

## 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 indicate a consistent progress both in regard to the extension of existing industries and the establishment of new ones. As will be seen from the following pages, this growth has been particularly rapid since the abolition of inter-colonial tariffs consequent upon the creation of the Commonwealth of Australia in 1901, the throwing open of the whole of the Australian markets to the industrial products of each State having facilitated the internal distribution of the products of Australian industry.

(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 earlier 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 workers, 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 six years 1915 to 1919-20, will serve to indicate generally the progress which has been made. During recent years a change has been made in the period for which manufacturing returns are collected by several of the States, viz., New South Wales, Victoria, and South Australia, these States having adopted the financial year ending on the 30th June instead of the calendar year. Efforts were made to secure a uniform period of collection throughout the Commonwealth, and the financial year was favoured as being more suitable generally for statistical purposes, but the statisticians of those States which furnish information for the calendar year have so far failed to make the desired change. Owing to the late arrival of some of the returns, it was necessary, in 1917 and 1918, to combine the statistics of New South Wales, Victoria, and South Australia to 30th June with those of Queensland, Western Australia, and Tasmania to the 31st December, of the same year. This arrangement was not satisfactory on account of the late presentation of the figures for three of the more important States.

In order to bring the statistics more up to date, the returns for New South Wales, Victoria, and South Australia were carried forward a year, and from 1918-19 onwards the returns as presented will consist of Queensland, Western Australia, and Tasmania to 31st December, and New South Wales, Victoria, and South Australia to 30th June, six months later. To permit of this alteration it was necessary in this issue to furnish particulars of manufacturing for both of the years 1918-19 and 1919-20.

## NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 TO 1919-20.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
NUMBER OF FACTORIES.							
1861 ..	601	531	..	..	..	..	..
1871 ..	1,813	1,740	..	..	..	..	..
1881 ..	2,961	2,488	571 <sup>e</sup>	823 <sup>e</sup>	..	..	..
1891 ..	3,056	3,141	1,328 <sup>e</sup>	996 <sup>e</sup>	175	..	..
1901 ..	3,367	3,249	2,110 <sup>e</sup>	1,335 <sup>e</sup>	662	420 <sup>f</sup>	11,143
1911 ..	5,039	5,126	1,657	1,314	710	609	14,455
1915 ..	5,269 <sup>d</sup>	5,413	1,775	1,266	780	589	15,092
1916 <sup>a</sup> ..	5,210	5,413	1,782	1,266	771	563	15,010
1917 <sup>b</sup> ..	5,356	5,445	1,793	1,286	759	540	15,179
1918 <sup>b</sup> ..	5,414	5,627	1,778	1,285	764	553	15,421
1918-19 <sup>c</sup> ..	5,460	5,720	1,778	1,313	764	553	15,588
1919-20 <sup>c</sup> ..	5,662	6,038	1,754	1,368	817	652	16,291

## NUMBER OF EMPLOYEES.

1861 ..	..	4,395	..	..	..	..	..
1871 ..	13,583	19,569	..	5,629 <sup>e</sup>	..	..	..
1881 ..	31,191	43,209	..	10,995 <sup>e</sup>	..	..	..
1891 ..	50,879	53,525	..	14,099 <sup>e</sup>	..	..	..
1901 ..	66,135	66,529	26,172 <sup>e</sup>	19,283 <sup>e</sup>	12,198	7,466 <sup>f</sup>	197,783
1911 ..	108,624	111,948	37,156	27,885	15,799	10,298	311,710
1915 ..	116,611 <sup>d</sup>	113,834	42,079	25,496	14,631	8,420	321,071
1916 <sup>a</sup> ..	116,401	113,834	39,983	25,496	12,676	8,362	316,752
1917 <sup>b</sup> ..	117,997	116,970	40,446	26,010	12,168	8,079	321,670
1918 <sup>b</sup> ..	120,554	118,241	40,990	26,634	12,917	8,713	328,049
1918-19 <sup>c</sup> ..	127,591	122,349	40,990	27,915	12,917	8,713	340,475
1919-20 <sup>c</sup> ..	144,454	130,522	40,891	29,442	15,409	10,016	376,734

(a) New South Wales for year ended 30th June, 1916; Victoria and South Australia, calendar year 1915; Queensland, Western Australia, and Tasmania, calendar year 1916. (b) New South Wales, Victoria, and South Australia for year ended 30th June; the remaining States for year ended 31st December. (c) New South Wales, Victoria, and South Australia for year ended 30th June; the remaining States for year ended 31st December, six months earlier. See last paragraph above. (d) For year ended 30th June, 1915. (e) Not on same basis as other States. (f) For 1902.

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

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 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 which was drawn up by the conference. 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. The classification of industries prepared by the conference of 1902 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 twelve 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 with greater uniformity throughout.

3. **Classification of Manufacturing Industries.**—Under the classification prepared by the Conference of Statisticians held in 1902, and adopted at that held in 1906, factories were placed under nineteen different categories, according to the nature of the industry carried on therein, most of the categories being further 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 shows 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><b>CLASS I.—TREATING RAW MATERIALS, ETC.</b>          Bolling-down, Tallow Refining, etc.          Tanneries          Woolscouring and Fellmongering          Chaff-cutting, etc.</p> <p><b>CLASS II.—OILS AND FAT, ETC.</b>          Oil and Grease          Soap and Candles</p> <p><b>CLASS III.—STONE, CLAY, GLASS, ETC.</b>          Bricks and Tiles          Glass (including Bottles)          Glass (Ornamental)          Lime, Plaster, Cement and Asphalt          Marble, Slate, etc.          Modelling, etc.          Pottery and Earthenware</p> <p><b>CLASS IV.—WORKING IN WOOD.</b>          Boxes and Cases          Coopersage          Joinery          Saw Mills          Wood-turning, etc.</p> <p><b>CLASS V.—METAL WORKS, MACHINERY, ETC.</b>          Agricultural Implements          Brass and Copper          Cutlery          Engineering          Galvanised Iron-working          Ironworks and Foundries          Lead Mills          Railway Carriages          Railway and Tramway Workshops          Smelting          Stoves and Ovens          Tinsmithing          Wireworking          Other Metal Works</p> <p><b>CLASS VI.—FOOD AND DRINK, ETC.</b>          Bacon Curing          Butter Factories          Butterline and Margarine          Cheese Factories          Condensed Milk          Meat and Fish Preserving          Biscuits</p>	<p>Confectionery          Corn-flour, Oatmeal, etc.          Flour Mills          Jam and Fruit Canning          Pickles, Sauces and Vinegar          Sugar Mills          Sugar Refining          Aerated Waters, Cordials, etc.          Breweries          Condiments, Coffee, Spices, etc.          Distilleries          Ice and Refrigerating          Malting          Tobacco, Cigars, etc.</p> <p><b>CLASS VII.—CLOTHING AND TEXTILE FABRICS.</b>          Woollen and Tweed Mills          Boots and Shoes          Slop Clothing          Clothing (Tailoring)          Dressmaking and Millinery—            Makers' material            Customers' material          Dyeworks and Cleaning          Furriers          Hats and Caps          Waterproof and Oilskin          Shirts, Ties, and Scarfs          Rope and Cordage          Tents and Tarpaulins          Sallmaking</p> <p><b>CLASS VIII.—BOOKS, PAPER, PRINTING, ETC.</b>          Electrotyping and Stereotyping          Paper-making, Paper Boxes, Bags, etc.          Photo-engraving          Printing and Binding</p> <p><b>CLASS IX.—MUSICAL INSTRUMENTS, ETC.</b>          Musical Instruments and Sewing Machines</p> <p><b>CLASS X.—ARMS AND EXPLOSIVES.</b>          Arms and Explosives</p> <p><b>CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC.</b>          Coach and Wagon Building          Cycles and Motors          Perambulators          Saddlery, Harness, etc.          Spokes, etc.</p>	<p><b>CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING.</b>          Docks and Slips          Ship and Boat Building and Repairing</p> <p><b>CLASS XIII.—FURNITURE, BEDDING, ETC.</b>          Bedding, Flock, and Upholstery          Billiard Tables          Furniture and Cabinet Making          Picture Frames          Window Blinds</p> <p><b>CLASS XIV.—DRUGS AND CHEMICALS, ETC.</b>          Chemicals, Drugs, and Medicines          Fertilizers          Paints, Varnishes, and By-products</p> <p><b>CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS.</b>          Surgical, Optical, and other Scientific Instruments</p> <p><b>CLASS XVI.—TIMEPIECES, JEWELLERY, AND PLATED WARE.</b>          Electro-plating          Manufacturing Jewellery, etc.</p> <p><b>CLASS XVII.—HEAT, LIGHT, AND POWER.</b>          Coke Works          Electric Apparatus          Electric Light and Power          Gas Works and Kerosene          Lamps and Fittings, etc.          Hydraulic Power</p> <p><b>CLASS XVIII.—LEATHERWARE (N.E.I.).</b>          Leather Belting, Fancy Leather, Portmanteaux and Bags</p> <p><b>CLASS XIX.—MINOR WARES.</b>          Basket and Wickerware, Matting, etc.          Brooms and Brushware          Rubber Goods          Toys          Umbrellas          Other Industries</p>
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## § 2. Number of Factories.

1. *General.*—The presentation of the number of factories in each State does not furnish a clear indication of the extent or progress of the manufacturing industry throughout Australia.

Experience has shewn that the smaller establishments in many branches of industry tend to disappear before the superior competitive facilities of larger enterprises.

On the other hand, new factories are constantly under construction in districts advantageously located for manufacturing purposes, and small plants are as numerous as large ones.

(i) *Total Number of Factories in each State 1915 to 1919-20.* The following table presents, for the years 1915 to 1919-20, the total number of factories in each State of the Commonwealth:—

**FACTORIES IN THE COMMONWEALTH, 1915 TO 1919-20.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1915 ..	5,269 <i>d</i>	5,413	1,775	1,266	780	589	15,092
1916 <i>a</i> ..	5,210	5,413	1,782	1,266	771	568	15,010
1917 <i>b</i> ..	5,356	5,445	1,793	1,286	759	540	15,179
1918 <i>b</i> ..	5,414	5,627	1,778	1,285	764	553	15,421
1918-19 <i>c</i>	5,460	5,720	1,778	1,313	764	553	15,588
1919-20 <i>c</i>	5,662	6,038	1,754	1,368	817	652	16,291

(a) See note (a) first table this section.

(b) See note (b) first table this section.

(c) See note (c) first table this section.

(d) For year ended 30th June, 1915.

(ii) *Classification of Factories in Commonwealth, 1915 to 1919-20.* The following table shews the total number of factories in the Commonwealth for each year from 1915 to 1919-20, classified on the basis indicated in § 1, 3 hereof:—

**CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1915 TO 1919-20.**

Class of Industry.	1915.(a)	1916.(b)	1917.(c)	1918.(c)	1918-19 (d)	1919-20 (d)
	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	839	817	797	798	789	799
II. Treating oils and fats, animal, vegetable, etc. ..	99	96	92	90	88	92
III. Processes in stone, clay, glass, etc. ..	654	626	606	616	643	670
IV. Working in wood ..	1,702	1,661	1,646	1,713	1,762	1,912
V. Metal works, machinery, etc. ..	1,814	1,832	1,802	1,836	1,872	1,974
VII. Connected with food and drink, etc. ..	2,328	2,372	2,403	2,402	2,420	2,427
VII. Clothing and textile fabrics, etc. ..	3,117	3,085	3,176	3,177	3,155	3,311
VIII. Books, paper, printing and engraving ..	1,225	1,225	1,232	1,256	1,220	1,247
IX. Musical instruments, etc. ..	19	20	25	27	31	37
X. Arms and explosives ..	20	21	17	18	17	17
XI. Vehicles and fittings, saddlery and harness, etc. ..	1,337	1,334	1,374	1,423	1,449	1,514
XII. Ship and boat building and repairing ..	88	72	74	75	76	80
XIII. Furniture, bedding, and upholstery ..	693	697	704	722	743	817
XIV. Drugs, chemicals, and by-products ..	208	207	238	260	273	293
XV. Surgical and other scientific instruments ..	51	51	63	67	72	71
XVI. Jewellery, timepieces, and platedware ..	199	195	190	187	194	215
XVII. Heat, light, and power ..	474	466	479	489	505	515
XVIII. Leatherware, n.e.l. ..	67	69	74	81	83	83
XIX. Minor wares, n.e.l. ..	160	164	187	184	196	207
Total ..	15,092	15,010	15,179	15,421	15,588	16,291

(a) New South Wales figures for year ended 30th June, 1915. (b) See note (a) first table this section.

(c) See note (b) first table this section. (d) See note (c) first table this section.

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

number of factories has increased by 1,199 since 1915. A temporary depression occurred in the manufacturing industry during the war period, but since the signing of the Armistice the natural expansion of industry has been responsible for the large increase of 703 factories during 1919-20. As previously pointed out, any increase or decrease in the number of factories from year to year does not necessarily indicate a change in the position of the industry.

(iii) *Classification of Factories in each State, 1918-19 and 1919-20.* The following tables shew the number of factories in each State of the Commonwealth during 1918-19 and 1919-20, classified according to the nature of the industry. (See classification given in § 1, 3 hereof) :—

## CLASSIFICATION OF FACTORIES IN EACH STATE, 1918-19.

Class of Industry.	N.S.W. 1918-19.	Vic. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'with.
I. Treating raw material, product of agricul. & pastoral pursuits, etc.	244	312	41	105	38a	49a	789
II. Treating oils and fats, animal, vegetable, etc.	40	24	13	11	(b)	(b)	88
III. Processes in stone, clay, glass, etc.	290	180	39	78	34	22	643
IV. Working in wood	696	481	290	81	68	140	1,762
V. Metal works, machinery, etc.	630	746	214	165	78	39	1,872
VI. Connected with food & drink, etc.	805	651	477	248	139	100	2,420
VII. Clothing and textile fabrics, etc.	960	1,500	242	250	135	68	3,155
VIII. Books, paper, printing & engraving	467	421	146	87	73	26	1,220
IX. Musical instruments, etc.	13	12	..	1	..	..	31
X. Arms and explosives	5	11	..	1	..	..	17
XI. Vehicles and fittings, saddlery and harness, etc.	469	571	144	138	77	50	1,449
XII. Ship and boat building & repairing	37	12	10	7	4	6	76
XIII. Furniture, bedding, and upholstery	258	286	80	58	43	18	743
XIV. Drugs, chemicals, and by-products	115	120	3	15	13	7	273
XV. Surgical and other scientific instruments	18	32	7	8	7	..	72
XVI. Jewellery, timepieces & platedware	53	95	17	16	8	5	194
XVII. Heat, light, and power	237	166	32	21	31	18	505
XVIII. Leatherware, n.e.l.	32	40	3	5	3	..	83
XIX. Minor wares, n.e.l.	86	60	14	18	13	5	196
Total .. ..	5,460	5,720	1,773	1,313	764	553	15,588

(a) Includes Class II.

(b) Included in Class I.

## CLASSIFICATION OF FACTORIES IN EACH STATE, 1919-20.

Class of Industry.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'with.
I. Treating raw material, product of agricul. & pastoral pursuits, etc.	237	305	45	108	42a	62	799
II. Treating oils and fats, animal, vegetable, etc.	39	26	13	11	(b)	3	92
III. Processes in stone, clay, glass, etc.	290	196	37	89	37	21	670
IV. Working in wood	754	512	297	89	82	178	1,912
V. Metal works, machinery, etc.	671	794	214	170	77	48	1,974
VI. Connected with food & drink, etc.	783	676	460	240	152	116	2,427
VII. Clothing and textile fabrics, etc.	1,035	1,573	233	259	134	77	3,311
VIII. Books, paper, printing & engraving	473	437	144	89	76	28	1,247
IX. Musical instruments, etc.	23	12	..	2	..	..	37
X. Arms and explosives	5	10	..	2	..	..	17
XI. Vehicles and fittings, saddlery and harness, etc.	484	612	138	146	85	49	1,514
XII. Ship and boat building & repairing	36	12	10	9	6	7	80
XIII. Furniture, bedding and upholstery	270	332	86	62	47	20	817
XIV. Drugs, chemicals, and by-products	117	132	3	16	15	10	293
XV. Surgical and other scientific instruments	16	33	6	8	8	..	71
XVI. Jewellery, timepieces & platedware	61	99	19	18	9	9	215
XVII. Heat, light, and power	233	170	32	25	32	18	515
XVIII. Leatherware, n.e.l.	37	45	2	5	3	1	93
XIX. Minor wares, n.e.l.	93	62	15	20	12	5	207
Total .. ..	5,662	6,038	1,754	1,368	817	652	16,291

(a) Includes Class II.

(b) Included in Class I.

### § 3. Factories Classified by Number of Employees.

1. **General.**—A more scientific method of measuring the size of the manufacturing establishments in Australia is furnished by an analysis of the factories grouped according to the average number of employees in each.

The following tables shew, for each State, the number of factories classified according to number of hands employed, and the average number of hands employed therein, during 1918-19 and 1919-20 :—

#### CLASSIFICATION OF FACTORIES IN EACH STATE ACCORDING TO NUMBER OF HANDS EMPLOYED, 1918-19.

No. of Persons Employed in each Factory.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tasmania. 1918.	C'wealth.
NUMBER OF FACTORIES.							
Under 4 ..	927	1,182	334	177	169	122	2,911
4 ..	514	621	165	157	79	68	1,604
5 to 10 ..	1,821	1,864	548	479	244	188	5,144
11 to 20 ..	985	922	328	219	135	76	2,665
21 to 50 ..	756	686	242	178	90	67	2,019
51 to 100 ..	245	237	76	66	29	23	676
Over 100 ..	212	208	85	37	18	9	569
Total ..	5,460	5,720	1,778	1,313	764	553	15,588

#### AVERAGE NUMBER OF HANDS EMPLOYED.

Under 4 ..	2,089	2,671	738	440	356	267	6,561
4 ..	2,056	2,484	660	628	316	272	6,416
5 to 10 ..	12,616	13,008	3,821	3,323	1,738	1,276	35,782
11 to 20 ..	14,376	13,534	4,778	3,139	1,933	1,085	38,845
21 to 50 ..	23,848	21,933	7,556	5,645	2,869	2,101	63,952
51 to 100 ..	17,205	16,516	5,369	4,689	2,047	1,564	47,390
Over 100 ..	55,401	52,203	18,068	10,051	3,658	2,148	141,529
Total	127,591	122,349	40,990	27,915	12,917	8,713	340,475

#### CLASSIFICATION OF FACTORIES IN EACH STATE ACCORDING TO NUMBER OF HANDS EMPLOYED, 1919-20.

No. of Persons Employed in each Factory.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tasmania. 1919.	C'wealth.
NUMBER OF FACTORIES.							
Under 4 ..	939	1,153	321	176	161	128	2,878
4 ..	499	601	166	128	73	67	1,534
5 to 10 ..	1,863	1,970	543	508	285	254	5,423
11 to 20 ..	1,031	1,034	310	246	130	80	2,831
21 to 50 ..	807	773	259	191	112	88	2,230
51 to 100 ..	273	272	72	73	31	24	745
Over 100 ..	250	235	83	46	25	11	650
Total ..	5,662	6,038	1,754	1,368	817	652	16,291

CLASSIFICATION OF FACTORIES IN EACH STATE ACCORDING TO NUMBER OF HANDS EMPLOYED, 1919-20—*continued.*

No. of Persons Employed in each Factory.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tasmania. 1919.	C'wealth.
AVERAGE NUMBER OF HANDS EMPLOYED.							
Under 4 ..	2,091	2,632	687	438	350	289	6,487
4 ..	1,996	2,404	664	512	292	268	6,136
5 to 10 ..	13,113	13,717	3,815	3,545	1,978	1,731	37,899
11 to 20 ..	15,186	15,147	4,545	3,565	1,901	1,144	41,488
21 to 50 ..	25,198	24,415	8,104	5,912	3,483	2,676	69,788
51 to 100 ..	19,048	18,672	5,091	4,942	2,117	1,730	51,600
Over 100 ..	67,822	59,535	17,985	10,528	5,288	2,178	163,336
Total ..	144,454	136,522	40,891	29,442	15,409	10,016	376,734

Reference to the following table will shew a tendency for the proportionate number of hands employed in the larger establishments to still further increase and for that of the smaller factories to diminish. During the quinquennial period under discussion, the ratio of hands in factories employing under 21 hands to total number of employees in all factories shews a decline from 26.33 per cent. in 1915 to 24.42 in 1919-20. The larger establishments with 101 hands and upwards during the same period exhibit an increase from 41.99 to 43.36 per cent. of total employed. The average number of hands per establishment in 1915 was 21.27, and in 1919-20, 23.13.

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH ACCORDING TO NUMBER OF HANDS EMPLOYED DURING THE YEARS 1915 TO 1919-20.

Year.	Establishments Employing on the Average—							
	20 hands and under.		21 to 100 hands.		101 hands and upwards.		Total.	
	Es- tabl- ments.	Hands.	Es- tabl- ments.	Hands.	Es- tabl- ments.	Hands.	Es- tabl- ments.	Hands.
1915(a)—								
Number ..	12,106	84,545	2,445	101,722	541	134,804	15,092	321,071
Average per establishment ..	6.89	..	41.60	..	249.18	..	..	21.27
Percentage on total ..	80.22	26.33	16.20	31.68	3.58	41.99	100.00	100.00
1916(b)—								
Number ..	12,081	83,263	2,386	98,107	543	135,382	15,010	316,752
Average per establishment ..	6.89	..	41.11	..	249.32	..	..	21.10
Percentage on total ..	80.49	26.29	15.90	30.97	3.61	42.74	100.00	100.00
1917(c)—								
Number ..	12,158	84,685	2,491	102,695	530	134,290	15,179	321,670
Average per establishment ..	6.97	..	41.23	..	253.38	..	..	21.19
Percentage on total ..	80.10	26.33	16.41	31.92	3.49	41.75	100.00	100.00
1918(c)—								
Number ..	12,240	85,425	2,635	108,782	546	133,842	15,421	328,049
Average per establishment ..	6.98	..	41.28	..	245.13	..	..	21.27
Percentage on total ..	79.37	26.04	17.09	33.16	3.54	40.80	100.00	100.00
1918-19(d)—								
Number ..	12,324	87,604	2,695	111,342	569	141,529	15,588	340,475
Average per establishment ..	7.11	..	41.31	..	248.73	..	..	21.84
Percentage on total ..	79.06	25.73	17.29	32.70	3.65	41.57	100.00	100.00
1919-20(d)—								
Number ..	12,666	92,010	2,975	121,388	650	163,338	16,291	376,734
Average per establishment ..	7.26	..	40.80	..	251.29	..	..	23.13
Percentage on total ..	77.75	24.42	18.26	32.22	3.99	43.36	100.00	100.00

(a) New South Wales figures for year ended 30th June, 1915. (b) See note (a) first table this section.  
(c) See note (b) first table this section. (d) See note (c) first table this section.

### § 4. Factories Using Mechanical Power.

1. *Use of Mechanical Power.*—The statistics relating to the utilization of mechanical power in factories bring into relief another phase of industrial development in Australia.

The following tables reveal a gradual increase in the number of factories using mechanical power, and a more striking increase in the amount of power used, while a marked decline is noticeable in the number of factories using no power, thus affording definite statistical evidence of the growth of power-driven machinery in Australia, and of its increasing ascendancy over hand labour.

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 which many factories find it convenient to derive their motive power.

(i) *Utilization of Mechanical Power in Factories in each State.* The following tables shew the number of factories in which machinery was worked by steam, gas, oil, electricity, or water and the horse-power of engines or motors used, in each State and in the Commonwealth during 1918-19 and 1919-20:—

#### UTILIZATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1918-19.

State.	Number of Establishments.			Actual Horse-power of Engines Used.					
	Using Machinery worked by Steam, Gas, Oil, Electricity, or Water.	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Water.	Total.
N.S.W., 1918-19	No. 4,451	No. 1,009	No. 5,460	H.P. 181,611	H.P. 14,227	H.P. 1,935	H.P. 74,567	H.P. 63	H.P. 272,403
Vict., 1918-19 ..	4,435	1,285	5,720	91,245	18,929	2,443	40,791	..	153,408
Q'land., 1918	1,370	408	1,778	46,553	9,515	1,522	13,811	40	71,441
S. Aust., 1918-19	1,042	271	1,313	29,241	8,169	2,094	11,034	237	50,775
W. Aust., 1918 ..	627	137	764	38,580	5,374	780	6,489	..	51,223
Tas., 1918 ..	460	93	553	5,742	223	282	12,680	11,769	30,696
Commonwealth	12,335	3,203	15,538	392,972	56,437	9,056	159,372	12,109	629,946

#### UTILIZATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1919-20.

State.	Number of Establishments.			Actual Horse-power of Engines Used.					
	Using Machinery worked by Steam, Gas, Oil, Electricity, or Water.	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Water.	Total.
N.S.W., 1919-20	No. 4,730	No. 932	No. 5,662	H.P. 171,590	H.P. 13,342	H.P. 2,417	H.P. 78,287	H.P. 165	H.P. 265,801
Vict., 1919-20 ..	4,737	1,301	6,038	95,747	19,183	3,059	48,814	..	166,803
Q'land., 1919 ..	1,360	394	1,754	59,510	10,725	2,006	15,945	21	88,207
S. Aust., 1919-20	1,093	275	1,368	29,120	9,019	2,400	11,849	256	52,644
W. Aust., 1919 ..	675	142	817	39,570	5,872	1,737	7,671	..	54,850
Tas., 1919 ..	551	101	652	6,615	208	253	13,910	10,725	31,711
Commonwealth	13,146	3,145	16,291	402,152	58,349	11,372	176,476	11,167	660,016

The preponderance of horse-power employed in the New South Wales factories is the result of the location in that State of 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 utilized.

The number of establishments in the Commonwealth during 1919-20 using machinery worked by steam, gas, oil, electricity, or water was 13,146, or 80.70 per cent. of the total; 3,145 establishments, representing 19.30 per cent., used no mechanical power. The total actual horse-power in use was 660,016, distributed in the following proportions:—Steam, 60.93 per cent.; gas, 8.84 per cent.; oil, 1.80 per cent.; electricity, 26.74 per cent.; and water, 1.69 per cent.



(ii) *Utilization of Mechanical Power used in Factories in the Commonwealth, 1915 to 1919-20.* The following table shews the horse-power of engines used in connexion with factories in the Commonwealth during each of the last six years :—

UTILIZATION OF MECHANICAL POWER IN FACTORIES IN COMMONWEALTH,  
1915 TO 1919-20.

Year.	Number of Establishments.			Actual Horse-power of Engines used.					
	Using Machinery worked by Steam, Gas, Oil, Electricity or Water.	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Water.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
1915(a) ..	11,438	3,654	15,092	333,494	54,994	8,558	107,788	..	504,834
1916(b) ..	11,550	3,460	15,010	349,157	53,921	8,541	118,149	..	529,768
1917(c) ..	11,931	3,248	15,179	358,346	54,825	8,687	131,819	6,584	560,261
1918(c) ..	12,250	3,171	15,421	384,794	56,137	8,576	148,732	12,037	610,326
1918-19(d) ..	12,385	3,203	15,588	392,972	56,437	9,056	159,372	12,109	629,946
1919-20(d) ..	13,146	3,145	16,291	402,152	55,349	11,872	170,476	11,187	660,016

(a) New South Wales figures for year ended 30th June, 1915. (b) See note (a) first table this section. (c) See note (b) first table this section. (d) See Note (c), first table this Section.

From this table it appears that the number of manufacturing establishments using power increased from 11,438 in 1915 to 13,146 in 1919-20, an increase of 1,708, or 11½ per cent. During the same period the number of establishments using no power decreased from 3,654 to 3,145, a decrease of 509, or 13.93 per cent. The corresponding increase in the actual horse-power of engines used was 155,182, or 30.74 per cent.

(iii) *Classification of Mechanical Power Used in Factories in each State.* The following tables give a classification of the actual horse-power of engines used in factories of different descriptions in each State during 1918-19 and 1919-20 :—

ACTUAL HORSE-POWER OF ENGINES USED IN VARIOUS FACTORIES  
IN EACH STATE, 1918-19.

Class of Industry.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	H.P. 7,567	H.P. 7,151	H.P. 1,028	H.P. 2,019	H.P. (a) 536	H.P. (a) 531	H.P. 18,832
II. Treating oils and fats, animal, vegetable, etc. ..	1,772	570	135	224	(b)	(b)	2,701
III. Processes in stone, clay, glass, etc. ..	14,760	7,103	1,830	2,770	589	397	27,449
IV. Working in wood ..	17,519	11,771	8,967	1,928	6,377	1,937	48,499
V. Metal works, machinery, etc. ..	56,431	14,580	6,389	12,084	4,234	5,963	99,681
VI. Connected with food and drink, etc. ..	32,358	28,934	33,358	8,387	5,491	1,739	110,267
VII. Clothing and textile fabrics, etc. ..	6,837	9,690	1,377	920	281	323	19,428
VIII. Books, paper, printing, and engraving ..	6,702	6,023	1,311	1,242	732	236	16,246
IX. Musical instruments, etc. ..	344	151	..	6	..	..	501
X. Arms and explosives ..	1,044	680	..	1	..	..	1,725
XI. Vehicles and fittings, saddlery and harness, etc. ..	2,049	1,567	431	849	249	147	5,292
XII. Ship and boat building and repairing ..	4,462	1,459	120	140	30	28	6,239
XIII. Furniture, bedding, and upholstery ..	2,455	1,773	831	981	422	229	6,691
XIV. Drugs, chemicals, and by-products ..	2,290	2,737	35	2,026	1,060	31	8,179
XV. Surgical and other scientific instruments ..	38	43	17	18	8	..	124
XVI. Jewellery, timepieces, and plated ware ..	297	238	50	62	17	8	672
XVII. Heat, light, and power ..	114,361	52,029	15,508	17,064	31,117	19,120	249,199
XVIII. Leatherware, n.e.i. ..	285	307	16	6	5	..	599
XIX. Minor wares, n.e.i. ..	852	6,602	38	48	75	7	7,622
Total ..	272,403	153,408	71,441	50,775	51,223	30,696	629,946

(a) Includes Class II.

(b) Included in Class I.

**ACTUAL HORSE-POWER OF ENGINES USED IN VARIOUS FACTORIES  
IN EACH STATE, 1919-20.**

Class of Industry.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	H.P. 8,645	H.P. 7,766	H.P. 1,073	H.P. 2,271	H.P. 693	H.P. 557	H.P. 21,005
II. Treating oils and fats, animal, vegetable, etc. . .	1,992	651	152	267	..	47	3,109
III. Processes in stone, clay, glass, etc. . .	16,130	8,249	2,351	3,268	931	373	31,302
IV. Working in wood . .	18,119	13,469	9,101	2,226	8,050	2,691	53,656
V. Metal works, machinery, etc.	54,809	17,513	12,643	11,509	3,967	6,346	106,792
VI. Connected with food and drink, etc. . .	34,347	31,297	36,434	8,573	7,846	1,911	120,408
VII. Clothing and textile fabrics, etc. . .	7,473	11,590	1,317	950	316	368	22,014
VIII. Books, paper, printing, and engraving . .	7,425	6,288	1,462	1,277	741	251	17,444
IX. Musical instruments, etc. . .	365	169	..	6	..	..	540
X. Arms and explosives . .	1,574	614	..	4	..	..	2,192
XI. Vehicles and fittings, saddlery and harness, etc. . .	2,062	1,741	524	983	298	162	5,770
XII. Ship and boat building and repairing . .	4,794	1,410	109	462	37	48	6,860
XIII. Furniture, bedding, and upholstery . .	2,778	2,123	951	1,030	559	221	7,667
XIV. Drugs, chemicals, and by-products . .	2,483	3,714	37	2,348	1,003	46	9,631
XV. Surgical and other scientific instruments . .	60	40	16	15	14	..	145
XVI. Jewellery, timepieces, and plated ware . .	346	323	53	86	16	15	839
XVII. Heat, light, and power . .	101,032	52,650	21,921	17,303	30,324	18,663	241,893
XVIII. Leatherware, n.e.i. . .	198	366	12	6	3	2	571
XIX. Minor wares, n.e.i. . .	1,179	6,831	46	60	52	10	8,178
Total .. ..	265,801	166,803	88,207	52,644	54,850	31,711	660,016

(iv) *Classification of Mechanical Power Used in Factories in the Commonwealth, 1915 to 1919-20.* The following table shews a similar classification of the actual horse-power of engines used in manufacturing industries in the Commonwealth during the years 1915 to 1919-20 inclusive :—

**ACTUAL HORSE-POWER OF ENGINES USED IN VARIOUS FACTORIES IN THE  
COMMONWEALTH, 1915 TO 1919-20.**

Class of Industry.	1915. (a)	1916. (b)	1917. (c)	1918. (c)	1918-19. (d)	1919-20. (d)
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	H.P. 15,294	H.P. 15,963	H.P. 15,483	H.P. 17,842	H.P. 18,832	H.P. 21,005
II. Treating oils and fats, animal, vegetable, etc. . .	2,028	2,435	2,140	2,282	2,701	3,109
III. Processes in stone, clay, glass, etc. . .	26,554	24,736	24,275	26,383	27,449	31,302
IV. Working in wood . .	47,894	45,997	45,712	47,560	48,499	53,656
V. Metal works, machinery, etc. . .	77,646	85,783	86,991	94,434	99,681	106,792
VI. Connected with food and drink, etc. . .	92,923	94,477	100,803	105,390	110,267	120,408
VII. Clothing and textile fabrics, etc. . .	15,470	16,353	17,923	18,362	19,423	22,014
VIII. Books, paper, printing, and engraving . .	13,987	14,125	14,590	16,225	16,246	17,444
IX. Musical instruments, etc. . .	480	448	613	664	501	540
X. Arms and explosives . .	855	910	1,739	1,547	1,725	2,192
XI. Vehicles and fittings, saddlery and harness, etc. . .	4,215	4,310	4,620	4,851	5,292	5,770
XII. Ship and boat building and repairing . .	5,824	4,333	5,445	5,310	6,239	6,860
XIII. Furniture, bedding, and upholstery . .	5,838	5,894	5,878	6,576	6,691	7,667
XIV. Drugs, chemicals, and by-products . .	6,201	6,555	7,368	8,102	8,179	9,631
XV. Surgical and other scientific instruments . .	74	72	109	120	124	145
XVI. Jewellery, timepieces, and plated ware . .	554	586	658	635	672	839
XVII. Heat, light, and power . .	185,558	202,232	217,980	245,767	249,199	241,893
XVIII. Leatherware, n.e.i. . .	369	377	444	512	599	571
XIX. Minor wares, n.e.i. . .	4,270	4,232	7,474	7,764	7,622	8,178
Total .. ..	504,834	529,768	560,261	610,326	629,946	660,016

(a) New South Wales figures for year ended 30th June, 1915. (b) See note (a) first table this section.  
(c) See note (b) first table this section. (d) See note (c) first table this section.

