

SECTION XIII. MANUFACTURING INDUSTRIES.

§ 1. General.

1. Industrial Progress.—The statistics of manufactures in the Commonwealth 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. As will be seen in the following pages of this section, this progress has been particularly in evidence since the abolition of inter-colonial tariffs which took place upon the creation of the Commonwealth of Australia in 1901.

(i.) *The Gold Discoveries, 1851.* Prior to the gold discoveries (1851) there was little development in the manufacturing industries of Australia. Reference to that period will be found in previous issues of the Year Book (see No. 6, page 524).

(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 from 1861 to 1911, and for each of the three years 1912 to 1914, will serve to indicate generally the progress which has been made:—

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 to 1914.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
NUMBER OF FACTORIES.							
1861	601	531	...	...	...	...	...
1871	1,813	1,740	...	...	...	...	...
1881	2,961	2,488	571†	823†	...	...	...
1891	3,056	3,141	1,328†	996†	175	...	...
1901	3,367	3,249	2,110†	1,335†	662	420*	11,143‡
1911	5,039	5,126	1,657	1,314	710	609	14,455
1912	5,162	5,263	1,790	1,341	711	611	14,878
1913	5,346	5,613	1,838	1,353	763	623	15,536
1914	5,268	5,650	1,796	1,323	787	603	15,427
NUMBER OF EMPLOYEES.							
1861	...	4,395	...	...	...	...	...
1871	13,583	19,569	...	5,629†	...	...	...
1881	31,191	43,209	...	10,995†	...	...	...
1891	50,879	53,525	...	14,099†	...	...	...
1901	66,135	66,529	26,172†	19,283†	12,198	7,466*	197,783‡
1911	108,624	111,948	37,156	27,885	15,799	10,298	311,710
1912	115,561	116,108	40,948	28,500	16,382	9,957	327,456
1913	120,400	118,744	42,363	28,511	17,299	9,784	337,101
1914	116,462	118,399	43,282	26,874	17,640	8,922	331,579

* For 1902. † Not on same basis as other States. ‡ Not on same basis for some of States as in 1911.

NOTE.—In this and all subsequent tables, except where specially mentioned, "Number of Employees" includes working proprietors.

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

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

In 1896 it was agreed, as between Victoria and New South Wales, to adopt a common definition of the term "factory," viz., "any factory, workshop, or mill where four or more persons are employed or power is used." This agreement was adopted for the States generally at the Conference of State Statisticians in 1902, when it was decided, however, that the term "factory" should include also "all establishments, whether making for the trade, wholesale or retail, or for export." It was further agreed that industries should be arranged, as far as possible, under a uniform classification. As a result of the conference of 1902 a higher degree of uniformity in the collection and presentation of industrial statistics was attained in the several States, so that returns upon which anything like a proper comparative study of the development and progress of various manufacturing industries in the Commonwealth may be based, date back only as far as the year 1903, when the resolution 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 past six years are, however, in more complete co-ordination than formerly, and it is now possible to give particulars for the several States in greater detail and on a more uniform basis throughout.

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

CLASSIFICATION OF MANUFACTURING INDUSTRIES.

<p>CLASS I.—TREATING RAW MATERIALS, ETC.</p> <p>Boiling-down, Tallow Refining, etc.</p> <p>Tanneries</p> <p>Woolscouring & Fellmongering</p> <p>Chaff-cutting, etc.</p> <p>CLASS II.—OILS AND FAT, ETC.</p> <p>Oil and Grease</p> <p>Soap and Candles</p> <p>CLASS III.—STONE, CLAY, GLASS, ETC.</p> <p>Bricks and Tiles</p> <p>Glass (including Bottles)</p> <p>Glass (Ornamental)</p> <p>Lime, Plaster, Cement and Asphalt</p> <p>Marble, Slate, etc.</p> <p>Modelling, etc.</p> <p>Pottery and Earthenware</p> <p>CLASS IV.—WORKING IN WOOD.</p> <p>Boxes and Cases</p> <p>Cooperage</p> <p>Joinery</p> <p>Saw Mills</p> <p>Wood-turning, etc.</p> <p>CLASS V.—METAL WORKS, MACHINERY, ETC.</p> <p>Agricultural Implements</p> <p>Brass and Copper</p> <p>Cutlery</p> <p>Engineering</p> <p>Galvanised Iron-working</p> <p>Ironworks and Foundries</p> <p>Lead Mills</p> <p>Railway Carriages</p> <p>Railway and Tramway Workshops</p> <p>Smelting</p> <p>Stoves and Ovens</p> <p>Tinsmithing</p> <p>Wireworking</p> <p>Other Metal Works</p> <p>CLASS VI.—FOOD AND DRINK, ETC.</p> <p>Bacon Curing</p> <p>Butter Factories</p> <p>Butterine and Margarine</p> <p>Cheese Factories</p> <p>Condensed Milk</p> <p>Meat and Fish Preserving</p> <p>Biscuits</p> <p>Confectionery</p>	<p>Corn-flour, Oatmeal, etc.</p> <p>Flour Mills</p> <p>Jam and Fruit Canning</p> <p>Pickles, Sauces, and Vinegar</p> <p>Sugar Mills</p> <p>Sugar Refining</p> <p>Aerated Waters, Cordials, etc.</p> <p>Breweries</p> <p>Condiments, Coffee, Spices, etc.</p> <p>Distilleries</p> <p>Ice and Refrigerating</p> <p>Malting</p> <p>Tobacco, Cigars, etc.</p> <p>CLASS VII.—CLOTHING AND TEXTILE FABRICS.</p> <p>Woollen and Tweed Mills</p> <p>Boots and Shoes</p> <p>Slop Clothing</p> <p>Clothing (Tailoring)</p> <p>Dressmaking and Millinery—Makers' material</p> <p>Customers' material</p> <p>Dyeworks and Cleaning</p> <p>Furriers</p> <p>Hats and Caps</p> <p>Waterproof and Oilskin</p> <p>Shirts, Ties, and Scarfs</p> <p>Rope and Cordage</p> <p>Tents and Tarpaulins</p> <p>CLASS VIII.—BOOKS, PAPER, PRINTING, ETC.</p> <p>Electrotyping & Stereotyping</p> <p>Paper-making, Paper Boxes, Bags, etc.</p> <p>Photo-engraving</p> <p>Printing and Binding</p> <p>CLASS IX.—MUSICAL INSTRUMENTS, ETC.</p> <p>Musical Instruments and Sewing Machines</p> <p>CLASS X.—ARMS & EXPLOSIVES</p> <p>Arms and Explosives</p> <p>CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC.</p> <p>Coach and Wagon Building</p> <p>Cycles</p> <p>Perambulators</p> <p>Saddlery, Harness, etc.</p> <p>Spokes, etc.</p>	<p>CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING.</p> <p>Docks and Shipyards</p> <p>Sailmaking</p> <p>Ship and Boat Building and Repairing</p> <p>CLASS XIII.—FURNITURE, BEDDING, ETC.</p> <p>Bedding, Flock, & Upholstery</p> <p>Billiard Tables</p> <p>Furniture and Cabinet Making</p> <p>Picture Frames</p> <p>Window Blinds</p> <p>CLASS XIV.—DRUGS AND CHEMICALS, ETC.</p> <p>Chemicals, Drugs, and Medicines</p> <p>Fertilisers</p> <p>Paints, Varnishes, and By-products</p> <p>CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS.</p> <p>Surgical, Optical, and other Scientific Instruments</p> <p>CLASS XVI.—TIMEPIECES, JEWELLERY, & PLATED WARE.</p> <p>Electro-plating</p> <p>Manufacturing Jewellery, etc.</p> <p>CLASS XVII.—HEAT, LIGHT, AND POWER.</p> <p>Coke Works</p> <p>Electric Apparatus</p> <p>Electric Light and Power</p> <p>Gas Works and Kerosene</p> <p>Lamps and Fittings, etc.</p> <p>Hydraulic Power</p> <p>CLASS XVIII.—LEATHERWARE (N.E.I.)</p> <p>Leather Belting, Fancy Leather, Portmanteaux & Bags</p> <p>CLASS XIX.—MINOR WARES.</p> <p>Basket and Wickerware, Matting, etc.</p> <p>Brooms and Brushware</p> <p>Rubber Goods</p> <p>Toys</p> <p>Umbrellas</p> <p>Other Industries</p>
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§ 2. Number of Manufactories.

1. **General.**—In stating the number of factories in the States of the Commonwealth, it is to be remembered that in the collection of statistics, for years prior to 1907, the same basis has not been adopted in each State. In Queensland, for example, prior to 1906, the statistics included all establishments where two or more hands were employed, except Government railway workshops, which were not included till 1907. The difference in other respects is not material.

In the following table, shewing the total number of manufactories in the Commonwealth during the years 1903 and 1909 to 1914, it should be noted that not only are the results affected by differences of classification prior to 1907, but also that the number of

factories from year to year does not unequivocally indicate a change in the position of the industry, since amalgamations may account for part of the reduction of the numbers. (See § 3, 5.)

MANUFACTORIES OF THE COMMONWEALTH, 1903, and 1909 to 1914.

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
1909 ...	4,581	4,755	1,420	1,265	632	576	13,229
1910 ...	4,821	4,873	1,563	1,278	680	635	13,850
1911 ...	5,039	5,126	1,657	1,314	710	609	14,455
1912 ...	5,162	5,263	1,790	1,341	711	611	14,878
1913 ...	5,346	5,613	1,838	1,353	763	623	15,536
1914 ...	5,268	5,650	1,796	1,323	787	603	15,427

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

(i.) *Classification of Factories in Commonwealth, 1909 to 1914.* The following table shews the total number of factories in the Commonwealth at the end of each year from 1909 to 1914, classified on the basis indicated in § 1, 3 hereof:—

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1909 to 1914.

Class of Industry.	1909.	1910.	1911.	1912.	1913.	1914.
	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	855	855	857	871	907	870
II. Treating oils and fats, animal, vegetable, etc. ...	94	100	105	102	100	101
III. Processes in stone, clay, glass, etc. ...	645	703	719	709	732	706
IV. Working in wood ...	1,411	1,474	1,625	1,752	1,812	1,764
V. Metal works, machinery, etc. ...	1,588	1,629	1,697	1,779	1,814	1,824
VI. Connected with food and drink, etc. ...	2,253	2,286	2,310	2,331	2,366	2,333
VII. Clothing and textile fabrics, etc. ...	2,774	2,982	3,093	3,115	3,266	3,254
VIII. Books, paper, printing and engraving ...	1,011	1,062	1,144	1,158	1,206	1,228
IX. Musical instruments, etc. ...	18	20	19	21	21	19
X. Arms and explosives ...	9	13	14	16	20	19
XI. Vehicles and fittings, saddlery & harness, etc. ...	1,117	1,195	1,208	1,249	1,396	1,365
XII. Ship and boat building and repairing ...	84	85	87	97	96	93
XIII. Furniture, bedding, and upholstery ...	512	560	613	670	719	703
XIV. Drugs, chemicals, and by-products ...	164	176	189	202	206	213
XV. Surgical and other scientific instruments ...	30	35	41	44	48	52
XVI. Jewellery, timepieces, and platedware ...	150	155	169	177	190	200
XVII. Heat, light, and power ...	314	326	351	372	420	454
XVIII. Leatherware, n.e.i. ...	55	60	62	66	67	65
XIX. Minor wares, n.e.i. ...	140	143	152	147	150	164
Total ...	13,229	13,850	14,455	14,878	15,536	15,427

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 1909 to 1914 was 2,198, or an average of 440 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, 1914.* The following table shews the number of factories in each State of the Commonwealth at the end of the year 1914, classified according to the nature of the industry. (See classification given in § 1, 3 hereof):—

CLASSIFICATION OF FACTORIES IN EACH STATE, 1914.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Cwilt.
	No.	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	281	354	46	115	30	44	870
II. Treating oils and fats, animal, vegetable, etc.	42	25	14	12	6	2	101
III. Processes in stone, clay, glass, etc.	293	213	42	90	45	23	706
IV. Working in wood	668	449	326	98	73	150	1,764
V. Metal works, machinery, etc.	568	722	326	181	83	44	1,824
VI. Connected with food and drink, etc.	757	643	433	253	136	111	3,333
VII. Clothing and textile fabrics, etc.	1,001	1,515	258	233	160	87	3,254
VIII. Books, paper, printing & engraving	457	453	141	81	71	25	1,228
IX. Musical instruments, etc.	13	5	...	1	...	...	19
X. Arms and explosives	7	11	...	1	...	...	19
XI. Vehicles and fittings, saddlery and harness, etc.	397	538	159	143	73	55	1,365
XII. Ship and boat building & repairing	43	15	13	9	7	6	93
XIII. Furniture, bedding, and upholstery	243	269	73	53	40	25	703
XIV. Drugs, chemicals, and by-products	93	91	3	10	13	3	213
XV. Surgical and other scientific instruments	15	24	6	2	5	...	52
XVI. Jewellery, timepieces, & platedware	59	98	16	14	6	7	200
XVII. Heat, light, and power	238	134	26	12	28	16	454
XVIII. Leatherware, n.e.i.	24	34	4	3	...	...	65
XIX. Minor wares, n.e.i.	69	57	10	12	11	5	164
Total ...	5,268	5,650	1,796	1,323	787	603	15,427

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

The following table shews the number of factories in which machinery was worked by steam, gas, oil, or electricity, and the horse-power of engines or motors used, in each State and in the Commonwealth, during the year 1914 :—

UTILISATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1914.

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	3,986	1,282	5,268	158,418	14,552	1,885	50,166	225,021
Victoria ...	4,028	1,622	5,650	67,649	17,432	2,390	22,584	110,055
Queensland ...	1,324	472	1,796	43,295	8,186	1,364	7,063	59,908
South Australia ...	986	337	1,323	25,568	6,238	1,829	5,684	39,319
Western Australia	595	192	787	29,911	4,273	980	5,063	40,177
Tasmania ...	476	127	603	11,625	295	144	4,680	16,744
Commonwealth	11,395	4,032	15,427	336,466	50,976	8,542	95,240	491,224

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 during 1914 was 11,395, being 73.86 per cent.; 4,032 establishments, representing 26.14 per cent., used no mechanical power. The total average horse-power in use was 491,224, of which engines in which the motive power was steam formed 68.49 per cent.; gas, 10.38 per cent.; oil, 1.74 per cent.; and electricity, 19.39 per cent.

During 1914 there were 156 more establishments using power than in 1913, the increase in horse-power employed being 49,070, or over eleven per cent.

The following table shews the horse-power of engines used in connection with factories in the Commonwealth during each of the last six years :—

**UTILISATION OF MECHANICAL POWER IN FACTORIES IN COMMONWEALTH,
1909 to 1914.**

Year.	Number of Establishments.			Actual Horse-power of Engines used.				
	Using Machinery worked by Steam, Gas, Oil, or Electricity.	Others.	Total.	Steam.	Gas.	Oil.	Elec- tricity.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.
1909	8,738	4,491	13,229	219,224	23,749	4,530	29,861	277,364
1910	9,264	4,586	13,850	228,902	28,323	4,939	36,437	298,601
1911	9,972	4,483	14,455	255,061	35,889	6,024	46,576	343,550
1912	10,558	4,320	14,878	284,228	43,905	6,829	56,797	391,759
1913	11,239	4,297	15,536	313,085	48,677	8,142	72,250	442,154
1914	11,395	4,032	15,427	336,466	50,976	8,542	95,240	491,224

During the last five years the number of establishments using mechanical power has increased over 30½ per cent., the actual horse-power of engines used increasing over 77 per cent. during the same period.

§ 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, 1909 to 1914.* The following table shews, for each year from 1909 to 1914 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,
1909 to 1914.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
AVERAGE NUMBER.							
1909 ...	91,702	97,355	29,504	25,709	12,826	9,565	266,661
1910 ...	99,711	102,176	33,944*	27,010	14,107	9,980	286,928
1911 ...	108,624	111,948	37,156*	27,885	15,799	10,298	311,710
1912 ...	115,561	116,108	40,948*	28,500	16,352	9,957	327,456
1913 ...	120,400	118,744	42,363*	28,511	17,299	9,784	337,101
1914 ...	116,462	118,399	43,282*	26,874	17,640	8,922	331,579

PERCENTAGE ON COMMONWEALTH TOTAL.

	%	%	%	%	%	%	%
1909 ...	34.39	36.51	11.06	9.64	4.81	3.59	100.00
1910 ...	34.76	35.61	11.83*	9.41	4.91	3.48	100.00
1911 ...	34.85	35.91	11.92*	8.95	5.07	3.30	100.00
1912 ...	35.29	35.46	12.51*	8.70	5.00	3.04	100.00
1913 ...	35.72	35.22	12.57*	8.35	5.13	2.90	100.00
1914 ...	35.12	35.71	13.05*	8.11	5.22	2.69	100.00

AVERAGE NUMBER OF PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES, 1909 TO 1914—Continued.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
PER 10,000 OF MEAN POPULATION.							
1909 ...	574	772	518	656	487	503	624
1910 ...	611	797	574*	673	521	522	657
1911 ...	654	848	605*	679	551	541	694
1912 ...	665	856	648*	676	543	519	705
1913 ...	665	852	649*	658	551	499	702
1914 ...	629	832	641*	611	545	450	674

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

(ii.) *Rates of Increase, 1909 to 1914.* From the preceding table it may be seen that except during the last two years 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 on the average number for the preceding year from 1910 to 1914:—

PERCENTAGE OF INCREASE IN AVERAGE NUMBER EMPLOYED, 1910 to 1914.

Years.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1909-10 ...	8.77	4.95	15.05*	5.06	9.99	4.34	7.61
1910-11 ...	8.94	9.56	9.46*	3.32	11.99	3.19	8.65
1911-12 ...	6.35	3.72	10.20*	2.12	3.69	—3.31	5.03
1912-13 ...	4.19	2.27	3.46*	0.04	5.60	—1.74	2.95
1913-14 ...	—3.27	—0.29	2.17*	—5.74	1.97	—8.81	—1.64

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

2. *Classification of Numbers Employed in Factories in the Commonwealth, 1909 to 1914.*—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1909 to 1914 inclusive:—

AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN THE COMMONWEALTH, 1909 to 1914.

