

SECTION XIII. MANUFACTURING INDUSTRIES.

§ 1. General.

1. **Industrial Progress.**—The statistics of manufactures in the Commonwealth shew that many industries have now been permanently established on a secure basis, and also indicate a consistent progress both in regard to the extension of existing industries and the establishment of new ones. As will be seen 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 five years 1912 to 1916, will serve to indicate generally the progress which has been made. Consequent on Victoria and South Australia having fallen into line with New South Wales in furnishing manufacturing returns for the commercial year ended 30th June, it has been found necessary in the present issue to repeat the 1915 year's figures in the case of Victorian and South Australian manufactures, the New South Wales returns being for year ended 30th June, 1916, and those for the other three States for the calendar year 1916:—

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 to 1916.

| Year. | N.S.W. | Victoria. | Queensland. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|-----------------------------|--------|-----------|-------------|----------|----------|-----------|-----------|
| NUMBER OF FACTORIES. | | | | | | | |
| 1861 | 601 | 531 | ... | ... | ... | ... | ... |
| 1871 | 1,813 | 1,740 | ... | ... | ... | ... | ... |
| 1881 | 2,961 | 2,488 | 571† | 823† | ... | ... | ... |
| 1891 | 3,056 | 3,141 | 1,328† | 996† | 175 | ... | ... |
| 1901 | 3,367 | 3,249 | 2,110† | 1,335† | 662 | 420* | 11,143 |
| 1911 | 5,039 | 5,126 | 1,657 | 1,314 | 710 | 609 | 14,455 |
| 1912 | 5,162 | 5,263 | 1,790 | 1,341 | 711 | 611 | 14,878 |
| 1913 | 5,346 | 5,613 | 1,838 | 1,353 | 763 | 623 | 15,536 |
| 1914 | 5,269 | 5,650 | 1,796 | 1,323 | 787 | 603 | 15,428 |
| 1915 | 5,269 | 5,413 | 1,775 | 1,266 | 780 | 589 | 15,092 |
| 1916† | 5,210 | 5,413 | 1,782 | 1,266 | 771 | 568 | 15,010 |

* For 1902. † Not on same basis as other States. ‡ New South Wales for year ended 30th June, 1916; Victoria and South Australia, calendar year 1915; Queensland, Western Australia, and Tasmania calendar year 1916. See last paragraph above. || For year ended 30th June, 1915.

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

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE,
1861 TO 1916—(Continued).

| Year. | N.S.W. | Victoria. | Queensland. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|----------------------|---------|-----------|-------------|----------|----------|-----------|-----------|
| NUMBER OF EMPLOYEES. | | | | | | | |
| 1861 | ... | 4,395 | ... | ... | ... | ... | ... |
| 1871 | 13,583 | 19,569 | ... | 5,629† | ... | ... | ... |
| 1881 | 31,191 | 43,209 | ... | 10,995† | ... | ... | ... |
| 1891 | 50,879 | 53,525 | ... | 14,099† | ... | ... | ... |
| 1901 | 66,135 | 66,529 | 26,172† | 19,283† | 12,198 | 7,466* | 197,783 |
| 1911 | 108,624 | 111,948 | 37,156 | 27,885 | 15,799 | 10,298 | 311,710 |
| 1912 | 115,561 | 116,108 | 40,948 | 28,500 | 16,382 | 9,957 | 327,456 |
| 1913 | 120,400 | 118,744 | 42,363 | 28,511 | 17,299 | 9,784 | 337,101 |
| 1914 | 116,611 | 118,399 | 43,282 | 26,874 | 17,640 | 8,922 | 331,728 |
| 1915 | 116,611 | 113,834 | 42,079 | 25,496 | 14,631 | 8,420 | 321,071 |
| 1916† | 116,401 | 113,834 | 39,983 | 25,496 | 12,676 | 8,362 | 316,752 |

For notes see previous page.

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. As a result of the conference of 1902 a higher degree of uniformity in the collection and presentation of industrial statistics was attained in the several States, so that returns upon which anything like a proper comparative study of the development and progress of various manufacturing industries in the Commonwealth may be based, date back only as far as the year 1903, when the resolution of the conference first came to be put into force. All the States did not, however, fall completely into line, and, as may be seen in the succeeding parts of this section, the comparisons afforded by the returns for the years 1903 to 1906 inclusive, are in some cases subject to various limitations. At the Conference of Statisticians held in Melbourne in 1906 special consideration was given to the methods to be adopted for the collection of statistical information regarding primary and secondary production and industry. A definite classification of industries was adopted, and a set of forms for the collection and compilation of industrial statistics on a definite and uniform basis in each State was agreed upon. The States have not, even yet, fallen entirely into line in collecting and classifying the returns. The particulars for the past eight 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 adopted at the Conference of Statisticians held in 1906, factories were placed under nineteen different categories, according to the nature of the industry carried on therein, 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 shews the classification which has been adopted; it

must be understood, however, that this classification does not pretend to be exhaustive, but merely serves as a guide for the collection and presentation of statistics in the several States on a definite and uniform basis :—

CLASSIFICATION OF MANUFACTURING INDUSTRIES.

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

§ 2. Number of Factories.

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

In the following table, shewing the total number of factories in the Commonwealth during the years 1903 and 1911 to 1916, it should be noted that not only are the results affected by differences of classification prior to 1907, but also that the alteration in

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

FACTORIES OF THE COMMONWEALTH, 1903 and 1911 to 1916.

| Year. | N.S.W. | Victoria. | Queensland. | South Aust. | West. Aust. | Tasmania. | C'wealth. |
|----------|--------|-----------|-------------|-------------|-------------|-----------|-----------|
| 1903 ... | 3,476 | 4,151 | 2,001* | 906*† | 586 | 431 | 11,551 |
| 1911 ... | 5,039 | 5,126 | 1,657 | 1,314 | 710 | 609 | 14,455 |
| 1912 ... | 5,162 | 5,263 | 1,790 | 1,341 | 711 | 611 | 14,878 |
| 1913 ... | 5,346 | 5,613 | 1,838 | 1,353 | 763 | 623 | 15,536 |
| 1914 ... | 5,269 | 5,650 | 1,796 | 1,323 | 787 | 603 | 15,428 |
| 1915 ... | 5,269 | 5,413 | 1,775 | 1,266 | 780 | 589 | 15,092 |
| 1916 | 5,210 | 5,413 | 1,782 | 1,266 | 771 | 568 | 15,010 |

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

† For year ended 30th June, 1915. || See note † first table, this section.

(i.) *Classification of Factories in Commonwealth, 1911 to 1916.* The following table shews the total number of factories in the Commonwealth at the end of each year from 1911 to 1916, classified on the basis indicated in § 1, 3 hereof:—

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1911 to 1916.

| Class of Industry. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| | No. | No. | No. | No. | No. | No. |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 857 | 871 | 907 | 870 | 839 | 817 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 105 | 102 | 100 | 101 | 99 | 96 |
| III. Processes in stone, clay, glass, etc. ... | 719 | 709 | 732 | 706 | 654 | 626 |
| IV. Working in wood ... | 1,625 | 1,752 | 1,812 | 1,764 | 1,702 | 1,661 |
| V. Metal works, machinery, etc. ... | 1,697 | 1,779 | 1,814 | 1,824 | 1,814 | 1,832 |
| VI. Connected with food and drink, etc. ... | 2,310 | 2,331 | 2,366 | 2,333 | 2,328 | 2,372 |
| VII. Clothing and textile fabrics, etc. ... | 3,093 | 3,115 | 3,266 | 3,254 | 3,117 | 3,085 |
| VIII. Books, paper, printing and engraving ... | 1,144 | 1,158 | 1,206 | 1,229 | 1,225 | 1,225 |
| IX. Musical instruments, etc. ... | 19 | 21 | 21 | 19 | 19 | 20 |
| X. Arms and explosives ... | 14 | 16 | 20 | 19 | 20 | 21 |
| XI. Vehicles and fittings, saddlery & harness, etc. ... | 1,208 | 1,249 | 1,396 | 1,365 | 1,337 | 1,334 |
| XII. Ship and boat building and repairing ... | 87 | 97 | 96 | 93 | 88 | 72 |
| XIII. Furniture, bedding, and upholstery ... | 613 | 670 | 719 | 703 | 693 | 697 |
| XIV. Drugs, chemicals, and by-products ... | 189 | 202 | 206 | 213 | 206 | 207 |
| XV. Surgical and other scientific instruments ... | 41 | 44 | 48 | 52 | 51 | 51 |
| XVI. Jewellery, timepieces, and platedware ... | 169 | 177 | 190 | 200 | 199 | 195 |
| XVII. Heat, light, and power ... | 351 | 372 | 420 | 454 | 474 | 466 |
| XVIII. Leatherware, n.e.i. ... | 62 | 66 | 67 | 65 | 67 | 69 |
| XIX. Minor wares, n.e.i. ... | 152 | 147 | 150 | 164 | 160 | 164 |
| Total ... | 14,455 | 14,878 | 15,536 | 15,428 | 15,092 | 15,010 |

For the purpose of the returns in the above table the definition of a factory adopted at the Conference of Statisticians in 1902 (see § 1, 2 hereof) is used, viz., "Any factory, workshop or mill where four or more persons are employed or power is used." The total increase in the number of factories according to this table from 1911 to 1916 was 555, or an average of 111 a year. The state of the manufacturing industries throughout Australia cannot, however, be gauged from a mere enumeration of the number of factories. Some of the factories concerned were practically in their infancy, employing but few hands, while others were developed on a large scale. Also, as pointed out previously, amalgamations may in some instances account for a reduction in the numbers.

(ii.) *Classification of Factories in each State, 1916.* The following table shews the number of factories in each State of the Commonwealth, classified according to the nature of the industry. (See classification given in § 1, 3 hereof):—

CLASSIFICATION OF FACTORIES IN EACH STATE, 1916.

| Class of Industry. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S. Aus. 1915. | W. Aus. 1916. | Tas. 1916. | Cwlth. No. |
|---|--------------------|---------------|------------------|------------------|------------------|---------------|---------------|
| I. Treating raw material, product of agricul. and pastoral pursuits, etc. | 264 | 322 | 43 | 105 | 39 | 44 | 817 |
| II. Treating oils and fats, animal, vegetable, etc. | 40 | 25 | 15 | 10 | 4 | 2 | 96 |
| III. Processes in stone, clay, glass, etc. | 269 | 189 | 41 | 71 | 36 | 20 | 626 |
| IV. Working in wood | 649 | 410 | 301 | 94 | 66 | 141 | 1,661 |
| V. Metal works, machinery, etc. | 584 | 731 | 218 | 177 | 81 | 41 | 1,832 |
| VI. Connected with food and drink, etc. | 767 | 631 | 473 | 248 | 141 | 112 | 2,373 |
| VII. Clothing and textile fabrics, etc. | 985 | 1,415 | 247 | 226 | 141 | 71 | 3,085 |
| VIII. Books, paper, printing & engraving | 468 | 443 | 143 | 85 | 73 | 23 | 1,225 |
| IX. Musical instruments, etc. | 14 | 5 | ... | 1 | ... | ... | 20 |
| X. Arms and explosives | 8 | 12 | ... | 1 | ... | ... | 21 |
| XI. Vehicles and fittings, saddlery and harness, etc. | 404 | 529 | 144 | 133 | 73 | 51 | 1,334 |
| XII. Ship and boat building & repairing | 30 | 12 | 11 | 8 | 5 | 6 | 72 |
| XIII. Furniture, bedding, and upholstery | 246 | 265 | 78 | 48 | 40 | 20 | 697 |
| XIV. Drugs, chemicals, and by-products | 94 | 79 | 3 | 11 | 13 | 7 | 207 |
| XV. Surgical and other scientific instruments | 14 | 23 | 7 | 2 | 5 | ... | 51 |
| XVI. Jewellery, timepieces, & platedware | 56 | 94 | 16 | 14 | 8 | 7 | 195 |
| XVII. Heat, light, and power | 229 | 142 | 29 | 17 | 32 | 17 | 466 |
| XVIII. Leatherware, n.e.i. | 26 | 33 | 4 | 3 | 3 | ... | 69 |
| XIX. Minor wares, n.e.i. | 73 | 53 | 9 | 12 | 11 | 6 | 164 |
| Total | 5,210 | 5,413 | 1,782 | 1,266 | 771 | 568 | 15,010 |

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

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

UTILISATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1916.

| State. | Number of Establishments. | | | Actual Horse-power of Engines Used. | | | | |
|-----------------|---|---------|--------|-------------------------------------|--------|-------|--------------|---------|
| | Using Machinery worked by Steam, Gas, Oil, or Electricity | Others. | Total. | Steam. | Gas. | Oil. | Electricity. | Total. |
| | No. | No. | No. | H.P. | H.P. | H.P. | H.P. | H.P. |
| N.S.W., 1915-16 | 4,077 | 1,133 | 5,210 | 177,162 | 13,926 | 1,689 | 58,075 | 250,852 |
| Vic., 1915 | 4,030 | 1,383 | 5,413 | 71,223 | 17,935 | 2,272 | 26,385 | 117,815 |
| Q'land, 1916 | 1,382 | 400 | 1,782 | 42,529 | 9,799 | 1,529 | 11,960 | 65,817 |
| S. Aust., 1915 | 971 | 295 | 1,266 | 26,698 | 6,888 | 1,859 | 6,485 | 41,930 |
| W. Aust., 1916 | 616 | 155 | 771 | 26,476 | 5,094 | 977 | 5,605 | 38,152 |
| Tas., 1916... | 474 | 94 | 568 | 5,069 | 279 | 215 | 9,639 | 15,202 |
| Commonwealth | 11,550 | 3,460 | 15,010 | 349,157 | 53,921 | 8,541 | 118,149 | 529,768 |

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

The number of establishments in the Commonwealth using machinery worked by steam, gas, oil, or electricity was 11,550, or 76.95 per cent. of the total; 3460 establishments, representing 23.05 per cent., used no mechanical power. The total actual horse-power in use was 529,768, of which engines in which the motive power was steam formed 65.91 per cent.; gas, 10.18 per cent.; oil, 1.61 per cent.; and electricity, 22.30 per cent.

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

**UTILISATION OF MECHANICAL POWER IN FACTORIES IN COMMONWEALTH,
1911 to 1916.**

| Year. | Number of Establishments. | | | Actual Horse-power of Engines used. | | | | |
|----------|--|---------|--------|-------------------------------------|--------|-------|--------------|---------|
| | Using Machinery worked by Steam, Gas, Oil, or Electricity. | Others. | Total. | Steam. | Gas. | Oil. | Electricity. | Total. |
| | No. | No. | No. | H.P. | H.P. | H.P. | H.P. | H.P. |
| 1911 ... | 9,972 | 4,483 | 14,455 | 255,061 | 35,589 | 6,024 | 46,576 | 343,550 |
| 1912 ... | 10,556 | 4,320 | 14,876 | 284,228 | 43,905 | 6,829 | 56,797 | 391,759 |
| 1913 ... | 11,239 | 4,297 | 15,536 | 313,085 | 48,677 | 8,143 | 72,250 | 442,154 |
| 1914 ... | 11,396 | 4,032 | 15,428 | 336,766 | 50,976 | 8,542 | 95,253 | 491,537 |
| 1915 ... | 11,438 | 3,654 | 15,092 | 333,494 | 54,994 | 8,558 | 107,788 | 504,834 |
| 1916 ... | 11,560 | 3,460 | 15,010 | 349,157 | 53,921 | 8,541 | 118,149 | 529,768 |

During the last five years the number of establishments using mechanical power has increased nearly 16 per cent., the actual horse-power of engines used increasing over 54 per cent. during the same period.

§ 3. Numbers Employed in Australian Factories.

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

(i.) **Average Numbers Employed, 1911 to 1916.** The following table shews, for each year from 1911 to 1916 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,
1911 to 1916.**

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|-----------------|----------|-----------|---------|----------|----------|-----------|-----------|
| AVERAGE NUMBER. | | | | | | | |
| 1911 ... | 108,624 | 111,948 | 37,156 | 27,885 | 15,799 | 10,298 | 311,710 |
| 1912 ... | 115,561 | 116,108 | 40,948 | 28,500 | 16,382 | 9,957 | 327,456 |
| 1913 ... | 120,400 | 118,744 | 42,363 | 28,511 | 17,299 | 9,784 | 337,101 |
| 1914 ... | 116,611* | 118,399 | 43,282 | 26,874 | 17,640 | 8,922 | 331,728 |
| 1915 ... | 116,611* | 113,834 | 42,079 | 25,496 | 14,631 | 8,420 | 321,071 |
| 1916† | 116,401 | 113,834 | 39,983 | 25,496 | 12,676 | 8,362 | 316,752 |

PERCENTAGE ON COMMONWEALTH TOTAL.

| | % | % | % | % | % | % | % |
|----------|-------|-------|-------|------|------|------|--------|
| 1911 ... | 34.85 | 35.91 | 11.92 | 8.95 | 5.07 | 3.30 | 100.00 |
| 1912 ... | 35.29 | 35.46 | 12.51 | 8.70 | 5.00 | 3.04 | 100.00 |
| 1913 ... | 35.72 | 35.22 | 12.57 | 8.46 | 5.13 | 2.90 | 100.00 |
| 1914 ... | 35.15 | 35.69 | 13.05 | 8.10 | 5.32 | 2.69 | 100.00 |
| 1915 ... | 36.32 | 35.45 | 13.11 | 7.94 | 4.56 | 2.62 | 100.00 |
| 1916† | 36.75 | 35.94 | 12.62 | 8.05 | 4.00 | 2.64 | 100.00 |

* For year ended 30th June, 1915.

† See footnote to table on page 481.

AVERAGE NUMBER OF PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES, 1911 TO 1916—Continued.

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|--------------------------------|--------|-----------|---------|----------|----------|-----------|-----------|
| PER 10,000 OF MEAN POPULATION. | | | | | | | |
| 1911 ... | 654 | 848 | 605 | 679 | 551 | 541 | 694 |
| 1912 ... | 665 | 856 | 648 | 676 | 543 | 519 | 705 |
| 1913 ... | 665 | 852 | 649 | 658 | 551 | 499 | 702 |
| 1914 ... | 626* | 832 | 641 | 611 | 545 | 450 | 674 |
| 1915 ... | 626* | 798 | 612 | 580 | 454 | 422 | 650 |
| 1916† ... | 622 | 798 | 590 | 580 | 403 | 422 | 642 |

* Year ended 30th June, 1915.

† See note † first table this section.

(ii.) *Rates of Increase, 1911 to 1916.* From the preceding table it may be seen that during the last three years there has been a general decrease in the average number of persons employed in manufacturing industries during the period referred to. The following table shews the percentage of increase or decrease on the average number for the preceding year from 1912 to 1916. The figures for the past three years are somewhat vitiated by the change in dates of collecting the statistics in New South Wales, Victoria, and South Australia :—

PERCENTAGE OF INCREASE IN AVERAGE NUMBER EMPLOYED, 1911 to 1916.

| Years. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|--------------|--------|-----------|---------|----------|----------|-----------|-----------|
| | % | % | % | % | % | % | % |
| 1911-12 ... | 6.35 | 3.72 | 10.20 | 2.12 | 3.69 | —3.31 | 5.03 |
| 1912-13 ... | 4.19 | 2.27 | 3.46 | 0.04 | 5.60 | —1.74 | 2.95 |
| 1913-14 ... | —3.27* | —0.29 | 2.17 | —5.74 | 1.97 | —8.81 | —1.64 |
| 1914-15 ... | —3.27* | —3.86 | —2.78 | —5.13 | —17.06 | —5.63 | —3.21 |
| 1915-16† ... | —0.10 | —3.86 | —4.98 | —5.13 | —13.64 | —0.69 | —1.35 |

Note. — signifies a decrease. * Eighteen months ended 30th June, 1915. † See note † first table this section.

2. Classification of Numbers Employed in Factories in the Commonwealth, 1911 to 1916.—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1911 to 1916 inclusive :—

AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES.
IN THE COMMONWEALTH, 1911 to 1916.

| Class of Industry. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|---------|---------|---------|---------|---------|---------|
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 9,805 | 9,624 | 9,495 | 9,221 | 9,306 | 9,009 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 2,019 | 2,091 | 2,091 | 2,259 | 2,523 | 2,399 |
| III. Processes in stone, clay, glass, etc. ... | 12,093 | 12,909 | 13,794 | 13,570 | 12,616 | 11,604 |
| IV. Working in wood ... | 27,948 | 30,660 | 31,646 | 30,137 | 26,030 | 23,336 |
| V. Metal works, machinery, etc. ... | 60,538 | 66,472 | 68,839 | 66,112 | 65,368 | 65,850 |
| VI. Connected with food and drink, etc. ... | 45,623 | 46,812 | 49,882 | 51,980 | 49,266 | 48,272 |
| VII. Clothing and textile fabrics, etc. ... | 83,845 | 84,661 | 84,237 | 81,076 | 78,952 | 80,292 |
| VIII. Books, paper, printing and engraving ... | 24,292 | 25,077 | 26,013 | 25,213 | 24,928 | 24,890 |
| IX. Musical instruments, etc. ... | 607 | 628 | 616 | 542 | 515 | 542 |
| X. Arms and explosives ... | 508 | 899 | 1,240 | 1,674 | 2,028 | 2,571 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 13,294 | 13,400 | 13,913 | 13,125 | 12,350 | 12,006 |
| XII. Ship and boat building and repairing... .. | 2,920 | 3,821 | 4,216 | 5,633 | 6,097 | 4,605 |
| XIII. Furniture, bedding and upholstery ... | 9,480 | 10,405 | 10,462 | 9,534 | 8,961 | 8,716 |
| XIV. Drugs, chemicals and by-products ... | 4,165 | 4,381 | 4,328 | 4,490 | 4,601 | 4,738 |
| XV. Surgical & other scientific instruments ... | 233 | 238 | 264 | 282 | 301 | 293 |
| XVI. Jewellery, timepieces, and platedware ... | 2,142 | 2,302 | 2,170 | 2,026 | 1,878 | 1,835 |
| XVII. Heat, light, and power ... | 7,651 | 8,550 | 9,394 | 9,942 | 9,939 | 10,018 |
| XVIII. Leatherware, n.e.i. ... | 1,225 | 1,231 | 1,204 | 1,217 | 1,292 | 1,376 |
| XIX. Minor wares, n.e.i. ... | 3,321 | 3,295 | 3,297 | 3,695 | 4,120 | 4,400 |
| Total ... | 311,710 | 327,456 | 337,101 | 331,728 | 321,071 | 316,752 |

The total increase in the average number of hands employed from 1911 to 1916 was 5,042, or an annual average of 1,008. The greatest development took place in Classes V., VI. and XVII, the increases being 5,312; 2,649; and 2,367 respectively. Decreases occurred in Classes I., III., VII., XI and XVI.

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

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES
IN EACH STATE, 1916.**

| Class of Industry. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S. Aus. 1915. | W. Aus. 1916. | Tas. 1916. | C'wlth. |
|---|--------------------|---------------|------------------|------------------|------------------|---------------|---------|
| I. Treating raw material, product of agricul. and pastoral pursuits, etc. | 3,528 | 3,345 | 641 | 844 | 267 | 384 | 9,009 |
| II. Treating oils and fats, animal, vegetable, etc. | 1,103 | 740 | 157 | 221 | 153 | 25 | 2,399 |
| III. Processes in stone, clay, glass, etc. | 5,470 | 3,822 | 518 | 1,202 | 401 | 191 | 11,604 |
| IV. Working in wood | 7,469 | 6,345 | 4,447 | 1,269 | 2,205 | 1,601 | 23,336 |
| V. Metal works, machinery, etc. | 27,367 | 19,217 | 6,482 | 8,096 | 2,801 | 1,287 | 65,850 |
| VI. Connected with food and drink, etc. | 14,409 | 13,778 | 13,585 | 3,274 | 1,566 | 1,660 | 48,272 |
| VII. Clothing and textile fabrics, etc. | 26,466 | 38,041 | 7,526 | 4,654 | 2,299 | 1,316 | 80,292 |
| VIII. Books, paper, printing & engraving | 9,368 | 8,861 | 2,962 | 1,835 | 1,118 | 726 | 24,890 |
| IX. Musical instruments, etc. | 351 | 145 | ... | 16 | ... | ... | 542 |
| X. Arms and explosives | 1,243 | 1,324 | ... | 4 | ... | ... | 2,571 |
| XI. Vehicles and fittings, saddlery, and harness, etc. | 4,049 | 4,589 | 1,169 | 1,275 | 514 | 410 | 12,006 |
| XII. Ship and boat building & repairing | 3,233 | 1,085 | 118 | 125 | 32 | 32 | 4,605 |
| XIII. Furniture, bedding, and upholstery | 3,464 | 2,689 | 1,091 | 805 | 381 | 286 | 8,716 |
| XIV. Drugs, chemicals, and by-products | 1,691 | 1,860 | 77 | 694 | 334 | 22 | 4,738 |
| XV. Surgical and other scientific instruments | 115 | 115 | 37 | 6 | 20 | ... | 293 |
| XVI. Jewellery, timepieces, & platedware | 688 | 825 | 114 | 116 | 61 | 31 | 1,835 |
| XVII. Heat, light, and power | 3,771 | 4,012 | 747 | 844 | 340 | 344 | 10,018 |
| XVIII. Leatherware, n.e.i. | 582 | 604 | 139 | 24 | 27 | ... | 1,376 |
| XIX. Minor wares, n.e.i.... | 1,414 | 2,417 | 173 | 192 | 157 | 47 | 4,400 |
| Total | 116,401 | 113,834 | 39,983 | 25,496 | 12,676 | 8,362 | 316,752 |

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 80,292 employees, or 25.35 per cent. of the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 293 hands, or 0.09 per cent. of the total number of employees. Classes VI., VII., and VIII. comprise those industries in which female labour is largely employed. (See § 4. 5 hereof.)