From the above table it will be seen that the actual horse-power of engines used increased in practically all of the various branches of industry during the last five years. The industries using the greatest amount of power were Class XVII. Heat, light, and power; Class VI. Connected with food and drink; and Class V. Metal works, machinery, etc. These three classes, which together accounted for 71 per cent. of the total power used in 1919-20, increased their horse-power from 356,127 to 469,093 during the five years under review, and are mainly responsible for the development of mechanical power in factories since 1915.

### § 5. 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 5 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) engine-drivers and firemen; (v) skilled and unskilled workers in the factories, mills, or workshops; (vi) carters and messengers; and (vii) others.

(i) **Average Numbers Employed, 1915 to 1919-20.** The following table shews, for each year from 1915 to 1919-20 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, 1915 TO 1919-20.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
AVERAGE NUMBER.							
1915 ..	116,611 <sup>a</sup>	113,834	42,079	25,496	14,631	8,420	321,071
1916(b)	116,401	113,834	39,983	25,496	12,676	8,362	316,752
1917(c)	117,997	116,970	40,446	26,010	12,168	8,079	321,670
1918(c)	120,554	118,241	40,990	26,634	12,917	8,713	328,049
1918-19(d)	127,591	122,349	40,990	27,915	12,917	8,713	340,475
1919-20(d)	144,454	136,522	40,891	29,442	15,409	10,016	376,734

#### PERCENTAGE ON COMMONWEALTH TOTAL.

	%	%	%	%	%	%	%
1915 ..	36.32	35.45	13.11	7.94	4.56	2.62	100.00
1916(b)	36.75	35.94	12.62	8.05	4.00	2.64	100.00
1917(c)	36.68	36.37	12.57	8.09	3.78	2.51	100.00
1918(c)	36.75	36.04	12.49	8.12	3.94	2.66	100.00
1918-19(d)	37.48	35.93	12.04	8.20	3.79	2.56	100.00
1919-20(d)	38.34	36.24	10.85	7.82	4.09	2.66	100.00

#### PER 10,000 OF MEAN POPULATION.

1915 ..	626 <sup>a</sup>	798	612	580	454	422	650
1916(b)	622	798	590	580	403	422	642
1917(c)	635	836	600	601	394	406	659
1918(c)	638	838	595	611	415	428	663
1918-19(d)	661	855	595	626	415	428	679
1919-20(d)	721	913	574	629	476	474	721

(a) For year ended 30th June, 1915. (b) See note (a) first table this section.  
(c) See note (b) first table this section. (d) See note (c) first table this section.

(ii) *Rates of Increase, 1915 to 1919-20.* The following table shews the percentage of increase or decrease on the average number of persons employed for the preceding year from 1916 to 1919-20. The figures for the past five years are somewhat vitiated by the change in dates of collecting the statistics in New South Wales, Victoria, and South Australia :—

PERCENTAGE OF INCREASE ON AVERAGE NUMBER EMPLOYED, 1916 TO 1919-20.

Years.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1915-16(a) ..	-0.18	-3.86	-4.98	-5.13	-13.36	-0.69	-1.35
1916-17(b) ..	1.37	2.75	1.16	2.02	-4.01	-3.38	1.55
1917-18(b) ..	2.17	1.09	1.35	2.40	6.16	7.85	1.98
1918-1918-19(c) ..	5.84	3.47	1.35d	4.81	6.16d	7.85d	3.79
1918-19-1919-20(c)	13.22	11.58	-0.24	5.47	19.29	14.95	10.65

NOTE.—The minus sign (—) indicates decrease.

(a) See note (a) first table this section.

(b) See note (b) first table this section.

(c) See note (c) first table this section.

(d) Twelve months ended 31st December, 1918.

2. *Classification of Numbers Employed in Factories in the Commonwealth, 1915 to 1919-20.*—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1915 to 1919-20 inclusive :—

AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES  
IN THE COMMONWEALTH, 1915 TO 1919-20.

Class of Industry.	1915.(a)	1916.(b)	1917.(c)	1918.(e)	(d) 1918-19.	(d) 1919-20.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	9,306	9,009	9,411	9,984	10,775	12,040
II. Treating oils and fats, animal, vegetable, etc. . . . .	2,523	2,399	2,554	2,726	2,604	3,075
III. Processes in stone, clay, glass, etc. . .	12,616	11,604	10,949	12,575	13,761	16,271
IV. Working in wood . . . . .	26,030	23,336	22,079	24,112	25,825	29,865
V. Metal works, machinery, etc. . . . .	65,368	65,850	62,115	60,392	62,679	70,025
VI. Connected with food and drink, etc. .	49,266	48,272	52,781	56,297	59,891	61,757
VII. Clothing and textile fabrics, etc. . .	78,952	80,292	83,201	82,002	81,441	89,424
VIII. Books, paper, printing and engraving	24,928	24,890	24,954	25,054	25,000	26,926
IX. Musical instruments, etc. . . . .	515	542	652	677	714	902
X. Arms and explosives . . . . .	2,028	2,571	2,951	2,225	1,986	1,662
XI. Vehicles and fittings, saddlery and harness, etc. . . . .	12,350	12,006	12,196	12,672	13,630	15,525
XII. Ship and boat building and repairing	6,087	4,905	4,953	4,569	6,119	8,343
XIII. Furniture, bedding, and upholstery .	8,961	8,716	9,072	9,542	9,827	11,317
XIV. Drugs, chemicals, and by-products .	4,601	4,738	5,036	5,564	5,861	6,436
XV. Surgical & other scientific instruments	301	293	361	415	453	495
XVI. Jewellery, timepieces, and plated ware	1,873	1,835	1,975	2,119	2,345	2,719
XVII. Heat, light, and power . . . . .	9,939	10,018	10,329	10,714	10,912	11,991
XVIII. Leatherware, n.e.l. . . . .	1,292	1,376	1,458	1,647	1,799	2,233
XIX. Minor wares, n.e.l. . . . .	4,120	4,400	4,613	4,763	4,853	5,823
Total .. .. .	321,071	316,752	321,670	323,049	340,475	376,734

(a) New South Wales figures for year ended 30th June, 1915. (b) See note (a) first table this section.  
(c) See note (b) first table this section. (d) See Note (c) first Table this Section.

The number of persons employed in factories increased by 55,663 since 1915. During the war period, considerable numbers of the male population were withdrawn for military purposes, but the 1919-20 figures shew that the manufacturing industry has not only regained its numerical strength, but has largely added to its pre-war totals of the number of employees.

3. Classification of Numbers Employed in each State, according to Class of Industry.—The following tables shew a similar classification of employees in manufacturing industries in each State during 1918-19 and 1919-20 :—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES  
IN EACH STATE, 1918-19.**

Class of Industry.	N.S.W. 1918-19.	Vic. 1918-19	Q'land. 1918.	S.A. 1918-19	W.A. 1918.	Tas. 1918.	C'with.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	4,145	4,204	746	976	365a	339a	10,775
II. Treating oils and fats, animal, vegetable, etc.	1,385	807	173	239	(b)	(b)5	2,604
III. Processes in stone, clay, glass, etc.	6,531	4,436	823	1,322	409	240	13,761
IV. Working in wood	8,374	7,669	4,385	1,264	2,544	1,589	25,825
V. Metal works, machinery, etc.	28,129	16,523	5,770	8,261	2,513	1,478	62,679
VI. Connected with food and drink, etc.	17,955	19,185	15,001	3,989	1,906	1,855	59,891
VII. Clothing and textile fabrics, etc.	26,266	39,739	6,994	5,012	2,132	1,293	81,441
VIII. Books, paper, printing, and engraving	9,312	8,703	2,916	1,788	1,035	691	25,000
IX. Musical instruments, etc.	445	255	..	14	..	..	714
X. Arms and explosives	1,119	864	..	3	..	..	1,986
XI. Vehicles and fittings, saddlery, and harness, etc.	4,697	4,974	1,302	1,718	544	395	13,630
XII. Ship and boat building & repairing	5,097	692	115	145	20	50	6,119
XIII. Furniture, bedding, and upholstery	3,844	3,023	1,240	952	447	321	9,827
XIV. Drugs, chemicals, and by-products	2,274	2,349	91	783	343	21	5,861
XV. Surgical and other scientific instruments	186	159	45	34	29	..	453
XVI. Jewellery, timepieces, & plated ware	767	1,199	117	171	62	29	2,345
XVII. Heat, light, and power	4,032	4,289	952	943	329	367	10,912
XVIII. Leatherware, n.e.l.	855	762	112	47	23	..	1,799
XIX. Minor wares, n.e.l.	1,678	2,512	208	254	161	40	4,853
Total .. ..	127,591	122,349	40,990	27,915	12,917	8,713	340,475

(a) Includes Class II.

(b) Included in Class I.

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES  
IN EACH STATE, 1919-20.**

Class of Industry.	N.S.W. 1919-20.	Vic. 1919-20	Q'land. 1919.	S.A. 1919-20	W.A. 1919.	Tas. 1919.	C'with.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	4,474	4,759	772	1,189	422a	424	12,040
II. Treating oils and fats, animal, vegetable, etc.	1,744	878	172	253	(b)	28	3,075
III. Processes in stone, clay, glass, etc.	8,142	4,828	827	1,690	529	255	16,271
IV. Working in wood	9,205	8,802	4,828	1,456	3,627	2,047	29,865
V. Metal works, machinery, etc.	32,057	19,348	6,972	7,261	2,722	1,665	70,025
VI. Connected with food and drink, etc.	19,282	20,545	13,320	4,159	2,535	1,916	61,757
VII. Clothing and textile fabrics, etc.	29,429	44,245	6,616	5,342	2,313	1,479	89,424
VIII. Books, paper, printing and engraving	10,647	9,148	3,090	2,027	1,146	768	26,826
IX. Musical instruments, etc.	596	285	..	21	..	..	902
X. Arms and explosives	819	839	..	4	..	..	1,662
XI. Vehicles and fittings, saddlery, and harness, etc.	5,150	5,707	1,283	2,226	667	492	15,525
XII. Ship and boat building & repairing	6,908	938	117	275	25	80	8,343
XIII. Furniture, bedding, and upholstery	4,364	3,657	1,284	1,063	530	419	11,317
XIV. Drugs, chemicals and by-products	2,620	2,517	107	809	354a	29	6,436
XV. Surgical and other scientific instruments	199	174	51	35	36	..	495
XVI. Jewellery, timepieces, & plated ware	896	1,347	146	219	72	39	2,719
XVII. Heat, light, and power	4,753	4,466	1,021	1,075	346	325	11,991
XVIII. Leatherware, n.e.l.	1,031	1,045	73	50	25	9	2,233
XIX. Minor wares, n.e.l.	2,133	2,994	212	238	160	41	5,828
Total .. ..	144,454	136,522	40,391	29,442	15,409	10,016	376,734

(a) Includes Class II.

(b) Included in Class I.

The largest number employed in any particular class in the Commonwealth during 1919-20 was in Class VII., in which there were 89,424 employees, or 24 per cent. of the whole number. The class affording employment to the smallest number of hands was

Class XV., in which there were 495 hands, or 0.13 per cent. of the total number of employees. Classes VI., VII., and VIII. comprise those industries in which female labour is largely employed. (See § 6, 5 hereof.)

4. Classification of Numbers Employed in each State according to Nature of Employment.—In the following tables the average numbers of persons employed in each State during 1918-19 and 1919-20 are classified according to the nature of their employment :—

AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED  
ACCORDING TO NATURE OF EMPLOYMENT, 1918-19.

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 (a)	Carters, Messengers, and Others.	
N.S. Wales, 1918-19	4,105	4,571	5,600	2,913	108,727	1,675	127,591
Victoria, 1918-19 ..	5,471	3,793	4,919	1,914	102,630	3,622	122,349
Queensland, 1918 ..	1,430	1,605	1,865	1,707	32,198	2,185	40,990
S. Australia, 1918-19	1,190	983	1,406	559	23,175	602	27,915
W. Australia, 1918	424	660	640	394	10,261	538	12,917
Tasmania, 1918 ..	372	407	481	295	6,887	271	8,713
Commonwealth	12,992	12,019	14,911	7,782	283,878	8,893	340,475

(a) Including outworkers.

AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED  
ACCORDING TO NATURE OF EMPLOYMENT, 1919-20.

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 (a)	Carters, Messengers and Others.	
N.S. Wales, 1919-20	4,461	4,911	6,319	3,058	123,730	1,975	144,454
Victoria, 1919-20 ..	5,898	4,130	5,602	2,144	114,768	3,980	136,522
Queensland, 1919 ..	1,402	1,691	1,941	1,789	31,721	2,347	40,891
S. Australia, 1919-20	1,283	1,012	1,543	588	24,486	530	29,442
W. Australia, 1919	445	770	677	460	12,483	574	15,409
Tasmania, 1919 ..	447	422	525	346	7,946	330	10,016
Commonwealth	13,936	12,936	16,607	8,385	315,134	9,736	376,734

(a) Including outworkers.

5. **Outworkers.**—The term “outworker” or “homeworker” has acquired a special meaning in connexion 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 1915 to 1919–20 inclusive :—

NUMBER OF OUTWORKERS(a) CONNECTED WITH FACTORIES, 1915 TO 1919–20.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1915 .. ..	5826	1,473	92	44	6	70	2,267
1916(c) .. ..	577	1,473	99	44	6	35	2,234
1917(d) .. ..	677	1,814	89	41	5	32	2,658
1918(d) .. ..	637	1,406	30	25	4	20	2,122
1918–1919(e) ..	582	1,022	30	57	4	20	1,715
1919–1920(e) ..	733	1,492	19	50	8	28	2,330

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

(b) Year ended 30th June, 1915.

(c) See note (a) first table this section.

(d) See note (b) first table this section.

(e) See note (c) first table this section.

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 relating to *Industrial Unionism and Industrial Legislation*.)

## § 6. 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 relating to *Industrial Unionism and Industrial Legislation*.)

2. **Distribution of Employees according to Sex.**—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 slightly less 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 less than one to two. In South Australia the ratio at the latest date was one female employed to every four males, while Queensland and Western Australia were less than one to four, and Tasmania less than one to five. The ratio for the whole of the Commonwealth was more than 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 also with commercial establishments, a considerable number of factories employ women as clerks and typists.

(i) *Average Number of Males and Females Employed, 1915 to 1919-20.* The following table shows the average number of male and female employees in factories in each State from 1915 to 1919-20 :—

**AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1915 TO 1919-20.**

State.	1915.	1916.(b)	1917.(c)	1918.(c)	1918-19.(d)	1919-20.(d)
<b>MALES.</b>						
New South Wales ..	90,409 <sup>a</sup>	87,724	88,910	90,025	96,884	109,836
Victoria ..	75,971	75,971	74,924	76,654	81,357	92,101
Queensland ..	34,387	32,235	32,763	33,597	33,597	33,851
South Australia ..	20,772	20,772	20,798	21,325	22,372	23,434
Western Australia ..	12,290	10,259	9,704	10,497	10,497	12,789
Tasmania ..	7,161	7,046	6,860	7,356	7,356	8,503
Commonwealth ..	240,990	234,007	233,959	239,454	252,063	280,514
<b>FEMALES.</b>						
New South Wales ..	26,202 <sup>a</sup>	28,677	29,087	30,529	30,707	34,618
Victoria ..	37,863	37,863	42,046	41,587	40,992	44,421
Queensland ..	7,692	7,748	7,683	7,393	7,393	7,040
South Australia ..	4,724	4,724	5,212	5,309	5,543	6,008
Western Australia ..	2,341	2,417	2,464	2,420	2,420	2,620
Tasmania ..	1,259	1,316	1,219	1,357	1,357	1,513
Commonwealth ..	80,081	82,745	87,711	88,595	88,412	96,220

(a) Year ended 30th June, 1915.

(b) See note (a) first table this section.

(c) See note (b) first table this section.

(d) See note (c) first table this section.

It will be seen that during the years specified there has been for the whole Commonwealth a total increase in the number of male employees of 39,524, or an annual average of 7,905, whilst the number of female employees has shewn a total increase of 16,139 or an annual average of 3,228.

(ii) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1915 to 1919-20.* The following table shows the average number of male and female employees per 10,000 of the mean male and female population respectively in each State from 1915 to 1919-20 :—

**AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1915 TO 1919-20.**

State.	1915.	1916.(b)	1917.(c)	1918.(c)	1918-19.(d)	1919-20.(d)
<b>MALES.</b>						
New South Wales ..	935 <sup>a</sup>	920	963	962	1,012	1,086
Victoria ..	1,077	1,077	1,125	1,142	1,188	1,243
Queensland ..	932	910	948	958	958	922
South Australia ..	960	960	1,030	1,059	1,087	1,043
Western Australia ..	696	615	612	658	658	752
Tasmania ..	702	706	690	717	717	784
Commonwealth ..	948	936	975	987	1,022	1,068

(a) Year ended 30th June, 1915.

(b) See note (a) first table this section.

(c) See note (b) first table this section.

(d) See note (c) first table this section.



AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF MEAN MALE AND FEMALE POPULATION RESPECTIVELY—*continued.*

State.	1915.	1916.(b)	1917.(c)	1918.(c)	1918-19.(d)	1919-20.(d)
<b>FEMALES.</b>						
New South Wales ..	293 <sup>a</sup>	313	311	320	316	349
Victoria ..	525	525	574	562	550	588
Queensland ..	242	239	234	219	219	204
South Australia ..	212	212	226	226	231	247
Western Australia ..	161	163	164	160	160	171
Tasmania ..	129	134	122	134	134	147
Commonwealth ..	333	340	354	351	347	371

(a) Year ended 30th June, 1915.

(b) See note (a) first table this section.

(c) See note (b) first table this section.

(d) See note (c) first table this section.

3. Rate of Variation for each Sex.—The percentages of annual increase or decrease during the years 1915 to 1919-20 in the average number of males and females employed in manufacturing industries in the several States and the Commonwealth are shown below:—

**PERCENTAGE OF ANNUAL INCREASE IN NUMBERS OF MALE AND FEMALE EMPLOYEES, 1916 TO 1919-20.**

State.	1915-16.(a)	1916-17.(b)	1917-18.(b)	1918-19-18-19.(d)	1918-19-1919-20. (d)
<b>MALES.</b>					
New South Wales ..	- 2.97	1.35	1.25	7.62	13.37
Victoria ..	- 4.76	- 1.38	2.31	6.14	13.21
Queensland ..	- 6.26	1.64	2.55	c 2.55	0.76
South Australia ..	- 6.06	0.13	2.53	4.91	4.75
Western Australia..	- 16.53	- 5.41	8.17	c 8.17	21.83
Tasmania ..	- 1.61	- 2.64	7.23	c 7.23	15.59
Commonwealth	- 2.90	- 0.02	2.35	5.27	11.29

**FEMALES.**

New South Wales ..	9.45	1.43	4.96	0.58	12.74
Victoria ..	- 1.98	11.05	- 1.09	- 1.43	8.37
Queensland ..	0.73	- 0.94	- 3.77	c - 3.77	- 4.77
South Australia ..	- 0.82	10.33	1.86	4.41	8.39
Western Australia..	3.25	1.94	- 1.79	c - 1.79	8.26
Tasmania ..	4.55	- 7.37	11.32	c 11.32	11.50
Commonwealth	3.33	6.00	1.01	- 0.21	8.83

NOTE.—The minus sign (—) indicates decrease.

(a) See note (a) first table this section.

(b) See note (b) first table this section.

(c) Twelve months ended 31st December, 1918.

(d) See note (c) first table this section.

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 1915 to 1919-20 inclusive :—

EXCESS OF MALES OVER FEMALES PER 100 OF BOTH SEXES COMBINED,  
1915 TO 1919-20.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1915 .. ..	55.1 <sup>a</sup>	33.5	63.4	62.9	68.0	70.1	50.1
1916(b) .. ..	50.7	33.5	61.2	62.9	61.9	68.5	47.8
1917(c) .. ..	50.7	28.1	62.0	59.9	59.5	69.8	45.5
1918(c) .. ..	49.4	29.7	63.9	60.1	62.5	68.9	46.0
1918-19(d) ..	51.9	33.0	63.9	60.3	62.5	68.9	48.1
1919-20(d) ..	52.1	34.9	65.6	59.2	66.0	69.8	48.9

(a) Year ended 30th June, 1915.

(b) See note (a) first table this section.

(c) See note (b) first table, this section.

(d) See note (c) first table this section.

The excess of males over females employed per 100 of both sexes combined has declined from 50.1 in 1915 to 48.9 in 1919-20, the decline being noticeable in all the States with the exception of Victoria and Queensland, which States shewed increases amounting to 4.18 and 3.47 per cent. respectively. The tables given in the succeeding paragraph shew that the comparatively high proportions of 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.**—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 connexion with food, drink, etc., clothing and textile fabrics, and books, paper, printing, etc. The following tables shew the average number of females employed in each of these classes in each State during 1918-19 and 1919-20, and also shew 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, 1918-19.**

Class.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
<b>AVERAGE NUMBER.</b>							
VI. Food, drink, etc. . .	5,178	5,405	956	615	332	294	12,780
VII. Clothing and textile fabrics . .	18,712	28,996	5,202	3,776	1,645	838	59,169
VIII. Books, paper, printing, etc. . .	2,857	2,667	681	557	247	108	7,117
All other classes . .	3,960	3,924	554	595	196	117	9,346
<b>Total . .</b>	<b>30,707</b>	<b>40,992</b>	<b>7,393</b>	<b>5,543</b>	<b>2,420</b>	<b>1,357</b>	<b>88,412</b>

PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES.

[illegible]

AVERAGE NUMBER OF FEMALES EMPLOYED IN PARTICULAR INDUSTRIES,  
AND PERCENTAGES ON AVERAGE TOTAL EMPLOYED, 1919-20.

Class.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919	Tas. 1919.	C'wealth.
AVERAGE NUMBER.							
VI. Food, drink, etc. . . . .	6,172	5,604	976	620	387	305	14,064
VII. Clothing and textile fabrics . .	20,888	31,349	4,839	4,036	1,771	966	64,340
VIII. Books, paper, printing, etc. . .	3,168	2,618	701	678	247	113	7,525
All other classes . . . . .	4,390	4,350	524	674	215	129	10,282
Total . . . . .	34,618	44,421	7,040	6,008	2,620	1,513	96,220

## PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES.

VI. Food, drink, etc. . . . .	17.83	12.62	13.86	10.32	14.77	20.16	14.62
VII. Clothing and textile fabrics . .	60.34	71.70	68.74	67.18	67.59	63.84	66.88
VIII. Books, paper, printing, etc. . .	9.15	5.89	9.96	11.28	9.43	7.47	7.82
All other classes . . . . .	12.68	9.79	7.44	11.22	8.21	8.53	10.68
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 relation of their number to that of the males so employed, are shewn in the following tables :—

## FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII. DURING 1918-19.

Industry.	New South Wales. 1918-19.			Victoria. 1918-19.			Other States.(a)		
	Males.	Females	Femini- nity. (b)	Males.	Females	Femini- nity. (b)	Males.	Females	Femini- nity. (b)
Woollen and tweed mills	595	658	5.03	923	1,256	15.28	274	381	16.34
Boots and shoes . .	2,777	1,845	-20.16	5,313	3,648	-18.58	1,492	885	-25.54
Slop clothing	2,456	6,997	48.04	1,980	7,015	55.98	1,710	4,855	47.91
Clothing (tailoring)									
Dressmaking and millinery . . . . .	182	5,333	93.40	332	8,310	92.32	23	3,503	98.70
Dyeworks and cleaning . .	111	110	-0.45	107	106	-0.47	23	28	9.80
Furriers . . . . .	67	78	7.59	91	218	41.10	..	..	..
Hats and caps . . . . .	532	851	23.07	696	958	15.84	77	121	22.22
Waterproof and oilskin . .	58	195	54.15	57	158	46.98	..	..	..
Shirts, ties, and scarfs	150	1,638	83.22	325	5,163	88.16	79	1,371	89.10
Hosiery and knitted goods . . . . .	160	612	58.55	174	1,424	78.22	..	..	..
Rope and cordage . . . . .	283	22	-85.57	625	515	-9.65	180	198	4.76
Tents and tarpaulins . .	183	373	34.17	91	72	-11.66	108	90	-9.09
Other . . . . .	..	..	..	29	153	68.13	9	29	52.63
Total, Class VII. . . . .	7,554	18,712	42.48	10,743	28,996	45.93	3,975	11,461	48.50

NOTE.—The minus sign (—) denotes excess of males over females.

(a) See note (c) first table this section. (b) Excess of females over males per 100 of both sexes combined.

## FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII. DURING 1919-20.

Industry.	New South Wales. 1919-20.			Victoria. 1919-20.			Other States.(a)		
	Males.	Females	Femini- nity. (b)	Males.	Females	Femini- nity. (b)	Males.	Females	Femini- nity. (b)
Woollen and tweed mills	733	728	-0.34	1,373	1,491	4.12	285	419	19.03
Boots and shoes ..	3,229	1,928	-25.23	6,094	4,263	-17.68	1,580	893	-32.79
Slop clothing	2,536	7,461	49.26	2,099	7,223	54.97	1,719	5,152	49.96
Clothing (tailoring)									
Dressmaking and millinery ..	162	5,392	94.17	321	8,796	92.95	21	3,262	98.72
Dyeworks and cleaning	166	147	-6.07	145	145	..	37	36	-1.37
Furriers ..	82	136	24.77	110	260	40.54	2	2	..
Hats and caps ..	656	909	16.17	730	873	8.92	66	99	20.00
Waterproof and oilskin	43	131	50.57	47	153	53.00	6	12	33.33
Shirts, ties, and scarfs	222	2,784	85.23	359	5,660	88.07	90	1,467	88.44
Hosiery and knitted goods ..	180	905	66.82	297	2,146	75.68	..	..	..
Rope and cordage ..	354	29	84.86	668	524	-12.08	197	196	-0.03
Tents and tarpaulins ..	178	338	31.01	98	81	-9.50	126	51	-42.37
Other ..	..	..	..	55	234	61.94	9	23	43.75
Total, Class VII. ..	8,541	20,888	41.96	12,396	31,849	43.97	4,138	11,612	47.45

NOTE.—The minus sign (–) denotes excess of males over females.

(a) See note (c) first table this section. (b) Excess of females over males per 100 of both sexes combined.

## § 7. 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 relating to *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, 1915 to 1919-20.**—In the statistical compilations of the various States the term "child" may be taken to denote any person under sixteen years of age. The following table shews the average number of children of each sex employed in manufacturing industries in each State during the years 1915 to 1919-20 :—

## AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1915 TO 1919-20.

State.	1915.	1916.(b)	1917.(c)	1918.(c)	1918-19.(d)	1919-20.(d)
MALES.						
New South Wales ..	2,437 <sup>a</sup>	2,578	2,604	2,584	2,586	3,824
Victoria ..	3,355	3,355	3,072	3,195	3,137	3,721
Queensland ..	1,247	1,197	1,170	1,171	1,171	1,214
South Australia ..	1,068	1,068	744	779	834	866
Western Australia ..	414	398	408	407	407	447
Tasmania ..	262	217	253	244	244	327
Commonwealth ..	8,783	8,813	8,251	8,380	8,379	10,399

(a) Year ended 30th June, 1915.

(c) See note (b) first table this section.

(b) See note (a) first table this section.

(d) See note (c) first table this section.

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1915 TO 1919-20—*continued.*

State.	1915.	1916.(b)	1917.(c)	1918.(c)	1918-19.(d)	1919-20.(d)
FEMALES.						
New South Wales ..	2,326 <sup>a</sup>	2,605	2,449	2,492	2,561	3,764
Victoria ..	2,197	2,197	2,301	2,447	2,339	2,872
Queensland ..	835	745	704	711	711	645
South Australia ..	591	591	586	567	545	765
Western Australia ..	311	271	314	307	307	307
Tasmania ..	97	102	89	105	105	186
Commonwealth ..	6,357	6,511	6,443	6,629	6,618	8,539

TOTAL.						
New South Wales ..	4,763 <sup>a</sup>	5,183	5,053	5,076	5,147	7,588
Victoria ..	5,552	5,552	5,373	5,642	5,526	6,593
Queensland ..	2,082	1,942	1,874	1,882	1,882	1,859
South Australia ..	1,659	1,659	1,330	1,346	1,379	1,631
Western Australia ..	725	669	722	714	714	754
Tasmania ..	359	319	342	349	349	513
Commonwealth ..	15,140	15,324	14,694	15,009	14,997	18,938

(a) Year ended 30th June, 1915. (b) See note (a) first table this section.  
(c) See note (b) first table this section. (d) See note (c) first table this section.

3. **Percentage of Children on Total Persons Employed.**—The foregoing table shews a general increase in the number of children employed in factories during the past quinquennial period. This increase is more marked among the females than the males, the respective gains being 2,182 and 1,616. Examined in conjunction with the total number of persons employed, the following table reveals a gradual increase in the percentage of children employed in factories since 1915 :—

## PERCENTAGE OF CHILDREN IN FACTORIES ON TOTAL NUMBER OF EMPLOYEES, 1915 TO 1919-20.

State.	1915.	1916.(b)	1917.(c)	1918.(c)	1918-19.(d)	1919-20.(d)
	%	%	%	%	%	%
New South Wales ..	4.08 <sup>a</sup>	4.45	4.28	4.21	4.03	5.25
Victoria ..	4.88	4.88	4.59	4.77	4.52	4.83
Queensland ..	4.95	4.86	4.63	4.59	4.59	4.55
South Australia ..	6.51	6.51	5.11	5.05	4.94	5.54
Western Australia ..	4.96	5.28	5.93	5.53	5.53	4.89
Tasmania ..	4.26	3.81	4.23	4.01	4.01	5.12
Commonwealth ..	4.72	4.84	4.57	4.58	4.40	5.03

(a) Year ended 30th June, 1915. (b) See note (a) first table this section.  
(c) See note (b) first table this section. (d) See note (c) first table this section.

4. **Industries Employing Child Labour.**—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the tables below, which shew the average number of children of each sex employed in the several industries indicated in each State during 1918-19 and 1919-20.

## NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1918-19.

Class.	Industry.	N.S.W. 1918-19.		Victoria. 1918-19.		Q'land. 1918.		S. Aust. 1918-19.		W. Aust. 1918.		Tas. 1918.		C'wealth.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III.	Bricks, tiles, pottery, and earthenware ..	114	..	82	8	6	1	11	..	11	..	9	..	233	9
IV.	Joinery, boxes, cases, etc.	84	1	77	..	38	2	18	..	10	1	7	..	234	4
..	Saw mills ..	41	..	17	..	38	3	3	..	11	..	52	..	162	3
V.	Engineering, ironworks, and foundries ..	213	7	383	1	62	4	82	..	58	2	10	..	808	14
..	Galvanised ironwork- ing and tinsmithing ..	76	13	101	19	45	3	42	8	..	..	7	..	271	43
..	Railway carriage, rail- way and tramway workshops ..	34	..	104	..	32	..	52	..	26	..	..	..	248	..
VI.	Meat & fish preserving ..	6	3	38	1	124	5	2	..	..	..	..	..	170	9
..	Biscuits ..	154	136	79	52	10	18	9	11	33	36	18	4	303	257
..	Confectionery ..	68	182	33	67	32	45	11	36	9	37	..	..	153	367
..	Jams, pickles, sauces, etc.	13	9	44	34	23	15	24	19	2	..	22	10	128	87
..	Tobacco, cigars, etc.	75	93	55	19	3	1	1	..	1	7	..	..	135	122
VII.	Woollen, cotton, and tweed mills ..	49	71	77	109	14	29	2	6	..	..	1	4	143	219
..	Boots and shoes ..	158	205	262	347	40	55	29	43	9	10	14	23	512	683
..	Clothing (tailoring and slop) ..	68	450	93	292	43	192	12	77	15	32	2	9	233	1,052
..	Dressmaking and mil- linery ..	8	437	7	504	1	161	..	130	1	104	..	30	17	1,366
..	Hats and caps ..	18	68	48	28	1	2	5	6	..	..	..	..	72	104
..	Shirts, ties, scarfs, etc.	10	183	12	351	8	51	2	68	1	20	..	2	33	675
VIII.	Electrotyping, printing and binding ..	268	147	360	106	170	61	52	26	39	17	27	14	916	371
..	Paper making, paper boxes, etc. ..	58	127	27	47	3	13	14	49	1	12	..	..	103	248
XI.	Coach and wagon building ..	57	1	89	..	42	..	18	..	8	..	14	..	228	1
..	Cycles and motors ..	44	4	86	2	19	1	59	8	15	..	13	..	236	15
XIII.	Billiard tables, cabinet making and furniture ..	59	..	104	1	90	2	53	..	17	..	10	..	333	3
XIV.	Chemicals, drugs, and medicines ..	39	76	21	24	1	12	7	12	8	1	1	..	77	125

## NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1919-20.

Class.	Industry.	N.S.W. 1919-20.		Victoria. 1919-20.		Q'land. 1919.		S. Aust. 1919-20.		W. Aust. 1919.		Tas. 1919.		C'wealth.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III.	Bricks, tiles, pottery, and earthenware ..	166	..	65	11	18	..	21	..	5	..	12	..	287	11
IV.	Joinery, boxes, cases, etc.	125	2	127	4	34	..	29	..	18	..	8	..	341	6
..	Saw mills ..	79	4	22	..	61	4	5	..	14	1	30	..	211	9
V.	Engineering, ironworks, and foundries ..	343	16	412	3	45	1	87	..	60	1	19	..	966	21
..	Galvanised ironwork- ing and tinsmithing ..	128	14	151	24	68	1	49	12	..	..	6	1	402	52
..	Railway carriage, rail- way and tramway workshops ..	87	..	115	..	15	..	2	..	11	..	2	..	232	..
VI.	Meat & fish preserving ..	4	9	17	..	111	1	..	..	1	..	..	..	133	10
..	Biscuits ..	213	155	45	40	13	14	6	16	42	34	20	7	339	266
..	Confectionery ..	74	165	28	65	24	65	20	43	15	36	1	6	162	380
..	Jams, pickles, sauces, etc.	27	20	71	63	12	3	24	17	2	7	69	7	205	117
..	Tobacco, cigars, etc.	57	114	100	15	2	..	4	1	4	11	..	..	167	141
VII.	Woollen, cotton, and tweed mills ..	86	79	174	159	42	7	9	14	..	..	5	2	316	261
..	Boots and shoes ..	178	190	316	346	37	41	33	34	16	13	22	29	602	653
..	Clothing (tailoring and slop) ..	124	707	90	366	46	173	16	166	12	55	7	54	295	1,521
..	Dressmaking and mil- linery ..	12	654	9	610	1	148	..	177	..	88	1	48	23	1,725
..	Hats and caps ..	66	134	41	18	..	3	2	3	..	..	..	..	1	109
..	Shirts, ties, scarfs, etc.	15	420	17	374	6	85	4	91	2	25	..	6	44	1,001
VIII.	Electrotyping, printing and binding ..	453	276	383	146	211	47	73	31	49	14	25	14	1,194	528
..	Paper making, paper boxes, etc. ..	68	158	31	64	4	15	13	78	1	2	..	..	117	317
XI.	Coach and wagon building ..	113	7	92	..	28	..	19	1	18	..	21	..	291	8
..	Cycles and motors ..	90	2	108	1	24	..	85	1	13	..	18	..	338	4
XIII.	Billiard tables, cabinet making and furniture ..	130	4	227	4	77	1	56	..	17	..	3	..	510	9
XIV.	Chemicals, drugs, and medicine ..	31	86	12	37	..	11	5	18	8	4	..	..	56	156

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 usually become inoperative at twenty-one years of age, or in the case of women, on marriage. In Tasmania, however, the section of the Wages Boards Act 1920 which deals with apprentices provides for the issue of licenses by the Minister to enable persons to complete their term of apprenticeship after the age of twenty-one if necessary.

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.

## § 8. 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 1919–20 was £292,536,608, of which amount the sum of £187,722,877 represents the value of the raw materials used. The difference between these two amounts, viz., £104,813,731, 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 1919–20 was £52,115,558.

2. **Amount of Salaries and Wages Paid.**—The total amounts of salaries and wages paid during the years 1918–19 and 1919–20 in various classes of factories in the Commonwealth (excluding all sums drawn by working proprietors) are shewn in the following tables:—

AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES  
IN COMMONWEALTH, 1918–19.(a)

Class of Industry.	N.S.W. 1918–19.	Victoria. 1918–19.	Q'land. 1918.	S. Aust. 1918–19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural pursuits, etc. . . .	606,507	571,915	106,326	111,466	40,290b	23,797b	1,460,301
II. Treating oils and fats, animal, vegetable, etc. . . .	200,534	112,067	25,153	34,964	(c)	(c)	372,718
III. Processes in stone, clay, glass, etc. . .	951,803	612,200	102,008	195,557	52,764	24,908	1,939,240
IV. Working in wood . .	1,078,295	1,022,730	556,680	182,039	372,433	167,501	3,379,678
V. Metal works, machinery, etc. . . .	4,563,495	2,334,987	829,964	1,391,921	409,806	216,984	9,747,157
VI. Connected with food and drink, etc. . . .	2,312,954	2,392,764	2,083,282	519,635	264,937	191,989	7,765,561
VII. Clothing and textile fabrics, etc. . . .	2,300,013	3,246,179	506,612	373,470	167,891	95,175	6,689,340
VIII. Books, paper, printing, and engraving . . .	1,285,931	1,121,895	399,952	212,276	162,134	94,354	3,276,542
IX. Musical instruments, etc.	71,630	36,252	..	1,758	..	..	109,640
X. Arms and explosives	230,467	95,971	..	338	..	..	326,776
XI. Vehicles & fittings, saddlery & harness, etc.	574,476	543,181	136,200	199,518	65,154	39,568	1,558,097

(a) Excluding all amounts drawn by working proprietors. (b) Includes Class II. (c) Included in Class I.

**AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES IN  
COMMONWEALTH, 1918-19(a)—continued.**

Class of Industry.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
XII. Ship and boat building and repairing ..	934,890	136,907	13,747	19,950	2,942	7,756	1,116,192
XIII. Furniture, bedding, and upholstery ..	484,280	327,169	140,333	101,807	56,838	23,766	1,139,193
XIV. Drugs, chemicals, and by-products ..	263,995	301,034	7,738	97,772	47,398	1,364	719,301
XV. Surgical & other scientific instruments ..	26,419	14,980	5,195	3,433	1,830	..	51,857
XVI. Jewellery, timepieces, and plated ware ..	116,112	136,982	14,032	20,309	7,342	3,235	298,012
XVII. Heat, light, and power ..	690,237	702,329	168,381	155,587	63,087	65,837	1,845,458
XVIII. Leatherware, n.e.i. ..	86,952	74,000	9,392	4,666	1,848	..	176,858
XIX. Minor wares, n.e.i. ..	178,929	296,861	16,193	25,249	14,202	2,740	534,174
Total ..	16,957,919	14,080,403	5,121,188	3,651,715	1,730,896	963,974	42,506,095

(a) Excluding all amounts drawn by working proprietors.

**AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES IN  
COMMONWEALTH, 1919-20.(a)**

Class of Industry.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	789,131	797,141	108,170	165,988	(b)46,797	30,008	1,937,235
II. Treating oils and fats, animal, vegetable, etc. ..	261,501	127,054	25,027	35,866	(c)	4,060	453,508
III. Processes in stone, clay, glass, etc. ..	1,310,044	681,187	102,444	242,842	70,788	23,152	2,435,457
IV. Working in wood ..	1,290,850	1,294,096	678,980	213,269	580,211	235,804	4,293,210
V. Metal works, machinery, etc. ..	5,832,981	3,007,455	1,020,909	1,204,054	419,966	291,403	11,776,768
VI. Connected with food and drink, etc. ..	2,711,367	2,985,894	1,854,560	597,633	375,697	226,317	8,751,468
VII. Clothing and textile fabrics, etc. ..	2,947,356	4,225,126	549,508	455,581	191,086	118,149	8,486,806
VIII. Books, paper, printing, and engraving ..	1,589,937	1,259,756	447,264	249,974	179,086	102,523	3,823,540
IX. Musical instruments, etc. ..	102,784	46,034	..	2,232	..	..	151,050
X. Arms and explosives ..	197,463	95,237	..	394	..	..	293,094
XI. Vehicles and fittings, saddlery and harness, etc. ..	690,613	689,290	144,843	280,533	81,021	49,073	1,935,373
XII. Ship and boat building and repairing ..	1,489,925	181,513	14,793	33,637	3,304	7,379	1,730,551
XIII. Furniture, bedding, and upholstery ..	629,344	448,214	158,136	131,870	74,415	42,658	1,484,637
XIV. Drugs, chemicals, and by-products ..	351,685	347,655	9,968	121,096	51,297	2,854	884,555
XV. Surgical and other scientific instruments ..	23,768	19,302	6,677	4,115	3,848	..	62,710
XVI. Jewellery, timepieces, and plated ware ..	145,466	178,209	18,477	23,241	8,841	3,577	382,811
XVII. Heat, light, & power ..	949,661	794,839	198,353	184,778	67,984	60,207	2,255,822
XVIII. Leatherware, n.e.i. ..	119,483	111,055	6,730	6,927	2,327	814	247,336
XIX. Minor wares, n.e.i. ..	242,837	413,116	19,979	29,032	16,682	2,981	724,627
Total ..	21,681,196	17,702,173	5,364,818	3,988,062	2,173,350	1,205,959	52,115,558

(a) Excluding all amounts drawn by working proprietors.

(b) Includes Class II.

(c) Included with Class I.



The maximum amount of salaries and wages paid in any particular class during 1919-20 was in Class V., the amount being £11,776,768, or 22.60 per cent. on the total amount; the minimum amount was in Class XV., £62,710, or 0.12 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 1915 to 1919-20. The figures are exclusive of working proprietors and of the amounts drawn from the business by them.

**AMOUNT OF SALARIES AND WAGES PAID AND AVERAGE AMOUNT PER ANNUM  
PAID PER EMPLOYEE, 1915 TO 1919-20.**

Year.	Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
		£	£	£	£	£	£	£
1915a ..	Total amount paid ..	12,667,721	11,036,345	4,226,635	2,705,130	1,791,276	783,547	33,210,654
	Average per employee ..	112.94	101.75	104.21	111.54	127.31	97.82	108.00
1916b ..	Total amount paid ..	13,413,845	11,036,345	4,181,254	2,705,130	1,656,799	835,467	33,828,840
	Average per employee ..	119.29	101.75	108.13	111.54	136.29	104.88	111.35
1917c ..	Total amount paid ..	14,381,309	11,833,517	4,879,940	3,094,094	1,590,696	838,662	36,618,218
	Average per employee ..	126.16	105.87	125.28	124.57	136.22	108.97	118.54
1918c ..	Total amount paid ..	14,701,255	12,502,601	5,121,188	3,359,354	1,730,896	963,974	38,379,268
	Average per employee ..	126.18	110.77	129.45	131.94	138.55	115.57	121.75
1918-19d	Total amount paid ..	16,957,919	14,080,403	5,121,188	3,651,715	1,730,896	963,974	42,506,095
	Average per employee ..	137.33	120.47	129.45	136.64	138.55	115.57	129.80
1919-20d	Total amount paid ..	21,681,196	17,702,173	5,364,818	3,988,062	2,173,350	1,205,959	52,115,558
	Average per employee ..	154.87	135.52	135.86	141.63	145.24	126.03	143.65

(a) New South Wales figures for year ended 30th June, 1915. (b) See note (a) first table this section.  
(c) See note (b) first table this section. (d) See note (c) first table this section.

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. In Victoria, for instance, there is a large number of hands employed in Class VII., comprising a heavy percentage of women and children. New South Wales pays the largest amount in salaries, and the average per employee in that State is considerably higher than in any other part of the Commonwealth.

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. Taking the Commonwealth as a whole, during the period 1915-1919-20 there has been an increase of 57 per cent. on the total amount of wages paid, and 33 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 1918-19 and 1919-20, and the total amounts paid to employees of each sex during the last six years :-

**AMOUNT(a) OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS  
EMPLOYED IN EACH CLASS OF INDUSTRY IN THE SEVERAL STATES OF  
THE COMMONWEALTH DURING 1918-19.**

Class of Industry.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . . .	599,183	569,669	105,757	110,914	39,843b	23,526b	1,448,892
II. Treating oils and fats, animal, vegetable, etc. . . .	180,738	102,350	24,184	32,949	(c)	(c)	340,221
III. Processes in stone, clay, glass, etc. . .	944,465	605,432	101,358	194,750	52,281	24,758	1,923,053
IV. Working in wood . .	1,066,915	1,014,263	551,834	179,529	372,094	166,275	3,550,910
V. Metal works, machinery, etc. . .	4,521,055	2,308,762	823,925	1,385,270	407,420	215,882	9,662,314

(a) Exclusive of amount drawn by working proprietors. (b) Includes Class II. (c) Included in Class I.

AMOUNT(a) OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS  
EMPLOYED IN EACH CLASS OF INDUSTRY, ETC.—*continued.*

Class of Industry.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
<b>MALES—<i>continued.</i></b>							
	£	£	£	£	£	£	£
VI. Connected with food and drink, etc. . .	1,981,379	2,061,548	2,026,703	488,104	248,335	176,524	6,982,593
VII. Clothing and textile fabrics, etc. . .	1,073,912	1,460,493	230,996	162,910	60,646	52,447	3,041,404
VIII. Books, paper, printing and engraving . .	1,109,968	954,340	357,505	183,746	146,775	88,603	2,840,937
IX. Musical instruments, etc. . .	68,658	35,279	..	1,758	..	..	105,695
X. Arms and explosives	230,041	70,503	..	338	..	..	300,882
XI. Vehicles and fittings, saddlery and harness, etc. . .	560,327	529,612	131,255	193,634	62,826	38,226	1,515,880
XII. Ship and boat building and repairing . .	932,813	136,520	13,747	19,950	2,942	7,756	1,113,728
XIII. Furniture, bedding, and upholstery . .	452,562	304,844	132,613	98,992	55,107	27,219	1,071,337
XIV. Drugs, chemicals, and by-products . .	212,661	264,908	5,420	92,123	44,319	1,137	620,568
XV. Surgical and other scientific instruments	22,775	14,121	4,993	3,140	1,449	..	46,478
XVI. Jewellery, timepieces, and plated ware . .	107,447	126,289	13,159	19,375	7,148	3,157	276,575
XVII. Heat, light, and power	685,305	667,404	165,867	150,707	63,087	64,761	1,797,131
XVIII. Leatherware, n.e.l. . .	70,942	57,962	7,513	3,834	1,518	..	141,769
XIX. Minor wares, n.e.l. . .	145,523	247,367	13,888	22,591	12,810	2,472	444,651
Total ..	14,966,669	11,531,666	4,710,717	3,344,623	1,578,600	892,743	37,025,018

## FEMALES.

I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	7,324	2,246	569	552	447b	271b	11,409
II. Treating oils and fats, animal, vegetable, etc. . .	19,796	9,717	969	2,015	(c)	(c)	32,497
III. Processes in stone, clay, glass, etc. . .	7,338	6,768	650	798	483	150	16,137
IV. Working in wood . .	11,380	8,467	4,846	2,510	339	1,226	28,768
V. Metal works, machinery, etc. . .	42,440	26,225	6,039	6,651	2,386	1,102	84,843
VI. Connected with food and drink, etc. . .	331,575	331,216	56,579	31,531	16,602	15,465	782,968
VII. Clothing and textile fabrics, etc. . .	1,226,101	1,785,686	275,616	210,560	107,245	42,728	3,647,936
VIII. Books, paper, printing and engraving . .	175,963	167,555	42,447	28,530	15,359	5,751	435,605
IX. Musical instruments, etc. . .	2,972	973	..	..	..	..	3,945
X. Arms and explosives	426	25,468	..	..	..	..	25,894
XI. Vehicles and fittings, saddlery and harness, etc. . .	14,149	13,569	4,945	5,884	2,328	1,342	42,217
XII. Ship and boat building and repairing . .	2,077	387	..	..	..	..	2,464
XIII. Furniture, bedding, and upholstery . .	31,718	22,325	7,720	2,815	1,731	1,547	67,856
XIV. Drugs, chemicals, and by-products . .	51,334	36,126	2,318	5,649	3,079	227	98,733
XV. Surgical and other scientific instruments	3,644	859	202	293	381	..	5,379
XVI. Jewellery, timepieces, and plated ware . .	8,665	10,693	873	934	194	78	21,437
XVII. Heat, light, and power	4,932	34,925	2,514	4,880	..	1,076	48,327
XVIII. Leatherware, n.e.l. . .	16,010	16,036	1,879	832	330	..	35,089
XIX. Minor wares, n.e.l. . .	33,406	49,494	2,305	2,658	1,392	268	89,523
Total ..	1,991,250	2,548,737	410,471	307,092	152,296	71,231	5,481,077

(a) Exclusive of amount drawn by working proprietors. (b) Includes Class II. (c) Included in Class I.

**AMOUNT<sup>(a)</sup> OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS  
EMPLOYED IN EACH CLASS OF INDUSTRY IN THE SEVERAL STATES OF  
THE COMMONWEALTH DURING 1919-20.**

Class of Industry.	N.S.W., 1919-20.	Victoria, 1919-20.	Q'land., 1919.	S. Aust., 1919-20.	W. Aust., 1919.	Tas., 1919.	C'wealth.
<b>MALES.</b>							
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	775,743	794,496	107,497	165,100	46,343b	30,008	1,919,187
II. Treating oils and fats, animal, vegetable, etc. . .	233,871	114,633	24,138	33,669	(c)	3,665	409,976
III. Processes in stone, clay, glass, etc. . .	1,300,778	673,880	101,741	241,898	70,046	27,931	2,416,274
IV. Working in wood . .	1,277,034	1,282,556	673,272	210,729	579,718	234,686	4,257,995
V. Metal works, machinery, etc. . .	5,780,707	2,974,768	1,013,293	1,196,581	417,601	200,011	11,672,961
VI. Connected with food and drink, etc. . .	2,288,555	2,598,338	1,794,752	562,181	355,334	208,500	7,807,660
VII. Clothing and textile fabrics, etc. . .	1,371,893	1,899,615	246,189	185,755	71,879	61,858	3,837,189
VIII. Books, paper, printing and engraving . .	1,364,366	1,072,020	396,245	214,433	160,399	95,777	3,303,240
IX. Musical instruments, etc. . .	99,030	44,733	..	2,232	..	..	145,995
X. Arms and explosives	197,092	72,177	..	394	..	..	269,663
XI. Vehicles and fittings, saddlery and harness, etc. . .	672,707	675,597	138,371	272,877	78,431	47,114	1,885,097
XII. Ship and boat building and repairing . .	1,486,686	181,111	14,793	33,637	3,304	7,379	1,726,910
XIII. Furniture, bedding, and upholstery . .	591,068	424,183	151,209	128,481	72,534	40,969	1,408,444
XIV. Drugs, chemicals, and by-products . .	285,520	297,762	6,471	115,194	48,094	2,690	755,731
XV. Surgical and other scientific instruments . .	25,150	18,228	6,514	3,871	3,354	..	57,117
XVI. Jewellery, timepieces, and plated ware . .	135,620	165,137	17,088	27,060	8,660	3,544	357,109
XVII. Heat, light, and power	944,361	759,399	195,227	179,426	67,965	59,100	2,205,478
XVIII. Leatherware, n.e.l. . .	92,694	83,713	5,479	5,033	1,821	746	189,486
XIX. Minor wares, n.e.l. . .	205,473	350,820	17,446	26,629	14,991	2,701	618,060
Total . .	19,128,348	14,483,166	4,909,725	3,605,180	2,000,474	1,116,679	45,243,572
<b>FEMALES.</b>							
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	13,388	2,645	673	888	454b	..	18,048
II. Treating oils and fats, animal, vegetable, etc. . .	27,630	12,421	889	2,197	(c)	395	43,532
III. Processes in stone, clay, glass, etc. . .	9,266	7,307	703	944	742	221	19,183
IV. Working in wood . .	13,816	11,540	5,708	2,540	493	1,118	35,215
V. Metal works, machinery, etc. . .	52,274	32,687	7,616	7,473	2,365	1,392	103,807
VI. Connected with food and drink, etc. . .	422,812	387,556	59,808	35,452	20,363	17,817	943,808
VII. Clothing and textile fabrics, etc. . .	1,575,463	2,325,511	303,319	269,826	119,207	56,291	4,649,617
VIII. Books, paper, printing and engraving . .	225,571	187,736	51,019	35,541	18,687	6,746	525,300
IX. Musical instruments, etc. . .	3,754	1,301	..	..	..	..	5,055
X. Arms and explosives	371	23,060	..	..	..	..	23,431
XI. Vehicles and fittings, saddlery and harness, etc. . .	17,906	13,693	6,472	7,656	2,500	1,959	50,276
XII. Ship and boat building and repairing . .	3,239	402	..	..	..	..	3,641
XIII. Furniture, bedding, and upholstery . .	38,276	24,031	6,927	3,389	1,881	1,689	76,193

(a) Exclusive of amount drawn by working proprietors. (b) Includes Class II. (c) Included in Class I.

**AMOUNT(a) OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS  
EMPLOYED IN EACH CLASS OF INDUSTRY, ETC.—continued.**

Class of Industry.	N.S.W., 1919-20.	Victoria, 1919-20.	Q'land., 1919.	S. Aust., 1919-20.	W. Aust., 1919.	Tas., 1919.	C'wealth.
<b>FEMALES—continued.</b>							
XIV. Drugs, chemicals, and by-products ..	£ 66,165	£ 49,893	£ 3,497	£ 5,902	£ 3,203	£ 164	£ 128,824
XV. Surgical and other scientific instru- ments ..	3,618	1,074	163	244	494	..	5,593
XVI. Jewellery, timepieces, and plated ware ..	9,846	13,072	1,389	1,181	181	33	25,702
XVII. Heat, light, and power	5,300	35,440	3,126	5,352	19	1,107	50,344
XVIII. Leatherware, n.e.i. ..	26,789	27,342	1,251	1,894	506	68	57,850
XIX. Minor wares, n.e.i. ..	37,364	62,296	2,533	2,403	1,691	280	106,567
Total ..	2,552,848	3,219,007	455,093	382,882	172,876	89,280	6,871,986

(a) Exclusive of amount drawn by working proprietors.

**AMOUNT(a) OF SALARIES AND WAGES PAID TO MALES AND FEMALES IN  
FACTORIES IN THE SEVERAL STATES OF THE COMMONWEALTH,  
1915 TO 1919-20.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
<b>MALES.</b>							
1915.b Amount paid ..£	11,296,572	9,161,852	3,886,165	2,506,579	1,667,477	723,010	29,241,655
Per cent. on total ..	89.18	83.02	91.94	92.66	93.09	92.27	88.05
Average per employee£	130.96	128.76	118.03	122.92	141.93	106.97	128.01
1916.c Amount paid ..£	11,888,028	9,161,852	3,823,488	2,506,579	1,520,760	772,789	29,673,496
Per cent. on total ..	88.63	83.02	91.44	92.66	91.79	92.50	87.72
Average per employee£	141.46	128.76	123.57	122.92	155.80	116.10	133.66
1917.d Amount paid ..£	12,727,172	9,590,851	4,496,449	2,852,334	1,449,780	778,352	31,894,939
Per cent. on total ..	88.50	81.05	92.14	92.19	91.14	92.81	87.10
Average per employee£	149.33	136.48	143.51	144.99	156.99	120.13	143.53
1918.d Amount paid ..£	12,848,017	10,141,750	4,710,717	3,087,063	1,578,600	892,743	33,258,890
Per cent. on total ..	87.39	81.12	91.98	91.89	91.20	92.61	86.66
Average per employee£	148.93	141.12	146.19	152.89	156.41	127.75	146.11
1918-19.e Amount paid ..£	14,966,669	11,531,666	4,710,717	3,344,623	1,578,600	892,743	37,025,018
Per cent. on total ..	88.26	81.90	91.98	91.59	91.20	92.61	87.11
Average per employee£	160.82	150.89	146.19	157.55	156.41	127.75	154.25
1919-20.e Amount paid ..£	19,128,348	14,483,166	4,909,725	3,605,180	2,000,474	1,116,679	45,243,572
Per cent. on total ..	88.23	81.82	91.52	90.40	92.05	92.60	86.81
Average per employee£	181.06	166.98	151.09	162.43	161.84	138.51	169.14

**FEMALES.**

1915.b Amount paid ..£	1,371,149	1,874,493	340,470	198,551	123,799	60,537	3,968,999
Per cent. on total ..	10.82	16.98	8.06	7.34	6.91	7.73	11.95
Average per employee£	52.94	50.24	44.62	42.47	53.34	43.39	50.18
1916.c Amount paid ..£	1,525,817	1,874,493	357,766	198,551	136,039	62,678	4,155,344
Per cent. on total ..	11.37	16.98	8.56	7.34	8.21	7.50	12.28
Average per employee£	53.72	50.24	46.29	42.47	56.80	47.85	50.81
1917.d Amount paid ..£	1,654,137	2,242,666	383,491	241,760	140,916	60,309	4,723,279
Per cent. on total ..	11.50	18.95	7.86	7.81	8.86	7.19	12.90
Average per employee£	57.49	54.05	50.31	46.81	57.71	49.56	54.47
1918.d Amount paid ..£	1,853,238	2,360,851	410,471	272,291	152,296	71,231	5,120,378
Per cent. on total ..	12.61	18.88	8.02	8.11	8.80	7.39	13.34
Average per employee£	61.27	57.57	55.95	51.67	63.46	52.65	58.45
1919-20.e Amount paid ..£	1,991,250	2,548,737	410,471	307,092	152,296	71,231	5,481,077
Per cent. on total ..	11.74	18.10	8.02	8.41	8.80	7.39	12.89
Average per employee£	65.46	63.00	55.95	55.88	63.46	52.65	62.67
1919-20.e Amount paid ..£	2,552,848	3,219,007	455,093	382,882	172,876	89,280	6,871,986
Per cent. on total ..	11.77	18.18	8.48	9.60	7.95	7.40	13.19
Average per employee£	74.33	73.35	65.07	64.20	66.41	59.24	72.11

(a) Exclusive of amounts drawn by working proprietors. (b) Year ended 30th June, 1915, for New South Wales. (c) See note (a) first table this section. (d) See note (b) first table this section. (e) See note (c) first table this section.

A further analysis of salaries and wages paid is given in the following tables, 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 1918-19.(a)**

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. . .	£ 177,079	£ 4,671	£ 1,271,813	£ 6,738	£ 1,448,892	£ 11,409	£ 1,460,301
II. Treating oils and fats, animal, vegetable, etc. . .	64,874	6,366	275,347	26,131	340,221	32,497	372,718
III. Processes in stone, clay, glass, etc. . .	201,695	8,186	1,721,358	8,001	1,923,053	16,187	1,939,240
IV. Working in wood . .	405,743	24,554	2,945,167	4,214	3,350,910	28,768	3,379,678
V. Metal works, machinery, etc. . .	1,037,863	46,801	8,624,451	38,042	9,662,314	84,843	9,747,157
VI. Connected with food and drink, etc. . .	1,246,186	96,109	5,736,407	686,859	6,982,593	782,968	7,765,561
VII. Clothing and textile fabrics, etc. . .	479,118	206,212	2,562,286	3,441,724	3,041,404	3,647,936	6,689,340
VIII. Books, paper, printing, and engraving . .	568,288	80,120	2,272,649	355,485	2,840,937	435,605	3,276,542
IX. Musical instruments, etc. . .	8,649	1,994	97,046	1,951	105,695	3,945	109,640
X. Arms and explosives . .	26,591	2,569	274,291	23,325	300,882	25,894	326,776
XI. Vehicles and fittings, saddlery and harness, etc. . .	160,663	25,084	1,355,217	17,133	1,515,880	42,217	1,558,097
XII. Ship and boat building and repairing . .	89,484	2,264	1,024,244	200	1,113,728	2,464	1,116,192
XIII. Furniture, bedding, and upholstery . .	87,448	13,967	983,889	53,889	1,071,337	67,856	1,139,193
XIV. Drugs, chemicals, and by-products . .	128,853	16,450	491,715	82,283	620,568	98,733	719,301
XV. Surgical & other scientific instruments . .	7,442	1,609	39,036	3,770	46,478	5,379	51,857
XVI. Jewellery, timepieces, and plated ware . .	25,166	6,135	251,409	15,302	276,575	21,437	298,012
XVII. Heat, light, and power . .	358,989	21,789	1,438,142	26,538	1,797,131	48,327	1,845,458
XVIII. Leatherware, n.e.l. . .	22,545	3,721	119,224	31,368	141,769	35,089	176,858
XIX. Minor wares, n.e.l. . .	58,677	6,632	385,974	82,891	444,651	89,523	534,174
Total . .	5,155,353	575,233	31,869,665	4,905,844	37,025,018	5,481,077	42,506,095
Average paid per employee . .	244.54	98.36	145.56	60.11	154.25	62.67	129.80

(a) See note (c) first table this section.

**DETAILS OF SALARIES AND WAGES PAID TO MANAGERS, OVERSEERS, ETC.,  
AND OTHER EMPLOYEES IN FACTORIES DURING 1919-20.(a)**

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. . .	£ 223,421	£ 6,766	£ 1,695,766	£ 11,282	£ 1,919,187	£ 18,048	£ 1,937,235
II. Treating oils and fats, animal, vegetable, etc. . .	88,129	10,122	321,847	33,410	409,976	43,532	453,508
III. Processes in stone, clay, glass, etc. . .	242,367	10,762	2,173,907	8,421	2,416,274	19,183	2,435,457
IV. Working in wood . .	492,434	28,213	3,765,561	7,002	4,257,995	35,215	4,293,210
V. Metal works, machinery, etc. . .	1,224,422	57,106	10,448,539	46,701	11,672,961	103,807	11,776,768
VI. Connected with food and drink, etc. . .	1,393,365	111,397	6,414,295	832,411	7,807,660	943,808	8,751,468
VII. Clothing and textile fabrics, etc. . .	592,045	265,513	3,245,144	4,384,104	3,837,189	4,649,617	8,486,806
VIII. Books, paper, printing, and engraving . .	630,712	92,955	2,672,528	432,345	3,303,240	525,300	3,828,540
IX. Musical instruments, etc. . .	14,375	2,651	131,620	2,404	145,995	5,055	151,050
X. Arms and explosives . .	32,825	2,723	236,838	20,708	269,663	23,431	293,094

(a) See note (c) first table this section.

**DETAILS OF SALARIES AND WAGES PAID TO MANAGERS, OVERSEERS,  
ETC., AND OTHER EMPLOYEES IN FACTORIES, ETC.(a)—continued.**

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.
	£	£	£	£	£	£	£
XI. Vehicles and fittings, saddlery and harness, etc. . .	201,984	30,750	1,683,113	19,526	1,885,097	50,276	1,935,373
XII. Ship and boat building and repairing. . .	108,889	3,111	1,618,021	530	1,726,910	3,641	1,730,551
XIII. Furniture, bedding, and upholstery . .	105,154	14,212	1,303,290	61,981	1,408,444	76,193	1,484,637
XIV. Drugs, chemicals, and by-products . .	173,908	19,872	581,823	108,952	755,781	128,824	884,555
XV. Surgical & other scientific instruments . .	10,015	1,541	47,102	4,052	57,117	5,593	62,710
XVI. Jewellery, timepieces, and plated ware . .	28,763	7,922	328,346	17,780	357,109	25,702	382,811
XVII. Heat, light, and power	436,714	25,771	1,768,764	24,573	2,205,478	50,344	2,255,822
XVIII. Leatherware, n.e.i. . .	27,665	4,927	161,821	52,923	189,486	57,850	247,336
XIX. Minor wares, n.e.i. . .	82,580	7,899	535,480	98,668	618,060	106,567	724,627
Total . .	6,109,767	704,213	39,133,805	6,167,773	45,243,572	6,871,986	52,115,558
Average paid per employee. .	264.77	108.89	160.11	69.43	169.14	72.11	143.65

(a) See note (c) first table this section.

**3. Value of Fuel and Light used in Factories.**—The amount expended in factories on fuel and light is of considerable importance; in 1919–20 it amounted to £5,141,293. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £1,385,545; Class VI., Connected with Food, Drink, etc., £1,190,521; Class XVII., Heat, Light, Power, etc., £1,005,826, of which amount £898,954 was expended on generating electric light and power; and Class III., £570,078. 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 1918–19 and 1919–20, and of the total used for each of the last six years:—

**VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH,  
1918–19.**

Class of Industry.	N.S.W. 1918–19.	Vic. 1918–19.	Q'land. 1918.	S. Aust. 1918–19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	87,109	79,368	14,984	16,000	4,633a	1,520a	203,614
II. Treating oils and fats, animal, vegetable, etc. . .	45,044	31,348	4,245	6,237	(b)	(b)	86,874
III. Processes in stone, clay, glass, etc. . .	273,114	183,408	20,805	69,584	16,602	6,565	570,078
IV. Working in wood . .	36,488	27,961	12,181	6,301	2,787	1,870	87,588
V. Metal works, machinery, etc. . .	755,560	211,628	33,471	302,217	27,329	55,340	1,385,545
VI. Connected with food and drink, etc. . .	355,604	402,593	249,853	112,606	52,239	17,626	1,190,521
VII. Clothing and textile fabrics, etc. . .	58,548	109,881	10,398	11,734	3,876	2,105	196,542
VIII. Books, paper, printing, and engraving . .	48,465	60,561	16,736	9,019	5,908	2,203	142,892
IX. Musical instruments, etc. . .	1,292	726	..	26	..	..	2,044
X. Arms and explosives. . .	2,931	10,788	..	14	..	..	13,733
XI. Vehicles and fittings, saddlery and harness, etc. . .	19,154	17,759	3,080	8,217	3,187	844	52,241
XII. Ship and boat building and repairing . .	21,700	5,530	211	638	17	105	28,201
XIII. Furniture, bedding, and upholstery . .	13,899	9,879	3,828	3,379	1,746	601	33,332
XIV. Drugs, chemicals, and by-products . .	19,422	33,120	610	12,679	4,949	50	70,830
XV. Surgical and other scientific instruments . .	545	647	197	193	90	..	1,672
XVI. Jewellery, timepieces, and plated ware . .	2,567	3,900	596	1,068	179	45	8,355
XVII. Heat, light, and power	547,924	217,015	52,526	84,023	87,861	16,477	1,005,826
XVIII. Leatherware, n.e.i. . .	1,771	2,120	165	132	73	..	4,261
XIX. Minor wares, n.e.i. . .	6,904	48,692	213	620	474	41	57,144
Total . .	2,298,041	1,457,124	424,099	644,687	211,950	105,392	5,141,293

(a) Includes Class II.