Class of Industry.	1909.	1910.	1911.	1912.	1913.	1914.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	9,549	9,655	9,805	9,624	9,495	9,221
II. Treating oils and fats, animal, vegetable, etc. ...	1,812	1,872	2,019	2,091	2,091	2,259
III. Processes in stone, clay, glass, etc. ...	9,605	10,737	12,093	12,909	13,794	13,570
IV. Working in wood ...	22,487	24,520	27,948	30,660	31,646	30,137
V. Metal works, machinery, etc. ...	49,753	54,238	60,538	66,472	68,839	66,112.
VI. Connected with food and drink, etc. ...	41,006	42,921	45,623	46,812	49,882	51,960
VII. Clothing and textile fabrics, etc. ...	73,567	78,983	83,845	84,661	84,237	81,076
XIII. Books, paper, printing and engraving ...	21,943	23,064	24,292	25,077	26,013	25,064
IX. Musical instruments, etc. ...	433	553	607	628	616	542
X. Arms and explosives ...	377	431	508	899	1,240	1,674
XI. Vehicles and fittings, saddlery and harness, etc. ...	11,366	12,484	13,294	13,400	13,913	13,125.
XII. Ship and boat building and repairing ...	2,220	2,508	2,920	3,821	4,216	5,633
XIII. Furniture, bedding and upholstery ...	7,638	8,434	9,480	10,405	10,462	9,534
XIV. Drugs, chemicals and by-products ...	3,391	3,827	4,165	4,381	4,328	4,490
XV. Surgical & other scientific instruments ...	173	190	233	238	264	282
XVI. Jewellery, timepieces, and platedware ...	1,800	1,896	2,142	2,302	2,170	2,026
XVII. Heat, light, and power ...	5,986	6,735	7,651	8,550	9,394	9,942
XVIII. Leatherware, n.e.i. ...	924	1,097	1,226	1,231	1,204	1,217
XIX. Minor wares, n.e.i. ...	2,631	2,763	3,321	3,295	3,297	3,695
Total ...	266,661	286,928	311,710	327,456	337,101	331,579

The total increase in the average number of hands employed from 1909 to 1914 was 64,918, or an annual average of 12,984. The increase was general throughout all the various classes of industry. The greatest development took place in Classes V. and VI., the increases being 16,359 and 10,974 respectively.

3. **Classification of Numbers Employed in each State, according to Class of Industry, 1914.**—The following table shews a similar classification of employees in manufacturing industries in each State for the year 1914:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES
IN EACH STATE, 1914.**

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.	3,818	3,310	600	963	203	327	9,221
II. Treating oils and fats, animal, vegetable, etc.	1,008	711	153	244	113	30	2,259
III. Processes in stone, clay, glass, etc.	6,256	4,283	677	1,404	704	246	13,570
IV. Working in wood	8,254	7,472	5,275	1,568	5,779	1,789	30,137
V. Metal works, machinery, etc.	26,407	19,694	7,121	7,966	3,399	1,525	66,112
VI. Connected with food and drink, etc.	15,393	15,308	14,609	3,699	1,560	1,414	51,980
VII. Clothing and textile fabrics, etc.	24,893	39,446	7,806	4,721	2,691	1,519	81,076
VIII. Books, paper, printing & engraving	9,130	9,153	3,007	1,824	1,195	755	25,064
IX. Musical instruments, etc.	354	170	...	18	...	...	542
X. Arms and explosives	700	970	...	4	...	...	1,674
XI. Vehicles and fittings, saddlery, and harness, etc.	4,080	5,086	1,457	1,445	585	472	13,125
XII. Ship and boat building & repairing	4,710	503	115	125	48	42	5,633
XIII. Furniture, bedding, and upholstery	3,642	2,986	1,171	959	444	332	9,534
XIV. Drugs, chemicals, and by-products	1,559	1,834	72	620	396	9	4,490
XV. Surgical and other scientific instruments	112	114	32	6	18	...	282
XVI. Jewellery, timepieces, & platedware	714	925	140	140	62	45	2,026
XVII. Heat, light, and power	3,721	3,769	795	960	316	381	9,942
XVIII. Leatherware, n.e.i.	532	566	96	23	...	...	1,217
XIX. Minor wares, n.e.i....	1,182	2,009	156	185	127	36	3,695
Total	116,462	118,399	43,282	26,874	17,640	8,922	331,579

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 81,076 employees, or 24.45 per cent. of the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 282 hands, or 0.09 per cent. of the total number of employees. Classes VI., VII., and VIII. comprise those industries in which female labour is largely employed. (See § 4, 5 hereof.)

4. **Classification of Numbers Employed in each State according to Nature of Employment, 1914.**—In the following table the average numbers of persons employed in each State during the year 1914 are classified according to the nature of their employment:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED
ACCORDING TO NATURE OF EMPLOYMENT, 1914.**

State.	Average Number of Persons Employed.						Total.
	Working Proprietors.	Managers and Overseers	Accountants and Clerks.	Engine-drivers and Firemen.	Workers, Skilled & Unskilled in Factory Mill or Workshop	Carters, Messengers and Others.	
New South Wales ...	4,452	3,754	4,611	2,804	97,804	3,037	116,462
Victoria ...	5,707	3,283	3,981	1,835	99,660	3,933	118,399
Queensland ...	1,548	1,381	1,760	1,600	34,579	2,414	43,282
South Australia ...	1,322	917	1,117	556	22,332	630	26,874
Western Australia ...	579	573	630	521	13,394	1,943	17,640
Tasmania ...	464	371	439	392	6,910	346	8,922
Commonwealth ...	14,072	10,279	12,538	7,708	274,679	12,303	331,579

* Including out-workers.

5. Classification of Factories according to Number of Hands Employed, 1914.—

(i.) The number of factories in each State, classified according to the number of hands employed and the total number of hands employed therein, is shewn in the following table:—

**CLASSIFICATION OF FACTORIES IN EACH STATE ACCORDING TO NUMBER OF
HANDS EMPLOYED, 1914.**

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 ...	962	1,045	214	184	150	100	2,655
4 ...	530	646	167	159	76	70	1,648
5 to 10 ...	1,778	1,941	627	500	270	235	5,351
11 to 20 ...	927	926	338	220	127	92	2,630
21 to 50 ...	646	659	276	167	102	81	1,931
51 to 100 ...	232	239	88	51	34	14	658
Over 100 ...	193	194	86	42	28	11	554
Total ...	5,268	5,650	1,796	1,323	787	603	15,427

AVERAGE NUMBER OF HANDS EMPLOYED.

Under 4 ...	2,234	2,411	507	458	338	253	6,201
4 ...	2,120	2,584	668	636	304	280	6,592
5 to 10 ...	12,338	13,437	4,378	3,469	1,853	1,586	37,061
11 to 20 ...	13,462	13,457	4,920	3,184	1,874	1,320	38,217
21 to 50 ...	20,194	20,838	8,480	5,215	3,246	2,309	60,282
51 to 100 ...	16,314	16,510	6,335	3,763	2,331	1,049	46,302
Over 100 ...	49,800	49,162	17,994	10,149	7,694	2,125	136,924
Total ...	116,462	118,399	43,282	26,874	17,640	8,922	331,579

(ii.) Reference to the following table will shew the tendency of the ratio of the number of hands employed in the larger establishments to still further increase and that of the smaller factories to diminish. In 1909 the ratio of hands in factories employing under 21 hands was 29.36 per cent. of total employees in factories, and in those where over 100 hands were engaged 36.89 per cent., whereas in 1914 the percentages were 26.56 and 41.30 respectively. The proportion of factories with 20 hands or under in 1909 was 80.14 per cent., this figure decreasing to 79.62 in 1914, whereas the larger factories employing over 100 hands shewed an increase from 3.34 to 3.59 per cent. The percentage of hands in factories employing from 21 to 100 hands was virtually the same during each of the two years. The average number employed in all establishments in 1909 was 20.16, and in 1914, 21.49.

**CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH ACCORDING TO
NUMBER OF HANDS EMPLOYED DURING THE YEARS 1909 to 1914.**

Year.	Establishments Employing on the Average—							
	20 hands and under.		21 to 100 hands.		101 hands and upwards.		Total.	
	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.
1909—								
Number ...	10,601	78,288	2,186	89,997	442	98,376	13,229	266,661
Average per establishment ...	...	7.38	...	41.17	...	222.57	...	20.16
Percentage to total ...	80.14	29.36	16.52	33.75	3.34	36.89	100.00	100.00
1910—								
Number ...	10,985	81,561	2,381	98,243	484	107,124	13,850	286,928
Average per establishment ...	...	7.42	...	41.26	...	221.33	...	20.72
Percentage to total ...	79.31	28.43	17.20	34.24	3.49	37.33	100.00	100.00
1911—								
Number ...	11,362	85,562	2,567	106,624	526	119,524	14,455	311,710
Average per establishment ...	...	7.53	...	41.54	...	227.23	...	21.56
Percentage to total ...	78.60	27.45	17.76	34.21	3.64	38.34	100.00	100.00
1912—								
Number ...	11,660	87,231	2,673	111,126	545	129,099	14,878	327,456
Average per establishment ...	...	7.48	...	41.57	...	236.88	...	22.01
Percentage to total ...	78.37	26.63	17.97	33.94	3.66	39.43	100.00	100.00
1913—								
Number ...	12,280	90,005	2,676	109,704	580	137,392	15,536	337,101
Average per establishment ...	...	7.33	...	41.00	...	236.88	...	21.70
Percentage to total ...	79.04	27.52	17.22	33.54	3.73	42.00	100.00	100.00
1914—								
Number ...	12,284	88,071	2,589	106,584	554	136,924	15,427	331,579
Average per establishment ...	...	7.17	...	41.16	...	247.15	...	21.49
Percentage to total ...	79.62	26.56	16.79	32.14	3.59	41.30	100.00	100.00

6. Outworkers.—The term “outworker” or “homeworker” has acquired a special meaning in connection with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in the employees’ own homes. Individuals working for themselves are not included. The following table gives particulars of the average number of outworkers connected with factories in each State during each year from 1909 to 1914 inclusive :—

NUMBER OF OUTWORKERS* CONNECTED WITH FACTORIES, 1909 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1909 ...	630	1,695	144	65	13	...	2,547
1910 ...	720	1,584	224	68	20	76	2,692
1911 ...	784	1,906	158	88	15	96	3,047
1912 ...	895	1,959	140	71	14	86	3,165
1913 ...	724	1,910	522	54	7	72	3,289
1914 ...	582	1,737	117	58	8	58	2,560

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

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

§ 4. Sex Distribution in Factories.

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

2. **Distribution of Employees according to Sex, 1909 to 1914.**—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 lower than one to three. In Victoria the ratio of females to males during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is slightly under one to two. In the remaining States the ratios during 1914 were—Queensland and South Australia, less than one female employed to every four males, Western Australia more than one to five, and Tasmania slightly less than one to six. The proportion for the whole of the Commonwealth was just below one to three. The employment of women is, however, largely confined to a few trades.

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

(i.) *Average Number of Males and Females Employed, 1909 to 1914.* The following table shews the average number of male and female employees in factories in each State from 1909 to 1914:—

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1909 to 1914.

State.	1909.	1910.	1911.	1912.	1913.	1914.
MALES.						
New South Wales ...	69,184	75,384	82,083	88,178	93,036	90,286
Victoria ...	62,822	66,309	73,573	77,565	80,054	79,772
Queensland ...	24,877	*27,165	*29,832	*33,254	*34,715	*35,717
South Australia ...	20,753	21,864	22,629	23,083	23,323	22,111
Western Australia ...	10,703	11,654	13,212	13,805	14,625	14,996
Tasmania...	8,132	8,277	8,737	8,391	8,354	7,613
Commonwealth ...	196,471	210,653	230,066	244,276	254,107	250,495

**AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN
MANUFACTURING INDUSTRIES, 1909 to 1914—Continued.**

State.	1909.	1910.	1911.	1912.	1913.	1914.
FEMALES.						
New South Wales ...	22,518	24,327	26,541	27,383	27,364	26,176
Victoria ...	34,533	35,867	38,375	38,543	38,690	38,627
Queensland ...	4,627	*6,779	*7,324	*7,694	*7,648	*7,565
South Australia ...	4,956	5,146	5,256	5,417	5,188	4,763
Western Australia ...	2,123	2,453	2,587	2,577	2,674	2,644
Tasmania ...	1,433	1,703	1,561	1,566	1,430	1,309
Commonwealth ...	70,190	76,275	81,644	83,180	82,994	81,084

* 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 54,024, or an annual average of 10,805, and in the number of female employees a total increase of 10,894, or an annual average of 2,179.

(ii.) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1909 to 1914.* 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 1909 to 1914 :—

**AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000
OF MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1909 to 1914.**

State.	1909.	1910.	1911.	1912.	1913.	1914.
MALES.						
New South Wales ...	826	883	947	967	979	931
Victoria ...	1,012	1,045	1,118	1,145	1,151	1,119
Queensland ...	801	*843	*892	*970	*932	*978
South Australia ...	1,040	1,071	1,084	1,077	1,062	1,002
Western Australia ...	712	754	805	802	823	826
Tasmania ...	835	848	900	854	823	741
Commonwealth ...	887	929	986	1,009	1,015	979
FEMALES.						
New South Wales ...	296	312	334	332	319	297
Victoria ...	539	554	579	567	555	543
Queensland ...	178	*252	*262	*266	*256	*244
South Australia ...	257	261	260	261	242	217
Western Australia ...	188	210	211	199	196	186
Tasmania ...	154	182	167	168	151	137
Commonwealth ...	341	363	379	374	361	343

* See note (*) to § 3, 1 (i).

3. **Rate of Increase for each Sex.**—The percentages of annual increase during the years 1910 to 1914 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, 1909 to 1914.

State.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.
MALES.					
	%	%	%	%	%
New South Wales ...	9.01	8.89	7.37	5.51	—2.96
Victoria ...	5.55	10.95	5.43	3.21	—0.35
Queensland ...	*9.20	*9.82	*11.47	*4.39	*2.89
South Australia ...	5.35	3.60	1.91	1.04	—5.20
Western Australia ...	8.89	13.37	4.49	5.94	2.54
Tasmania ...	1.78	5.56	—3.96	—0.44	—8.87
Commonwealth ...	7.24	9.23	6.15	4.02	—1.42
FEMALES.					
	%	%	%	%	%
New South Wales ...	8.04	9.10	3.17	—0.07	—4.34
Victoria ...	3.86	6.99	0.44	0.38	—0.16
Queensland ...	*46.51	*8.04	*4.99	*—0.60	*—1.08
South Australia ...	3.83	2.14	3.06	—4.23	—8.19
Western Australia ...	15.54	5.46	—0.39	3.76	—1.12
Tasmania ...	18.84	—8.34	0.32	—8.68	—8.46
Commonwealth ...	8.67	7.04	1.88	—0.22	—2.36

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

The above table shews that taking the Commonwealth as a whole for the first year of the quinquennial period under discussion, there has been relatively a larger increase in the number of female than in the number of male employees. This position, however, was reversed in 1911, 1912, and 1913, when the percentage of increase of male employees exceeded that of female in every State, with the exception of New South Wales in 1911 and South Australia in 1912. During 1914 the percentage of increase in females predominated in New South Wales and South Australia, and also in the total of the Commonwealth. This matter is referred to further in the following paragraph.

4. **Ratio of Female Employment in Factories.**—The extent to which females are employed in the factories of the Commonwealth may perhaps be best shewn by giving the masculinity of employees for each State for a series of years. The following table furnishes particulars for each of the years 1903 to 1914 inclusive:—

RATIO OF MALES TO FEMALES PER 100 OF BOTH SEXES COMBINED, 1903 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1903	59.8	35.7	*66.8	59.7	76.2	65.6	52.5
1904	57.2	32.4	*67.1	59.7	74.7	67.3	50.6
1905	55.5	32.0	*66.8	64.3	74.2	67.8	50.3
1906	54.1	32.2	*66.6	63.2	70.8	69.9	49.6
1907	52.6	31.3	65.9	63.0	69.0	69.9	48.6
1908	51.8	29.8	68.8	62.1	68.3	68.1	48.1
1909	50.9	29.1	68.7	61.5	66.9	70.0	47.4
1910	51.2	29.6	†60.1	61.9	65.2	65.9	46.8
1911	51.1	31.5	†60.6	†62.3	67.3	69.7	47.6
1912	52.6	33.6	†62.4	62.0	68.6	68.6	49.2
1913	54.5	34.8	†63.9	63.6	69.1	70.8	50.8
1914	55.6	34.8	†65.0	64.6	70.0	70.7	51.1

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

This table shews that the proportion of the sexes has not materially changed during the past ten years, the 1914 figures for the whole of the Commonwealth being almost identical with those of 1905. The tables given in the succeeding paragraph shew that the comparatively high ratios for females have been due not 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 1914.—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 1914 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, 1914.**

Class.	N.S.W.	Vict.	Q'land.	S. Aust.	W.Aust.	Tas.	Cwlth.
AVERAGE NUMBER.							
VI. Food, drink, etc. ...	3,705	3,541	699	561	176	167	8,849
VII. Clothing and textile fabrics ...	17,517	29,615	5,839	3,453	2,091	966	59,481
VIII. Books, paper, printing, etc. ...	2,378	2,405	641	468	241	94	6,227
All other classes ...	2,576	3,066	386	281	136	82	6,527
Total ...	26,176	38,627	7,565	4,763	2,644	1,309	81,084

PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES.

VI. Food, drink, etc. ...	14.15	9.17	9.24	11.78	6.66	12.76	10.91
VII. Clothing and textile fabrics ...	66.92	76.67	77.19	72.50	79.09	73.80	73.36
VIII. Books, paper, printing, etc. ...	9.09	6.22	8.47	9.82	9.11	7.18	7.68
All other classes ...	9.84	7.94	5.10	5.90	5.14	6.26	8.05
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, are shewn in the following table :—

FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII. DURING 1914.

Industry.	New South Wales.			Victoria.			Other States.		
	Males.	Femls.	Femi- ninity.	Males.	Femls.	Femi- ninity.	Males.	Femls.	Femi- ninity.
Woollen & tweed mills	379	576	20.63	823	994	9.41	238	280	8.11
Boots and shoes ...	2,634	1,471	-28.33	4,391	2,533	-26.83	1,428	735	-32.04
Slop clothing	2,904	7,586	44.63	2,510	8,315	53.63	2,228	6,231	47.32
Clothing (tailoring) }									
Dressmaking & millin'y	108	4,394	95.20	261	9,177	94.47	29	3,349	98.28
Dyeworks and cleaning	58	46	-11.54	72	103	17.71	28	14	-33.33
Furriers ...	35	39	5.41	58	144	42.57	2	4	33.33
Hats and caps ...	511	918	20.48	662	976	19.17	94	149	22.63
Waterproof and oilskin	21	68	52.80	58	204	55.73	...	...	...
Shirts, ties, and scarfs	239	2,168	80.14	385	6,630	89.02	87	1,432	88.55
Rope and cordage ...	275	7	-95.04	474	346	-15.61	159	92	-26.69
Tents and tarpaulins...	212	244	7.02	124	82	-20.39	95	63	-20.25
Other ...	...	...	...	13	111	79.03	...	...	...
Total Class VII....	7,376	17,517	40.74	9,831	29,615	50.15	4,388	12,349	47.57

* Excess of females over males per 100 of both sexes combined.

NOTE.—Minus sign (-) intimates excess of males over females.

§ 5. Child Labour in Factories.

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

2. **Average Number of Children Employed in Factories, 1909 to 1914.**—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 1909 to 1914.

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1909 to 1914.