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

**AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED
ACCORDING TO NATURE OF EMPLOYMENT, 1916.**

| State. | Average Number of Persons Employed. | | | | | | Total. |
|-----------------------|-------------------------------------|------------------------|-------------------------|-----------------------------|--|---------------------------------|---------|
| | Working Proprietors. | Managers and Overseers | Accountants and Clerks. | Engine-drivers and Firemen. | Workers, Skilled & Unskilled in Factory Mill or Workshop | Carters, Messengers and Others. | |
| N. S. Wales, 1915-16 | 3,959 | 3,711 | 4,821 | 2,798 | 98,176 | 2,936 | 116,401 |
| Victoria, 1915 | 5,366 | 3,347 | 4,062 | 1,685 | 95,811 | 3,563 | 113,834 |
| Queensland, 1916 | 1,473 | 1,435 | 1,846 | 1,442 | 31,827 | 1,960 | 39,983 |
| South Australia, 1915 | 1,243 | 852 | 1,098 | 542 | 21,209 | 552 | 25,496 |
| W. Australia, 1916 | 520 | 545 | 549 | 362 | 10,248 | 452 | 12,676 |
| Tasmania, 1916 | 396 | 371 | 412 | 299 | 6,575 | 309 | 8,362 |
| Commonwealth | 12,957 | 10,261 | 12,788 | 7,128 | 263,846 | 9,772 | 316,752 |

* Including out-workers.

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

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

**CLASSIFICATION OF FACTORIES IN EACH STATE ACCORDING TO NUMBER
OF HANDS EMPLOYED, 1916.**

| No. of Persons Employed in each Factory. | N.S.W. 1915-16. | Victoria. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C wealth. |
|--|--------------------|--------------------|------------------|-------------------|-------------------|---------------|-----------|
| NUMBER OF FACTORIES. | | | | | | | |
| Under 4 ... | 965 | 1,148 | 315 | 199 | 183 | 138 | 2,948 |
| 4 ... | 570 | 623 | 179 | 177 | 85 | 59 | 1,693 |
| 5 to 10 ... | 1,701 | 1,805 | 577 | 468 | 254 | 214 | 5,019 |
| 11 to 20 ... | 908 | 827 | 310 | 187 | 121 | 68 | 2,421 |
| 21 to 50 ... | 652 | 608 | 238 | 139 | 83 | 60 | 1,780 |
| 51 to 100 ... | 211 | 214 | 83 | 52 | 26 | 20 | 606 |
| Over 100 ... | 203 | 188 | 80 | 44 | 19 | 9 | 543 |
| Total ... | 5,210 | 5,413 | 1,782 | 1,266 | 771 | 568 | 15,010 |

AVERAGE NUMBER OF HANDS EMPLOYED.

| | | | | | | | |
|---------------|---------|---------|--------|--------|--------|-------|---------|
| Under 4 ... | 2,207 | 2,635 | 733 | 477 | 372 | 289 | 6,713 |
| 4 ... | 2,280 | 2,492 | 716 | 708 | 340 | 236 | 6,772 |
| 5 to 10 ... | 11,727 | 12,390 | 3,981 | 3,262 | 1,773 | 1,492 | 34,625 |
| 11 to 20 ... | 13,160 | 12,011 | 4,557 | 2,647 | 1,782 | 996 | 35,153 |
| 21 to 50 ... | 20,314 | 19,621 | 7,363 | 4,369 | 2,601 | 1,848 | 56,116 |
| 51 to 100 ... | 14,659 | 14,693 | 6,041 | 3,548 | 1,704 | 1,346 | 41,991 |
| Over 100 ... | 52,054 | 49,992 | 16,592 | 10,485 | 4,104 | 2,155 | 135,382 |
| Total ... | 116,401 | 113,834 | 39,983 | 25,496 | 12,676 | 8,362 | 316,752 |

(ii.) Reference to the following table will shew the 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 27.45 per cent. in 1911 to 26.29 in 1916. A heavier falling-off appears in establishments employing from 21 to 100 hands, viz., 34.21 to 30.97 per cent. The larger establishments with 101 hands and upwards during the same period exhibit an increase from 38.34 to 42.74 per cent. of total employed. The average number of hands per establishment in 1911 was 21.56, and in 1916, 21.10.

**CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH ACCORDING TO
NUMBER OF HANDS EMPLOYED DURING THE YEARS 1911 to 1916.**

| Year. | Establishments Employing on the Average— | | | | | | | |
|-------------------------------|--|--------|---------------------------|---------|---------------------------|---------|---------------------------|---------|
| | 20 hands and under. | | 21 to 100 hands. | | 101 hands and upwards. | | Total. | |
| | Es- tablish- ments. | Hands. | Es- tablish- ments. | Hands. | Es- tablish- ments. | Hands. | Es- tablish- ments. | Hands. |
| 1911— | | | | | | | | |
| Number ... | 11,362 | 85,562 | 2,567 | 106,624 | 526 | 119,524 | 14,455 | 311,710 |
| Average per establishment ... | ... | 7.53 | ... | 41.54 | ... | 227.23 | ... | 21.56 |
| Percentage on total ... | 78.60 | 27.45 | 17.76 | 34.21 | 3.64 | 38.34 | 100.00 | 100.00 |
| 1912— | | | | | | | | |
| Number ... | 11,660 | 87,231 | 2,673 | 111,126 | 545 | 129,099 | 14,878 | 327,456 |
| Average per establishment ... | ... | 7.48 | ... | 41.57 | ... | 236.88 | ... | 22.01 |
| Percentage on total ... | 78.37 | 26.63 | 17.97 | 33.94 | 3.66 | 39.43 | 100.00 | 100.00 |
| 1913— | | | | | | | | |
| Number ... | 12,280 | 90,005 | 2,676 | 109,704 | 580 | 137,392 | 15,536 | 337,101 |
| Average per establishment ... | ... | 7.33 | ... | 41.00 | ... | 236.88 | ... | 21.70 |
| Percentage on total ... | 79.04 | 26.70 | 17.23 | 32.54 | 3.73 | 40.76 | 100.00 | 100.00 |
| 1914— | | | | | | | | |
| Number ... | 12,284 | 88,071 | 2,589 | 106,584 | 554 | 136,924 | 15,427 | 331,579 |
| Average per establishment ... | ... | 7.17 | ... | 41.16 | ... | 247.15 | ... | 21.49 |
| Percentage on total ... | 79.62 | 26.56 | 16.79 | 32.14 | 3.59 | 41.30 | 100.00 | 100.00 |
| 1915— | | | | | | | | |
| Number ... | 12,106 | 84,545 | 2,445 | 101,722 | 541 | 134,804 | 15,092 | 321,071 |
| Average per establishment ... | ... | 6.99 | ... | 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— | | | | | | | | |
| Number ... | 12,081 | 83,263 | 2,396 | 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 |

6. Outworkers.—The term “outworker” or “homeworker” has acquired a special meaning in connection with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in the employees' own homes. Individuals working for themselves are not included. The following table gives particulars of the average number of outworkers connected with factories in each State during each year from 1911 to 1916 inclusive :—

NUMBER OF OUTWORKERS* CONNECTED WITH FACTORIES, 1911 to 1916.

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | O'wealth. |
|-----------|--------|-----------|---------|----------|----------|------|-----------|
| 1911 ... | 784 | 1,906 | 158 | 88 | 15 | 96 | 3,047 |
| 1912 ... | 895 | 1,959 | 140 | 71 | 14 | 86 | 3,165 |
| 1913 ... | 724 | 1,910 | 522 | 54 | 7 | 72 | 3,289 |
| 1914 ... | 582† | 1,737 | 117 | 58 | 8 | 58 | 2,560 |
| 1915 ... | 582† | 1,473 | 92 | 44 | 6 | 70 | 2,267 |
| 1916† ... | 577 | 1,473 | 99 | 44 | 6 | 35 | 2,234 |

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

† Year ended 30th June, 1915. † See note † 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 XXVII. *Industrial Unionism and Industrial Legislation.*)

§ 4. Sex Distribution in Factories.

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

2. Distribution of Employees according to Sex, 1911 to 1916.—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 just below one to three. In Victoria the ratio of females to males during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is slightly under one to two. In the remaining States, with the exception of Tasmania, the ratios at the latest date were less than one female employed to every four males, and in Tasmania slightly less than one to five. The proportion 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, 1911 to 1916.* The following table shows the average number of male and female employees in factories in each State from 1911 to 1916:—

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1911 to 1916.

| State. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916.† |
|-----------------------|---------|---------|---------|---------|---------|---------|
| MALES. | | | | | | |
| New South Wales ... | 82,083 | 88,178 | 93,036 | *90,394 | *90,394 | 87,724 |
| Victoria ... | 73,573 | 77,565 | 80,054 | 79,772 | 75,971 | 75,971 |
| Queensland ... | 29,832 | 33,254 | 34,715 | 35,717 | 34,387 | 32,235 |
| South Australia ... | 22,629 | 23,083 | 23,323 | 22,111 | 20,772 | 20,772 |
| Western Australia ... | 13,212 | 13,805 | 14,625 | 14,996 | 12,290 | 10,259 |
| Tasmania... | 8,737 | 8,391 | 8,354 | 7,613 | 7,161 | 7,046 |
| Commonwealth ... | 230,066 | 244,276 | 254,107 | 250,603 | 240,975 | 234,007 |

* Year ended 30th June, 1915.

† See note † first table this section.

**AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN
MANUFACTURING INDUSTRIES, 1911 to 1916—Continued.**

| State. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916.* |
|-----------------------|--------|--------|--------|---------|---------|--------|
| FEMALES. | | | | | | |
| New South Wales ... | 26,541 | 27,383 | 27,364 | *26,217 | *26,217 | 28,677 |
| Victoria ... | 38,375 | 38,543 | 38,690 | 38,627 | 37,863 | 37,863 |
| Queensland ... | 7,324 | 7,694 | 7,648 | 7,565 | 7,692 | 7,748 |
| South Australia ... | 5,256 | 5,417 | 5,188 | 4,763 | 4,724 | 4,724 |
| Western Australia ... | 2,587 | 2,577 | 2,674 | 2,644 | 2,341 | 2,417 |
| Tasmania ... | 1,561 | 1,566 | 1,430 | 1,309 | 1,259 | 1,316 |
| Commonwealth ... | 81,644 | 83,180 | 82,994 | 81,125 | 80,096 | 82,745 |

* Year ended 30th June, 1915.

† See note † 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 3,941, or an annual average of 788, and in the number of female employees a total increase of 1,101, or an annual average of 220. The decline in numbers employed since 1913 is, of course, due in a large measure to the disorganising effect of the war.

(ii.) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1911 to 1916.* The following table shews the average number of male and female employees per 10,000 of the mean male and female population respectively in each State from 1911 to 1916 :—

**AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF
MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1911 to 1916.**

| State. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916.† |
|-----------------------|-------|-------|-------|-------|-------|--------|
| MALES. | | | | | | |
| New South Wales ... | 947 | 967 | 979 | *935 | *935 | 920† |
| Victoria ... | 1,118 | 1,145 | 1,151 | 1,119 | 1,077 | 1,077† |
| Queensland ... | 892 | 970 | 982 | 978 | 932 | 910 |
| South Australia ... | 1,084 | 1,077 | 1,062 | 1,002 | 960 | 960† |
| Western Australia ... | 805 | 802 | 823 | 826 | 696 | 615 |
| Tasmania ... | 900 | 854 | 823 | 741 | 702 | 706 |
| Commonwealth ... | 986 | 1,009 | 1,015 | 981 | 948 | 936† |
| FEMALES. | | | | | | |
| New South Wales ... | 334 | 332 | 319 | *293 | *293 | 313† |
| Victoria ... | 579 | 567 | 555 | 543 | 525 | 525† |
| Queensland ... | 262 | 266 | 256 | 244 | 242 | 239 |
| South Australia ... | 260 | 261 | 242 | 217 | 212 | 212† |
| Western Australia ... | 211 | 199 | 196 | 186 | 161 | 163 |
| Tasmania ... | 167 | 168 | 151 | 137 | 129 | 134 |
| Commonwealth ... | 379 | 374 | 361 | 342 | 333 | 340† |

* Year ended 30th June, 1915.

† See note † first table this section.

3. **Rate of Increase for each Sex.**—The percentages of annual increase during the years 1912 to 1916 in the average number of males and females employed in manufacturing industries in the several States and the Commonwealth are shewn below:—

PERCENTAGE OF ANNUAL INCREASE IN NUMBERS OF MALE AND FEMALE EMPLOYEES, 1912 to 1916.

| State. | 1911-12. | 1912-13. | 1913-14. | 1914-15. | 1915-16. † |
|-----------------------|----------|----------|----------|----------|---------------|
| MALES. | | | | | |
| New South Wales ... | 7.37 | 5.51 | —2.84* | 2.84* | —2.95† |
| Victoria ... | 5.43 | 3.21 | —0.35 | —4.76 | —4.76† |
| Queensland ... | 11.47 | 4.39 | 2.89 | —3.72 | —6.26 |
| South Australia ... | 1.91 | 1.04 | —5.20 | —6.06 | —6.06† |
| Western Australia ... | 4.49 | 5.94 | 2.54 | —18.04 | —16.53 |
| Tasmania ... | —3.96 | —0.44 | —8.87 | —5.94 | —1.61 |
| Commonwealth ... | 6.15 | 4.02 | —1.38 | —4.00 | —2.89† |

FEMALES.

| | | | | | |
|-----------------------|-------|-------|--------|--------|--------|
| New South Wales ... | 3.17 | —0.07 | —4.19* | —4.19* | 9.38† |
| Victoria ... | 0.44 | 0.38 | —0.16 | —1.98 | —1.98† |
| Queensland ... | 4.99 | —0.60 | —1.08 | 1.68 | 0.73 |
| South Australia ... | 3.06 | —4.23 | —8.19 | —0.82 | —0.82† |
| Western Australia ... | —0.39 | 3.76 | —1.12 | —11.46 | 3.25 |
| Tasmania ... | 0.32 | —8.68 | —8.46 | —3.82 | 4.55 |
| Commonwealth ... | 1.88 | —0.22 | —2.25 | —1.27 | 3.31† |

* Eighteen months ended 30th June, 1915. † See note † first table this section.
Note.—The minus (—) sign indicates decrease.

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 1911 to 1916 inclusive:—

EXCESS OF MALES OVER FEMALES PER 100 OF BOTH SEXES COMBINED, 1911 to 1916.

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|-------|--------|-----------|---------|----------|----------|------|-----------|
| 1911 | 51.1 | 31.5 | 60.6 | 62.3 | 67.3 | 69.7 | 47.6 |
| 1912 | 52.6 | 33.6 | 62.4 | 62.0 | 68.6 | 68.6 | 49.2 |
| 1913 | 54.5 | 34.8 | 63.9 | 63.6 | 69.1 | 70.8 | 50.8 |
| 1914 | *55.0 | 34.8 | 65.0 | 64.6 | 70.0 | 70.7 | 51.1 |
| 1915 | *55.0 | 33.5 | 63.4 | 62.9 | 68.0 | 70.1 | 50.1 |
| 1916 | †50.7 | †33.5 | 61.2 | †62.9 | 61.9 | 68.5 | †47.8 |

* Year ended 30th June, 1915. † See note † first table this section.

The proportion of the sexes has not materially changed during recent years, the 1915 figure for the whole of the Commonwealth, 50.1, being almost identical with that of 1905, 50.3, while the 47.8 for 1916 accords closely with 47.4 in 1909 and 47.6 in 1911. 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 connection with food, drink, etc., clothing and textile fabrics, and books, paper, printing, etc. The following table shews the average number of females employed in each of these classes in each State, and also shews the percentages of the average number so employed on the total average number of females employed in all classes of factories:—

**AVERAGE NUMBER OF FEMALES EMPLOYED IN PARTICULAR INDUSTRIES,
AND PERCENTAGES ON AVERAGE TOTAL EMPLOYED, 1916.**

| Class. | N.S.W. 1915-16. | Vict. 1915. | Q'land. 1916. | S. Aust. 1915. | W.Aust. 1916. | Tas. 1916. | CwIth. |
|--|--------------------|----------------|------------------|-------------------|------------------|---------------|--------|
| AVERAGE NUMBER. | | | | | | | |
| VI. Food, drink, etc. ... | 3,896 | 3,603 | 864 | 442 | 200 | 255 | 9,260 |
| VII. Clothing and textile fabrics ... | 19,218 | 23,262 | 5,745 | 3,434 | 1,792 | 861 | 59,312 |
| VIII. Books, paper, printing, etc. ... | 2,524 | 2,378 | 692 | 525 | 253 | 103 | 6,475 |
| All other classes ... | 3,039 | 3,620 | 447 | 323 | 172 | 97 | 7,698 |
| Total ... | 28,677 | 37,863 | 7,748 | 4,724 | 2,417 | 1,316 | 82,745 |

PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES.

| | | | | | | | |
|--|--------|--------|--------|--------|--------|--------|--------|
| VI. Food, drink, etc. ... | 13.59 | 9.52 | 11.15 | 9.36 | 8.27 | 19.38 | 11.19 |
| VII. Clothing and textile fabrics ... | 67.01 | 74.64 | 74.15 | 72.69 | 74.14 | 65.42 | 71.68 |
| VIII. Books, paper, printing, etc. ... | 8.80 | 6.28 | 8.93 | 11.11 | 10.47 | 7.83 | 7.83 |
| All other classes ... | 10.60 | 9.56 | 5.77 | 6.84 | 7.12 | 7.37 | 9.30 |
| 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 table:—

FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII. DURING 1916.

| Industry. | New South Wales.* 1915-16. | | | Victoria* 1915. | | | Other States.* | | |
|---|-------------------------------|--------|-----------------------|--------------------|--------|-----------------------|----------------|--------|-----------------------|
| | Males. | Femls. | Femi- ninity. † | Males. | Femls. | Femi- ninity. † | Males. | Femls. | Femi- ninity. † |
| Woollen & tweed mills | 501 | 668 | 14.29 | 960 | 1,103 | 6.93 | 298 | 397 | 14.24 |
| Boots and shoes ... | 2,540 | 1,659 | -20.98 | 4,317 | 2,530 | -26.10 | 1,440 | 836 | -26.54 |
| Slop clothing Clothing (tailoring) } | 2,681 | 7,863 | 49.15 | 2,278 | 7,969 | 55.54 | 1,766 | 5,675 | 52.53 |
| Dressmaking & millin'y | 188 | 5,005 | 94.63 | 256 | 7,851 | 93.68 | 23 | 3,110 | 98.53 |
| Dyeworks and cleaning | 68 | 48 | -17.24 | 79 | 86 | 4.24 | 24 | 16 | -20.00 |
| Furriers ... | 22 | 37 | 25.42 | 65 | 147 | 38.68 | ... | ... | ... |
| Hats and caps ... | 515 | 1,044 | 33.93 | 667 | 984 | 19.20 | 78 | 128 | 24.27 |
| Waterproof and oilskin | 51 | 149 | 49.00 | 52 | 170 | 53.15 | ... | ... | ... |
| Shirts, ties, and scarfs | 255 | 2,464 | 81.24 | 423 | 6,795 | 88.28 | 81 | 1,509 | 89.81 |
| Rope and cordage ... | 290 | 11 | -92.68 | 526 | 371 | -17.28 | 152 | 85 | -28.27 |
| Tents and tarpaulins... | 183 | 263 | 17.94 | 143 | 132 | -4.00 | 91 | 69 | -13.75 |
| Other ... | 4 | 7 | 27.27 | 13 | 124 | 81.02 | ... | 7 | 100.00 |
| Total Class VII.... | 7,248 | 19,218 | 45.23 | 9,779 | 28,262 | 48.59 | 3,953 | 11,832 | 49.91 |

* See note † first table this section. † Excess of females over males per 100 of both sexes combined.
NOTE.—Minus sign (-) denotes excess of males over females.

§ 5. Child Labour in Factories.

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

2. **Average Number of Children Employed in Factories, 1911 to 1916.**—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 shows the average number of children of each sex employed in manufacturing industries in each State during the years 1911 to 1916:—

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1911 to 1916.

| State. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916.† |
|---------------------|-------|-------|-------|--------|--------|--------|
| MALES. | | | | | | |
| New South Wales | 2,474 | 2,225 | 2,385 | *2,437 | *2,437 | 2,578 |
| Victoria ... | 2,623 | 2,652 | 2,743 | 2,898 | 3,355 | 3,355 |
| Queensland ... | 1,176 | 1,114 | 1,122 | 1,148 | 1,247 | 1,197 |
| South Australia ... | 999 | 1,078 | 1,122 | 1,064 | 1,068 | 1,068 |
| Western Australia | 368 | 356 | 346 | 381 | 414 | 398 |
| Tasmania ... | 280 | 322 | 283 | 213 | 262 | 217 |
| Commonwealth ... | 7,920 | 7,747 | 8,001 | 8,141 | 8,783 | 8,813 |

* Year ended 30th June, 1915. † See note † first table this section.

**AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES,
1911 TO 1916.—Continued.**

| State. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. † |
|-----------------------|--------|--------|--------|--------|--------|------------|
| FEMALES. | | | | | | |
| New South Wales ... | 2,267 | 2,093 | 2,086 | *2,326 | *2,326 | 2,605 |
| Victoria ... | 1,937 | 1,740 | 1,840 | 1,816 | 2,197 | 2,197 |
| Queensland ... | 818 | 764 | 701 | 713 | 835 | 745 |
| South Australia ... | 555 | 704 | 611 | 522 | 591 | 591 |
| Western Australia ... | 293 | 334 | 360 | 361 | 311 | 271 |
| Tasmania ... | 131 | 121 | 141 | 77 | 97 | 102 |
| Commonwealth ... | 6,001 | 5,756 | 5,739 | 5,815 | 6,357 | 6,511 |
| TOTAL. | | | | | | |
| New South Wales ... | 4,741 | 4,318 | 4,471 | *4,763 | *4,763 | 5,183 |
| Victoria ... | 4,560 | 4,392 | 4,583 | 4,714 | 5,552 | 5,552 |
| Queensland ... | 1,994 | 1,878 | 1,823 | 1,861 | 2,082 | 1,942 |
| South Australia ... | 1,554 | 1,782 | 1,733 | 1,586 | 1,659 | 1,659 |
| Western Australia ... | 661 | 690 | 706 | 742 | 725 | 669 |
| Tasmania ... | 411 | 443 | 424 | 290 | 359 | 319 |
| Commonwealth ... | 13,921 | 13,503 | 13,740 | 13,956 | 15,140 | 15,324 |

* Year ended 30th June, 1915.

† See note † first table this section.

3. Percentage of Children to Total Persons Employed.—The foregoing table shews a general increase in several of the States in the number of children employed in factories during the past quinquennial period. These increases for the first two years, however, when examined in conjunction with the total number of persons employed, shew a fairly regular decrease in the percentage of child labour. This decrease is particularly noticeable in Queensland, the percentage falling from 5.37 in 1911 to 4.30 in 1913. In 1914 there was both an actual and a percentage increase in several of the States, and in all of them during 1915. The 1916 figures shew an actual increase for New South Wales only, but percentage increases for New South Wales and Western Australia, while Queensland and Tasmania shew decreases both actual and per cent. of total employees.

**PERCENTAGE OF CHILDREN IN FACTORIES TO TOTAL NUMBER OF EMPLOYEES,
1911 TO 1916.**

| State. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. † |
|-----------------------|-------|-------|-------|-------|-------|------------|
| | % | % | % | % | % | % |
| New South Wales ... | 4.36 | 3.74 | 3.71 | *4.08 | *4.08 | 4.45 |
| Victoria ... | 4.07 | 3.78 | 3.86 | 3.98 | 4.88 | 4.88 |
| Queensland ... | 5.37 | 4.59 | 4.30 | 4.30 | 4.95 | 4.86 |
| South Australia ... | 5.57 | 6.25 | 6.08 | 5.90 | 6.51 | 6.51 |
| Western Australia ... | 4.18 | 4.21 | 4.08 | 4.21 | 4.96 | 5.28 |
| Tasmania ... | 3.99 | 4.45 | 4.33 | 3.25 | 4.26 | 3.81 |
| Commonwealth ... | 4.47 | 4.12 | 4.08 | 4.21 | 4.72 | 4.84 |

* Year ended 30th June, 1915.

