1,913	1,367	36,300
21 to 50 ...	18,211	18,801	6,675	5,294	2,903	1,973	53,857
51 to 100 ...	16,471	13,566	6,558	4,359	2,067	1,383	44,404
Over 100 ...	36,838	40,780	11,432	9,737	5,148	3,288	107,223
Total ...	99,746	102,176	33,944	27,010	14,107	9,848	286,831

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, so far as available, of the average number of outworkers connected with factories in each State during each year from 1904 to 1910 inclusive :—

NUMBER OF OUTWORKERS* CONNECTED WITH FACTORIES, 1904 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1904 ...	374	991	†	†	†	42	†
1905 ...	439	1,186	†	†	†	86	†
1906 ...	501	1,431	†	†	†	57	†
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

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

† Not available.

Although the figures from 1904 to 1910, for the States of New South Wales and Victoria, shew generally a fairly steady increase in the number of outworkers, they are considerably smaller than the figures for early years. For example, in 1897 there were 2382 outworkers registered in Victoria in the clothing trades, while the number of employees in factories for those trades was 14,293. The corresponding figures for the same year in New South Wales were 546 outworkers and 8602 factory employees. Thus it will be seen that the number of employees in factories has largely increased, while the increase in the number of outworkers has been relatively small.

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

§ 4. Sex Distribution in Factories.

1. Employment of Females in Factories.—In all the States the employment of female labour in factories is now regulated by Act of Parliament. In Victoria the first Act dealing with the subject was passed in the year 1873, and provided that no female should be employed for more than eight hours a day without the permission of the Chief

Secretary. The number of working hours for women is now limited to forty-eight per week in all the States except Tasmania, where the maximum number of working hours is ten per day. The maximum periods of continuous labour, and the intervals of cessation therefrom, are also prescribed by the several Acts. Further reference is made to the restrictions regarding the employment of females in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*)

2. Distribution of Employees according to Sex, 1906 to 1910.—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 about one to two. 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.

(i.) *Average Number of Males and Females Employed, 1906 to 1910.* The following table shows the average number of male and female employees in factories in each State from 1906 to 1910:—

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1906 to 1910.

State.	1906.	1907.	1908.	1909.	1910.
MALES.					
New South Wales ...	59,979	65,953	67,616	69,184	75,419
Victoria ...	56,339	59,691	60,873	62,822	66,309
Queensland ...	*19,961	23,191	24,639	24,877	†27,165
South Australia ...	16,451	18,423	19,640	20,753	21,864
Western Australia ...	11,015	10,671	10,453	10,703	11,654
Tasmania ...	7,220	6,972	7,334	7,889	8,145
Commonwealth ...	170,965	184,901	190,555	196,228	210,556
FEMALES.					
New South Wales ...	17,843	20,514	21,482	22,518	24,327
Victoria ...	28,890	31,212	32,935	34,538	35,867
Queensland ...	*4,000	4,763	4,561	4,627	†6,779
South Australia ...	3,702	4,278	4,596	4,956	5,146
Western Australia ...	1,882	1,954	1,972	2,123	2,453
Tasmania ...	1,278	1,237	1,393	1,433	1,703
Commonwealth ...	57,595	63,958	66,939	70,190	76,275

* Estimated. † 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 39,591, or an annual average of 9898, and in the number of female employees a total increase of 18,680, or an annual average of 4670.

(ii.) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1906 to 1910.* 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 1906 to 1910 :—

**AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF
MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1906 to 1910.**

State.	1906.	1907.	1908.	1909.	1910.
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MALES.

New South Wales ...	757	811	816	826	883
Victoria ...	942	991	1000	1012	1045
Queensland ...	680	785	818	801	*843
South Australia ...	886	980	1015	1040	1071
Western Australia ...	742	723	707	712	754
Tasmania ...	762	736	765	810	835
Commonwealth ...	809	863	876	885	929

FEMALES.

New South Wales ...	250	281	288	296	312
Victoria ...	469	501	521	539	554
Queensland ...	165	193	181	178	*252
South Australia ...	204	233	244	257	261
Western Australia ...	178	181	179	188	210
Tasmania ...	143	137	152	154	182
Commonwealth ...	296	323	332	341	363

* See note (†) to § 3. 1 (i).

3. Rate of Increase for each Sex.—The percentages of annual increase during the years 1906 to 1910 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, 1906 to 1910.**

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
MALES.					
New South Wales ...	6.89	9.96	2.52	2.32	9.01
Victoria ...	6.45	5.95	1.98	3.20	5.55
Queensland ...	10.25	16.18	6.24	0.97	*9.20
South Australia ...	3.91	11.99	6.61	5.67	5.35
Western Australia ...	-0.69	-3.12	-2.04	2.39	8.89
Tasmania ...	1.62	3.43	5.19	7.57	3.25
Commonwealth ...	6.08	8.15	3.06	2.98	7.30
FEMALES.					
New South Wales ...	11.07	14.97	4.72	4.82	8.04
Victoria ...	5.79	8.04	5.52	4.85	3.86
Queensland ...	11.11	19.08	-4.24	1.45	*46.51
South Australia ...	7.59	15.56	7.43	7.83	3.83
Western Australia ...	14.62	3.83	0.92	7.66	15.54
Tasmania ...	6.24	3.21	12.61	2.87	18.84
Commonwealth ...	7.82	11.05	4.66	4.86	8.67

Note.—(—) indicates decrease. * See note (†) to § 3. 1. (i).

The above table shews that in each State for the past five years, with a few exceptions, there has been relatively a larger increase in the number of female than in the number of male employees. This matter is referred to further in the following paragraph hereof.

4. Increasing Ratio of Female Employment in Factories.—The increasing extent to which females are employed in the factories of the Commonwealth may perhaps be best shewn by giving the number of females to every 100 male employees for each State for each year from 1904 to 1910 inclusive:—

NUMBER OF FEMALES PER 100 MALES IN AUSTRALIAN FACTORIES, 1904 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1904	27.27	50.90	*19.89	26.07	14.51	19.53	32.78
1905	28.63	51.60	*19.89	22.35	14.80	19.46	33.15
1906	29.75	51.28	*20.04	23.31	17.09	17.68	33.69
1907	31.10	52.29	20.53	23.22	18.19	17.74	34.58
1908	31.77	54.10	18.51	23.36	18.86	18.99	35.12
1909	32.55	54.97	18.60	23.88	19.74	18.16	35.76
1910	32.26	54.09	†24.95	23.54	21.05	20.91	36.23

* Estimated. † See note (†) to § 3. 1. (i).

Although this table shews that from 1904 to 1910 there has been an increase in the percentage specified from 32.78 to 36.23, the tables given in the next succeeding paragraph shew that this increase has not been due so much to the incursion of female labour into what may be termed men's trades, as to the activity in those trades in which women are ordinarily engaged, more especially in dressmaking, millinery, etc.

5. **Employment of Females in Particular Industries, 1910.**—The employment of women in manufacturing industries in Australia is largely confined to a few trades, of which the more important are comprised in Classes VI., VII., and VIII., viz., in connection with food, drink, etc., clothing and textile fabrics, and books, paper, printing, etc. The following table shews the average number of females employed in each of these classes during the year 1910 in each State, and also shews the percentages of the average number so employed on the total average number of females employed in all classes of factories :—

**AVERAGE NUMBER OF FEMALES EMPLOYED IN PARTICULAR INDUSTRIES, AND
PERCENTAGES ON AVERAGE TOTAL EMPLOYED. 1910.**

Class.	N.S.W.	Vict.	Q'land.	S. Aust.	W.Aust.	Tas.	Cwlth.
AVERAGE NUMBER.							
VI. Food, drink, etc. ...	2,988	3,637	546	467	143	307	8,088
VII. Clothing and textile fabrics ...	17,272	27,878	5,459	3,998	2,030	1,232	57,869
VIII. Books, paper, printing, etc. ...	2,118	2,167	465	487	177	93	5,507
All other classes ...	1,949	2,185	309	194	103	71	4,811
Total ...	24,327	35,867	6,779	5,146	2,453	1,703	76,275

PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES.

VI. Food, drink, etc. ...	12.28	10.14	8.05	9.08	5.83	18.03	10.60
VII. Clothing and textile fabrics ...	71.00	77.73	80.53	77.69	82.75	72.34	75.87
VIII. Books, paper, printing, etc. ...	8.71	6.04	6.86	9.46	7.22	5.46	7.22
All other classes ...	8.01	6.09	4.56	3.77	4.20	4.17	6.31
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00

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 shewn in the following table :—

FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII. DURING 1910.

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.
Woollen & tweed mills	319	429	134	736	921	125	254	371	146
Boots and shoes ...	2,866	1,609	56	4,344	2,488	57	1,676	827	49
Slop clothing	3,017	7,622	253	2,192	7,250	331	1,984	5,386	271
Clothing (tailoring)									
Dressmaking & millin'y	78	4,772	6,118	248	9,149	3,689	59	3,734	6,329
Dyeworks and cleaning	34	27	79	56	75	134	26	21	81
Furriers ...	19	21	111	30	78	260	8	11	138
Hats and caps ...	454	944	208	720	1,170	163	115	203	177
Waterproof and oilskin	19	77	405	46	150	326	...	...	...
Shirts, ties, and scarfs	134	1,529	1,141	319	6,084	1,907	132	2,010	1,523
Rope and cordage ...	212	3	1	502	351	70	132	81	61
Tents and tarpaulins...	173	239	138	93	49	53	108	75	69
Other ...	...	...	...	9	113	1,256	...	...	...
Total Class VII....	7,325	17,272	236	9,295	27,878	300	4,494	12,719	283

§ 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 New South Wales, Queensland, and Western Australia is fourteen, and in the other States thirteen years. Other restrictions on the employment of young persons in factories are more particularly referred to in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*) The general object of the restrictions imposed is to assure that a proper period shall be devoted to primary education, and that the early years of toil shall not exhaust the worker before the attainment of full growth.

2. **Average Number of Children Employed in Factories, 1906 to 1910.**—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 1906 to 1910. It will be seen that the Commonwealth figures for years prior to 1907 are incomplete. During the period under review, there was an increase in the average number employed in every State, with the exception of Victoria, where there was a decrease of 1283.

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1906 to 1910.

State.	1906.	1907.	1908.	1909.	1910.
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MALES.

New South Wales ...	881	2,406	2,475	2,433	2,452
Victoria ...	3,213	3,253	3,049	2,817	2,753
Queensland ...	*	1,119	1,034	1,001	†1,031
South Australia ...	1,166	1,127	1,179	1,094	1,082
Western Australia ...	203	216	289	289	340
Tasmania ...	251	214	239	257	281
Commonwealth ...	†5,714	8,335	8,265	7,891	7,939

FEMALES.

New South Wales ...	579	1,880	1,859	1,973	2,025
Victoria ...	2,997	3,095	3,065	2,496	2,174
Queensland ...	*	576	583	556	†733
South Australia ...	400	480	568	577	702
Western Australia ...	126	159	251	242	266
Tasmania ...	99	97	135	128	96
Commonwealth ...	†4,201	6,287	6,461	5,972	5,996

TOTAL.

New South Wales ...	1,460	4,286	4,334	4,406	4,477
Victoria ...	6,210	6,348	6,114	5,313	4,927
Queensland ...	*	1,695	1,617	1,557	†1,764
South Australia ...	1,566	1,607	1,747	1,671	1,784
Western Australia ...	329	375	540	531	606
Tasmania ...	350	311	374	385	377
Commonwealth ...	†9,915	14,622	14,726	13,863	13,935

* Not available. † Incomplete. ‡ See Note (†) to § 3. 1 (i).

The relatively large increase in the figures for the Commonwealth for the year 1907 is accounted for largely by the fact that in New South Wales, the term "child" denoted any person under the age of fifteen years, which, in 1907, was raised to sixteen years in order to come into line with the other States of the Commonwealth. It should be noted also that the Commonwealth figures for the year 1906 are exclusive of returns for Queensland.

3. Industries Employing Child Labour, 1910.—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the table below, which shows the average number of children of each sex employed in the several industries indicated in each State during the year 1910:—

NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1910.