State.	1909.	1910.	1911.	1912.	1913.	1914.
MALES.						
New South Wales	2,433	2,452	2,474	2,225	2,385	2,434
Victoria ...	2,817	2,753	2,623	2,652	2,743	2,898
Queensland ...	1,001	*1,031	*1,176	*1,114	*1,122	*1,148
South Australia ...	1,094	1,082	999	1,078	1,122	1,064
Western Australia	289	340	368	356	346	381
Tasmania ...	258	282	280	322	283	213
Commonwealth ...	7,892	7,940	7,920	7,747	8,001	8,138

**AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES,
1909 TO 1914.—Continued.**

State.	1909.	1910.	1911.	1912.	1913.	1914.
FEMALES.						
New South Wales ...	1,973	2,025	2,267	2,093	2,086	2,326
Victoria ...	2,496	2,174	1,937	1,740	1,840	1,816
Queensland ...	556	*733	*818	*764	*701	*713
South Australia ...	577	702	555	704	611	522
Western Australia ...	242	266	293	334	360	361
Tasmania ...	128	96	131	121	141	77
Commonwealth ...	5,972	5,996	6,001	5,756	5,739	5,815

TOTAL.

New South Wales ...	4,406	4,477	4,741	4,318	4,471	4,760
Victoria ...	5,313	4,927	4,560	4,392	4,583	4,714
Queensland ...	1,557	*1,764	*1,994	*1,878	*1,823	*1,861
South Australia ...	1,671	1,784	1,554	1,782	1,733	1,586
Western Australia ...	531	606	661	690	706	742
Tasmania ...	386	378	411	443	424	290
Commonwealth ...	13,864	13,936	13,921	13,503	13,740	13,953

* See Note (*) to § 3. 1 (i).

3. Percentage of Children to Total Persons Employed.—The foregoing table shows a general increase in several of the States in the number of children employed in factories during the past quinquennial period. These increases, however, when examined in conjunction with the total number of persons employed, shew in every State, taking one year with another, a fairly regular decrease in the percentage of child labour. This decrease is particularly noticeable in Victoria, the percentage falling from 5.46 in 1909 to 3.98 in 1914.

**PERCENTAGE OF CHILDREN IN FACTORIES TO TOTAL NUMBER OF EMPLOYEES,
1909 TO 1914.**

State.	1909.	1910.	1911.	1912.	1913.	1914.
	%	%	%	%	%	%
New South Wales ...	4.80	4.49	4.36	3.74	3.71	4.08
Victoria ...	5.46	4.82	4.07	3.78	3.86	3.98
Queensland ...	5.28	5.20	5.37	4.59	4.30	4.30
South Australia ...	6.50	6.60	5.57	6.25	6.08	5.90
Western Australia ...	4.14	4.30	4.18	4.21	4.08	4.21
Tasmania ...	4.04	3.79	3.99	4.45	4.33	3.25
Commonwealth ...	5.20	4.86	4.47	4.12	4.08	4.21

4. Industries Employing Child Labour, 1914.—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the table below, which shews the average number of children of each sex employed in the several industries indicated, in each State during the year 1914 :—

NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1914.

Class.	Industry.	N.S.W.		Victoria.		Q'land.		S. Aust.		W.A.		Tas.		C'w'lth.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III.	Bricks, tiles, pottery and earthenware ...	43	...	71	3	12	...	16	...	7	...	5	...	154	3
IV.	Joinery, boxes, cases, etc. ...	59	...	74	...	49	2	40	...	15	1	6	...	243	3
V.	Engin'ring, ironworks, and foundries ...	261	4	262	...	86	...	98	...	61	...	12	...	780	4
"	Galvanised iron-work- ing and tinsmithing ...	99	15	132	30	74	...	99	3	...	...	4	...	408	48
"	Railway carriages, rail- way & tramway work- shops ...	46	...	193	...	12	...	73	...	21	...	2	...	347	...
VI.	Biscuits, cakes, etc. ...	143	115	75	49	13	7	5	6	...	...	21	...	257	177
"	Confectionery ...	46	57	29	29	20	21	20	24	28	22	1	...	144	153
"	Jams, pickles, sauces, etc. ...	4	4	29	35	7	3	8	6	4	2	17	1	69	51
"	Aerated waters, cor- dials, etc. ...	16	1	68	2	62	10	10	...	14	...	4	...	174	13
"	Tobacco, cigars, etc. ...	83	100	30	8	...	...	2	...	1	5	...	...	116	113
VII.	Woollen, tweed, and cotton mills... ..	49	79	117	85	5	14	14	16	...	...	1	4	186	198
"	Boots and shoes ...	144	148	154	200	29	42	34	42	9	7	7	5	377	444
"	Clothing (tailoring and slop)... ..	79	550	92	248	53	266	26	86	20	97	11	23	281	1,270
"	Dressmaking and mil- linery ...	5	407	5	408	...	...	...	103	...	144	...	32	10	1,094
"	Hats and caps ...	34	99	40	25	3	10	3	3	...	...	...	1	80	138
"	Shirts, ties, scarfs, etc.	9	196	10	358	6	83	2	62	3	38	...	1	30	738
VIII.	Electrotyping, printing and binding... ..	318	152	435	117	204	89	78	9	54	27	32	7	1,121	401
"	Paper making, paper boxes, etc. ...	57	136	21	34	2	14	26	58	5	8	...	...	111	250
XI.	Coach & wagon build- ing, etc. ...	51	...	110	...	34	...	40	...	10	...	9	...	254	...
XIII.	Billiard tables, cabinet making and furniture	81	1	58	...	58	5	48	...	17	...	14	...	276	6

5. **Apprenticeship.**—It is obvious that the age of apprenticeship in each State must be limited by the conditions governing the employment of child labour in factories. The early Apprentices Acts in some of the States are apparently in conflict on this point with the Factories Acts. The statutes limiting the age at which children may begin to work may be regarded as applicable by way of preventing too early apprenticeship, as may also 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 and specify the term of apprenticeship. 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 1914 was £166,405,923, of which amount the sum of £99,778,884 represents the value of the raw materials used. The difference between these two amounts, viz., £66,627,039, 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 1914 was £34,090,428.

2. **Amount of Salaries and Wages Paid, 1914.**—The total amount of salaries and wages paid during the year 1914 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 herein 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 lacking in essential details.

AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES IN COMMONWEALTH, 1914.*

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. ...	355,039	314,058	61,306	91,337	14,480	17,770	883,990
II. Treating oils and fats, animal, vegetable, etc. ...	101,859	74,946	14,566	27,571	10,508	3,162	232,612
III. Processes in stone, clay, glass, etc. ...	776,997	491,402	64,870	160,191	88,995	22,297	1,604,752
IV. Working in wood ...	895,202	823,585	549,228	190,684	908,187	170,249	3,537,135
V. Metal works, machinery, etc. ...	3,391,462	2,402,140	826,587	1,101,664	491,726	204,935	8,418,514
VI. Connected with food and drink, etc. ...	1,709,597	1,572,851	1,509,187	379,049	207,433	116,321	5,494,438
VII. Clothing and textile fabrics, etc. ...	1,786,584	2,411,619	461,714	296,457	186,119	90,682	5,233,175
VIII. Books, paper, printing and engraving ...	1,067,648	998,737	344,016	191,513	176,253	83,033	2,861,200
IX. Musical instruments, etc. ...	44,653	20,119	...	1,741	...	...	66,513
X. Arms and explosives ...	81,499	93,337	...	350	...	...	130,186
XI. Vehicles and fittings, saddlery and harness, etc. ...	433,016	470,600	122,210	140,265	61,729	40,045	1,267,805
XII. Ship and boat building and repairing... ..	669,916	77,472	12,220	18,709	4,865	4,221	787,403
XIII. Furniture, bedding and upholstery ...	389,634	292,668	101,820	97,806	55,666	27,326	964,920
XIV. Drugs, chemicals, and by-products ...	147,435	182,170	4,681	71,923	56,780	609	463,598
XV. Surgical and other scientific instruments ...	11,198	9,924	3,621	833	1,606	...	27,182
XVI. Jewellery, timepieces, and platedware ...	89,769	93,757	12,768	13,660	7,365	3,370	220,689
XVII. Heat, light, and power ...	523,234	521,163	105,325	144,371	58,530	49,576	1,402,199
XVIII. Leatherware, n.e.i. ...	46,886	45,652	7,484	2,353	...	...	102,375
XIX. Minor wares, n.e.i....	102,518	198,740	9,886	15,879	12,186	2,233	341,742
Total	12,654,446	11,099,940	4,211,489	2,946,296	2,342,428	835,829	34,090,428

* 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 £8,418,514, or 24.69 per cent. on the total amount; the minimum amount was in Class XV., £27,182, or 0.08 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 1909 to 1914; 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, 1909 to 1914.

Year.	Particulars.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
		£	£	£	£	£	£	£
1909	Total amount paid ...	7,665,125	6,807,851	2,324,005	2,028,691	1,506,360	779,624	21,111,656
	Average per employee ...	87.27	73.57	83.09	83.08	122.06	86.44	82.97
1910	Total amount paid ...	8,687,007	7,600,932	2,830,704	2,323,398	1,683,657	740,463	23,866,161
	Average per employee ...	90.78	78.18	86.79	90.44	123.93	78.81	87.04
1911	Total amount paid ...	10,047,656	8,911,019	3,113,835	2,645,386	1,982,883	827,592	27,528,371
	Average per employee ...	96.35	83.48	87.15	99.64	129.80	84.47	92.26
1912	Total amount paid ...	11,592,052	10,102,244	3,699,065	2,869,653	2,169,144	855,334	31,287,492
	Average per employee ...	104.44	91.19	93.88	105.62	136.67	90.41	99.74
1913	Total amount paid ...	12,683,384	10,714,336	4,075,191	3,034,537	2,215,187	883,452	33,606,087
	Average per employee ...	109.66	94.74	100.05	111.66	132.31	95.18	104.14
1914	Total amount paid ...	12,654,446	11,099,940	4,211,489	2,946,296	2,342,428	835,829	34,090,428
	Average per employee ...	112.98	98.50	100.91	115.31	137.30	98.82	107.37

In comparing the figures in the preceding 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 hands employed in Class VII., of whom a large percentage are women and children. The position occupied by Western Australia is principally due to the high ratio of male to female employees in that State.

It will be noted that 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 1909-14 there has been an increase of 61.48 per cent. on the total amount of wages paid and 29.41 per cent. on the average paid per employee.

The following tables shew the approximate amount paid in salaries and wages to males and females in each class of industry in each State during 1914, and total amounts paid to each sex in New South Wales and Victorian factories during the last six years, in South Australia and Tasmania during the last four years, and in Queensland and Western Australia during 1912, 1913 and 1914 :—

**AMOUNT* OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS
EMPLOYED IN EACH CLASS OF INDUSTRY IN THE SEVERAL STATES OF THE
COMMONWEALTH DURING 1914.**

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	C'wealth.
MALES.							
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	380,368	312,951	61,024	90,899	14,480	17,724	877,446
II. Treating oils and fats, animal, vegetable, etc.	91,614	71,440	14,132	26,861	10,482	2,981	217,510
III. Processes in stone, clay, glass, etc.	774,099	497,684	64,641	152,969	88,528	22,297	1,597,218
IV. Working in wood	890,275	819,157	545,705	189,745	908,143	169,475	3,522,500
V. Metal works, machinery, etc.	3,371,877	2,386,063	823,486	1,098,918	490,399	204,312	8,375,055
VI. Connected with food and drink, etc.	1,521,275	1,392,960	1,477,877	360,991	198,826	109,185	5,061,114
VII. Clothing and textile fabrics, etc.	864,219	1,035,769	211,238	135,638	72,577	52,423	2,371,864
VIII. Books, paper, printing and engraving	945,708	880,618	314,482	171,980	163,061	79,291	2,555,140
IX. Musical instruments, etc.	42,934	19,695	...	1,741	...	...	64,370
X. Arms and explosives	81,281	55,795	...	350	...	...	137,426
XI. Vehicles and fittings, saddlery and harness, etc.	425,867	462,254	119,665	138,675	60,943	38,538	1,245,942
XII. Ship and boat building and repairing	669,773	77,472	12,220	18,709	4,865	4,221	787,260
XIII. Furniture, bedding and upholstery	365,692	277,295	97,149	96,765	54,156	26,529	917,586
XIV. Drugs, chemicals and by-products	118,466	165,117	3,590	69,544	54,841	609	412,167
XV. Surgical and other scientific instruments	10,055	9,114	3,426	833	1,526	...	24,954
XVI. Jewellery, timepieces and platedware	84,409	89,976	11,920	13,151	7,307	3,320	210,083
XVII. Heat, light and power	520,855	499,495	104,717	143,177	58,530	49,376	1,376,150
XVIII. Leatherware, n.e.i.	40,190	37,564	6,294	1,913	...	...	85,961
XIX. Minor wares, n.e.i.	86,561	171,917	8,906	14,744	11,297	2,019	295,444
Total	11,285,518	9,252,336	3,880,472	2,734,603	2,199,961	782,300	30,135,190

* Exclusive of amount drawn by working proprietors.

AMOUNT* OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS EMPLOYED IN EACH CLASS OF INDUSTRY, Etc.—Continued.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	C'wealth.
FEMALES.							
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural & pastoral pursuits, etc.	4,671	1,107	292	438	...	46	6,544
II. Treating oils and fats, animal, vegetable, etc.	10,245	3,506	434	710	26	181	15,102
III. Processes in stone, clay, glass, etc.	2,898	3,718	229	222	467	...	7,534
IV. Working in wood	4,927	4,428	3,523	939	44	774	14,635
V. Metal works, machinery, etc.	19,585	16,077	3,101	2,746	1,327	623	43,459
VI. Connected with food and drink, etc.	188,322	179,891	31,310	18,058	8,607	7,136	433,324
VII. Clothing and textile fabrics, etc.	922,365	1,375,850	250,476	160,819	113,542	38,259	2,861,311
VIII. Books, paper, printing and engraving	121,940	118,119	29,534	19,533	13,192	3,742	306,060
IX. Musical instruments, etc.	1,719	424	...	...	...	...	2,143
X. Arms and explosives	218	42,542	...	...	...	...	42,760
XI. Vehicles and fittings, saddlery & harness, etc.	7,149	8,346	2,545	1,530	786	1,507	21,863
XII. Ship and boat building and repairing	143	...	...	...	...	...	143
XIII. Furniture, bedding, and upholstery	23,942	15,373	4,671	1,041	1,510	797	47,334
XIV. Drugs, chemicals, and by-products	28,969	17,053	1,091	2,379	1,939	...	51,431
XV. Surgical and other scientific instruments	1,143	810	195	...	80	...	2,228
XVI. Jewellery, timepieces and plated ware	5,360	3,781	848	509	58	50	10,606
XVII. Heat, light, and power	2,372	21,668	608	1,194	...	200	26,049
XVIII. Leatherware, n.e.i.	6,696	8,088	1,190	440	...	...	16,414
XIX. Minor wares, n.e.i.	16,257	26,823	980	1,135	889	214	46,298
Total	1,368,923	1,847,604	331,017	211,693	142,467	53,529	3,955,238

* Exclusive of amount drawn by working proprietors.

AMOUNT* OF SALARIES AND WAGES PAID TO MALES AND FEMALES IN FACTORIES IN CERTAIN STATES, 1909 to 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
MALES.							
1909. Amount paid	£ 6,823,732	5,607,703	...	...	...	...	...
Per cent. on total	89.02	82.37	...	...	...	...	...
Average per employee	£ 103.96	95.61	...	...	...	...	...
1910. Amount paid	£ 7,724,310	6,273,921	...	...	...	...	...
Per cent. on total	88.92	82.54	...	...	...	...	...
Average per employee	£ 107.84	101.20	...	...	...	...	...
1911. Amount paid	£ 8,917,577	7,357,735	...	2,430,263	...	773,900	...
Per cent. on total	88.76	82.57	...	91.87	...	93.51	...
Average per employee	£ 114.22	106.62	...	113.66	...	93.67	...
1912. Amount paid	£ 10,283,733	8,388,613	3,386,191	2,647,842	2,024,318	798,098	27,528,795
Per cent. on total	88.71	83.04	91.54	92.25	93.34	93.31	87.99
Average per employee	£ 122.50	115.18	106.57	121.41	152.02	100.85	118.86
1913. Amount paid	£ 11,323,791	8,925,814	3,744,050	2,809,066	2,068,212	826,358	29,697,291
Per cent. on total	89.28	83.30	91.87	92.57	93.37	93.54	88.37
Average per employee	£ 127.76	118.94	112.95	127.43	146.79	105.09	123.32
1914. Amount paid	£ 11,285,518	9,252,336	3,880,472	2,734,603	2,199,961	782,300	30,135,190
Per cent. on total	89.18	83.35	92.14	92.81	93.92	93.60	88.40
Average per employee	£ 131.00	123.84	113.39	131.21	152.31	109.24	126.87
FEMALES.							
1909. Amount paid	£ 841,393	1,200,148	...	...	...	...	...
Per cent. on total	10.98	17.63	...	...	...	...	...
Average per employee	£ 37.91	35.41	...	...	...	...	...
1910. Amount paid	£ 962,697	1,327,011	...	...	...	...	...
Per cent. on total	11.08	17.46	...	...	...	...	...
Average per employee	£ 40.08	37.67	...	...	...	...	...
1911. Amount paid	£ 1,130,079	1,553,284	...	215,123	...	53,692	...
Per cent. on total	11.24	17.43	...	8.13	...	6.49	...
Average per employee	£ 43.10	41.16	...	41.44	...	34.98	...
1912. Amount paid	£ 1,308,319	1,713,631	312,874	222,123	144,514	57,236	3,758,697
Per cent. on total	11.29	16.96	8.46	7.75	6.66	6.69	12.10
Average per employee	£ 43.39	45.15	41.00	41.43	56.56	37.00	45.79
1913. Amount paid	£ 1,359,593	1,788,522	331,141	225,471	146,975	57,094	3,908,796
Per cent. on total	10.72	16.70	8.13	7.43	6.63	6.46	11.63
Average per employee	£ 50.29	47.01	43.66	43.94	55.42	40.24	47.74
1914. Amount paid	£ 1,368,923	1,847,604	331,017	211,693	142,467	53,529	3,955,238
Per cent. on total	10.92	16.65	7.86	7.19	6.08	6.40	11.60
Average per employee	£ 52.94	48.65	44.06	44.95	54.44	41.27	49.46

* Exclusive of amounts drawn by working proprietors.

A further analysis of salaries and wages paid during 1914 is given in the following table, the amounts paid to managers, overseers, etc., being differentiated from those paid to other employees. As previously mentioned, amounts drawn by working proprietors are excluded in all cases.