† See note † 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 table below, which shews the average number of children of each sex employed in the several industries indicated in each State :—

NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1916.

| Class. | Industry. | N.S.W. 1915-16. | | Victoria. 1915. | | Q'land. 1916. | | S. Aust. 1915. | | W.A. 1916. | | Tas. 1916. | | C'w'lth. | |
|--------|---|--------------------|-----|--------------------|-----|------------------|-----|-------------------|-----|---------------|-----|---------------|-----|----------|-------|
| | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| III. | Bricks, tiles, pottery and earthenware | 64 | ... | 68 | 4 | 4 | ... | 22 | ... | 2 | ... | 6 | ... | 166 | 4 |
| IV. | Joinery, boxes, cases, etc. | 73 | ... | 65 | 4 | 28 | ... | 24 | ... | 20 | ... | 5 | ... | 315 | 4 |
| V. | Agricultural implem'ts | 18 | 1 | 75 | ... | 10 | ... | 35 | ... | 3 | ... | ... | ... | 141 | 1 |
| " | Engin'ring, ironworks, and foundries | 212 | 5 | 353 | 1 | 75 | 1 | 92 | ... | 57 | ... | 9 | ... | 798 | 7 |
| " | Brass and copper | 11 | ... | 93 | ... | 2 | ... | 33 | ... | ... | ... | 3 | ... | 142 | ... |
| " | Galvanised iron-working and tinsmithing | 77 | 22 | 124 | 53 | 71 | 2 | 87 | ... | ... | ... | 4 | ... | 363 | 77 |
| " | Railway carriages, railway & tramway work-shops | 106 | ... | 221 | ... | 19 | 1 | 99 | ... | 10 | ... | ... | ... | 455 | 1 |
| VI. | Biscuits, cakes, etc. | 142 | 108 | 55 | 55 | 12 | 4 | 16 | 9 | 26 | 17 | 20 | 5 | 271 | 198 |
| " | Confectionery | 62 | 90 | 24 | 52 | 26 | 38 | 28 | 30 | 8 | 6 | ... | ... | 148 | 216 |
| " | Meat & fish preserving | 3 | 1 | 24 | ... | 114 | ... | 7 | ... | ... | ... | ... | ... | 148 | 1 |
| " | Jams, pickles, sauces, etc. | 17 | 26 | 26 | 22 | 24 | ... | 22 | 29 | 2 | 2 | 19 | 6 | 110 | 85 |
| " | Aerated waters, cordials, etc. | 18 | 3 | 53 | 2 | 50 | 3 | 11 | 1 | 8 | ... | 4 | ... | 144 | 9 |
| " | Tobacco, cigars, etc. | 87 | 110 | 33 | 8 | 3 | 5 | 2 | 1 | 1 | 2 | ... | ... | 126 | 126 |
| VII. | Woollen, tweed, and cotton mills... | 30 | 101 | 155 | 122 | 16 | 31 | 16 | 16 | ... | ... | 3 | 16 | 220 | 286 |
| " | Boots and shoes | 163 | 220 | 208 | 236 | 47 | 54 | 39 | 40 | 13 | 9 | 14 | 19 | 484 | 578 |
| " | Clothing (tailoring and slop)... | 63 | 514 | 103 | 310 | 55 | 233 | 23 | 135 | 16 | 36 | 2 | 12 | 262 | 1,240 |
| " | Dressmaking and millinery | 4 | 484 | 13 | 446 | 1 | 145 | ... | 133 | ... | 104 | ... | 31 | 18 | 1,343 |
| " | Hats and caps | 28 | 79 | 54 | 30 | 2 | 5 | 6 | 5 | ... | ... | ... | ... | 90 | 119 |
| " | Shirts, ties, scarfs, etc. | 19 | 234 | 14 | 436 | 7 | 97 | 3 | 77 | ... | 36 | ... | ... | 43 | 880 |
| VIII. | Electrotyping, printing and binding... | 298 | 198 | 432 | 120 | 199 | 74 | 81 | 21 | 59 | 32 | 40 | 5 | 1,109 | 450 |
| " | Paper making, paper boxes, etc. | 55 | 117 | 25 | 46 | 4 | 8 | 26 | 76 | 4 | 7 | ... | ... | 114 | 254 |
| XI. | Coach & wagon building, etc. | 52 | 1 | 96 | ... | 26 | 1 | 36 | ... | 7 | ... | 14 | ... | 231 | 2 |
| " | Cycles and motors | 25 | ... | 79 | ... | 27 | 1 | 42 | ... | 16 | ... | 15 | ... | 204 | 1 |
| XIII. | Billiard tables, cabinet making and furniture | 64 | ... | 70 | 2 | 71 | 2 | 24 | 1 | 20 | ... | 4 | ... | 253 | 5 |

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 1910 which deals with apprentices has been amended to provide 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. Other enactments relating to child labour are referred to in Section XXVII. of this book, *Industrial Unionism and Industrial Legislation*.

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

1. **Introduction.**—The importance of the manufacturing industries of the Commonwealth is indicated by the fact that the total value of the output for 1916 was £172,574,845, of which amount the sum of £105,180,445 represents the value of the raw materials used. The difference between these two amounts, viz., £67,394,400, 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 1916 was £33,828,840.

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

**AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES
IN COMMONWEALTH, 1916.***

| Class of Industry: | N.S.W. 1915-16. | Vict. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'wlth. |
|---|--------------------|-------------------|------------------|-------------------|-------------------|----------------|-------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 392,654 | 354,008 | 79,125 | 67,682 | 20,650 | 21,505 | 935,627 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 119,678 | 82,628 | 16,664 | 26,088 | 21,244 | 2,950 | 269,252 |
| III. Processes in stone, clay, glass, etc. ... | 701,306 | 464,874 | 51,348 | 131,752 | 50,544 | 15,008 | 1,414,832 |
| IV. Working in wood ... | 839,666 | 710,367 | 475,480 | 140,698 | 346,729 | 164,923 | 2,678,453 |
| V. Metal works, machinery, etc. | 4,065,413 | 2,399,009 | 851,755 | 1,094,901 | 430,061 | 181,836 | 9,022,975 |
| VI. Connected with food and drink, etc. ... | 1,618,761 | 1,454,381 | 1,506,120 | 319,685 | 204,849 | 153,695 | 5,257,491 |
| VII. Clothing and textile fabrics, etc. ... | 1,933,642 | 2,449,548 | 464,492 | 277,858 | 162,577 | 84,893 | 5,373,010 |
| VIII. Books, paper, printing and engraving ... | 1,105,061 | 994,229 | 353,548 | 184,162 | 162,643 | 89,792 | 2,889,435 |
| IX. Musical instruments, etc. ... | 51,297 | 15,692 | ... | 1,692 | ... | ... | 68,681 |
| X. Arms and explosives ... | 239,457 | 136,660 | ... | 366 | ... | ... | 376,483 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 449,609 | 443,661 | 98,240 | 121,839 | 58,440 | 37,450 | 1,209,239 |
| XII. Ship and boat building and repairing ... | 520,174 | 143,261 | 12,711 | 18,100 | 3,579 | 3,487 | 701,312 |
| XIII. Furniture, bedding and upholstery ... | 385,808 | 254,626 | 110,156 | 76,656 | 47,571 | 25,769 | 900,586 |
| XIV. Drugs, chemicals, and by-products ... | 170,526 | 190,617 | 5,772 | 76,429 | 67,077 | 1,329 | 511,750 |
| XV. Surgical and other scientific instruments ... | 13,410 | 10,394 | 3,408 | 917 | 1,379 | ... | 29,508 |
| XVI. Jewellery, timepieces, and platedware ... | 89,846 | 83,194 | 10,754 | 13,648 | 6,863 | 2,828 | 207,133 |
| XVII. Heat, light, and power ... | 532,041 | 553,368 | 118,460 | 134,427 | 58,115 | 47,590 | 1,444,004 |
| XVIII. Leatherware, n.e.i. ... | 56,800 | 46,091 | 11,764 | 2,125 | 1,827 | ... | 118,608 |
| XIX. Minor wares, n.e.i. ... | 128,696 | 249,147 | 11,457 | 16,104 | 12,648 | 2,409 | 420,461 |
| Total ... | 13,413,845 | 11,036,345 | 4,181,254 | 2,705,130 | 1,656,799 | 835,467 | 33,828,840 |

* Excluding all amounts drawn by working proprietors.

The maximum amount of salaries and wages paid in any particular class was in Class V., the amount being £9,022,975, or 26.67 per cent. on the total amount; the minimum amount was in Class XV., £29,508, or 0.09 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 1911 to 1916; the figures are exclusive of the amounts drawn from the business by working proprietors:—

**AMOUNT OF SALARIES AND WAGES PAID AND AVERAGE AMOUNT PER ANNUM
PAID PER EMPLOYEE, 1911 to 1916.**

| Year. | Particulars. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wlth. |
|-------|--------------------------|------------|------------|-----------|-----------|-----------|---------|------------|
| | | £ | £ | £ | £ | £ | £ | £ |
| 1911 | Total amount paid ... | 10,047,656 | 8,911,019 | 3,113,835 | 2,645,386 | 1,992,883 | 827,592 | 27,528,371 |
| | Average per employee ... | 96.35 | 83.48 | 87.15 | 90.56 | 120.80 | 94.47 | 92.25 |
| 1912 | Total amount paid ... | 11,592,052 | 10,102,244 | 3,699,065 | 2,869,653 | 2,169,144 | 855,334 | 31,287,492 |
| | Average per employee ... | 104.44 | 91.19 | 93.88 | 105.62 | 136.67 | 90.40 | 99.74 |
| 1913 | Total amount paid ... | 12,683,384 | 10,714,336 | 4,075,191 | 3,034,537 | 2,215,187 | 883,452 | 33,606,087 |
| | Average per employee ... | 109.66 | 94.74 | 100.05 | 111.66 | 132.31 | 95.18 | 104.14 |
| 1914* | Total amount paid ... | 12,667,721 | 11,099,940 | 4,211,480 | 2,946,296 | 2,342,428 | 835,829 | 34,103,703 |
| | Average per employee ... | 112.94 | 98.50 | 100.91 | 115.31 | 137.30 | 98.82 | 107.36 |
| 1915* | 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 | 104.91 | 111.53 | 127.31 | 97.82 | 108.00 |
| 1916† | 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 | 111.53 | 136.29 | 104.88 | 111.35 |

* New South Wales figures for year ended 30th June, 1915. † See note ‡ 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 (see § 2 hereof). In Victoria, for instance, there are a large number of hands employed in Class VII., of whom a large percentage are women and children. The position occupied by Western Australia is principally due to the high ratio of male to female employees in that State.

It will be noted that there has been a persistent increase in the average wage paid per employee in each of the States during the period under review. Taking the Commonwealth as a whole, during the period 1911-16 there has been an increase of 22.88 per cent. on the total amount of wages paid, and 19.05 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 1916, and the total amounts paid to employees of each sex in New South Wales, Victoria, South Australia and Tasmania during the last six years, and in Queensland and Western Australia during the last five years:—

**AMOUNT* OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS
EMPLOYED IN EACH CLASS OF INDUSTRY IN THE SEVERAL STATES
OF THE COMMONWEALTH DURING 1916.**

| Class of Industry. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S. Aust. 1915. | W. A. 1916. | Tas. 1916. | C'wealth. |
|---|--------------------|------------------|------------------|-------------------|------------------|----------------|-------------------|
| MALES. | | | | | | | |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. | 387,507 | 353,137 | 78,740 | 66,834 | 20,650 | 21,478 | 928,346 |
| II. Treating oils and fats, animal, vegetable, etc. | 107,300 | 78,171 | 16,196 | 25,321 | 21,144 | 2,662 | 250,694 |
| III. Processes in stone, clay, glass, etc. | 697,835 | 460,568 | 51,013 | 131,461 | 50,008 | 14,988 | 1,405,923 |
| IV. Working in wood | 833,980 | 706,349 | 471,414 | 139,507 | 316,216 | 163,774 | 2,661,240 |
| V. Metal works, machinery, etc. | 4,040,439 | 2,382,244 | 847,380 | 1,091,705 | 428,239 | 181,419 | 8,971,426 |
| VI. Connected with food and drink, etc. | 1,414,497 | 1,269,686 | 1,464,207 | 304,182 | 195,470 | 140,701 | 4,788,743 |
| VII. Clothing and textile fa- brics, etc. | 916,104 | 1,081,185 | 209,323 | 129,311 | 59,613 | 44,763 | 2,440,299 |
| VIII. Books, paper, printing and engraving | 971,371 | 874,728 | 318,258 | 165,073 | 148,501 | 85,434 | 2,564,165 |
| IX. Musical instruments, etc. | 49,475 | 15,397 | ... | 1,692 | ... | ... | 66,564 |
| X. Arms and explosives | 239,277 | 83,599 | ... | 366 | ... | ... | 323,242 |
| XI. Vehicles and fittings, saddlery and harness, etc. | 442,474 | 434,312 | 95,557 | 120,296 | 57,229 | 36,020 | 1,185,888 |
| XII. Ship and boat building and repairing | 519,818 | 143,261 | 12,711 | 18,100 | 3,579 | 3,487 | 700,956 |
| XIII. Furniture, bedding and upholstery | 359,230 | 239,247 | 104,900 | 75,522 | 46,612 | 24,785 | 850,296 |
| XIV. Drugs, chemicals and by-products | 137,106 | 171,964 | 3,966 | 73,461 | 64,692 | 1,209 | 452,398 |
| XV. Surgical and other scien- tific instruments | 11,814 | 9,863 | 3,313 | 917 | 1,279 | ... | 27,186 |
| XVI. Jewellery, timepieces and platedware | 83,429 | 79,178 | 9,808 | 13,255 | 6,838 | 2,828 | 195,336 |
| XVII. Heat, light and power | 528,891 | 524,570 | 117,150 | 133,050 | 58,000 | 47,252 | 1,408,913 |
| XVIII. Leatherware, n.e.i. | 45,888 | 35,242 | 9,972 | 1,656 | 1,617 | ... | 93,775 |
| XIX. Minor wares, n.e.i. | 101,743 | 219,151 | 9,580 | 14,870 | 10,773 | 1,989 | 358,106 |
| Total | 11,888,028 | 9,161,852 | 3,823,488 | 2,506,579 | 1,520,760 | 772,789 | 29,673,496 |

* Exclusive of amount drawn by working proprietors.

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

| Class of Industry. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S. Aust. 1915. | W. A. 1916 | Tas. 1916. | C'wealth. |
|---|--------------------|---------------|------------------|-------------------|---------------|---------------|-----------|
| FEMALES. | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural & pastoral pursuits, etc. | 5,147 | 871 | 385 | 848 | ... | 30 | 7,281 |
| II. Treating oils and fats, animal, vegetable, etc. | 12,478 | 4,457 | 468 | 767 | 100 | 288 | 18,558 |
| III. Processes in stone, clay, glass, etc. | 3,421 | 4,306 | 335 | 291 | 536 | 20 | 8,909 |
| IV. Working in wood | 5,686 | 4,608 | 4,066 | 1,191 | 513 | 1,149 | 17,213 |
| V. Metal works, machinery, etc. | 24,974 | 16,765 | 4,375 | 3,196 | 1,822 | 417 | 51,549 |
| VI. Connected with food and drink, etc. | 204,264 | 184,695 | 41,913 | 15,503 | 9,379 | 12,994 | 468,748 |
| VII. Clothing and textile fabrics, etc. | 1,017,538 | 1,368,363 | 255,169 | 148,547 | 102,964 | 40,130 | 2,932,711 |
| VIII. Books, paper, printing and engraving | 133,190 | 119,501 | 35,290 | 19,089 | 13,842 | 4,358 | 325,270 |
| IX. Musical instruments, etc. | 1,822 | 295 | ... | ... | ... | ... | 2,117 |
| X. Arms and explosives | 180 | 53,061 | ... | ... | ... | ... | 53,241 |
| XI. Vehicles and fittings, saddlery & harness, etc. | 7,135 | 9,349 | 2,683 | 1,543 | 1,211 | 1,430 | 23,351 |
| XII. Ship and boat building and repairing | 356 | ... | ... | ... | ... | ... | 356 |
| XIII. Furniture, bedding, and upholstery | 26,578 | 15,379 | 5,256 | 1,134 | 959 | 984 | 50,290 |
| XIV. Drugs, chemicals, and by-products | 33,420 | 18,653 | 1,806 | 2,968 | 2,385 | 120 | 59,352 |
| XV. Surgical and other scientific instruments | 1,596 | 531 | 95 | ... | 100 | ... | 2,322 |
| XVI. Jewellery, timepieces and platedware | 6,417 | 4,016 | 946 | 393 | 25 | ... | 11,797 |
| XVII. Heat, light, and power | 3,150 | 28,798 | 1,310 | 1,377 | 118 | 338 | 35,091 |
| XVIII. Leatherware, n.e.i. | 11,512 | 10,849 | 1,792 | 470 | 210 | ... | 24,833 |
| XIX. Minor wares, n.e.i. | 26,953 | 29,996 | 1,877 | 1,234 | 1,875 | 420 | 62,355 |
| Total | 1,525,817 | 1,874,493 | 357,766 | 198,551 | 136,039 | 62,678 | 4,155,344 |

* Exclusive of amount drawn by working proprietors.

**AMOUNT* OF SALARIES AND WAGES PAID TO MALES AND FEMALES
IN FACTORIES IN CERTAIN STATES, 1911 to 1916.**

| Particulars. | N.S.W. | Victoria. | Q'land. | S.A. | W.A. | Tas. | C'wlth. |
|----------------------|--------------|-----------|-----------|-----------|-----------|---------|------------|
| MALES. | | | | | | | |
| 1911. Amount paid | £ 8,917,577 | 7,357,735 | ... | 2,430,263 | ... | 773,900 | ... |
| Per cent. on total | 88.76 | 82.57 | ... | 91.87 | ... | 93.51 | ... |
| Average per employee | £ 114.22 | 106.62 | ... | 113.66 | ... | 93.67 | ... |
| 1912. Amount paid | £ 10,263,733 | 8,388,613 | 3,386,191 | 2,647,842 | 2,024,318 | 798,098 | 27,528,795 |
| Per cent. on total | 88.71 | 83.04 | 91.54 | 92.25 | 93.34 | 93.31 | 87.99 |
| Average per employee | £ 122.50 | 115.18 | 106.57 | 121.41 | 152.02 | 100.85 | 118.86 |
| 1913. Amount paid | £ 11,323,791 | 8,925,814 | 3,744,050 | 2,809,066 | 2,068,212 | 826,358 | 29,697,291 |
| Per cent. on total | 89.28 | 83.30 | 91.87 | 92.57 | 93.37 | 93.54 | 88.37 |
| Average per employee | £ 127.76 | 118.94 | 112.95 | 127.43 | 146.79 | 105.09 | 123.32 |
| 1914. Amount paid | £ 11,296,572 | 9,252,336 | 3,890,472 | 2,734,603 | 2,199,961 | 782,300 | 30,146,244 |
| Per cent. on total | 89.18 | 83.35 | 92.14 | 92.81 | 93.92 | 93.60 | 88.40 |
| Average per employee | £ 130.98 | 123.84 | 113.39 | 131.21 | 152.31 | 109.24 | 126.86 |
| 1915. 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 | £ 130.98 | 128.76 | 118.03 | 122.92 | 141.93 | 106.97 | 128.02 |
| 1916. Amount paid | £ 11,868,028 | 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 | 132.92 | 155.80 | 116.10 | 133.58 |
| FEMALES. | | | | | | | |
| 1911. Amount paid | £ 1,130,079 | 1,553,284 | ... | 215,123 | ... | 53,692 | ... |
| Per cent. on total | 11.24 | 17.43 | ... | 8.13 | ... | 6.49 | ... |
| Average per employee | £ 43.10 | 41.16 | ... | 41.44 | ... | 34.98 | ... |
| 1912. Amount paid | £ 1,308,319 | 1,713,631 | 312,874 | 222,123 | 144,514 | 57,236 | 3,758,697 |
| Per cent. on total | 11.29 | 16.96 | 8.46 | 7.75 | 6.66 | 6.69 | 12.10 |
| Average per employee | £ 48.39 | 45.15 | 41.00 | 41.43 | 56.56 | 37.00 | 45.79 |
| 1913. Amount paid | £ 1,359,593 | 1,788,522 | 331,141 | 225,471 | 146,975 | 57,094 | 3,968,796 |
| Per cent. on total | 10.72 | 16.70 | 8.13 | 7.43 | 6.63 | 6.46 | 11.63 |
| Average per employee | £ 50.29 | 47.01 | 43.66 | 43.94 | 55.42 | 40.24 | 47.74 |
| 1914. Amount paid | £ 1,371,149 | 1,847,604 | 331,017 | 211,693 | 142,467 | 53,529 | 3,957,459 |
| Per cent. on total | 10.82 | 16.65 | 7.86 | 7.19 | 6.08 | 6.40 | 11.60 |
| Average per employee | £ 52.91 | 48.65 | 44.06 | 44.95 | 54.44 | 41.27 | 49.46 |
| 1915. 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 | £ 52.91 | 50.24 | 44.62 | 42.47 | 53.34 | 48.39 | 50.18 |
| 1916. 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 | 50.79 |

* Exclusive of amounts drawn by working proprietors. † Year ended 30th June, 1915, for New South Wales. ‡ See note † first table this section.