Class.	Industry.	N.S.W.		Victoria.		Q'land.		S. Aust.		W.A.		Tas.		C'w'lt'h.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III.	Bricks, tiles, pottery and earthenware ...	63	9	62	4	19	...	28	2	17	...	7	...	196	15
IV.	Joinery, boxes, cases, etc. ...	88	...	62	...	28	2	50	2	10	...	10	...	248	4
V.	Engin'ring, ironworks, and foundries ...	216	4	202	...	33	...	95	...	53	...	20	...	619	4
"	Galvanised iron-working and tinsmithing ...	96	3	81	19	54	...	71	...	...	...	4	...	306	22
"	Railway carriages, railway & tramway work-shops ...	61	...	50	...	23	...	30	...	14	...	1	...	179	...
VI.	Biscuits, cakes, etc. ...	133	104	93	23	28	12	8	6	9	12	9	...	280	157
"	Confectionery ...	38	68	22	44	24	21	27	24	...	8	...	...	111	165
"	Jams, pickles, sauces, etc. ...	31	26	34	50	19	...	33	41	3	4	22	12	142	133
"	Aerated waters, cordials, etc. ...	40	4	51	...	49	2	16	...	10	...	5	...	171	6
"	Tobacco, cigars, etc. ...	53	70	21	12	...	...	1	4	1	4	...	...	76	90
VII.	Boots and shoes ...	151	159	209	245	61	45	65	56	5	8	5	11	496	534
"	Clothing (tailoring and slop) ...	97	500	106	384	58	229	20	170	12	57	16	19	309	1,359
"	Dressmaking and millinery ...	1	409	9	521	2	150	1	98	...	100	...	42	13	1,320
"	Hats and caps ...	24	63	50	63	2	15	6	15	...	...	...	...	82	156
"	Shirts, ties, scarfs, etc. ...	4	114	2	361	12	107	2	124	...	32	...	...	20	738
"	Woollen, tweed, and cotton mills ...	12	35	112	106	14	39	5	29	...	...	3	6	146	215
VIII.	Electrotyping, printing and binding ...	413	186	483	102	182	52	73	23	63	20	48	1	1,262	390
"	Paper making, paper boxes, etc. ...	32	91	22	43	2	26	20	68	...	4	...	...	76	232
XI.	Coach & wagon building, etc. ...	79	...	116	...	43	...	45	...	15	...	18	...	316	...
XII.	Billiard tables, cabinet making and furniture ...	43	4	65	...	48	5	35	...	11	...	20	...	222	9

4. **Apprenticeship.**—The apprenticeship systems of the several States may be summarised as follows :—

In New South Wales, no child may be apprenticed until the attainment of the age of fourteen years, in Victoria and Queensland, twelve years. There is no limitation in the case of the other States, nor any regulating Acts except as applying to charity apprentices. The statutes limiting the age at which children may begin to work may be regarded as applicable by way of preventing too early apprenticeship, so also may those directing that education be continued up to a certain age or standard.

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

The Arbitration Courts and Wages Boards have power to limit the number of apprentices which may be taken into a factory. No general statistics of the number of apprentices in Australia have been collected up to the present time. Other enactments relating to child labour are referred to 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 1910 was £120,770,674, of which amount the sum of £72,722,642 represents the value of the raw

materials used. The difference between these two amounts, viz., £48,048,032, 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 1910 was £23,874,959.

2. **Amount of Salaries and Wages Paid, 1910.**—The total amount of salaries and wages paid during the year 1910 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,
1910.***

Class of Industry.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	323,544	254,246	73,511	72,120	21,551	8,974	753,946
II. Treating oils and fats, animal, vegetable, etc.	60,409	56,440	16,199	22,674	3,862	2,902	162,496
III. Processes in stone, clay, glass, etc.	453,537	326,306	42,206	94,119	49,491	17,802	983,460
IV. Working in wood ...	630,216	537,195	327,357	158,912	585,841	130,180	2,379,701
V. Metal works, machinery, etc.	2,378,610	1,561,502	533,896	847,653	321,540	229,716	5,872,917
VI. Connected with food and drink, etc.	1,158,523	1,116,879	634,787	295,499	179,735	96,309	3,681,732
VII. Clothing and textile fabrics, etc.	1,397,639	1,799,889	356,880	281,399	169,618	88,417	4,093,842
VIII. Books, paper, printing and engraving ...	807,754	736,813	352,249	164,932	160,021	76,110	2,297,879
IX. Musical instruments, etc.	40,337	14,908	...	1,713	...	...	56,958
X. Arms and explosives ...	2,080	24,456	...	...	...	...	26,536
XI. Vehicles and fittings, saddlery and harness, etc.	346,991	299,996	102,737	139,213	64,142	30,960	984,039
XII. Ship and boat building and repairing... ..	222,101	12,260	9,812	14,473	3,611	3,893	266,080
XIII. Furniture, bedding and upholstery ...	284,865	220,464	79,286	77,691	39,487	17,690	719,483
XIV. Drugs, chemicals, and by-products ...	103,721	125,878	4,269	53,247	9,896	...	297,011
XV. Surgical and other scientific instruments ...	6,991	4,569	2,654	911	701	...	15,826
XVI. Jewellery, timepieces, and platedware ...	58,769	75,471	10,247	17,207	6,185	2,987	170,866
XVII. Heat, light, and power ...	326,860	292,112	62,971	68,390	58,433	36,459	845,225
XVIII. Leatherware, n.e.i.	26,857	35,606	4,067	1,709	1,931	...	70,160
XIX. Minor wares, n.e.i....	61,582	105,942	7,587	11,606	7,612	2,483	196,812
Total	8,691,386	7,600,932	2,830,704	2,323,398	1,683,657	744,882	23,874,959

* 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 £5,872,917, or 24.60 per cent. on the total amount; the minimum amount was in Class XV., £15,826, 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 1906 to 1910; 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, 1906 to 1910.**

Year.	Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
		£	£	£	£	£	£	£
1906	Total amount paid ...	5,591,888	5,468,470	•	•	1,531,117	615,684	113,207,159
	Average per employee	75.05	67.69	•	•	123.91	75.87	175.14
1907	Total amount paid ...	6,650,715	5,982,677	1,923,639	1,734,394	1,380,708	651,844	18,323,977
	Average per employee	80.63	69.33	72.09	80.03	114.11	84.07	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	84.31	80.99
1909	Total amount paid ...	7,665,135	6,807,851	2,324,005	2,028,691	1,506,360	773,424	21,106,456
	Average per employee	87.27	73.57	82.09	83.08	122.08	87.78	83.01
1910	Total amount paid ...	8,691,386	7,600,932	2,830,704	2,323,398	1,683,657	744,882	23,874,959
	Average per employee	90.83	78.18	86.79	90.44	123.93	80.32	87.11

* Information not available.

† Exclusive of Queensland and South Australia.

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 Western Australia—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 1907-10 there has been an increase of 30 per cent. on the total amount of wages paid and 12.67 per cent. on the average paid per employee.

The following table shews the approximate amount paid in salaries and wages to males and females in New South Wales and Victorian factories during 1909 and 1910. Similar information for the other States is not available :—

**APPROXIMATE AMOUNT OF SALARIES AND WAGES PAID TO MALES AND FEMALES
IN FACTORIES IN NEW SOUTH WALES AND VICTORIA, 1909 and 1910.**

Particulars.	New South Wales.		Victoria.	
	Males.	Females.	Males.	Females.
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 amount 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 amount per employee ... £	107.84	40.08	101.20	37.67

3. Value of Fuel and Light used in Factories, 1910.—The amount expended in factories on fuel and light is of considerable importance; in 1910 it amounted to £2,634,831, being an increase on the previous year's figures of £407,326. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £863,485; Class VI., Connected with Food, Drink, etc., £594,306; Class XVII., Heat, Light, Power, etc., £403,441, of which amount £329,750 was expended on generating

electric light and power; and Class III., £317,133, of which £249,755 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 1910, and of the total used for the four years ended 1910 as far as the figures are available:—

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH, 1910.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwltth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	45,955	30,152	8,699	9,563	1,594	2,657	98,620
II. Treating oils and fats, animal, vegetable, etc.	13,839	14,601	1,834	6,383	313	50	37,020
III. Processes in stone, clay, glass, etc.	147,768	99,906	6,195	41,215	17,479	4,570	317,133
IV. Working in wood	10,246	10,651	6,600	4,315	1,334	350	33,496
V. Metal wks., machinery, etc.	453,422	120,202	35,895	150,787	18,607	84,482	863,485
VI. Connected with food and drink, etc.	185,546	185,517	129,482	54,618	29,438	9,705	594,306
VII. Clothing and textile fabrics, etc.	24,362	54,318	5,403	7,853	3,154	1,843	96,933
VIII. Books, paper, printing, and engraving	23,549	33,995	9,090	6,606	4,510	947	78,697
IX. Musical instruments, etc.	502	173	...	22	...	...	697
X. Arms and explosives	35	1,309	...	...	...	...	1,344
XI. Vehicles and fittings, saddlery and harness, etc.	9,287	10,979	1,026	4,602	2,458	675	29,027
XII. Ship and boat building and repairing	10,487	710	133	281	75	24	11,710
XIII. Furniture, bedding, and upholstery	4,171	4,825	1,824	2,237	863	457	14,377
XIV. Drugs, chemicals, and by-products	15,540	11,557	312	7,178	1,639	...	36,226
XV. Surgical and other scientific instruments	164	128	73	18	65	...	448
XVI. Jewellery, timepieces, and plated ware	1,409	2,302	355	500	202	38	4,806
XVII. Heat, light, and power	234,970	48,471	9,780	17,220	68,348	24,652	403,441
XVIII. Leatherware, n.e.i.	615	1,015	76	23	48	...	1,777
XIX. Minor wares, n.e.i.	2,415	8,324	113	310	94	32	11,288
Total ...	1,184,282	639,135	216,890	313,731	150,311	130,482	2,634,831

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1907 to 1910.

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	115,364	2,227,505
1910 ...	1,184,282	639,135	216,890	313,731	150,311	130,482	2,634,831

* Figures not available.

4. Value of Raw Materials used in Factories, 1910.—The total value of raw materials worked up (*i.e.*, exclusive of fuel, lubricants, etc.) in factories in the Commonwealth during 1910 was £72,722,642, which represents 60.22 per cent. of the total value of the finished products. (See next paragraph hereof.) The following table shows the value of the raw materials worked up in various factories in each State during the year 1910:—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH, 1910.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	3,959,481	2,005,365	1,342,883	423,741	192,505	50,122	7,974,097
II. Treating oils and fats, animal, vegetable, etc. ...	625,432	395,399	71,404	117,592	59,348	11,000	1,280,175
III. Processes in stone, clay, glass, etc. ...	226,084	153,343	7,417	32,555	12,410	5,086	436,895
IV. Working in wood ...	1,441,719	829,773	504,385	668,022	55,271	16,893	3,516,063
V. Metal wks., machinery, etc. ...	6,066,309	2,105,398	837,164	1,723,490	269,873	597,513	11,599,747
VI. Connected with food and drink, etc. ...	13,455,491	9,658,390	5,628,437	2,450,076	668,988	496,276	32,357,658
VII. Clothing and textile fabrics, etc. ...	2,446,561	3,677,769	686,716	509,634	255,363	108,530	7,684,573
VIII. Books, paper, printing, and engraving ...	712,785	740,164	122,687	150,401	86,918	22,046	1,835,001
IX. Musical instruments, etc. ...	71,443	6,361	...	1,370	...	...	79,174
X. Arms and explosives ...	4,819	60,850	...	...	...	...	65,669
XI. Vehicles and fittings, saddlery and harness, etc. ...	420,608	361,263	108,920	190,262	72,327	34,742	1,188,122
XII. Ship and boat building and repairing ...	123,400	9,961	7,184	9,038	5,755	2,448	157,786
XIII. Furniture, bedding, and upholstery ...	422,805	383,073	85,737	77,732	54,510	20,072	1,043,929
XIV. Drugs, chemicals, and by-products ...	442,755	585,885	8,325	247,310	35,019	...	1,319,294
XV. Surgical and other scientific instruments ...	6,918	3,459	2,219	700	70	...	13,366
XVI. Jewellery, timepieces, and platedware ...	87,294	142,397	15,651	19,550	12,827	1,350	279,069
XVII. Heat, light, and power ...	621,502	259,572	26,552	53,876	17,998	15,256	994,756
XVIII. Leatherware, n.e.i. ...	106,250	155,611	11,359	4,821	2,670	...	280,711
XIX. Minor wares, n.e.i. ...	174,923	407,222	9,779	15,085	8,107	1,441	616,557
Total ...	31,416,579	21,941,255	9,476,819	6,695,255	1,809,959	1,382,775	72,722,642

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £32,357,658. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £11,599,747 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £13,366. The year 1910 is the first for which reliable and complete returns have been collected in every State relating to the value of raw materials worked up in factories; the following table, however, gives particulars for the four years ended 1910, so far as information is available:—

VALUE OF RAW MATERIAL WORKED UP IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1907 to 1910.