**DETAILS OF SALARIES AND WAGES PAID TO MANAGERS, OVERSEERS, Etc.,
AND OTHER EMPLOYEES IN FACTORIES DURING 1914.**

Class of Industry.	Salaries and Wages Paid to—						
	Managers, Overseers, Accountants, and Clerks.		All Other Employees.		All Employees.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	96,956	1,726	780,490	4,818	877,446	6,544	883,990
II. Treating oils and fats, animal, vegetable, etc.	48,885	3,185	168,625	11,917	217,510	15,102	232,612
III. Processes in stone, clay, glass, etc.	149,822	3,481	1,447,396	4,053	1,597,218	7,534	1,604,752
IV. Working in wood	351,311	12,810	3,171,189	1,925	3,522,500	14,635	3,537,135
V. Metal works, machinery, etc.	717,227	23,956	7,657,828	19,503	8,375,055	43,459	8,418,514
VI. Connected with food and drink, etc.	917,357	40,957	4,143,757	392,367	5,061,114	433,324	5,494,438
VII. Clothing and textile fabrics, etc.	370,841	160,534	2,001,023	2,700,777	2,371,864	2,861,311	5,233,175
VIII. Books, paper, printing and engraving	507,841	44,805	2,047,299	261,255	2,555,140	306,060	2,861,200
IX. Musical instruments, etc.	8,758	1,106	55,612	1,037	64,370	2,143	66,513
X. Arms and explosives	14,873	591	122,553	42,169	137,426	42,760	180,186
XI. Vehicles and fittings, saddlery and harness, etc.	111,630	9,870	1,134,312	11,993	1,245,942	21,863	1,267,805
XII. Ship and boat building and repairing	67,273	143	719,987	...	787,260	143	787,403
XIII. Furniture, bedding, & upholstery	68,489	7,664	849,097	39,670	917,586	47,334	964,920
XIV. Drugs, chemicals, and by-products	84,689	6,589	327,478	44,842	412,167	51,431	463,598
XV. Surgical & other scientific instruments	4,969	391	19,985	1,837	24,954	2,228	27,182
XVI. Jewellery, timepieces, and platedware	20,948	3,375	189,135	7,231	210,083	10,606	220,689
XVII. Heat, light, and power	230,058	5,787	1,146,092	20,262	1,376,150	26,049	1,402,199
XVIII. Leatherware, n.e.i.	11,345	1,263	74,616	15,151	85,961	16,414	102,375
XIX. Minor wares, n.e.i.	36,464	3,397	258,980	42,901	295,444	46,298	341,742
Total	3,819,736	331,630	26,315,454	3,623,608	30,135,190	3,955,238	34,090,428
Average paid per employee	200.23	88.67	120.47	47.52	126.58	49.45	107.37

3. Value of Fuel and Light used in Factories, 1914.—The amount expended in factories on fuel and light is of considerable importance; in 1914 it amounted to £3,306,582, being an increase on the previous year's figures of £65,681. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £937,228; Class VI., Connected with Food, Drink, etc., £717,356; Class XVII., Heat, Light, Power, etc., £610,031, of which amount £499,597 was expended on generating

electric light and power; and Class III., £423,694, of which £319,744 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 1914, and of the total used for each of the last six years:—

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH, 1914.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	47,530	34,141	12,125	10,490	1,737	2,299	108,322
II. Treating oils and fats, animal, vegetable, etc. ...	21,239	13,497	1,931	6,308	1,125	363	44,463
III. Processes in stone, clay, glass, etc. ...	206,343	124,695	12,475	44,919	26,528	8,734	423,694
IV. Working in wood. ...	22,744	15,507	9,925	4,165	2,847	1,574	56,762
V. Metal wks., machinery, etc. ...	410,267	159,592	42,426	214,507	34,592	75,844	937,228
VI. Connected with food and drink, etc. ...	216,154	209,406	190,828	55,816	30,630	14,522	717,356
VII. Clothing and textile fabrics, etc. ...	39,903	64,609	5,767	7,656	3,780	1,758	123,473
VIII. Books, paper, printing, and engraving ...	32,111	42,834	27,125	7,471	5,900	1,436	116,877
IX. Musical instruments, etc. ...	1,486	160	...	22	...	...	1,688
X. Arms and explosives ...	3,206	4,825	...	6	...	...	8,037
XI. Vehicles and fittings, saddlery and harness, etc. ...	16,367	15,080	1,946	5,271	2,830	1,155	42,649
XII. Ship and boat building and repairing ...	18,203	2,357	271	328	36	70	21,265
XIII. Furniture, bedding, and upholstery ...	8,511	7,308	2,339	2,583	1,611	755	23,107
XIV. Drugs, chemicals, and by-products ...	13,878	14,880	670	8,857	5,091	61	43,437
XV. Surgical and other scientific instruments ...	276	329	89	23	65	...	782
XVI. Jewellery, timepieces, and plated ware ...	1,812	2,885	382	610	155	80	5,924
XVII. Heat, light, and power ...	295,911	76,492	26,636	37,671	93,014	80,307	610,631
XVIII. Leatherware, n.e.l. ...	723	1,404	186	26	...	...	2,339
XIX. Minor wares, n.e.l. ...	4,183	14,304	98	258	251	54	19,148
Total ...	1,360,847	804,325	335,219	406,987	210,192	189,012	3,306,582

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1909 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1909 ...	940,840	566,768	194,776	269,646	140,111	115,864	2,228,005
1910 ...	1,184,282	639,135	216,890	313,731	150,311	130,962	2,635,311
1911 ...	1,242,613	637,497	222,560	338,565	176,659	140,816	2,758,710
1912 ...	1,360,141	683,376	261,978	363,403	191,025	187,461	3,047,384
1913 ...	1,371,425	739,835	328,519	417,280	198,161	185,681	3,240,901
1914 ...	1,360,847	804,325	335,219	406,987	210,192	189,012	3,306,582

4. Value of Raw Materials used in Factories, 1914.—The total value of raw materials worked up (i.e., exclusive of fuel, lubricants, etc.) in factories in the Commonwealth during 1914 was £99,778,884, which represents 59.96 per cent. of the total value of the finished products. (See next paragraph hereof.) The following table shews the value of the raw materials worked up in various classes of industry in each State during the year 1914:—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH, 1914.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	4,846,704	2,580,862	1,340,105	653,350	168,323	191,943	9,781,285
II. Treating oils and fats, animal, vegetable, etc. ...	861,539	486,334	61,413	132,249	86,274	8,764	1,636,573
III. Processes in stone, clay, glass, etc. ...	361,286	216,604	15,106	60,075	28,969	7,501	689,541
IV. Working in wood... ..	2,121,979	1,209,966	941,237	699,083	128,742	133,251	5,234,258
V. Metal wks., machinery, etc. ...	7,339,887	3,188,553	1,061,771	2,596,263	471,741	641,371	15,299,586
VI. Connected with food and drink, etc. ...	19,674,332	12,091,986	10,747,499	2,492,456	921,905	689,653	46,617,831
VII. Clothing and textile fabrics, etc. ...	3,196,161	4,907,844	892,641	440,616	306,755	123,236	9,866,253
VIII. Books, paper, printing, and engraving ...	973,190	1,014,490	286,303	190,388	113,212	51,156	2,628,739
IX. Musical instruments, etc. ...	58,722	13,650	...	1,304	...	...	73,576
X. Arms and explosives ...	23,813	225,690	...	50	...	...	249,553
XI. Vehicles and fittings, saddlery and harness, etc.	411,066	476,155	137,186	145,584	69,922	82,068	1,321,981
XII. Ship and boat building and repairing ...	247,469	59,388	10,164	8,077	4,997	3,029	333,124
XIII. Furniture, bedding, and upholstery ...	554,181	444,383	120,593	96,327	74,447	29,683	1,319,614
XIV. Drugs, chemicals, and by-products ...	737,464	707,022	10,899	308,441	183,595	9,215	1,956,636
XV. Surgical and other scientific instruments ...	5,878	8,262	2,788	623	568	...	18,119
XVI. Jewellery, timepieces, and plated ware ...	112,097	182,714	16,356	13,886	10,146	2,662	337,861
XVII. Heat, light, and power ...	662,719	414,166	40,754	65,235	25,467	18,079	1,226,440
XVIII. Leatherware, n.e.i. ...	151,539	186,223	11,946	4,379	...	...	354,087
XIX. Minor wares, n.e.i. ...	209,164	572,402	14,033	22,869	13,250	2,109	833,827
Total	42,549,190	28,986,694	15,710,794	7,931,175	2,608,312	1,992,719	99,778,884

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £46,617,831. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £15,299,586 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £18,119. The year 1910 was the first for which reliable and complete returns were collected in every State relating to the value of raw materials worked up in factories; the following table, however, gives particulars for the six years ended 1914, so far as information is available:—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1909 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1909 ...	27,314,486	19,706,530	7,658,195	6,004,459	1,529,211	*1,816,000	64,028,881
1910 ...	31,379,604	21,941,255	9,476,819	6,695,255	1,809,959	1,456,369	72,759,261
1911 ...	33,670,951	25,029,525	8,788,335	7,503,979	2,059,346	1,952,240	79,004,376
1912 ...	37,122,441	27,002,302	11,078,954	8,199,110	2,536,195	2,286,618	88,275,620
1913 ...	40,537,476	28,465,699	14,183,539	8,354,258	2,782,839	2,083,666	96,407,477
1914 ...	42,549,190	28,986,694	15,710,794	7,931,175	2,608,312	1,992,719	99,778,884

* Estimated on basis of partial returns and subsequent years' figures.

5. **Total Value of Output of Manufacturing Industries, 1914.**—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State during the year 1914 is shewn in the following table. The figures given represent not only the increased value due to the process of manufacture, but also include the value of the raw materials used. The difference between the value of the materials used and the total output (see paragraph 6 hereof) is the real value of production from manufactories:—

TOTAL VALUE OF OUTPUT OF COMMONWEALTH, 1914.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
	£	£		£	£	£	£
I. Treating raw material, product of agricultural & pastoral pursuits, etc.	5,642,150	3,287,317	1,554,897	795,956	212,236	237,997	11,730,553
II. Treating oils and fats, animal, vegetable, etc.	1,176,404	763,974	119,348	187,117	123,613	14,787	2,385,243
III. Processes in stone, clay, glass, etc.	1,891,733	1,134,915	135,597	334,076	176,079	53,225	3,725,535
IV. Working in wood	3,461,373	2,470,884	1,935,315	1,011,439	1,308,928	378,714	10,566,653
V. Metal works, mach'y, etc.	13,908,681	6,772,626	2,601,997	4,549,255	1,015,699	1,060,013	29,908,271
VI. Connected with food and drink, etc.	24,910,252	16,135,907	15,392,095	3,431,957	1,543,547	1,000,855	62,414,613
VII. Clothing and textile fabrics, etc.	6,049,263	8,737,487	1,702,209	879,020	570,072	268,219	18,256,270
VIII. Books, paper, printing, and engraving...	2,528,515	2,986,410	841,179	505,281	438,625	181,505	7,481,515
IX. Musical instruments, etc.	135,524	39,887	...	3,980	...	...	179,391
X. Arms and explosives	135,341	366,266	...	400	...	...	502,007
XI. Vehicles and fittings, saddlery and harness, etc.	1,061,414	1,183,063	360,552	364,001	163,317	149,547	3,281,894
XII. Ship and boat building and repairing	1,034,070	163,970	28,756	34,051	12,251	8,722	1,281,820
XIII. Furniture, bedding, and upholstery	1,120,888	886,133	302,961	224,813	155,169	74,543	2,764,507
XIV. Drugs, chemicals, and by-products	1,239,934	1,222,929	33,888	452,923	292,064	10,360	3,252,098
XV. Surgical and other scientific instruments	24,730	25,218	8,600	2,320	2,875	...	63,743
XVI. Jewellery, timepieces, and platedware	244,561	356,188	35,385	39,794	19,542	8,494	703,964
XVII. Heat, light, and power	3,017,617	1,693,988	385,797	343,769	317,798	215,584	5,974,553
XVIII. Leatherware, n.e.i.	250,500	271,487	26,854	9,204	...	...	558,045
XIX. Minor wares, n.e.i.	375,797	891,336	26,615	46,614	29,697	5,189	1,375,248
Total	68,208,747	49,439,985	25,491,955	13,215,970	6,381,512	3,667,754	166,405,923

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 £68,208,747, or 40.99 per cent. on the total for the Commonwealth. The next State in order of value is Victoria, which produced 29.71 per cent.; the value of the output of Queensland was 15.32 per cent.; of South Australia 7.94 per cent.; of Western Australia 3.84 per cent.; and of Tasmania 2.20 per cent. The four most important classes in order of value of output (Classes VI., V., VII. and I.) are the same as in order of value of raw materials used. The following statement shews the value of output of factories, value per employee, and value per head of mean population in each State during the six years ended 1914:—

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1909 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1909	42,960,689	32,898,235	12,823,695	9,928,105	4,008,604	*3,339,000	105,958,328
1910	49,615,643	36,660,854	15,792,109	11,184,695	4,533,611	3,073,246	120,860,158
1911	54,346,011	41,747,863	15,675,662	12,416,381	5,311,086	3,525,087	133,022,090
1912	61,163,328	45,410,773	18,798,904	13,438,218	6,092,268	3,871,916	148,775,407
1913	65,672,495	47,936,647	23,688,789	13,998,670	6,481,331	3,782,831	161,560,763
1914	68,208,747	49,439,985	25,491,955	13,215,970	6,381,512	3,667,754	166,405,923

PER EMPLOYEE.†

	£	£	£	£	£	£	£
1909	469	338	435	386	313	349	397
1910	498	359	465	414	321	308	421
1911	500	373	422	445	336	342	427
1912	529	391	459	472	372	389	454
1913	545	404	559	491	375	387	479
1914	586	418	589	492	362	411	502

PER HEAD OF MEAN POPULATION.

	£	£	£	£	£	£	£
1909	26.88	26.09	23.16	25.33	15.23	17.53	24.79
1910	30.38	28.59	26.69	27.88	16.73	16.09	27.66
1911	32.70	31.62	25.52	30.19	18.52	18.52	29.62
1912	35.22	33.48	29.77	31.87	20.21	20.20	32.03
1913	36.3	34.41	36.30	32.29	20.64	19.30	33.67
1914	36.82	34.73	37.77	30.04	19.73	18.49	33.83

* See note (*) to last table § 6, 4.

† Including working proprietors.

6. **Value of Production of Manufacturing Industries, 1914.**—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 1914 for the various classes of factories:—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1914.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	795,446	706,455	214,792	142,606	43,914	46,055	1,949,268
II. Treating oils and fats, animal, vegetable, etc. ...	314,865	277,640	57,935	54,868	37,339	6,023	748,670
III. Processes in stone, clay, glass, etc. ...	1,530,447	918,311	120,401	274,001	147,110	45,724	3,035,994
IV. Working in wood ...	1,339,394	1,260,918	994,078	312,356	1,180,186	245,463	5,332,395
V. Metal works, machinery, etc. ...	6,568,794	3,584,073	1,540,226	1,952,992	543,958	418,642	14,608,685
VI. Connected with food and drink, etc. ...	5,335,920	4,043,921	4,644,596	939,501	621,642	311,202	15,796,782
VII. Clothing and textile fabrics, etc. ...	2,853,102	3,879,643	809,568	438,404	263,317	145,983	8,390,017
VIII. Books, paper, printing, and engraving ...	1,555,325	1,971,920	554,876	314,893	325,413	130,349	4,852,776
IX. Musical instruments, etc. ...	76,802	26,237	...	2,776	...	...	105,815
X. Arms and explosives ...	111,528	140,576	...	350	...	...	252,454
XI. Vehicles and fittings, saddlery and harness, etc. ...	650,348	706,908	223,366	218,417	93,395	67,479	1,959,913
XII. Ship and boat building and repairing ...	786,601	104,582	18,592	25,974	7,254	5,693	948,696
XIII. Furniture, bedding, and upholstery ...	566,707	441,750	182,368	128,486	80,722	44,860	1,444,893
XIV. Drugs, chemicals, and by-products ...	502,470	515,907	22,989	144,482	108,469	1,145	1,295,462
XV. Surgical and other scientific instruments ...	18,852	16,956	5,812	1,697	2,307	...	45,624
XVI. Jewellery, timepieces, and plated ware ...	132,464	173,474	19,029	25,908	9,395	5,832	366,103
XVII. Heat, light, and power ...	2,354,898	1,279,832	345,043	278,514	292,331	197,505	4,748,113
XVIII. Leatherware, n.e.i. ...	98,961	85,264	14,908	4,825	...	...	203,958
XIX. Minor wares, n.e.i. ...	166,633	319,934	12,582	23,745	16,447	3,080	541,421
Total ...	25,659,557	20,453,291	9,781,161	5,284,795	3,773,200	1,675,035	66,627,039

The amount of the value added in each State is not in the same order as in the case of value of output, the four most important classes being VI., V., VII., and IV., in the order named. The value added to raw material by process of manufacture and amount per employee and per head of mean population are shewn in the following statement for the years 1909 to 1914:—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1909 to 1914.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tas.	C'wealth.
VALUE.							
	£	£	£	£	£	£	£
1909 ...	15,646,203	13,191,705	5,165,500	3,923,646	2,479,393	*1,523,000	41,929,447
1910 ...	18,236,039	14,719,539	6,315,230	4,489,440	2,723,652	1,616,877	48,100,897
1911 ...	20,675,060	16,718,336	6,897,327	4,912,402	3,251,740	1,572,847	54,017,714
1912 ...	24,040,887	18,408,471	7,719,950	5,239,108	3,506,073	1,585,298	60,499,787
1913 ...	25,135,019	19,470,948	9,505,250	5,644,412	3,638,492	1,699,165	65,153,286
1914 ...	25,659,557	20,453,291	9,781,161	5,284,795	3,773,200	1,675,035	66,627,039
PER EMPLOYEE.							
	£	£	£	£	£	£	£
1909 ...	171	136	175	153	193	120	157
1910 ...	183	144	186	166	193	162	168
1911 ...	190	149	185	176	206	153	173
1912 ...	208	159	189	184	214	159	185
1913 ...	209	164	224	198	214	174	193
1914 ...	220	173	226	197	214	188	201

* See note(*) to last table § 6, 4.

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN
COMMONWEALTH, 1909 TO 1914—Continued.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
PER HEAD OF MEAN POPULATION.							
1909 ...	9.79	10.46	9.33	10.01	9.42	8.01	9.81
1910 ...	11.17	11.48	10.68	11.19	10.05	8.47	11.01
1911 ...	12.44	12.66	11.21	11.95	11.34	8.26	12.03
1912 ...	13.84	13.57	12.22	12.43	11.63	8.27	13.03
1913 ...	13.90	13.98	14.57	13.02	11.78	8.67	13.56
1914 ...	13.55	14.37	14.49	12.01	11.67	8.44	13.54

As the total value of the output for the Commonwealth was estimated at £166,405,923, there remained, after payment of £99,778,884, the value of the raw materials used, of £34,090,428 for salaries and wages, and of £3,306,582 for fuel, the sum of £29,230,029 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, 1914.**

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 ...	42,549,190	1,360,847	12,654,446	11,644,264	68,208,747
Victoria ...	28,986,694	804,325	11,099,940	8,549,026	49,439,985
Queensland ...	15,710,794	335,219	4,211,489	5,234,453	25,491,955
South Australia ...	7,931,175	406,987	2,946,296	1,931,512	13,215,970
Western Australia ...	2,608,312	210,192	2,342,428	1,220,580	6,381,512
Tasmania ...	1,992,719	189,012	835,829	650,194	3,667,754
Commonwealth ...	99,778,884	3,306,582	34,090,428	29,230,029	166,405,923
PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.					
	%	%	%	%	%
New South Wales ...	62.38	2.00	18.55	17.07	100.00
Victoria ...	58.63	1.63	22.45	17.29	100.00
Queensland ...	61.63	1.32	16.52	20.53	100.00
South Australia ...	60.01	3.08	22.29	14.62	100.00
Western Australia ...	40.87	3.29	36.71	19.13	100.00
Tasmania ...	54.33	5.15	22.79	17.73	100.00
Commonwealth ...	59.96	1.99	20.49	17.56	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 1909 to 1914 by £25,982,481, *i.e.*, from £54,527,222 to £80,509,703, or at the rate of £5,196,496 per annum.