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

**DETAILS OF SALARIES AND WAGES PAID TO MANAGERS, OVERSEERS, Etc.,
AND OTHER EMPLOYEES IN FACTORIES DURING 1916.**

| 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. | £ | £ | £ | £ | £ | £ | £ |
| II. Treating oils and fats, animal, vegetable, etc. | 100,191 | 1,750 | 828,155 | 5,531 | 928,346 | 7,281 | 935,627 |
| III. Processes in stone, clay, glass, etc. | 57,150 | 4,047 | 193,544 | 14,511 | 250,694 | 18,558 | 269,252 |
| IV. Working in wood | 144,996 | 3,994 | 1,260,927 | 4,915 | 1,405,923 | 8,909 | 1,414,832 |
| V. Metal works, machinery, etc. | 318,598 | 15,367 | 2,342,642 | 1,846 | 2,661,240 | 17,213 | 2,678,453 |
| VI. Connected with food and drink, etc. | 770,166 | 27,817 | 8,201,260 | 23,732 | 8,971,426 | 51,549 | 9,022,975 |
| VII. Clothing and textile fabrics, etc. | 966,444 | 53,116 | 3,822,299 | 415,632 | 4,788,743 | 468,748 | 5,257,491 |
| VIII. Books, paper, printing and engraving | 379,902 | 163,813 | 2,060,397 | 2,768,898 | 2,440,299 | 2,932,711 | 5,373,010 |
| IX. Musical instruments, etc. | 471,874 | 50,479 | 2,092,291 | 274,791 | 2,564,165 | 325,270 | 2,889,435 |
| X. Arms and explosives | 8,512 | 1,137 | 58,052 | 980 | 66,564 | 2,117 | 68,681 |
| XI. Vehicles and fittings, saddlery and harness, etc. | 18,473 | 2,600 | 304,769 | 50,641 | 323,242 | 53,241 | 376,483 |
| XII. Ship and boat building and repairing | 119,615 | 10,499 | 1,066,273 | 12,852 | 1,185,888 | 23,351 | 1,209,239 |
| XIII. Furniture, bedding, & upholstery | 51,378 | 262 | 649,578 | 94 | 700,956 | 356 | 701,312 |
| XIV. Drugs, chemicals, and by-products | 67,261 | 9,419 | 783,035 | 40,871 | 850,296 | 50,290 | 900,586 |
| XV. Surgical & other scientific instruments | 94,963 | 8,686 | 357,435 | 50,666 | 452,398 | 59,352 | 511,750 |
| XVI. Jewellery, timepieces, and plated ware | 4,228 | 492 | 22,958 | 1,830 | 27,186 | 2,322 | 29,508 |
| XVII. Heat, light, and power | 17,733 | 3,582 | 177,603 | 8,215 | 195,336 | 11,797 | 207,133 |
| XVIII. Leatherware, n.e.i. | 242,725 | 6,800 | 1,166,188 | 28,291 | 1,408,913 | 35,091 | 1,444,004 |
| XIX. Minor wares, n.e.i. | 14,040 | 1,793 | 79,735 | 23,040 | 93,775 | 24,833 | 118,608 |
| | 39,717 | 4,237 | 318,389 | 58,118 | 353,106 | 62,355 | 420,461 |
| Total | 3,887,966 | 369,890 | 25,785,530 | 3,785,454 | 29,673,496 | 4,155,344 | 33,828,840 |
| Average paid per employee | 206.77 | 87.11 | 126.89 | 48.82 | 133.66 | 50.91 | 111.35 |

3. Value of Fuel and Light used in Factories.—The amount expended in factories on fuel and light is of considerable importance; in 1916 it amounted to £3,383,598. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £1,060,330; Class VI., Connected with Food, Drink, etc., £678,347; Class XVII., Heat, Light, Power, etc., £576,901, of which amount £484,353 was expended on generating electric light and power; and Class III., £402,566, of which £282,364 was represented in brick and pottery works, etc., and glass

factories. The following tables shew the value of fuel and light used in the different classes of industry in the several States of the Commonwealth at latest date and of the total used for each of the last six years :—

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH, 1916.

| Class of Industry. | N.S.W. 1915-16 | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'with. |
|---|-------------------|---------------|------------------|---------------|---------------|---------------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 48,105 | 36,104 | 14,151 | 7,873 | 2,162 | 1,694 | 110,089 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 26,221 | 14,945 | 2,545 | 6,596 | 1,168 | 328 | 51,803 |
| III. Processes in stone, clay, glass, etc. ... | 209,186 | 125,886 | 5,598 | 42,213 | 14,922 | 4,761 | 409,566 |
| IV. Working in wood ... | 24,785 | 17,161 | 8,396 | 3,893 | 2,392 | 2,129 | 58,756 |
| V. Metal wks. machinery, etc. ... | 536,854 | 173,972 | 32,689 | 217,212 | 28,760 | 70,813 | 1,060,390 |
| VI. Connected with food and drink, etc. ... | 209,142 | 186,341 | 182,031 | 51,297 | 30,717 | 18,819 | 678,347 |
| VII. Clothing and textile fabrics, etc. ... | 47,628 | 76,820 | 8,823 | 9,128 | 3,720 | 2,204 | 148,323 |
| VIII. Books, paper, printing, and engraving ... | 43,009 | 42,441 | 14,625 | 6,959 | 5,551 | 1,737 | 114,322 |
| IX. Musical instruments, etc. ... | 250 | 233 | ... | 32 | ... | ... | 515 |
| X. Arms and explosives ... | 4,932 | 6,188 | ... | 3 | ... | ... | 11,123 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 15,284 | 14,414 | 2,264 | 5,365 | 3,091 | 1,706 | 42,124 |
| XII. Ship and boat building and repairing ... | 16,782 | 3,289 | 257 | 342 | 21 | 59 | 20,750 |
| XIII. Furniture, bedding, and upholstery ... | 8,868 | 7,589 | 3,225 | 2,025 | 1,480 | 695 | 23,882 |
| XIV. Drugs, chemicals, and by-products ... | 16,592 | 16,619 | 485 | 9,411 | 5,541 | 222 | 48,870 |
| XV. Surgical and other scientific instruments ... | 331 | 426 | 211 | 27 | 70 | ... | 1,065 |
| XVI. Jewellery, timepieces, and plated ware ... | 1,800 | 2,751 | 538 | 506 | 202 | 67 | 5,864 |
| XVII. Heat, light, and power ... | 313,199 | 87,958 | 34,277 | 36,633 | 93,382 | 11,452 | 576,901 |
| XVIII. Leatherware, n.e.i. ... | 1,047 | 1,509 | 261 | 40 | 41 | ... | 2,898 |
| XIX. Minor wares, n.e.i. ... | 4,175 | 20,320 | 78 | 176 | 303 | 18 | 25,070 |
| Total ... | 1,528,220 | 834,966 | 310,454 | 399,731 | 193,523 | 116,704 | 3,383,598 |

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1911 to 1916.

| Year. | N.S.W. | Victoria. | Q'land. | S.A. | W.A. | Tas. | C'wealth. |
|-----------|------------|-----------|---------|---------|---------|---------|-----------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1911 ... | 1,242,613 | 637,497 | 222,560 | 338,565 | 176,659 | 140,816 | 2,758,710 |
| 1912 ... | 1,360,141 | 683,376 | 261,978 | 363,403 | 191,025 | 187,461 | 3,047,384 |
| 1913 ... | 1,371,425 | 739,835 | 328,519 | 417,280 | 198,161 | 185,681 | 3,240,901 |
| 1914 ... | 1,364,186* | 804,325 | 335,219 | 406,987 | 210,192 | 189,012 | 3,309,921 |
| 1915 ... | 1,364,186* | 834,966 | 300,716 | 399,731 | 187,121 | 110,803 | 3,197,523 |
| 1916† ... | 1,528,220 | 834,966 | 310,454 | 399,731 | 193,523 | 116,704 | 3,383,598 |

* Year ended 30th June, 1915.

† See note † 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 1916 was £105,180,445, which represents 60.95 per cent. of the total value of the finished products. (See next paragraph.) The following table shews 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, 1916.

| Class of Industry. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'wlth. |
|---|--------------------|---------------|------------------|---------------|---------------|---------------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 5,105,713 | 3,606,032 | 1,839,057 | 668,712 | 198,126 | 182,578 | 11,600,218 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 1,002,745 | 559,419 | 75,585 | 131,746 | 106,315 | 9,403 | 1,885,216 |
| III. Processes in stone, clay, glass, etc. ... | 418,683 | 200,961 | 17,015 | 61,019 | 19,370 | 5,788 | 725,836 |
| IV. Working in wood ... | 2,119,551 | 1,105,174 | 738,107 | 519,249 | 87,800 | 109,104 | 4,678,985 |
| V. Metal wks. machinery, etc. ... | 9,854,145 | 3,135,179 | 880,259 | 3,452,227 | 445,579 | 577,674 | 18,345,063 |
| VI. Connected with food and drink, etc. ... | 17,172,757 | 11,657,985 | 10,840,027 | 2,539,843 | 1,184,804 | 1,106,896 | 44,502,312 |
| VII. Clothing and textile fabrics, etc. ... | 3,902,436 | 5,710,117 | 1,059,272 | 480,030 | 334,000 | 148,228 | 11,634,083 |
| VIII. Books, paper, printing, and engraving ... | 1,193,036 | 1,026,496 | 252,581 | 198,859 | 151,681 | 72,331 | 2,894,984 |
| IX. Musical instruments, etc. ... | 69,255 | 10,343 | ... | 658 | ... | ... | 80,256 |
| X. Arms and explosives ... | 58,229 | 338,875 | ... | 701 | ... | ... | 397,805 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 445,449 | 519,207 | 125,560 | 125,971 | 80,562 | 45,796 | 1,342,545 |
| XII. Ship and boat building and repairing ... | 190,744 | 98,730 | 9,822 | 9,591 | 2,827 | 3,069 | 314,783 |
| XIII. Furniture, bedding, and upholstery ... | 555,423 | 419,782 | 130,241 | 77,257 | 70,078 | 27,400 | 1,280,181 |
| XIV. Drugs, chemicals, and by-products ... | 912,674 | 789,583 | 16,427 | 341,455 | 279,958 | 16,151 | 2,356,248 |
| XV. Surgical and other scientific instruments ... | 7,023 | 9,796 | 2,772 | 590 | 1,652 | ... | 21,833 |
| XVI. Jewellery, timepieces, and plated ware ... | 103,274 | 156,433 | 12,254 | 16,601 | 9,208 | 667 | 298,437 |
| XVII. Heat, light, and power ... | 646,245 | 474,147 | 73,388 | 62,840 | 42,491 | 35,986 | 1,335,097 |
| XVIII. Leatherware, n.e.i. ... | 174,462 | 179,785 | 42,481 | 5,283 | 2,686 | ... | 404,697 |
| XIX. Minor wares, n.e.i. ... | 295,235 | 730,699 | 13,075 | 24,804 | 16,501 | 1,552 | 1,081,866 |
| Total ... | 44,227,079 | 30,728,743 | 16,127,926 | 8,720,436 | 3,033,638 | 2,342,623 | 105,180,445 |

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £44,502,312. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £18,345,063 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £21,833. The following table gives particulars for the six years ended 1916:—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1911 to 1916.

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|-----------|-------------|------------|------------|-----------|-----------|-----------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1911 ... | 33,670,951 | 25,029,525 | 8,788,335 | 7,503,979 | 2,059,346 | 1,952,240 | 79,004,376 |
| 1912 ... | 37,122,441 | 27,002,302 | 11,078,954 | 8,199,110 | 2,586,195 | 2,286,618 | 88,275,620 |
| 1913 ... | 40,537,476 | 28,465,699 | 14,183,539 | 8,354,258 | 2,782,839 | 2,083,666 | 96,407,477 |
| 1914 ... | 42,559,370* | 28,986,694 | 15,710,794 | 7,931,175 | 2,608,312 | 1,992,719 | 99,789,064 |
| 1915 ... | 42,559,370* | 30,728,743 | 15,939,583 | 8,720,436 | 2,634,700 | 2,193,250 | 102,776,082 |
| 1916† ... | 44,227,079 | 30,728,743 | 16,127,926 | 8,720,436 | 3,033,638 | 2,342,623 | 105,180,445 |

* Year ended 30th June, 1915.

† See note † first table this section.

5. Total Value of Output of Manufacturing Industries.—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State is shown in the following table. 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, 1916.

| Class of Industry. | N.S.W. 1915-6. | Victoria. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'w'lt'h. |
|---|-------------------|--------------------|------------------|---------------|---------------|---------------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural & pastoral pursuits, etc. | 6,083,338 | 4,503,751 | 2,344,981 | 838,118 | 255,036 | 227,846 | 14,253,070 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 1,409,467 | 858,554 | 129,791 | 182,235 | 152,527 | 13,177 | 2,745,751 |
| III. Processes in stone, clay, glass, etc. ... | 1,862,081 | 1,060,652 | 126,138 | 301,247 | 100,415 | 36,156 | 3,486,689 |
| IV. Working in wood ... | 3,327,180 | 2,204,757 | 1,487,405 | 757,427 | 578,525 | 346,985 | 8,702,279 |
| V. Metal works, mach'y, etc. | 17,518,290 | 6,705,272 | 2,113,044 | 5,618,230 | 986,174 | 1,545,638 | 34,486,648 |
| VI. Connected with food and drink, etc. ... | 21,730,548 | 15,514,965 | 15,021,253 | 3,342,683 | 1,798,771 | 1,518,417 | 58,926,637 |
| VII. Clothing and textile fabrics, etc. ... | 7,132,665 | 9,906,499 | 1,931,260 | 911,646 | 566,516 | 300,384 | 20,748,970 |
| VIII. Books, paper, printing, and engraving ... | 3,019,964 | 2,829,505 | 925,909 | 502,450 | 453,043 | 200,358 | 7,931,229 |
| IX. Musical instruments, etc. | 148,075 | 27,310 | ... | 2,753 | ... | ... | 178,138 |
| X. Arms and explosives ... | 356,529 | 537,170 | ... | 948 | ... | ... | 894,647 |
| XI. Vehicles and fittings, saddlery and harness, etc. | 1,129,517 | 1,188,035 | 329,772 | 313,293 | 168,255 | 103,714 | 3,232,586 |
| XII. Ship and boat building and repairing ... | 797,608 | 296,995 | 30,824 | 35,218 | 8,674 | 8,021 | 1,177,340 |
| XIII. Furniture, bedding, and upholstery ... | 1,108,604 | 825,541 | 316,986 | 185,464 | 133,302 | 73,037 | 2,642,934 |
| XIV. Drugs, chemicals, and by-products ... | 1,484,730 | 1,333,729 | 44,224 | 546,145 | 406,471 | 20,034 | 3,835,333 |
| XV. Surgical and other scientific instruments ... | 30,458 | 29,498 | 9,372 | 2,240 | 4,663 | ... | 76,231 |
| XVI. Jewellery, timepieces, and plated ware ... | 242,923 | 313,990 | 32,096 | 40,794 | 18,414 | 5,834 | 654,051 |
| XVII. Heat, light, and power ... | 2,825,446 | 1,922,353 | 602,432 | 358,275 | 335,050 | 170,913 | 6,214,469 |
| XVIII. Leatherware, n.e.i. ... | 281,288 | 286,920 | 63,573 | 8,609 | 6,011 | ... | 646,431 |
| XIX. Minor wares, n.e.i. ... | 501,153 | 1,120,597 | 31,964 | 46,448 | 35,264 | 6,016 | 1,741,442 |
| Total ... | 70,989,864 | 51,466,033 | 25,541,024 | 13,994,223 | 6,007,111 | 4,576,530 | 172,574,845 |

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 £70,989,864, or 41.14 per cent. on the total for the Commonwealth. The next State in order of value is Victoria, which produced 29.82 per cent.; the value of the output of Queensland was 14.80 per cent.; of South Australia 8.11 per cent.; of Western Australia 3.48 per cent.; and of Tasmania 2.65 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 shews the value of output of factories, value per employee, and value per head of mean population in each State during the six years ended 1916:—

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1911 TO 1916.

| Year. | N.S.W. | Victoria. | Q'land. | S.A. | W.A. | Tas. | C'wealth. |
|-----------|-------------|------------|------------|------------|-----------|-----------|-------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1911 ... | 54,346,011 | 41,747,863 | 15,675,662 | 12,416,381 | 5,311,066 | 3,525,087 | 133,022,090 |
| 1912 ... | 61,163,328 | 45,410,773 | 18,798,904 | 13,438,218 | 6,092,268 | 3,871,916 | 148,775,407 |
| 1913 ... | 65,672,495 | 47,936,647 | 23,688,789 | 13,998,670 | 6,481,331 | 3,782,831 | 161,560,763 |
| 1914 ... | 68,253,332* | 49,439,985 | 25,491,955 | 13,215,970 | 6,381,512 | 3,667,754 | 166,450,508 |
| 1915 ... | 68,253,332* | 51,466,093 | 25,444,812 | 13,994,223 | 5,712,793 | 4,215,447 | 169,086,700 |
| 1916† ... | 70,989,864 | 51,466,093 | 25,541,024 | 13,994,223 | 6,007,111 | 4,576,530 | 172,574,845 |

PER EMPLOYEE.†

| | | | | | | | |
|-----------|------|-----|-----|-----|-----|-----|-----|
| | £ | £ | £ | £ | £ | £ | £ |
| 1911 ... | 500 | 373 | 422 | 445 | 336 | 342 | 427 |
| 1912 ... | 529 | 391 | 459 | 472 | 372 | 369 | 454 |
| 1913 ... | 545 | 404 | 559 | 491 | 375 | 387 | 479 |
| 1914 ... | 585* | 418 | 589 | 492 | 362 | 411 | 502 |
| 1915 ... | 585* | 452 | 605 | 549 | 390 | 501 | 527 |
| 1916† ... | 610 | 452 | 639 | 549 | 474 | 547 | 545 |

PER HEAD OF MEAN POPULATION.

| | | | | | | | |
|-----------|--------|-------|-------|-------|-------|-------|-------|
| | | | | | | | |
| 1911 ... | 32.70 | 31.62 | 25.52 | 30.19 | 18.52 | 18.52 | 29.62 |
| 1912 ... | 35.22 | 33.48 | 29.77 | 31.87 | 20.21 | 20.20 | 32.03 |
| 1913 ... | 36.32 | 34.41 | 36.30 | 32.29 | 20.64 | 19.30 | 33.67 |
| 1914 ... | 36.67* | 34.73 | 37.77 | 30.04 | 19.73 | 18.49 | 33.78 |
| 1915 ... | 33.67* | 36.07 | 37.04 | 31.85 | 17.72 | 21.15 | 34.21 |
| 1916† ... | 37.95 | 36.07 | 37.69 | 31.85 | 19.09 | 23.09 | 34.97 |

* Year ended 30th June, 1915.

† Including working proprietors.

‡ See note ‡ 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 table shews the value added in this manner in each State for the various classes of factories:—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1916.

| Class of Industry. | N.S.W. 1915-16. | Victoria. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | Cwealth. |
|---|--------------------|--------------------|------------------|---------------|---------------|---------------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 977,625 | 897,719 | 505,924 | 169,406 | 56,910 | 45,268 | 2,652,852 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 406,722 | 299,135 | 54,203 | 50,489 | 46,212 | 3,774 | 860,535 |
| III. Processes in stone, clay, glass, etc. ... | 1,443,398 | 859,691 | 109,123 | 237,228 | 81,045 | 30,368 | 2,760,853 |
| IV. Working in wood ... | 1,207,629 | 1,099,583 | 749,298 | 238,178 | 490,725 | 237,881 | 4,023,294 |
| V. Metal works, machinery, etc. ... | 7,664,145 | 3,570,093 | 1,232,785 | 2,166,003 | 540,595 | 967,964 | 16,141,585 |
| VI. Connected with food and drink, etc. ... | 4,557,791 | 3,856,980 | 4,181,226 | 802,840 | 613,967 | 411,521 | 14,424,325 |
| VII. Clothing and textile fabrics, etc. ... | 3,230,229 | 4,196,382 | 871,988 | 431,616 | 232,516 | 152,156 | 9,114,887 |
| VIII. Books, paper, printing, and engraving ... | 1,826,928 | 1,803,009 | 673,328 | 303,591 | 301,362 | 128,027 | 5,036,245 |
| IX. Musical instruments, etc. ... | 78,820 | 16,967 | ... | 2,095 | ... | ... | 97,892 |
| X. Arms and explosives ... | 298,300 | 198,295 | ... | 247 | ... | ... | 496,842 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 684,068 | 668,828 | 204,213 | 187,322 | 87,693 | 57,918 | 1,890,041 |
| XII. Ship and boat building and repairing ... | 606,864 | 198,265 | 21,002 | 25,627 | 5,847 | 4,952 | 862,557 |
| XIII. Furniture, bedding, and upholstery ... | 553,181 | 405,759 | 186,745 | 108,207 | 63,224 | 45,637 | 1,362,753 |
| XIV. Drugs, chemicals, and by-products ... | 572,066 | 544,146 | 27,797 | 204,690 | 126,513 | 3,883 | 1,479,085 |
| XV. Surgical and other scientific instruments ... | 23,435 | 19,702 | 6,600 | 1,650 | 3,011 | ... | 54,398 |
| XVI. Jewellery, timepieces, and platedware ... | 139,649 | 157,557 | 19,842 | 24,193 | 9,206 | 5,167 | 355,614 |
| XVII. Heat, light, and power ... | 2,179,201 | 1,448,206 | 529,044 | 295,435 | 292,559 | 134,927 | 4,879,372 |
| XVIII. Leatherware, n.e.i. ... | 106,826 | 107,135 | 21,092 | 3,326 | 3,325 | ... | 241,704 |
| XIX. Minor wares, n.e.i. ... | 205,918 | 389,898 | 18,889 | 21,644 | 18,763 | 4,464 | 659,576 |
| Total ... | 26,762,785 | 20,737,350 | 9,413,098 | 5,273,787 | 2,973,473 | 2,233,907 | 67,394,400 |

The amount of the value added in each State is not in the same order as in the case of value of output, the four most important classes being V., VI., VII., and VIII., in the order named. The value added to raw material by process of manufacture and amount per employee and per head of mean population is shewn in the following statement for the years 1911 to 1916:—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1911 to 1916.

| Year. | N.S.W. | Victoria. | Queensland. | S. Aust. | W. Aust. | Tas. | C'wealth. |
|----------------------|-------------|------------|-------------|-----------|-----------|-----------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1911 ... | 20,675,060 | 16,718,338 | 6,887,327 | 4,912,402 | 3,251,740 | 1,573,847 | 54,017,714 |
| 1912 ... | 24,040,887 | 18,408,471 | 7,719,950 | 5,239,108 | 3,506,073 | 1,585,298 | 60,499,787 |
| 1913 ... | 25,135,019 | 19,470,948 | 9,505,250 | 5,644,412 | 3,698,492 | 1,699,165 | 65,153,286 |
| 1914 ... | 25,693,962* | 20,453,291 | 9,781,161 | 5,284,795 | 3,773,200 | 1,675,035 | 66,661,444 |
| 1915 ... | 25,693,962* | 20,737,350 | 9,505,229 | 5,273,787 | 3,078,093 | 2,022,197 | 66,310,618 |
| 1916† | 26,762,785 | 20,737,350 | 9,413,098 | 5,273,787 | 2,973,473 | 2,233,907 | 67,394,400 |
| PER EMPLOYEE. | | | | | | | |
| | £ | £ | £ | £ | £ | £ | £ |
| 1911 ... | 190 | 149 | 185 | 176 | 206 | 153 | 173 |
| 1912 ... | 208 | 159 | 189 | 184 | 214 | 159 | 185 |
| 1913 ... | 209 | 164 | 224 | 198 | 214 | 174 | 193 |
| 1914 ... | 220* | 173 | 226 | 197 | 214 | 188 | 201 |
| 1915 ... | 220* | 182 | 226 | 207 | 210 | 240 | 207 |
| 1916† | 230 | 182 | 235 | 207 | 235 | 267 | 213 |

*. Year ended 30th June, 1915.

† See note ‡ first table this section.

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN
COMMONWEALTH, 1911 TO 1916—Continued.**

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|------------------------------|---------|-----------|---------|----------|----------|-----------|-----------|
| PER HEAD OF MEAN POPULATION. | | | | | | | |
| 1911 ... | £ 12.44 | £ 12.66 | £ 11.21 | £ 11.95 | £ 11.34 | £ 8.26 | £ 12.03 |
| 1912 ... | 13.84 | 13.57 | 12.22 | 12.43 | 11.63 | 8.27 | 13.03 |
| 1913 ... | 13.90 | 13.98 | 14.57 | 13.02 | 11.78 | 8.67 | 13.56 |
| 1914 ... | 13.50* | 14.37 | 14.49 | 12.01 | 11.67 | 8.44 | 13.53 |
| 1915 ... | 13.80* | 14.54 | 13.84 | 12.00 | 9.55 | 10.14 | 13.41 |
| 1916† ... | 14.31 | 14.54 | 13.89 | 12.00 | 9.45 | 11.27 | 13.66 |

* Year ended 30th June, 1915. † See note † first table this section.

As the total value of the output for the Commonwealth was estimated at £172,574,845, there remained, after payment of £105,180,445, the value of the raw materials used, of £33,828,840 for salaries and wages, and of £3,383,598 for fuel, the sum of £30,181,962 to provide for all other expenditure and profits. The following table gives corresponding particulars for each State, expressed absolutely, and as percentages of the total value of the output:—

**VALUE OF OUTPUT AND COST OF PRODUCTION IN COMMONWEALTH
FACTORIES, 1916.**

| State. | Raw Materials Used. | Fuel and Light. | Salaries and Wages. | All other Expenditure Interest, and Profits. | Total Value of Output. |
|-----------------------------|---------------------------|--------------------|------------------------|---|---------------------------|
| VALUE AND COST, ETC. | | | | | |
| New South Wales, 1915-16... | £ 44,227,079 | £ 1,528,220 | £ 13,413,845 | £ 11,820,720 | £ 70,989,864 |
| Victoria, 1915 ... | 30,728,743 | 834,966 | 11,036,345 | 8,866,039 | 51,466,093 |
| Queensland, 1916 ... | 16,127,926 | 310,454 | 4,181,254 | 4,921,390 | 25,541,024 |
| South Australia, 1915 ... | 8,720,436 | 399,731 | 2,705,130 | 2,168,926 | 13,994,223 |
| Western Australia, 1916 ... | 3,033,638 | 193,523 | 1,656,799 | 1,123,151 | 6,007,111 |
| Tasmania, 1916 ... | 2,342,623 | 116,704 | 835,467 | 1,281,736 | 4,576,530 |
| Commonwealth ... | 105,180,445 | 3,383,598 | 33,828,840 | 30,181,962 | 172,574,845 |

PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.

| | % | % | % | % | % |
|-----------------------------|-------|------|-------|-------|--------|
| New South Wales, 1915-16... | 62.30 | 2.15 | 18.90 | 16.65 | 100.00 |
| Victoria, 1915 ... | 59.71 | 1.62 | 21.44 | 17.23 | 100.00 |
| Queensland, 1916 ... | 63.15 | 1.22 | 16.37 | 19.26 | 100.00 |
| South Australia, 1915 ... | 62.31 | 2.86 | 19.33 | 15.50 | 100.00 |
| Western Australia, 1916 ... | 50.50 | 3.22 | 27.58 | 18.70 | 100.00 |
| Tasmania, 1916 ... | 51.19 | 2.55 | 18.26 | 28.00 | 100.00 |
| Commonwealth ... | 60.95 | 1.96 | 19.60 | 17.49 | 100.00 |

§ 7. Land, Buildings, Plant and Machinery.