(b) Included in Class I.

## VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH, 1919-20.

Class of Industry.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	105,978	109,359	17,005	22,665	26,666	1,467	263,140
II. Treating oils and fats, animal, vegetable, etc. . .	62,347	42,526	4,913	4,514	(b)	471	114,771
III. Processes in stone, clay, glass, etc. . .	360,561	206,884	18,035	90,470	20,143	7,910	704,003
IV. Working in wood . .	45,409	30,439	12,012	6,741	4,317	3,273	102,191
V. Metal works, machinery, etc. . .	974,938	212,945	143,065	137,891	24,987	44,997	1,538,823
VI. Connected with food and drink, etc. . .	410,597	469,052	234,444	116,789	63,039	25,157	1,319,078
VII. Clothing and textile fabrics, etc. . .	68,944	161,399	11,589	13,346	4,029	3,514	262,821
VIII. Books, paper, printing, and engraving . .	56,799	64,193	18,951	9,453	6,230	2,760	158,386
IX. Musical instruments, etc. . .	1,538	909	..	44	..	..	2,491
X. Arms and explosives. .	2,063	9,653	..	8	..	..	11,724
XI. Vehicles and fittings, saddlery and harness, etc. . .	18,385	21,005	3,382	10,321	3,517	1,806	58,416
XII. Ship and boat building and repairing . .	34,270	7,342	324	4,887	31	91	46,945
XIII. Furniture, bedding, and upholstery . .	13,601	12,409	4,459	4,599	2,328	1,075	38,471
XIV. Drugs, chemicals, and by-products . .	24,096	35,777	780	17,565	5,979	251	84,448
XV. Surgical and other scientific instruments	618	568	203	242	156	..	1,787
XVI. Jewellery, timepieces, and plated ware . .	2,836	5,437	614	1,315	221	69	10,492
XVII. Heat, light, and power	515,391	279,794	61,370	117,066	80,231	19,653	1,073,505
XVIII. Leatherware, n.e.i. . .	1,551	3,215	118	68	79	12	5,043
XIX. Minor wares, n.e.i. . .	10,744	50,314	348	818	381	49	62,654
Total ..	2,710,666	1,723,220	531,612	558,802	222,334	112,555	5,859,189

(a) Includes Class II.

(b) Included in Class I.

## VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1915 TO 1919-20.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1915 ..	1,364,186a	834,966	300,716	399,731	187,121	110,803	3,197,523
1916b ..	1,528,220	834,966	310,454	399,731	193,523	116,704	3,383,598
1917c ..	1,766,664	1,024,156	415,052	558,524	198,000	92,544	4,054,940
1918c ..	2,060,076	1,248,186	424,099	683,187	211,950	105,392	4,732,890
1918-19d ..	2,298,041	1,457,124	424,099	644,687	211,950	105,392	5,141,293
1919-20d ..	2,710,666	1,723,220	531,612	558,802	222,334	112,555	5,859,189

(a) Year ended 30th June, 1915. (b) See note (a) first table this section.

(c) See note (b) first table this section. (d) See note (c) first table this section.

4. Value of Raw Materials used in Factories.—The total value of raw materials worked up (i.e., exclusive of fuel, lubricants, etc.) in factories in the Commonwealth during 1919-20 was £187,722,877, which represents 64.17 per cent. of the total value of the finished products. (See next paragraph.) The following tables shew the value of the raw materials worked up in various classes of industry in each State.

**VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH,  
1918-19.**

Class of Industry.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	7,984,944	6,479,059	2,477,075	975,735	a359,842	a277,758	18,554,213
II. Treating oils and fats, animal, vegetable, etc. . .	2,410,007	806,412	142,051	228,807	(b)	(b)	3,587,277
III. Processes in stone, clay, glass, etc. . .	740,630	357,474	54,180	136,963	20,209	9,749	1,319,205
IV. Working in wood . .	2,955,548	1,452,602	866,612	614,460	117,957	103,343	6,110,522
V. Metal works, machinery, etc. . .	15,926,577	3,752,620	867,706	4,970,628	439,583	1,095,263	27,052,377
VI. Connected with food and drink, etc. . .	25,644,382	22,442,516	12,984,071	4,567,611	1,947,234	1,338,249	68,924,063
VII. Clothing and textile fabrics, etc. . .	5,779,622	9,148,734	1,277,937	852,629	392,662	175,591	17,627,175
VIII. Books, paper, printing, and engraving . .	2,264,984	2,039,293	431,475	393,251	198,430	97,653	5,425,086
IX. Musical instrum'ts, etc.	77,117	30,058	..	1,365	..	..	108,540
X. Arms and explosives	58,916	380,059	..	420	..	..	439,395
XI. Vehicles and fittings, saddlery and harness, etc. . .	647,970	701,075	183,990	257,485	85,090	45,372	1,920,982
XII. Ship and boat building and repairing..	679,202	145,277	11,674	16,266	2,452	11,523	866,394
XIII. Furniture, bedding, and upholstery . .	846,642	627,585	201,200	128,539	85,510	34,582	1,924,058
XIV. Drugs, chemicals, and by-products . .	1,487,906	1,294,820	24,843	430,919	233,921	11,405	3,483,814
XV. Surgical and other scientific instrum'ts.	26,067	13,984	2,845	2,312	2,940	..	48,148
XVI. Jewellery, timepieces, and platedware . .	127,422	249,640	13,302	19,542	9,761	1,196	420,863
XVII. Heat, light, and power	1,260,218	741,257	108,304	111,354	45,459	25,918	2,292,510
XVIII. Leatherware, n.e.i. . .	351,685	355,580	23,120	13,021	2,540	..	745,946
XIX. Minor wares, n.e.j. . .	467,613	1,080,692	22,658	38,575	20,080	2,586	1,632,204
<b>Total . .</b>	<b>69,737,452</b>	<b>52,098,737</b>	<b>19,693,043</b>	<b>13,759,882</b>	<b>3,963,470</b>	<b>3,230,188</b>	<b>162,482,772</b>

(a) Includes Class II.

(b) Included in Class I.

**VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH,  
1919-20.**

Class of Industry.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	10,383,416	8,882,848	2,404,158	1,531,038	a535,873	463,589	24,200,922
II. Treating oils and fats, animal, vegetable, etc. . .	2,543,224	1,115,658	147,140	250,976	(b)	17,689	4,074,687
III. Processes in stone, clay, glass, etc. . .	925,662	390,501	74,894	172,810	24,578	13,013	1,601,458
IV. Working in wood . .	3,833,824	1,884,329	1,092,333	992,023	129,798	136,878	8,069,185
V. Metal works, machinery, etc. . .	16,332,274	4,432,535	1,334,413	1,407,396	383,712	1,052,940	24,943,270
VI. Connected with food and drink, etc. . .	29,296,352	27,028,497	11,802,957	5,602,411	2,622,618	1,395,070	77,747,905
VII. Clothing and textile fabrics, etc. . .	7,794,972	12,549,338	1,387,635	1,137,307	538,552	226,328	23,634,032
VIII. Books, paper, printing, and engraving . .	2,524,789	2,245,423	492,723	510,580	242,519	97,092	6,113,126
IX. Musical instruments, etc. . .	99,810	41,947	..	1,571	..	..	143,328
X. Arms and explosives	48,188	380,886	..	1,865	..	..	430,939
XI. Vehicles and fittings, saddlery and harness, etc. . .	763,825	866,480	182,581	389,979	96,030	46,591	2,345,486
XII. Ship and boat building and repairing..	766,945	192,725	13,862	37,880	2,137	14,070	1,027,619
XIII. Furniture, bedding, and upholstery . .	1,200,623	926,536	234,912	205,174	104,753	49,147	2,721,145
XIV. Drugs, chemicals, and by-products . .	1,991,682	1,557,602	27,933	490,980	282,943	18,596	4,369,736
XV. Surgical and other scientific instruments . .	29,779	21,528	3,268	3,652	5,535	..	63,762
XVI. Jewellery, timepieces, and platedware . .	174,719	361,863	17,382	33,403	14,195	1,443	603,005
XVII. Heat, light, and power	1,403,274	864,355	122,155	123,966	43,514	25,464	2,582,728
XVIII. Leatherware, n.e.i. . .	612,344	568,854	17,662	21,076	2,670	2,001	1,074,607
XIX. Minor wares, n.e.j. . .	462,795	1,251,199	30,160	56,870	21,687	3,226	1,975,937
<b>Total . .</b>	<b>81,188,497</b>	<b>65,563,104</b>	<b>19,386,068</b>	<b>12,970,957</b>	<b>5,051,114</b>	<b>3,563,137</b>	<b>187,722,877</b>

(a) Includes Class II.

(b) Included in Class I.



The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £77,747,905. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £24,943,270 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £63,762. The following table gives particulars for the six years ended 1919-20 :—

**VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1915 TO 1919-20.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1915 ..	42,559,370a	30,728,743	15,939,583	8,720,436	2,634,700	2,193,250	102,776,082
1916b ..	44,227,079	30,728,743	16,127,926	8,720,436	3,033,638	2,342,623	105,180,445
1917c ..	57,044,667	37,103,750	20,938,266	11,331,814	3,323,424	2,541,175	132,283,096
1918c ..	64,718,726	42,133,636	19,693,043	12,442,803	3,963,470	3,230,188	146,181,866
1918-19d ..	69,737,452	52,098,737	19,693,043	13,759,882	3,963,470	3,230,188	162,482,772
1919-20d ..	81,188,497	65,563,104	19,386,068	12,970,957	5,051,114	3,563,137	187,722,877

(a) Year ended 30th June, 1915.

(b) See note (a) first table this section.

(c) See note (b) first table this section.

(d) See note (c) first table this section.

5. Total Value of Output of Manufacturing Industries.—The values of the output of new goods manufactured and repairs effected in factories of various classes in each State during 1918-19 and 1919-20 are shewn in the following tables. The figures given represent not only the increase in value due to the process of manufacture, but also include the value of the raw materials used. The difference between the value of the materials used and the total output (see paragraph 6 hereof) is the real value of production from manufactories :—

**TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH, 1918-19.**

Class of Industry.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	9,706,230	8,033,014	3,031,623	1,224,766	a468,883	a337,701	22,802,217
II. Treating oils and fats, animal, vegetable, etc. . .	3,188,749	1,209,060	238,558	310,069	(b)	(b)	4,946,436
III. Processes in stone, clay, glass, etc. . .	2,581,575	1,514,021	215,983	519,054	110,551	56,019	4,997,203
IV. Working in wood . .	4,560,888	3,185,881	1,870,980	928,975	634,418	361,031	11,542,223
V. Metal works, machinery, etc. . .	24,669,994	7,443,794	1,905,982	7,472,821	970,607	1,993,492	44,456,690
VI. Connected with food and drink, etc. . .	31,991,329	28,644,340	18,190,762	5,852,606	2,628,052	1,864,924	89,172,013
VII. Clothing and textile fabrics, etc. . .	9,719,421	14,885,688	2,175,189	1,443,899	637,172	373,145	29,234,514
VIII. Books, paper, printing, and engraving . .	4,470,684	4,185,035	1,179,442	776,701	480,430	235,907	11,328,199
IX. Musical instruments, etc. . .	196,256	82,769	..	3,655	..	..	282,680
X. Arms and explosives . .	424,088	561,894	..	900	..	..	986,882
XI. Vehicles and fittings, saddlery and harness, etc. . .	1,488,239	1,547,248	411,152	565,455	180,522	104,566	4,297,182
XII. Ship and boat building and repairing . .	1,732,149	353,910	29,309	44,270	7,011	21,838	2,188,537
XIII. Furniture, bedding, and upholstery . .	1,553,868	1,167,282	425,842	285,132	165,049	86,485	3,683,658
XIV. Drugs, chemicals, and by-products . .	2,541,187	2,068,311	56,687	648,162	325,748	14,456	5,654,551
XV. Surgical and other scientific instruments . .	78,681	41,508	11,285	8,447	6,716	..	146,637
XVI. Jewellery, timepieces, and plated ware . .	294,902	485,882	35,335	53,587	19,620	5,682	895,008
XVII. Heat, light, and power . .	4,307,932	2,656,509	703,199	577,502	320,342	222,627	8,788,111
XVIII. Leatherware, n.e.i. . .	516,655	494,870	35,319	20,128	5,360	..	1,072,332
XIX. Minor wares, n.e.i. . .	780,191	1,634,661	43,192	74,501	43,024	6,246	2,581,815
Total ..	104,803,018	80,195,677	30,559,839	20,810,630	7,003,505	5,684,219	249,056,888

(a) Includes Class II.

(b) Included in Class I.

## TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH, 1919-20.

Class of Industry.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	13,002,928	11,026,037	2,925,919	1,951,516	702,273	553,053	30,161,726
II. Treating oils and fats, animal, vegetable, etc.	3,478,428	1,612,514	227,476	352,818	(b)	23,681	5,694,917
III. Processes in stone, clay, glass, etc.	3,520,101	1,690,639	283,259	628,841	147,074	74,666	6,344,580
IV. Working in wood	5,888,337	4,062,773	2,446,879	1,378,312	800,884	470,844	15,138,029
V. Metal works, machinery, etc.	24,754,762	9,180,549	3,370,871	3,120,013	900,658	1,844,393	43,171,246
VI. Connected with food and drink, etc.	37,306,834	34,974,847	17,622,453	7,152,538	3,497,069	2,007,766	102,561,507
VII. Clothing and textile fabrics, etc.	12,890,898	20,655,143	2,384,288	1,884,815	845,625	469,036	39,129,805
VIII. Books, paper, printing, and engraving	5,360,048	4,720,748	1,273,792	983,914	550,624	248,935	13,138,061
IX. Musical instruments, etc.	268,042	111,987	..	5,194	..	..	385,223
X. Arms and explosives	322,666	521,731	..	2,492	..	..	846,889
XI. Vehicles and fittings, saddlery and harness, etc.	1,811,869	1,945,012	477,671	826,095	210,379	128,191	5,399,217
XII. Ship and boat building and repairing	2,434,986	448,858	34,045	89,686	6,647	22,929	3,037,151
XIII. Furniture, bedding, and upholstery	2,121,623	1,695,571	480,330	410,231	210,102	114,725	5,032,582
XIV. Drugs, chemicals, and by-products	3,143,747	2,455,553	64,776	783,589	379,070	26,292	6,853,027
XV. Surgical and other scientific instruments	73,394	55,594	12,563	10,490	11,129	..	163,170
XVI. Jewellery, timepieces, and plated ware	397,394	689,423	44,840	79,538	27,870	8,134	1,247,199
XVII. Heat, light, and power	4,745,657	2,842,470	721,950	659,363	288,671	213,682	9,472,793
XVIII. Leatherware, n.e.i.	665,348	825,371	27,440	32,210	6,381	2,829	1,559,579
XIX. Minor wares, n.e.i.	1,020,418	1,959,543	54,192	102,884	49,472	7,398	3,199,907
Total	123,213,480	101,475,363	32,452,744	20,454,539	8,723,928	6,216,554	292,536,608

(a) Includes Class II.

(b) Included in Class I.

It will 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 £123,213,480, or 42.28 per cent. on the total for the Commonwealth. The next State in order of value is Victoria, which produced 34.69 per cent.; the value of the output of Queensland was 11.09 per cent.; of South Australia 6.99 per cent.; of Western Australia 2.98 per cent.; and of Tasmania 2.13 per cent. The two most important classes in order of value of output (Classes VI. and V.) are the same as in order of value of raw materials used. The following statement shows the value of output of factories, value per employee, and value per head of mean population in each State during the six years ended 1919-20:—

## TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1915 TO 1919-20.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1915	68,253,332a	51,466,093	25,444,812	13,994,223	5,712,793	4,215,447	169,086,700
1916b	70,989,864	51,466,093	25,541,024	13,994,223	6,007,111	4,576,530	172,574,845
1917c	85,944,320	60,047,284	31,969,302	17,392,352	6,255,388	4,788,000	206,376,046
1918	96,178,191	67,066,715	30,559,839	19,261,142	7,003,505	5,684,219	225,753,611
1918-19d	104,803,018	80,195,677	30,559,839	20,810,630	7,003,505	5,684,219	249,056,888
1919-20d	123,213,480	101,475,363	32,452,744	20,454,539	8,723,928	6,216,554	292,536,608

(a) Year ended 30th June, 1915.

(b) See note (a) first table this section.

(c) See note (b) first table this section.

(d) See note (c) first table this section.

**TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH  
DURING THE YEARS 1915 TO 1919-20—continued.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
PER EMPLOYEE.(a)							
1915 ..	£ 585b	£ 452	£ 605	£ 549	£ 390	£ 501	£ 527
1916c ..	610	452	639	549	474	547	545
1917d ..	728	513	790	669	514	590	642
1918d ..	798	567	746	723	542	652	688
1918-19e ..	821	655	746	745	542	652	731
1919-20e ..	853	743	794	695	566	621	777
PER HEAD OF MEAN POPULATION.							
1915 ..	33.07b	36.07	37.04	31.85	17.72	21.15	34.21
1916c ..	37.95	36.07	37.69	31.85	19.09	23.09	34.97
1917d ..	46.24	42.93	47.43	40.19	20.27	23.97	42.30
1918d ..	50.87	47.53	44.38	44.16	22.51	27.89	45.62
1918-19e ..	55.30	56.05	44.38	46.69	22.51	27.89	49.64
1919-20e ..	61.53	67.83	45.52	43.69	26.97	29.40	56.02

(a) Including working proprietors. (b) Year ended 30th June, 1915. (c) See note (a) first table this section.  
(d) See note (b) first table this section. (e) See note (c) first table this section.

6. Value of Production of Manufacturing Industries.—The difference between the figures given in paragraph 5 and the corresponding figures in paragraph 4 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 tables shew the values added in this manner during 1918-19 and 1919-20 in each State for the various classes of factories :—

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH,  
1918-19.**

Class of Industry.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	£ 1,721,286	£ 1,553,955	£ 554,548	£ 249,031	£ 109,241	£ 59,943	£ 4,248,004
II. Treating oils and fats, animal, vegetable, etc. ..	778,742	402,648	96,507	81,262	(b)	(b)	1,359,159
III. Processes in stone, clay, glass, etc. ..	1,840,945	1,156,547	161,803	382,091	90,342	46,270	3,677,998
IV. Working in wood ..	1,605,340	1,733,279	1,004,368	314,515	516,461	257,738	5,431,701
V. Metal works, machinery, etc. ..	8,743,417	8,691,174	1,038,276	2,502,193	531,024	898,229	17,404,313
VI. Connected with food and drink, etc. ..	6,346,947	6,201,824	5,206,691	1,284,995	680,818	526,675	20,247,950
VII. Clothing and textile fabrics, etc. ..	3,939,799	5,736,954	897,252	591,270	244,510	197,554	11,607,339
VIII. Books, paper, printing, and engraving ..	2,205,700	2,145,742	747,967	383,450	282,000	138,254	5,903,113
IX. Musical instruments, etc. ..	119,139	52,711	..	2,290	..	..	174,140
X. Arms and explosives ..	365,172	181,835	..	480	..	..	547,487
XI. Vehicles and fittings, saddlery and harness, etc. ..	840,269	846,173	227,162	307,970	95,432	59,194	2,376,200
XII. Ship and boat building and repairing ..	1,052,947	208,633	17,635	28,004	4,559	10,365	1,322,143
XIII. Furniture, bedding, and upholstery ..	707,226	539,697	224,642	156,593	79,539	51,903	1,759,600
XIV. Drugs, chemicals, and by-products ..	1,053,281	773,491	31,844	217,243	91,827	3,051	2,170,737
XV. Surgical & other scientific instruments ..	52,614	27,524	8,440	6,135	3,776	..	98,489
XVI. Jewellery, timepieces, and plated ware ..	167,480	236,242	22,033	34,045	9,859	4,486	474,145
XVII. Heat, light, and power ..	3,047,714	1,915,252	594,895	466,148	274,883	196,709	6,495,601
XVIII. Leatherware, n.e.i. ..	164,970	139,290	12,199	7,107	2,820	..	326,386
XIX. Minor wares, n.e.i. ..	312,578	553,969	20,534	35,926	22,944	3,660	949,611
Total ..	35,065,566	28,096,940	10,866,796	7,050,748	3,040,035	2,454,031	86,574,116

(a) Includes Class II.

(b) Included in Class I.

# VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1919-20.

Class of Industry.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural pursuits, etc. . .	2,619,512	2,143,189	521,761	420,478	2166,400	89,464	5,960,804
II. Treating oils and fats, animal, vegetable, etc. . .	935,204	496,856	80,336	101,842	(b)	5,992	1,620,230
III. Processes in stone, clay, glass, etc. . .	2,594,439	1,300,138	208,365	456,031	122,496	61,653	4,743,122
IV. Working in wood . .	2,054,543	2,178,444	1,354,546	386,289	761,086	333,966	7,068,844
V. Metal works, machinery, etc. . .	8,422,468	4,748,014	2,036,458	1,712,617	516,946	791,453	18,227,976
VI. Connected with food and drink, etc. . .	8,010,482	7,946,350	5,819,496	1,550,127	874,451	612,696	24,813,602
VII. Clothing and textile fabrics, etc. . .	5,095,926	8,105,805	996,753	747,508	307,073	242,708	15,495,773
VIII. Books, paper, printing, and engraving . .	2,835,259	2,475,325	781,069	473,334	308,105	151,843	7,024,935
IX. Musical instruments, etc. . .	168,232	70,040	..	3,623	..	..	241,895
X. Arms and explosives. .	274,478	140,845	..	627	..	..	415,950
XI. Vehicles and fittings, saddlery and harness, etc. . .	1,048,044	1,078,532	295,090	436,116	114,349	81,600	3,053,731
XII. Ship and boat building and repairing . .	1,668,041	256,133	20,183	51,806	4,510	8,859	2,009,532
XIII. Furniture, bedding, and upholstery . .	921,000	769,035	245,418	205,057	105,349	65,578	2,311,437
XIV. Drugs, chemicals, and by-products . .	1,152,065	897,951	36,843	292,609	96,127	7,696	2,483,291
XV. Surgical & other scientific instruments . .	43,615	34,066	9,295	6,838	5,594	..	99,408
XVI. Jewellery, timepieces, and plated ware . .	222,675	327,560	27,458	46,135	13,675	6,691	644,194
XVII. Heat, light, and power . .	3,342,383	1,979,115	599,795	535,397	245,157	188,218	6,890,065
XVIII. Leatherware, n.e.i. . .	203,004	256,517	9,778	11,134	3,711	828	484,972
XIX. Minor wares, n.e.i. . .	413,623	708,344	24,032	46,014	27,785	4,172	1,223,970
Total . .	42,024,983	35,912,259	13,066,676	7,483,582	3,672,814	2,653,417	104,813,731

(a) Includes Class II.

(b) Included in Class I.

The amount of the value added in each State is in the same order as in the case of value of output, the six most important classes being VI., V., VII., IV., VIII., and XVII., 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 1915 to 1919-20 :—

## VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1915 TO 1919-20.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
VALUE.							
	£	£	£	£	£	£	£
1915 ..	25,693,962a	20,737,350	9,505,229	5,273,787	3,078,093	2,022,197	66,310,618
1916b ..	26,762,785	20,737,350	9,413,098	5,273,787	2,973,473	2,233,907	67,394,400
1917c ..	28,899,653	22,943,534	11,031,036	6,060,538	2,931,964	2,226,825	74,093,550
1918c ..	31,459,465	24,933,079	10,866,796	6,818,339	3,040,035	2,454,031	79,571,745
1918-19d ..	35,065,566	28,096,940	10,866,796	7,050,748	3,040,035	2,454,031	86,574,116
1919-20d ..	42,024,983	35,912,259	13,066,676	7,483,582	3,672,814	2,653,417	104,813,731

(a) Year ended 30th June, 1915.

(b) See note (a) first table this section.

(c) See note (b) first table this section.

(d) See note (c) first table this section.

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN  
COMMONWEALTH, 1915 TO 1919-20—continued.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
<b>PER EMPLOYEE.</b>							
	£	£	£	£	£	£	£
1915 ..	220a	182	228	207	210	240	207
1916b ..	230	182	235	207	235	287	213
1917c ..	245	196	273	233	241	276	230
1918c ..	261	211	265	256	235	282	243
1918-19d ..	275	230	265	253	235	282	254
1919-20d ..	291	263	320	254	238	265	278
<b>PER HEAD OF MEAN POPULATION.</b>							
	£	£	£	£	£	£	£
1915 ..	13.80a	14.54	13.84	12.00	9.55	10.14	13.41
1916b ..	14.31	14.54	13.89	12.00	9.45	11.27	13.66
1917c ..	15.55	16.40	16.37	14.01	9.50	11.19	15.19
1918c ..	16.64	17.67	15.78	15.63	9.77	12.04	16.08
1918-19d ..	18.17	19.64	15.78	15.82	9.77	12.04	17.25
1919-20d ..	20.98	24.01	18.33	15.98	11.35	12.55	20.07

(a) Year ended 30th June, 1915.

(b) See note (a) first table this section.

(c) See note (b) first table this section.

(d) See note (c) first table this section.

As the total value of the output for the Commonwealth for 1919-20 was estimated at £292,536,608, there remained, after payment of £187,722,877, the value of the raw materials used, of £52,115,558 for salaries and wages, and of £5,859,189 for fuel, the sum of £46,838,984 to provide for all other expenditure and profits. The following tables give corresponding particulars for each State, expressed absolutely, and as percentages on the total value of the output for the years 1918-19 and 1919-20:—

**VALUE OF OUTPUT AND COST OF PRODUCTION IN COMMONWEALTH  
FACTORIES, 1918-19.**

State.	Raw Materials Used.	Fuel and Light.	Salaries and Wages.	All other Expenditure, Interest, and Profits.	Total Value of Output.
<b>VALUE AND COST, ETC.</b>					
	£	£	£	£	£
New South Wales, 1918-19	69,737,452	2,298,041	16,957,919	15,809,606	104,803,018
Victoria, 1918-19 ..	52,098,737	1,457,124	14,080,403	12,559,413	80,195,677
Queensland, 1918 ..	19,693,043	424,099	5,121,188	5,321,509	30,559,839
South Australia, 1918-19 ..	13,759,882	644,687	3,651,715	2,754,346	20,810,630
Western Australia, 1918 ..	3,963,470	211,950	1,730,896	1,097,189	7,003,505
Tasmania, 1918 ..	3,230,188	105,392	963,974	1,384,665	5,684,219
Commonwealth ..	162,482,772	5,141,293	42,506,095	38,926,728	249,056,888

**PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.**

	%	%	%	%	%
New South Wales, 1918-19	66.54	2.19	16.18	15.09	100.00
Victoria, 1918-19 ..	64.96	1.82	17.56	15.66	100.00
Queensland, 1918 ..	64.44	1.39	16.76	17.41	100.00
South Australia, 1918-19 ..	66.12	3.10	17.55	13.23	100.00
Western Australia, 1918 ..	56.59	3.03	24.71	15.67	100.00
Tasmania, 1918 ..	56.83	1.85	16.96	24.36	100.00
Commonwealth ..	65.24	2.06	17.07	15.63	100.00

**VALUE OF OUTPUT AND COST OF PRODUCTION IN COMMONWEALTH  
FACTORIES, 1919-20.**

State.	Raw Materials Used.	Fuel and Light.	Salaries and Wages.	All other Expenditure, Interest, and Profits.	Total Value of Output.
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**VALUE AND COST, ETC.**

	£	£	£	£	£
New South Wales, 1919-20	81,188,497	2,710,666	21,681,196	17,633,121	123,213,480
Victoria, 1919-20 ..	65,563,104	1,723,220	17,702,173	16,486,866	101,475,363
Queensland, 1919 ..	19,386,068	531,612	5,364,818	7,170,246	32,452,744
South Australia, 1919-20 ..	12,970,957	558,802	3,988,062	2,936,718	20,454,539
Western Australia, 1919 ..	5,051,114	222,334	2,173,350	1,277,130	8,723,928
Tasmania, 1919 ..	3,563,137	112,555	1,205,959	1,334,903	6,216,554
Commonwealth ..	187,722,877	5,859,189	52,115,558	46,838,984	232,536,608

**PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.**

	%	%	%	%	%
New South Wales, 1919-20	65.89	2.20	17.60	14.31	100.00
Victoria, 1919-20 ..	64.61	1.70	17.44	16.25	100.00
Queensland, 1919 ..	59.73	1.64	16.53	22.10	100.00
South Australia, 1919-20 ..	63.41	2.73	19.49	14.37	100.00
Western Australia, 1919 ..	57.90	2.55	24.91	14.64	100.00
Tasmania, 1919 ..	57.32	1.81	19.40	21.47	100.00
Commonwealth ..	64.17	2.00	17.82	16.01	100.00

**§ 9. 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 1915 to 1919-20 by £31,524,748, i.e., from £81,492,417 to £113,017,165, or at the rate of £6,304,950 per annum.

The following statements shew the values of land and buildings and of plant and machinery used in connexion with manufacturing industries in each State during the past two years :—

**VALUE OF LAND, BUILDINGS, PLANT AND MACHINERY IN CONNEXION WITH  
MANUFACTURING INDUSTRIES, 1918-19.**

Value of—	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tasmania. 1918.	C'wealth.
	£	£	£	£	£	£	£
Land and buildings	22,081,877	13,673,515	5,519,316	3,672,831	2,487,087	843,399	48,278,905
Plant and machinery	23,651,152	13,645,220	8,391,480	3,551,386	2,742,386	1,916,184	53,897,808
Total ..	45,733,029	27,318,735	13,910,796	7,224,217	5,230,353	2,759,583	102,176,713

**VALUE OF LAND, BUILDINGS, PLANT AND MACHINERY IN CONNEXION WITH  
MANUFACTURING INDUSTRIES, 1919-20.**

Value of—	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tasmania. 1919.	C'wealth.
	£	£	£	£	£	£	£
Land and buildings	24,108,890	14,957,585	5,886,215	3,977,099	3,132,014	955,768	53,017,571
Plant and machinery	26,366,083	15,846,935	8,867,803	3,931,562	2,938,889	2,048,322	59,999,594
Total ..	50,474,973	30,804,520	14,754,018	7,908,661	6,070,903	3,004,090	113,017,165

The total capital invested in land, buildings, plant and machinery in manufacturing industries in the Commonwealth during the year 1919-20 was approximately £113,017,165 (or £21 12s. 10d. per head of population); of that sum £53,017,571 was invested in land and buildings occupied as manufactories, the remaining £59,999,594 being the value of the plant and machinery used in connexion therewith.

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

(i) *Total Value in Commonwealth, 1915 to 1919-20.* The following table shews for the whole Commonwealth the approximate values of land and buildings occupied in connexion with manufacturing industries of various classes during each year from 1915 to 1919-20 inclusive:—

**VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH,  
1915 TO 1919-20.**

Class of Industry.	1915. <i>a</i>	1916. <i>b</i>	1917. <i>c</i>	1918. <i>c</i>	1918-19. <i>d</i>	1919-20. <i>d</i>
	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	1,069,890	1,002,686	1,126,504	1,237,117	1,415,725	1,588,513
II. Treating oils and fats, animal, vegetable, etc.	465,757	518,932	524,349	573,005	610,573	614,877
III. Processes in stone, clay, glass, etc.	1,666,097	1,620,520	1,657,760	1,739,247	1,943,848	2,216,901
IV. Working in wood ..	2,146,909	2,036,786	2,083,755	2,283,985	2,349,500	2,622,071
V. Metal works, machinery, etc.	6,587,199	6,800,296	7,137,251	7,961,012	8,163,051	8,997,496
VI. Connected with food and drink, etc.	9,852,479	10,508,926	11,209,366	11,640,843	12,403,204	13,411,552
VII. Clothing and textile fabrics, etc.	5,244,627	5,239,362	5,580,472	5,695,268	6,059,980	6,876,671
VIII. Books, paper, printing, and engraving ..	3,546,017	3,824,069	3,891,991	4,028,048	4,029,014	4,270,008
IX. Musical instruments, etc.	83,430	82,695	96,335	98,680	121,883	134,462
X. Arms and explosives ..	194,149	212,267	252,498	260,550	257,520	264,020
XI. Vehicles and fittings, saddlery and harness, etc.	1,825,999	1,822,565	1,866,859	1,955,096	2,156,572	2,467,633
XII. Ship and boat building and repairing	1,134,530	1,126,754	953,879	1,009,201	1,059,529	1,122,468
XIII. Furniture, bedding, and upholstery ..	1,094,646	1,075,547	1,071,635	1,103,679	1,189,103	1,325,762
XIV. Drugs, chemicals, and by-products ..	955,905	1,013,577	1,109,703	1,318,731	1,393,237	1,446,721
XV. Surgical and other scientific instruments ..	67,021	70,536	83,304	94,524	106,225	104,628
XVI. Jewellery, timepieces, and plated ware ..	344,452	325,126	334,147	336,289	369,050	425,214
XVII. Heat, light, and power ..	2,775,148	3,150,513	3,655,083	3,873,224	3,999,806	4,342,913
XVIII. Leatherware, n.e.i. ..	137,666	137,391	150,660	165,835	178,444	231,073
XIX. Minor wares, n.e.i. ..	343,529	344,651	426,906	421,370	472,639	554,588
Total ..	39,535,540	40,913,199	43,212,437	45,795,704	48,278,905	53,017,571

(a) New South Wales figures for year ended 30th June, 1915. (b) See note (a) first table this section.  
(c) See note (b) first table this section. (d) See note (c) first table this section.