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	‡2,980,359	65,193,240
1910 ...	31,416,579	21,941,255	9,476,819	6,695,255	1,809,959	1,382,775	72,722,642

* 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, 1910.—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State during the year 1910 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 FACTORIES IN COMMONWEALTH, 1910.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'lt'h.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural & pastoral pursuits, etc.	4,688,061	2,549,910	1,719,840	556,115	235,814	71,640	9,821,380
II. Treating oils and fats, animal, vegetable, etc.	886,027	565,989	110,885	192,512	72,118	17,000	1,944,531
III. Processes in stone, clay, glass, etc.	1,186,274	784,791	89,390	211,160	109,058	38,634	2,419,307
IV. Working in wood	2,468,452	1,698,773	1,005,058	955,138	794,157	215,967	7,927,545
V. Metal works, machinery, etc.	10,751,443	4,635,569	1,634,599	3,247,118	665,910	1,307,691	22,242,330
VI. Connected with food and drink, etc.	16,956,241	12,645,057	8,382,031	3,313,026	1,184,168	757,776	43,238,299
VII. Clothing and textile fabrics, etc.	4,671,647	6,616,909	1,301,018	958,420	487,734	232,145	14,267,873
VIII. Books, paper, printing, and engraving	2,076,433	2,184,356	602,203	391,478	346,702	102,522	5,703,694
IX. Musical instruments, etc.	139,505	23,416	...	5,400	...	...	168,321
X. Arms and explosives	7,500	122,066	...	...	...	...	129,566
XI. Vehicles and fittings, saddlery and harness, etc.	968,173	842,054	297,107	437,605	160,383	78,568	2,783,890
XII. Ship and boat building and repairing	402,363	34,184	21,493	27,342	11,563	7,905	504,850
XIII. Furniture, bedding, and upholstery	857,946	724,104	217,336	193,209	106,834	49,502	2,148,931
XIV. Drugs, chemicals, and by-products	533,161	1,009,201	20,907	365,470	61,218	...	2,289,957
XV. Surgical and other scientific instruments	24,444	11,855	7,938	2,200	1,344	...	47,781
XVI. Jewellery, timepieces, and platedware	190,310	291,817	29,748	49,977	22,679	5,481	590,012
XVII. Heat, light, and power	2,056,192	1,077,378	225,561	237,374	249,500	94,446	3,940,451
XVIII. Leatherware, n.e.i.	161,518	223,256	16,729	8,708	5,434	...	415,645
XIX. Minor wares, n.e.i.	289,953	620,169	20,266	32,443	18,995	4,485	986,311
Total ...	49,615,643	36,660,854	15,792,109	11,184,695	4,533,611	2,983,762	120,770,674

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 £49,615,643, or 41.08 per cent. on the total for the Commonwealth. The next State in order of value is Victoria, which produced 30.36 per cent.; the value of the output of Queensland was 13.08 per cent.; of South Australia 9.26 per cent.; of Western Australia 3.75 per cent.; and of Tasmania 2.47 per cent. The two most important classes in order of value of output (Classes VI. and V.) are the same as in order of value of raw materials used. As regards output the next class is Class VII., and as regards raw materials used Class I. The following statement shews the value of output of factories in each State during the four years ended 1910 so far as particulars are available:—

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1907 to 1910.

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	9,928,105	4,008,604	14,790,405	107,409,733
1910 ...	49,615,643	36,660,854	15,792,109	11,184,695	4,533,611	2,983,762	120,770,674

PER HEAD OF MEAN POPULATION.							
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	25.18	25.13
1910 ...	30.38	28.59	26.69	27.88	16.73	15.62	27.64

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

† See note (1) to last table § 6, 4.

6. **Value of Production of Manufacturing Industries, 1910.**—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 shews the value added in this manner in each State during the year 1910 for the various classes of factories:—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMON-WEALTH, 1910.

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. ...	728,580	544,545	376,957	132,374	43,309	21,518	1,847,283
II. Treating oils and fats, animal, vegetable, etc. ...	260,595	170,590	39,481	74,920	12,770	6,000	564,356
III. Processes in stone, clay, glass, etc. ...	960,190	631,448	81,973	178,605	96,648	33,548	1,982,412
IV. Working in wood ...	1,026,733	869,000	590,673	287,116	738,886	199,074	3,711,482
V. Metal works, machinery, etc. ...	4,685,134	2,530,171	797,435	1,523,028	396,037	710,176	10,642,583
VI. Connected with food and drink, etc. ...	3,500,750	2,986,667	2,753,594	862,950	515,180	261,500	10,880,641
VII. Clothing and textile fabrics, etc. ...	2,225,086	2,939,140	614,302	448,786	232,371	123,615	6,583,300
VIII. Books, paper, printing, and engraving ...	1,363,648	1,444,192	479,516	241,077	259,784	80,476	3,868,693
IX. Musical instruments, etc. ...	68,062	17,055	...	4,030	...	...	89,147
X. Arms and explosives ...	2,681	61,216	...	...	...	...	63,897
XI. Vehicles and fittings, saddlery and harness, etc. ...	547,565	430,791	188,187	247,343	88,056	43,826	1,595,768
XII. Ship and boat building and repairing ...	278,963	21,223	14,309	18,304	5,808	5,457	347,064
XIII. Furniture, bedding, and upholstery ...	435,141	341,031	131,599	115,477	52,324	29,430	1,105,002
XIV. Drugs, chemicals, and by-products ...	390,406	423,316	12,582	118,160	26,199	...	970,663
XV. Surgical and other scientific instruments ...	17,526	8,396	5,719	1,500	1,274	...	34,415
XVI. Jewellery, timepieces, and plated ware ...	103,016	149,420	14,097	30,427	9,852	4,131	310,943
XVII. Heat, light, and power ...	1,434,690	817,806	199,009	183,498	231,502	79,190	2,945,695
XVIII. Leatherware, n.e.i. ...	55,268	67,645	5,370	3,887	2,764	...	134,934
XIX. Minor wares, n.e.i. ...	115,030	212,947	10,487	17,358	10,888	3,044	369,754
Total ...	18,199,064	14,719,599	6,315,290	1,489,440	2,723,652	1,600,987	48,048,032

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 shewn in the following statement for the years 1907 to 1910:—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN THE COMMON-WEALTH, 1907 to 1910.

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	£ 1,810,046	£ 42,216,493
1910 ...	18,199,064	14,719,599	6,315,290	4,489,440	2,723,652	1,600,987	48,048,032
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	9.52	9.88
1910 ...	11.14	11.48	10.68	11.19	10.05	8.38	9.94

* Details too incomplete for publication. † Figures not available. ‡ See note (1) to last table § 6, 4.

It may thus be seen that in 1910 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, are all different 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 £120,770,674, there remained, after payment of £72,722,642, the value of the raw materials used, of £23,874,959 for salaries and wages, and of £2,634,831 for fuel, the sum of £21,538,242 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,
1910.**

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 ...	31,416,579	1,184,282	8,691,386	8,323,396	49,615,643
Victoria ...	21,941,255	639,135	7,600,932	6,479,532	36,660,854
Queensland ...	9,476,819	216,890	2,830,704	3,267,696	15,792,109
South Australia ...	6,695,255	313,731	2,323,398	1,852,311	11,184,695
Western Australia ...	1,809,959	150,311	1,683,657	889,684	4,533,611
Tasmania ...	1,382,775	130,482	744,882	725,623	2,983,762
Commonwealth ...	72,722,642	2,634,831	23,874,959	21,538,242	120,770,674

PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.

	%	%	%	%	%
New South Wales ...	63.32	2.39	17.52	16.77	100.00
Victoria ...	59.85	1.74	20.73	17.68	100.00
Queensland ...	60.01	1.37	17.93	20.69	100.00
South Australia ...	59.86	2.81	20.77	16.56	100.00
Western Australia ...	39.92	3.32	37.14	19.62	100.00
Tasmania ...	46.35	4.37	24.96	24.32	100.00
Commonwealth ...	60.22	2.18	19.77	17.83	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 1910 by £11,637,850, i.e., from £46,824,489 to £58,462,339, or at the rate of £2,909,463 per annum.

The following statement shews for the year 1910 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, 1910.**

Value of—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	O'with.
	£	£	£	£	£	£	£
Land and buildings ...	12,108,776	9,012,263	3,045,974	2,648,658	1,674,953	1,021,015	29,511,639
Plant and machinery ...	11,578,620	7,601,085	4,631,519	2,225,718	1,893,602	1,020,156	28,950,700
Total ...	23,687,396	16,613,348	7,677,493	4,874,376	3,568,555	2,041,171	58,462,339

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 1910 was approximately £58,462,339 (or £13.38 per head of mean population); of that sum £29,511,639 was invested in land and buildings occupied as manufactories, the remaining £28,950,700 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, 1906 to 1910.* 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 1906 to 1910 inclusive:—

**VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH,
1906 to 1910.**

Class of Industry.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	777,871	781,733	847,113	869,488	920,685
II. Treating oils & fats, animal, vegetable, etc. ...	363,622	343,424	359,624	370,681	394,079
III. Processes in stone, clay, glass, etc. ...	728,995	820,332	937,753	956,733	1,073,612
IV. Working in wood ...	1,219,155	1,090,551	1,195,581	1,288,267	1,492,673
V. Metal works, machinery, etc. ...	3,313,200	3,709,314	4,378,755	4,415,525	4,554,698
VI. Connected with food and drink, etc. ...	6,638,474	6,708,611	7,211,845	7,191,976	7,399,625
VII. Clothing and textile fabrics, etc. ...	2,919,301	3,396,599	3,377,905	3,809,148	4,191,488
VIII. Books, paper, printing, and engraving ...	2,134,021	2,357,799	2,483,693	2,642,029	2,779,754
IX. Musical instruments, etc. ...	27,741	27,405	31,054	33,314	75,632
X. Arms and explosives ...	30,314	31,152	34,586	33,016	38,763
XI. Vehicles & fittings, saddlery & harness, etc. ...	951,288	1,079,859	1,172,556	1,186,750	1,325,152
XII. Ship and boat building and repairing ...	1,111,752	991,907	988,141	1,033,513	1,052,868
XIII. Furniture, bedding, and upholstery ...	618,422	633,237	666,289	697,273	764,170
XIV. Drugs, chemicals, and by-products ...	335,393	444,060	531,765	543,507	687,162
XV. Surgical and other scientific instruments ...	37,197	31,779	33,054	56,378	56,149
XVI. Jewellery, timepieces, and platedware ...	159,356	204,734	226,352	232,483	271,834
XVII. Heat, light, and power ...	1,510,520	1,855,438	1,923,734	2,026,611	2,112,220
XVIII. Leatherware, n.e.i. ...	60,365	57,043	91,036	83,578	100,096
XIX. Minor wares, n.e.i. ...	143,204	193,797	218,540	210,325	220,984
Total ...	23,080,191	24,758,774	26,714,676	27,677,595	29,511,639

The figures in the above table are subject to the limitation that the actual returns for 1906 for the States of New South Wales and South Australia are not available. In order to present an approximate total for the Commonwealth, however, 1901 figures for New South Wales, and 1907 figures for South Australia are included for the year specified. It may be seen that the total net increase during the four years was £6,431,448, or an annual average of £1,607,862. In Class XII., there was a comparatively small decrease, which amounted to £58,884. The largest increases were in Classes V. and VII., and amounted to £1,241,493 and £1,272,187 respectively.