The following statement shews for the year 1914 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, 1914.

Value of—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	£	£	£	£	£	£	£
Land and buildings ...	16,813,303	11,248,120	4,434,336	3,047,791	2,409,517	1,144,714	39,097,781
Plant and machinery ...	16,833,973	10,727,526	6,898,673	3,275,579	2,484,793	1,191,378	41,411,922
Total ...	33,647,276	21,975,646	11,333,009	6,323,370	4,894,310	2,336,092	80,509,703

The total capital invested in land, buildings, plant and machinery in manufacturing industries in the Commonwealth during the year 1914 was approximately £80,509,703 (or £16 5s. 11d. per head of population); of that sum £39,097,781 was invested in land and buildings occupied as manufactories, the remaining £41,411,922 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, 1909 to 1914.* 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 1909 to 1914 inclusive:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH, 1909 to 1914.

Class of Industry.	1909.	1910.	1911.	1912.	1913.	1914.
	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	870,588	921,785	978,978	1,004,221	1,014,783	1,063,549
II. Treating oils and fats, animal, vegetable, etc. ...	376,681	394,079	445,499	449,453	452,415	466,373
III. Processes in stone, clay, glass, etc. ...	956,733	1,073,612	1,228,889	1,382,062	1,593,769	1,679,050
IV. Working in wood ...	1,285,267	1,492,673	1,668,045	1,923,963	2,184,257	2,244,995
V. Metal works, machinery, etc. ...	4,415,525	4,554,693	5,000,274	5,437,718	5,846,225	6,242,968
VI. Connected with food & drink, etc. ...	7,191,976	7,399,625	8,167,496	8,259,066	8,656,547	9,800,457
VII. Clothing and textile fabrics, etc. ...	3,809,148	4,191,488	4,601,924	4,928,474	5,188,631	5,270,374
VIII. Books, paper, printing, and engraving ...	2,642,029	2,779,754	2,964,466	3,150,049	3,388,072	3,490,769
IX. Musical instruments, etc. ...	33,314	75,632	82,168	85,731	88,136	83,375
X. Arms and explosives ...	33,016	38,763	41,462	112,300	184,772	179,723
XI. Vehicles and fittings, saddlery and harness, etc. ...	1,186,750	1,325,152	1,453,077	1,654,488	1,835,221	1,824,018
XII. Ship & boat building & repairing ...	1,033,513	1,052,868	1,163,299	1,261,647	1,113,243	1,127,521
XIII. Furniture, bedding & upholstery ...	690,588	757,485	993,408	1,043,680	1,149,120	1,117,699
XIV. Drugs, chemicals & by-products ...	543,507	687,162	760,441	823,429	831,292	929,933
XV. Surgical and other scientific instruments ...	56,378	56,149	61,703	59,308	70,968	64,263
XVI. Jewellery, timepieces, & plated-ware ...	232,483	271,834	300,717	344,306	353,900	345,018
XVII. Heat, light, and power ...	2,026,611	2,112,220	2,320,348	2,511,317	2,517,179	2,717,502
XVIII. Leatherware, n.e.i. ...	83,578	100,096	111,506	120,646	133,283	132,777
XIX. Minor wares, n.e.i. ...	210,325	220,984	250,550	257,298	270,307	317,417
Total ...	27,672,010	29,506,054	32,494,250	34,809,156	36,872,720	39,097,781

As shewn in the above table the total net increase during the five years was £11,425,771, or an annual average of £2,285,154. The largest increases were in Classes VI., V., and VII., and amounted to £2,608,481, £1,827,443, and £1,461,226 respectively.

(ii.) *Value in each State, 1914.* The following table gives similar information for each State up to the 31st December, 1914 :—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1914.

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. ...	465,505	389,688	66,073	97,166	28,985	16,132	1,063,549
II. Treating oils and fats, animal, vegetable, etc. ...	237,991	105,070	28,723	68,709	21,565	4,315	466,373
III. Processes in stone, clay, glass, etc. ...	950,702	461,703	51,162	125,793	61,313	28,377	1,679,050
IV. Working in wood ...	973,465	422,589	221,482	155,456	388,767	83,236	2,244,995
V. Metal works, machinery, etc. ...	2,941,258	1,433,378	656,677	534,736	587,572	89,347	6,242,968
VI. Connected with food and drink, etc. ...	3,381,299	2,682,669	1,928,562	773,250	439,612	595,065	9,800,457
VII. Clothing and textile fabrics, etc. ...	2,204,549	1,986,117	449,281	296,554	208,059	125,814	5,270,374
VIII. Books, paper, printing and engraving ...	1,423,747	960,715	496,026	312,410	249,230	48,641	3,490,769
IX. Musical instruments, etc. ...	57,335	24,340	1,700	...	...	...	83,375
X. Arms and explosives ...	70,926	105,297	...	3,500	...	...	179,723
XI. Vehicles and fittings, saddlery and harness, etc. ...	706,151	556,668	173,918	203,096	122,237	61,948	1,824,018
XII. Ship and boat building and repairing ...	833,804	213,595	11,040	60,000	4,635	4,447	1,127,521
XIII. Furniture, bedding and upholstery ...	492,656	350,111	99,330	76,211	76,319	33,072	1,117,699
XIV. Drugs, chemicals, and by-products ...	340,489	340,780	10,950	143,564	91,950	2,200	929,933
XV. Surgical and other scientific instruments ...	32,040	20,445	6,738	2,070	2,970	...	64,263
XVI. Jewellery, timepieces, and plated ware ...	143,786	128,981	26,331	24,680	9,270	11,970	345,018
XVII. Heat, light, and power ...	1,360,061	888,344	186,143	150,999	94,395	37,560	2,717,502
XVIII. Leatherware, n.e.i. ...	62,921	55,125	10,670	4,061	...	...	132,777
XIX. Minor wares, n.e.i. ...	144,618	122,505	11,230	13,836	22,638	2,590	317,417
Total ...	16,813,303	11,248,120	4,434,336	3,047,791	2,409,517	1,144,714	39,097,781

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £9,800,457, 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 £6,242,968, £5,270,374, £3,490,769, and £2,717,502 respectively. The sum of the values for the five classes mentioned amounted to £27,522,070, or 70.39 per cent. on the total value for all classes.

(iii.) *Total Value in each State, 1909 to 1914.* The following table shews the total value of land and buildings occupied as manufactories in each State at the end of each year from 1909 to 1914 inclusive :—

TOTAL VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1909 to 1914.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1909...	11,014,362	8,642,344	2,888,923	2,425,970	1,522,692	1,177,719	27,672,010
1910...	12,108,776	9,012,263	3,045,974	2,641,973	1,674,953	1,022,115	29,506,054
1911...	13,474,455	9,921,520	3,277,776	2,950,170	1,819,342	1,050,987	32,494,250
1912...	14,765,810	10,362,661	3,524,991	3,150,834	1,910,372	1,094,488	34,809,156
1913...	15,792,105	10,753,309	3,923,584	3,261,242	2,036,769	1,105,711	36,872,720
1914...	16,813,303	11,248,120	4,434,336	3,047,791	2,400,517	1,144,714	39,097,781

It will be seen that since 1909 there has been a general increase throughout the Commonwealth, Tasmania being the only State shewing a decrease. The fall in Tasmania occurred in 1910 and was due to the closing down of a large pyrites works.

3. **Value of Plant and Machinery.**—(i.) The following table shews for the whole Commonwealth the approximate value of plant and machinery used in factories at the end of each year from 1909 to 1914 inclusive:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH, 1909 to 1914.

Class of Industry.	1909.	1910.	1911.	1912.	1913.	1914.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	£ 754,556	£ 829,255	£ 877,820	£ 926,966	£ 985,619	£ 974,556
II. Treating oils and fats, animal, vegetable, etc. ...	349,479	360,660	435,315	417,231	444,502	469,680
III. Processes in stone, clay, glass, etc. ...	901,193	1,109,139	1,299,774	1,491,383	1,717,544	1,869,446
IV. Working in wood ...	1,623,497	1,852,296	2,207,703	2,455,436	2,664,508	2,737,527
V. Metal works, machinery, etc. ...	4,941,632	5,255,575	5,722,956	6,308,356	6,879,461	7,630,150
VI. Connected with food and drink, etc. ...	7,772,770	8,212,440	8,570,565	9,029,735	9,650,298	10,782,825
VII. Clothing and textile fabrics, etc. ...	1,280,102	1,403,135	1,538,062	1,620,437	1,746,713	1,774,910
VIII. Books, paper, printing, and engraving ...	2,207,930	2,362,268	2,481,999	2,628,039	2,814,226	2,941,111
IX. Musical instruments, etc. ...	11,263	16,443	17,924	20,960	22,630	19,030
X. Arms and explosives ...	45,940	47,012	56,255	158,823	190,060	216,581
XI. Vehicles and fittings, saddlery and harness, etc. ...	220,746	249,973	263,470	329,933	374,371	395,463
XII. Ship and boat building, and repairing ...	434,905	443,429	478,012	597,783	725,934	764,782
XIII. Furniture, bedding, and upholstery ...	126,000	150,774	177,924	207,211	235,068	238,547
XIV. Drugs, chemicals, & by-products ...	435,019	517,781	602,276	629,402	650,185	832,686
XV. Surgical and other scientific instruments ...	9,215	9,929	11,158	11,615	13,121	13,758
XVI. Jewellery, timepieces, and platedware ...	43,980	49,490	61,765	61,791	68,186	69,724
XVII. Heat, light, and power ...	5,561,333	5,961,816	6,611,770	7,392,958	7,880,325	9,451,227
XVIII. Leatherware, n.e.i. ...	19,555	24,651	25,565	27,695	28,035	30,576
XIX. Minor wares, n.e.i. ...	116,097	120,669	138,896	145,141	166,172	199,343
Total ...	26,855,212	28,976,735	31,599,209	34,460,895	37,256,958	41,411,922

It will be seen that during the period in question there has been a steady and substantial net increase amounting in all to £14,556,710, or an annual average of £2,911,342. Development has occurred in all classes of industry, the largest increase being in Class XVII., "Heat, Light, and Power," where it amounted to £3,889,894, while the two next largest were in Class VI., "Connected with Food and Drink, etc.," with an increase of £3,010,055, and Class V., "Metal Works, Machinery, etc.," £2,688,518.

(ii.) *Total Value in each State, 1909 to 1914.* The figures which were given in the above table referred to the Commonwealth as a whole. In the following table they are shewn for each State, and it will be seen that the increase referred to above is general throughout the States. New South Wales shews by far the largest increase, viz., £6,503,249; while Victoria comes next with £3,587,222.

VALUE OF PLANT AND MACHINERY IN FACTORIES, 1909 to 1914.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1909	10,330,724	7,140,304	4,457,314	2,135,203	1,728,207	1,063,460	26,855,212
1910	11,578,620	7,601,085	4,631,519	2,225,718	1,893,602	1,046,191	28,976,735
1911	12,510,600	8,336,373	4,947,259	2,506,000	2,082,777	1,216,200	31,599,209
1912	13,795,195	9,095,134	5,442,471	2,725,540	2,241,536	1,161,019	34,460,895
1913	14,861,676	10,022,429	5,877,387	2,982,323	2,264,455	1,248,688	37,256,958
1914	16,833,973	10,727,526	6,898,673	3,275,579	2,484,793	1,191,378	41,411,922

(iii.) *Classified Value in each State, 1914.* The following table shews the value of plant and machinery used in factories in each State during the year 1914, classified according to the nature of the industry in which used:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1914.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	394,005	320,740	122,821	71,250	21,070	44,670	974,556
II. Treating oils and fats, animal, vegetable, etc. ...	250,789	136,065	41,931	26,813	12,970	1,112	469,680
III. Processes in stone, clay, glass, etc. ...	1,114,406	417,450	94,007	159,002	62,391	22,190	1,869,446
IV. Working in wood ...	838,036	594,575	501,396	85,206	531,736	186,578	2,737,537
V. Metal wks., machinery, etc. ...	3,983,195	1,469,806	803,339	533,898	567,596	272,316	7,630,150
VI. Connected with food and drink, etc. ...	3,466,183	2,261,535	3,874,680	616,907	418,035	145,485	10,782,825
VII. Clothing and textile factories, etc. ...	588,448	870,318	130,078	94,396	38,562	53,108	1,774,910
VIII. Books, paper, printing, and engraving ...	1,184,322	975,931	315,778	228,666	169,383	67,031	2,941,111
IX. Musical instruments, etc. ...	11,794	6,636	...	600	...	...	19,030
X. Arms and explosives ...	100,372	115,809	...	400	...	...	216,581
XI. Vehicles and fittings, saddlery and harness, etc. ...	144,008	134,867	32,010	50,508	21,634	12,436	395,463
XII. Ship and boat building and repairing ...	659,228	82,273	6,895	11,385	1,450	3,551	764,782
XIII. Furniture, bedding, and upholstery ...	72,902	75,815	35,744	30,631	15,249	8,206	238,547
XIV. Drugs, chemicals, and by-products ...	283,967	244,071	4,720	156,526	142,952	450	832,686
XV. Surgical and other scientific instruments ...	4,894	4,820	1,712	900	1,432	...	13,758
XVI. Jewellery, timepieces, and platedware ...	28,853	28,273	4,611	4,992	1,550	1,445	69,724
XVII. Heat, light, and power ...	3,612,157	2,864,817	924,877	1,200,881	476,070	372,425	9,451,227
XVIII. Leatherware, n.e.l. ...	12,465	15,705	2,069	317	...	...	30,576
XIX. Minor wares, n.e.l. ...	83,929	108,020	2,005	2,301	2,713	375	199,343
Total ...	16,833,973	10,727,526	6,898,673	3,275,579	2,484,793	1,191,378	41,411,923

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £10,782,825, or 26.04 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," which amounts to £9,451,227, or 22.82 per cent. on the total; followed by Class V., "Metal Works, Machinery, etc.," amounting to £7,630,150, or 18.43 per cent. on the total value. The total for these three classes amounts to £27,864,202, or 67.29 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 is necessary to furnish details of the development of individual industries. While it is not possible, within the limits of this article, to give a full and detailed account of all 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.**—(i.) 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 1914 was as follows:—

TANNERIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	77	50	18	11	6	4	166
" employees	1,109	1,443	205	196	74	64	3,091
Actual horse-power of engines employed...	1,269	1,779	314	225	158	58	3,803
Approx. value of lands and buildings £	142,608	180,325	16,012	20,330	23,495	9,650	392,420
Approx. value of plant and machinery £	92,910	136,555	19,422	10,672	13,100	10,840	283,499
Total amount of wages paid during year £	130,059	173,596	22,953	23,852	9,042	6,983	366,484
Value of fuel used	£ 7,555	10,848	980	1,702	983	505	22,573
Value of raw material worked up	£ 1,058,887	1,244,008	197,245	121,480	56,661	54,244	2,732,525
Total value of output	£ 1,314,631	1,585,151	261,007	161,056	74,286	72,344	3,468,475
Value added in process of manufacture £	255,744	341,143	63,762	39,576	17,625	18,100	735,950

* Including three bone milling establishments in order to avoid disclosing particulars of individual establishments.

(ii.) *Raw Materials used in Tanneries, 1914.* The quantity of raw materials used in tanneries in each State during the year 1914 is shewn in the following table:—

RAW MATERIAL USED IN TANNERIES, 1914.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
RAW MATERIALS USED.							
Hides & calf skins ... No.	535,641	765,136	136,919	83,496	27,735	27,191	1,576,118
Sheep pelts	4,068,137	805,525	77,405	76,122	...	23,796	5,050,985
Other skins	166,700	131,450	94,420	5,020	8,000	1,104	406,694
Bark Tons	11,810	11,400	2,137	1,419	694	310	27,770

(iii.) *Progress of Tanning Industries, 1909 to 1914.* The development of the tanning industry during the period 1909 to 1914 is shewn in the following table:—

DEVELOPMENT OF TANNING INDUSTRY IN THE COMMONWEALTH, 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.*
Number of factories	179	176	176	174	164	166
Number of employees	2,980	3,110	3,247	3,071	2,892	3,091
Actual horse-power of engines used ...	2,846	3,125	3,168	3,274	3,748	3,803
Approx. value of land and buildings £	281,898	301,500	343,914	366,898	366,696	392,420
Approx. value of plant and machinery £	202,961	212,253	241,245	250,495	276,610	283,499
Total amount of wages paid	£ 266,797	303,012	332,206	328,060	322,747	366,484
Value of fuel used	£ 21,381	23,644	21,711	21,341	19,642	22,573
Value of raw materials worked up	£ 1,832,309	1,988,512	2,069,034	2,216,705	2,428,003	2,732,525
Value of final output	£ 2,320,190	2,570,858	2,698,250	2,834,007	3,030,785	3,468,475
Value added in process of manufacture £	487,881	572,346	599,216	617,302	602,782	735,950

* Including three bone milling establishments in Western Australia.

It will be seen from the above table that as regards the number of factories and of hands employed, the figures during the last five years have been almost stationary. The approximate amount of permanently invested capital, however, shews a very substantial increase, amounting to 39.2 per cent. in the value of land and buildings, and 39.7 per cent. in that of plant and machinery. The amount of wages paid, value of materials used, and of final output, also shew a substantial increase during the period.

3. *Fellmongering and Wool-scouring.*—(i.) The next industry in importance in Class I. is that of fellmongering and wool-scouring, one of the earliest industries established in Australia. The following table gives particulars of the industry in each State for the year 1914:—

FELLMONGERING AND WOOL-SCOURING, 1914.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	54	29	21	4	...	...	108
Number of employees	1,451	432	355	60	...	...	2,298
Actual horse-power of engines used ...	2,398	655	599	120	...	...	3,772
Approx. value of land and buildings £	151,195	54,018	44,024	7,093	...	...	256,330
Approx. value of plant and machinery £	174,598	53,905	93,034	8,510	...	...	330,047
Total amount of wages paid	£ 149,800	36,411	34,489	5,809	...	...	226,509
Value of fuel used	£ 21,930	4,936	9,060	732	...	...	36,658
Value of raw material worked up	£ 2,552,400	473,648	1,134,350	79,307	...	...	4,238,705
Value of final output	£ 2,928,057	547,784	1,277,282	89,408	...	...	4,742,531
Value added in process of manufacture £	275,657	75,136	142,932	10,101	...	...	503,826

(ii.) *Development of Fellmongering and Wool-scouring, 1909 to 1914.*—The following return furnishes particulars of fellmongering and wool-scouring establishments in the Commonwealth for the last six years :—

DEVELOPMENT OF FELLMONGERING AND WOOL-SCOURING IN THE COMMONWEALTH, 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	124	122	112	120	119	108
Number of employees	2,655	2,674	2,590	2,544	2,375	2,298
Actual horse-power of engines used ...	2,473	2,896	3,230	3,831	3,966	3,772
Approx. value of land and buildings £	255,030	274,122	273,281	267,188	269,895	256,330
Approx. value of plant and machinery £	213,894	298,548	308,211	348,970	346,381	330,047
Total amount of wages paid	£ 210,500	217,919	208,627	209,352	230,445	226,509
Value of fuel used	£ 25,907	31,250	21,581	31,445	33,404	36,658
Value of raw materials worked up	£ 3,714,968	3,965,303	3,757,750	3,859,200	4,365,413	4,238,705
Value of final output	£ 4,550,457	4,855,517	4,343,690	4,444,938	4,940,410	4,742,531
Value added in process of manufacture £	835,489	690,214	585,940	585,738	574,997	503,826

A slight decline has taken place in this industry during the last five years as regards the number of establishments and of employees. On the other hand, the horse-power used, the value of plant and machinery, and of fuel used, all shew substantial increases amounting to 52.5 per cent., 35.32 per cent. and 41.49 per cent. respectively.