1. **General.**—As an indication of the permanent character and stability of the industries which have been established in the Commonwealth, it may be noted that the values of land and buildings and of plant and machinery used in the factories are rapidly increasing. Thus, for the whole Commonwealth the total value of land and buildings and plant and machinery has increased from 1911 to 1916 by £20,685,100, i.e., from £63,906,846 to £84,591,946, or at the rate of £4,137,020 per annum.

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

VALUE OF LAND, BUILDINGS, PLANT, AND MACHINERY IN CONNECTION WITH MANUFACTURING INDUSTRIES, 1916.

| Value of— | N.S.W. 1915-16. | Victoria. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'with. |
|-------------------------|--------------------|--------------------|-------------------|-------------------|-------------------|------------------|-------------------|
| | £ | £ | £ | £ | £ | £ | £ |
| Land and buildings ... | 17,770,517 | 11,450,123 | 5,014,824 | 3,072,784 | 2,247,505 | 1,130,602 | 40,696,355 |
| Plant and machinery ... | 18,211,104 | 11,068,949 | 7,543,873 | 2,990,702 | 2,817,863 | 1,263,100 | 43,895,591 |
| Total ... | 35,981,621 | 22,529,072 | 12,558,697 | 6,063,486 | 5,065,368 | 2,393,702 | 84,591,946 |

The total capital invested in land, buildings, plant and machinery in manufacturing industries in the Commonwealth during the year 1916 was approximately £84,591,946 (or £17 2s. 11d. per head of population); of that sum £40,696,355 was invested in land and buildings occupied as manufactories, the remaining £43,895,591 being the value of the plant and machinery used in connection therewith.

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

(i.) *Total Value in Commonwealth, 1911 to 1916.* The following table shews for the whole Commonwealth the approximate values of land and buildings occupied in connection with manufacturing industries of various classes during each year from 1911 to 1916 inclusive:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH, 1911 to 1916.

| Class of Industry. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 978,978 | 1,004,221 | 1,014,763 | 1,063,549 | 1,069,890 | 1,002,686 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 445,499 | 449,453 | 452,415 | 466,373 | 465,757 | 518,932 |
| III. Processes in stone, clay, glass, etc. ... | 1,228,889 | 1,382,062 | 1,593,769 | 1,679,050 | 1,666,097 | 1,620,520 |
| IV. Working in wood ... | 1,668,045 | 1,923,963 | 2,184,257 | 2,244,905 | 2,146,909 | 2,036,786 |
| V. Metal works, machinery, etc. ... | 5,000,274 | 5,437,718 | 5,846,225 | 6,242,968 | 6,370,355 | 6,583,452 |
| VI. Connected with food & drink, etc. ... | 8,167,496 | 8,259,066 | 8,656,547 | 9,800,457 | 9,852,479 | 10,508,926 |
| VII. Clothing and textile fabrics, etc. ... | 4,601,924 | 4,928,474 | 5,188,631 | 5,270,374 | 5,244,627 | 5,239,362 |
| VIII. Books, paper, printing, and engraving ... | 2,964,466 | 3,150,049 | 3,388,072 | 3,521,164 | 3,546,017 | 3,824,069 |
| IX. Musical instruments, etc. ... | 82,168 | 85,731 | 88,136 | 83,375 | 83,430 | 82,695 |
| X. Arms and explosives ... | 41,462 | 112,300 | 184,772 | 179,723 | 194,149 | 212,267 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 1,453,077 | 1,654,488 | 1,835,221 | 1,824,018 | 1,825,999 | 1,822,565 |
| XII. Ship & boat building & repairing ... | 1,163,299 | 1,261,647 | 1,113,243 | 1,127,521 | 1,134,530 | 1,126,754 |
| XIII. Furniture, bedding & upholstery ... | 893,408 | 1,043,680 | 1,149,120 | 1,117,699 | 1,094,646 | 1,075,547 |
| XIV. Drugs, chemicals & by-products ... | 760,441 | 823,429 | 831,892 | 929,933 | 955,995 | 1,013,577 |
| XV. Surgical and other scientific instruments ... | 61,703 | 59,308 | 70,968 | 64,263 | 67,021 | 70,536 |
| XVI. Jewellery, timepieces, & plated-ware ... | 300,717 | 344,306 | 353,900 | 345,018 | 344,452 | 325,126 |
| XVII. Heat, light, and power ... | 2,320,348 | 2,511,317 | 2,517,179 | 2,717,502 | 2,775,148 | 3,150,513 |
| XVIII. Leatherware, n.e.i. ... | 111,506 | 120,646 | 133,283 | 132,777 | 137,666 | 137,391 |
| XIX. Minor wares, n.e.i. ... | 250,550 | 257,298 | 270,307 | 317,417 | 343,529 | 344,651 |
| Total ... | 32,494,250 | 34,809,156 | 36,872,720 | 39,128,176 | 39,318,696 | 40,696,355 |

As shewn in the above table, the total net increase during the five years was £3,202,105, or an annual average of £1,640,421. The largest increases were in Classes VI., V., and VIII., and amounted to £2,341,430, £1,583,178, and £859,603 respectively.

(ii.) *Value in each State.* The following table gives similar information for each State up to latest date :—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1916.

| Class of Industry. | N.S.W. 1915-16. | Victoria. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'w'lth. |
|---|--------------------|--------------------|------------------|---------------|---------------|---------------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | 387,749 | 400,018 | 70,568 | 92,180 | 37,769 | 14,403 | 1,002,686 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 291,466 | 112,714 | 28,458 | 66,629 | 15,440 | 4,225 | 518,932 |
| III. Processes in stone, clay, glass, etc. ... | 894,428 | 459,673 | 66,700 | 113,171 | 59,363 | 27,185 | 1,620,520 |
| IV. Working in wood... .. | 943,987 | 394,487 | 225,660 | 153,019 | 242,068 | 77,555 | 2,036,786 |
| V. Metal works, machinery, etc. ... | 3,162,194 | 1,536,579 | 658,692 | 567,849 | 598,938 | 59,150 | 6,583,452 |
| VI. Connected with food and drink, etc. ... | 3,557,208 | 2,720,587 | 2,435,943 | 747,649 | 442,682 | 604,857 | 10,508,926 |
| VII. Clothing and textile fabrics, etc. ... | 2,175,606 | 2,012,234 | 441,911 | 286,294 | 197,884 | 125,433 | 5,239,362 |
| VIII. Books, paper, printing and engraving ... | 1,731,074 | 975,545 | 486,228 | 334,840 | 246,707 | 49,575 | 3,824,069 |
| IX. Musical instruments, etc. ... | 56,600 | 24,395 | ... | 1,700 | ... | ... | 83,635 |
| X. Arms and explosives ... | 89,044 | 119,723 | ... | 3,500 | ... | ... | 212,267 |
| XI. Vehicles and fittings, saddlery and harness, etc.... | 705,395 | 559,343 | 179,192 | 200,886 | 109,694 | 68,055 | 1,822,565 |
| XII. Ship and boat building and repairing ... | 825,833 | 220,383 | 10,093 | 60,705 | 4,815 | 4,925 | 1,126,754 |
| XIII. Furniture, bedding and upholstery ... | 464,985 | 327,387 | 111,839 | 75,494 | 69,595 | 26,247 | 1,075,547 |
| XIV. Drugs, chemicals, and by-products ... | 408,779 | 342,723 | 10,860 | 160,755 | 84,060 | 6,400 | 1,013,577 |
| XV. Surgical and other scientific instruments ... | 34,115 | 20,151 | 8,004 | 2,416 | 5,850 | ... | 70,536 |
| XVI. Jewellery, timepieces, and platedware ... | 124,695 | 130,935 | 23,091 | 21,045 | 19,105 | 13,255 | 325,126 |
| XVII. Heat, light, and power ... | 1,705,435 | 902,573 | 232,395 | 164,147 | 99,886 | 46,078 | 3,150,513 |
| XVIII. Leatherware, n.e.i. ... | 62,586 | 58,115 | 10,600 | 2,190 | 3,900 | ... | 137,391 |
| XIX. Minor wares, n.e.i. ... | 149,338 | 142,559 | 14,590 | 18,315 | 16,699 | 3,150 | 344,651 |
| Total | 17,770,517 | 11,460,123 | 5,014,824 | 3,072,784 | 2,247,505 | 1,130,602 | 40,696,355 |

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £10,508,926, or 25.82 per cent. on the total value. The next in order of importance were Classes V., VII., VIII., and XVII., in which the values were £6,583,452, £5,239,362, £3,824,069, and £3,150,513 respectively. The sum of the values for the five classes mentioned amounted to £29,306,322, or 72.01 per cent. on the total value for all classes.

(iii.) *Total Value in each State, 1911 to 1916.* The following table shews the total value of land and buildings occupied as manufactories in each State at the end of each year from 1911 to 1916 inclusive :—

**TOTAL VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES
IN EACH STATE, 1911 to 1916.**

| Year. | N.S.W. | Victoria. | Queensland. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|---------|-------------|------------|-------------|-----------|-----------|-----------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1911... | 13,474,455 | 9,921,520 | 3,277,776 | 2,950,170 | 1,819,342 | 1,050,987 | 32,494,250 |
| 1912... | 14,765,810 | 10,362,661 | 3,524,991 | 3,150,834 | 1,910,372 | 1,094,488 | 34,809,156 |
| 1913... | 15,792,105 | 10,753,309 | 3,923,584 | 3,261,242 | 2,036,769 | 1,105,711 | 36,872,720 |
| 1914... | 16,843,698* | 11,248,120 | 4,434,336 | 3,047,791 | 2,409,517 | 1,144,714 | 39,128,176 |
| 1915... | 16,843,698* | 11,460,123 | 4,446,405 | 3,072,784 | 2,363,262 | 1,132,424 | 39,318,696 |
| 1916† | 17,770,517 | 11,460,123 | 5,014,824 | 3,072,784 | 2,247,505 | 1,130,602 | 40,696,355 |

* Year ended 30th June, 1915.

† See note † first table this section.

It will be seen that since 1911 there has been a general increase throughout the Commonwealth. The States shewing the largest growth were New South Wales, with an average increase per annum for four and a-half years of £954,682, Victoria for four years £384,651, and Queensland with an average of £347,410 for five years.

3. Value of Plant and Machinery.—(i.) *Total Value in Commonwealth, 1911 to 1916.* The following table shews for the whole Commonwealth the approximate value of plant and machinery used in factories during each year from 1911 to 1916 inclusive:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH, 1911 to 1916.

| Class of Industry. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | £ 877,820 | £ 926,966 | £ 985,619 | £ 974,556 | £ 971,841 | £ 965,932 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 435,315 | 417,231 | 444,502 | 469,680 | 545,796 | 576,877 |
| III. Processes in stone, clay, glass, etc. ... | 1,299,774 | 1,491,383 | 1,717,544 | 1,869,446 | 1,900,086 | 1,866,993 |
| IV. Working in wood ... | 2,207,703 | 2,455,436 | 2,664,508 | 2,737,527 | 2,611,407 | 2,806,553 |
| V. Metal works, machinery, etc. ... | 5,722,956 | 6,308,356 | 6,879,461 | 7,630,150 | 7,651,160 | 8,494,093 |
| VI. Connected with food and drink, etc. ... | 8,570,565 | 9,029,735 | 9,650,298 | 10,782,825 | 10,914,862 | 11,654,182 |
| VII. Clothing and textile fabrics, etc. ... | 1,538,062 | 1,620,437 | 1,746,713 | 1,774,910 | 1,798,554 | 1,846,758 |
| VIII. Books, paper, printing, and engraving ... | 2,481,999 | 2,628,039 | 2,814,226 | 2,974,120 | 2,987,190 | 3,054,941 |
| IX. Musical instruments, etc. ... | 17,924 | 20,960 | 22,630 | 19,030 | 19,119 | 21,191 |
| X. Arms and explosives ... | 56,255 | 158,823 | 190,060 | 216,581 | 228,031 | 228,210 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 283,470 | 329,933 | 374,371 | 395,463 | 411,295 | 421,416 |
| XII. Ship and boat building, and repairing ... | 478,012 | 597,783 | 725,934 | 764,782 | 768,159 | 511,237 |
| XIII. Furniture, bedding, and upholstery ... | 177,924 | 207,211 | 235,068 | 238,547 | 244,796 | 251,822 |
| XIV. Drugs, chemicals, & by-products ... | 602,276 | 629,402 | 650,185 | 832,686 | 916,136 | 868,126 |
| XV. Surgical and other scientific instruments ... | 11,158 | 11,615 | 13,121 | 13,758 | 13,955 | 13,873 |
| XVI. Jewellery, timepieces, and platedware ... | 61,765 | 61,791 | 68,186 | 69,724 | 72,988 | 74,617 |
| XVII. Heat, light, and power ... | 6,425,157 | 7,135,997 | 7,590,198 | 9,044,847 | 9,532,800 | 9,970,117 |
| XVIII. Leatherware, n.e.i. ... | 25,565 | 27,695 | 28,035 | 30,576 | 31,706 | 34,240 |
| XIX. Minor wares, n.e.i. ... | 138,896 | 145,141 | 166,172 | 199,343 | 226,285 | 234,313 |
| Total ... | 31,412,596 | 34,203,934 | 36,936,831 | 41,038,551 | 41,846,166 | 43,895,591 |

It will be seen that during the period in question there has been a steady and substantial net increase amounting in all to £12,482,995, or an annual average of £2,496,599. Development has occurred in all classes of industry, the largest increase being in Class XVII., "Heat, Light, and Power," where it amounted to £3,544,960, while the two next largest were in Class VI., "Connected with Food and Drink, etc.," with an increase of £3,083,617, and Class V., "Metal Works, Machinery, etc.," £2,771,137.

(ii.) *Total Value in each State, 1911 to 1916.* 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., £5,700,504; while Victoria comes next with £2,732,576.

VALUE OF PLANT AND MACHINERY IN FACTORIES, 1911 to 1916.

| Year. | N.S.W. | Victoria. | Queensland. | S. Aust. | W. Aust. | Tasmania. | C'wealth. |
|-------|-------------|------------|-------------|-----------|-----------|-----------|------------|
| | £ | £ | £ | £ | £ | £ | £ |
| 1911 | 12,510,600 | 8,336,373 | 4,947,259 | 2,319,387 | 2,082,777 | 1,216,200 | 31,412,596 |
| 1912 | 13,795,195 | 9,095,134 | 5,442,471 | 2,468,579 | 2,241,536 | 1,161,019 | 34,203,934 |
| 1913 | 14,861,676 | 10,022,429 | 5,877,387 | 2,662,196 | 2,264,455 | 1,248,688 | 36,936,831 |
| 1914 | 16,866,982* | 10,727,526 | 6,898,673 | 2,869,199 | 2,484,793 | 1,191,378 | 41,038,551 |
| 1915 | 16,866,982* | 11,068,949 | 7,051,113 | 2,990,702 | 2,640,168 | 1,228,252 | 41,846,166 |
| 1916† | 18,211,104 | 11,068,949 | 7,543,873 | 2,990,702 | 2,817,863 | 1,263,100 | 43,895,591 |

* Year ended 30th June, 1915.

† See note † first table this section.

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

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1916.

| Class of Industry. | N.S.W. 1915-16. | Victoria. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'wlth. |
|---|--------------------|--------------------|------------------|-------------------|-------------------|---------------|------------|
| I. Treating raw material, product of agricultural and pastoral pursuits, etc. ... | £ 397,382 | £ 318,759 | £ 119,164 | £ 63,646 | £ 23,300 | £ 43,681 | £ 965,932 |
| II. Treating oils and fats, animal, vegetable, etc. ... | 345,704 | 138,662 | 42,794 | 27,105 | 22,046 | 566 | 576,877 |
| III. Processes in stone, clay, glass, etc. ... | 1,098,225 | 439,356 | 80,823 | 163,853 | 66,925 | 17,811 | 1,966,993 |
| IV. Working in wood ... | 817,519 | 510,831 | 465,104 | 84,223 | 751,943 | 177,033 | 2,806,653 |
| V. Metal wks., machinery, etc. ... | 4,956,818 | 1,560,541 | 627,147 | 561,090 | 597,762 | 190,735 | 8,494,093 |
| VI. Connected with food and drink, etc. ... | 3,604,699 | 2,263,565 | 4,579,428 | 604,388 | 436,712 | 165,390 | 11,654,182 |
| VII. Clothing and textile fabrics, etc. ... | 626,422 | 890,009 | 141,871 | 100,690 | 35,654 | 52,112 | 1,846,758 |
| VIII. Books, paper, printing, and engraving ... | 1,277,002 | 1,010,984 | 317,583 | 225,598 | 161,873 | 61,901 | 3,054,941 |
| IX. Musical instruments, etc. ... | 13,866 | 6,725 | ... | 600 | ... | ... | 21,191 |
| X. Arms and explosives ... | 100,551 | 127,259 | ... | 400 | ... | ... | 228,210 |
| XI. Vehicles and fittings, saddlery and harness, etc. ... | 149,952 | 140,286 | 41,490 | 54,485 | 21,347 | 13,856 | 421,416 |
| XII. Ship and boat building and repairing ... | 398,881 | 84,765 | 7,915 | 11,240 | 1,285 | 7,151 | 511,237 |
| XIII. Furniture, bedding, and upholstery ... | 75,510 | 77,545 | 43,284 | 30,973 | 14,666 | 9,344 | 251,822 |
| XIV. Drugs, chemicals, and by-products ... | 238,743 | 272,545 | 6,202 | 177,253 | 172,638 | 745 | 868,126 |
| XV. Surgical and other scientific instruments ... | 5,099 | 4,731 | 1,838 | 850 | 1,355 | ... | 13,873 |
| XVI. Jewellery, timepieces, and platedware ... | 30,175 | 31,461 | 4,109 | 5,230 | 1,747 | 1,895 | 74,617 |
| XVII. Heat, light, and power ... | 3,968,033 | 3,041,942 | 1,059,588 | 876,140 | 504,474 | 519,940 | 9,970,117 |
| XVIII. Leatherware, n.e.i. ... | 14,718 | 14,672 | 3,619 | 317 | 914 | ... | 34,240 |
| XIX. Minor wares, n.e.i. ... | 91,805 | 134,311 | 1,914 | 2,621 | 3,222 | 440 | 234,313 |
| Total ... | 18,211,104 | 11,068,949 | 7,543,873 | 2,990,702 | 2,817,863 | 1,263,100 | 43,895,591 |

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £11,654,182, or 26.55 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," which amounts to £9,970,117, or 22.71 per cent. on the total; followed by Class V., "Metal Works, Machinery, etc.," amounting to £8,494,093, or 19.35 per cent. on the total value. The total for these three classes amounts to £30,118,392, or 68.61 per cent. on the total value for all classes.

§ 8. Individual Industries.

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

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

TANNERIES, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'with. |
|--|--------------------|---------------|------------------|---------------|---------------|---------------|-----------|
| Number of factories | 76 | 52 | 18 | 12 | 3 | 2 | 163 |
| " employees | 1,060 | 1,720 | 209 | 206 | 51 | 57 | 3,303 |
| Actual horse-power of engines employed... | 1,397 | 1,883 | 399 | 275 | 105 | 86 | 4,145 |
| Approx. value of lands and buildings ... | £ 137,376 | 185,753 | 17,576 | 26,233 | 14,889 | 5,879 | 287,706 |
| Approx. value of plant and machinery ... | £ 92,701 | 133,043 | 21,354 | 14,163 | 10,750 | 8,945 | 285,956 |
| Total amount of wages paid during year ... | £ 135,464 | 219,596 | 25,193 | 25,533 | 7,408 | 7,820 | 423,014 |
| Value of fuel used | £ 8,877 | 13,701 | 1,413 | 1,864 | 749 | 688 | 27,292 |
| Value of raw material worked up | £ 1,144,103 | 1,606,586 | 246,908 | 150,811 | 72,998 | 62,381 | 3,283,787 |
| Total value of output | £ 1,433,637 | 2,106,358 | 325,548 | 204,617 | 90,127 | 73,140 | 4,233,427 |
| Value added in process of manufacture ... | £ 289,534 | 499,772 | 78,640 | 53,806 | 17,129 | 10,759 | 949,640 |

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

RAW MATERIALS USED IN TANNERIES, 1916.

| Particulars. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'wealth. |
|----------------------------|--------------------|---------------|------------------|-------------------|-------------------|---------------|-----------|
| Hides & calf skins ... No. | 567,190 | 931,285 | 105,311 | 89,045 | 27,405 | 22,712 | 1,742,948 |
| Sheep pelts | 3,504,375 | 907,653 | 68,345 | 68,476 | ... | 61,345 | 4,610,194 |
| Other skins | 283,337 | 242,796 | 127,517 | 17,751 | 9,722 | ... | 681,123 |
| Bark Tons | 10,915 | 14,600 | 2,395 | 1,489 | 640 | 310 | 30,349 |

(iii.) *Progress of Tanning Industries, 1911 to 1916.* The development of the tanning industry during the period 1911 to 1916 is shewn in the following table:—

DEVELOPMENT OF TANNING INDUSTRY IN THE COMMONWEALTH, 1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914.* | 1915. | 1916. |
|---|-------------|-----------|-----------|-----------|-----------|-----------|
| Number of factories | 176 | 174 | 164 | 166 | 165 | 163 |
| Number of employees | 3,247 | 3,071 | 2,892 | 3,091 | 3,376 | 3,303 |
| Actual horse-power of engines used ... | 3,168 | 3,274 | 3,745 | 3,803 | 3,899 | 4,145 |
| Approx. value of land and buildings ... | £ 343,914 | 366,898 | 366,696 | 392,420 | 389,024 | 387,706 |
| Approx. value of plant and machinery ... | £ 241,245 | 250,495 | 276,610 | 283,499 | 287,856 | 285,956 |
| Total amount of wages paid | £ 332,206 | 328,060 | 322,747 | 366,484 | 418,363 | 423,014 |
| Value of fuel used | £ 21,711 | 21,341 | 19,642 | 22,573 | 26,140 | 27,292 |
| Value of raw materials worked up | £ 2,099,034 | 2,216,705 | 2,428,003 | 2,732,525 | 3,188,817 | 3,283,787 |
| Value of final output | £ 2,698,250 | 2,834,007 | 3,030,785 | 3,468,475 | 4,088,140 | 4,233,427 |
| Value added in process of manufacture ... | £ 599,216 | 617,302 | 602,782 | 735,950 | 899,323 | 949,640 |

* Including three bone milling establishments in Western Australia.

It will be seen from the above table that as regards the number of factories and of hands employed, the figures during the last five years have been almost stationary. The approximate amount of permanently invested capital, however, shews a very substantial increase, amounting to 12.73 per cent. in the value of land and buildings, and 18.53 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 27.03, 56.44 and 56.90 per cent. respectively during the same period.

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

FELLMONGERING AND WOOL-SCOURING, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Qld. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'with. |
|---|--------------------|---------------|---------------|---------------|---------------|---------------|-----------|
| Number of factories | 49 | 30 | 18 | 3 | ... | ... | 100 |
| Number of employees | 1,474 | 445 | 389 | 71 | ... | ... | 2,379 |
| Actual horse-power of engines used ... | 3,007 | 627 | 736 | 93 | ... | ... | 4,463 |
| Approx. value of land and buildings £ | 145,862 | 69,225 | 43,953 | 4,490 | ... | ... | 263,530 |
| Approx. value of plant and machinery £ | 187,850 | 55,307 | 86,124 | 4,850 | ... | ... | 334,131 |
| Total amount of wages paid | £ 174,259 | 49,288 | 48,363 | 7,218 | ... | ... | 279,128 |
| Value of fuel used | £ 26,028 | 8,115 | 9,961 | 810 | ... | ... | 44,914 |
| Value of raw material worked up ... | £ 3,224,833 | 939,524 | 1,580,739 | 158,053 | ... | ... | 5,903,149 |
| Value of final output | £ 3,704,179 | 1,095,097 | 1,995,673 | 194,173 | ... | ... | 6,989,122 |
| Value added in process of manufacture £ | 479,346 | 155,573 | 414,934 | 36,120 | ... | ... | 1,085,973 |

(ii.) *Development of Fellmongering and Wool-scouring, 1911 to 1916.*—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, 1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|-------------|-----------|-----------|-----------|-----------|-----------|
| Number of factories | 112 | 120 | 119 | 108 | 106 | 100 |
| Number of employees | 2,590 | 2,544 | 2,375 | 2,298 | 2,337 | 2,379 |
| Actual horse-power of engines used ... | 3,230 | 3,831 | 3,966 | 3,772 | 3,754 | 4,463 |
| Approx. value of land and buildings £ | 273,281 | 267,188 | 269,895 | 256,330 | 266,440 | 263,530 |
| Approx. value of plant and machinery £ | 308,211 | 348,970 | 346,381 | 330,047 | 329,780 | 334,131 |
| Total amount of wages paid | £ 208,627 | 209,352 | 230,445 | 226,509 | 245,362 | 279,128 |
| Value of fuel used | £ 21,581 | 31,445 | 33,404 | 36,658 | 40,834 | 44,914 |
| Value of raw materials worked up ... | £ 3,757,750 | 3,869,200 | 4,365,413 | 4,238,705 | 5,223,231 | 5,903,149 |
| Value of final output | £ 4,343,690 | 4,444,938 | 4,940,410 | 4,742,531 | 5,919,690 | 6,989,122 |
| Value added in process of manufacture £ | 585,940 | 585,738 | 574,997 | 503,826 | 696,459 | 1,085,973 |

A slight decline has taken place in this industry during the last five years as regards the number of establishments and of employees. On the other hand, the amount paid in wages, the value of materials used, and of the final output, all shew substantial increases amounting to 33.8 per cent., 57.1 per cent., and 60.9 per cent. respectively.