(ii.) *Value in each State, 1910.* The following table gives similar information for each State up to the 31st December, 1910:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1910.

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.	378,213	353,708	61,473	85,539	23,980	17,772	920,685
II. Treating oils and fats, animal, vegetable, etc.	186,712	111,204	25,331	55,716	10,116	5,000	394,079
III. Processes in stone, clay, glass, etc.	569,041	331,739	34,240	68,606	44,172	25,814	1,073,612
IV. Working in wood	709,769	300,262	147,821	115,862	156,737	62,222	1,492,673
V. Metal works, machinery, etc.	2,068,001	1,059,707	491,927	480,962	405,985	48,111	4,554,693
VI. Connected with food and drink, etc.	2,413,622	2,124,617	1,206,164	700,909	399,423	554,890	7,399,625
VII. Clothing and textile fabrics, etc.	1,764,578	1,532,722	265,375	361,302	151,100	116,411	4,191,488
VIII. Books, paper, printing and engraving	1,091,252	925,570	391,762	264,592	164,128	42,450	2,779,754
IX. Musical instruments, etc.	53,024	19,508	...	3,100	...	...	75,632
X. Arms and explosives	6,053	31,810	...	...	...	...	38,763
XI. Vehicles and fittings, saddlery and harness, etc.	494,119	390,904	125,323	182,396	73,970	58,440	1,325,152
XII. Ship and boat building and repairing	610,003	417,160	8,235	12,010	2,760	2,700	1,052,868
XIII. Furniture, bedding and upholstery	296,160	258,395	79,852	67,953	39,980	21,830	764,170
XIV. Drugs, chemicals, and by-products	192,430	284,087	10,000	126,446	74,199	...	687,162
XV. Surgical and other scientific instruments	25,344	10,793	10,912	4,320	4,780	...	56,149
XVI. Jewellery, timepieces, and plated ware	94,652	104,000	24,142	26,920	5,720	16,400	271,834
XVII. Heat, light, and power	1,019,030	730,557	150,847	60,070	105,641	46,075	2,112,220
XVIII. Leatherware, n.e.i.	36,831	44,675	8,150	7,060	3,380	...	100,096
XIX. Minor wares, n.e.i.	99,042	80,845	4,420	24,955	8,882	2,900	220,984
Total	12,108,776	9,012,263	3,045,974	2,648,658	1,674,953	1,021,015	29,511,639

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £7,399,625, or 25.07 per cent. on the total value. The next classes in importance were Classes V., VII., VIII., and XVII., in which the values were £4,554,693, £4,191,488, £2,779,754, and £2,112,220 respectively. The sum of the values for the five classes mentioned amounted to £21,037,780, or 71.23 per cent. on the total value for all classes.

(iii.) *Total Value in each State, 1904 to 1910.* The following table shews the total value, so far as returns are available, of land and buildings occupied as manufactories in each State at the end of each year from 1904 to 1910 inclusive:—

TOTAL VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1904 to 1910.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1904...	*8,029,890	7,641,051	2,699,191	2,140,516†	1,731,233	1,000,481	23,242,362
1905...	*8,029,890	7,771,238	2,709,951	2,140,516†	1,685,597	963,517	23,300,709
1906...	*8,029,890	8,062,110	2,405,559	2,140,516†	1,775,279	666,837	23,080,191
1907...	9,508,259	8,376,642	2,261,539	2,140,516	1,637,207	834,611	24,758,774
1908...	10,440,260	8,589,027	2,763,085	2,311,650	1,565,756	1,044,898	26,714,676
1909...	11,014,362	8,642,344	2,888,923	2,432,655	1,522,692	1,176,619	27,677,595
1910...	12,108,776	9,012,263	3,045,974	2,648,658	1,674,953	1,021,015	29,511,639

* 1901 figures. † 1907 figures, those for previous years not being available.

It may be seen that, so far as returns are available, there has been a general though irregular increase in all the States with the exception of Western Australia, where there was a slight fall; this is 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 temporary closing down of a large pyrites works, otherwise a further increase would have been shown for that State. The irregularities in some of the States are probably due partly to the returns having been made on different bases for the succeeding years in carrying into effect the resolutions passed at the Conferences of Statisticians (see § 1. 2 hereof).

3. Value of Plant and Machinery.—The following table shews for the whole Commonwealth the approximate value of plant and machinery used in connection with factories at the end of each year from 1906 to 1910 inclusive. The figures, however, are subject to certain limitations, inasmuch as returns for South Australia for 1906 are not available; South Australian figures for 1907 have therefore been taken for that year.

**VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH,
1906 to 1910.**

Class of Industry.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	618,891	644,597	671,015	726,786	803,220
II. Treating oils & fats, animal, vegetable, etc.	328,484	331,595	349,997	349,479	360,660
III. Processes in stone, clay, glass, etc.	745,504	752,084	833,809	901,193	1,109,139
IV. Working in wood... ..	1,422,545	1,506,933	1,583,496	1,623,497	1,852,296
V. Metal works, machinery, etc.	3,749,781	4,237,810	4,633,656	4,941,632	5,255,575
VI. Connected with food and drink, etc.	7,436,991	7,340,941	7,744,682	7,772,770	8,212,440
VII. Clothing and textile fabrics, etc.	1,177,456	1,132,063	1,158,688	1,280,102	1,403,135
VIII. Books, paper, printing, and engraving	1,889,705	1,993,135	2,091,168	2,207,930	2,362,268
IX. Musical instruments, etc.	6,327	7,829	9,124	11,263	16,443
X. Arms and explosives	44,476	45,613	46,113	45,940	47,012
XI. Vehicles & fittings, saddlery & harness, etc.	194,136	195,271	204,138	220,746	249,973
XII. Ship and boat building, and repairing	353,371	352,486	432,803	434,905	443,429
XIII. Furniture, bedding, and upholstery	97,392	106,613	117,481	126,000	150,774
XIV. Drugs, chemicals, and by-products	306,285	332,349	398,028	435,019	517,781
XV. Surgical and other scientific instruments	7,329	6,340	8,144	9,215	9,939
XVI. Jewellery, timepieces, and platedware	38,796	45,927	46,160	43,980	49,490
XVII. Heat, light, and power	5,242,509	5,555,544	5,481,759	5,561,333	5,961,816
XVIII. Leatherware, n.e.i.	15,489	16,523	18,989	19,555	24,651
XIX. Minor wares, n.e.i.	68,831	82,435	98,503	116,097	120,669
Total	23,744,298	24,686,108	25,927,763	26,827,442	28,950,700

It may be seen that during the period in question there has been a steady and substantial net increase amounting in all to £5,206,402, or an annual average of £1,301,601. The increase has occurred in all classes of industry, the largest increase being in Class V., "Metal Works, Machinery, etc.," amounting to £1,505,794, while the two next largest were in Class VI., "Connected with Food and Drink, etc.," amounting to £775,449, and Class XVII., "Heat, Light, and Power," with an increase of £719,307.

(i.) *Total Value in each State, 1904 to 1910.* 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., £3,929,717; while Victoria comes next with £1,573,951.

VALUE OF PLANT AND MACHINERY IN FACTORIES, 1904 to 1910.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1904	7,648,903	6,027,134	4,200,303	1,900,744*	1,776,481	753,967	22,307,532
1905	8,031,948	6,187,919	3,988,056	1,900,744*	1,834,098	753,924	22,696,689
1906	8,407,337	6,450,355	4,282,502	1,900,744*	1,861,477	841,883	23,744,298
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	1,035,690	26,827,442
1910	11,578,620	7,601,085	4,631,519	2,225,718	1,893,602	1,020,156	28,950,700

* Figures for 1907, previous years not being available.

(ii.) *Classified Value in each State, 1910.* The following table shews the value of plant and machinery used in factories in each State during the year 1910, classified according to the nature of the industry in which used:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1910.

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. ...	354,562	251,136	103,220	65,297	17,405	11,600	803,220
II. Treating oils and fats, animal, vegetable, etc. ...	174,001	121,498	39,202	18,018	6,725	1,216	360,660
III. Processes in stone, clay, glass, etc. ...	695,082	247,901	44,286	64,211	44,051	13,608	1,109,139
IV. Working in wood ...	609,607	335,444	358,026	61,473	369,175	118,571	1,852,296
V. Metal wks., machinery, etc. ...	2,670,504	1,047,566	488,972	446,628	314,526	287,379	5,255,575
VI. Connected with food and drink, etc. ...	2,887,467	1,645,727	2,675,302	527,243	314,483	162,218	8,212,440
VII. Clothing and textile fabrics, etc. ...	442,845	680,718	123,309	84,329	24,158	47,776	1,403,135
VIII. Books, paper, printing, and engraving ...	915,848	786,152	232,890	187,486	172,739	67,153	2,362,268
IX. Musical instruments, etc. ...	9,630	5,963	...	850	...	...	16,443
X. Arms and explosives ...	1,280	45,732	...	...	...	...	47,012
XI. Vehicles and fittings, saddlery and harness, etc. ...	85,114	75,267	26,738	40,656	15,487	6,711	249,973
XII. Ship and boat building and repairing ...	362,855	60,265	10,828	6,420	1,506	1,575	443,429
XIII. Furniture, bedding, and upholstery ...	43,375	50,194	19,537	26,074	7,453	4,141	150,774
XIV. Drugs, chemicals, and by-products ...	167,449	168,379	4,250	107,002	70,701	...	517,781
XV. Surgical and other scientific instruments ...	3,951	2,408	1,645	900	1,025	...	9,929
XVI. Jewellery, timepieces, and platedware ...	20,298	20,602	2,887	3,757	1,316	630	49,490
XVII. Heat, light, and power ...	2,068,638	1,984,043	493,822	582,479	530,621	297,213	5,961,816
XVIII. Leatherware, n.e.i. ...	11,474	11,738	649	240	550	...	24,651
XIX. Minor wares, n.e.i. ...	54,640	60,352	976	2,655	1,681	365	120,669
Total ...	11,578,620	7,601,085	4,631,519	2,225,718	1,893,602	1,020,156	28,950,700

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £8,212,440, or 28.37 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," which amounts to £5,961,816, or 20.59 per cent. on the total; followed by Class V., "Metal Works, Machinery, etc.," amounting to £5,255,575, or 18.15 per cent. on the total value. The total for the three classes just specified amounts to £19,429,831, or 67.11 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 1910 was as follows:—

TANNERIES, 1910.

Items.	N.S.W	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	76	55	18	15	4	8	176
" employees	1,023	1,487	221	246	67	66	3,110
Actual horse-power of engines employed ...	1,073	1,390	271	220	97	74	3,125
Approx. value of lands and buildings ...	£ 100,320	134,159	20,792	27,187	10,020	9,022	301,500
Approx. value of plant and machinery ...	£ 83,302	90,370	13,490	11,871	6,070	7,150	212,253
Total amount of wages paid during year ...	£ 102,057	140,959	20,595	25,470	8,105	5,826	303,012
Value of fuel used	£ 8,122	9,092	1,253	1,707	501	2,069	23,644
Value of raw material worked up ...	£ 774,936	885,672	149,945	115,247	41,450	31,262	1,998,512
Total value of output	£ 971,910	1,137,608	210,345	155,868	52,217	42,910	2,570,858
Value added in process of manufacture ...	£ 196,974	251,936	63,400	40,621	10,767	11,648	573,346

(i.) *Progress of Tanning, etc. Industries, 1906 to 1910.* 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 1906 to 1910 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, 1906 to 1910.

State.	Number of Factories.					Number of Employees.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N. S. Wales ...	154	152	146	147	140	2,427	2,507	2,396	2,544	2,640	£ 172,553	£ 159,850	£ 167,071	£ 188,820	£ 246,082
Victoria ...	84	90	92	93	89	1,657	1,893	2,001	1,991	1,954	114,951	124,064	133,376	142,425	141,702
Queensland ...	40	37	39	36	40	513	615	685	667	763	84,758	81,225	91,492	88,337	96,811
S. Australia ...	14	12	14	15	17	341	294	34	288	286	*	9,197	11,991	14,161	13,986
West. Australia ...	2	3	3	4	4	61	64	69	61	67	5,500	5,500	5,640	5,500	6,070
Tasmania ...	3	6	9	8	8	54	67	74	68	66	6,600	6,550	7,476	7,600	7,150
Commonwealth	297	300	303	303	298	5,054	5,440	5,570	5,631	5,784	384,354	386,386	417,046	446,855	510,801

* No information available. † Exclusive of South Australia.