4. *Soap and Candle Factories.*—(i.) 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 1914 :—

SOAP AND CANDLE FACTORIES, 1914.

Items.	N.S.W.	Vic.	Qld.	S.A.	* W.A.	Tas.	Cwlth.
Number of factories	32	17	14	5	6	1	75
employees	753	617	153	201	113	24	1,861
Actual horse-power of engines employed ...	548	442	189	162	141	2	1,434
Approximate value of land and buildings £	174,161	90,125	28,723	55,679	21,565	4,165	374,418
Approximate value of plant and machinery £	187,617	120,215	41,931	23,349	12,970	662	385,744
Total amount of wages paid during year ...	£ 71,350	65,155	14,566	26,168	10,508	2,602	190,349
Value of fuel used	£ 13,094	11,463	1,931	6,093	1,125	303	33,049
Value of raw material worked up	£ 432,508	397,924	61,413	130,422	86,274	8,599	1,117,140
Total value of output	£ 675,893	641,104	119,348	183,293	123,613	13,687	1,756,938
Value added in process of manufacture £	243,385	243,180	57,935	52,871	37,339	5,088	639,798

* Including three bark milling establishments in order to avoid disclosing particulars of individual establishments.

(ii.) *Development of Soap and Candle Factories, 1909 to 1914.* The following table gives similar particulars for the last six years as regards the Commonwealth as a whole :—

DEVELOPMENT OF SOAP AND CANDLE FACTORIES IN THE COMMONWEALTH, 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories...	73	78	81	77	74	75
" employees	1,582	1,606	1,668	1,776	1,755	1,801
Actual horse-power of engines used...	920	1,002	1,266	1,274	1,314	1,434
Approximate value of land and buildings	£ 296,312	311,333	347,824	360,572	360,783	374,418
" plant and machinery	£ 300,015	305,693	326,273	348,365	364,357	385,744
Total amount of wages paid...	£ 139,959	140,423	148,592	162,551	172,247	190,349
Value of fuel used	£ 30,270	33,222	31,701	30,896	31,692	33,949
" of raw material worked up	£ 832,263	952,770	1,018,757	1,030,770	1,067,001	1,117,140
" of final output	£ 1,304,483	1,410,176	1,588,416	1,614,898	1,644,188	1,756,938
" added in process of manufacture	£ 472,220	487,406	569,659	584,128	577,187	639,798

* Including three bark milling establishments in Western Australia.

(iii.) *Production of Soap and Candles, 1909 to 1914.* The subjoined statement shows that, taking the Commonwealth as a whole, there has been a considerable and consistent increase in the output of soap during the past five years.

PRODUCTION OF SOAP AND CANDLES IN THE COMMONWEALTH, 1909 to 1914.

Particulars.	1909.	1910.	1911.	1912.	1913.	1914.
Soap cwt.	567,648	617,458	639,458	688,722	700,878	697,807
Candles "	143,722	144,621	130,122	130,785	129,877	110,734

* Exclusive of Western Australia, for which State particulars are not available for publication.

(iv.) *Raw Materials Used, 1909 to 1914.* The following statement shows the quantity of certain raw materials used in soap and candle factories in the Commonwealth during the years 1909 to 1914:—

RAW MATERIALS USED IN SOAP AND CANDLE FACTORIES, 1909 to 1914.

Particulars.	1909.	1910.	1911.	1912.	1913.	1914.
Tallow cwt.	346,591	349,035	356,471	411,701	391,133	410,235
Alkali "	107,225	134,010	133,675	135,643	135,231	158,624
Cocconut oil gal.	*	355,802	505,612	499,329	457,693	460,561

* Figures not available. † Exclusive of Western Australia, for which State figures are not available for publication.

5. *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, JOINERY, Etc., 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	610	394	312	90	73	144	1,623
" employees	7,736	6,939	5,170	1,469	5,779	1,771	28,864
Actual horse-power of engines employed	17,157	9,265	8,212	1,581	8,489	2,634	47,341
Approx. value of land and buildings	£ 872,636	368,655	209,485	144,072	388,767	79,822	2,063,437
" plant and machinery	£ 774,294	568,428	495,250	77,999	531,736	184,758	2,632,465
Total amount of wages paid during year	£ 838,642	770,075	536,203	178,620	908,187	169,318	3,401,045
Value of fuel used	£ 20,295	13,044	9,230	3,833	2,847	1,401	50,650
Value of raw material worked up	£ 2,024,512	1,149,065	914,929	662,537	1,287,742	132,426	5,012,211
Total value of output	£ 3,264,614	2,323,598	1,883,868	943,874	1,308,928	375,804	10,100,686
Value added in process of manufacture	£ 1,240,102	1,174,533	968,939	281,337	1,180,186	243,378	5,088,475

The development of forest and other saw mills, etc., since 1909, is shewn in the following table :—

**DEVELOPMENT OF SAW MILLS, FOREST AND OTHER, Etc., IN THE
COMMONWEALTH, FROM 1909 to 1914.**

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of establishments	1,284	1,350	1,494	1,609	1,670	1,623
" employees	21,416	23,424	26,785	29,358	30,371	28,864
Actual horse-power of engines used...	27,141	30,520	34,540	40,256	45,684	47,341
Approximate value of land and buildings	£ 1,160,713	1,363,927	1,532,620	1,754,241	2,008,035	2,063,437
" of plant and machinery	£ 1,562,130	1,794,078	2,141,883	2,365,462	2,571,701	2,632,465
Total amount of wages paid...	£ 2,007,298	2,290,059	2,749,209	3,211,625	3,383,907	3,401,045
Value of fuel used	£ 28,694	29,856	37,308	43,913	51,436	50,650
" of raw material worked up ...	£ 2,977,219	3,372,421	4,208,333	4,900,612	5,273,688	5,012,211
" of final output	£ 6,098,939	6,928,310	8,535,800	9,882,810	10,411,923	10,100,686
" added in process of manufacture	£ 3,121,720	3,555,889	4,327,467	4,982,198	5,168,235	5,088,475

The great development in the building and other trades that has taken place in Australia during late years is reflected in the very satisfactory progress of the timber industries, in which there were large increases in wages paid, value of materials used, and final output, as well as in capital invested in land and buildings, and plant and machinery.

6. 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 1914 :—

AGRICULTURAL IMPLEMENT WORKS, 1914.

Items.	N.S.W.	Victoria	Q'land.	S.Aust.	W.A.	Tas.	C'w'ith.
Number of factories	24	65	6	54	4	1	154
" employees	599	1,968	104	952	237	5	3,865
Actual horse-power of engines employed	313	1,238	64	862	185	3	2,665
Approx. value of land and buildings	£ 100,235	160,980	4,150	66,966	28,465	100	360,916
" plant and machinery	£ 36,494	186,272	7,135	78,803	15,288	300	324,292
Total amount of wages paid during year	£ 70,028	242,158	9,798	111,637	32,774	291	466,686
Value of fuel used	£ 2,812	16,866	412	7,182	2,590	30	29,892
Value of raw material worked up	£ 275,630	278,283	14,397	114,418	66,125	300	749,153
Total value of output	£ 387,974	638,827	32,356	269,641	84,118	873	1,413,789
Value added in process of manufacture	£ 112,344	360,544	17,959	155,223	17,993	573	664,636

Development of Agricultural Implement Works. The following table shews the progress of this industry during the years 1909 to 1914 to have been very satisfactory. Notwithstanding a general decline in the year 1914, during the five year period under review the number of establishments increased 4 per cent., the value of plant and machinery over 90 per cent., and the value of output about 15 per cent. :—

DEVELOPMENT OF AGRICULTURAL IMPLEMENT WORKS IN THE COMMON-WEALTH, FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	148	150	155	159	154	154
Number of employees	4,081	4,868	5,156	4,733	4,444	3,865
Actual horse-power of engines used ...	1,713	2,228	2,347	2,419	2,698	2,665
Approx. value of land and buildings £	199,544	227,936	284,469	331,348	348,666	360,916
Approx. value of plant and machinery £	169,778	208,185	245,025	281,923	309,015	324,292
Total amount of wages paid	356,710	470,931	550,922	527,406	502,244	466,686
Value of fuel used	23,992	35,070	32,342	30,961	30,408	29,592
Value of raw material worked up	559,141	743,032	811,322	751,596	824,556	749,153
Value of final output	1,227,339	1,560,880	1,656,364	1,538,421	1,536,378	1,413,789
Value added in process of manufacture £	668,198	817,848	845,042	786,825	711,822	664,636

7. 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, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	312	388	99	62	66	23	950
employees	10,059	9,032	3,088	1,817	1,257	463	25,766
Actual horse-power of engines employed	20,239	8,537	1,901	1,285	1,297	371	33,630
Approx. value of land and buildings £	1,183,283	615,069	191,310	105,437	128,335	41,455	2,264,589
plant and machinery £	1,627,923	823,341	213,236	117,258	112,582	52,007	2,946,347
Total amount of wages paid during year £	1,258,032	1,089,633	346,033	220,406	175,948	53,868	3,143,920
Value of fuel used	205,905	97,667	17,509	16,598	14,559	4,833	357,071
Value of raw materials worked up	1,717,110	1,401,268	361,176	246,859	189,551	44,288	3,960,252
Total value of output	3,671,429	3,152,868	947,605	570,762	413,811	125,302	8,881,777
Value added in process of manufacture £	1,954,319	1,751,600	586,429	323,903	224,260	81,014	4,921,525

In addition to engineering works which supply ordinary 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.

The development of engineering, ironworks, and foundries in the Commonwealth since 1909 is shewn in the following table :—

DEVELOPMENT OF ENGINEERING, IRONWORKS, AND FOUNDRIES, FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	754	781	820	877	919	950
Number of employees	17,882	20,109	22,539	25,151	26,014	25,766
Actual horse-power of engines used ...	11,403	13,493	16,015	18,744	20,630	33,630
Approx. value of land and buildings ...	1,335,863	1,382,872	1,579,925	1,792,169	1,980,453	2,264,889
Approx. value of plant and machinery ...	1,414,187	1,541,107	1,706,405	1,953,478	2,188,935	2,946,347
Total amount of wages paid	1,715,292	1,948,326	2,342,603	2,846,180	3,044,263	3,143,920
Value of fuel used	149,346	166,449	178,546	195,729	217,173	357,071
Value of raw material worked up	2,076,291	2,414,210	2,832,181	3,536,179	3,719,643	3,960,252
Value of final output	4,822,169	5,636,048	6,614,535	7,930,060	8,815,320	8,881,777
Value added in process of manufacture £	2,745,878	3,221,838	3,782,354	4,393,581	4,595,677	4,921,525

The progress in these industries during late years has been very rapid. Since 1909 the number of establishments has increased over 24 per cent., the number of hands employed 44 per cent., the amount of wages paid 83 per cent., the amount of capital invested in land, buildings, plant and machinery, 89½ per cent., and the output 84 per cent.

8. Railway and Tramway Workshops.—(i.) 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 AND TRAMWAY WORKSHOPS, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.Aust.	W. Aust.	Tas.	C'w'lth.
Number of factories ...	26	17	8	8	9	7	75
" employees ...	9,577	5,346	2,084	2,576	1,867	295	21,745
Actual h.p. of engines employed ...	5,493	1,423	1,137	576	2,243	153	11,025
Approx. value of land and buildings £	1,057,558	337,164	292,366	258,344	426,257	7,075	2,378,764
Approx. value of plant and mach'ny £	965,664	252,356	206,310	193,806	438,543	84,975	2,141,654
Total amt. of wages paid during year £	1,366,091	756,146	298,632	354,745	278,775	42,345	3,096,734
Value of fuel used ...	31,503	26,561	6,220	7,224	17,337	1,487	90,332
Value of raw material worked up £	854,595	916,026	256,208	234,620	210,338	20,430	2,492,217
Total value of output ...	2,426,094	1,839,388	636,186	661,657	505,284	65,979	6,134,588
Value added in process of manuf'ct're £	1,571,490	923,362	379,978	427,037	294,946	45,549	3,642,371

(ii.) *Northern Territory Railway Workshops.* In addition to the above, a railway workshop is in operation in the Northern Territory. The work is confined almost exclusively to repairs to rolling stock, etc., no new goods being manufactured. For the sake of convenience this establishment is not included in any of the tables in this publication.

(iii.) *Development of Railway and Tramway Workshops, 1909 to 1914.* The following table shews the development of railway and tramway workshops in the Commonwealth since 1909:—

DEVELOPMENT OF RAILWAY AND TRAMWAY WORKSHOPS, Etc., FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories...	68	68	72	73	73	75
" employees ...	13,176	14,915	17,425	19,662	26,014	21,745
Actual horse-power of engines used ...	10,731	7,384	8,373	9,637	9,581	11,025
Approx. value of land and buildings £	1,884,351	1,939,092	2,036,178	2,128,273	2,213,697	2,378,764
" plant and machinery £	1,284,764	1,394,657	1,433,093	1,563,710	1,685,050	2,141,654
Total amount of wages paid... £	1,628,379	1,842,142	2,163,460	2,702,711	3,018,988	3,096,734
Value of fuel used ...	43,114	57,777	69,919	75,476	77,155	90,332
" of raw material worked up ...	1,426,542	1,558,898	1,939,477	2,574,737	2,874,535	2,492,217
" of final output ...	3,234,955	3,648,168	4,468,096	5,695,221	6,435,823	6,134,588
" added in process of manufacture	1,808,413	2,089,270	2,528,619	3,120,484	3,561,288	3,642,371

The growth of the railway and tramway systems, conjointly with heavy increases in passenger and goods traffic, throughout the Commonwealth during the past few years (see Section XVII., § 2 and 3), has resulted in an enhanced activity in those workshops engaged in the manufacture or repair of rolling stock, etc. The above table shews the number of employees to have increased 65 per cent. during the last five years, the

amount of wages paid 90 per cent., the final output nearly 90 per cent., while the value added in process of manufacture shews an increase of 101 per cent.

9. **Smelting Works, etc.**—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 a 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, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	26	55	11	6	...	3	101
" employees	2,909	370	559	1,580	...	646	6,064
Actual horse-power of engines employed	13,402	395	3,781	3,780	...	2,501	23,859
Approx. value of land and buildings £	212,398	10,056	55,717	19,748	...	32,897	330,816
" plant and machinery £	1,087,273	44,656	306,463	68,420	...	132,777	1,639,599
Total am't of wages paid during year £	342,958	35,936	52,649	298,388	...	97,324	827,255
Value of fuel used	156,149	4,480	16,383	180,139	...	69,210	426,361
Value of raw material worked up	£3,624,155	89,424	202,847	1,748,692	...	563,181	6,228,299
Total value of output	£5,884,456	169,032	577,747	2,604,336	...	837,332	10,032,903
Value added in process of manufacture £	2,260,301	79,608	334,900	855,644	...	274,151	3,804,604

* See third paragraph below.

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

The largest output for the year under review was in New South Wales, viz., £5,884,456, or 58.65 per cent. on the total output for the Commonwealth. South Australia came next with £2,604,336, or 25.96 per cent.; this amount is made up of £2,598,639 smelting and £5697 cyanide. Of the total for Tasmania, the output of smelting was £788,935, the balance £48,397 representing that of cyanide and pyrites works. The output in Victoria was £65,032, £63,038, £40,035, and £927 from cyanide, pyrites, smelting, and metallurgical works in the order named.

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

10. **Bacon-curing Factories.**—(i.) The following table gives particulars of factories engaged in bacon-curing in each State during the year 1914 :—

BACON-CURING FACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	* W.A.	Tas.	C'w'lth.
Number of factories	21	26	9	11	...	5	72
" employees	202	475	350	78	...	24	1,129
Actual horse-power of engines employed	315	831	577	68	...	28	1,819
Approx. value of land and buildings £	72,277	91,960	90,817	11,574	...	5,447	272,075
" plant and machinery £	27,314	61,069	51,795	5,100	...	1,922	147,200
Total amount of salaries and wages paid £	30,927	57,965	46,697	8,394	...	2,400	146,383
Value of fuel used	4,174	6,398	4,088	639	...	380	15,679
Value of raw material worked up	£536,416	673,930	334,300	96,878	...	25,367	1,666,891
Total value of output	£617,406	772,318	541,975	110,934	...	43,492	2,086,125
Value added in process of manufacture £	60,990	98,388	207,675	14,056	...	18,125	419,234

* Two establishments, particulars not available for publication.

(ii.) **Quantity and Value of Production, 1914.** 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 1914 :—

PRODUCTION OF BACON-CURING FACTORIES, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.*	Tasmania.	C'wealth.
QUANTITY (,000 omitted).							
Bacon & ham lbs.	13,565	16,298	12,685	2,614	...	1,309	46,471
Lard ... lbs.	634	798	930	117	...	275	2,754
VALUE.							
Bacon & ham £	554,692	713,365	460,761	104,400	...	33,739	1,866,957
Lard ... £	18,999	23,094	23,426	3,243	...	2,602	71,364
Other products £	25,460	35,859	57,788	3,291	...	7,215	129,613
PIGS KILLED.							
Number ...	172,876	181,756	164,416	30,421	...	10,134	559,603

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

Bacon and ham and other pig products are dealt with more fully in Section IX., *Farmyard and Dairy Production*.

11. **Butter, Cheese, and Condensed Milk Factories.**—(i.) The subjoined table gives particulars of butter, cheese, and condensed milk factories in each State during the year 1914. The returns are exclusive of butterine and margarine factories.

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	162	196	94	46	5	25	528
" employees ...	1,087	1,343	810	175	22	111	3,568
Actual horse-power of engines employed	2,892	2,820	1,551	331	66	232	7,895
Approximate value of land and buildings	200,553	307,051	98,194	35,674	6,380	17,147	664,999
plant & machinery £	286,323	336,626	177,160	28,544	3,750	13,367	850,770
Total amount of wages paid ...	£ 152,954	161,740	98,755	14,368	3,128	8,176	439,121
Value of fuel used ...	£ 32,109	31,211	14,234	2,600	424	1,231	81,809
Value of raw material worked up	£ 3,815,028	2,840,526	1,643,100	202,289	104,777	103,552	8,709,272
Total value of output ...	£ 4,187,034	3,228,640	2,009,822	232,318	112,123	128,461	9,898,398
Value added in process of manufacture	£ 572,006	388,114	366,722	30,029	7,346	24,909	1,189,126

* Including two bacon-curing establishments, in order to avoid disclosing particulars of individual establishments.