As shewn in the above table, the total net increase during the five years was £13,482,031, or an annual average of £2,696,406. The largest increases were in Classes VI., V., VII., and XVII., and amounted to £3,559,073, £2,410,297, £1,632,044, and £1,567,765 respectively.

(ii) *Value in each State.* The following tables give similar information for each State for the past two years :—

**VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1918-19.**

Class of Industry.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . . .	589,861	566,135	74,069	104,554	662,577	618,529	1,415,725
II. Treating oils and fats, animal, vegetable, etc. . .	370,996	150,925	31,989	56,663	(b)	(b)	610,573
III. Processes in stone, clay, glass, etc. . . .	1,118,726	502,670	95,926	148,088	49,547	28,891	1,943,848
IV. Working in wood . .	1,146,827	448,970	239,268	172,423	260,920	81,092	2,349,500
V. Metal works, machinery, etc. . . .	3,974,218	1,966,550	713,978	809,440	612,804	86,061	8,163,051
VI. Connected with food and drink, etc. . . .	4,584,576	3,336,215	2,824,970	887,016	482,042	288,385	12,403,204
VII. Clothing and textile fabrics, etc. . . .	2,624,841	2,358,925	423,995	339,780	198,586	113,853	6,059,980
VIII. Books, paper, printing, and engraving . . .	1,910,576	987,510	486,532	343,403	242,558	58,435	4,029,014
IX. Musical instruments, etc. .	74,285	45,200	..	2,400	..	..	121,885
X. Arms and explosives . .	84,510	169,510	..	3,500	..	..	257,620
XI. Vehicles and fittings, saddlery and harness, etc. . . .	895,290	622,645	193,531	241,251	134,433	69,422	2,156,572
XII. Ship and boat building and repairing . . .	747,527	257,445	11,207	37,720	3,180	2,450	1,059,529
XIII. Furniture, bedding, and upholstery . . .	516,235	350,755	115,958	100,237	80,076	25,842	1,189,103
XIV. Drugs, chemicals, and by-products . . .	638,728	457,440	12,814	179,600	99,655	5,000	1,393,237
XV. Surgical and other scientific instruments . .	48,396	28,680	12,064	9,000	8,085	..	106,225
XVI. Jewellery, timepieces, and plated ware . .	154,613	142,870	23,167	26,465	14,160	7,775	369,050
XVII. Heat, light, and power .	2,298,679	1,017,140	232,603	185,911	210,339	54,634	3,999,806
XVIII. Leatherware, n.e.i. . .	93,599	66,760	8,470	5,130	4,485	..	178,444
XIX. Minor wares, n.e.i. . .	209,394	197,170	18,775	20,250	24,020	3,030	472,639
Total . . .	22,081,877	13,673,515	5,519,316	3,672,831	2,487,967	843,399	48,278,905

(a) Includes Class II.

(b) Included in Class I.

**VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1919-20.**

Class of Industry.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . . .	697,013	602,985	100,058	112,631	661,594	14,232	1,588,513
II. Treating oils and fats, animal, vegetable, etc. . .	376,765	162,230	33,955	37,502	(b)	4,425	614,877
III. Processes in stone, clay, glass, etc. . . .	1,275,292	558,225	89,079	191,451	78,973	23,881	2,216,901
IV. Working in wood . .	1,256,891	513,195	265,881	184,161	318,590	83,353	2,622,071
V. Metal works, machinery, etc. . . .	4,348,638	2,080,265	965,606	828,893	626,890	147,204	8,997,496
VI. Connected with food and drink, etc. . . .	4,838,379	3,548,675	2,762,361	951,646	986,963	323,528	13,411,552
VII. Clothing and textile fabrics, etc. . . .	2,951,833	2,751,150	464,260	365,343	212,202	131,883	6,876,671
VIII. Books, paper, printing, and engraving . . .	2,038,393	1,073,270	520,365	347,225	233,719	57,036	4,270,008
IX. Musical instruments, etc. .	83,927	47,550	..	2,985	..	..	134,462
X. Arms and explosives . .	83,470	176,850	..	3,700	..	..	264,020
XI. Vehicles and fittings, saddlery and harness, etc. .	1,022,946	716,090	194,271	315,708	147,460	71,158	2,467,633
XII. Ship and boat building and repairing . . .	775,996	256,410	10,687	67,215	4,810	7,350	1,122,468
XIII. Furniture, bedding, and upholstery . . .	563,228	417,990	136,833	106,561	79,028	22,122	1,325,762
XIV. Drugs, chemicals, and by-products . . .	638,521	496,610	12,814	184,239	104,655	9,882	1,446,721
XV. Surgical and other scientific instruments . .	49,191	28,380	11,139	7,410	8,508	..	104,628
XVI. Jewellery, timepieces, and plated ware . .	169,128	165,450	30,105	30,688	19,245	10,598	425,214
XVII. Heat, light, and power .	2,549,299	1,061,575	257,422	210,525	219,058	45,034	4,342,913
XVIII. Leatherware, n.e.i. . .	122,831	89,890	7,770	5,865	4,485	232	231,073
XIX. Minor wares, n.e.i. . .	267,149	210,795	23,609	23,351	25,834	3,850	554,588
Total . . .	24,108,890	14,957,585	5,886,215	3,977,099	3,132,014	955,768	53,017,571

(a) Includes Class II.

(b) Included in Class I.



The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £13,411,552, or 25.30 per cent. on the total value. The next in order of importance were Classes V., VII., XVII., and VIII., in which the values were £8,997,496, £6,876,671, £4,342,913, and £4,270,008 respectively. The sum of the values for the five classes mentioned amounted to £37,898,640, or 71.48 per cent. on the total value for all classes.

(iii) *Value in each State, 1915 to 1919-20.* The following table shews the total value of land and buildings occupied as manufactories in each State at the end of each year from 1915 to 1919-20 inclusive :—

**VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE,  
1915 TO 1919-20.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1915 .. ..	16,843,698a	11,460,123	4,446,405	3,289,628	2,363,262	1,132,424	39,535,540
1916b .. ..	17,770,517	11,460,123	5,014,824	3,289,628	2,247,505	1,130,602	40,913,199
1917c .. ..	18,920,057	12,052,227	5,251,877	3,462,296	2,398,264	1,127,716	43,212,437
1918c .. ..	20,533,171	12,847,485	5,519,316	3,564,366	2,487,967	843,399	45,795,704
1918-19d ..	22,081,877	13,673,515	5,519,316	3,672,831	2,487,967	843,399	48,278,905
1919-20d ..	24,108,890	14,957,585	5,886,215	3,977,099	3,132,014	955,768	53,017,571

(a) Year ended 30th June, 1915.

(b) See note (a) first table this section.

(c) See note (b) first table this section.

(d) See note (c) first table this section.

It will be seen that since 1915 there has been a general increase throughout the Commonwealth, with the exception of Tasmania, where a gradual decline has been in evidence. The States shewing the largest growth were New South Wales, Victoria, and Queensland, with annual average increases of £1,453,038, £699,492, and £287,962 respectively.

**3. Value of Plant and Machinery.**—(i) *Total Value in Commonwealth, 1915 to 1919-20.* The following table shews for the whole Commonwealth the approximate value of plant and machinery used in factories during each year from 1915 to 1919-20 inclusive :—

**VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH,  
1915 TO 1919-20.**

Class of Industry.	1915.a	1916.b	1917.c	1918.c	1918-19d.	1919-20d.
	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	971,841	965,932	1,048,729	1,216,281	1,382,538	1,668,023
II. Treating oils and fats, animal, vegetable, etc. . .	545,796	576,877	597,327	634,936	688,737	712,583
III. Processes in stone, clay, glass, etc. . .	1,900,086	1,866,993	1,972,885	2,172,225	2,414,539	2,853,294
IV. Working in wood . .	2,611,407	2,806,653	2,784,838	2,915,781	3,063,111	3,398,146
V. Metal works, machinery, etc. . .	7,761,871	8,604,804	9,549,635	10,259,558	10,702,907	11,959,693
VI. Connected with food and drink, etc. . .	10,914,862	11,654,182	12,318,334	13,026,771	13,648,102	14,532,708
VII. Clothing and textile fabrics, etc. . .	1,798,554	1,846,758	1,926,718	2,006,983	2,255,623	3,059,732
VIII. Books, paper, printing, and engraving . .	2,987,190	3,054,941	3,070,739	3,124,559	3,225,151	3,684,858
IX. Musical instruments, etc. .	19,119	21,191	22,841	26,827	26,532	31,302
X. Arms and explosives . .	228,031	228,210	308,536	323,073	345,880	327,700
XI. Vehicles and fittings, saddlery and harness, etc. .	411,295	421,416	433,716	477,472	532,361	627,087
XII. Ship and boat building and repairing . .	768,159	511,237	1,312,332	1,477,247	1,627,143	1,711,746
XIII. Furniture, bedding, and upholstery . .	244,796	251,822	267,180	281,229	306,853	369,738
XIV. Drugs, chemicals, and by-products . .	916,136	868,126	906,091	1,055,262	1,091,229	1,264,703
XV. Surgical and other scientific instruments . .	13,955	13,873	19,021	19,813	23,333	28,257
XVI. Jewellery, timepieces, and plated ware . .	72,988	74,617	72,757	75,437	84,453	103,690
XVII. Heat, light, and power . .	9,532,800	9,970,117	10,365,297	11,274,492	12,025,382	13,127,358
XVIII. Leatherware, n.e.i. . .	31,706	34,240	33,029	37,103	40,477	48,136
XIX. Minor wares, n.e.i. . .	226,285	234,313	305,358	387,256	413,457	490,840
Total .. ..	41,956,877	44,006,302	47,315,863	50,792,305	53,897,808	59,999,594

(a) New South Wales figures for year ended 30th June, 1915.

(b) See note (a) first table this section.

(c) See note (b) first table this section.

(d) See note (c) first table this section.

It will be seen that during the period in question there has been a steady and substantial net increase amounting in all to £18,042,717, or an annual average of £3,608,543. Development has occurred in all classes of industry, the largest increase being in Class V., "Metal Works, Machinery, etc.," where it amounted to £4,197,822, while the two next were in Class VI., "Connected with Food and Drink, etc.," with an increase of £3,617,846, and Class XVII., "Heat, Light, and Power," £3,594,558.

(ii) *Value in each State, 1915 to 1919-20.* 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., £9,499,101; while Victoria comes next with £4,777,986. The establishment of the Electrolytic Zinc Works at Risdon, and a further extension of the State Hydro-electric Works to cope with the demand for increased power, were mainly responsible for the substantial increase noted in Tasmania during 1918.

#### VALUE OF PLANT AND MACHINERY IN FACTORIES, 1915 TO 1919-20.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1915 ..	15,866,982a	11,068,949	7,051,113	3,101,413	2,640,168	1,228,252	41,956,877
1916b ..	18,211,104	11,068,949	7,543,873	3,101,413	2,817,863	1,263,100	44,006,302
1917c ..	20,364,122	11,732,062	7,846,834	3,313,113	2,835,085	1,224,647	47,315,863
1918c ..	21,739,739	12,612,797	8,391,480	3,389,719	2,742,386	1,916,184	50,792,305
1918-19d ..	23,651,152	13,645,220	8,391,480	3,551,386	2,742,386	1,916,184	53,897,808
1919-20d ..	26,360,083	15,846,935	8,867,803	3,931,562	2,988,889	2,048,322	59,999,594

(a) Year ended 30th June, 1915. (b) See note (c) first table this section.  
(c) See note (b) first table this section. (d) See note (c) first table this section.

(iii) *Classified Value in each State.* The following tables shew the value of plant and machinery used in factories in each State during 1918-19 and 1919-20, classified according to the nature of the industry in which used:—

#### VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1918-19.

Class of Industry.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	591,810	494,455	127,944	83,426	447,593	237,310	1,382,538
II. Treating oils and fats, animal, vegetable, etc. ..	441,387	157,580	51,188	38,582	(b)	(b)	688,737
III. Processes in stone, clay, glass, etc. ..	1,299,568	529,785	239,611	269,222	53,258	23,091	2,414,539
IV. Working in wood ..	1,011,460	615,675	473,132	85,184	691,303	186,357	3,063,111
V. Metal works, machinery, etc. ..	6,394,318	1,960,255	646,010	743,361	573,614	385,349	10,702,907
VI. Connected with food and drink, etc. ..	4,548,775	2,755,860	5,070,442	688,158	421,946	162,921	13,648,102
VII. Clothing and textile fabrics, etc. ..	756,812	1,158,355	136,887	116,699	35,165	51,705	2,255,623
VIII. Books, paper, printing, and engraving ..	1,405,943	1,052,380	339,836	201,777	161,598	63,617	3,225,151
IX. Musical instruments, etc. ..	17,622	8,350	..	560	..	..	26,532
X. Arms and explosives ..	152,040	193,490	..	350	..	..	345,880
XI. Vehicles and fittings, saddlery and harness, etc. ..	223,300	161,940	41,491	64,000	21,249	15,381	532,361
XII. Ship and boat building and repairing ..	1,492,623	112,500	9,815	9,560	1,450	1,195	1,627,143
XIII. Furniture, bedding, and upholstery ..	98,626	99,000	43,234	38,978	17,657	9,358	306,853
XIV. Drugs, chemicals, and by-products ..	379,817	360,625	7,191	227,452	115,384	760	1,091,229
XV. Surgical and other scientific instruments ..	10,311	6,730	2,097	3,041	1,154	..	23,333
XVI. Jewellery, timepieces, and plated ware ..	31,747	37,480	4,304	6,792	2,380	1,750	84,453
XVII. Heat, light, and power ..	4,646,776	3,645,620	1,194,653	968,404	593,104	976,825	12,025,382
XVIII. Leatherware, n.e.l. ..	18,728	18,530	1,577	532	1,110	..	40,477
XIX. Minor wares, n.e.l. ..	124,489	276,610	2,068	5,304	4,421	565	413,457
Total ..	23,651,152	13,645,220	8,391,480	3,551,386	2,742,386	1,916,184	53,897,808

(a) Includes Class II. (b) Included in Class I.

**VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE,  
1919-20.**

Class of Industry.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . . .	£ 757,649	£ 534,080	£ 172,470	£ 100,716	£ 453,566	£ 49,542	£ 1,668,023
II. Treating oils and fats, animal, vegetable, etc. . . .	451,138	167,495	53,703	38,582	(b)	1,665	712,583
III. Processes in stone, clay, glass, etc. . . .	1,685,453	563,790	193,774	315,225	68,958	26,094	2,853,294
IV. Working in wood . . .	1,162,548	697,780	506,580	94,131	738,902	198,205	3,398,146
V. Metal works, machinery, etc. . . .	6,848,717	2,164,490	1,216,017	790,818	453,395	486,256	11,959,693
VI. Connected with food and drink, etc. . . .	4,861,485	3,293,810	4,784,269	764,297	658,738	170,109	14,532,708
VII. Clothing and textile fabrics, etc. . . .	986,460	1,716,020	144,278	118,917	38,077	55,980	3,059,782
VIII. Books, paper, printing, and engraving . . .	1,707,303	1,159,950	369,786	230,396	165,183	52,240	3,684,858
IX. Musical instruments, etc. . . .	21,097	9,515	..	690	..	..	31,302
X. Arms and explosives . . .	123,705	203,520	..	475	..	..	327,700
XI. Vehicles and fittings, saddlery and harness, etc. . . .	254,525	197,090	45,469	85,039	29,613	15,351	627,087
XII. Ship and boat building and repairing . . .	1,502,655	110,055	11,280	77,061	1,555	9,140	1,711,746
XIII. Furniture, bedding, and upholstery . . .	139,444	111,500	50,609	36,005	22,561	9,619	369,738
XIV. Drugs, chemicals, and by-products . . .	513,904	365,335	7,386	263,806	112,137	2,135	1,264,703
XV. Surgical and other scientific instruments . . .	13,569	7,170	1,937	4,230	1,351	..	28,257
XVI. Jewellery, timepieces, and plated ware . . .	39,857	44,495	5,767	9,305	2,061	2,205	103,690
XVII. Heat, light, and power . . .	5,112,816	4,163,425	1,300,491	994,860	586,700	969,066	13,127,358
XVIII. Leatherware, n.e.i. . .	22,638	22,310	1,281	552	1,310	65	48,136
XIX. Minor wares, n.e.i. . .	161,120	315,105	2,726	6,457	4,782	650	490,840
Total .. ..	26,366,083	15,846,935	8,867,803	3,931,562	2,938,889	2,048,322	59,999,594

(a) Includes Class II.

(b) Included in Class I.

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £14,532,708, or 24.22 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," which amounts to £13,127,358, or 21.88 per cent. on the total; followed by Class V., "Metal Works, Machinery, etc.," amounting to £11,959,693, or 19.93 per cent. on the total value. The total for these three classes amounts to £39,619,759, or 66.03 per cent. on the total value for all classes.

## § 10. 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 section, 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) *Details for each State.* 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 is as follows:—

## TANNERIES, 1918-19.

Item.	N.S.W. 1918-19.	Vic. 1918-19.	Q'land. 1918.	S.A. 1918-19.	W.A. 1918.	Tas.a 1918.	C'with.
Number of factories .. ..	74	45	17	10	3	4	153
Number of employees .. ..	1,159	1,960	241	199	65	64	3,688
Actual horse-power of engines employed	1,812	2,588	335	278	116	118	6,247
Approx. value of land and buildings £	176,188	213,745	19,090	26,562	15,540	8,038	459,163
Approx. value of plant and machinery £	117,731	181,200	23,957	16,280	12,650	8,864	360,682
Total amount of wages paid during year £	189,346	303,925	34,731	31,274	9,065	8,702	577,043
Value of fuel used .. ..	14,454	25,296	2,473	2,563	818	353	45,957
Value of raw material worked up £	1,710,212	2,104,410	309,287	158,629	72,739	67,815	4,423,092
Total value of output .. ..	2,149,198	2,796,351	418,652	218,631	90,234	89,675	5,762,741
Value added in process of manufacture £	438,986	691,941	109,365	60,002	17,495	21,860	1,339,649

(a) Including fellmongering.

## TANNERIES, 1919-20.

Item.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S.A. 1919-20.	W.A. 1919.	Tas. 1919.	C'with.
Number of factories .. ..	77	48	17	10	4	4	160
Number of employees .. ..	1,351	2,161	260	214	74	87	4,147
Actual horse-power of engines employed	2,389	3,081	270	324	177	126	6,367
Approx. value of land and buildings £	214,335	263,895	19,410	27,854	18,190	8,837	552,521
Approx. value of plant and machinery £	140,458	216,445	25,165	17,925	13,550	9,433	422,976
Total amount of wages paid during year £	256,033	420,848	36,828	37,956	11,776	13,927	777,368
Value of fuel used .. ..	17,601	35,469	2,739	3,567	1,179	426	60,981
Value of raw material worked up £	2,907,835	3,111,015	371,679	216,295	109,163	121,848	6,837,835
Total value of output .. ..	3,548,164	4,150,873	483,140	302,111	134,953	153,095	8,772,336
Value added in process of manufacture £	640,329	1,039,858	111,461	85,816	25,790	31,247	1,934,501

(ii) *Raw Materials used in Tanneries.* The quantities of raw materials used in tanneries in each State are shewn in the following tables:—

## RAW MATERIALS USED IN TANNERIES, 1918-19.

Particulars.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Hides and calf skins .. No.	607,604	905,504	110,626	72,331	24,180	21,552	1,741,797
Sheep pelts .. ..	2,922,510	1,151,758	66,059	80,310	17,369	24,432	4,262,438
Other skins .. ..	384,127	590,630	80,960	8,967	..	2,160	1,066,844
Bark .. .. Tons	11,600	11,737	2,566	1,365	650	422	28,340

## RAW MATERIALS USED IN TANNERIES, 1919-20.

Particulars.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Hides and calf skins .. No.	749,866	990,880	109,382	73,535	36,582	34,122	1,994,367
Sheep pelts .. ..	5,213,242	2,521,050	88,074	112,004	21,208	48,636	8,004,214
Other skins .. ..	560,304	258,967	335,828	14,279	..	2,030	1,171,408
Bark .. .. Tons	13,301	13,623	2,338	1,268	976	505	32,011

(iii) *Progress of Tanning Industries, 1915 to 1919-20.* The development of the tanning industry during the period 1915 to 1919-20 is shewn in the following table :—

**DEVELOPMENT OF TANNING INDUSTRY IN THE COMMONWEALTH, 1915 TO 1919-20.**

Items.	1915.	1916.	1917. <sup>a</sup>	1918.	1918-19. <sup>b</sup>	1919-20.
Number of factories .. ..	165	163	156	153	153	160
Number of employees .. ..	3,376	3,303	3,437	3,396	3,688	4,147
Actual horse-power of engines used ..	3,899	4,145	4,449	4,884	5,247	6,367
Approx. value of land and buildings £	389,924	387,706	412,311	441,737	459,163	552,521
Approx. value of plant and machinery £	287,856	285,956	307,483	328,927	360,682	422,976
Total amount of wages paid £	418,363	422,014	466,071	493,880	577,043	777,368
Value of fuel used .. ..	26,140	27,292	34,102	40,558	45,957	60,981
Value of raw materials worked up £	3,188,817	3,283,787	3,951,266	3,831,180	4,423,092	6,837,835
Value of final output .. ..	4,088,140	4,233,427	4,979,988	4,990,412	5,762,741	8,772,336
Value added in process of manufacture £	899,323	949,640	1,028,722	1,159,232	1,339,649	1,934,501

(a) Including one wool-scouring and fellmongering establishment in Western Australia.

(b) Including fellmongering in Tasmania.

It will be seen from the above table that during the last five years the number of factories has decreased by 5, while the number of hands employed has increased by 771. The approximate amount of permanently invested capital shews a substantial increase, amounting to 41½ per cent. in the value of land and buildings, and 47 per cent. in that of plant and machinery. The amount of wages paid, value of materials used, and of final output, shew the large increases of 86, 114, and 115 per cent. respectively during the same period, while the value added in process of manufacture increased by 115 per cent. The relatively high increases which have taken place in the values of raw materials, added value, and final output in tanneries during the last five years, are not a reflection of any correspondingly large increase in the volume of business, but rather serve as an indication of the enhanced value of commodities since 1915.

**3. Fellmongering and Wool-scouring.**—(i) *Details for each State.* 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 tables give particulars of the industry in each State during the past two years :—

**FELLMONGERING AND WOOL-SCOURING, 1918-19.**

Items.	N.S.W. 1918-19.	Vic. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W.A. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	50	36	17	3	1	..	107
Number of employees .. ..	1,786	1,024	460	108	14	..	3,392
Actual horse-power of engines used ..	3,540	1,447	508	177	35	..	5,707
Approx. value of land and buildings £	198,650	207,045	48,073	<i>a</i>	<i>a</i>	..	466,658 <sup>b</sup>
Approx. value of plant and machinery £	294,628	189,565	90,900	<i>a</i>	<i>a</i>	..	584,343 <sup>b</sup>
Total amount of wages paid £	279,851	151,623	65,402	<i>a</i>	<i>a</i>	..	517,161 <sup>b</sup>
Value of fuel used .. ..	41,537	28,740	10,246	<i>a</i>	<i>a</i>	..	84,478 <sup>b</sup>
Value of raw material worked up £	5,060,216	3,545,500	2,154,448	<i>a</i>	<i>a</i>	..	11,213,481 <sup>b</sup>
Value of final output .. ..	5,928,764	4,121,919	2,588,712	<i>a</i>	<i>a</i>	..	13,126,314 <sup>b</sup>
Value added in process of manufacture £	866,548	576,329	434,264	<i>a</i>	<i>a</i>	..	1,912,833 <sup>b</sup>

(a) Information not available for publication.

(b) Including South Australia and Western Australia.

## FELLMONGERING AND WOOL-SCOURING, 1919-20.

Items.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W.A. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	48	38	20	3	1	..	110
Number of employees .. ..	1,775	1,223	461	123	28	..	3,610
Actual horse-power of engines used ..	3,608	1,550	582	165	120	..	6,025
Approx. value of land and buildings £	246,327	176,590	72,192	a	a	..	514,499b
Approx. value of plant and machinery £	346,559	183,665	132,423	a	a	..	683,227b
Total amount of wages paid £	347,408	211,072	65,394	a	a	..	652,842b
Value of fuel used .. ..	44,070	38,265	12,420	a	a	..	99,981b
Value of raw material worked up £	5,541,302	4,089,342	2,014,213	a	a	..	12,279,135b
Value of final output .. ..	6,880,468	4,745,218	2,411,853	a	a	..	14,745,652b
Value added in process of manufacture £	1,339,166	655,876	397,640	a	a	..	2,466,517b

(a) Information not available for publication. (b) Including South Australia and Western Australia.

(ii) *Development of Fellmongering and Wool-scouring, 1915 to 1919-20.* 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, 1915 TO 1919-20.

Items.	1915.	1916.	1917. <sup>a</sup>	1918.	1918-19.	1919-20.
Number of factories .. ..	106	100	98	102	107	110
Number of employees .. ..	2,337	2,379	2,599	3,191	3,392	3,610
Actual horse-power of engines used ..	3,754	4,463	4,157	4,991	5,707	6,025
Approx. value of land and buildings £	266,440	263,530	276,162	348,170	466,658	514,499
Approx. value of plant and machinery £	329,780	334,131	369,728	458,301	584,343	683,227
Total amount of wages paid £	245,362	279,123	332,583	404,079	517,161	652,842
Value of fuel used .. ..	40,834	44,914	53,667	66,113	84,478	99,981
Value of raw materials worked up £	5,223,231	5,903,149	7,341,638	10,290,131	11,213,481	12,279,135
Value of final output .. ..	5,919,690	6,989,122	8,572,579	12,105,928	13,126,314	14,745,652
Value added in process of manufacture £	696,459	1,085,973	1,230,941	1,815,798	1,912,833	2,466,517

(a) Excluding one establishment in Western Australia, particulars of which are included in tanneries.

Though the number of establishments has only increased by 4, this industry has been considerably extended during the last five years. The number of hands employed has risen from 2,337 to 3,610, and the amount of salaries and wages paid from £245,362 to £652,842, or more than 166 per cent. Though an augmentation of values has materially assisted, the progress of this industry may be gauged from the fact that the values of raw materials used and of final output have been more than doubled, while the added value has increased by no less than 254 per cent.

4. *Soap and Candle Factories.*—(i) *Details for each State.* In Class II. (see § 1, 3 hereof) soap and candle factories are the most important establishments. The manufacture of these two products is frequently carried on in the same factory, 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 tables give particulars of soap and candle factories in each State during the years 1918-19 and 1919-20:—

## SOAP AND CANDLE FACTORIES, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W.A. 1918. <sup>a</sup>	Tas. 1918. <sup>a</sup>	C'wealth.
Number of factories .. ..	26	15	13	6	..	..	60
Number of employees .. ..	849	681	173	199	..	..	1,902
Actual horse-power of engines employed ..	820	431	135	182	..	..	1,568
Approx. value of land and buildings £	215,290	132,650	31,989	46,980	..	..	426,909
Approx. value of plant and machinery £	260,947	140,600	51,188	35,667	..	..	488,402
Total amount of wages paid during year £	102,945	92,663	25,153	31,001	..	..	251,762
Value of fuel used .. ..	29,100	26,009	4,245	6,115	..	..	65,469
Value of raw material worked up £	837,240	638,057	142,051	213,069	..	..	1,830,417
Total value of output .. ..	1,139,417	957,295	238,558	283,536	..	..	2,618,806
Value added in process of manufacture £	302,177	319,238	96,507	70,467	..	..	788,389

(a) Western Australia has three soap and candle establishments and Tasmania one, but separate details are not available for publication.

## SOAP AND CANDLE FACTORIES, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W.A. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	25	16	13	6	..	1	61
Number of employees .. ..	1,017	738	172	214	..	22	2,163
Actual horse-power of engines employed ..	890	498	152	199	..	10	1,749
Approx. value of land and buildings £	223,120	139,705	b	27,879	..	b	428,824c
Approx. value of plant and machinery £	253,870	143,310	b	34,859	..	b	486,187c
Total amount of wages paid during year £	131,383	103,333	b	33,303	..	b	296,352c
Value of fuel used .. ..	37,188	35,091	b	4,360	..	b	81,938c
Value of raw material worked up £	1,076,868	911,310	b	239,038	..	b	2,389,706c
Total value of output .. ..	1,476,959	1,321,112	b	332,890	..	b	3,377,783c
Value added in process of manufacture £	400,091	409,802	b	93,852	..	b	988,077c

(a) Western Australia has three soap and candle establishments, but separate details are not available for publication. (b) Particulars not available for publication. (c) Including Queensland and Tasmania.

(ii) *Development of Soap and Candle Factories, 1915 to 1919-20.* 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, 1915 TO 1919-20.

Items.	1915.	1916.	1917.	1918.	1918-19.	1919-20.
Number of factories .. ..	75	72	65	62	60	61
Number of employees .. ..	2,141	2,009	2,049	2,128	1,902	2,163
Actual horse-power of engines used .. ..	1,420	1,477	1,165	1,083	1,568	1,749
Approx. value of land and buildings £	374,886	391,619	373,377	400,517	426,909	428,824
Approx. value of plant and machinery £	460,519	447,005	424,942	444,219	488,402	486,187
Total amount of wages paid .. ..	219,865	219,398	228,284	242,960	251,762	296,352
Value of fuel used .. ..	36,101	38,548	52,085	67,639	65,469	81,938
Value of raw material worked up .. ..	1,285,950	1,318,105	1,407,431	1,762,408	1,830,417	2,389,706
Value of final output .. ..	1,971,513	1,965,881	2,036,978	2,550,562	2,618,806	3,377,783
Value added in process of manufacture £	685,563	647,776	629,547	788,154	788,389	988,077

(a) Including three oil establishments in Western Australia. (b) Excluding three soap and candle establishments in Western Australia, and one in Tasmania. (c) Excluding three soap and candle establishments in Western Australia.

(iii) *Production of Soap and Candles, 1915 to 1919-20.* The subjoined statement furnishes particulars of the output of soap and candles during the past six years :—

## PRODUCTION OF SOAP AND CANDLES IN THE COMMONWEALTH, 1915 TO 1919-20.

Particulars.	1915.	1916.	1917.	1918.	1918-19.	1919-20.
Soap .. .. . cwt.	729,984	727,349	671,326	746,166	694,456	788,478
Candles .. .. . "	104,986	102,775	100,497	101,098	97,692	104,676

(a) Exclusive of Western Australia.

(iv) *Raw Materials Used, 1915 to 1919-20.* The following statement shows the quantity of certain raw materials used in soap and candle factories in the Commonwealth during the years 1915 to 1919-20 :—

## RAW MATERIALS USED IN SOAP AND CANDLE FACTORIES, 1915 TO 1919-20.

Particulars.	1915.	1916.	1917.	1918.	1918-19.	1919-20.
Tallow .. .. . cwt.	439,402	416,649	382,188	423,021	431,638	390,267
Alkali .. .. . "	159,344	154,348	143,683	144,112	126,981	123,101
Cocconut oil .. .. . gal.	485,851	630,298	524,918	533,685	624,802	469,549

(a) Exclusive of Western Australia.