(ii.) *Production of Tanneries, 1910.* The quantity of raw materials used and the quantity and value of leather produced in tanneries in each State during the year 1910 are shewn in the following table:—

RAW MATERIALS USED AND LEATHER PRODUCED IN TANNERIES, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
RAW MATERIALS USED.							
Hides ... No. (,000 omitted)	529	496	79	90	27	16	1,237
Pelts treated No. ...	4,325	*	*	72	...	*	*
Bark Tons	10,218	10,081	1,767	1,536	693	484	24,779
LEATHER AND BASILS PRODUCED.							
LEATHER—							
Quantity lbs. (,000 omitted)	13,855	19,125	2,463	2,552	956	231	39,183
Value £	68,811	950,000	157,001	148,448	51,775	28,318	2,104,353
BASILS—							
Quantity lbs. (,000 omitted)	4,130	707	*	86	...	39	*
Value £	181,657	32,000	*	6,364	...	2,865	*

* 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 1910:—

SOAP AND CANDLE FACTORIES, 1910.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Cwltth.
Number of factories	33	16	17	6	4	2	78
" employees	624	540	168	192	50	32	1,606
Actual horse-power of engines employed	473	239	138	101	35	16	1,002
Approximate value of land and buildings	£ 129,526	99,924	25,331	41,436	10,116	5,000	311,333
" plant and machinery	£ 132,004	113,418	39,202	13,128	6,725	1,216	305,693
Total amount of wages paid during year	£ 46,271	51,518	16,199	19,671	3,862	2,902	140,423
Value of fuel used	£ 11,374	13,711	1,834	5,940	313	*	†33,172
Value of raw material worked up	£ 346,133	355,000	71,404	108,985	59,348	*	†941,770
Total value of output	£ 547,598	516,508	110,885	176,067	72,118	*	†1,423,176
Value added in process of manufacture	£ 201,465	160,608	39,481	67,082	12,770	*	†481,406

* As there are only two soap and candle factories in this State, returns relative to output, etc., are not disclosed. † Exclusive of Tasmania.

(i.) *Development of Soap and Candle Factories, 1906 to 1910.* 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, 1906 to 1910.

State.	Number of Factories.					Average Number of Employees.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
N.S.W.	41	34	29	26	33	602	553	553	571	624	121,313	127,311	135,786	127,437	132,004
Vic. ...	15	15	17	17	16	523	510	535	563	540	104,244	106,326	109,768	111,252	113,418
Q'land ...	14	15	16	18	17	142	142	159	174	168	33,599	35,562	35,794	40,102	39,202
S. Aus. ...	8	7	6	7	6	207	166	164	185	192	*	11,896	12,484	14,224	13,128
W. Aus. ...	3	3	3	3	4	61	57	50	50	50	8,216	6,938	4,910	3,200	6,725
Tas. ...	2	2	2	2	2	35	35	35	39	32	4,300	3,600	4,000	3,800	1,216
C'wltth...	83	76	73	73	78	1,570	1,463	1,496	1,582	1,606	†271,672	291,633	302,742	300,015	305,693

* Information not available. † Exclusive of South Australia.

(ii.) *Production of Soap and Candles, 1906 to 1910.* The subjoined statement shews that there has been a considerable increase in the output of both of these products. As regards the production of soap an increase is shewn in all the States. The returns as to the production of candles are incomplete for 1906 and 1907; it will be seen, however that there has been a considerable increase in New South Wales during the past four years, and that the production in the whole of the Commonwealth during 1910 shews an increase of 1,865,716 lbs. over that for 1908.

PRODUCTION OF SOAP AND CANDLES, 1906 to 1910.

State.	Soap.					Candles.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
	cwt.	cwt.	cwt.	cwt.	cwt.	lbs.	lbs.	lbs.	lbs.	lbs.
N.S.W.	221,834	225,217	217,321	206,678	245,538	4,799,898	5,656,354	5,566,776	6,922,468	6,689,875
Vic. ...	154,570	153,478	162,757	176,162	187,433	4,826,528	5,341,056	4,222,960	5,091,520	5,014,016
Q'land...	64,130	59,900	67,755	73,446	74,338	*	*	1,023,160	557,312	965,040
S. Aus. ...	*	56,745	61,614	66,043	66,800	*	1,975,075	1,806,725	1,678,900	1,788,224
W. Aus. ...	26,960	31,774	29,767	35,419	34,707	1,567,768	1,300,625	1,259,214	1,309,066	1,225,356
Tas. ...	7,360	9,679	10,500	9,900	8,642	703,360	672,000	448,000	537,600	495,040
C'wltth...	474,854	536,793	549,714	567,648	617,458	11,897,554	14,945,110	14,331,835	16,096,886	16,197,551

* Not available. † Incomplete.

(iii.) *Raw Material Used, 1910.* The following statement shows the quantity of certain raw materials used in soap and candle factories in each State during the year 1910 :—

RAW MATERIALS USED IN SOAP AND CANDLE FACTORIES, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Tallow cwt.	109,540	141,771	33,945	46,462	12,092	5,225	349,035
Alkali lbs.	46,716	44,012	19,337	10,808	11,841	1,296	134,010
Cocoonut oil gal.	228,541	79,389	...	47,872	...	...	355,802

In addition to the above, Queensland returns shew 7 cwt. and Tasmanian returns 945 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, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	572	298	221	86	63	110	1,350
" employees	6,966	5,461	3,727	1,614	3,922	1,734	23,424
Actual horse-power of engines employed	11,650	6,915	5,403	1,342	3,034	2,176	30,520
Approx. value of land and buildings	£ 650,689	248,671	137,001	108,607	156,737	62,222	1,363,927
" plant and machinery	£ 576,164	315,429	355,847	58,892	369,175	118,571	1,794,078
Total amount of wages paid during year	£ 590,906	502,406	331,376	149,350	585,841	130,180	2,290,059
Value of fuel used	£ 8,970	8,943	6,228	4,031	1,334	350	29,856
Value of raw material worked up	£ 1,374,317	775,280	493,664	656,996	55,271	16,893	3,372,421
Total value of output	£ 2,335,166	1,581,800	1,071,849	923,371	794,157	215,967	6,928,310
Value added in process of manufacture	£ 960,849	808,520	578,165	272,375	738,886	199,074	3,555,889

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 1910 :—

AGRICULTURAL IMPLEMENT WORKS, 1910.

Items.	N.S.W.	Victoria	Q'land.	S.Aust.	W.A.	Tas.	C'w'lth.
Number of factories	21	50	4	60	6	9	150
" employees	600	2,255	364	1,544	73	32	4,868
Actual horse-power of engines employed	162	810	141	1,041	69	5	2,228
Approx. value of land and buildings	£ 58,870	90,171	7,618	64,047	5,690	1,540	227,936
" plant and machinery	£ 18,575	105,429	14,283	62,315	6,663	920	208,185
Total amount of wages paid during year	£ 53,680	231,919	30,276	145,304	8,557	1,195	470,931
Value of fuel used	£ 1,977	21,537	953	9,371	1,050	182	35,070
Value of raw material worked up	£ 244,168	300,718	36,236	152,639	7,896	1,375	743,032
Total value of output	£ 338,833	742,326	85,329	372,175	18,586	3,631	1,560,880
Value added in process of manufacture	£ 94,665	441,608	49,093	219,536	10,690	2,256	817,848

(i.) *Development of Agricultural Implement Works.* The following table shews the progress of this industry during the years 1906 to 1910 :—

AGRICULTURAL IMPLEMENT WORKS, 1906 to 1910.

State.	Number of Factories.					Number of Employees.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
											£	£	£	£	£
N.S.W.	17	21	20	21	21	440	499	434	481	600	12,850	16,426	16,008	18,063	18,575
Vic. ...	53	55	52	52	50	1,747	1,618	1,441	1,892	2,255	62,808	66,492	69,335	84,067	105,429
Q'land	8	4	2	4	4	117	142	108	284	364	11,470	9,444	8,244	12,121	14,283
S. Aus.	49	49	54	59	60	874	827	1,092	1,346	1,544	*	34,034	38,157	49,405	62,315
W. Aus.	6	2	3	5	6	56	15	25	49	73	2,470	3,450	4,259	5,277	6,663
Tas. ...	...	13	9	7	9	...	45	34	29	32	...	796	235	845	920
C'w'ith	133	144	140	148	150	3,234	3,146	3,134	4,081	4,868	†89,598	130,642	136,238	169,778	208,185

* Not available. † Exclusive of South Australia.

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, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'ith.
Number of factories ...	247	320	96	51	45	22	781
" employees ...	7,851	6,766	2,241	1,888	913	450	20,109
Actual horse-power of engines employed	6,232	4,024	1,001	1,302	666	268	13,493
Approx. value of land and buildings £	647,208	420,202	131,350	82,665	73,547	27,900	1,382,872
plant and machinery £	618,479	553,015	157,890	108,669	62,758	40,296	1,541,107
Total amount of wages paid during year £	764,786	649,961	206,540	176,766	107,743	42,530	1,948,326
Value of fuel used ...	60,786	69,750	12,558	13,764	6,357	3,234	166,449
Value of raw materials worked up £	1,023,766	844,830	204,272	214,242	91,789	35,311	2,414,210
Total value of output ...	2,280,817	1,962,369	573,425	477,490	252,210	89,737	5,636,048
Value added in process of manufacture £	1,257,051	1,117,539	369,153	263,248	160,421	54,426	3,221,838

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, 1910.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'ith.
Number of factories ...	26	15	7	8	7	5	68
" employees ...	6,268	3,559	1,496	1,813	1,474	305	14,915
Actual h.p. of engines employed	2,734	799	1,463	356	1,910	122	7,384
Approx. value of land and buildings £	804,966	294,958	278,007	236,283	322,878	2,000	1,939,092
Approx. value of plant and machinery £	510,575	203,705	180,704	152,879	244,700	102,094	1,394,657
Total amt. of wages paid during year £	787,719	436,525	166,618	213,470	203,987	33,823	1,842,142
Value of fuel used ...	17,840	14,180	4,851	8,396	11,252	1,258	57,777
Value of raw material worked up £	576,608	484,497	174,202	135,048	167,945	20,598	1,558,898
Total value of output ...	1,485,615	1,013,124	344,878	357,423	390,218	56,910	3,648,168
Value added in process of manufacture £	909,007	528,627	170,676	222,375	222,273	36,312	2,089,270

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, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	37	98	8	7	...	7	157
" employees	3,292	690	361	1,454	...	1,064	6,861
Actual horse-power of engines employed	11,884	380	826	4,634	...	735	18,709
Approx. value of land and buildings £	251,167	15,298	2,018	21,664	...	8,511	298,858
" plant and machinery £	1,358,607	55,341	93,362	73,308	...	141,531	1,722,119
Total am't of wages paid during year £	536,312	53,940	50,438	210,277	...	144,119	995,086
Value of fuel used	361,037	4,889	15,711	115,955	...	79,674	580,326
Value of raw material worked up	3,645,087	90,965	247,801	981,216	...	535,060	5,498,129
Total value of output	5,659,203	203,271	308,019	1,651,288	...	1,148,604	8,960,385
Value added in process of manufacture £	2,014,116	112,306	60,218	670,072	...	603,541	3,462,256

* See third paragraph below.