4. **Soap and Candle Factories.**—(i.) In Class II. (see § 1. 3 hereof) the manufactures of soap and candles are the most important industries. These two manufactures are frequently carried on in the same establishments, so that separate returns cannot be obtained; it may, however, be said generally that the manufacture of soap is the more important of the two. The following table gives particulars of soap and candle factories in each State during the year 1916:—

SOAP AND CANDLE FACTORIES, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Qld. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'with. |
|--|--------------------|---------------|---------------|---------------|---------------|---------------|-----------|
| Number of factories | 30 | 17 | 15 | 5 | 4 | 1 | 72 |
| employees | 896 | 639 | 157 | 200 | 153 | 24 | 2,009 |
| Actual horse-power of engines employed ... | 585 | 464 | 156 | 177 | 85 | 10 | 1,477 |
| Approximate value of land and buildings £ | 191,104 | 96,770 | 28,458 | 55,682 | 15,440 | 4,165 | 391,619 |
| Approximate value of plant and machinery £ | 237,507 | 121,946 | 42,794 | 22,166 | 22,046 | 546 | 447,005 |
| Total amount of wages paid during year £ | 82,543 | 71,282 | 16,664 | 24,715 | 21,244 | 2,950 | 219,398 |
| Value of fuel used | £ 15,577 | 12,587 | 2,545 | 6,343 | 1,168 | 328 | 38,548 |
| Value of raw material worked up | £ 539,894 | 457,900 | 75,588 | 190,021 | 106,315 | 9,387 | 1,318,106 |
| Total value of output | £ 771,099 | 721,845 | 129,791 | 177,472 | 152,527 | 13,147 | 1,965,881 |
| Value added in process of manufacture £ | 232,205 | 269,945 | 54,203 | 47,451 | 46,212 | 3,760 | 647,776 |

(ii.) *Development of Soap and Candle Factories, 1911 to 1916.* 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, 1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|-------------|-----------|-----------|-----------|-----------|-----------|
| Number of factories... .. | 81 | 77 | 74 | 75 | 75 | 72 |
| employees | 1,668 | 1,776 | 1,755 | 1,801 | 2,141 | 2,009 |
| Actual horse-power of engines used... | 1,266 | 1,274 | 1,314 | 1,434 | 1,420 | 1,477 |
| Approximate value of land and buildings £ | 347,824 | 360,572 | 360,783 | 374,418 | 374,886 | 391,619 |
| plant and machinery £ | 326,273 | 348,365 | 364,357 | 385,744 | 460,519 | 447,005 |
| Total amount of wages paid... | £ 148,592 | 162,551 | 172,247 | 190,349 | 219,865 | 219,398 |
| Value of fuel used | £ 31,701 | 30,896 | 31,692 | 33,949 | 36,101 | 38,548 |
| of raw material worked up ... | £ 1,018,757 | 1,030,770 | 1,067,001 | 1,117,140 | 1,285,950 | 1,318,105 |
| of final output | £ 1,588,416 | 1,614,898 | 1,644,188 | 1,756,938 | 1,971,513 | 1,965,881 |
| added in process of manufacture £ | 569,659 | 584,128 | 577,187 | 639,798 | 685,563 | 647,776 |

* Including three bark milling establishments in Western Australia in 1914, and three oil establishments in 1915.

(iii.) *Production of Soap and Candles, 1911 to 1916.* The subjoined statement shows that, taking the Commonwealth as a whole, there has been a considerable increase in the output of soap during the past five years.

PRODUCTION OF SOAP AND CANDLES IN THE COMMONWEALTH, 1911 to 1916.

| Particulars. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|------------------|---------|---------|---------|---------|---------|---------|
| Soap cwt. | 639,458 | 688,722 | 700,878 | 697,807 | 729,984 | 727,349 |
| Candles „ | 130,122 | 130,785 | 129,877 | 110,734 | 104,986 | 102,775 |

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

(iv.) *Raw Materials Used, 1911 to 1916.* The following statement shows the quantity of certain raw materials used in soap and candle factories in the Commonwealth during the years 1911 to 1916 :—

RAW MATERIALS USED IN SOAP AND CANDLE FACTORIES, 1911 to 1916.

| Particulars. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|--------------------------|---------|---------|---------|---------|---------|---------|
| Tallow cwt. | 356,471 | 411,701 | 391,133 | 410,235 | 439,402 | 416,649 |
| Alkali „ | 133,675 | 135,643 | 135,231 | 158,624 | 159,344 | 154,348 |
| Cocoonut oil gal. | 505,612 | 489,329 | 457,693 | 460,561 | 485,851 | 630,298 |

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

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

SAW MILLS, FOREST AND OTHER, JOINERY, Etc., 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'w'th. |
|--|--------------------|---------------|------------------|---------------|---------------|---------------|-----------|
| Number of factories | 590 | 360 | 288 | 87 | 66 | 135 | 1,526 |
| employees | 6,989 | 5,828 | 4,355 | 1,213 | 2,205 | 1,583 | 22,173 |
| Actual horse-power of engines employed | 17,990 | 9,640 | 8,909 | 1,600 | 5,197 | 2,120 | 44,456 |
| Approx. value of land and buildings £ | 829,367 | 341,623 | 214,829 | 143,800 | 242,068 | 74,125 | 1,845,812 |
| plant and machinery £ | 749,321 | 480,843 | 458,337 | 77,445 | 751,943 | 175,243 | 2,693,133 |
| Total amount of wages paid during year £ | 782,228 | 658,931 | 467,031 | 133,195 | 346,729 | 164,083 | 2,552,197 |
| Value of fuel used | £ 22,146 | 14,496 | 7,695 | 3,636 | 2,392 | 1,908 | 52,273 |
| Value of raw material worked up | £ 2,020,992 | 1,045,278 | 723,080 | 501,992 | 87,800 | 108,059 | 4,487,201 |
| Total value of output | £ 3,128,678 | 2,061,595 | 1,457,939 | 726,734 | 578,525 | 343,639 | 8,297,110 |
| Value added in process of manufacture £ | 1,107,686 | 1,016,317 | 734,869 | 224,742 | 490,725 | 235,580 | 3,809,909 |

The development of forest and other saw mills, etc., since 1911, is shewn in the following table:—

DEVELOPMENT OF SAW MILLS, FOREST AND OTHER, JOINERY, Etc., IN THE COMMONWEALTH, FROM 1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|-------------|-----------|------------|------------|-----------|-----------|
| Number of establishments ... | 1,494 | 1,609 | 1,670 | 1,623 | 1,567 | 1,526 |
| " employees ... | 26,785 | 29,358 | 30,371 | 28,864 | 24,847 | 22,173 |
| Actual horse-power of engines used... | 34,540 | 40,256 | 45,684 | 47,341 | 46,479 | 44,456 |
| Approximate value of land and buildings | £ 1,532,620 | 1,754,241 | 2,008,035 | 2,063,437 | 1,969,758 | 1,845,812 |
| " of plant and machinery | £ 2,141,883 | 2,365,462 | 2,571,701 | 2,632,465 | 2,502,325 | 2,493,132 |
| Total amount of wages paid... | £ 2,749,209 | 3,211,625 | 3,383,907 | 3,401,045 | 2,780,990 | 2,552,197 |
| Value of fuel used ... | £ 37,308 | 43,913 | 51,436 | 50,650 | 51,276 | 52,273 |
| " of raw material worked up ... | £ 4,208,333 | 4,900,612 | 5,273,688 | 5,012,211 | 4,602,863 | 4,487,201 |
| " of final output ... | £ 8,535,800 | 9,882,810 | 10,411,923 | 10,100,686 | 8,892,082 | 8,297,110 |
| " added in process of manufacture | £ 4,327,467 | 4,982,198 | 5,168,235 | 5,088,475 | 4,289,219 | 3,809,909 |

The great development in the building and other trades in Australia during the years immediately preceding the war is reflected in the very satisfactory progress of the timber industries, in which there were large increases in wages paid, value of materials used, and final output, as well as in capital invested in land and buildings, and plant and machinery. For the past three years, however, there was, as might have been expected, a fairly considerable decline on the returns for 1913.

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

The following table gives particulars of the agricultural implement works of Australia for the year 1916:—

AGRICULTURAL IMPLEMENT WORKS, 1916.

| Items. | N.S.W. 1915-16. | Victoria 1915. | Q'land. 1916. | S.Aust. 1915. | W.A. 1916. | Tas. 1916. | C'w'lth. |
|--|--------------------|-------------------|------------------|------------------|---------------|---------------|-----------|
| Number of factories ... | 23 | 64 | 6 | 54 | 3 | 1 | 151 |
| " employees ... | 597 | 1,678 | 86 | 912 | 261 | 4 | 3,538 |
| Actual horse-power of engines employed | 327 | 1,372 | 97 | 881 | 131 | 3 | 2,811 |
| Approx. value of land and buildings | £ 92,888 | 159,942 | 6,020 | 67,093 | 29,065 | 100 | 355,108 |
| " plant and machinery | £ 33,905 | 188,492 | 7,128 | 79,585 | 26,937 | 350 | 336,397 |
| Total amount of wages paid during year | £ 70,979 | 206,764 | 7,691 | 97,852 | 42,389 | 191 | 425,866 |
| Value of fuel used ... | £ 2,653 | 15,337 | 597 | 6,142 | 4,318 | 20 | 29,067 |
| Value of raw material worked up | £ 355,144 | 213,257 | 10,653 | 109,276 | 68,626 | 275 | 757,231 |
| Total value of output ... | £ 496,514 | 526,756 | 22,030 | 258,911 | 152,727 | 707 | 1,457,645 |
| Value added in process of manufacture | £ 141,370 | 313,499 | 11,377 | 149,635 | 84,101 | 432 | 700,414 |

The following table shews the conditions of this industry during the years 1911 to 1916 to have been somewhat fluctuating. A general decline took place during 1914 and 1915, attributable to various causes, the recent drought and a reduction in the exports to other countries being the principal contributing factors. The 1916 figures, however, shew more satisfactory results, being an advance on either of the two previous years as regards material worked up and output:—

**DEVELOPMENT OF AGRICULTURAL IMPLEMENT WORKS IN THE COMMONWEALTH,
FROM 1911 to 1916.**

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|-------------|-----------|-----------|-----------|-----------|-----------|
| Number of factories | 155 | 159 | 154 | 154 | 153 | 151 |
| Number of employees | 5,156 | 4,733 | 4,444 | 3,865 | 3,606 | 3,538 |
| Actual horse-power of engines used ... | 2,347 | 2,419 | 2,698 | 2,665 | 2,905 | 2,811 |
| Approx. value of land and buildings ... | £ 284,469 | 331,348 | 348,666 | 360,916 | 363,166 | 355,108 |
| Approx. value of plant and machinery ... | £ 245,025 | 281,923 | 309,015 | 324,292 | 337,459 | 336,397 |
| Total amount of wages paid | £ 550,922 | 527,406 | 502,244 | 466,686 | 428,370 | 425,866 |
| Value of fuel used | £ 32,342 | 30,961 | 30,408 | 29,892 | 29,167 | 29,067 |
| Value of raw material worked up | £ 811,322 | 751,596 | 824,556 | 749,153 | 664,412 | 757,231 |
| Value of final output | £ 1,656,364 | 1,538,421 | 1,536,378 | 1,413,789 | 1,299,308 | 1,457,645 |
| Value added in process of manufacture ... | £ 845,042 | 786,825 | 711,822 | 664,636 | 634,896 | 700,414 |

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

ENGINEERING, IRONWORKS, AND FOUNDRIES, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'w'lth. . |
|--|--------------------|---------------|------------------|---------------|---------------|---------------|---------------|
| Number of factories | 316 | 397 | 90 | 64 | 67 | 22 | 956 |
| ... employees | 11,202 | 8,999 | 2,388 | 1,739 | 986 | 404 | 25,718 |
| Actual horse-power of engines employed ... | 25,907 | 8,744 | 1,980 | 1,406 | 1,286 | 335 | 39,658 |
| Approx. value of land and buildings ... | £ 1,291,200 | 655,613 | 187,604 | 126,550 | 126,007 | 37,785 | 2,424,759 |
| ... plant and machinery ... | £ 3,280,219 | 846,337 | 216,779 | 149,388 | 118,040 | 44,899 | 3,655,662 |
| Total amount of wages paid during year ... | £ 1,656,521 | 1,105,930 | 313,240 | 207,132 | 139,666 | 45,771 | 3,468,260 |
| Value of fuel used | £ 262,560 | 110,353 | 14,400 | 17,854 | 12,117 | 2,855 | 420,139 |
| Value of raw materials worked up | £ 2,418,060 | 1,447,547 | 299,730 | 294,285 | 213,119 | 45,775 | 4,718,516 |
| Total value of output | £ 5,072,153 | 3,221,994 | 788,450 | 598,853 | 413,426 | 110,543 | 10,205,424 |
| Value added in process of manufacture ... | £ 2,654,093 | 1,774,447 | 488,720 | 304,573 | 200,307 | 64,768 | 5,486,908 |

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, ironworks, and foundries in the Commonwealth since 1911 is shown in the following table:—

**DEVELOPMENT OF ENGINEERING, IRONWORKS, AND FOUNDRIES, FROM
1911 to 1916.**

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|-------------|-----------|-----------|-----------|-----------|------------|
| Number of factories | 820 | 877 | 919 | 950 | 950 | 956 |
| Number of employees | 22,539 | 25,151 | 26,014 | 25,766 | 25,219 | 25,718 |
| Actual horse-power of engines used | 16,015 | 18,744 | 20,630 | 33,630 | 34,049 | 39,658 |
| Approx. value of land and buildings ... | £ 1,579,925 | 1,792,169 | 1,980,453 | 2,264,889 | 2,315,984 | 2,424,759 |
| Approx. value of plant and machinery ... | £ 1,706,405 | 1,953,478 | 2,188,935 | 2,946,347 | 2,988,650 | 3,655,662 |
| Total amount of wages paid | £ 3,342,603 | 2,846,180 | 3,044,263 | 3,143,920 | 3,134,873 | 3,468,260 |
| Value of fuel used | £ 178,546 | 195,729 | 217,173 | 357,071 | 369,170 | 420,139 |
| Value of raw material worked up | £ 2,832,181 | 3,536,179 | 3,719,643 | 3,960,252 | 4,005,914 | 4,718,516 |
| Value of final output | £ 6,614,535 | 7,930,060 | 8,315,320 | 8,881,777 | 8,944,601 | 10,205,424 |
| Value added in process of manufacture ... | £ 3,782,354 | 4,393,581 | 4,595,677 | 4,921,525 | 4,938,687 | 5,486,908 |

The progress in these industries during late years has been very rapid. Since 1911 the number of establishments has increased over 16½ per cent., the number of hands employed 14 per cent., the amount of wages paid 48 per cent., the amount of capital invested in land, buildings, plant and machinery, 85 per cent., and the output over 54 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 table gives the details concerning them, but includes also private and municipal establishments for manufacturing and repairing rolling stock:—

RAILWAY AND TRAMWAY WORKSHOPS, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'w'lth. |
|---|--------------------|---------------|------------------|-------------------|-------------------|---------------|-----------|
| Number of factories ... | 40 | 17 | 11 | 9 | 8 | 7 | 92 |
| " employees ... | 10,222 | 5,491 | 2,746 | 2,721 | 1,526 | 289 | 22,995 |
| Actual h.p. of engines employed ... | 7,168 | 1,503 | 2,669 | 596 | 2,209 | 205 | 14,350 |
| Approx. value of land and buildings £ | 1,113,677 | 384,379 | 334,179 | 269,137 | 439,776 | 7,075 | 2,548,223 |
| Approx. value of plant and mach'ny £ | 1,094,105 | 308,167 | 250,380 | 196,075 | 451,315 | 89,023 | 2,389,065 |
| Total amt. of wages paid during year £ | 1,551,900 | 793,114 | 397,426 | 375,996 | 244,482 | 46,347 | 3,409,265 |
| Value of fuel used ... | 33,846 | 28,621 | 6,909 | 8,701 | 12,212 | 1,911 | 92,200 |
| Value of raw material worked up £ | 824,354 | 869,498 | 199,507 | 256,243 | 157,936 | 16,535 | 2,324,063 |
| Total value of output ... | £2,590,051 | 1,828,874 | 678,195 | 710,737 | 408,305 | 82,176 | 6,298,338 |
| Value added in process of manuf'ct're £ | 1,765,697 | 959,376 | 478,688 | 454,494 | 250,379 | 65,641 | 3,974,275 |

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

(iii.) *Development of Railway and Tramway Workshops, 1911 to 1916.* The following table shows the development of railway and tramway workshops in the Commonwealth since 1911:—

DEVELOPMENT OF RAILWAY AND TRAMWAY WORKSHOPS, Etc., FROM
1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|--|-------------|-----------|-----------|-----------|-----------|-----------|
| Number of factories... | 72 | 73 | 73 | 75 | 77 | 92 |
| " employees ... | 17,425 | 19,662 | 26,014 | 21,745 | 22,224 | 22,995 |
| Actual horse-power of engines used ... | 8,373 | 9,637 | 9,581 | 11,025 | 12,571 | 14,350 |
| Approx. value of land and buildings | £ 2,036,178 | 2,128,273 | 2,213,697 | 2,378,764 | 2,471,731 | 2,548,223 |
| " plant and machinery | £ 1,433,093 | 1,563,710 | 1,685,050 | 2,141,654 | 2,236,578 | 2,389,065 |
| Total amount of wages paid... | £ 2,163,460 | 2,702,711 | 3,018,968 | 3,066,734 | 3,174,946 | 3,409,265 |
| Value of fuel used ... | £ 69,919 | 75,476 | 77,155 | 90,332 | 90,490 | 92,200 |
| " of raw material worked up ... | £ 1,939,477 | 2,574,737 | 2,874,535 | 2,492,217 | 2,363,785 | 2,234,063 |
| " of final output | £ 4,468,096 | 5,695,221 | 6,435,823 | 6,134,588 | 6,046,521 | 6,298,338 |
| " added in process of manufacture | £ 2,528,619 | 3,120,484 | 3,561,288 | 3,642,371 | 3,682,736 | 3,974,275 |

The growth of the railway and tramway systems conjointly with heavy increases in passenger and goods traffic throughout the Commonwealth during the past few years has resulted in corresponding activity in workshops engaged in the manufacture or repair of rolling stock, etc. The above table shows that the number of employees increased 32 per cent. during the last five years, the amount of wages paid 57½ per cent., the final output nearly 41 per cent., while the value added in process of manufacture shows an increase of over 57 per cent.

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

SMELTING, CYANIDE, PYRITES, Etc., WORKS, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A.* 1916. | Tas. 1916. | C'w'lth. |
|---|--------------------|---------------|------------------|---------------|----------------|---------------|------------|
| Number of factories | 29 | 52 | 12 | 6 | ... | 2 | 101 |
| " employees | 2,957 | 272 | 119 | 1,730 | ... | 498 | 5,576 |
| Actual horse-power of engines employed | 16,890 | 356 | 701 | 3,816 | ... | 2,998 | 24,761 |
| Approx. value of land and buildings £ | 256,610 | 10,076 | 11,675 | 19,748 | ... | 7,000 | 305,109 |
| " plant and machinery £ | 1,279,206 | 34,584 | 77,800 | 69,240 | ... | 54,078 | 1,514,908 |
| Total am't of wages paid during year £ | 462,822 | 24,323 | 20,019 | 320,437 | ... | 79,648 | 907,248 |
| Value of fuel used | 224,237 | 4,529 | 8,750 | 180,950 | ... | 65,732 | 484,198 |
| Value of raw material worked up | 5,399,991 | 79,674 | 94,166 | 2,600,977 | ... | 501,973 | 8,676,781 |
| Total value of output | 7,884,570 | 138,241 | 138,251 | 3,707,286 | ... | 1,323,795 | 13,192,143 |
| Value added in process of manufacture £ | 2,484,579 | 58,567 | 44,085 | 1,106,309 | ... | 821,822 | 4,515,362 |

* See third paragraph below.

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

The largest output was in New South Wales, viz., £7,884,570, or 59 per cent. on the total output for the Commonwealth. South Australia came next with £3,707,286, or 28 per cent.; this amount is made up of £3,701,688 smelting and £5598 cyanide. For Tasmania, the output of smelting was £1,323,795. The output in Victoria was £53,828, £42,850, £40,595, and £968 from pyrites, smelting, cyanide, and metallurgical works in the order named.

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

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

BACON-CURING FACTORIES, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915.* | W.A. 1916. | Tas. 1916. | C'w'lth. |
|---|--------------------|---------------|------------------|----------------|---------------|---------------|-----------|
| Number of factories | 21 | 25 | 8 | † 12 | 3 | 5 | 74 |
| " employees | 216 | 394 | 361 | † 68 | 15 | 18 | 1,072 |
| Actual horse-power of engines employed | 304 | 933 | 614 | 146 | 57 | 63 | 2,317 |
| Approx. value of land and buildings £ | 63,657 | 92,312 | 102,013 | 11,304 | 4,275 | 4,563 | 278,124 |
| " plant and machinery £ | 23,714 | 60,567 | 56,110 | 5,350 | 2,150 | 1,739 | 149,630 |
| Total amount of salaries and wages paid £ | 32,424 | 49,672 | 48,283 | 16,163 | 2,250 | 1,710 | 150,502 |
| Value of fuel used | 4,778 | 5,488 | 5,010 | 2,195 | 409 | 332 | 18,212 |
| Value of raw material worked up | 568,267 | 666,534 | 462,402 | 116,325 | 100,937 | 35,630 | 1,850,095 |
| Total value of output | 632,175 | 767,778 | 685,882 | 149,035 | 106,642 | 38,320 | 2,379,832 |
| Value added in process of manufacture £ | 63,908 | 101,244 | 223,480 | 32,710 | 5,705 | 2,690 | 429,737 |

* Including two meat preserving establishments employing 110 hands. † Not including meat preserving.

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

PRODUCTION OF BACON-CURING FACTORIES, 1916.

| Particulars. | N.S.W. 1915-16. | Victoria. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust.* 1916. | Tasmania. 1916. | C'wealth. |
|--------------------------|--------------------|--------------------|------------------|-------------------|--------------------|--------------------|-----------|
| QUANTITY (,000 omitted). | | | | | | | |
| Bacon & ham lbs. | 11,638 | 11,451 | 9,738 | 1,736 | 1,852 | 641 | 37,056 |
| Lard ... lbs. | 556 | 570 | 622 | 78 | 4 | 43 | 1,873 |
| VALUE. | | | | | | | |
| Bacon & ham £ | 565,421 | 709,599 | 517,099 | 90,013 | 106,773 | 32,665 | 2,021,570 |
| Lard ... £ | 22,278 | 21,367 | 20,131 | 3,034 | 156 | 1,481 | 68,447 |
| Other products £ | 36,627 | 36,812 | 148,652 | 3,154 | ... | 4,174 | 229,419 |
| PIGS KILLED. | | | | | | | |
| Number ... | 143,839 | 129,259 | 126,796 | 19,185 | † | 7,276 | 426,355 |

* In Western Australia, a portion of the bacon and ham treated in factories is imported and subsequently smoked in that State. † 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 table gives particulars of butter, cheese, and condensed milk factories in each State. The returns are exclusive of eight butterine and margarine factories in New South Wales and Victoria employing 116 hands, the value of the output being £213,865, but include butterine and margarine factories in Western Australia.