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 tables :—

#### SAW MILLS, FOREST AND OTHER, JOINERY, ETC., 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	625	436	281	75	68	136	1,621
Number of employees .. ..	7,796	7,062	4,227	1,225	2,544	1,573	24,427
Actual horse-power of engines employed .. ..	16,802	10,958	8,682	1,904	6,377	1,918	46,641
Approximate value of land and buildings .. ..	£ 1,010,914	389,190	223,660	169,363	260,920	78,462	2,132,509
Approximate value of plant and machinery .. ..	£ 941,028	579,730	456,311	84,212	691,303	185,107	2,937,691
Total amount of wages paid during year .. ..	£ 996,936	942,137	536,132	175,111	372,433	166,338	3,189,087
Value of fuel used .. ..	£ 32,723	24,240	10,629	6,113	2,787	1,802	78,294
Value of raw material worked up .. ..	£ 2,808,547	1,320,400	825,143	599,774	117,957	102,178	5,773,999
Total value of output .. ..	£ 4,285,205	2,923,530	1,786,190	903,311	634,418	357,876	10,890,530
Value added in process of manufacture .. ..	£ 1,476,658	1,603,130	961,047	303,537	516,461	255,698	5,116,531

#### SAW MILLS, FOREST AND OTHER, JOINERY, ETC., 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	678	470	282	82	82	172	1,766
Number of employees .. ..	8,490	8,086	4,661	1,401	3,527	2,006	28,171
Actual horse-power of engines employed .. ..	17,304	12,704	8,773	2,201	8,050	2,659	51,691
Approximate value of land and buildings .. ..	£ 1,100,879	443,375	243,178	180,601	318,590	79,388	2,376,011
Approximate value of plant and machinery .. ..	£ 1,081,242	658,490	487,610	92,341	738,902	195,121	3,253,706
Total amount of wages paid during year .. ..	£ 1,197,600	1,185,005	654,885	203,186	580,211	231,820	4,052,707
Value of fuel used .. ..	£ 41,246	25,080	11,052	6,622	4,317	3,044	91,341
Value of raw material worked up .. ..	£ 3,626,672	1,716,890	1,047,508	968,340	129,798	134,902	7,624,110
Total value of output .. ..	£ 5,522,406	3,709,114	2,350,476	1,339,647	890,884	464,456	14,276,983
Value added in process of manufacture .. ..	£ 1,895,734	1,992,224	1,302,968	371,307	761,086	329,554	6,652,873

The development of forest and other saw mills, etc., since 1915 is shewn in the following table :—

#### DEVELOPMENT OF SAW MILLS, FOREST AND OTHER, JOINERY, ETC., IN THE COMMONWEALTH FROM 1915 TO 1919-20.

Items.	1915.	1916.	1917.	1918.	1918-19.	1919-20.
Number of establishments .. ..	1,567	1,526	1,517	1,575	1,621	1,766
Number of employees .. ..	24,847	22,173	20,902	22,756	24,427	28,171
Actual horse-power of engines used .. ..	46,479	44,456	43,833	45,756	46,641	51,691
Approx. value of land and buildings .. ..	£ 1,969,758	1,845,812	1,901,505	2,086,166	2,132,509	2,376,011
Approx. value of plant and machinery .. ..	£ 2,502,325	2,693,132	2,662,625	2,784,355	2,937,691	3,253,706
Total amount of wages paid .. ..	£ 2,780,990	2,552,197	2,558,412	2,870,214	3,189,087	4,052,707
Value of fuel used .. ..	£ 51,276	52,273	60,567	69,606	78,294	91,341
Value of raw material worked up .. ..	£ 4,602,863	4,487,201	4,463,996	5,159,691	5,773,999	7,624,110
Value of final output .. ..	£ 8,892,082	8,207,110	8,443,255	9,829,872	10,890,530	14,276,983
Value added in process of manufacture .. ..	£ 4,289,219	3,809,909	3,979,259	4,670,181	5,116,531	6,652,873

The pre-war development in the building and other trades in Australia using timber received a temporary set-back during the war years, but the all-round increases since 1918 in wages, value of materials used, and final output, as well as in capital invested in land and buildings and plant and machinery, shew that the trade has practically regained its normal rate of progression.



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 was one of the first industries to which it was sought to apply the so-called "New Protection" system. The articles manufactured include stripper harvesters, strippers, stump-jump and other ploughs, harrows, disc and other 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 tables give particulars of the agricultural implement works of Australia for the years 1918-19 and 1919-20 :—

#### AGRICULTURAL IMPLEMENT WORKS, 1918-19.

Items.	N.S.W. 1918-19	Vic. 1918-19.	Q'land. 1918.	S.A. 1918-19.	W.A. 1918.a	Tas. 1918.	C'wealth. c
Number of factories .. ..	25	60	6	46	..	1	138
Number of employees .. ..	455	1,689	68	699	..	3	2,914
Actual horse-power of engines employed ..	294	1,081	103	856	..	4	2,338
Approx. value of land and buildings £	128,691	161,200	b	67,003	..	b	367,951
Approx. value of plant and machinery £	39,954	224,600	b	75,397	..	b	350,754
Total amount of wages paid during year £	72,620	249,360	b	92,085	..	b	420,750
Value of fuel used .. ..	£ 2,211	18,100	b	6,174	..	b	26,755
Value of raw material worked up ..	£ 75,353	337,730	b	110,381	..	b	531,766
Total value of output .. ..	£ 188,519	702,870	b	237,622	..	b	1,149,121
Value added in process of manufacture £	118,166	365,140	b	127,241	..	b	617,355

(a) Western Australia has three agricultural implement establishments, but separate details are not available for publication. (b) Information not available for publication. (c) Excluding Western Australia.

#### AGRICULTURAL IMPLEMENT WORKS, 1919-20.

Items.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S.A. 1919-20.	W.A. 1919.a	Tas. 1919.	C'wealth. c
Number of factories .. ..	27	61	6	46	..	1	141
Number of employees .. ..	505	1,771	87	751	..	2	3,116
Actual horse-power of engines employed ..	300	1,178	103	921	..	3	2,505
Approx. value of land and buildings £	135,113	152,770	b	70,167	..	b	368,897
Approx. value of plant and machinery £	45,469	238,175	b	78,713	..	b	372,949
Total amount of wages paid during year £	93,614	272,262	b	98,016	..	b	465,558
Value of fuel used .. ..	£ 3,546	20,001	b	6,284	..	b	30,096
Value of raw material worked up ..	£ 99,632	349,555	b	129,242	..	b	586,048
Total value of output .. ..	£ 233,775	757,062	b	272,457	..	b	1,282,931
Value added in process of manufacture £	134,143	407,507	b	143,215	..	b	696,883

(a) Western Australia has three agricultural implement establishments, but separate details are not available for publication. (b) Information not available for publication. (c) Excluding Western Australia.

A glance at the following table will shew that the Agricultural Implement industry has failed to progress during the last five years. There are fewer factories, fewer hands, less power used, and the total output is smaller than it was in 1915 :—

#### DEVELOPMENT OF AGRICULTURAL IMPLEMENT WORKS IN THE COMMONWEALTH, FROM 1915 TO 1919-20.

Items.	1915.	1916.	1917.a	1918.b	1918-19.b	1919-20.b
Number of factories .. ..	153	151	142	142	138	141
Number of employees .. ..	3,608	3,538	3,313	3,336	2,914	3,116
Actual horse-power of engines used ..	2,905	2,811	2,613	2,566	2,338	2,505
Approx. value of land and buildings £	363,166	355,108	340,521	355,830	367,951	368,897
Approx. value of plant and machinery £	337,459	338,397	339,244	360,621	350,754	372,949
Total amount of wages paid .. ..	£ 428,370	£ 425,866	£ 427,102	£ 428,522	£ 420,750	£ 465,558
Value of fuel used .. ..	£ 29,167	£ 29,067	£ 27,659	£ 30,011	£ 26,755	£ 30,096
Value of raw material worked up ..	£ 664,412	£ 757,231	£ 798,110	£ 762,069	£ 531,766	£ 586,048
Value of final output .. ..	£ 1,290,308	£ 1,457,845	£ 1,465,955	£ 1,415,375	£ 1,149,121	£ 1,282,931
Value added in process of manufacture £	634,896	700,414	667,845	652,406	617,355	696,883

(a) Excluding three establishments in Western Australia and one in Tasmania.  
(b) Excluding three establishments in Western Australia.

7. Engineering Works, 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 owing to the limited classification still adopted by some of the States.

#### ENGINEERING WORKS, IRONWORKS, AND FOUNDRIES, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.a	Tas. 1918.	C'wealth.
Number of factories .. ..	358	455	95	64	67	19	1,058
Number of employees .. ..	12,583	8,286	1,989	1,532	1,080	364	25,834
Actual horse-power of engines employed .. ..	32,047	9,725	1,942	1,302	1,741	321	47,078
Approximate value of land and buildings .. .. £	1,825,954	788,075	204,375	129,541	165,398	26,641	3,139,984
Approximate value of plant and machinery .. .. £	3,542,275	999,135	207,924	166,587	163,629	41,075	5,120,625
Total amount of wages paid during year .. .. £	1,982,296	1,173,766	250,544	196,469	168,207	50,341	3,821,623
Value of fuel used .. .. £	453,365	142,550	14,571	19,025	16,249	3,359	649,119
Value of raw materials worked up .. .. £	7,199,948	1,894,110	248,148	269,449	292,196	38,535	9,942,386
Total value of output .. .. £	10,528,876	3,873,336	645,115	568,130	562,762	112,956	16,291,175
Value added in process of manufacture .. .. £	3,328,928	1,979,226	396,967	298,681	270,566	74,421	6,348,789

(a) Including three agricultural implement establishments.

#### ENGINEERING WORKS, IRONWORKS, AND FOUNDRIES, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.a	Tas. 1919.	C'wealth.
Number of factories .. ..	401	496	92	66	66	20	1,141
Number of employees .. ..	16,064	9,823	2,073	1,588	1,097	405	31,050
Actual horse-power of engines employed .. ..	36,548	11,850	1,742	1,462	1,521	287	53,410
Approximate value of land and buildings .. .. £	2,110,370	876,015	202,526	139,075	170,581	29,366	3,527,933
Approximate value of plant and machinery .. .. £	4,581,961	1,133,765	229,247	180,153	176,113	38,046	6,339,285
Total amount of wages paid during year .. .. £	2,922,591	1,509,527	285,141	218,472	167,351	58,359	5,161,441
Value of fuel used .. .. £	844,850	186,476	17,580	21,323	13,422	3,361	1,037,012
Value of raw materials worked up .. .. £	8,990,279	2,144,292	223,304	326,086	199,980	44,719	11,928,660
Total value of output .. .. £	13,625,262	4,677,408	666,280	660,829	452,790	126,760	20,209,329
Value added in process of manufacture .. .. £	4,634,983	2,533,116	442,976	334,743	252,810	82,041	8,280,669

(a) Including three agricultural implement establishments.

In addition to engineering works which supply ordinary requirements, there is 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 works, ironworks, and foundries in the Commonwealth since 1915 is shown in the following table :—

**DEVELOPMENT OF ENGINEERING WORKS, IRONWORKS, AND FOUNDRIES,  
FROM 1915 TO 1919-20.**

Items.	1915.	1916.	1917. <sup>a</sup>	1918. <sup>a</sup>	1918-19 <sup>a</sup> .	1919-20 <sup>a</sup> .
Number of factories .. ..	950	956	962	1,012	1,058	1,141
Number of employees .. ..	25,219	25,718	23,543	23,783	25,834	31,050
Actual horse-power of engines used ..	34,049	39,658	42,502	44,317	47,078	53,410
Approx. value of land and buildings £	2,315,984	2,424,759	2,581,805	2,910,881	3,139,984	3,527,933
Approx. value of plant and machinery £	2,989,650	3,655,662	4,274,067	4,744,750	5,120,625	6,339,285
Total amount of wages paid .. ..	£ 3,134,873	£ 3,468,260	£ 3,265,738	£ 3,365,045	£ 3,821,623	£ 5,181,441
Value of fuel used .. ..	£ 369,170	£ 420,139	£ 431,448	£ 493,116	£ 649,119	£ 1,037,012
Value of raw material worked up ..	£ 4,005,914	£ 4,718,516	£ 5,932,214	£ 7,520,930	£ 9,942,386	£ 11,928,660
Value of final output .. ..	£ 8,944,601	£ 10,205,424	£ 11,096,741	£ 13,322,795	£ 16,291,175	£ 20,209,329
Value added in process of manufacture £	£ 4,938,687	£ 5,486,908	£ 5,164,527	£ 5,801,865	£ 6,348,789	£ 8,280,669

(a) Including three agricultural implement establishments in Western Australia.

The progress in these industries during late years has been very marked. Since 1915 the number of establishments has increased by more than 20 per cent., the amount of wages paid 64½ per cent., the amount of capital invested in land, buildings, plant and machinery 86 per cent., and the output nearly 126 per cent.

8. Railway and Tramway Workshops.—(i) *Details for each State.* The railway workshops of Australia form an important item in the metal and machinery class, and are chiefly State institutions. The following tables give the details concerning them, but include also private and municipal establishments for manufacturing and repairing rolling stock :—

**RAILWAY AND TRAMWAY WORKSHOPS, 1918-19.**

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	39	19	12	9	8	7	94
Number of employees .. ..	8,443	3,696	2,522	2,637	1,410	328	19,036
Actual horse-power of engines employed .. ..	5,516	1,648	2,866	776	2,446	182	13,434
Approximate value of land and buildings .. ..	£ 1,177,081	£ 684,510	£ 357,464	£ 275,979	£ 442,517	£ 7,075	£ 2,944,626
Approximate value of plant and machinery .. ..	£ 1,183,517	£ 497,700	£ 256,051	£ 200,972	£ 408,268	£ 90,083	£ 2,636,591
Total amount of wages paid during year .. ..	£ 1,425,997	£ 577,120	£ 430,089	£ 388,531	£ 237,291	£ 47,801	£ 3,106,829
Value of fuel used .. ..	£ 31,322	£ 24,850	£ 7,632	£ 14,221	£ 10,929	£ 1,864	£ 90,818
Value of raw material worked up ..	£ 1,002,590	£ 532,920	£ 194,250	£ 192,721	£ 138,119	£ 21,957	£ 2,082,557
Total value of output .. ..	£ 2,487,961	£ 1,248,380	£ 556,565	£ 660,565	£ 391,635	£ 73,890	£ 5,418,996
Value added in process of manufacture .. ..	£ 1,485,371	£ 715,460	£ 362,315	£ 467,844	£ 253,516	£ 51,933	£ 3,336,439

**RAILWAY AND TRAMWAY WORKSHOPS, 1919-20.**

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	39	19	12	9	8	7	94
Number of employees .. ..	9,832	4,373	2,748	2,593	1,576	366	21,488
Actual horse-power of engines employed .. ..	6,864	2,312	2,937	934	2,396	183	15,626
Approximate value of land and buildings .. ..	£ 1,190,066	£ 691,230	£ 357,444	£ 280,188	£ 450,835	£ 7,075	£ 2,976,838
Approximate value of plant and machinery .. ..	£ 1,233,946	£ 542,835	£ 255,264	£ 218,392	£ 275,318	£ 90,248	£ 2,616,001
Total amount of wages paid during year .. ..	£ 1,967,849	£ 791,753	£ 480,874	£ 432,202	£ 246,746	£ 58,278	£ 3,977,702
Value of fuel used .. ..	£ 40,002	£ 26,152	£ 7,316	£ 17,680	£ 11,399	£ 1,947	£ 104,496
Value of raw material worked up ..	£ 1,391,788	£ 804,061	£ 227,930	£ 213,243	£ 169,422	£ 23,463	£ 2,829,907
Total value of output .. ..	£ 3,458,750	£ 1,784,163	£ 628,199	£ 734,729	£ 423,601	£ 87,542	£ 7,116,984
Value added in process of manufacture .. ..	£ 2,066,962	£ 980,102	£ 400,269	£ 521,486	£ 254,179	£ 64,079	£ 4,287,077

(ii) *Northern Territory Railway Workshop.* 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 section.

(iii) *Development of Railway and Tramway Workshops, 1915 to 1919-20.* The following table shews the development of railway and tramway workshops in the Commonwealth since 1915:—

**DEVELOPMENT OF RAILWAY AND TRAMWAY WORKSHOPS, ETC., FROM  
1915 TO 1919-20.**

Items.	1915.	1916.	1917.	1918.	1918-19.	1919-20.
Number of factories .. ..	77	92	94	95	94	94
Number of employees .. ..	22,224	22,995	20,566	18,071	19,036	21,438
Actual horse-power of engines used ..	12,571	14,350	13,363	12,874	13,434	15,626
Approximate value of land and buildings .. ..	£ 2,471,731	2,548,223	2,609,432	2,904,419	2,944,626	2,976,838
Approximate value of plant and machinery .. ..	£ 2,236,578	2,389,065	2,480,239	2,614,127	2,636,591	2,616,001
Total amount of wages paid .. ..	£ 3,174,946	3,409,265	3,270,817	2,839,827	3,106,829	3,977,702
Value of fuel used .. ..	£ 90,490	92,200	87,701	81,487	90,818	104,496
Value of raw material worked up .. ..	£ 2,363,785	2,234,063	2,010,288	1,934,645	2,082,557	2,829,907
Value of final output .. ..	£ 6,046,521	6,298,338	5,566,940	5,037,255	5,418,996	7,116,984
Value added in process of manufacture ..	£ 3,682,736	3,974,275	3,556,652	3,102,610	3,336,439	4,287,077

The growth of the railway and tramway systems, conjointly with heavy increases in passenger and goods traffic throughout the Commonwealth, has resulted in corresponding activity in workshops engaged in the manufacture or repair of rolling stock, etc. Since the war, however, the operations of these establishments have been restricted, on the score of economy, to necessary works, and consequently the value of output only increased from £6,046,521 in 1915 to £7,116,984 in 1919-20.

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

**SMELTING, CYANIDE, PYRITES, ETC., WORKS, 1918-19.**

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W.A. 1918.	Tasmania. 1918.	C'wealth.
Number of factories .. ..	26	15	10	2	..	3	56
Number of employees .. ..	3,171	179	174	2,438	..	678	6,640
Actual horse-power of engines employed .. ..	14,806	392	978	8,770	..	5,420	30,366
Approximate value of land and buildings .. ..	£ 323,434	12,260	16,630	b	..	b	c 645,090
Approximate value of plant and machinery .. ..	£ 1,238,641	32,580	86,680	b	..	b	c 1,832,731
Total amount of wages paid during year .. ..	£ 638,915	26,154	29,630	b	..	b	c 1,405,543
Value of fuel used .. ..	£ 227,186	6,509	8,497	b	..	b	c 549,456
Value of raw material worked up .. ..	£ 5,637,632	143,011	124,236	b	..	b	c 11,132,686
Total value of output .. ..	£ 8,543,022	215,328	173,744	b	..	b	c 16,337,792
Value added in process of manufacture .. ..	£ 2,905,390	72,317	49,508	b	..	b	c 5,205,106

(a) See third paragraph below. (b) Information not available for publication.  
(c) Including South Australia and Tasmania.

## SMELTING, CYANIDE, PYRITES, ETC., WORKS, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W.A. & 1919.	Tasmania. 1919.	C'wealth.
Number of factories .. ..	11	14	13	2	..	6	46
Number of employees .. ..	1,142	143	973	1,204	..	732	4,194
Actual horse-power of engines employed .. ..	7,152	318	7,470	7,756	..	5,827	28,523
Approximate value of land and buildings .. .. £	224,828	11,445	266,616	b	..	b	c 843,747
Approximate value of plant and machinery .. .. £	373,331	27,335	633,140	b	..	b	c1,618,781
Total amount of wages paid during year .. .. £	200,803	21,098	121,270	b	..	b	c 824,998
Value of fuel used .. .. £	47,221	4,615	114,990	b	..	b	c 291,367
Value of raw material worked up .. £	3,317,752	104,896	538,395	b	..	b	c5,383,557
Total value of output .. .. £	3,711,485	159,790	1,506,421	b	..	b	c7,908,611
Value added in process of manufacture .. .. £	393,733	54,894	968,026	b	..	b	c2,525,054

(a) See third paragraph below.

(b) Information not available for publication.

(c) Including South Australia and Tasmania.

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

A serious depression has taken place in the metal and ore reduction industries owing to the fall in the prices of metals. Since 1918 the number of establishments has dropped from 63 to 46, and the number of hands from 7,085 to 4,194. Corresponding decreases have occurred in wages paid and fuel used, while the value of output has fallen from £18,409,027 to £7,908,611.

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

10. Bacon-curing Factories.—(i) *Details for each State.* The following tables give particulars of factories engaged in bacon-curing in each State during the past two years :—

## BACON-CURING FACTORIES, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	23	21	7	14	7	5	77
Number of employees .. ..	290	503	459	144	48	22	1,466
Actual horse-power of engines employed .. ..	454	1,116	792	172	114	65	2,713
Approx. value of land and buildings .. £	104,065	105,630	105,226	20,271	16,725	5,275	357,192
Approx. value of plant and machinery .. .. £	42,527	70,820	58,299	11,972	6,322	1,160	191,100
Total amount of salaries and wages paid .. .. £	57,087	76,308	79,072	19,571	6,083	2,678	240,799
Value of fuel used .. .. £	9,408	10,360	8,251	1,766	764	397	30,946
Value of raw material worked up .. £	697,566	886,810	705,851	227,600	93,512	47,444	2,658,783
Total value of output .. .. £	863,644	1,107,910	1,172,207	258,955	104,831	53,105	3,560,652
Value added in process of manufacture .. .. £	166,078	221,100	466,356	31,355	11,319	5,661	901,869

## BACON-CURING FACTORIES, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	22	21	7	10	7	4	71
Number of employees .. ..	283	549	380	121	72	20	1,425
Actual horse-power of engines employed .. ..	639	1,188	740	193	254	69	3,083
Approx. value of land and buildings .. £	104,564	140,970	105,648	20,094	38,965	4,176	414,415
Approx. value of plant and machinery .. .. £	43,286	83,740	58,540	11,416	12,725	1,114	210,821
Total amount of salaries and wages paid .. .. £	59,169	99,736	71,051	21,077	10,459	3,068	264,560
Value of fuel used .. .. £	9,771	12,122	8,341	1,777	400	400	34,188
Value of raw material worked up .. £	919,416	1,138,511	628,385	296,880	129,421	45,925	3,158,538
Total value of output .. .. £	1,057,512	1,384,351	1,037,691	337,508	156,564	53,367	4,026,993
Value added in process of manufacture .. .. £	138,096	245,840	409,306	40,628	27,143	7,442	868,455

(ii) *Quantity and Value of Production.* The following tables shew the numbers of pigs killed and the quantities and values of the production of bacon-curing factories in each State for the years 1918-19 and 1919-20 :—

**PRODUCTION OF BACON-CURING FACTORIES, 1918-19.**

Particulars.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.a	Tasmania. 1918.	C'wealth.
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**QUANTITY (,000 OMITTED).**

Bacon and ham .. lbs.	13,929	18,343	15,703	5,276	2,335	909	56,495
Lard .. .. lbs.	634	877	854	373	35	51	2,824

**VALUE.**

Bacon and ham .. £	727,943	968,700	897,683	224,148	103,371	46,996	2,968,841
Lard .. .. £	26,593	32,900	33,392	13,286	1,226	1,757	109,154
Other products .. £	68,735	106,310	241,132	21,521	1,154	4,352	443,204

**PIGS KILLED.**

Number .. ..	167,296	201,770	190,623	63,864	(b)	10,577	634,130
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(a) In Western Australia, a portion of the bacon and ham treated in factories is imported and subsequently smoked in that State. (b) Not available.

**PRODUCTION OF BACON-CURING FACTORIES, 1919-20.**

Particulars.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.a	Tasmania. 1919.	C'wealth.
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**QUANTITY (,000 OMITTED).**

Bacon and ham .. lbs.	14,938	16,675	11,639	4,935	2,340	809	51,336
Lard .. .. lbs.	594	848	657	228	119	45	2,491

**VALUE.**

Bacon and ham .. £	920,686	1,030,000	761,658	292,408	147,868	47,374	3,199,994
Lard .. .. £	34,623	42,400	31,111	11,292	6,510	2,007	127,943
Other products .. £	84,920	99,930	244,922	33,808	1,532	3,986	469,098

**PIGS KILLED.**

Number .. ..	171,742	182,320	153,202	55,982	(b)	9,634	572,880
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(a) In Western Australia, a portion of the bacon and ham treated in factories is imported and subsequently smoked in that State. (b) Not available.

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) *Details for each State.* The subjoined tables give particulars of butter, cheese, and condensed milk factories in each State during the years 1918-19 and 1919-20:—

### BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tasmania. 1918.	C'wealth.
Number of factories ..	161	180	137	44	5	31	558
Number of employees ..	1,168	1,918	919	218	27	119	4,369
Actual horse-power of engines employed ..	3,322	3,419	1,959	481	71	239	9,491
Approximate value of land and buildings .. £	310,771	370,170	147,688	44,519	8,587	25,413	907,148
Approximate value of plant and machinery .. £	399,795	416,105	231,075	31,286	6,373	22,493	1,107,127
Total amount of wages paid .. £	184,978	273,385	133,007	25,393	3,691	12,072	633,076
Value of fuel used .. £	49,007	65,199	19,571	4,429	461	1,458	140,125
Value of raw material worked up .. £	4,778,524	5,355,091	2,207,597	553,672	61,179	221,580	13,177,643
Total value of output .. £	5,390,459	6,056,342	2,737,602	605,263	67,713	263,011	15,120,395
Value added in process of manufacture .. £	611,935	701,251	530,005	51,591	6,539	41,431	1,942,752

### BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tasmania. 1919.	C'wealth.
Number of factories ..	155	181	137	46	7	37	563
Number of employees ..	1,192	2,054	891	224	38	145	4,544
Actual horse-power of engines employed ..	3,562	3,369	2,248	478	167	278	10,102
Approximate value of land and buildings .. £	314,024	460,765	187,269	47,668	20,165	30,653	1,060,544
Approximate value of plant and machinery .. £	379,792	564,560	248,418	33,901	12,129	23,906	1,262,706
Total amount of wages paid .. £	220,828	338,507	138,367	27,275	4,900	12,464	742,341
Value of fuel used .. £	56,211	84,150	20,600	3,843	634	1,704	167,142
Value of raw material worked up .. £	5,197,584	5,539,896	2,137,936	566,702	75,209	220,351	13,737,678
Total value of output .. £	5,991,607	6,365,927	2,654,318	626,214	87,223	264,130	15,989,419
Value added in process of manufacture .. £	794,023	826,031	516,382	59,512	12,014	43,779	2,251,741

(ii) *Development of Factories, 1915 to 1919-20.* The following table shews the progress of the factories in this industry during the past five years:—

### DEVELOPMENT OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES IN THE COMMONWEALTH, 1915 TO 1919-20.

Items.	1915.	1916.	1917. <sup>a</sup>	1918.	1918-19.	1919-20.
Number of factories ..	536	559	560	557	558	563
Number of employees ..	3,300	3,287	3,801	4,075	4,369	4,544
Actual horse-power of engines used ..	7,948	8,329	8,961	9,279	9,491	10,102
Approx. value of land and buildings .. £	633,413	734,686	758,454	823,178	907,148	1,060,544
Approx. value of plant and machinery .. £	852,260	881,267	933,086	998,841	1,107,127	1,262,706
Total amount of wages paid .. £	408,181	403,136	510,832	576,548	633,076	742,341
Value of fuel used .. £	71,796	70,053	101,496	116,228	140,125	167,142
Value of raw material worked up .. £	8,040,316	7,763,596	12,128,520	12,642,071	13,177,643	13,737,678
Value of final output .. £	9,203,041	8,974,067	14,151,299	14,322,025	15,120,395	15,989,419
Value added in process of manufacture .. £	1,162,725	1,210,471	2,022,779	1,679,954	1,942,752	2,251,741

(a) Including one margarine establishment in South Australia.

(iii) *Quantity and Value of Production.* The following tables shew the quantities and values of butter, cheese, and condensed milk produced, and the quantities of milk used in butter, cheese, and condensed milk factories in each State during the past two years :—

### PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1918-19.

Particulars.	N.S.W. 1918-19.	Vic. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
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#### QUANTITY (,000 OMITTED).

Butter .. .. lbs.	61,943	61,124	30,669	6,875	889	3,740	165,240
Cheese .. .. "	4,560	5,025	8,573	2,411	..	426	20,995
Condensed and concentrated milk .. .. "	11,192	41,726	6,846	..	..	..	59,764

#### VALUE (,000 OMITTED).

Butter .. .. £	4,734	4,492	2,198	508	67	248	12,247
Cheese .. .. £	211	213	345	97	..	15	881
Condensed and concentrated milk .. .. £	289	1,177	195	..	..	..	1,661

#### MILK USED (,000 OMITTED).

Butter factories .. gals.	139,238	140,792	64,206	13,655	1,951	8,300	368,192
Cheese " .. "	4,723	4,977	8,482	2,362	..	446	20,990
Condensed milk factories .. "	3,111	11,276	1,222	..	..	..	15,609

### PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1919-20.

Particulars.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
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#### QUANTITY (,000 OMITTED).

Butter .. .. lbs.	59,636	55,475	24,529	6,129	996	3,082	149,847
Cheese .. .. "	5,593	6,798	8,287	2,540	..	608	23,826
Condensed and concentrated milk .. .. "	12,970	38,044	9,170	..	..	..	60,184

#### VALUE (,000 OMITTED).

Butter .. .. £	5,004	4,514	1,992	521	87	230	12,348
Cheese .. .. £	281	302	375	105	..	25	1,088
Condensed and concentrated milk .. .. £	384	1,229	288	..	..	..	1,901

#### MILK USED (,000 OMITTED).

Butter factories .. gals.	137,145	128,581	49,722	12,186	2,120	7,519	337,273
Cheese " .. "	5,748	6,797	7,223	2,489	..	623	22,880
Condensed milk factories .. "	3,819	10,615	2,229	..	..	..	16,463

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. Large freezing works have been installed at many ports in the Commonwealth for the purpose of freezing produce chiefly for export, while 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 222 and 225 hereof respectively.

The particulars given in the subjoined tables include ice-making and freezing works, also meat-canning factories, separate particulars for each item for all the States not being available.

### MEAT AND FISH PRESERVING, ICE AND REFRIGERATING WORKS, 1918-19.

Items.	N.S.W. 1918-19.	Vic. 1918-19.	Q'land. 1918.	S.A. 1918-19.	W.A. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	141	40	62	16	20	5	284
Number of employees .. ..	2,959	2,229	4,899	472	131	27	10,717
Actual horse-power of engines employed	7,751	6,641	11,314	1,352	1,144	72	28,274
Approx. value of land and buildings £	995,960	653,595	1,565,372	a	57,589	a	63,493,332
Approx. value of plant and machinery £	827,364	365,860	908,077	a	59,240	a	62,284,888
Total amount of wages paid during year .. ..	£ 365,122	320,682	844,479	a	22,699	a	61,622,990
Value of fuel used .. ..	£ 74,027	68,784	99,196	19,392	10,327	712	272,438
Value of raw material worked up	£ 5,075,745	3,283,929	4,871,649	279,247	36,236	1,166	13,547,972
Total value of output .. ..	£ 6,151,588	3,939,584	6,146,350	484,420	82,149	9,748	16,813,839
Value added in process of manufacture £	1,075,843	655,655	1,274,701	205,173	45,913	8,582	3,265,867

(a) Information not available for publication.

(b) Including South Australia and Tasmania.

### MEAT AND FISH PRESERVING, ICE AND REFRIGERATING WORKS, 1919-20.

Items.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S.A. 1919-20.	W.A. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	136	46	60	16	21	10	289
Number of employees .. ..	2,466	2,640	4,259	501	483	63	10,412
Actual horse-power of engines employed	8,092	7,364	10,955	1,368	2,544	235	30,558
Approx. value of land and buildings £	1,035,756	683,165	1,495,873	a	494,933	a	63,992,620
Approx. value of plant and machinery £	876,192	523,915	891,047	a	276,974	a	62,714,424
Total amount of wages paid during year .. ..	£ 347,227	531,128	702,394	a	90,316	a	61,767,905
Value of fuel used .. ..	£ 95,751	89,493	94,184	22,134	26,398	3,584	331,544
Value of raw material worked up	£ 5,647,804	4,347,782	3,977,635	404,606	154,010	5,298	14,537,135
Total value of output .. ..	£ 6,539,844	5,339,787	5,664,945	594,103	236,705	33,936	18,409,320
Value added in process of manufacture £	892,040	992,005	1,687,310	189,497	82,695	28,638	3,872,185

(a) Information not available for publication.

(b) Including South Australia and Tasmania.

The following tables give particulars, so far as available, of meat tinned during the years 1918-19 and 1919-20 :—

### MEAT PRESERVING WORKS—OUTPUT, 1918-19.

Output.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Tinned meat .. cwt.	215,971a	204,160b	308,730c	11,576d	..	..	740,437

(a) Also 33,226 cwt. tinned rabbits. (b) Also 9,625 cwt. tinned rabbits. (c) Also 1,940 cwt. salted meat. (d) Large numbers of rabbits are tinned in South Australia, but particulars are not available for publication.

## MEAT PRESERVING WORKS—OUTPUT, 1919-20.

Output.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Tinned meat .. cwt.	167,589	167,435	6247,572	67,772	..	..	590,368

(a) Also 7,580 cwt. tinned rabbits. (b) Also 113 cwt. salted meat. (c) Large numbers of rabbits are tinned in South Australia, but particulars are not available for publication.

Large quantities of rabbits, hares, and poultry, for which, however, complete returns are not available, were treated in freezing works. Exclusive of Victoria, for which State particulars are not available, the returns shew that 118,207 tons of ice, valued at £263,606, were manufactured in the Commonwealth in 1919-20.

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 Factories.**—The following tables give particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the years 1918-19 and 1919-20:—

## BISCUIT, ETC., FACTORIES, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.c	Tas. 1918.	C'wealth.
Number of factories .. ..	9	7	22	3	6	3	50
Number of employees .. ..	1,749	1,575	547	174	190	124	4,359
Actual horse-power of engines employed .. ..	1,274	378	332	104	355	63	2,506
Approximate value of land and buildings .. .. £	133,824	80,390	71,571	a	10,740	a	6338,583
Approximate value of plant and machinery .. .. £	112,342	64,460	46,829	a	12,452	a	6256,719
Total amount of wages paid during year .. .. £	173,568	149,865	65,767	a	13,766	a	6425,107
Value of fuel used .. .. £	17,641	15,297	3,333	1,965	1,801	821	40,858
Value of raw material worked up .. .. £	725,284	546,254	168,145	44,864	51,795	28,490	1,564,832
Total value of output .. .. £	1,071,757	847,256	292,777	71,269	81,913	50,606	2,415,578
Value added in process of manufacture .. .. £	346,473	301,002	124,632	26,405	30,118	22,116	850,746

(a) Information not available for publication.