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

The largest output for the year under review was in New South Wales, viz., £5,659,203, or 63.16 per cent. on the total output for the Commonwealth. South Australia came next with £1,651,288, or 18.43 per cent.; this amount is made up of £1,643,497 smelting and £7791 cyanide. Of the total for Tasmania the output of smelting was £1,130,534, the balance £8070 representing that obtained from pyrites works. The output in Victoria was £118,285, £17,629, £40,519, and £26,838 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 1910:—

BACON-CURING FACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	19	25	5	11	3	7	70
" employees	166	335	245	71	19	41	877
Actual horse-power of engines employed	144	388	193	58	18	44	845
Approx. value of land and buildings £	45,727	34,675	46,634	11,157	6,190	6,051	160,434
" plant and machinery £	17,389	26,799	16,698	4,520	1,250	4,325	70,981
Total amount of salaries and wages paid £	20,145	30,035	30,798	6,064	2,888	3,267	93,197
Value of fuel used	4,411	4,179	2,848	502	279	251	12,470
Value of raw material worked up	297,981	408,119	215,030	948	76,796	17,959	1,090,803
Total value of output	347,872	483,469	343,211	86,457	81,070	29,244	1,371,323
Value added in process of manufacture £	49,891	75,350	128,211	11,509	4,274	11,285	280,520

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

(i.) *Quantity and Value of Production, 1910.* 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 1910:—

PRODUCTION OF BACON-CURING FACTORIES, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.*	Tasmania.	C'wealth.
QUANTITY. (,000 omitted).							
Bacon & ham lbs.	10,174	13,455	9,916	2,656	...	614	36,815
Lard ... lbs.	598	587	677	98	...	58	2,018
VALUE.							
Bacon & ham £	308,401	450,469	303,879	83,974	...	21,174	1,167,897
Lard ... £	11,836	14,000	16,363	2,348	...	1,194	45,741
Other products £	11,401	19,000	22,737	135	...	6,876	60,149
PIGS KILLED.							
Number ...	118,017	142,429	119,718	30,127	...	15,031	425,322

* In Western Australia all bacon and hams are imported and some are 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 1910. The returns are exclusive of butterine and margarine factories.

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lh.
Number of factories ...	181	203	82	53	3	26	548
" employees ...	1,046	1,261	814	232	8	118	3,479
Actual horse-power of engines employed	2,259	2,433	943	356	29	162	6,182
Approximate value of land and buildings £	194,316	233,189	89,083	38,297	2,327	19,432	576,644
plant & machinery £	231,679	280,103	147,396	28,620	4,070	16,371	708,239
Total amount of wages paid ...	£ 108,844	121,128	73,447	13,990	1,168	5,928	324,505
Value of fuel used ...	£ 25,749	19,593	10,703	2,753	165	653	59,616
Value of raw material worked up	£ 3,081,388	2,707,540	1,205,000	301,787	9,174	73,257	7,378,146
Total value of output ...	£ 3,335,331	2,980,669	1,466,512	348,716	10,722	88,832	8,230,782
Value added in process of manufacture £	253,943	273,129	261,512	46,929	1,548	15,575	852,636

(i.) *Development of Factories, 1906 to 1910.* The following table shews the progress of the factories in this industry from 1906 to 1910 :—

DEVELOPMENT OF BUTTER, Etc., FACTORIES, 1906 to 1910.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	179	188	183	181	181	1,045	1,023	979	1,014	1,046	£ 218,566	£ 244,438	£ 247,678	£ 229,940	£ 231,679
Vict. ...	221	223	215	211	203	1,482	1,449	1,294	1,190	1,261	307,635	311,241	282,012	281,630	280,103
Q'land	81	83	82	80	82	1,333	1,376	1,238	760	814	104,157	133,861	145,531	136,049	147,396
S. Aust.	55	57	54	53	53	141	213	212	216	232	*	25,224	27,539	29,353	28,620
W. Aus.	2	2	2	3	3	5	5	6	10	8	2,300	2,300	2,300	4,117	4,070
Tas. ...	20	23	24	22	26	76	81	95	93	118	13,351	8,199	11,618	11,040	16,371
C'w'lh.	558	576	560	550	548	4,082	4,147	3,824	3,283	3,479	£ 646,009†	£ 725,263	£ 716,678	£ 694,129	£ 708,239

* Not available. † Exclusive of South Australia.

(ii.) *Quantity and Value of Production, 1910.* The following table shews 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 1910 :—

PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Butter ... lbs.	71,390	65,063	29,059	6,721	214	1,781	174,228
Cheese ... "	3,081	2,707	4,019	1,758	...	465	12,060
Condensed and concentrated milk ... lbs.	1,940	2,707	7,844	...	...	...	12,491
VALUE (,000 OMITTED).							
Butter ... £	3,160	2,865	1,240	310	11	78	7,664
Cheese ... £	75	68	90	38	...	10	281
Condensed and concentrated milk ... £	27	45	136	...	...	...	208
MILK USED (,000 OMITTED).							
Butter factories ... gals.	179,554	145,815	67,639	14,423	486	4,452	412,369
Cheese " "	3,250	2,730	3,797	1,803	...	466	12,046
Condensed milk factories " "	582	945	2,104	...	...	...	3,631

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 343 and 347 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, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	90	33	35	15	10	6	189
employees ...	2,049	936	1,801	303	90	32	5,311
Actual horse-power of engines employed	3,837	3,355	3,376	702	582	20	11,872
Approx. value of land and buildings £	469,478	276,158	402,467	151,699	59,755	6,000	1,365,557
plant and machinery £	481,490	164,454	270,105	85,614	37,256	3,900	1,042,819
Total amount of wages paid during year £	208,708	85,113	210,214	35,507	12,350	2,030	553,922
Value of fuel used ... £	46,663	33,224	35,861	5,762	6,414	80	128,004
Value of raw material worked up	£3,755,741	550,774	1,850,000	163,698	2,211	50	6,322,474
Total value of output	£4,297,662	721,499	2,300,446	213,114	32,342	3,525	7,568,588
Value added in process of manufacture £	541,921	170,725	450,446	49,416	30,131	3,475	1,246,114

The following table gives particulars, so far as available, of various classes of meat preserved during the year 1910 :—

MEAT PRESERVING WORKS—PARTICULARS OF ANIMALS TREATED, 1910.*

Particulars.			N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Sheep treated	...	No.	1,098,577	1,573,516	1,119,660	5,600	...	...	3,792,353
Cattle	"	No.	36,145	13,009	167,064	...	...	...	216,318
Pigs	"	No.	253	1,557	2,830	...	...	...	4,640

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 53,420 tons of ice, valued at £111,358, were manufactured in the Commonwealth in 1910.

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 1910:—

BISCUIT MANUFACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.*	C'w'lth.
Number of factories	6	4	12	3	3	10	38
employees	1,166	1,080	352	110	141	166	3,015
Actual horse-power of engines employed	363	148	97	50	83	62	803
Approx. value of land and buildings	£ 87,648	52,150	28,640	15,667	8,734	16,046	208,895
plant and machinery	£ 78,272	46,800	19,443	9,265	12,013	19,065	184,861
Total amount of wages paid during year	£ 69,483	63,018	25,544	8,479	11,881	9,876	187,281
Value of fuel used	£ 6,356	8,159	1,140	1,214	1,377	1,131	19,380
Value of raw material worked up	£ 273,865	270,120	66,383	17,536	43,102	34,282	704,288
Total value of output	£ 449,463	432,367	122,584	36,341	63,996	50,631	1,157,381
Value added in process of manufacture	£ 175,518	162,247	56,201	18,804	22,894	11,349	453,093

* 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 1910. Separate returns for the individual industries are not available for most of the States.

JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR MANUFACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	34	25	10	27	6	12	114
employees	1,088	1,427	203	467	59	952	4,196
Actual horse-power of engines employed	197	273	69	119	39	273	970
Approx. value of land and buildings	£ 80,100	106,519	8,032	21,007	4,860	37,760	258,248
plant and machinery	£ 29,488	43,497	7,311	10,558	3,140	20,512	114,506
Total amount of wages paid during year	£ 61,320	90,184	10,759	19,363	3,900	36,961	222,486
Value of fuel used	£ 3,522	8,379	635	1,912	342	2,489	17,279
Value of raw material worked up	£ 276,115	460,118	34,030	78,366	12,031	130,021	960,654
Total value of output	£ 432,943	676,484	56,855	136,843	18,537	180,791	1,501,553
Value added in process of manufacture	£ 155,928	216,366	22,825	58,477	6,503	50,770	510,869

(i.) *Quantity and Value of Production, 1910.* The following table shews the quantity and value of jams, pickles, and sauces manufactured in each State during the year 1910:—

QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCE MANUFACTURED, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
QUANTITY (,000 OMITTED).							
Jam ... lbs.	22,586	34,018	4,627	4,770	517	14,351	80,869
Pickles ... pints	1,978	1,265	400	373	188	4	4,208
Sauce ... pints	2,270	4,174	197	1,058	315	54	8,068
VALUE.							
Jam ... £	291,189	530,000	48,302	62,582	6,408	146,894	1,085,375
Pickles ... £	37,344	23,700	6,387	10,213	3,941	90	81,375
Sauce ... £	38,022	78,700	3,565	19,991	5,618	925	146,821

14. **Confectionery.**—The following table shews the position of the confectionery industry in 1910, 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, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.*	C'w'lth.
Number of factories ...	36	25	11	6	4	...	82
" employees ...	1,096	1,564	349	256	110	...	3,375
Actual horse-power of engines employed	308	373	57	100	60	...	898
Approx. value of land and buildings	£ 163,192	62,703	18,680	25,286	11,910	...	281,671
" plant and machinery	£ 59,879	50,468	16,719	23,936	8,000	...	158,986
Total amount of wages paid during year	£ 63,247	90,643	19,627	15,511	6,895	...	202,923
Value of fuel used ...	£ 4,230	6,726	1,058	2,100	920	...	15,084
Value of raw material worked up	£ 289,528	316,390	40,763	42,761	19,710	...	709,152
Total value of output	£ 478,522	497,961	102,255	91,088	33,460	...	1,204,286
Value added in process of manufacture	£ 189,994	181,571	61,492	48,327	13,750	...	495,134

* Included with biscuit factories.

15. **Flour Mills.**—The following table shews the position of the flour-milling industry in year 1910:—

FLOUR MILLS, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	72	62	13	54	17	18	236
" employees ...	945	780	201	537	158	141	2,762
Actual horse-power of engines employed	4,238	4,404	874	3,041	752	589	13,948
Approx. value of land and buildings	£ 360,948	217,862	55,223	122,826	58,841	47,740	863,440
" plant and machinery	£ 326,502	242,851	63,859	143,864	56,141	47,435	880,652
Total am't of wages paid during year	£ 117,986	84,863	18,177	58,541	21,285	13,473	314,328
Value of fuel used ...	£ 25,290	23,903	3,230	18,056	6,437	2,316	79,232
Value of raw material worked up	£ 2,379,769	2,210,086	267,152	893,349	339,342	183,276	6,242,974
Total value of output	£ 2,695,276	2,486,741	349,058	1,066,884	400,521	253,280	7,251,760
Value added in process of manufact're	£ 315,507	276,655	81,906	173,535	61,179	70,004	978,786

(i.) *Production of Flour Mills, 1904 to 1910.* The production of flour by the mills in each State of the Commonwealth in the years 1904 to 1910 was as follows:—

FLOUR MILLS—PRODUCTION, 1904 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tasmania.	C'wealth.
	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*
1904	210,137	202,314	34,211	†	20,185	19,822	486,669‡
1905	205,805	209,058	37,505	†	26,420	18,325	497,113‡
1906	225,995	219,166	24,219	†	26,977	17,692	514,049‡
1907	237,442	235,185	28,532	105,395	28,353	17,056	651,963
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

* Tons of 2000 lbs. † Not available. ‡ Exclusive of South Australia.

The total production of flour for the Commonwealth for 1910, viz., 649,282 tons, was valued at £5,843,525; in addition 274,856 tons of bran and pollard, valued at £1,311,198, were made. The total quantity of wheat ground in 1910 was 32,004,658 bushels.

16. **Sugar Mills.**—The following table shews the position of the cane-crushing branch of the sugar-making industry in 1910. 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, 1910.