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A.* 1916. | Tas. 1916. | C'w'lt'h. |
|---|--------------------|---------------|------------------|---------------|----------------|---------------|-----------|
| Number of factories ... | 167 | 190 | 122 | 44 | 5 | 31 | 559 |
| " employees ... | 1,007 | 1,194 | 816 | 152 | 20 | 98 | 3,287 |
| Actual horse-power of engines employed | 2,891 | 2,921 | 1,863 | 387 | 46 | 221 | 8,329 |
| Approximate value of land and buildings £ | 221,706 | 310,412 | 135,379 | 36,187 | 12,600 | 18,400 | 734,686 |
| " plant & machinery £ | 287,253 | 334,548 | 210,622 | 27,049 | 2,812 | 18,583 | 881,267 |
| Total amount of wages paid ... | £ 141,333 | 139,543 | 99,607 | 12,153 | 2,283 | 8,217 | 403,136 |
| Value of fuel used ... | £ 28,508 | 23,841 | 14,281 | 2,328 | 229 | 866 | 70,053 |
| Value of raw material worked up | £ 3,253,551 | 2,364,314 | 1,759,561 | 235,209 | 24,239 | 126,722 | 7,763,596 |
| Total value of output ... | £ 3,607,288 | 2,715,784 | 2,203,371 | 264,930 | 29,017 | 153,677 | 8,974,067 |
| Value added in process of manufacture £ | 353,737 | 351,470 | 443,610 | 29,721 | 4,778 | 26,955 | 1,210,471 |

* Including butterine and margarine.

(ii.) *Development of Factories, 1911 to 1916.* 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, 1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|-------------|-----------|-----------|-----------|-----------|-----------|
| Number of factories ... | 540 | 530 | 531 | 528 | 536 | 559 |
| " employees ... | 3,730 | 3,518 | 3,507 | 3,568 | 3,300 | 3,287 |
| Actual horse-power of engines used | 6,818 | 8,156 | 7,726 | 7,895 | 7,948 | 8,329 |
| Approx. value of land and buildings £ | 677,139 | 659,673 | 664,735 | 664,999 | 683,413 | 734,686 |
| " plant and machinery £ | 775,792 | 788,922 | 828,986 | 850,770 | 852,260 | 881,267 |
| Total amount of wages paid ... | £ 375,221 | 385,793 | 411,491 | 439,121 | 408,181 | 403,136 |
| Value of fuel used ... | £ 67,555 | 70,155 | 72,214 | 81,809 | 71,796 | 70,053 |
| " raw material worked up | £ 8,341,125 | 8,676,346 | 8,146,178 | 8,709,272 | 8,040,316 | 7,763,596 |
| " final output ... | £ 9,432,122 | 9,760,205 | 9,284,747 | 9,898,398 | 9,203,041 | 8,974,067 |
| Value added in process of manufacture £ | 1,090,997 | 1,083,859 | 1,138,569 | 1,169,126 | 1,162,725 | 1,210,471 |

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

PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1916.

| Particulars. | N.S.W. 1915-16. | Victoria. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'w'lth. |
|--|--------------------|--------------------|------------------|-------------------|-------------------|---------------|----------|
| QUANTITY (,000 OMITTED). | | | | | | | |
| Butter ... lbs. | 55,352 | 37,594 | 26,924 | 2,983 | 358 | 2,137 | 125,348 |
| Cheese ... " | 3,951 | 2,130 | 8,424 | 1,410 | ... | 449 | 16,364 |
| Condensed and concentrated milk ... lbs. | 4,918 | 16,690 | 6,584 | ... | ... | ... | 28,192 |
| VALUE (,000 OMITTED). | | | | | | | |
| Butter ... £ | 3,256 | 2,245 | 1,726 | 212 | 26 | 131 | 7,626 |
| Cheese ... £ | 140 | 79 | 301 | 52 | ... | 17 | 589 |
| Condensed and concentrated milk ... £ | 92 | 383 | 176 | ... | ... | ... | 651 |
| MILK USED (,000 OMITTED). | | | | | | | |
| Butter factories ... gals. | 127,268 | 85,570 | 62,351 | 6,075 | 699 | 5,341 | 287,304 |
| Cheese ... " | 4,190 | 2,185 | 8,321 | 1,377 | ... | 451 | 16,524 |
| Condensed milk factories ... " | 1,400 | 5,455 | 1,964 | ... | ... | ... | 8,819 |

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. Extensive meat freezing and canning works have recently been erected in the Northern Territory at Darwin at a cost to date of £700,000, and it is estimated that, on completion, the expenditure will have reached three-quarters of a million. The Commonwealth Government has entered into an agreement with the proprietors in regard to the carriage of cattle at special rates provided that private owners of cattle may have their stock treated under reasonable terms and conditions. Operations were commenced early in 1917, and between April and August 18,911 cattle were treated. When the works are in full operation it is expected that from 400 to 500 head of stock will be treated daily. Particulars regarding the export of frozen beef and mutton may be found on pages 314 and 318 hereof respectively.

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

MEAT AND FISH PRESERVING, ICE AND REFRIGERATING WORKS, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'w'lth. |
|--|--------------------|---------------|------------------|---------------|---------------|---------------|-----------|
| Number of factories ... | 106 | 34 | 57 | 18 | 20 | 6 | 241 |
| " employees ... | 1,465 | 1,008 | 4,518 | 310 | 120 | 30 | 7,451 |
| Actual horse-power of engines employed | 5,765 | 5,736 | 11,042 | * 877 | 1,102 | 151 | 24,673 |
| Approx. value of land and buildings £ | 708,662 | 416,498 | 1,314,061 | * 158,851 | 48,124 | 9,800 | 2,655,996 |
| " plant and machinery £ | 544,853 | 240,878 | 916,593 | * 86,198 | 57,810 | 6,016 | 1,852,348 |
| Total amount of wages paid during year £ | 167,835 | 134,472 | 542,079 | * 26,066 | 18,085 | 3,204 | 891,741 |
| Value of fuel used ... | 40,002 | 27,222 | 65,850 | * 7,368 | 7,789 | 2,148 | 150,379 |
| Value of raw material worked up | £ 2,472,379 | 886,953 | 4,428,594 | * 39,892 | 5,443 | 1,539 | 7,834,800 |
| Total value of output ... | £ 2,870,460 | 1,136,622 | 5,595,575 | * 71,207 | 39,238 | 12,036 | 9,725,188 |
| Value added in process of manufacture £ | 398,081 | 249,669 | 1,166,981 | * 31,315 | 33,795 | 10,497 | 1,890,338 |

* Excluding two meat preserving establishments employing 110 hands.

The following table gives particulars, so far as available, of meat tinned during the year :—

MEAT PRESERVING WORKS—OUTPUT, 1916.

| Output. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'w'Ith. |
|-------------------------|--------------------|---------------|------------------|-------------------|-------------------|---------------|----------|
| Tinned Meat Cwt. | 44,582* | 40,927 | 217,571† | 1,488‡ | ... | ... | 304,568 |

* Also 7,340 cwt. tinned rabbits. † Also 3,452 cwt. salted meat. ‡ Exclusive of large quantity of tinned rabbits, particulars of which 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. During 1915, over 3,300,000 rabbits and hares were treated in Victoria alone. Exclusive of Victoria, for which State particulars are not available, the returns shew that 92,296 tons of ice, valued at £174,426, were manufactured in the Commonwealth in 1916.

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 table gives particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the year 1916:—

BISCUIT, Etc., FACTORIES, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'with. |
|--|--------------------|---------------|------------------|---------------|---------------|---------------|-----------|
| Number of factories | 7 | 7 | 21 | 3 | 5 | 3 | 46 |
| employees | 1,386 | 1,361 | 561 | 127 | 139 | 121 | 3,695 |
| Actual horse-power of engines employed | 797 | 362 | 301 | 76 | 132 | 49 | 1,717 |
| Approx. value of land and buildings £ | 109,466 | 72,750 | 65,012 | 18,350 | 14,415 | 20,600 | 300,593 |
| plant and machinery £ | 110,290 | 61,068 | 43,860 | 11,102 | 18,088 | 10,675 | 255,083 |
| Total amount of wages paid during year £ | 91,187 | 111,794 | 55,935 | 8,860 | 10,154 | 9,387 | 287,317 |
| Value of fuel used | £ 9,646 | 9,925 | 2,741 | 1,617 | 1,333 | 1,349 | 26,611 |
| Value of raw material worked up £ | 516,684 | 424,234 | 157,421 | 33,665 | 40,700 | 32,399 | 1,205,103 |
| Total value of output | £ 768,876 | 669,841 | 278,189 | 61,114 | 60,332 | 54,182 | 1,892,584 |
| Value added in process of manufacture £ | 252,192 | 245,607 | 120,768 | 27,449 | 19,682 | 21,783 | 687,481 |

14. Jam and Fruit Preserving, Pickles, Sauces, and Vinegar.—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 three years. During the year ended 30th June, 1917, 45,074,352 lbs. of jams and jellies, valued at £949,112, were exported from the Commonwealth. The subjoined table gives particulars of factories at which these industries were carried on in each State during the year. Separate returns for the individual industries are not available for most of the States.

JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR. FACTORIES; 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'with. |
|--|--------------------|---------------|------------------|---------------|---------------|---------------|-----------|
| Number of factories | 36 | 30 | 22 | 26 | 8 | 17 | 139 |
| employees | 1,160 | 1,689 | 334 | 422 | 66 | 998 | 4,669 |
| Actual horse-power of engines employed | 488 | 393 | 100 | 122 | 30 | 521 | 1,714 |
| Approx. value of land and buildings £ | 115,333 | 126,875 | 18,904 | 34,160 | 5,627 | 66,378 | 367,277 |
| plant and machinery £ | 60,831 | 57,621 | 15,067 | 17,048 | 2,035 | 32,927 | 185,529 |
| Total amount of wages paid during year £ | 97,898 | 135,768 | 22,416 | 25,441 | 3,663 | 80,742 | 365,928 |
| Value of fuel used | £ 6,027 | 8,918 | 1,082 | 2,129 | 326 | 6,459 | 24,941 |
| Value of raw material worked up £ | 553,516 | 666,122 | 75,998 | 131,845 | 11,496 | 475,125 | 1,919,102 |
| Total value of output | £ 738,980 | 1,009,533 | 127,464 | 193,511 | 18,719 | 687,428 | 2,775,635 |
| Value added in process of manufacture £ | 180,464 | 343,411 | 51,466 | 61,666 | 7,223 | 212,303 | 856,533 |

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The following table shews the quantity and value of jams, pickles, and sauces manufactured in each State:—

QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCES MANUFACTURED, 1916.

| Particulars. | N.S.W. 1915-16. | Victoria. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'wealth. |
|--------------------------|--------------------|--------------------|------------------|-------------------|-------------------|---------------|-------------|
| QUANTITY (,000 OMITTED). | | | | | | | |
| Jams ... lbs. | 32,022 | 34,210 | 1,686 | 8,211 | † | 29,201 | \$105,330 |
| Fruit, preserved lbs. | 2,390 | 5,929 | 5,264 | 1,852 | ... | 13,712 | 19,147 |
| Pickles ... pints | 2,739 | 1,286 | *100 | 238 | 88 | 29 | 4,480 |
| Sauces ... pints | 3,106 | 5,827 | 348 | 928 | 336 | 67 | 10,612 |
| VALUE. | | | | | | | |
| Jams ... £ | 522,365 | 697,854 | 33,405 | 128,679 | † | 525,512 | \$1,907,815 |
| Fruit, preserved £ | 40,856 | 95,925 | 60,892 | 29,140 | ... | 66,687 | 293,500 |
| Pickles ... £ | 51,710 | 38,009 | 3,604 | 4,571 | 2,140 | 604 | 100,638 |
| Sauces ... £ | 65,334 | 177,745 | 6,098 | 17,691 | 5,919 | 1,357 | 274,144 |

* Approximate. † Exclusive of 71,724 cwt. fruit pulped, value £90,147. ‡ Information not available for publication. § Exclusive of Western Australia.

15. **Confectionery.**—The following table shews the present 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 £2815, and in the latter at £19,070.

CONFECTIONERY FACTORIES, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'w'thb. |
|--|--------------------|---------------|------------------|---------------|---------------|---------------|-----------|
| Number of factories ... | 55 | 36 | 9 | 9 | 4 | 4 | 117 |
| " employees ... | 1,641 | 1,987 | 480 | 285 | 152 | 25 | 4,570 |
| Actual horse-power of engines employed | 687 | 839 | 147 | 244 | 184 | 26 | 2,181 |
| Approx. value of land and buildings £ | 252,035 | 112,041 | 30,712 | 31,339 | 24,875 | 11,550 | 462,555 |
| " plant and machinery £ | 103,501 | 113,320 | 22,041 | 33,228 | 19,068 | 3,193 | 294,351 |
| Total amount of wages paid during year £ | 159,247 | 149,384 | 34,443 | 19,156 | 12,624 | 2,426 | 377,310 |
| Value of fuel used ... | 9,874 | 12,638 | 1,521 | 2,351 | 1,122 | 156 | 37,662 |
| Value of raw material worked up | £ 681,405 | 542,849 | 61,659 | 63,676 | 42,042 | 14,820 | 1,406,451 |
| Total value of output ... | £1,003,745 | 851,817 | 133,036 | 104,560 | 61,186 | 19,331 | 2,173,675 |
| Value added in process of manufacture £ | 322,340 | 308,968 | 71,377 | 40,884 | 19,144 | 4,511 | 767,224 |

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

FLOUR MILLS, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915 * | W.A. 1916 * | Tas. 1916 | C'w'thb. |
|---|--------------------|---------------|------------------|----------------|----------------|--------------|-----------|
| Number of factories ... | 63 | 51 | 12 | 42 | 16 | 13 | 197 |
| " employees ... | 1,026 | 651 | 212 | 469 | 287 | 124 | 2,769 |
| Actual horse-power of engines employed | 4,891 | 3,887 | 993 | 2,614 | 1,984 | 594 | 14,893 |
| Approx. value of land and buildings £ | 394,087 | 211,615 | 73,920 | 117,077 | 99,418 | 47,200 | 943,317 |
| " plant and machinery £ | 336,982 | 250,186 | 78,441 | 141,861 | 100,356 | 29,400 | 937,226 |
| Total am't of wages paid during year £ | 147,724 | 70,982 | 35,548 | 48,043 | 39,281 | 15,281 | 356,859 |
| Value of fuel used ... | £ 22,956 | 15,029 | 3,157 | 8,469 | 6,436 | 3,960 | 60,007 |
| Value of raw material worked up | £3,223,979 | 2,368,489 | 563,526 | 857,046 | 792,624 | 359,902 | 8,165,566 |
| Total value of output ... | £3,676,602 | 2,739,730 | 647,586 | 969,937 | 938,177 | 392,956 | 9,364,988 |
| Value added in process of manufacture £ | 452,623 | 371,241 | 84,060 | 112,871 | 145,553 | 33,054 | 1,199,422 |

* 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 1911 to 1916 was as follows:—

FLOUR MILLS—PRODUCTION 1911 to 1916.

| Year. | N.S.W. | Victoria. | Q'land. | Sth. Aust. | West. Aust. | Tasmania. | C'wealth. |
|-------|----------|-----------|---------|------------|-------------|-----------|-----------|
| | Tons.* | Tons.* | Tons.* | Tons.* | Tons.* | Tons.* | Tons.* |
| 1911 | 253,556 | 247,434 | 27,960 | 100,374 | 40,642 | 21,335 | 691,301 |
| 1912 | 255,359 | 225,376 | 25,855 | 103,100 | 49,319 | 18,044 | 677,053 |
| 1913 | 285,425 | 252,763 | 33,889 | 107,994 | 61,997 | 18,545 | 760,613 |
| 1914 | 266,302† | 246,136 | 35,402 | 84,701 | 61,922 | 19,382 | 713,845 |
| 1915 | 266,302† | 134,401 | 39,734 | 49,404 | 32,396 | 19,573 | 541,810 |
| 1916† | 254,393 | 134,401 | 42,559 | 49,404 | 70,912 | 25,369 | 577,038 |

* Tons of 2000 lbs. † Year ended 30th June, 1915. ‡ See note † first table this section.

The total production of flour for the Commonwealth for the last year, viz., 577,038 tons, was valued at £7,569,145; in addition 257,385 tons of bran and pollard, valued at £1,648,676, were made. The total quantity of wheat ground was 28,117,519 bushels.

17. **Sugar Mills.**—The following table shews 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 the sugar-cane is grown.

SUGAR MILLS, 1916.

| Items. | N.S.W. 1915-16. | Queensland. 1916. | Total. |
|--|--------------------|----------------------|-----------|
| Number of factories | 3 | 42 | 45 |
| " employees | 463 | 4,528 | 4,991 |
| Actual horse-power of engines employed ... | 1,768 | 13,473 | 15,241 |
| Approximate value of land and buildings £ | 54,000 | 354,738 | 408,738 |
| " " plant and machinery £ | 481,027 | 2,757,585 | 3,238,612 |
| Total amount of wages paid during year £ | 50,811 | 478,680 | 529,491 |
| Value of fuel used | £ 4,270 | 55,569 | 59,839 |
| Value of raw material worked up | £ 222,748 | 2,089,131 | 2,311,879 |
| Total value of output | £ 356,368 | 3,180,804 | 3,537,172 |
| Value added in course of manufacture £ | 133,620 | 1,091,673 | 1,225,293 |

The product of the sugar mill is raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. Part of the molasses produced is used in distillation, part is turned into food cake for cattle, and part is used for manuring land, but 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 1916.

| Items. | 1870. | 1877. | 1886. | 1896. | 1901. | 1911. | 1912. | 1913. | 1914-15. | 1915-16. |
|-------------------|-------|---------|---------|-----------|-----------|---------|---------|---------|-----------|-----------|
| No. of factories | 27 | 50 | 64 | 23 | 12 | 4 | 3 | 3 | 3 | 3 |
| " employees | ... | 1,065 | 2,259 | 1,475 | 695 | 469 | 469 | 486 | 437 | 463 |
| Cane crushed tns | ... | ... | ... | ... | ... | 167,799 | 141,274 | 185,910 | 181,606 | 157,748 |
| Sugar produced | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| tons | 677 | 7,537 | 13,750 | 28,557 | 19,519 | 17,299 | 16,817 | 22,192 | 20,029 | 19,144 |
| Molasses produced | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ...gals. | ... | 345,543 | 507,000 | 2,520,580 | 1,300,909 | 796,440 | 667,100 | 966,000 | 1,104,000 | 1,099,000 |

* Not available.

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

SUGAR MILLS, QUEENSLAND, 1868 to 1916.

| Items. | 1868. | 1876. | 1886. | 1896. | 1901. | 1911. | 1914. | 1915. | 1916. |
|-------------------------|--------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| No. of factories ... | 10 | 70 | 118 | 63 | 52 | 49 | 47 | 44 | 42 |
| ... employees ... | ... | ... | ... | 3,796 | ... | 4,295 | 4,835 | 4,220 | 4,528 |
| Cane crushed ... tons | ... | 17,945 | 140,756 | 166,640 | 178,160 | 1,534,451 | 1,922,633 | 1,152,516 | 1,579,514 |
| Sugar produced tons | 619 | 8,214 | 59,225 | 100,774 | 120,858 | 173,296 | 225,847 | 140,496 | 176,973 |
| Molasses— | | | | | | | | | |
| Sold to distillers gals | | | | | | 2,393,669 | 2,374,501 | 1,063,298 | 818,812 |
| Used as fodder gals | | | | | | 789,564 | 898,693 | 1,847,112 | 1,439,108 |
| Used as Manure gals | * | * | * | * | * | 223,000 | 476,556 | 64,400 | 54,600 |
| Run to waste or burnt | | | | | | | | | |
| † gals | | | | | | 1,847,333 | 3,278,841 | 1,892,201 | 3,232,835 |
| In stock ... | | | | | | 1,197,626 | 977,629 | 869,914 | 797,084 |
| Total Molasses † gals | 68,622 | 416,415 | 1,784,266 | 2,195,470 | 3,679,952 | 6,451,192 | 8,006,220 | 5,736,925 | 6,342,439 |

* No record. † Acres crushed. ‡ Quantity recorded: large quantities run to waste of which no record is kept. § Including 135,390 gallons syrup.

Information regarding the cultivation of sugar-cane may be found in the section of this book dealing with *Agricultural Production*. (See pages 371 to 374.)

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 1916 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 1617 hands was employed during the year. The approximate value of land and buildings was £448,871; of plant and machinery, £1,051,171; and the total amount of wages paid during the year was £222,000. The value of all materials used in sugar refineries was £4,965,992, while the total output reached £5,816,915. The amount of crude sugar used was 263,479 tons, and of refined sugar produced 251,764 tons, valued at £5,789,562.

19. Breweries.—(i.) *Details for each State.* The following table gives particulars of breweries in each State:—

BREWERIES, 1916.

| Items. | N.S.W. 1915-16. | Victoria. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'w'lth. |
|--|--------------------|--------------------|------------------|-------------------|-------------------|---------------|-----------|
| Number of factories ... | 24 | 22 | 10 | 11 | 14 | 5 | 86 |
| ... employees ... | 940 | 903 | 385 | 348 | 486 | 117 | 3,179 |
| Actual horse-power of engines employed ... | 2,507 | 3,199 | 619 | 990 | 1,430 | 137 | 8,882 |
| Approx. value of land and buildings ... £ | 623,919 | 434,295 | 133,132 | 99,985 | 176,931 | 396,450 | 1,864,712 |
| Approx. value of plant and machinery ... £ | 619,498 | 419,896 | 124,011 | 106,561 | 203,164 | 45,716 | 1,518,846 |
| Total amount of wages paid during year ... £ | 172,300 | 159,870 | 63,755 | 53,573 | 89,693 | 20,813 | 560,004 |
| Value of fuel used ... £ | 33,007 | 23,692 | 8,087 | 8,138 | 11,626 | 2,765 | 87,375 |
| Value of raw material worked up ... £ | 676,287 | 481,327 | 127,942 | 107,304 | 122,574 | 33,181 | 1,548,615 |
| Total value of output ... £ | 1,454,641 | 1,061,196 | 496,834 | 309,526 | 441,172 | 108,675 | 3,872,044 |
| Value added by process of manufacture ... £ | 778,354 | 579,869 | 368,892 | 202,222 | 318,568 | 75,494 | 2,323,429 |

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

PRODUCTION AND MATERIALS USED IN BREWERIES, 1916.

| Particulars. | N.S.W. 1915-16. | Victoria. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tasmania. 1916. | C'wealth. |
|--|--------------------|--------------------|------------------|-------------------|-------------------|--------------------|------------|
| ALE AND STOUT BREWED. | | | | | | | |
| Quantity gallons | 22,997,466 | 20,339,924 | 5,483,575 | 5,030,354 | 5,298,607 | 1,732,165 | 60,882,091 |
| Value* ... £ | 1,033,045 | 1,061,196 | 496,834 | 304,398 | 426,361 | 108,127 | 3,429,961 |
| RAW MATERIALS USED. | | | | | | | |
| Malt ... bush. | 666,088 | 600,333 | 162,424 | 118,086 | 159,284 | 64,383 | 1,770,598 |
| Hops ... lbs. | 849,161 | 661,299 | 228,055 | 160,593 | 205,608 | 97,530 | 2,302,246 |
| Sugar ... cwt. | 104,460 | 111,363 | 33,348 | 31,774 | 26,288 | 6,504 | 313,737 |
| RAW MATERIALS USED PER 1000 GALLONS OF ALE AND STOUT PRODUCED. | | | | | | | |
| Malt ... bush. | 28.96 | 29.52 | 29.62 | 23.47 | 30.06 | 37.17 | 29.08 |
| Hops ... lbs. | 36.92 | 32.51 | 41.59 | 31.92 | 38.80 | 56.31 | 36.17 |
| Sugar ... cwt. | 4.54 | 5.48 | 6.08 | 6.32 | 4.96 | 3.75 | 5.15 |

* Exclusive of excise duty.

(iii.) *Development of Breweries, 1911 to 1916.* The following table shews the progress of this industry during the past six years:—

DEVELOPMENT OF BREWERIES FROM 1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|-------------|-----------|-----------|-----------|-----------|-----------|
| Number of factories ... | 121 | 110 | 101 | 95 | 90 | 86 |
| “ employees ... | 3,450 | 3,532 | 3,551 | 3,535 | 3,295 | 3,179 |
| Actual horse-power of engines used ... | 5,008 | 5,678 | 6,930 | 8,313 | 8,430 | 8,882 |
| Approx. value of land and buildings £ | 1,469,449 | 1,526,629 | 1,554,187 | 1,860,584 | 1,872,535 | 1,864,712 |
| “ plant and machinery £ | 970,618 | 1,078,724 | 1,171,595 | 1,433,616 | 1,452,639 | 1,518,846 |
| Total amount of wages paid ... | £ 483,393 | 523,812 | 552,843 | 575,446 | 548,632 | 560,004 |
| Value of fuel used ... | £ 69,284 | 76,906 | 75,824 | 86,175 | 81,252 | 87,375 |
| “ raw material worked up ... | £ 1,273,522 | 1,494,070 | 1,568,620 | 1,534,656 | 1,494,974 | 1,548,615 |
| “ final output ... | £ 3,318,937 | 3,647,850 | 3,817,396 | 4,107,498 | 3,869,786 | 3,872,044 |
| Value added in process of manufacture £ | 2,045,415 | 2,153,780 | 2,248,776 | 2,572,842 | 2,374,612 | 2,323,429 |

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 £3,318,937 in 1911 to £3,872,044 in 1916, and the quantity of ale and stout brewed during the same period increased from 56,346,263 to 60,882,091 gallons. The average production per head of mean population was practically the same for the two years, being 12.55 gallons per head for 1911 and 12.41 for 1916.