(ii.) *Development of Factories, 1909 to 1914.* The following table shows the progress of the factories in this industry during the past five years:—

DEVELOPMENT OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES IN THE COMMONWEALTH, 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories ...	550	548	540	530	531	528
" employees ...	3,263	3,479	3,730	3,518	3,507	3,568
Actual horse-power of engines used	6,045	6,182	6,818	8,156	7,726	7,895
Approx. value of land and buildings	£ 545,145	576,644	677,139	659,673	664,735	664,999
plant and machinery £	694,129	708,239	775,792	788,922	828,986	850,770
Total amount of wages paid ...	£ 295,826	324,505	375,221	385,793	411,491	439,121
Value of fuel used ...	£ 52,789	59,616	67,555	70,155	72,214	81,809
" raw material worked up	£ 6,012,094	7,378,146	8,341,125	8,676,346	8,146,178	8,709,272
final output ...	£ 6,727,324	8,230,782	9,432,122	9,760,205	9,284,747	9,898,398
Value added in process of manufacture	£ 715,230	852,636	1,090,997	1,083,859	1,138,569	1,189,126

(iii.) *Quantity and Value of Production, 1914.* 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 1914 :—

PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Butter lbs.	80,302	57,576	35,063	3,258	147	2,432	178,778
Cheese "	3,770	2,673	7,814	1,999	...	410	16,666
Condensed and concentrated milk ... lbs.	6,002	19,094	6,967	...	...	...	32,063
VALUE (,000 OMITTED).							
Butter £	3,894	2,766	1,626	181	*	119	8,586
Cheese £	105	71	224	51	...	9	460
Condensed and concentrated milk ... £	100	371	160	...	...	...	631
MILK USED (,000 OMITTED).							
Butter factories ... gals.	181,121	134,694	75,185	6,657	324	6,082	404,063
Cheese " " "	3,882	2,671	7,714	1,977	...	424	16,668
Condensed milk factories " "	1,601	6,390	1,889	...	...	...	9,869

* Not available for publication.

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

12. 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 290 and 294 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, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	102	36	54	17	13	6	228
" employees	2,610	1,807	5,310	367	101	29	10,224
Actual horse-power of engines employed	5,621	5,800	9,610	847	765	270	22,913
Approx. value of land and buildings £	611,458	442,117	869,553	148,986	56,155	9,300	2,137,569
" plant and machinery £	516,434	247,886	922,468	85,527	38,940	4,711	1,815,966
Total amount of wages paid during year £	337,433	903,651	588,605	51,716	15,013	2,567	1,198,985
Value of fuel used	£ 55,973	38,560	72,043	8,451	6,253	587	181,867
Value of raw material worked up	£5,815,122	1,446,262	4,917,600	162,385	2,506	1,415	12,345,290
Total value of output	£6,805,729	1,797,734	6,628,311	241,109	34,168	7,581	15,514,632
Value added in process of manufacture £	990,607	351,472	1,710,711	78,724	31,662	6,166	3,169,342

The following table gives particulars, so far as available, of various classes of meat preserved during the year 1914 :—

MEAT-PRESERVING WORKS—PARTICULARS OF ANIMALS TREATED, 1914.

Particulars.		N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lt'h.
Sheep treated	... No.	415,397	1,710,152	756,691	1,124	...	...	2,883,364
Cattle	" ... No.	103,778	24,990	546,409	6,170	...	...	681,347
Pigs	" ... No.	...	42	648	...	...	...	690

Large quantities of rabbits, hares, and poultry for which, however, complete returns are not available, were treated in freezing works. During 1914, 1,917,870 pairs of rabbits and hares were treated in Victoria, and 993,793 pairs of rabbits in South Australia. Exclusive of Victoria, for which State particulars are not available, the returns show that 96,076 tons of ice, valued at £180,530, were manufactured in the Commonwealth in 1914.

Full particulars of quantities and value of beef, mutton, and lamb preserved by cold process, exported from the Commonwealth during a series of years, will be found in Section VII., *Pastoral Production*.

13. **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 1914:—

BISCUIT, Etc., MANUFACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	*W.A.	Tas.	C'w'lt'h.
Number of factories	7	6	16	3	...	4	36
" employees	1,410	1,405	501	118	...	120	3,554
Actual horse-power of engines employed	672	313	328	62	...	67	1,442
Approx. value of land and buildings	£ 117,231	73,650	54,305	17,170	...	21,300	283,716
" plant and machinery	£ 103,970	59,675	39,878	10,579	...	10,500	226,602
Total amount of wages paid during year	£ 78,010	103,214	49,515	9,803	...	7,953	243,323
Value of fuel used	£ 9,616	9,791	2,100	1,728	...	1,228	24,463
Value of raw material worked up	£ 428,520	344,588	97,760	28,155	...	25,945	924,968
Total value of output	£ 681,142	574,133	224,027	56,860	...	49,514	1,585,576
Value added in process of manufacture	£ 252,622	229,545	126,267	28,705	...	23,563	660,708

* In order to avoid disclosing particulars of individual establishments, three biscuit factories in Western Australia are included with confectionery.

14. **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 1914. Separate returns for the individual industries are not available for most of the States.

JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR MANUFACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lt'h.
Number of factories	36	33	11	29	8	19	136
" employees	1,074	1,857	220	604	65	710	4,530
Actual horse-power of engines employed	366	400	98	137	29	531	1,561
Approx. value of land and buildings	£ 114,333	115,425	15,997	38,166	5,342	60,175	349,438
" plant and machinery	£ 55,794	59,550	10,903	17,584	1,767	22,980	168,578
Total amount of wages paid during year	£ 88,512	133,229	13,765	30,687	4,690	47,649	318,532
Value of fuel used	£ 4,893	8,623	669	2,413	391	4,897	21,886
Value of raw material worked up	£ 464,530	556,396	38,840	141,185	12,114	231,177	1,444,242
Total value of output	£ 656,308	835,807	67,877	203,629	18,916	327,650	2,110,187
Value added in process of manufacture	£ 191,778	279,411	29,037	62,444	6,802	96,473	665,945

Quantity and Value of Production, 1914. The following table shews the quantity and value of jams, pickles, and sauces manufactured in each State during the year 1914:—

QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCE MANUFACTURED, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
QUANTITY (,000 OMITTED).							
Jam ... lbs.	29,799	30,437	1,279	7,284	†	18,505	\$87,304
Fruit, preserved lbs.	2,135	9,120	2,958	3,280	...	12,399	19,922
Pickles ... pints	2,626	1,641	*87	343	100	26	5,023
Sauce ... pints	2,952	5,648	339	922	376	84	10,321
VALUE.							
Jam ... £	429,896	521,469	22,797	105,027	†	242,626	\$1,321,815
Fruit, preserved £	33,049	123,918	30,917	56,177	...	138,650	282,711
Pickles ... £	49,778	45,717	1,707	7,245	2,691	545	107,683
Sauce ... £	63,885	144,703	5,429	18,249	7,041	1,685	240,992

* Approximate. † Exclusive of 44,790 cwt. fruit pulped, value £43,735. ‡ Information not available for publication. § Exclusive of Western Australia.

15. **Confectionery.**—The following table shows the position of the confectionery industry in 1914, 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, the plant and machinery in the former State being valued at £2815, and at £19,070 in the latter.

CONFECTIONERY FACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'ldh.
Number of factories ...	53	33	9	7	7	5	114
employees ...	1,534	1,656	407	260	279	27	4,163
Actual horse-power of engines employed	714	663	191	241	232	15	2,056
Approx. value of land and buildings £	249,578	100,335	29,862	30,154	25,005	5,500	440,534
plant and machinery £	95,512	108,749	20,240	32,435	29,637	1,085	287,658
Total amount of wages paid during year £	130,222	127,153	26,078	19,882	24,536	2,238	333,009
Value of fuel used ...	8,650	8,410	1,597	1,965	2,976	217	23,815
Value of raw material worked up	£522,514	436,518	44,129	55,599	66,418	5,760	1,130,938
Total value of output ...	£816,389	676,067	127,420	97,590	110,946	9,810	1,838,222
Value added in process of manufacture £	293,875	239,549	83,291	41,991	44,528	4,050	707,284

* Including three biscuit factories.

16. **Flour Mills.**—(i.) The following table shows the position of the flour-milling industry in the year 1914 :—

FLOUR MILLS, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.*	W.A.*	Tas.*	C'w'ldh.
Number of factories ...	63	57	11	46	17	14	208
employees ...	901	887	182	519	230	114	2,833
Actual horse-power of engines employed	4,781	4,467	901	2,851	1,691	588	15,279
Approx. value of land and buildings £	363,641	227,460	62,769	118,781	89,428	50,375	912,454
plant and machinery £	334,602	276,425	77,877	149,417	98,593	27,730	964,644
Total am't of wages paid during year £	139,702	109,910	19,781	63,576	34,046	12,615	379,630
Value of fuel used ...	£22,687	24,046	2,963	12,242	6,069	2,232	70,239
Value of raw material worked up	£2,827,968	2,284,345	350,533	793,852	563,672	233,500	7,054,370
Total value of output ...	£3,351,289	2,726,878	429,017	954,794	704,228	260,538	8,426,744
Value added in process of manufacture £	523,321	442,033	78,484	160,942	140,556	27,038	1,372,374

* The manufacture of cornflour, oatmeal, etc., was worked in conjunction with these establishments.

(ii.) **Production of Flour Mills, 1909 to 1914.** The production of flour by the mills in each State of the Commonwealth in the years 1909 to 1914 was as follows :—

FLOUR MILLS—PRODUCTION, 1909 to 1914.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tasmania.	C'wealth.
	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*
1909	214,426	215,547	29,451	97,967	24,878	21,419	603,688
1910	242,813	225,282	27,559	95,885	36,818	20,925	649,282
1911	253,556	247,434	27,960	100,374	40,642	21,335	691,301
1912	255,359	225,376	25,855	103,100	49,319	18,044	677,053
1913	285,425	252,763	33,889	107,994	61,997	18,545	760,613
1914	266,302	246,136	35,402	84,701	61,922	19,382	713,845

* Tons of 2000 lbs.

The total production of flour for the Commonwealth for 1914, viz., 713,845 tons, was valued at £6,543,613; in addition 315,825 tons of bran and pollard, valued at £1,760,584, were made. The total quantity of wheat ground in 1914 was 34,932,614 bushels.

17. **Sugar Mills.**—The following table shews the position of the cane-crushing branch of the sugar-making industry in 1914. 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, 1914.

Items.	N.S.W.	Queensland.	Total.
Number of factories	3	47	50
" employees	437	4,835	5,272
Actual horse-power of engines employed ...	2,750	11,473	14,223
Approximate value of land and buildings £	54,000	338,398	392,398
" " plant and machinery £	478,927	2,096,490	2,575,417
Total amount of wages paid during year £	54,708	463,094	517,802
Value of fuel used	£ 5,507	57,566	63,073
Value of raw material worked up	£ 200,009	2,215,752	2,415,761
Total value of output	£ 320,464	3,319,293	3,639,757
Value added in course of manufacture £	120,455	1,103,541	1,223,996

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

SUGAR MILLS, NEW SOUTH WALES, 1870 to 1914.

Items.	1870.	1877.	1886.	1896.	1901.	1910.	1911.	1912.	1913.	1914.
No. of factories	27	50	64	23	12	4	4	3	3	3
" employees	...	1,065	2,259	1,475	695	506	469	469	486	437
Cane crushed tns	...	*	*	*	*	160,311	167,799	141,274	185,910	181,606
Sugar produced tons	677	7,537	13,750	28,557	19,519	20,115	17,299	16,817	22,192	20,029
Molasses produced gals.	...	345,543	507,000	2,520,580	1,300,909	918,900	796,440	667,100	966,000	1,104,000

* Not available.

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 1914.

Items.	1868.	1876.	1886.	1896.	1901.	1910.	1911.	1912.	1913.	1914.
No. of factories	10	70	118	63	52	49	49	47	48	47
" employees	...	*	*	3,796	*	4,036	4,295	3,891	4,524	4,835
" acres	...	...	...	...	...	...	...	...	...	...
" crushed	...	7,245	40,756	66,640	78,160	1,840,447†	1,534,451†	994,212†	2,085,588†	1,922,633†
Sugar produced...tons	...	8,214	59,225	100,774	120,858	210,756	173,296	113,060	242,837	225,847
Molasses produced gals.	68,622	416,415	1,784,266	2,195,470	3,679,952	7,329,870	6,451,193	4,988,988	4,263,186	2,374,501

* Not available. † 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 342 to 347.)

18. 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 1914 there were two sugar refineries in each of the States of Victoria and Queensland, and one in each of the States of New South Wales and South Australia. The returns for the individual States cannot be disclosed.

In the six refineries in the Commonwealth, an average number of 1751 hands was employed during the year 1914. The approximate value of land and buildings was £450,921; of plant and machinery, £1,041,862; and the total amount of wages paid during the year was £223,243. The value of all materials used in sugar refineries during 1914 was £4,443,863, while the total output represented £5,123,360. The amount of crude sugar used was 267,964 tons, and of refined sugar produced 256,767 tons, valued at £4,970,817.

19. Breweries.—(i.) The following table gives particulars of breweries in each State during the year 1914:—

BREWERIES, 1914.

Items.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lt'h.
Number of factories ...	27	25	10	13	15	5	95
" employees ...	1,045	1,050	430	387	480	143	3,535
Actual horse-power of engines employed ...	2,208	3,151	461	995	1,414	84	8,313
Approx. value of land and buildings ...	£ 620,102	396,030	134,189	122,358	191,955	395,950	1,860,584
Approx. value of plant and machinery ...	£ 564,327	394,785	120,447	110,774	201,326	41,957	1,433,616
Total amount of wages paid during year ...	£ 168,997	167,352	66,421	60,347	91,150	21,179	575,446
Value of fuel used ...	£ 28,096	25,354	7,412	9,704	12,633	2,976	86,175
Value of raw material worked up ...	£ 630,314	483,098	134,860	119,122	129,347	37,915	1,534,656
Total value of output ...	£ 1,533,435	1,196,306	467,765	349,735	444,757	115,500	4,107,498
Value added by process of manufacture ...	£ 903,121	713,208	332,905	230,613	315,410	77,585	2,572,842

(ii.) *Production and Materials Used, 1914.* 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 1914:—

PRODUCTION AND MATERIALS USED IN BREWERIES, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
ALE AND STOUT BREWED.							
Quantity gallons	23,516,887	23,865,467	6,138,587	5,987,185	5,544,090	1,985,013	67,037,219
Value* ... £	1,148,945	1,196,306	467,765	343,876	429,904	116,248	3,703,044
RAW MATERIALS USED.							
Malt ... bush.	838,148	678,526	190,770	140,427	165,689	74,355	2,087,915
Hops ... lbs.	893,050	738,953	272,175	197,741	213,431	112,756	2,428,106
Sugar ... cwt	103,848	133,707	44,785	35,253	27,625	9,374	354,592
RAW MATERIALS USED PER 1000 GALLONS OF ALE AND STOUT PRODUCED.							
Malt ... bush.	35.64	28.43	31.08	23.46	29.89	37.46	31.15
Hops ... lbs.	37.97	30.96	44.34	33.03	38.50	56.80	36.22
Sugar ... cwt.	4.42	5.60	7.30	5.89	4.98	4.72	5.29

* Exclusive of excise duty.

(iii.) *Development of Breweries, 1909 to 1914.* The following table shews the progress of this industry during the past five years:—

DEVELOPMENT OF BREWERIES FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	125	124	121	110	101	95
" employees	3,238	3,333	3,450	3,532	3,551	3,535
Actual horse-power of engines used ...	3,704	4,663	5,008	5,678	6,930	8,313
Approx. value of land and buildings £	1,398,283	1,453,696	1,469,449	1,526,629	1,554,187	1,860,584
" plant and machinery £	817,671	903,521	970,618	1,078,724	1,171,595	1,433,616
Total amount of wages paid ...	420,032	445,342	483,393	523,812	552,843	575,446
Value of fuel used	68,963	77,101	69,284	76,906	75,824	86,175
" raw material worked up ...	1,157,707	1,138,145	1,273,522	1,494,070	1,568,620	1,534,656
" final output	2,864,923	3,076,736	3,318,937	3,647,850	3,817,396	4,107,498
Value added in process of manufacture £	1,707,216	1,938,591	2,045,415	2,153,780	2,248,776	2,572,842

The main feature in the history of the brewing industry, which was established at an early date in Australia, has been the change from the small local brewery in every township of moderate size to the large centralised city brewery. This, however, has not been so much in evidence during the period embraced in the above table, the reduction of the number of establishments during recent years being mainly due to several large amalgamations. The total value of output of breweries in the Commonwealth increased from £2,864,923 in 1909 to £4,107,498 in 1914, equal to 43.4 per cent. during the period.

20. Distilleries.—The subjoined table gives particulars of distilleries in each State during the year 1914. There are no distilleries in either of the States of Western Australia or Tasmania.

DISTILLERIES, 1914.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	3	9	3	18	...	...	33
" employees	22	101	40	79	...	...	242
Actual horse-power of engines employed ...	124	212	55	200	...	...	591
Approximate value of land and buildings £	19,330	99,575	13,603	25,183	...	...	157,691
Approx. value of plant and machinery £	58,008	73,750	18,136	22,747	...	...	172,641
Total amount of wages paid during year £	5,513	8,774	5,546	6,015	...	...	25,848
Value of fuel used	1,403	3,837	3,490	2,378	...	...	11,164
Value of raw materials worked up ...	34,180	60,377	11,698	52,368	...	...	158,643
Total value of output	53,079	89,399	58,358	77,526	...	...	278,362
Value added in process of manufacture £	18,899	29,022	46,060	25,138	...	...	119,719

Production of Spirits and Materials Used, 1914. The total quantity of brandy distilled in 1914 was 208,730 proof gallons, and of other spirits was 3,086,205 proof gallons. The materials used comprised 308,038 cwt. of molasses and sugar, and 2,816,141 gallons of wine. Particulars for the separate States are not available for publication.

21. Tobacco, Cigars, and Cigarettes.—(i.) During the year 1914 there were thirty-six establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. There were no factories engaged in this industry in Tasmania.

TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1914.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	11	13	3	3	6	...	36
" employees	1,763	1,684	75	101	35	...	3,658
Actual horse-power of engines employed ...	413	353	20	10	12	...	808
Approx. value of land and buildings £	212,726	168,955	3,352	13,089	4,340	...	402,462
" plant and machinery £	118,606	109,270	8,708	11,104	844	...	248,532
Total amount of wages paid during year £	173,440	192,194	7,293	6,283	1,611	...	390,821
Value of fuel used	4,451	2,493	214	175	32	...	7,365
Value of raw material worked up ...	1,187,756	672,665	28,535	9,749	6,484	...	1,905,489
Total value of output	1,767,898	1,158,067	53,149	16,592	10,776	...	3,006,482
Value added in process of manufacture £	580,142	485,492	24,314	6,843	4,292	...	1,100,993

(ii.) *Quantity of Goods Produced, and Tobacco Leaf Used, 1914.* 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 1914 :—

PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1914.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Manufact'ed tobacco lbs.	4,524	5,141	197	97	5	...	9,964
Cigars lbs.	102	286	...	13	...	...	401
... .. No.	8,966	23,533	...	935	...	...	33,434
Cigarettes lbs.	2,866	330	...	...	1	...	3,197
... .. No.	1,256,542	140,101	...	...	449	...	1,397,092
TOBACCO LEAF USED (,000 OMITTED).							
Australian leaf ... lbs.	925	340	239	35	...	...	1,539
Imported leaf ... lbs.	5,756	4,708	5	77	6	...	10,552

(iii.) *Development of Industry.* This industry was among the first to be established in Australia. In 1861 New South Wales had eleven factories, producing 177,744 lbs. of manufactured tobacco; in the same year there was one factory in Victoria, but the quantity of tobacco manufactured is not available. The Australian market has for many years been largely supplied with local manufactures. The quantities imported into Australia during 1914-15 were—manufactured tobacco 2,156,406 lbs., cigars 283,901 lbs., and cigarettes 138,455 lbs., while the quantities manufactured in Australian factories were respectively 9,963,739 lbs., 401,132 lbs., and 3,196,791 lbs. The following tables shew the development of the tobacco industry in the Commonwealth during recent years :—

DEVELOPMENT OF TOBACCO, CIGAR, AND CIGARETTE FACTORIES IN THE COMMONWEALTH, 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	37	35	33	35	36	36
Number of employees	3,991	3,923	3,730	3,484	3,566	3,658
Actual horse-power of engines used	764	830	1,045	917	1,119	808
Approx. value of land and buildings £	366,502	379,866	373,895	349,022	353,447	402,462
Approx. value of plant and machinery £	241,374	250,351	214,576	227,294	231,547	248,532
Total amount of wages paid £	296,638	322,171	346,258	358,081	373,963	380,821
Value of fuel used £	4,370	4,535	4,488	4,267	4,053	7,365
Value of raw material worked up £	1,266,284	1,385,863	1,468,212	1,622,713	1,651,226	1,905,489
Value of final output £	1,938,567	2,332,986	2,518,946	2,696,157	2,713,363	3,006,482
Value added in process of manufacture £	672,283	947,123	1,050,734	1,073,444	1,062,137	1,100,993

PRODUCTION.

Tobacco made lbs.	9,440,167	9,933,087	10,048,396	10,298,241	9,956,045	9,963,739
Cigars "	285,330	319,903	356,127	388,906	405,901	401,132
Cigarettes "	1,623,679	1,862,178	2,163,729	2,605,840	2,767,550	3,196,791
Leaf used "	9,959,650	10,950,775	10,993,024	11,826,658	11,677,099	12,091,216

22. **Woollen, Cotton, and Tweed Mills.**—(i.) The manufacture of woollens and tweeds was established in Australia at an early period in its history, and was under Government control, the first record in New South Wales dating back to 1801, when a few blankets were made by the convicts; the first record in Victoria was in 1867. The following table, which gives particulars of the mills in each State during the year 1914, shews that the industry is now well established :—

WOOLLEN, COTTON, AND TWEED MILLS, 1914.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	5	10	1	2	...	4	22
" employees	955	1,817	129	161	...	228	3,290
Actual horse-power of engines employed ...	2,173	2,356	135	290	...	118	5,072
Approx. value of land and buildings ...	£ 127,040	141,740	9,629	12,132	...	20,850	311,391
" plant and machinery ...	£ 185,767	263,050	20,650	24,067	...	38,550	532,084
Total amount of wages paid during year ...	£ 90,877	133,596	8,614	9,579	...	14,924	257,590
Value of fuel used	£ 9,424	14,983	*	*	...	1,199	27,306
Value of raw material worked up	£ 246,425	302,798	*	*	...	20,089	603,387
Total value of output	£ 459,150	577,434	*	*	...	51,688	1,152,657
Value added in process of manufacture ...	£ 212,725	274,636	*	*	...	31,599	549,270

* As there is only one factory in Queensland and two in South Australia, particulars of output, etc., are not disclosed; the amounts, however, are included in the totals for the Commonwealth.

(ii.) *Progress of Industry, 1909 to 1914.* The progress of woollen and tweed manufacturing in the Commonwealth during the last five years is shewn in the following table:—

DEVELOPMENT OF WOOLLEN, COTTON, AND TWEED MILLS IN COMMONWEALTH
FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	24	25	32	32	22	22
" employees	2,965	3,030	3,200	3,379	3,030	3,290
Actual horse-power of engines used ...	3,522	3,243	3,444	3,692	4,358	5,072
Approx. value of land and buildings ...	£ 222,925	249,787	233,115	307,049	299,306	311,391
" plant and machinery ...	£ 423,772	436,921	478,859	497,827	516,659	532,084
Total amount of wages paid	£ 155,675	172,394	203,194	232,561	231,018	257,590
Value of fuel used	£ 18,892	20,033	20,863	22,709	21,778	27,306
Value of raw material worked up	£ 303,283	347,226	447,829	468,728	475,637	603,387
Value of final output	£ 596,665	693,297	860,789	930,485	925,602	1,152,657
Value added in process of manufacture ...	£ 293,382	346,071	412,960	461,757	449,965	549,270

* Excluding 13 establishments for the manufacture of hosiery and knitted goods included in New South Wales returns previous to 1913.

(iii.) *Quantity and Value of Production, 1914.* 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 in the Commonwealth during 1914 was 3,221,950 yards. In New South Wales 1,718,903 yards of tweed and cloth, in Victoria 1,036,079 yards, and in Tasmania 21,890 yards were manufactured. The production of flannel in the Commonwealth in 1914 amounted to over 6,222,000 yards, while blankets, shawls, and rugs to the number of about 1,061,000 were manufactured.

No cotton spinning or weaving or linen weaving is carried on in Australia. Cotton ginning has been carried on intermittently in the northern States, and a mill was lately reopened at Ipswich in Queensland. For particulars of the quantity ginned on which bounties were paid, see page 359.

23. **Boots and Shoes.**—(i.) 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 extent of its output. The following table shews particulars of this industry for each State during the year 1914:—

BOOT AND SHOE FACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	108	172	27	27	10	13	357
" employees	4,105	6,924	1,047	724	188	204	13,192
Actual horse-power of engines employed	1,114	1,474	245	177	35	46	3,091
Approx. value of land and buildings £	282,397	253,743	41,418	48,783	15,190	15,045	656,576
" plant and machinery £	143,619	201,415	26,294	25,572	8,380	10,415	415,695
Total amt. of wages paid during year £	398,404	603,318	91,119	66,722	18,722	15,615	1,193,900
Value of fuel used	6,046	10,306	1,059	1,061	369	61	18,902
Value of raw material worked up £	783,880	1,281,352	177,288	118,532	44,065	31,952	2,437,169
Total value of output	1,355,896	2,160,500	302,524	208,666	71,792	57,212	4,156,590
Value added in process of manufacture £	572,016	879,148	125,235	90,034	27,727	25,260	1,719,421

(ii.) *Progress of Industry, 1909 to 1914.* The progress of the industry in the last five years is shewn in the following table :—

DEVELOPMENT OF BOOT AND SHOE FACTORIES IN THE COMMONWEALTH,
1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	315	337	341	332	346	357
Number of employees	14,023	13,810	13,772	13,341	13,456	13,192
Actual horse-power of engines used ...	2,008	2,248	2,405	2,646	2,823	3,091
Approx. value of land and buildings £	500,518	527,805	565,735	598,659	629,787	656,576
Approx. value of plant and machinery £	337,734	360,818	389,879	398,014	429,994	415,695
Total amount of wages paid	900,812	968,375	1,096,575	1,144,465	1,154,658	1,193,900
Value of fuel used	14,051	14,699	16,792	17,244	18,073	18,902
Value of raw material worked up	1,804,444	2,000,704	2,151,101	2,184,750	2,308,194	2,437,169
Value of final output	3,112,212	3,396,172	3,713,948	3,819,371	4,004,486	4,156,590
Value added in process of manufacture £	1,307,768	1,395,468	1,562,847	1,634,621	1,696,292	1,719,421

Although the average number of employees in boot and shoe factories shews a slight decline during the past five years, yet a substantial and consistent advance in the value of output is in evidence during the same period. This is doubtless attributable to the increase in mechanical power employed, and the introduction of improved plant and machinery, the value of which was £415,695 in 1914, as compared with £337,734 in 1909.

(iii.) *Value and Quantity of Production, 1914.* The number and value of boots, shoes and slippers made at factories in each State during the year 1914 are shewn in the following table :—

PRODUCTION OF BOOT AND SHOE FACTORIES, 1914.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Boots and shoes ... pairs	3,528	4,913	744	617	+196	133	10,131
Slippers ... pairs	312	273	3	12	†	1	601
Uppers* ... pairs	55	37	48	17	§	2	¶ 159
VALUE.							
Boots and shoes ... £	1,263,771	2,105,900	268,734	192,256	+67,064	54,761	3,952,506
Slippers ... £	31,802	27,000	563	1,755	†	125	61,245
Uppers* ... £	14,501	9,300	18,220	3,807	§	612	¶ 46,440

* Made for other than factory use. † Including slippers. ‡ Included with boots and shoes.
§ Information not available for publication. ¶ Exclusive of Western Australia.

24. Clothing (Tailoring and Slop) Factories.—The importance of this industry in the several States and in the Commonwealth as a whole is shewn in the following table:—

CLOTHING (TAILORING AND SLOP) FACTORIES, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	461	489	143	131	72	44	1,340
" employees	10,490	10,825	4,064	2,430	1,287	678	29,774
Actual horse-power of engines employed	432	407	253	90	58	17	1,257
Approx. value of land and buildings	£ 1,018,718	592,447	278,340	149,456	109,665	70,720	2,219,346
" plant and machinery	£ 63,852	78,501	38,951	14,656	10,428	2,779	209,167
Total amount of wages paid during year	£ 776,766	667,678	241,672	147,712	101,160	44,100	1,979,088
Value of fuel used	£ 11,575	12,607	1,970	3,318	1,910	445	31,825
Value of raw material worked up	£ 1,034,936	1,137,073	348,603	164,164	131,896	48,221	2,864,893
Total value of output	£ 2,195,381	2,201,353	779,654	381,256	277,905	117,452	5,953,001
Value added in process of manufacture	£ 1,160,445	1,064,280	431,051	217,092	146,009	69,231	3,088,108

Progress of Industry, 1909 to 1914. The substantial development that has taken place in the tailoring and slop branch of this industry may be accepted as an indication of the general prosperity of the community. The amount of wages paid increased from £1,869,138 in 1909 to £1,979,088 in 1914, or nearly 45 per cent., while the output increased approximately 40 per cent. during the same period.

DEVELOPMENT OF CLOTHING (TAILORING AND SLOP) FACTORIES IN THE COMMONWEALTH, FROM 1909 to 1914.

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	1,004	1,111	1,182	1,238	1,342	1,340
" employees	24,811	27,451	30,549	31,068	30,965	29,774
Actual horse-power of engines used	741	851	1,020	1,206	1,201	1,257
Approx. value of land and buildings	£ 1,637,795	1,778,985	1,931,274	2,155,643	2,212,346	2,219,346
" plant and machinery	£ 131,004	143,793	160,935	173,706	191,752	209,167
Total amount of wages paid ...	£ 1,369,138	1,589,636	1,854,135	2,010,779	2,075,916	1,979,088
Value of fuel used	£ 22,602	24,985	28,561	29,550	31,219	31,825
" raw material worked up	£ 2,097,483	2,304,362	2,610,348	2,696,937	2,732,241	2,864,893
" final output	£ 4,260,162	4,805,629	5,486,388	5,807,431	5,878,119	5,953,001
Value added in process of manufacture	£ 2,162,679	2,501,267	2,876,040	3,110,444	3,145,878	3,088,108

25. Dressmaking and Millinery.—Particulars of dressmaking and millinery establishments for the year 1914 are given in the following table:—

DRESSMAKING AND MILLINERY ESTABLISHMENTS, 1914.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	C'wlth.
Number of factories	279	525	58	50	59	20	991
" employees	4,502	9,438	1,425	770	818	365	17,318
Actual horse-power of engines employed	93	272	8	13	17	7	410
Approx. value of land and buildings	£ 336,950	459,130	49,371	42,745	51,920	16,300	956,416
" plant and machinery	£ 19,250	46,217	5,410	2,602	4,769	934	79,162
Total amount of wages paid during year	£ 206,604	403,992	59,833	32,115	42,290	14,387	759,221
Value of fuel used	£ 1,429	6,704	111	318	566	36	9,164
Value of raw material worked up	£ 288,476	766,671	90,851	45,879	60,005	20,538	1,272,420
Total value of output	£ 605,913	1,383,952	193,328	96,291	110,287	37,362	2,429,133
Value added by process of manufacture	£ 317,437	619,281	102,477	50,412	50,282	16,824	1,156,713

Progress of Industry, 1909 to 1914. The development of dressmaking and millinery establishments in the Commonwealth during the past five years is shewn in the following table:—

**DEVELOPMENT OF DRESSMAKING AND MILLINERY ESTABLISHMENTS IN THE
COMMONWEALTH FROM 1909 to 1914.**

Items.	1909.	1910.	1911.	1912.	1913.	1914.
Number of factories	1,009	1,056	1,050	994	995	991
" employees	16,324	18,040	18,803	18,476	18,217	17,318
Actual horse-power of engines used ...	157	254	319	371	376	410
Approx. value of land and buildings £	735,528	811,464	879,098	878,231	939,072	956,416
" plant and machinery £	57,752	60,937	67,307	74,466	72,257	79,182
Total amount of wages paid ...	508,501	600,484	695,319	748,222	772,748	759,221
Value of fuel used	7,076	8,185	8,722	9,143	9,238	9,164
Value of raw material worked up £	932,509	1,065,979	1,161,260	1,249,930	1,287,050	1,272,420
Value of final output	1,752,037	2,046,931	2,280,553	2,429,315	2,492,105	2,429,133
Value added in process of manufacture £	819,528	980,952	1,119,293	1,179,385	1,205,055	1,156,713

The above table shews the amount of wages paid to have increased over 49 per cent. during the last five years, and the final output 39 per cent. during the same period.

26. 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 1914. The returns include establishments for the manufacture of wheels, spokes, etc.

COACH AND WAGON BUILDING WORKS, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	233	329	87	100	41	24	814
" employees	2,436	2,891	780	806	286	204	7,403
Actual horse-power of engines employed ...	1,143	646	239	421	164	50	2,663
Approx. value of land and buildings £	333,585	271,783	71,723	102,191	56,932	21,900	858,114
" plant and machinery £	92,653	67,190	21,318	29,550	12,485	5,070	228,266
Total amount of wages paid during year £	251,304	247,931	66,457	72,769	32,299	15,616	686,376
Value of fuel used	13,086	9,170	1,258	3,249	2,085	629	29,477
Value of raw material worked up £	235,480	275,468	63,425	70,462	34,863	17,275	696,973
Total value of output	614,500	663,533	175,900	184,969	82,367	44,253	1,765,522
Value added in process of manufacture £	379,020	388,065	112,475	114,507	47,504	26,978	1,068,549

27. 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 1914:—

**FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE
MAKING, 1914.**

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	173	191	62	34	27	15	502
" employees	2,502	1,925	1,074	819	370	266	6,956
Actual horse-power of engines employed ...	1,477	876	670	530	256	149	3,958
Approx. value of land and buildings £	346,120	248,273	85,908	58,401	59,758	26,040	824,500
" plant and machinery £	55,546	46,529	33,235	27,791	13,603	6,049	182,753
Total amount of wages paid during year £	286,698	193,315	95,167	84,647	49,687	21,900	731,414
Value of fuel used	6,061	3,561	2,041	2,132	1,375	475	15,645
Value of raw material used	287,119	232,696	106,127	69,937	60,171	20,468	776,518
Total value of output	680,505	520,299	274,667	176,501	128,426	55,334	1,835,732
Value added in process of manufacture £	393,386	287,603	168,540	106,564	68,255	34,866	1,059,214

28. Electric Light and Power Works.—Particulars of the electric light and power works of the Commonwealth in the year 1914 are given in the subjoined table. In 1909 there were 148 establishments employing 1827 hands, whose salaries and wages amounted to £241,945: in 1914 these had increased to 233 establishments, 3298 hands, salaries and wages £482,082, while the value of output had increased during the five years from £1,185,426 to £2,548,651.

ELECTRIC LIGHT AND POWER WORKS, 1914.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	129	58	8	4	21	13	233
employees	1,161	924	237	494	247	235	3,228
Actual horse-power of engines employed	91,143	25,485	11,799	14,061	19,496	7,701	172,685
Approx. value of land and buildings	£ 599,514	305,975	30,508	135,082	74,064	6,260	1,151,403
" plant and machinery	£ 1,597,624	1,418,511	134,057	757,459	433,023	216,108	4,556,781
Total amount of wages paid during year	£ 179,248	131,854	25,771	71,464	45,712	28,033	482,082
Value of fuel used	£ 217,238	68,568	22,784	35,529	88,909	66,569	499,597
Total value of output	£ 1,367,742	473,918	131,053	149,419	270,123	156,396	2,548,651

* Including manufacture of electric apparatus.

29. 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 two 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, 1914.

Items.	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	C'wlth.
Number of factories	66	47	18	5	4	3	143
employees	1,957	2,117	558	423	62	146	5,263
Actual horse-power of engines employed	4,461	1,326	207	267	40	32	6,333
Approx. value of land and buildings	£ 628,541	475,825	153,635	11,612	18,866	31,300	1,321,779
" plant and machinery	£ 1941,337	1,320,895	790,820	441,717	42,468	156,317	4,693,544
Total amount of wages paid during year	£ 275,852	332,971	79,554	69,132	11,887	21,543	790,939
Value of fuel used	£ 74,880	2,471	3,852	1,925	4,060	13,738	100,926
Value of raw material used ...	£ 538,670	297,437	40,754	61,996	17,914	11,655	968,426
Total value of output	£ 1454,490	979,229	254,744	185,935	45,497	59,188	2,979,083
Value added in process of manufacture	£ 915,820	681,792	213,990	123,939	27,583	47,533	2,010,657

* Including thirteen coke factories worked as separate industries. † Including two coke factories worked as separate industries.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1914:—

PRODUCTION OF GAS AND COKE WORKS, 1914.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
QUANTITY.							
Gas made ... 1000 cub. ft.	6,080,270	3,806,880	799,491	609,564	134,933	192,548	11,623,186
Coke tons	543,789	195,178	50,070	25,246	6,770	9,959	831,012
VALUE.							
Gas £	953,602	699,000	205,697	132,291	28,829	46,277	2,065,696
Coke £	359,364	195,000	36,586	27,460	13,035	8,479	638,924
COAL USED.							
Coal tons	854,339	300,152	99,165	51,451	11,307	15,961	1,332,375