Items.	N.S.W.	Queensland.	Total.
Number of factories	4	49	53
„ employees	506	4,036	4,542
Actual horse-power of engines employed	2,578	9,675	12,253
Approximate value of land and buildings £	11,628	263,195	274,823
„ „ plant and machinery £	515,512	1,680,432	2,195,944
Total amount of wages paid during year £	33,367	305,827	339,194
Value of fuel used	6,239	49,390	55,629
Value of raw material worked up	117,262	1,262,213	1,379,475
Total value of output	244,812	2,248,419	2,493,231
Value added in course of manufacture £	127,550	986,206	1,113,756

The first crushing of sugar for commercial use is said to have taken place in New South Wales about 1850 on the plantation of Mr. Thomas Scott; the planting-out of cane was not, however, taken up by settlers, notwithstanding Mr. Scott's earnest advocacy of the industry, until 1862, when a small growth resulted in the establishment of a mill in Queensland. The appliances were rude, but the result satisfactory. In April, 1864, a mill with a modern crushing and boiling plant was opened at Cleveland (Q.) by Hon. Lionel Hope, but success was only partial, and the works were closed down till 1867. In 1866 the Pampania Company opened a small factory in Queensland, and in the following year two other mills started work. Two factories were erected in the Maryborough district, and in 1868 others were working in the Mackay, Bowen and other districts. The industry was by the end of 1870 firmly established.

An unfortunate feature of the industry is that large quantities of molasses have been and still are allowed to run to waste. Part of the molasses produced is used in distillation, part is turned into food cake for cattle, and part is used for manuring land, but the greater part produced is put to no use whatever.

The product of the sugar mill is raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. The following tables shew the progress of this industry from the dates at which information is first obtainable :—

SUGAR MILLS, NEW SOUTH WALES, 1870 to 1910.

Items.	1870.	1877.	1886.	1891.	1896.	1901.	1908.	1909.	1910.
Number of factories ...	27	50	64	33	23	12	4	4	4
„ employees ...	...	1,065	2,259	1,621	1,475	695	543	529	506
Sugar produced tons	677	7,537	13,750	16,033	28,557	19,519	14,995	14,810	20,115
Molasses produced gals.	...	345,543	507,000	1,074,080	2,520,580	1,300,909	922,549	1,072,400	918,900

During the year 1910, 160,311 tons of cane were crushed in sugar mills in New South Wales. The reduction in the number of New South Wales mills is due chiefly to 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 1910.

Items.	1868.	1876.	1886.	1891.	1896.	1901.	1908.	1909.	1910.
Number of factories ...	10	70	118	68	63	52	51	46	49
„ employees ...	...	...	...	...	3,796	...	3,304	3,848	4,036
„ acres crushed	...	7,245	40,786	36,821	66,640	78,160	1,433,315†	1,163,569†	1,840,447†
Sugar produced tons	...	8,214	59,225	51,219	100,774	120,858	151,098	134,584	210,756
Molasses produced gals.	68,622	416,415	1,784,266	1,640,662†	2,195,479	3,679,352	5,980,433	4,763,635	7,329,870

* 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 391 to 395.)

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 1910 there were two sugar refineries in Queensland; and one in each of the States of New South Wales, Victoria and South Australia. The returns for the individual States cannot be disclosed.

In the five refineries in the Commonwealth, an average number of 148½ hands were employed during the year 1910. The approximate value of land and buildings was £278,776; of plant and machinery, £898,263; and the total amount of wages paid during the year was £170,904.

As regards production, the amount of crude sugar used was 183,529 tons, and of refined sugar produced 174,090 tons, valued at £2,782,532, both these amounts being exclusive of the two refineries in Queensland, for which returns are not available.

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

The following table gives particulars of breweries in each State during the year 1910:—

BREWERIES, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'ith.
Number of factories ...	38	31	11	14	24	6	134
" employees ...	825	1,042	438	349	525	154	3,333
Actual horse-power of engines employed ...	815	2,348	217	320	790	173	4,663
Approx. value of land and buildings ... £	329,563	317,917	101,795	107,309	192,912	404,200	1,453,696
Approx value of plant and machinery ... £	283,264	281,702	81,640	70,851	141,814	44,250	908,521
Total amount of wages paid during year ... £	112,626	139,946	47,040	41,764	85,120	18,846	445,342
Value of fuel used ... £	21,584	28,484	5,780	7,335	11,625	2,293	77,101
Value of raw material worked up ... £	392,984	362,965	136,932	81,756	115,267	48,241	1,138,145
Total value of output ... £	1,064,987	886,465	358,658	286,872	408,672	121,062	3,076,736
Value added by process of manufacture ... £	672,003	473,520	221,726	205,116	293,405	73,821	1,938,591

(i.) *Production and Materials Used, 1910.* 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 1910:—

PRODUCTION AND MATERIALS USED IN BREWERIES, 1910.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
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ALE AND STOUT BREWED.

Quantity gallons	17,411,827	18,605,737	5,588,724	4,118,024	4,710,849	2,003,949	52,439,110
Value ... £	850,863	825,000	358,658	286,056	395,442	119,309	2,835,328

RAW MATERIALS USED.

Malt ... bush.	604,366	540,390	189,473	114,754	148,731	77,985	1,675,699
Hops ... lbs.	718,994	663,394	295,063	167,046	233,604	114,020	2,192,121
Sugar ... cwt	82,386	112,240	47,459	22,204	25,817	8,872	298,978

RAW MATERIALS USED PER 1000 GALLONS OF ALE AND STOUT PRODUCED.

Malt ... bush.	34.71	29.04	33.90	27.87	31.57	38.92	31.96
Hops ... lbs.	41.29	35.66	52.80	40.56	49.59	56.90	41.80
Sugar ... cwt.	4.73	6.03	8.49	5.39	5.48	4.43	5.70

19. *Distilleries.*—The subjoined table gives particulars of distilleries in each State during the year 1910. There are no distilleries in either of the States of Western Australia or Tasmania.

DISTILLERIES, 1910.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories ...	3	6	3	18	...	...	30
" employees ...	21	74	25	83	...	...	203
Actual horse-power of engines employed ...	51	160	70	164	...	...	445
Approximate value of land and buildings ... £	4,430	82,715	1,856	21,462	...	...	110,463
Approx. value of plant and machinery ... £	42,965	61,500	7,091	20,690	...	...	132,246
Total amount of wages paid during year ... £	2,814	9,195	3,106	6,460	...	...	21,475
Value of fuel used ... £	1,673	2,049	1,498	2,184	...	...	7,354
Value of raw materials worked up ... £	46,415	26,751	4,789	45,548	...	...	123,503
Total value of output ... £	64,076	45,205	50,170	90,277	...	...	249,728
Value added in process of manufacture ... £	17,661	18,454	45,381	44,729	...	...	126,225

(i.) *Production of Spirits and Materials Used, 1910.* The total quantity of brandy distilled in 1910 was 262,336 proof gallons, and of other spirits was 1,937,367 proof gallons. The materials used comprised 407,651 cwt. of molasses and 2,088,933 gallons of wine. Particulars for the separate States are not available for publication.

20. **Tobacco, Cigars and Cigarettes.**—During the year 1910 there were thirty-five establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. In Queensland there were only two such establishments, and particulars as to output, etc., are therefore not disclosed. In Tasmania there were no factories engaged in this industry.

TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	13	14	2	3	3	...	35
" employees	1,412	2,248	87	154	22	...	3,923
Actual horse-power of engines employed	337	456	12	22	3	...	830
Approx. value of land and buildings £	184,680	177,214	2,840	11,873	3,259	...	379,866
" plant and machinery £	125,703	106,521	5,318	12,101	708	...	250,351
Total amount of wages paid during year £	118,325	182,972	4,933	13,904	2,037	...	322,171
Value of fuel used £	1,171	2,526	*	680	5	...	4,382†
Value of raw material worked up £	697,337	624,918	*	47,270	2,230	...	1,371,755†
Total value of output	£1,059,748	1,155,995	*	78,357	4,891	...	2,298,991†
Value added in process of manufacture £	362,411	531,077	*	31,087	2,661	...	927,236†

* As there are only two factories in this State, particulars of output, etc., are not disclosed.
† Exclusive of Queensland.

(i.) *Quantity of Goods Produced, and Tobacco Leaf Used, 1910.* 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 1910 :—

PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1910.

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

Manufact'ed tobacco lbs.	3,850	5,507	196	378	2	...	9,933
" lbs.	73	229	...	12	6	...	320
Cigars { No.	6,845	19,666	...	952	437	...	27,900
" lbs.	1,549	311	...	...	2	...	1,862
Cigarettes { No.	681,636	132,302	...	...	743	...	814,681

TOBACCO LEAF USED (,000 OMITTED).

Australian leaf... lbs.	816	193	257	130	3	...	1,399
Imported leaf ... lbs.	4,130	5,198	...	216	8	...	9,552

(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. In 1896 there were in

New South Wales eight establishments employing 641 persons, of whom 471 were males and 170 females. The plant and machinery employed were valued at £55,700. The production was—tobacco 1,857,616 lbs., cigars 16,553 lbs., and cigarettes 169,520 lbs.; the quantity of leaf used was—Australian 1,349,776 lbs. and imported 693,913 lbs. In Victoria, in the same year, there were twelve establishments employing 650 persons, of whom 424 were males and 226 females. The value of the plant and machinery employed was £42,210. The quantity of manufactured tobacco was 985,811 lbs. and of cigars and cigarettes 92,698 lbs. and 164,766 lbs. respectively. The Australian market has for many years been largely supplied with local manufactures. The quantities imported into Australia during 1910 were—manufactured tobacco 2,260,571 lbs., cigars 330,256 lbs. and cigarettes 114,851 lbs., while the quantities manufactured in Australian factories were respectively 9,993,087 lbs., 319,903 lbs. and 1,862,178 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, 1906 to 1910.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	13	11	12	15	13	1,016	1,103	1,309	1,250	1,412	£ 104,051	£ 111,298	£ 119,012	£ 119,676	£ 125,703
Vic. ...	12	13	13	14	14	1,846	2,019	2,542	2,449	2,248	78,522	88,341	100,880	104,973	106,521
Q'land	2	2	2	2	2	63	71	70	90	87	4,684	2,020	2,300	4,350	5,318
S. Aus.	2	3	3	3	3	135	174	175	180	154	*	12,716	12,084	12,084	12,101
W.Aus.	3	3	3	3	3	30	23	32	22	22	235	265	297	291	708
Tas.† ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
C'wth.	32	32	33	37	35	3,090	3,390	4,137	3,991	3,923	187,492	214,638	234,573	241,374	250,351

State.	Tobacco made.					Cigars made.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	lbs. 4,057,965	lbs. 3,899,196	lbs. 3,916,388	lbs. 3,694,918	lbs. 3,850,154	lbs. 50,326	lbs. 54,048	lbs. 57,716	lbs. 57,148	lbs. 73,194
Vic. ...	4,650,113	4,781,888	5,330,953	5,160,728	5,507,524	207,505	176,704	199,847	210,766	229,315
Q'land	*	90,317	152,331	187,059	195,752	*	...	...	...	...
S. Aus.	*	348,168	434,636	393,913	377,556	*	10,956	9,733	10,001	11,594
W.Aus.	1,280	2,005	3,807	3,549	2,100	8,090	6,373	7,527	7,415	5,800
Tas.† ...	...	...	...	...	...	...	...	...	...	...
C'wth.	†8,709,358	9,121,574	9,838,115	9,440,167	9,933,087	†265,921	248,081	274,823	285,330	319,908
State.	Cigarettes made.					Leaf used.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	lbs. 837,835	lbs. 972,875	lbs. 1,119,269	lbs. 1,300,045	lbs. 1,548,872	lbs. 4,235,089	lbs. 4,304,763	lbs. 4,589,875	lbs. 4,417,173	lbs. 4,945,868
Vic. ...	309,489	328,448	402,548	323,086	310,711	4,604,006	4,770,521	5,802,567	4,934,548	5,390,921
Q'land	*	...	...	...	...	*	120,045	152,188	226,706	256,860
S. Aus.	*	1,146	...	...	...	*	341,019	427,588	363,564	346,259
W.Aus.	284	340	581	548	2,595	23,322	10,607	17,591	17,659	10,867
Tas.† ...	...	...	...	...	...	...	...	...	...	...
C'wth.	†1,147,608	1,302,809	1,522,398	1,623,679	1,862,178	†8,862,417	9,546,955	10,989,809	9,959,650	10,950,775

* Information not available. † Exclusive of Queensland and South Australia. ‡ There are no tobacco factories in Tasmania. || Exclusive of South Australia.