(b) Including South Australia and Tasmania.

(c) Including one butterine and margarine, and one macaroni establishment.

## BISCUIT, ETC., FACTORIES, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.c	Tas. 1919.	C'wealth.
Number of factories .. ..	9	7	22	3	10	3	54
Number of employees .. ..	1,904	1,607	613	173	292	139	4,728
Actual horse-power of engines employed .. ..	1,311	399	318	109	395	51	2,583
Approximate value of land and buildings .. .. £	134,182	82,255	77,930	a	26,630	a	6363,055
Approximate value of plant and machinery .. .. £	119,390	68,855	49,500	a	14,434	a	6272,632
Total amount of wages paid during year .. .. £	189,187	173,787	73,864	a	25,127	a	6487,609
Value of fuel used .. .. £	21,970	21,299	3,012	2,279	2,906	786	52,252
Value of raw material worked up .. .. £	817,128	682,532	193,758	72,098	88,851	36,482	1,890,849
Total value of output .. .. £	1,246,915	1,034,460	345,702	103,474	135,620	60,501	2,026,672
Value added in process of manufacture .. .. £	429,787	351,928	151,944	31,376	46,769	24,019	1,035,523

(a) Information not available for publication.

(b) Including South Australia and Tasmania.

(c) Including one butterine and margarine establishment.

14. **Jam and Fruit Preserving, Pickles, Sauces, and Vinegar.**—(i) *Details for each State.* 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 recent, but is of increasing value, and has shewn considerable expansion during

the past five years. During the year ended 30th June, 1920, 44,793,409 lbs. of jams and jellies, valued at £1,218,997, were exported from the Commonwealth. The subjoined tables give particulars of factories at which these industries were carried on in each State during the years 1918-19 and 1919-20. Separate returns for the different branches of the industry are not available for most of the States.

**JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR  
FACTORIES, 1918-19.**

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	42	34	20	23	7	17	143
Number of employees .. ..	1,393	2,723	357	406	93	1,202	6,174
Actual horse-power of engines employed .. ..	448	723	87	117	72	498	1,945
Approximate value of land and buildings .. .. £	230,957	145,045	20,319	40,849	6,715	84,687	528,572
Approximate value of plant and machinery .. .. £	133,382	76,510	15,605	16,659	3,171	38,758	284,085
Total amount of wages paid during year .. .. £	133,135	251,975	28,896	35,074	6,823	114,388	570,291
Value of fuel used .. .. £	9,377	21,476	1,657	3,435	486	8,046	44,477
Value of raw material worked up .. .. £	905,715	1,413,368	117,980	188,312	17,098	684,073	3,326,546
Total value of output .. .. £	1,286,698	1,961,670	172,522	263,548	26,214	952,374	4,663,026
Value added in process of manufacture .. .. £	380,983	548,302	54,542	75,236	9,116	268,301	1,336,480

**JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR  
FACTORIES, 1919-20.**

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	43	42	18	20	7	22	152
Number of employees .. ..	1,857	3,117	358	425	81	1,136	6,974
Actual horse-power of engines employed .. ..	796	813	144	135	70	568	2,526
Approximate value of land and buildings .. .. £	257,048	168,530	21,099	38,912	5,775	84,938	576,302
Approximate value of plant and machinery .. .. £	149,664	112,860	17,438	26,766	4,080	37,741	348,549
Total amount of wages paid during year .. .. £	189,027	324,438	35,836	45,094	5,568	131,510	731,473
Value of fuel used .. .. £	15,566	23,256	1,814	4,655	506	12,051	57,848
Value of raw material worked up .. .. £	1,167,816	1,530,155	145,571	250,927	32,147	621,995	3,757,611
Total value of output .. .. £	1,702,419	2,258,454	218,671	377,751	46,013	884,652	5,487,960
Value added in process of manufacture .. .. £	534,603	728,299	73,100	117,824	13,866	262,657	1,730,349

(ii) *Production of Factories.* The following tables shew the quantities and values of jams, pickles, and sauces manufactured in each State during the past two years:—

**QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCES MANUFACTURED,  
1918-19.**

Particulars.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
<b>QUANTITY (,000 OMITTED).</b>							
Jams .. .. lbs.	34,647	55,504	2,783	8,369	b	40,987	c142,290
Fruit, preserved .. .. lbs.	5,237	14,922	3,934	3,506	b	7,572	c35,171
Pickles .. .. pints	2,223	4,058	a	204	66	20	c6,571
Sauces .. .. pints	3,646	4,913	428	1,022	360	90	10,459

**VALUE.**

Jams .. .. £	748,074	1,149,342	64,253	153,520	b	780,616	c2,895,805
Fruit, preserved .. .. £	196,057	535,696	57,411	55,764	b	162,002	c1,006,930
Pickles .. .. £	71,422	123,881	14,312	8,226	2,330	729	220,900
Sauces .. .. £	118,281	152,751	8,916	29,194	9,336	2,171	320,649

(a) Information not available.

(b) Information not available for publication.

(c) Incomplete.

### QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCES MANUFACTURED, 1919-20.

Particulars.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
QUANTITY (,000 OMITTED).							
Jams ..	lbs. 34,560	36,227	4,574	8,465	731	35,731	120,288
Fruit, preserved ..	lbs. 10,448	20,335	2,964	9,441	a	5,954	649,142
Pickles ..	pints 2,597	1,874	300	239	115	18	5,143
Sauces ..	pints 4,511	6,547	447	1,721	356	66	13,648
VALUE.							
Jams ..	£ 944,919	990,488	106,024	168,102	16,246	748,496	2,974,275
Fruit, preserved ..	£ 317,299	617,576	67,069	124,863	a	121,141	61,247,948
Pickles ..	£ 86,341	62,311	13,942	9,946	3,837	654	177,031
Sauces ..	£ 165,069	239,530	11,783	54,553	10,148	1,669	482,752

(a) Information not available.

(b) Exclusive of Western Australia.

(iii) *Development of Factories, 1915 to 1919-20.* The following table furnishes particulars of jam and fruit preserving establishments in the Commonwealth for the last six years :—

### DEVELOPMENT OF JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR FACTORIES, 1915 TO 1919-20.

Items.	1915.	1916.	1917.	1918.	1918-19.	1919-20.
Number of factories ..	128	139	150	146	143	152
Number of employees ..	4,303	4,669	5,323	6,024	6,174	6,974
Actual horse-power of engines employed ..	1,567	1,714	2,059	1,991	1,945	2,526
Approx. value of land and buildings £	358,144	367,277	426,919	516,113	528,572	576,302
Approx. value of plant and machinery £	178,182	185,529	209,548	274,555	284,085	348,549
Total amount of wages paid £	326,442	365,928	443,793	538,344	570,291	731,473
Value of fuel used ..	£ 21,965	24,941	32,726	36,995	44,477	57,848
Value of raw material worked up ..	£ 1,602,465	1,919,102	2,271,966	2,930,403	3,326,546	3,757,611
Total value of output ..	£ 2,417,111	2,775,635	3,254,844	4,047,912	4,663,026	5,487,960
Value added in process of manufacture £	814,646	856,533	1,012,878	1,117,509	1,336,480	1,730,349

The progression of the jam and fruit preserving industry has been very marked during the past five years. Since 1915, the number of factories has been considerably enlarged, necessitating a 50 per cent. increase in the number of employees with a corresponding increase in the amount of wages paid, while the value of the output and the added value have been more than doubled.

**15. Confectionery.**—(i) *Details for each State.* The following tables reveal the position of the confectionery industry. Its growth will be apparent when it is stated that at the close of 1900 there were in New South Wales only 16 establishments, with 706 employees, and in Victoria 16 establishments, employing 731 persons, the plant and machinery in the former State being valued at £2,815, and in the latter at £19,070.

### CONFECTIONERY FACTORIES, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W.A. 1918.	Tas. 1918.	C'wealth.
Number of factories ..	64	63	8	12	5	4	156
Number of employees ..	2,374	3,103	542	436	230	25	6,710
Actual horse-power of engines employed ..	1,084	1,751	153	301	185	29	3,503
Approx. value of land and buildings £	433,552	214,785	34,973	43,240	37,530	11,590	775,070
Approx. value of plant and machinery £	255,056	220,610	21,584	40,171	22,179	2,875	562,475
Total amount of wages paid during year ..	£ 253,835	294,024	50,074	33,764	19,330	2,891	654,818
Value of fuel used ..	£ 22,488	35,434	1,822	4,354	10,632	235	74,995
Value of raw material worked up ..	£ 992,616	1,076,104	88,386	131,216	54,240	12,400	2,354,962
Total value of output ..	£ 1,440,468	1,661,680	183,808	201,791	91,301	18,100	3,597,148
Value added in process of manufacture £	447,852	585,576	95,422	70,575	37,061	5,700	1,242,186

## CONFECTIONERY FACTORIES, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W.A. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	75	76	8	11	5	6	181
Number of employees .. ..	2,896	3,035	641	448	256	47	7,323
Actual horse-power of engines employed .. ..	1,147	2,218	149	377	155	21	4,067
Approx. value of land and buildings £	466,006	278,460	42,361	45,534	40,089	5,855	878,305
Approx. value of plant and machinery £	284,257	286,990	24,421	42,888	22,671	3,225	664,452
Total amount of wages paid during year .. ..	£ 320,802	£ 320,249	£ 51,198	£ 37,687	£ 21,480	£ 3,822	£ 755,238
Value of fuel used .. ..	£ 24,884	£ 41,840	£ 1,809	£ 5,079	£ 1,251	£ 221	£ 75,084
Value of raw material worked up .. ..	£ 1,381,012	£ 1,171,119	£ 88,898	£ 174,860	£ 66,934	£ 15,036	£ 2,897,859
Total value of output .. ..	£ 2,112,273	£ 1,878,436	£ 182,707	£ 268,983	£ 93,471	£ 23,567	£ 4,559,437
Value added in process of manufacture £	731,261	707,317	93,809	94,123	26,537	8,531	1,661,578

(ii) *Development of Confectionery Factories, 1915 to 1919-20.* The progress of the confectionery industry during the past five years may be seen from the following table :—

## DEVELOPMENT OF CONFECTIONERY FACTORIES, 1915 TO 1919-20.

Items.	1915.	1916.	1917.	1918.	1918-19.	1919-20.
Number of factories .. ..	115	117	131	147	156	181
Number of employees .. ..	4,411	4,570	5,266	5,856	6,710	7,323
Actual horse-power of engines employed .. ..	2,268	2,181	2,802	3,277	3,503	4,067
Approx. value of land and buildings £	457,882	462,555	495,488	554,099	775,670	878,305
Approx. value of plant and machinery £	284,916	294,351	354,539	419,986	562,475	664,452
Total amount of wages paid during year .. ..	£ 345,938	£ 377,310	£ 463,067	£ 515,774	£ 654,818	£ 755,238
Value of fuel used .. ..	£ 26,543	£ 27,662	£ 45,304	£ 63,674	£ 74,995	£ 75,084
Value of raw material worked up .. ..	£ 1,224,464	£ 1,406,451	£ 1,586,353	£ 1,894,187	£ 2,354,962	£ 2,897,859
Total value of output .. ..	£ 1,963,299	£ 2,173,675	£ 2,504,732	£ 2,969,573	£ 3,597,148	£ 4,559,437
Value added in process of manufacture £	738,835	767,224	918,379	1,075,386	1,242,186	1,661,578

The embargo placed on the importation of luxuries during the war period was responsible for a considerable expansion of the confectionery industry in Australia.

During the past five years the number of factories increased by 57 per cent., the number of employees by 66 per cent., and the actual horse-power of engines used by 79 per cent., while the values of the salaries and wages paid, and of the final output shewed increases amounting to 118 and 132 per cent. respectively.

16. *Flour Mills.*—The following tables shew the position of the flour-milling industry :—

## FLOUR MILLS, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918. <sup>a</sup>	S. Aust. 1918-19. <sup>a</sup>	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	63	53	23	45	16	10	210
Number of employees .. ..	1,326	1,063	297	673	392	104	3,855
Actual horse-power of engines employed .. ..	5,482	4,507	1,006	3,051	2,135	498	16,679
Approx. value of land and buildings £	413,870	233,000	80,699	141,250	121,371	38,150	1,028,340
Approx. value of plant and machinery .. ..	£ 411,637	£ 305,000	£ 84,713	£ 169,987	£ 119,373	£ 19,800	£ 1,110,510
Total amount of wages paid during year .. ..	£ 229,690	£ 169,233	£ 44,324	£ 109,205	£ 61,696	£ 13,210	£ 627,358
Value of fuel used .. ..	£ 47,619	£ 45,012	£ 5,378	£ 32,236	£ 13,143	£ 2,262	£ 145,650
Value of raw material worked up .. ..	£ 4,650,713	£ 4,020,860	£ 610,445	£ 1,556,375	£ 1,369,827	£ 278,151	£ 12,486,371
Total value of output .. ..	£ 5,171,446	£ 4,656,403	£ 734,227	£ 1,797,359	£ 1,546,261	£ 317,011	£ 14,222,707
Value added in process of manufacture .. ..	£ 520,733	£ 635,543	£ 123,782	£ 240,984	£ 176,434	£ 38,860	£ 1,736,336

(a) The manufacture of cornflour, oatmeal, etc., was also carried on in some of these establishments.

## FLOUR MILLS, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919-20.	S. Aust. 1919-20. a	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	58	51	22	45	17	8	201
Number of employees .. ..	1,129	1,064	330	705	407	98	3,733
Actual horse-power of engines employed .. ..	5,845	4,924	1,030	3,149	2,667	476	18,091
Approx. value of land and buildings £ .. ..	470,638	243,850	77,731	157,532	130,462	29,600	1,109,813
Approx. value of plant and machinery .. ..	471,536	347,835	85,694	199,001	126,931	12,275	1,243,272
Total amount of wages paid during year .. ..	223,236	189,224	47,677	114,019	74,768	14,731	663,655
Value of fuel used .. ..	46,185	50,778	6,347	30,894	13,514	1,871	149,589
Value of raw material worked up .. ..	5,149,602	5,318,773	747,010	2,127,859	1,722,193	387,901	15,433,338
Total value of output .. ..	5,973,792	6,082,741	887,503	2,432,257	1,987,019	407,053	17,770,365
Value added in process of manufacture .. ..	824,190	763,968	140,493	304,398	264,826	39,152	2,337,027

(a) The manufacture of cornflour, oatmeal, etc., was also carried on in some of these establishments.

The production of flour by the mills in each State of the Commonwealth in the years 1915 to 1919-20 was as follows:—

## FLOUR MILLS—PRODUCTION, 1915 TO 1919-20.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>
1915 ..	266,302 <i>b</i>	134,401	39,734	49,404	32,396	19,573	541,810
1916 <i>c</i> ..	254,393	134,401	42,559	49,404	70,912	25,369	577,038
1917 <i>d</i> ..	331,233	263,095	46,244	105,925	102,300	21,178	869,975
1918 <i>d</i> ..	355,843	311,450	45,589	135,882	119,876	17,121	985,761
1918-19 <i>e</i> ..	377,107	347,841	45,589	138,734	119,876	17,121	1,046,268
1919-20 <i>e</i> ..	348,691	353,683	49,300	134,727	141,516	22,311	1,050,228

(a) Tons of 2,000 lbs. (b) Year ended 30th June, 1915. (c) See note (a) first table this section.

(d) See note (b) first table this section.

(e) See note (c) first table this section.

The total production of flour for the Commonwealth for the last year, viz., 1,050,228 tons, was valued at £14,076,083; in addition 448,573 tons of bran and pollard, valued at £3,247,685, were made. The total quantity of wheat ground was 50,881,516 bushels.

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

## SUGAR MILLS, 1918-19.

Items.	N.S.W. 1918-19.	Queensland. 1918.	Total.
Number of factories .. ..	3	42	45
Number of employees .. ..	432	5,214	5,646
Actual horse-power of engines employed .. ..	2,273	15,146	17,419
Approximate value of land and buildings .. ..	£ 106,112	454,023	560,135
Approximate value of plant and machinery .. ..	£ 424,450	3,211,336	3,635,786
Total amount of wages paid during year .. ..	£ 45,818	623,736	669,554
Value of fuel used .. ..	£ 5,095	67,968	73,063
Value of raw material worked up .. ..	£ 180,336	2,733,268	2,913,604
Total value of output .. ..	£ 271,270	4,037,706	4,308,976
Value added in course of manufacture .. ..	£ 90,934	1,304,438	1,395,372

## SUGAR MILLS, 1919-20.

Items.	N.S.W. 1919-20.	Queensland. 1919.	Total.
Number of factories .. .. .	3	32	35
Number of employees .. .. .	419	4,098	4,517
Actual horse-power of engines employed .. .. .	2,273	18,230	20,503
Approximate value of land and buildings.. £	105,908	421,441	527,349
Approximate value of plant and machinery £	423,632	2,894,823	3,318,455
Total amount of wages paid during year .. £	42,743	497,319	540,062
Value of fuel used .. .. . £	5,263	46,045	51,308
Value of raw material worked up .. .. . £	163,858	2,342,072	2,505,930
Total value of output .. .. . £	238,414	3,705,593	3,944,007
Value added in course of manufacture .. £	74,556	1,363,521	1,438,077

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 prepared for human consumption, part is turned into food cake for cattle, and part is used for manuring land, but a considerable quantity is run to waste. 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 1919-20.

Items.	1870.	1877.	1886.	1896.	1901.	1915-16.	1916-17.	1917-18	1918-19.	1919-20.
No. of factories	27	50	64	23	12	3	3	3	3	3
No. of employees	..	1,065	2,259	1,475	695	463	427	367	432	419
Cane crushed tons	a	a	a	a	a	157,748	143,558	174,881	105,234	91,321
Sugar produced tons	677	7,537	13,750	28,557	19,519	19,144	16,084	19,875	12,278	10,837
Molasses produced gals.	..	345,543	507,000	2,520,580	1,300,909	1,099,000	781,870	975,770	586,925	494,600

(a) 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 pasture in connexion with the dairying industry.

## SUGAR MILLS, QUEENSLAND, 1868 TO 1919.

Items.	1868.	1876.	1886.	1896.	1901.	1911.	1917.	1918.	1919.
No. of factories	10	70	118	63	52	49	47	42	32
No. of employees	..	b	b	3,796	b	4,295	5,500	5,214	4,098
Cane crushed tons	..	7,245c	40,756c	66,640c	78,160c	1,534,451	2,704,211	1,674,829	1,258,760
Sugar produced tons	619	8,214	59,225	100,774	120,858	173,296	307,714	189,978	162,136
Molasses—									
Sold to distillers and others, gals.	b	b	b	b	b	2,393,669	1,558,407	1,662,454	916,291
Used as fodder, gals.						789,564	1,464,084	1,602,962	1,517,167
Used as manure, gals.						223,000	627,000	109,000	141,175
Run to waste or burnt, a gals.						1,847,333	6,986,813	3,501,668	3,347,655
In stock ..						1,197,626	878,332	923,307	933,542
Total molasses a gals.	68,622	416,415	1,784,266	2,195,470	3,679,952	6,451,192	11,514,636	7,799,391	6,855,830

(a) Quantity recorded; large quantities run to waste of which no record is kept. (b) No record.  
(c) Acres crushed.

Information regarding the cultivation of sugar-cane may be found in the section of this book dealing with *Agricultural Production*. (See pages 283 to 286.)

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 1919–20 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 1,705 hands was employed during the year. The approximate value of land and buildings was £530,612, of plant and machinery, £1,163,675; and the total amount of wages paid during the year was £284,013. The value of all materials used in sugar refineries was £6,346,660, while the total output reached £7,498,643. The amount of crude sugar used was 247,763 tons, and of refined sugar produced 238,428 tons, valued at £7,435,245.

19. **Breweries.**—(i) *Details for each State.* The following tables give particulars of breweries in each State for the past two years:—

#### BREWERIES, 1918–19.

Items.	N.S.W. 1918–19.	Victoria. 1918–19.	Q'land. 1918.	S. Aust. 1918–19.	W. Aust. 1918.α	Tas. 1918.	C'wealth.
Number of breweries .. ..	18	17	10	8	11	4	68
Number of employees .. ..	950	940	518	336	488	123	3,355
Actual horse-power of engines employed .. ..	2,880	3,717	1,042	959	1,173	151	9,922
Approximate value of land and buildings .. .. £	746,900	473,680	141,146	92,327	176,217	61,950	1,692,220
Approximate value of plant and machinery .. .. £	786,312	434,040	145,482	80,616	163,914	44,236	1,654,600
Total amount of wages paid during year .. .. £	199,699	194,195	85,131	68,399	100,942	20,213	668,579
Value of fuel used .. .. £	50,141	41,400	10,626	10,652	13,019	2,812	128,650
Value of raw material worked up .. £	906,589	719,982	158,549	175,014	220,591	34,762	2,215,487
Total value of output .. .. £	1,822,375	1,476,335	862,773	360,139	519,283	143,744	5,184,649
Value added by processes of manufacture .. .. £	915,786	756,353	704,224	185,125	298,692	108,982	2,969,162

(α) Includes malting.

#### BREWERIES, 1919–20.

Items.	N.S.W. 1919–20.	Victoria. 1919–20.	Q'land. 1919.	S. Aust. 1919–20.	W. Aust. 1919.α	Tas. 1919.	C'wealth.
Number of breweries .. ..	17	17	10	8	12	4	68
Number of employees .. ..	1,100	1,016	548	362	546	138	3,710
Actual horse-power of engines employed .. ..	5,845	4,924	1,030	3,149	2,667	476	18,091
Approximate value of land and buildings .. .. £	470,638	243,850	77,731	157,532	130,462	29,600	1,109,813
Approximate value of plant and machinery .. .. £	471,536	347,835	85,694	199,001	126,931	12,275	1,243,272
Total amount of wages paid during year .. .. £	256,692	240,407	111,450	89,347	108,315	25,568	831,779
Value of fuel used .. .. £	56,010	53,831	16,472	16,411	14,427	3,458	160,609
Value of raw material worked up .. £	1,082,456	878,324	218,034	254,882	283,452	43,453	2,760,601
Total value of output .. .. £	2,373,895	1,830,548	1,137,560	469,193	605,575	214,638	6,631,409
Value added by processes of manufacture .. .. £	1,291,439	952,224	919,526	214,311	322,123	171,185	3,870,808

(α) Includes malting.



(ii) *Production and Materials Used.* The following tables shew the quantities and values of ale and stout brewed and the quantities of raw materials used in each State during the years 1918-19 and 1919-20 :—

**PRODUCTION AND MATERIALS USED IN BREWERIES, 1918-19.**

Particulars.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tasmania. 1918.	C'wealth.
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**ALE AND STOUT BREWED.**

Quantity	gallons	24,302,216	20,962,736	6,757,770	5,793,699	5,361,712	1,643,267	64,821,400
Value a ..	£	1,772,037	1,476,335	862,773	356,011	509,763	143,753	5,120,672

**RAW MATERIALS USED.**

Malt ..	bush.	737,229	625,774	206,992	151,585	163,929	68,933	1,954,442
Hops ..	lbs.	876,182	722,594	237,748	186,606	212,097	103,690	2,388,917
Sugar ..	cwt.	120,780	112,076	43,829	32,004	28,220	6,362	343,271

**RAW MATERIALS USED PER 1,000 GALLONS OF ALE AND STOUT PRODUCED.**

Malt ..	bush.	30.34	29.85	30.63	26.16	30.57	41.95	30.15
Hops ..	lbs.	36.05	34.47	42.58	32.21	39.56	63.10	36.85
Sugar ..	cwt.	4.97	5.35	6.49	5.52	5.26	3.87	5.30

(a) Exclusive of excise duty.

**PRODUCTION AND MATERIALS USED IN BREWERIES, 1919-20.**

Particulars.	N.S.W. 1919-20.	Victoria, 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tasmania. 1919.	C'wealth.
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**ALE AND STOUT BREWED.**

Quantity	gallons	26,485,407	22,610,200	8,265,333	6,567,609	5,774,924	1,927,135	71,630,608
Value a ..	£	2,247,873	1,830,548	1,137,820	464,816	592,419	214,047	6,487,523

**RAW MATERIALS USED.**

Malt ..	bush.	872,452	720,515	258,243	178,252	175,603	79,018	2,284,083
Hops ..	lbs.	906,944	769,765	381,487	222,034	220,372	117,496	2,618,098
Sugar ..	cwt.	114,620	110,020	47,989	33,499	29,022	7,559	342,709

**RAW MATERIALS USED PER 1,000 GALLONS OF ALE AND STOUT PRODUCED.**

Malt ..	bush.	32.94	31.87	31.24	27.14	30.41	41.00	31.89
Hops ..	lbs.	34.24	34.05	46.16	33.81	38.16	60.97	36.55
Sugar ..	cwt.	4.33	4.87	5.81	5.10	5.03	3.92	4.78

(a) Exclusive of excise duty.

(iii) *Development of Breweries, 1915 to 1919-20.* The following table shews the progress of this industry during the past five years :—

#### DEVELOPMENT OF BREWERIES FROM 1915 TO 1919-20.

Items.	1915.	1916.	1917.	1918.	1918-19.	1919-20.
Number of breweries .. ..	90	86	77	72	68	68
Number of employees .. ..	3,295	3,179	3,191	3,268	3,355	3,710
Actual horse-power of engines used .. ..	8,430	8,882	8,955	9,602	9,922	18,091
Approx. value of land and buildings £	1,872,535	1,864,712	1,901,488	1,676,567	1,692,220	1,109,813
Approx. value of plant and machinery £	1,452,639	1,518,846	1,565,914	1,600,734	1,654,600	1,243,272
Total amount of wages paid £	548,632	560,004	594,687	632,076	668,579	831,779
Value of fuel used .. ..	81,252	87,375	104,629	120,381	128,650	180,609
Value of raw material worked up £	1,494,974	1,548,615	1,637,568	1,959,232	2,215,487	2,760,601
Value of final output .. ..	3,869,786	3,872,044	3,952,647	4,741,744	5,184,649	6,631,409
Value added in process of manufacture £	2,374,812	2,323,429	2,315,079	2,782,512	2,969,162	3,870,808

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 £3,869,786 in 1915 to £6,631,409 in 1919-20, while the quantity of ale and stout brewed during the same period increased from 61,550,491 to 71,630,608 gallons. The average production per head of mean population likewise increased from 12.43 gallons per head for 1915 to 13.72 gallons for 1919-20.

20. *Distilleries.*—The subjoined tables give particulars of distilleries in four States. There are no distilleries in Western Australia or Tasmania.

#### DISTILLERIES, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of distilleries .. ..	4	11	3	18	..	..	36
Number of employees .. ..	35	264	40	104	..	..	443
Actual horse-power of engines employed .. ..	139	378	93	271	..	..	881
Approx. value of land and buildings £	21,283	160,750	12,598	38,019	..	..	232,630
Approx. value of plant and machinery £	68,989	112,985	21,157	36,797	..	..	239,928
Total amount of wages paid during year £	6,033	47,441	7,021	14,464	..	..	74,959
Value of fuel used .. ..	3,244	12,792	4,466	5,447	..	..	25,949
Value of raw materials worked up £	47,797	164,051	16,759	143,445	..	..	372,052
Total value of output .. ..	72,000	295,580	112,885	211,103	..	..	691,568
Value added in process of manufacture £	24,203	131,529	96,126	67,658	..	..	319,516

#### DISTILLERIES, 1919-20.

Items.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of distilleries .. ..	4	11	3	18	..	..	36
Number of employees .. ..	35	193	34	119	..	..	381
Actual horse-power of engines employed .. ..	136	387	91	304	..	..	918
Approx. value of land and buildings £	22,710	168,215	13,098	39,426	..	..	243,449
Approx. value of plant and machinery £	69,153	115,975	22,473	42,488	..	..	250,089
Total amount of wages paid during year £	7,240	35,654	6,462	16,085	..	..	65,441
Value of fuel used .. ..	2,970	8,066	3,086	5,859	..	..	19,981
Value of raw materials worked up £	39,563	122,732	14,504	143,524	..	..	320,323
Total value of output .. ..	66,331	219,341	48,546	210,333	..	..	544,551
Value added in process of manufacture £	26,768	96,609	34,042	66,809	..	..	224,228

The total quantity of rum distilled during the year was 50,854, of whisky 278,152, of brandy 174,270, of gin 63,534, and of other spirits, including rum distilled in Queensland, separate particulars for which are not available, 2,431,307 proof gallons. The materials used comprised 422,207 cwt. of molasses, and 4,154,025 gallons of wine.

21. Tobacco, Cigars, and Cigarettes.—(i) *Details for each State.* During the years 1918-19 and 1920 there were thirty-seven 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, 1918-19.

Items.	N.S.W. 1918-19.	Vic. 1918-19.	Q'land. 1918.	S.A. 1918-19.	W.A. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	16	14	2	2	3	..	37
Number of employees .. ..	1,973	1,784	65	47	39	..	3,908
Actual horse-power of engines employed	557	364	26	..	1	..	948
Approx. value of land and buildings £	232,123	174,455	a	a	2,744	..	6420,124
Approx. value of plant and machinery £	147,074	113,815	a	a	590	..	6270,953
Total amount of wages paid during year £	238,150	238,841	a	a	2,573	..	6490,172
Value of fuel used .. ..	8,441	4,429	a	a	2	..	613,147
Value of raw material worked up ..	1,912,970	1,167,746	a	a	4,645	..	63,110,373
Total value of output .. ..	2,513,839	1,735,678	a	a	10,383	..	64,306,140
Value added in process of manufacture £	600,869	567,932	a	a	5,738	..	61,195,767

(a) Not available for publication.

(b) Including Queensland and South Australia.

## TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1919-20.

Items.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S.A. 1919-20.	W.A. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	16	14	2	2	3	..	37
Number of employees .. ..	2,400	1,943	64	39	43	..	4,489
Actual horse-power of engines employed	667	440	36	..	1	..	1,144
Approx. value of land and buildings £	242,346	176,900	a	a	2,744	..	6432,247
Approx. value of plant and machinery £	183,462	120,510	a	a	545	..	6313,619
Total amount of wages paid during year £	331,324	289,027	a	a	3,063	..	6633,694
Value of fuel used .. ..	10,608	5,263	a	a	20	..	616,200
Value of raw material worked up ..	2,948,948	1,577,085	a	a	5,397	..	64,559,110
Total value of output .. ..	3,822,181	2,579,323	a	a	13,285	..	66,466,649
Value added in process of manufacture £	873,233	1,002,238	a	a	7,888	..	61,907,539

(a) Not available for publication.

(b) Including Queensland and South Australia.

(ii) *Quantities of Goods Produced, and Tobacco Leaf Used.* The following tables show the quantities of goods produced in tobacco factories in each State, and the quantities of imported and Australian-grown leaf used :—

## PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1918-19.

Particulars.	N.S.W. 1918-19.	Vic. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth. b
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## QUANTITY (,000 OMITTED).

Manufactured tobacco	..lbs.	5,146	5,842	a	..	3	..	10,991
	{ lbs.	132	309	..	a	a	..	441
Cigars .. ..	{ No.	12,011	27,074	..	a	a	..	39,985
	{ lbs.	3,437	289	..	..	a	..	3,728
Cigarettes .. ..	{ No.	1,609,846	125,373	..	..	a	..	1,735,219

## TOBACCO LEAF USED (,000 OMITTED).

Australian leaf .. ..	..lbs.	742	406	a	a	..	..	1,148
Imported leaf .. ..	..lbs.	7,089	5,096	..	a	18	..	12,203

(a) Not available for publication.

(b) Incomplete.

## PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1919-20.

Particulars.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth. <i>b</i>
QUANTITY (,000 OMITTED).							
Manufactured tobacco	.. lbs. 6,886	6,164	} <i>a</i>	<i>a</i>	<i>a</i>	.. {	13,158
Cigars ..	.. lbs. <i>a</i>	389					552
	{ No. <i>a</i>	35,232					50,777
Cigarettes ..	.. lbs. 4,498	338					4,837
	{ No. 2,112,899	143,374					2,256,273

## TOBACCO LEAF USED (,000 OMITTED).

Australian Leaf .. lbs.	861	574	} a	a	a	..	1,522
Imported leaf .. lbs.	9,378	5,189					14,615

(a) Not available for publication.

(b) Including particulars of New South Wales, Queensland, South Australia and Western Australia.

(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 1919-20 were—manufactured tobacco 682,639 lbs., cigars 123,389 lbs., and cigarettes 133,667 lbs., while the quantities manufactured in Australian factories were respectively 13,157,977 lbs., 552,121 lbs., and 4,836,602 lbs. The following tables shew the development of the tobacco manufacturing industry in the Commonwealth during recent years:—

## DEVELOPMENT OF TOBACCO, CIGAR, AND CIGARETTE FACTORIES IN THE COMMONWEALTH, 1915 TO 1919-20.

Items.	1915.a	1916.a	1917.b	1918.	1918-19.	1919-20.
Number of factories .. ..	34	35	38	37	37	37
Number of employees .. ..	3,547	3,739	3,814	3,920	3,908	4,489
Actual horse-power of engines used ..	826	914	934	934	948	1,144
Approx. value of land and buildings £	404,593	412,068	424,252	413,167	420,124	432,247
Approx. value of plant and machinery £	241,591	253,953	260,372	265,150	270,953	313,619
Total amount of wages paid... £	c370,227	c394,435	438,142	466,520	490,172	633,694
Value of fuel used .. .. £	c7,607	c9,720	13,523	12,347	13,147	16,200
Value of raw material worked up .. £	c1,959,525	c2,124,204	2,344,063	2,578,758	3,110,373	4,559,110
Value of final output .. .. £	c3,041,050	c3,223,433	3,543,704	3,694,246	4,306,140	6,466,649
Value added in process of manufacture £	c1,081,525	c1,099,229	1,199,641	1,115,488	1,195,767	1,907,539

## PRODUCTION.

Tobacco made .. .. 1,000 lbs.	9,776	10,306	d11,107	d11,011	d10,991	13,158
Cigars .. .. "	c365	d362	d398	d427	d441	552
Cigarettes .. .. "	3,175	d3,351	d3,075	d3,301	d3,726	4,837
Leaf used .. .. "	c11,858	12,541	d13,166	d12,957	d13,351	16,137

(a) Including four condiment establishments in Western Australia. (b) Including one condiment and two malting establishments in Queensland, and excluding two cigar factories in South Australia. (c) Exclusive of two factories in South Australia. (d) Incomplete.

22. *Woollen, Cotton, and Tweed Mills.*—(i) *Details for each State.* 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 tables, which give particulars of the mills in each State, shew that the industry is now well established :—

### WOOLLEN, COTTON, AND TWEED MILLS, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W.A. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	6	11	2	2	..	4	25
Number of employees .. ..	1,253	2,179	225	164	..	266	4,087
Actual horse-power of engines employed .. ..	2,590	3,547	552	278	..	245	7,212
Approx. value of land and buildings £ .. ..	158,950	212,545	a	a	..	24,700	6434,735
Approx. value of plant and machinery .. ..	242,403	368,690	a	a	..	40,281	6721,418
Total amount of wages paid during year .. ..	£ 136,931	209,674	a	a	..	20,402	6398,641
Value of fuel used .. ..	£ 18,419	29,048	a	a	..	1,949	650,618
Value of raw material worked up .. ..	£ 538,498	585,320	a	a	..	48,035	61,249,094
Total value of output .. ..	£ 945,624	1,126,119	a	a	..	113,805	62,330,253
Value added in process of manufacture .. ..	£ 407,126	540,799	a	a	..	65,770	61,081,159

(a) Information not available for publication.

(b) Including Queensland and South Australia.

### WOOLLEN, COTTON, AND TWEED MILLS, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W.A. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	7	14	2	2	..	4	29
Number of employees .. ..	1,461	2,864	259	178	..	267	5,029
Actual horse-power of engines employed .. ..	2,900	4,674	562	285	..	284	8,705
Approx. value of land and buildings £ .. ..	190,113	376,765	a	a	..	25,300	6626,822
Approx. value of plant and machinery .. ..	£ 338,098	742,900	a	a	..	44,700	61,192,913
Total amount of wages paid during year .. ..	£ 176,204	324,690	a	a	..	21,300	6560,149
Value of fuel used .. ..	£ 16,965	52,429	a	a	..	2,119	675,722
Value of raw material worked up .. ..	£ 580,694	1,131,765	a	a	..	56,271	61,865,477
Total value of output .. ..	£ 1,003,850	1,976,428	a	a	..	124,209	63,290,511
Value added in process of manufacture .. ..	£ 423,156	844,663	a	a	..	67,938	61,425,034

(a) Information not available for publication.

(b) Including Queensland and South Australia.

(ii) *Progress of Industry, 1915 to 1919-20.* The progress of woollen and tweed manufactories in the Commonwealth during the last five years is shewn in the following table :—

### DEVELOPMENT OF WOOLLEN, COTTON, AND TWEED MILLS IN THE COMMONWEALTH FROM 1915 TO 1919-20.

Items.	1915.	1916.	1917.	1918.	1918-19.	1919-20.
Number of factories .. ..	22	23	24	25	25	29
Number of employees .. ..	3,620	3,927	3,746	3,817	4,087	5,029
Actual horse-power of engines used .. ..	5,364	5,538	6,840	7,114	7,212	8,705
Approx. value of land and buildings £ .. ..	310,114	319,273	339,511	355,931	434,735	626,822
Approx. value of plant and machinery .. ..	£ 537,349	553,671	570,871	575,902	721,418	1,192,913
Total amount of wages paid .. ..	£ 313,826	357,137	351,043	380,466	398,641	560,149
Value of fuel used .. ..	£ 36,275	40,283	49,732	49,339	50,818	75,722
Value of raw material worked up .. ..	£ 836,298	971,144	1,073,314	1,141,962	1,249,094	1,865,477
Value of final output .. ..	£ 1,615,223	1,888,115	1,940,304	2,024,343	2,330,253	3,290,511
Value added in process of manufacture .. ..	£ 772,925	916,971	866,990	882,381	1,081,159	1,425,034

(iii) *Quantity and Value of Production.* 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 1919-20 was 5,388,177 yards. In New South Wales 2,208,846 yards of tweed and cloth, and in Victoria 2,212,202 yards were manufactured. The production of flannel in the Commonwealth amounted to 4,741,621 yards, while blankets, shawls, and rugs to the number of 632,942 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.

23. *Boots and Shoes.*—(i) *Details for each State.* Among the manufactories of Australia the boot and shoe industry holds an important place both in respect to the employment afforded and the extent of its output. The following tables shew the particulars of this industry for each State during 1918-19 and 1919-20 :—

#### BOOT AND SHOE FACTORIES, 1918-19.

Items.	N.S.W. 1918-19.	Vic. 1918-19.	Q'land. 1918.	S.A. 1918-19	W.A. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	111	238	30	32	17	10	438
Number of employees .. ..	4,622	8,961	1,130	746	265	236	15,960
Actual horse-power of engines employed ..	1,357	1,986	315	218	67	55	3,998
Approx. value of land and buildings £	326,029	390,710	37,531	55,157	24,938	15,394	849,759
Approx. value of plant and machinery £	168,514	237,060	25,267	27,693	10,469	6,980	475,983
Total amount of wages paid during year £	553,234	987,203	122,241	79,659	27,362	22,302	1,792,001
Value of fuel used .. ..	9,599	15,381	1,178	1,845	635	—	31,852
Value of raw material worked up .. ..	1,333,919	2,563,423	258,106	164,596	79,017	52,397	4,451,458
Total value of output .. ..	2,132,235	4,040,550	469,436	267,366	119,083	91,439	7,120,164
Value added in process of manufacture £	798,366	1,477,127	211,330	102,770	40,071	39,042	2,668,706

#### BOOT AND SHOE FACTORIES, 1919-20.

Items.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S.A. 1919-20	W.A. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	175	264	28	33	19	13	532
Number of employees .. ..	5,157	10,357	1,088	782	315	288	17,987
Actual horse-power of engines employed ..	1,530	2,258	292	230	101	51	4,462
Approx. value of land and buildings £	433,269	441,095	36,724	56,355	32,190	17,804	1,017,437
Approx. value of plant and machinery £	185,313	275,210	26,304	28,363	10,165	4,972	530,327
Total amount of wages paid during year £	706,267	1,252,004	124,465	91,360	32,186	26,464	2,232,746
Value of fuel used .. ..	12,045	24,880	1,384	1,997	676	224	41,206
Value of raw material worked up .. ..	2,047,904	3,909,570	292,351	254,241	93,901	63,516	6,661,483
Total value of output .. ..	3,101,212	5,996,639	471,593	374,535	146,303	116,683	10,206,965
Value added in process of manufacture £	1,053,308	2,087,069	179,242	120,294	52,402	53,167	3,545,482

(ii) *Progress of Industry, 1915 to 1919-20.* 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, 1915 TO 1919-20.

Items.	1915.	1916.	1917.	1918.	1918-19.	1919-20.
Number of factories .. ..	358	352	399	432	438	532
Number of employees .. ..	13,175	13,322	15,236	15,499	15,960	17,987
Actual horse-power of engines used .. ..	3,029	3,249	3,590	3,742	3,998	4,462
Approx. value of land and buildings £	677,307	692,673	750,551	790,573	849,759	1,017,437
Approx. value of plant and machinery £	418,529	428,837	447,389	465,020	475,983	530,327
Total amount of wages paid .. ..	1,220,987	1,244,700	1,574,623	1,613,728	1,792,001	2,232,746
Value of fuel used .. ..	20,713	22,248	31,131	29,055	31,852	41,206
Value of raw material worked up .. ..	2,673,016	2,793,391	3,784,338	3,913,893	4,451,458	6,661,483
Value of final output .. ..	4,486,885	4,617,322	6,143,048	6,410,464	7,120,164	10,206,965
Value added in process of manufacture £	1,813,869	1,823,931	2,358,710	2,496,571	2,668,706	3,545,482

The above table furnishes evidence of substantial and consistent development in the manufacture of boots and shoes in the Commonwealth during the period under review. Since 1915, the amount of wages paid increased from £1,220,987 to £2,232,746; the value of materials used from £2,673,016 to £6,661,483; and the final output from £4,486,885 to £10,206,965. During the same period the production of boots and shoes increased by 1,771,273 pairs, and slippers by 597,182 pairs.

(iii) *Quantity and Value of Production.* The numbers and values of boots, shoes, and slippers made at factories in each State are shown in the following tables :—

### PRODUCTION OF BOOT AND SHOE FACTORIES, 1918-19.

Particulars.	N.S.W. 1918-19.	Vic. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
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#### QUANTITY (,000 OMITTED).

Boots and shoes ..	.. pairs	3,605	6,073	743	541	207	164	11,333
Slippers ..	.. pairs	453	244	34	40	2	..	773
Uppers α	.. pairs	115	11	59	12	b	6	203

#### VALUE.

Boots and shoes ..	..	£ 1,976,872	3,330,763	412,707	237,370	102,849	86,577	6,147,138
Slippers ..	..	£ 77,259	41,491	6,973	6,607	890	105	133,325
Uppers α	..	£ 39,069	3,848	23,918	5,365	b	1,587	73,787

(a) Made for other than factory use.

(b) Included with slippers.

### PRODUCTION OF BOOT AND SHOE FACTORIES, 1919-20.

Particulars.	N.S.W. 1919-20.	Vic. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
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#### QUANTITY (,000 OMITTED).

Boots and shoes ..	.. pairs	3,872	6,774	681	548	224	155	12,254
Slippers ..	.. pairs	509	553	39	26	2	..	1,129
Uppers α	.. pairs	41	14	4	9	b	6	74

#### VALUE.

Boots and shoes ..	..	£ 2,831,070	5,613,769	436,058	337,688	123,489	110,568	9,452,642
Slippers ..	..	£ 93,397	106,942	8,556	5,727	910	..	220,532
Uppers α	..	£ 17,968	6,372	2,054	5,349	b	1,644	33,387

(a) Made for other than factory use.

(b) Included with slippers.

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, 1918–19.

Items.	N.S.W. 1918–19.	Vic. 1918–19.	Q'land. 1918.	S.A. 1918–19.	W.A. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	421	438	129	132	53	33	1,206
Number of employees .. ..	9,453	8,995	3,080	2,199	829	457	25,013
Actual horse-power of engines employed	444	438	251	105	63	12	1,313
Approx. value of land and buildings £	1,054,416	582,720	249,008	174,462	102,995	61,045	2,224,646
Approx. value of plant and machinery £	65,171	80,560	31,443	14,200	8,263	3,231	202,868
Total amount of wages paid during year £	812,401	682,095	236,615	165,386	75,703	35,626	2,007,826
Value of fuel used .. ..	11,832	15,108	4,261	4,258	1,722	..	37,181
Value of raw material worked up £	1,719,597	1,781,890	461,805	314,409	125,474	47,991	4,451,166
Total value of output .. ..	3,015,717	2,980,583	867,986	590,275	235,587	116,982	7,807,130
Value added in process of manufacture £	1,296,120	1,198,693	406,181	275,866	110,113	69,991	3,365,964

CLOTHING (TAILORING AND SLOP) FACTORIES, 1919–20.

Items.	N.S.W. 1919–20.	Vic. 1919–20.	Q'land. 1919.	S.A. 1919–20.	W.A. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	414	453	131	135	53	33	1,219
Number of employees .. ..	9,997	9,322	3,086	2,318	926	541	26,190
Actual horse-power of engines employed	479	415	200	113	58	22	1,287
Approx. value of land and buildings £	1,165,926	589,460	283,861	189,065	106,380	67,879	2,402,571
Approx. value of plant and machinery £	81,721	77,205	33,501	15,438	8,800	4,238	220,903
Total amount of wages paid during year £	1,051,805	896,906	261,250	209,111	87,980	49,060	2,556,112
Value of fuel used .. ..	12,429	16,945	4,428	4,371	1,953	815	40,941
Value of raw material worked up £	2,199,578	2,072,694	585,389	408,572	230,481	69,458	5,566,172
Total value of output .. ..	3,933,063	3,662,152	1,073,449	748,255	383,235	157,518	9,957,672
Value added in process of manufacture £	1,733,485	1,589,458	488,060	339,683	152,754	88,060	4,391,500

The considerable increases which have taken place in the prices of raw materials were mainly responsible for the decline of the tailoring and slop branch of the clothing industry during the past five years.

As will be seen from the following table, the number of factories decreased by 78, and the number of employees by 2,426 since 1915. The total output shews an increase of £3,832,400, but this increase merely indicates the advance which has taken place in the price of clothing during recent years :—

DEVELOPMENT OF CLOTHING (TAILORING AND SLOP) FACTORIES IN THE COMMONWEALTH FROM 1915 TO 1919–20.

Items.	1915.	1916.	1917. <sup>a</sup>	1918.	1918–19.	1919–20.
Number of factories .. ..	1,297	1,274	1,248	1,205	1,206	1,219
Number of employees .. ..	28,616	28,232	26,799	25,188	25,013	26,190
Actual horse-power of engines used ..	1,323	1,647	1,426	1,379	1,313	1,287
Approx. value of land and buildings £	2,195,419	2,058,674	2,234,022	2,182,326	2,224,646	2,402,571
Approx. value of plant and machinery £	214,967	221,940	216,718	206,954	202,868	220,903
Total amount of wages paid .. ..	1,895,146	1,889,195	1,941,667	1,954,356	2,007,826	2,556,112
Value of fuel used .. ..	33,312	34,767	36,052	34,889	37,181	40,941
Value of raw material worked up £	3,096,134	3,403,019	3,356,572	3,759,152	4,451,166	5,566,172
Value of final output .. ..	6,125,272	6,447,853	6,461,405	6,924,820	7,807,130	9,957,672
Value added in process of manufacture £	3,029,138	3,044,834	3,104,833	3,165,668	3,355,964	4,391,500

(a) Including two dyeworks and cleaning establishments in Western Australia.



25. Dressmaking and Millinery.—Particulars of dressmaking and millinery establishments are given in the following tables:—

## DRESSMAKING AND MILLINERY ESTABLISHMENTS, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	264	452	52	44	49	15	876
Number of employees .. ..	5,515	8,642	1,621	914	684	307	17,683
Actual horse-power of engines employed .. ..	227	346	10	9	21	10	623
Approximate value of land and buildings .. .. £	524,769	507,275	43,582	31,084	45,305	7,535	1,159,550
Approximate value of plant and machinery .. .. £	35,063	65,875	7,117	2,898	4,425	715	116,093
Total amount of wages paid during year .. .. £	356,592	514,182	71,957	45,315	41,438	14,779	1,044,263
Value of fuel used .. .. £	3,187	9,354	540	471	573	14,125	14,125
Value of raw material worked up .. .. £	654,827	1,119,428	111,103	75,147	66,983	23,689	2,051,177
Total value of output .. .. £	1,223,398	1,891,802	216,053	146,371	114,363	42,708	3,634,695
Value added by process of manufacture .. .. £	568,571	772,374	104,950	71,224	47,380	19,019	1,583,518

## DRESSMAKING AND MILLINERY ESTABLISHMENTS, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	243	459	44	46	46	16	854
Number of employees .. ..	5,554	9,117	1,243	1,052	690	298	17,954
Actual horse-power of engines employed .. ..	206	354	29	18	23	6	636
Approximate value of land and buildings .. .. £	487,834	545,055	43,744	35,267	46,603	9,065	1,167,568
Approximate value of plant and machinery .. .. £	46,115	66,570	7,275	3,243	4,691	752	128,646
Total amount of wages paid during year .. .. £	391,856	657,004	72,371	56,580	44,487	15,513	1,237,811
Value of fuel used .. .. £	3,445	9,679	691	657	528	70	15,070
Value of raw material worked up .. .. £	805,181	1,579,464	108,130	85,928	82,686	23,993	2,685,382
Total value of output .. .. £	1,457,205	2,863,889	208,909	174,180	132,712	46,093	4,882,988
Value added by process of manufacture .. .. £	652,024	1,284,425	100,779	88,252	50,026	22,100	2,197,606

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 1915 TO 1919-20.

Items.	1915.	1916.	1917.	1918.	1918-19.	1919-20.
Number of factories .. ..	892	890	932	920	876	854
Number of employees .. ..	15,616	16,383	18,211	18,575	17,683	17,954
Actual horse-power of engines used .. ..	428	509	602	648	623	636
Approx. value of land and buildings .. .. £	917,895	974,766	1,036,251	1,087,567	1,159,550	1,167,568
Approx. value of plant and machinery .. .. £	70,357	82,057	99,552	111,622	116,093	128,646
Total amount of wages paid .. .. £	714,181	749,377	873,269	986,440	1,044,263	1,237,811
Value of fuel used .. .. £	9,440	10,746	13,341	14,227	14,125	15,070
Value of raw material worked up .. .. £	1,224,687	1,266,755	1,595,495	1,884,886	2,051,177	2,685,382
Value of final output .. .. £	2,364,862	2,481,266	2,976,725	3,405,574	3,634,695	4,882,988
Value added in process of manufacture .. .. £	1,140,175	1,214,511	1,381,230	1,520,688	1,585,518	2,197,606

Despite the high prices, the dressmaking and millinery establishments in the Commonwealth continued to progress during the past five years.

The number of employees, the actual horse-power of engines used, and the capital invested have all shewn increases since 1915, while the amount of salaries and wages paid advanced from £714,131 to £1,237,811, and the value of the final output from £2,364,862 to £4,882,988.

26. **Electrotyping, Stereotyping, Printing, and Binding.**—The printing industry ranks high in importance among the manufactories of the Commonwealth. It affords employment for some 20,000 employees, and pays £3,000,000 in salaries and wages. During 1919–20 the total value of the output amounted to £10,906,244.

The following table gives particulars of these industries in each State for the years 1918–19 and 1919–20 :—

**ELECTROTYPING, STEREOTYPING, PRINTING, AND BINDING ESTABLISHMENTS,  
1918–19.**

Items.	N.S.W. 1918–19.	Victoria. 1918–19.	Q'land. 1918.	S. Aust. 1918–19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories ..	413	386	138	74	64	26	1,101
Number of employees ..	7,821	7,370	2,711	1,259	1,000	691	20,852
Actual horse-power of engines employed ..	4,340	3,918	1,220	1,031	699	236	11,444
Approximate value of land and buildings ..	£ 1,560,195	871,585	471,073	290,514	222,543	58,435	3,474,345
Approximate value of plant and machinery ..	£ 1,126,037	897,450	317,149	164,659	153,817	63,617	2,722,729
Total amount of wages paid during year ..	£ 1,078,712	983,838	380,578	169,701	154,229	94,354	2,861,412
Value of fuel used ..	£ 33,204	29,986	15,679	7,560	5,625	2,203	94,257
Value of raw materials worked up ..	£ 1,713,334	1,715,416	399,256	270,622	190,348	97,653	4,386,629
Total value of output ..	£ 3,491,369	3,513,702	1,120,380	559,588	460,853	235,907	9,381,799
Value added in process of manufacture ..	£ 1,778,035	1,798,286	721,124	288,966	270,505	138,254	4,995,170

**ELECTROTYPING, STEREOTYPING, PRINTING, AND BINDING ESTABLISHMENTS,  
1919–20.**

Items.	N.S.W. 1919–20.	Victoria. 1919–20.	Q'land. 1919.	S. Aust. 1919–20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of factories ..	422	396	136	77	66	28	1,125
Number of employees ..	8,383	7,646	2,868	1,434	1,050	768	22,149
Actual horse-power of engines employed ..	4,546	4,129	1,335	1,051	710	251	12,022
Approximate value of land and buildings ..	£ 1,659,911	932,800	501,191	298,967	211,149	57,036	3,661,054
Approximate value of plant and machinery ..	£ 1,363,178	979,145	346,629	188,532	157,419	52,240	3,087,143
Total amount of wages paid during year ..	£ 1,329,164	1,099,361	422,200	204,301	169,950	102,523	3,327,499
Value of fuel used ..	£ 37,184	34,176	17,299	7,819	5,855	2,760	105,093
Value of raw materials worked up ..	£ 1,947,789	1,901,138	452,590	371,109	233,963	97,092	5,003,681
Total value of output ..	£ 4,207,191	3,971,340	1,204,312	747,587	526,879	248,935	10,906,244
Value added in process of manufacture ..	£ 2,259,402	2,070,202	751,722	376,478	292,916	151,843	5,902,563

The development of electrotyping, stereotyping, printing, and binding in the Commonwealth since 1915 is shewn in the following table :—

**DEVELOPMENT OF ELECTROTYPING, STEREOTYPING, PRINTING, AND BINDING ESTABLISHMENTS IN THE COMMONWEALTH FROM 1915 TO 1919–20.**

Items.	1915.	1916.	1917.	1918.	1918–19.	1919–20.
Number of establishments ..	1,093	1,094	1,093	1,106	1,101	1,125
Number of employees ..	21,302	21,247	21,060	20,714	20,852	22,149
Actual horse-power of engines used ..	10,519	10,959	11,169	11,086	11,444	12,022
Approx. value of land and buildings ..	£ 3,081,872	3,346,985	3,387,008	3,449,394	3,474,345	3,661,054
Approx. value of plant and machinery ..	£ 2,607,317	2,666,977	2,664,637	2,693,781	2,722,729	3,087,143
Total amount of wages paid ..	£ 2,563,600	2,582,539	2,676,220	2,712,472	2,861,412	3,327,499
Value of fuel used ..	£ 79,443	84,637	87,301	89,663	94,257	105,093
Value of raw materials worked up ..	£ 2,152,096	2,394,703	3,112,140	3,690,419	4,386,629	5,003,681
Value of final output ..	£ 6,404,426	6,549,373	7,775,300	8,537,815	9,381,799	10,906,244
Value added in process of manufacture ..	£ 4,252,330	4,454,670	4,663,160	4,847,396	4,995,170	5,902,563

The latter table furnishes evidence of the activities of the printing establishments during the last five years. Since 1915 considerable increases have taken place in practically all of the items enumerated above, the value of the final output advancing from £6,404,426 to £10,906,244, or more than 70 per cent., and the added value from £4,252,330 to £5,902,563 or more than 38 per cent.

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

## COACH AND WAGON BUILDING WORKS, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	210	300	71	86	34	22	723
Number of employees .. ..	2,206	2,479	620	620	209	169	6,303
Actual horse-power of engines employed .. ..	1,209	747	224	462	149	69	2,860
Approximate value of land and buildings .. .. £	337,966	258,655	69,294	88,684	50,660	25,217	830,476
Approximate value of plant and machinery .. .. £	100,160	66,355	20,583	27,162	9,524	4,387	228,171
Total amount of wages paid during year .. .. £	275,038	261,935	61,859	64,521	27,867	15,052	706,272
Value of fuel used .. .. £	11,314	10,018	1,262	4,284	2,066	506	29,450
Value of raw material worked up .. £	342,124	335,869	79,706	81,232	38,164	21,139	898,234
Total value of output .. .. £	756,723	748,466	186,736	185,831	83,226	46,570	2,007,552
Value added in process of manufacture .. .. £	414,599	412,597	107,030	104,590	45,062	25,431	1,109,318

## COACH AND WAGON BUILDING WORKS, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	210	298	63	84	42	19	716
Number of employees .. ..	2,449	2,599	598	694	286	189	6,815
Actual horse-power of engines employed .. ..	1,176	806	262	475	164	78	2,961
Approximate value of land and buildings .. .. £	352,655	270,565	67,452	91,469	55,320	25,045	862,506
Approximate value of plant and machinery .. .. £	96,433	68,595	22,313	28,942	12,342	3,833	232,459
Total amount of wages paid during year .. .. £	332,099	310,865	62,701	79,324	33,761	16,355	835,105
Value of fuel used .. .. £	10,499	10,997	1,470	4,817	2,329	816	30,928
Value of raw material worked up .. £	378,769	405,320	69,827	112,111	44,562	18,253	1,028,842
Total value of output .. .. £	867,798	902,658	184,624	242,150	103,633	54,434	2,355,297
Value added in process of manufacture .. .. £	489,029	497,338	114,797	130,039	59,071	36,181	1,326,455

28. Furniture and Cabinet Making and Billiard Table Making.—These industries constitute the principal manufactures in Class XIII. (see § 1, 3 above). The following tables give particulars for each State:—

## FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE MAKING, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	182	211	68	36	31	9	537
Number of employees .. ..	2,658	2,174	1,129	789	376	248	7,374
Actual horse-power of engines employed .. ..	1,941	1,277	658	888	370	169	5,303
Approx. value of land and buildings .. £	353,217	254,295	99,782	72,687	66,715	19,235	865,931
Approx. value of plant and machinery .. .. £	71,619	79,655	37,742	35,995	15,869	6,549	247,429
Total amount of wages paid during year .. .. £	350,191	238,648	128,452	86,208	49,783	22,895	876,177
Value of fuel used .. .. £	9,532	7,022	2,043	2,899	1,520	531	24,447
Value of raw material used .. .. £	437,525	376,120	175,815	89,147	67,306	23,955	1,169,866
Total value of output .. .. £	922,892	759,616	378,960	218,496	134,850	62,777	2,477,591
Value added in process of manufacture .. .. £	485,367	383,496	203,145	129,349	67,544	38,822	1,307,723

### FACTORIES FOR FURNITURE AND CABINETMAKING AND BILLIARD TABLE MAKING, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	194	258	74	41	35	11	613
Number of employees .. ..	3,265	2,816	1,142	885	464	326	8,893
Actual horse-power of engines employed .. ..	2,351	1,627	762	932	504	180	6,356
Approx. value of land and buildings £	407,969	328,740	118,694	80,886	63,002	13,885	1,013,176
Approx. value of plant and machinery .. ..	£ 109,364	90,970	44,643	31,949	21,063	6,819	304,809
Total amount of wages paid during year .. ..	£ 493,731	346,117	144,180	112,057	66,088	33,364	1,195,537
Value of fuel used .. ..	£ 10,891	9,139	3,744	3,912	2,084	637	30,407
Value of raw material used .. ..	£ 709,004	591,939	202,576	144,271	83,774	33,460	1,765,024
Total value of output .. ..	£ 1,403,989	1,163,867	421,225	312,735	175,816	83,296	3,560,923
Value added in process of manufacture .. ..	£ 694,935	571,928	218,649	168,464	92,042	49,836	1,795,954

29. Electric Light and Power Works.—Particulars of the electric light and power works of the Commonwealth are given in the subjoined tables. In 1915 there were 247 establishments employing 3,131 hands, whose salaries and wages amounted to £552,524; in 1919-20 these had increased to 264 establishments, 3,696 hands, salaries and wages £716,579, while the value of output had increased during the five years from £2,935,186 to £3,512,975.

### ELECTRIC LIGHT AND POWER WORKS, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	131	77	14	8	21	15	266
Number of employees .. ..	1,268	1,149	359	360	229	192	3,557
Actual horse-power of engines employed .. ..	107,682	48,777	15,334	16,418	31,047	19,091	238,349
Approx. value of land and buildings .. ..	£ 1,076,601	409,040	40,365	158,101	133,210	12,834	1,880,151
Approx. value of plant and machinery .. ..	£ 2,228,624	2,135,310	232,667	466,930	523,559	817,770	6,404,860
Total amount of wages paid during year .. ..	£ 237,212	190,230	63,396	67,425	45,868	35,836	640,017
Value of fuel used .. ..	£ 455,671	204,080	41,626	69,240	83,206	13,699	867,522
Total value of output .. ..	£ 1,545,942	835,190	335,863	246,434	245,362	139,156	3,347,947

### ELECTRIC LIGHT AND POWER WORKS, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of factories .. ..	122	78	14	11	24	15	264
Number of employees .. ..	1,175	1,215	418	472	228	188	3,696
Actual horse-power of engines employed .. ..	93,264	49,241	21,727	16,651	30,251	18,636	229,770
Approx. value of land and buildings .. ..	£ 1,242,406	410,605	67,705	178,710	191,062	14,534	2,105,022
Approx. value of plant and machinery .. ..	£ 2,285,830	2,632,665	317,897	517,611	520,640	810,379	7,085,022
Total amount of wages paid during year .. ..	£ 253,099	217,995	77,451	86,280	46,377	35,377	716,579
Value of fuel used .. ..	£ 390,042	266,244	52,389	98,984	75,510	15,785	898,954
Total value of output .. ..	£ 1,552,764	953,039	360,105	306,764	209,075	131,228	3,512,975

30. 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 fourteen and in Queensland two coke factories which are worked as separate industries. The subjoined tables give particulars of gas and coke works in each State for the years 1918-19 and 1919-20 :—

## GAS AND COKE WORKS, 1918-19.

Items.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories ..	60	46	18	5	4	2	135
Number of employees ..	1,952	2,270	593	469	60	161	5,495
Actual horse-power of engines employed ..	5,859	1,808	174	607	42	23	8,513
Approx. value of land and buildings ..	£ 1,053,038	476,210	192,238	a	20,489	a	£1,799,180
Approx. value of plant and machinery ..	£ 2,349,430	1,384,750	961,986	a	67,662	a	£5,419,942
Total amount of wages paid during year ..	£ 358,867	420,597	104,985	a	12,030	a	£1,002,362
Value of fuel used ..	£ 88,103	5,678	10,900	a	4,444	a	£126,049
Value of raw material used ..	£ 1,056,727	504,146	108,304	a	23,808	a	£1,811,760
Total value of output ..	£ 2,496,643	1,373,603	367,336	a	65,943	a	£4,673,683
Value added in process of manufacture ..	£ 1,439,916	869,457	259,032	a	37,135	a	£2,861,923

(a) Information not available for publication.

(b) Including South Australia and Tasmania.

## GAS AND COKE WORKS, 1919-20.

Items.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth.
Number of factories ..	60	45	18	5	4	2	134
Number of employees ..	2,260	2,267	603	479	67	131	5,807
Actual horse-power of engines employed ..	5,859	1,865	194	618	42	24	8,602
Approx. value of land and buildings ..	£ 1,077,455	502,385	189,717	a	22,731	a	£1,839,493
Approx. value of plant and machinery ..	£ 2,477,890	1,395,320	982,594	a	63,456	a	£5,550,273
Total amount of wages paid during year ..	£ 496,081	472,855	120,902	a	13,971	a	£1,213,449
Value of fuel used ..	£ 114,522	5,369	8,981	a	4,411	a	£154,671
Value of raw material used ..	£ 1,148,217	623,232	122,155	a	29,157	a	£2,056,906
Total value of output ..	£ 2,722,834	1,447,702	361,845	a	69,685	a	£5,000,479
Value added in process of manufacture ..	£ 1,574,617	824,470	239,690	a	40,528	a	£2,943,573

(a) Information not available for publication.

(b) Including South Australia and Tasmania.

The following tables give particulars regarding the quantities and values of the production of gas and coke works in each State during the years 1918-19 and 1919-20 :—

## PRODUCTION OF GAS AND COKE WORKS, 1918-19.

Particulars.	N.S.W. 1918-19.	Victoria. 1918-19.	Q'land. 1918.	S. Aust. 1918-19.	W. Aust. 1918.	Tas. 1918.	C'wealth.
QUANTITY.							
Gas .. 1,000 cub. ft.	8,550,218	4,904,351	1,052,575	a	169,342	a	£15,653,515
Coke .. .. tons	832,284	220,287	445,131	a	7,512	a	£1,152,249
VALUE.							
Gas .. .. £	1,295,367	1,100,000	291,886	a	47,798	a	£3,009,410
Coke .. .. £	813,732	220,287	441,914	a	10,913	a	£1,143,402
COAL USED.							
Coal .. .. tons	1,365,038	353,584	490,301	a	14,525	a	£1,896,034

(a) Not available for publication.

(b) Including South Australia and Tasmania.

(c) Exclusive of particulars for coke works.

## PRODUCTION OF GAS AND COKE WORKS, 1919-20.

Particulars.	N.S.W. 1919-20.	Victoria. 1919-20.	Q'land. 1919.	S. Aust. 1919-20.	W. Aust. 1919.	Tas. 1919.	C'wealth. b
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## QUANTITY.

Gas	.. 1,000 cub. ft.	9,144,861	4,592,305	1,091,704	a	179,729	a	15,978,011
Coke	.. .. tons	c307,680	208,245	c49,153	a	6,725	a	d1,052,022

## VALUE.

Gas	.. .. £	1,521,488	1,148,076	310,102	a	53,265	a	3,320,974
Coke	.. .. £	c177,458	200,000	c31,273	a	9,850	a	d1,155,724

## COAL USED.

Coal	.. .. tons	c527,366	331,149	c92,720	a	13,331	a	d1,700,886
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(a) Not available for publication. (b) Including South Australia and Tasmania. (c) Exclusive of particulars for coke works. (d) Including particulars for coke works.