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 1910, shews that the industry is now well established :—

WOOLLEN AND TWEED MILLS, 1910.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	8	9	2†	2	...	4	25
" employees	748	1,657	175	172	...	278	3,030
Actual horse-power of engines employed ...	781	2,041	156	165	...	100	3,243
Approx. value of land and buildings ...	£ 84,213	133,975	9,499	6,000	...	16,100	249,787
" plant and machinery	£ 109,473	247,791	30,144	10,763	...	38,750	436,921
Total amount of wages paid during year ...	£ 44,349	98,573	8,433	9,344	...	11,695	172,394
Value of fuel used	£ 3,927	13,247	*	*	...	1,375	20,033
Value of raw material worked up	£ 81,744	210,545	*	*	...	23,296	347,266
Total value of output	£ 154,757	426,336	*	*	...	48,795	638,297
Value added in process of manufacture ...	£ 73,013	215,791	*	*	...	25,499	346,071

* As there are only two factories each in Queensland and South Australia particulars of output, etc., are not disclosed, but are added in with the total for the Commonwealth. † One woollen and tweed mill, and one cotton ginning establishment.

(i.) *Progress of Industry, 1906 to 1910.* The progress of woollen and tweed manufactories 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, 1906 to 1910.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	5	5	5	7	8	338	395	455	628	748	£ 36,400	£ 39,433	£ 43,933	£ 82,117	£ 109,473
Vic.	9	9	9	9	9	1,434	1,589	1,757	1,717	1,657	236,988	259,740	263,100	265,008	247,791
Q'land.	1	1	1	2	2	117	119	97	165*	175	24,500	19,364	19,364	*28,634	30,144
S. Aus.	2	2	2	2	2	155	149	145	177	172	†	13,850	11,200	10,763	10,763
W. Aus.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tas.	4	4	4	4	4	274	257	263	278	278	42,200	45,413	33,250	37,250	38,750
C'wlth.	21	21	21	24	25	2,318	2,509	2,717	2,965	3,030	†	377,800	370,847	423,772	436,921

* Including one cotton ginning establishment. † Not available.

(ii.) *Quantity and Value of Production, 1910.* 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 about 2,000,000 yards, valued at, approximately, £250,000. In New South Wales 804,146 yards of tweed and cloth, in Victoria 890,281 yards, and in Tasmania 37,184 yards were manufactured. The production of flannel in the Commonwealth in 1910 amounted to about 5,000,000 yards, valued at £260,000, and of blankets, shawls, and rugs to the number of 532,000, valued at £128,000.

No cotton spinning or weaving or linen weaving is carried on in Australia. Cotton ginning has been carried on at periods far apart in the northern States, and a mill was lately reopened at Ipswich in Queensland.

22. **Boots and Shoes.**—Among the 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 1910 :—

BOOT AND SHOE FACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	106	144	30	23	10	24	337
" employees	4,475	6,832	1,120	882	203	298	13,810
Actual horse-power of engines employed	800	991	231	171	26	29	2,248
Approx. value of land and buildings	£ 212,222	188,334	38,743	58,470	10,205	19,831	527,805
" plant and machinery	£ 149,228	136,195	34,651	30,079	6,100	4,565	360,818
Total amt. of wages paid during year	£ 331,985	458,997	76,590	68,262	18,609	16,932	968,375
Value of fuel used	£ 4,777	7,295	858	1,352	303	114	14,699
Value of raw material worked up	£ 693,651	963,110	148,989	134,105	35,307	26,542	2,000,704
Total value of output	£ 1,174,329	1,620,179	250,658	234,205	63,546	53,255	3,396,173
Value added in process of manufacture	£ 480,678	657,069	101,669	101,100	28,239	26,713	1,396,468

(i.) *Progress of Industry, 1906 to 1910.* The progress of the industry in the last five years is shewn in the following table:—

DEVELOPMENT OF BOOT AND SHOE FACTORIES, 1906 to 1910.

State.	No. of Factories.					No. of Persons Employed.					Approximate Value of Plant and Machinery.				
	1906	1907	1908	1909	1910	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
N.S.W.	102	102	105	102	106	4,767	4,786	4,650	4,460	4,475	122,580	131,884	134,575	141,822	149,228
Victoria	134	139	139	136	144	5,703	6,303	6,348	6,894	6,832	99,042	122,347	123,204	129,411	136,195
Q'land.	26	32	27	25	30	1,015	1,134	1,094	1,135	1,120	20,592	22,078	26,652	25,712	34,661
S. Aust.	17	21	24	23	23	1,212	1,162	1,077	1,069	832	*	23,352	30,748	29,644	30,079
W. Aust.	12	12	10	11	10	236	249	185	204	203	6,626	7,232	5,967	6,735	6,100
Tas. ...	15	23	23	18	24	323	281	252	261	298	6,713	4,859	3,165	4,410	4,565
C'wealth	309	329	328	315	337	13,256	13,915	13,606	14,023	13,810	255,553†	316,752	324,331	337,734	360,818

* Information not available. † Exclusive of South Australia.

(ii.) *Value and Quantity of Production, 1910.* The number and value of boots and shoes, and slippers made at factories in each State during the year 1910, are shewn in the following table:—

PRODUCTION OF BOOT AND SHOE FACTORIES, 1910.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Boots and shoes ... Pairs	3,820	4,847	800	824	208	159	10,658
Slippers ... Pairs	503	191	49	32	1	16	792
Uppers ... Pairs	125	15	12	11	3	3	169
VALUE.							
Boots and shoes ... £	1,093,273	1,590,000	237,684	220,858	61,101	47,782	3,250,698
Slippers ... £	44,482	26,500	4,092	4,078	96	1,125	80,373
Uppers ... £	22,634	2,500	3,109	1,984	810	896	31,933

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 1910 is shewn in the following table:—

HAT AND CAP FACTORIES, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wth.
Number of factories	29	42	5	2	1	...	79
" employees	1,398	1,890	147	166	5	...	3,606
Actual horse-power of engines employed	281	358	20	56	...	...	715
Approx. value of land and buildings £	87,922	86,118	9,950	4,764	260	...	189,014
" plant and machinery £	52,057	43,447	7,591	5,064	30	...	108,189
Total amount of wages paid during year £	70,905	124,635	7,672	10,737	120	...	214,069
Value of fuel used	£ 2,847	5,932	219	*	*	...	9,867
Value of raw material worked up	£ 122,978	174,872	9,659	*	*	...	318,834
Total value of output	£ 236,243	376,154	23,619	*	*	...	662,523
Value added in process of manufacture £	113,265	201,282	13,960	*	*	...	343,689

* 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, 1906 to 1910.* 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 1906 to 1910, 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, 1906 to 1910.

State.	Number of Factories.					No. of Persons employed.					Approximate Value of Plant and Machinery.				
	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.	1906.	1907.	1908.	1909.	1910.
N.S.W.	23	22	26	30	29	1,036	1,094	1,221	1,349	1,398	£ 32,750	£ 35,653	£ 34,315	£ 39,966	£ 52,057
Vic.	32	33	34	35	42	1,319	1,404	1,520	1,688	1,890	24,588	28,452	29,650	35,427	43,447
Q'land.	4	3	4	5	5	122	140	129	173	147	6,083	7,142	7,662	7,420	7,591
S. Aust.	2	1	1	2	2	50	60	57	144	166	*	3,180	3,721	5,182	5,064
W Aust.	...	...	...	1	1	...	...	...	7	5	...	...	...	50	30
C'wth.	61	59	65	73	79	2,527	2,698	2,927	3,361	3,606	63,421†	74,427	75,346	88,045	108,189

* Information not available. † Exclusive of South Australia.

(ii.) *Quantity and Value of Production, 1910.* 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 1910 was £648,770.

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 1910. The returns include establishments for the manufacture of wheels, spokes, etc.

COACH AND WAGON BUILDING WORKS, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wth.
Number of factories	249	260	84	97	36	33	759
" employees	2,563	2,720	757	1,052	341	216	7,649
Actual horse-power of engines employed	567	344	167	341	100	15	1,634
Approx. value of land and buildings £	279,793	214,837	56,918	98,420	30,990	17,520	698,478
" plant and machinery £	58,665	48,615	20,774	26,347	10,733	2,173	167,307
Total amount of wages paid during year £	215,204	190,752	57,284	81,934	38,017	13,414	596,605
Value of fuel used	£ 7,582	7,672	831	3,186	2,101	473	21,845
Value of raw material worked up	£ 224,052	217,409	56,033	90,560	44,164	11,239	643,457
Total value of output	£ 558,060	522,138	163,585	232,135	97,051	31,018	1,603,957
Value added in process of manufacture £	334,008	304,729	107,552	141,575	52,887	19,779	960,530

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 1910:—

**FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE
MAKING, 1910.**

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
Number of factories	122	148	56	21	21	10	378
" employees	2,352	1,726	902	762	276	196	6,214
Actual horse-power of engines employed	636	337	263	486	103	56	1,881
Approx. value of land and buildings	£ 199,439	180,941	67,555	38,570	30,990	16,870	534,365
" plant and machinery	£ 33,754	29,414	18,103	23,351	4,132	2,447	111,201
Total amount of wages paid during year	£ 216,689	150,811	74,605	67,827	30,686	13,564	554,182
Value of fuel used	£ 3,038	2,107	1,546	1,913	640	157	9,401
Value of raw material used ...	£ 196,062	199,239	75,845	59,669	37,660	11,671	580,146
Total value of output	£ 502,314	419,600	198,650	158,022	77,888	31,556	1,388,030
Value added in process of manufacture	£ 306,252	220,361	122,805	98,353	40,228	19,885	807,884

26. **Electric Light and Power Works.**—Particulars of the electric light and power works of the Commonwealth in the year 1910 are given in the subjoined table. In South Australia there is only one electric light and power station. Particulars for that State are therefore not disclosed in regard to output.

ELECTRIC LIGHT AND POWER WORKS, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
Number of factories	99	16	6	1	19	10	151
" employees	784	523	91	174	233	374	2,179
Actual horse-power of engines employed	49,718	13,962	4,700	5,050	15,110	5,300	93,840
Approx. value of land and buildings	£ 387,354	180,855	26,899	47,764	67,342	18,775	728,989
" plant and machinery	£ 1,176,920	645,333	69,223	292,910	461,826	143,202	2,789,454
Total amount of wages paid during year	£ 107,021	62,266	12,245	22,438	43,331	18,874	266,175
Value of fuel used	£ 173,183	43,358	6,065	*	56,301	24,329	313,256†
Total value of output	£ 784,790	231,604	51,948	*	206,297	52,856	1,327,489†

* Not available for publication.

† Exclusive of South Australia.

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, 1910.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
Number of factories	57	47	19	3	4	3	133
" employees	1,386	1,421	390	358	88	134	3,777
Actual horse-power of engines employed	2,556	740	118	129	36	24	3,603
Approx. value of land and buildings	£ 557,183	470,023	123,948	5,876	35,829	27,300	1,220,159
" plant and machinery	£ 855,242	1,249,673	429,559	288,000	68,045	154,011	3,044,530
Total amount of wages paid during year	£ 186,214	199,308	50,726	42,162	13,994	17,585	509,989
Value of fuel used	£ 59,289	1,479	3,695	418	2,001	323	67,206
Value of raw material used ...	£ 448,685	212,092	26,552	49,675	12,426	12,000	761,430
Total value of output	£ 1087,074	733,910	173,613	145,503	40,559	41,596	2,222,255
Value added in process of manufacture	£ 638,389	521,518	147,061	95,828	28,133	29,596	1,460,825

* Including 13 coke factories.

† Including 4 coke factories.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1910 :—

PRODUCTION OF GAS AND COKE WORKS, 1910.

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

Gas made	... 1000 cub. ft.	3,854,826	2,476,528	524,118	454,599	92,793	144,533	7,547,397
Coke	... .. tons	441,936	139,423	36,515	19,506	4,972	7,391	649,743

VALUE.

Gas	... .. £	669,269	625,000	145,009	115,951	28,026	35,528	1,618,783
Coke £	280,219	85,000	22,141	21,534	9,210	6,068	424,172

COAL USED.

Coal tons	*726,902	235,532	70,431	46,716	7,976	13,174	1,100,731
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* Also 51,644 tons shale.