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

DISTILLERIES, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Qld. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'with. |
|--|--------------------|---------------|---------------|---------------|---------------|---------------|---------|
| Number of factories ... | 3 | 9 | 3 | 19 | ... | ... | 34 |
| “ employees ... | 31 | 92 | 39 | 83 | ... | ... | 245 |
| Actual horse-power of engines employed ... | 114 | 217 | 52 | 222 | ... | ... | 605 |
| Approximate value of land and buildings £ | 20,230 | 103,985 | 13,000 | 29,023 | ... | ... | 166,238 |
| Approx. value of plant and machinery £ | 62,672 | 76,549 | 17,500 | 26,125 | ... | ... | 182,846 |
| Total amount of wages paid during year £ | 6,146 | 10,883 | 5,573 | 6,690 | ... | ... | 29,292 |
| Value of fuel used ... | £ 1,664 | 2,947 | 1,460 | 1,960 | ... | ... | 8,031 |
| Value of raw materials worked up ... | £ 39,091 | 32,209 | 6,057 | 38,108 | ... | ... | 115,465 |
| Total value of output ... | £ 63,041 | 61,604 | 33,233 | 57,657 | ... | ... | 215,535 |
| Value added in process of manufacture £ | 23,950 | 29,395 | 27,176 | 19,549 | ... | ... | 100,070 |

The total quantity of rum distilled during the year was 458,961, of whisky 120,157, of brandy 113,139, and of other spirits 1,734,182 proof gallons. The materials used comprised 396,981 cwt. of molasses and sugar, and 2,019,421 gallons of wine. Particulars for the separate States are not available for publication.

21. **Tobacco, Cigars, and Cigarettes.**—(i.) *Details for each State.* During the year there were thirty-one 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, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Qld. 1916. | S.A. 1915. | W.A. 1916-1 | Tas. 1916. | C'w'lth. † |
|--|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|
| Number of factories | 12 | 13 | 2 | 2 | 6 | ... | 35 |
| " employees | 1,969 | 1,501 | 99 | 31 | 39 | ... | 3,739 |
| Actual horse-power of engines employed | 495 | 375 | 26 | ... | 18 | ... | 914 |
| Approx. value of land and buildings £ | 220,217 | 177,365 | 5,114 | 5,319 | 4,053 | ... | 412,068 |
| " plant and machinery £ | 130,617 | 111,410 | 8,491 | 2,535 | 900 | ... | 253,953 |
| Total amount of wages paid during year £ | 198,558 | 185,889 | 8,446 | * | 1,542 | ... | †394,435 |
| Value of fuel used | 6,543 | 2,916 | 232 | * | 29 | ... | †9,720 |
| Value of raw material worked up £ | 1,356,206 | 731,948 | 29,740 | * | 6,310 | ... | †2,124,204 |
| Total value of output | 1,952,871 | 1,199,660 | 60,798 | * | 10,104 | ... | *3,223,433 |
| Value added in process of manufacture £ | 595,665 | 467,712 | 31,058 | * | 3,794 | ... | †1,099,229 |

* Not available for publication.

† Exclusive of South Australia.

‡ Including four condiment establishments.

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

PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1916.

| Particulars. | N.S.W. 1915-16. | Victoria. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'w'lth. |
|--------------------------------|--------------------|--------------------|------------------|-------------------|-------------------|---------------|-------------|
| QUANTITY (,000 OMITTED). | | | | | | | |
| Manufact'ed tobacco lbs. | 5,041 | 5,023 | * | * | 9 | ... | 10,306 |
| Cigars { lbs. 99 | 99 | 263 | ... | * | * | ... | \$362 |
| " " " " { No. 8,638 | 8,638 | 22,677 | ... | * | * | ... | \$31,315 |
| Cigarettes { lbs. 3,043 | 3,043 | 308 | ... | ... | † | ... | \$3,351 |
| " " " " { No. 1,352,666 | 1,352,666 | 138,111 | ... | ... | ‡ | ... | \$1,490,777 |

TOBACCO LEAF USED (,000 OMITTED).

| | | | | | | | |
|-------------------------|-------|-------|---|---|-----|-----|--------|
| Australian leaf... lbs. | 988 | 516 | * | * | ... | ... | 1,730 |
| Imported leaf ... lbs. | 6,363 | 4,415 | * | * | †9 | ... | 10,811 |

* Not available for publication. † For tobacco and cigarettes only. ‡ Included with tobacco.
§ Incomplete.

(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 1916-17 were—manufactured tobacco 1,645,325 lbs., cigars 149,500 lbs., and cigarettes 163,581 lbs., while the quantities manufactured in Australian factories were respectively 10,306,085 lbs., 361,592 lbs., and 3,350,643 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, 1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. † | 1916. † |
|--|-------------|-----------|-----------|-----------|------------|------------|
| Number of factories | 33 | 35 | 36 | 36 | 34 | 35 |
| Number of employees | 3,730 | 3,484 | 3,566 | 3,658 | 3,547 | 3,739 |
| Actual horse-power of engines used | 1,045 | 917 | 1,119 | 808 | 826 | 914 |
| Approx. value of land and buildings | £ 373,895 | 349,022 | 353,447 | 402,462 | 404,593 | 412,068 |
| Approx. value of plant and machinery | £ 214,576 | 227,294 | 231,547 | 248,532 | 241,591 | 253,933 |
| Total amount of wages paid | £ 346,258 | 358,081 | 373,963 | 380,821* | 370,237 | *394,435 |
| Value of fuel used | £ 4,488 | 4,267 | 4,053 | 7,365 | 7,607 | *9,720 |
| Value of raw material worked up | £ 1,468,212 | 1,623,713 | 1,651,226 | 1,905,489 | *1,959,525 | *2,124,204 |
| Value of final output | £ 2,518,946 | 2,696,157 | 2,713,363 | 3,006,482 | *3,041,050 | *3,223,433 |
| Value added in process of manufacture | £ 1,050,734 | 1,073,444 | 1,062,137 | 1,100,993 | *1,081,525 | *1,099,229 |

PRODUCTION.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|-------------------------------|--------|--------|--------|--------|---------|--------|
| Tobacco made 1000 lbs. | 10,048 | 10,298 | 9,956 | 9,964 | 9,776 | 10,306 |
| Cigars " | 356 | 389 | 406 | 401 | 365 | 1362 |
| Cigarettes " | 2,164 | 2,606 | 2,768 | 3,197 | 3,175 | †3,351 |
| Leaf used " | 10,993 | 11,827 | 11,677 | 12,091 | *11,858 | 12,541 |

* Exclusive of two factories in South Australia. † Incomplete.
 ‡ Including four condiment establishments in Western Australia.

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 table, which gives particulars of the mills in each State, shews that the industry is now well established :—

WOOLLEN, COTTON, AND TWEED MILLS, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'ld. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'wlth. |
|---|--------------------|---------------|----------------|---------------|---------------|---------------|-----------|
| Number of factories | 5 | 10 | 2 | 2 | ... | 4 | 23 |
| " employees | 1,169 | 2,063 | 221 | 216 | ... | 258 | 3,927 |
| Actual horse-power of engines employed | 9,230 | 2,679 | 220 | 261 | ... | 148 | 5,538 |
| Approx. value of land and buildings | £ 129,755 | 136,395 | 15,373 | 16,900 | ... | 20,950 | 319,273 |
| " plant and machinery | £ 192,457 | 265,267 | 26,616 | 29,523 | ... | 39,808 | 553,671 |
| Total amount of wages paid during year | £ 125,573 | 170,888 | 16,901 | 24,798 | ... | 18,977 | 357,137 |
| Value of fuel used | £ 19,924 | 21,962 | ... | ... | ... | 1,546 | 40,283 |
| Value of raw material worked up | £ 362,425 | 487,140 | * | * | ... | 40,018 | 971,144 |
| Total value of output | £ 696,805 | 931,774 | * | * | ... | 91,275 | 1,888,115 |
| Value added in process of manufacture | £ 334,379 | 444,634 | * | * | ... | 51,257 | 916,971 |

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

(ii.) *Progress of Industry, 1911 to 1916.* The progress of woollen and tweed manufactures in the Commonwealth during the last six years is shewn in the following table :—

DEVELOPMENT OF WOOLLEN, COTTON, AND TWEED MILLS IN THE COMMONWEALTH FROM 1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|--|-----------|---------|---------|-----------|-----------|-----------|
| Number of factories | 32 | 32 | 22 | 22 | 22 | 23 |
| " employees | 3,200 | 3,379 | 3,030 | 3,290 | 3,620 | 3,927 |
| Actual horse-power of engines used | 3,444 | 3,692 | 4,358 | 5,072 | 5,364 | 5,538 |
| Approx. value of land and buildings | £ 283,115 | 307,049 | 299,306 | 311,391 | 310,114 | 319,273 |
| " plant and machinery | £ 478,859 | 497,827 | 516,659 | 532,084 | 537,849 | 553,671 |
| Total amount of wages paid | £ 203,194 | 232,561 | 231,018 | 257,590 | 313,826 | 357,137 |
| Value of fuel used | £ 20,863 | 23,709 | 21,778 | 27,306 | 36,275 | 40,283 |
| Value of raw material worked up | £ 447,829 | 468,728 | 475,637 | 603,387 | 836,298 | 971,144 |
| Value of final output | £ 860,789 | 930,485 | 925,602 | 1,152,657 | 1,615,223 | 1,888,115 |
| Value added in process of manufacture | £ 412,960 | 461,757 | 449,965 | 549,270 | 778,925 | 916,971 |

*Excluding manufactures of hosiery and knitted goods, numbering 13 establishments in 1912, included in New South Wales returns previous to 1913.

(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 1916 was 4,707,548 yards. In New South Wales in 1915-16, 2,447,910 yards of tweed and cloth, and in Victoria in 1915, 1,331,137 yards were manufactured. The production of flannel in the Commonwealth amounted to 6,083,392 yards, while blankets, shawls, and rugs to the number of 1,097,178 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 table shews latest available particulars of this industry for each State:—

BOOT AND SHOE FACTORIES, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916 | S.A. 1915. | W.A. 1916. | Tas 1916. | C'w'lth. |
|--|--------------------|---------------|-----------------|---------------|---------------|--------------|-----------|
| Number of factories | 103 | 174 | 26 | 26 | 13 | 10 | 352 |
| " employees | 4,199 | 6,847 | 1,076 | 719 | 231 | 250 | 13,322 |
| Actual horse-power of engines employed | 1,248 | 1,362 | 371 | 167 | 49 | 52 | 3,249 |
| Approx. value of land and buildings | £ 295,521 | 278,145 | 36,675 | 46,785 | 20,437 | 15,110 | 692,673 |
| " plant and machinery | £ 153,165 | 205,538 | 26,578 | 25,969 | 9,450 | 8,137 | 428,837 |
| Total amt. of wages paid during year | £ 413,414 | 625,886 | 102,250 | 62,907 | 23,246 | 16,997 | 1,244,700 |
| Value of fuel used | £ 7,417 | 11,742 | 1,109 | 1,356 | 529 | 95 | 22,248 |
| Value of raw material worked up | £ 857,752 | 1,502,285 | 194,336 | 129,083 | 65,882 | 44,053 | 2,793,391 |
| Total value of output | £ 1,428,757 | 2,436,673 | 367,914 | 213,398 | 98,604 | 71,976 | 4,617,322 |
| Value added in process of manufacture | £ 571,005 | 934,388 | 173,578 | 84,315 | 32,722 | 27,923 | 1,823,931 |

(ii.) *Progress of Industry, 1911 to 1916.* The progress of the industry in the last six years is shewn in the following table:—

DEVELOPMENT OF BOOT AND SHOE FACTORIES IN THE COMMONWEALTH, 1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---------------------------------------|-------------|-----------|-----------|-----------|-----------|-----------|
| Number of factories | 341 | 332 | 346 | 357 | 358 | 352 |
| Number of employees | 13,772 | 13,341 | 13,456 | 13,192 | 13,175 | 13,322 |
| Actual horse-power of engines used | 2,405 | 2,646 | 2,823 | 3,091 | 3,029 | 3,249 |
| Approx. value of land and buildings | £ 565,735 | 598,659 | 629,787 | 656,576 | 677,307 | 692,673 |
| Approx. value of plant and machinery | £ 389,879 | 398,014 | 429,994 | 415,695 | 418,529 | 428,837 |
| Total amount of wages paid | £ 1,096,575 | 1,144,465 | 1,154,658 | 1,193,900 | 1,220,987 | 1,244,700 |
| Value of fuel used | £ 16,792 | 17,244 | 18,073 | 18,902 | 20,713 | 22,248 |
| Value of raw material worked up | £ 2,151,101 | 2,184,750 | 2,308,194 | 2,437,169 | 2,673,016 | 2,793,391 |
| Value of final output | £ 3,713,948 | 3,819,371 | 4,004,466 | 4,156,590 | 4,486,885 | 4,617,322 |
| Value added in process of manufacture | £ 1,562,847 | 1,634,621 | 1,696,292 | 1,719,421 | 1,813,669 | 1,823,931 |

Although the average number of employees in boot and shoe factories shews a slight decline during the past six years, a substantial and consistent advance in the value of output is in evidence during the same period. This is doubtless partly attributable to the increase in mechanical power employed, and the introduction of improved plant and machinery, the value of which was £428,837 in 1916, as compared with £389,879 in 1911.

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

PRODUCTION OF BOOT AND SHOE FACTORIES, 1916.

| Particulars. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'w'lth.. |
|---------------------------|--------------------|---------------|------------------|-------------------|-------------------|---------------|-----------|
| QUANTITY (,000 OMITTED). | | | | | | | |
| Boots and shoes ... pairs | 3,550 | 5,257 | 729 | 619 | 217 | 165 | 10,537 |
| Slippers ... pairs | 291 | 191 | 14 | 23 | 2 | 7 | 528 |
| Uppers* ... pairs | 44 | 14 | 34 | 16 | ... | ... | 108 |
| VALUE. | | | | | | | |
| Boots and shoes ... £ | 1,351,594 | 2,414,123 | 336,093 | 197,116 | 89,667 | 67,951 | 4,456,544 |
| Slippers ... £ | 34,393 | 19,000 | 2,729 | 4,019 | 640 | 1,485 | 62,256 |
| Uppers* ... £ | 12,440 | 3,550 | 13,219 | 4,122 | ... | ... | 33,331 |

* Made for other than factory use.

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, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'wlth. |
|--|--------------------|---------------|------------------|---------------|---------------|---------------|-----------|
| Number of factories ... | 451 | 466 | 135 | 127 | 60 | 35 | 1,274 |
| " employees ... | 10,544 | 10,247 | 3,744 | 2,254 | 969 | 474 | 28,232 |
| Actual horse-power of engines employed | 746 | 467 | 261 | 103 | 62 | 8 | 1,647 |
| Approx. value of land and buildings £ | 875,701 | 602,230 | 263,260 | 145,384 | 101,775 | 70,324 | 2,058,674 |
| " plant and machinery £ | 69,338 | 83,539 | 42,449 | 14,199 | 9,456 | 2,959 | 221,940 |
| Total amount of wages paid during year £ | 784,136 | 633,545 | 229,612 | 129,068 | 78,766 | 34,068 | 1,889,195 |
| Value of fuel used... £ | 11,741 | 13,398 | 4,225 | 3,139 | 1,816 | 448 | 34,767 |
| Value of raw material worked up £ | 1,268,476 | 1,279,278 | 487,799 | 174,702 | 147,643 | 45,121 | 3,403,019 |
| Total value of output ... £ | 2,498,027 | 2,315,842 | 902,995 | 367,223 | 263,639 | 100,127 | 6,447,853 |
| Value added in process of manufacture £ | 1,229,551 | 1,036,564 | 415,196 | 192,521 | 115,996 | 55,006 | 3,044,834 |

The substantial development that has taken place in the tailoring and slop branch of this industry may be accepted as an indication of the general prosperity of the community. The value of the output increased from £5,486,388 in 1911 to £6,447,853 in 1916, or approximately 17½ per cent.

DEVELOPMENT OF CLOTHING (TAILORING AND SLOP) FACTORIES IN THE COMMONWEALTH FROM 1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---|-----------|-----------|-----------|-----------|-----------|-----------|
| Number of factories ... | 1,182 | 1,238 | 1,342 | 1,340 | 1,297 | 1,274 |
| " employees ... | 30,549 | 31,068 | 30,965 | 29,774 | 28,616 | 28,232 |
| Actual horse-power of engines used ... | 1,020 | 1,206 | 1,201 | 1,257 | 1,323 | 1,647 |
| Approx. value of land and buildings £ | 1,931,274 | 2,155,643 | 2,212,346 | 2,219,346 | 2,195,419 | 2,058,674 |
| " plant and machinery £ | 160,935 | 173,706 | 191,752 | 209,167 | 214,967 | 221,940 |
| Total amount of wages paid ... £ | 1,854,135 | 2,010,779 | 2,075,916 | 1,979,088 | 1,895,146 | 1,889,195 |
| Value of fuel used ... £ | 28,561 | 29,550 | 31,219 | 31,825 | 33,312 | 34,767 |
| " raw material worked up £ | 2,610,348 | 2,696,987 | 2,732,241 | 2,864,893 | 3,096,134 | 3,403,019 |
| " final output ... £ | 5,486,388 | 5,807,431 | 5,678,119 | 5,953,001 | 6,125,272 | 6,447,853 |
| Value added in process of manufacture £ | 2,876,040 | 3,110,444 | 3,145,878 | 3,088,108 | 3,029,138 | 3,044,834 |

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

DRESSMAKING AND MILLINERY ESTABLISHMENTS, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.Aust. 1915. | W. A. 1916. | Tas. 1916. | C'w'lth. |
|--|--------------------|---------------|------------------|------------------|----------------|---------------|-----------|
| Number of factories | 277 | 446 | 54 | 46 | 50 | 17 | 890 |
| " employees | 5,143 | 8,107 | 1,350 | 763 | 718 | 302 | 16,383 |
| Actual horse-power of engines employed | 155 | 291 | 22 | 13 | 21 | 7 | 509 |
| Approx. value of land and buildings | £ 388,001 | 446,201 | 46,230 | 30,714 | 47,820 | 15,800 | 974,766 |
| " plant and machinery | £ 20,774 | 45,829 | 6,533 | 3,575 | 4,579 | 767 | 82,057 |
| Total amount of wages paid during year | £ 235,386 | 373,607 | 57,766 | 30,403 | 39,023 | 13,192 | 749,377 |
| Value of fuel used | £ 2,397 | 6,879 | 433 | 409 | 548 | 80 | 10,746 |
| Value of raw material worked up | £ 326,290 | 736,727 | 95,120 | 40,260 | 50,612 | 17,746 | 1,266,755 |
| Total value of output | £ 708,573 | 1,348,923 | 202,556 | 91,888 | 96,433 | 32,893 | 2,481,266 |
| Value added by process of manufacture | £ 382,283 | 612,196 | 107,436 | 51,628 | 45,821 | 15,147 | 1,214,511 |

The development of dressmaking and millinery establishments in the Commonwealth during the past six years is shewn in the following table:—

DEVELOPMENT OF DRESSMAKING AND MILLINERY ESTABLISHMENTS IN THE COMMONWEALTH FROM 1911 to 1916.

| Items. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. |
|---------------------------------------|-------------|-----------|-----------|-----------|-----------|-----------|
| Number of factories | 1,050 | 994 | 995 | 991 | 892 | 890 |
| " employees | 18,803 | 18,476 | 18,217 | 17,318 | 15,616 | 16,383 |
| Actual horse-power of engines used | 319 | 371 | 376 | 410 | 428 | 509 |
| Approx. value of land and buildings | £ 879,098 | 878,231 | 939,072 | 956,416 | 917,895 | 974,766 |
| " plant and machinery | £ 67,307 | 74,466 | 72,257 | 79,182 | 79,357 | 82,057 |
| Total amount of wages paid | £ 695,319 | 748,222 | 772,748 | 759,221 | 714,131 | 749,377 |
| Value of fuel used | £ 8,722 | 9,143 | 9,238 | 9,164 | 9,440 | 10,746 |
| Value of raw material worked up | £ 1,161,260 | 1,249,930 | 1,287,050 | 1,272,420 | 1,224,687 | 1,266,755 |
| Value of final output | £ 2 280,553 | 2,429,315 | 2,492,105 | 2,429,133 | 2,364,862 | 2,481,266 |
| Value added in process of manufacture | £ 1,119,293 | 1,179,385 | 1,205,055 | 1,156,713 | 1,140,175 | 1,214,511 |

The amount of wages paid increased nearly 8 per cent. during the last five years, and the final output slightly under 9 per cent. during the same period.

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

COACH AND WAGON BUILDING WORKS, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'wlth. |
|--|--------------------|---------------|------------------|---------------|---------------|---------------|-----------|
| Number of factories | 228 | 310 | 80 | 89 | 39 | 23 | 769 |
| " employees | 2,367 | 2,381 | 576 | 697 | 248 | 177 | 6,446 |
| Actual horse-power of engines employed | 1,133 | 704 | 251 | 435 | 165 | 69 | 2,757 |
| Approx. value of land and buildings | £ 316,237 | 258,883 | 64,160 | 96,831 | 41,080 | 23,007 | 800,198 |
| " plant and machinery | £ 91,375 | 65,788 | 23,538 | 28,292 | 10,185 | 4,401 | 223,579 |
| Total amount of wages paid during year | £ 260,132 | 207,276 | 40,451 | 58,994 | 24,588 | 15,487 | 606,928 |
| Value of fuel used | £ 12,008 | 7,994 | 1,092 | 3,314 | 2,111 | 606 | 27,125 |
| Value of raw material worked up | £ 245,534 | 228,739 | 53,689 | 57,755 | 35,214 | 18,005 | 638,936 |
| Total value of output | £ 651,159 | 558,267 | 146,951 | 149,304 | 79,031 | 43,866 | 1,628,578 |
| Value added in process of manufacture | £ 405,625 | 329,528 | 93,262 | 91,549 | 43,817 | 25,861 | 989,642 |

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

**FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD
TABLE MAKING, 1916.**

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. 1916. | C'wlth. |
|--|--------------------|---------------|------------------|---------------|---------------|---------------|-----------|
| Number of factories | 174 | 187 | 65 | 31 | 28 | 10 | 495 |
| " employees | 2,311 | 1,755 | 980 | 692 | 309 | 219 | 6,266 |
| Actual horse-power of engines employed | 1,767 | 916 | 707 | 788 | 312 | 115 | 4,605 |
| Approx. value of land and buildings | £ 318,895 | 221,820 | 97,664 | 59,729 | 57,222 | 19,490 | 774,820 |
| " plant and machinery | £ 58,934 | 46,697 | 38,325 | 28,101 | 13,200 | 6,137 | 191,394 |
| Total amount of wages paid during year | £ 273,033 | 168,399 | 102,155 | 66,918 | 41,062 | 20,385 | 671,952 |
| Value of fuel used | £ 6,578 | 3,585 | 2,653 | 1,595 | 1,331 | 416 | 16,158 |
| Value of raw material used | £ 287,722 | 217,306 | 111,956 | 57,453 | 55,194 | 17,437 | 747,068 |
| Total value of output | £ 662,843 | 479,520 | 279,159 | 147,676 | 106,893 | 52,638 | 1,728,729 |
| Value added in process of manufacture | £ 375,121 | 262,214 | 167,203 | 90,223 | 51,699 | 35,201 | 981,661 |

28. Electric Light and Power Works.—Particulars of the electric light and power works of the Commonwealth for latest date available are given in the subjoined table. In 1911 there were 164 establishments employing 2432 hands, whose salaries and wages amounted to £325,049; in 1916 these had increased to 245 establishments, 3079 hands, salaries and wages £559,170, while the value of output had increased during the five years from £1,663,185 to £2,484,756.

ELECTRIC LIGHT AND POWER WORKS, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas.* 1916. | C'wlth. |
|--|--------------------|---------------|------------------|---------------|---------------|----------------|-----------|
| Number of factories | 126 | 63 | 11 | 7 | 23 | 15 | 245 |
| " employees | 1,122 | 957 | 205 | 388 | 236 | 171 | 3,079 |
| Actual horse-power of engines employed | 104,942 | 33,127 | 13,347 | 15,510 | 19,759 | 6,023 | 192,708 |
| Approx. value of land and buildings | £ 901,900 | 319,472 | 37,813 | 143,850 | 76,995 | 16,078 | 1,496,108 |
| " plant and machinery | £ 2,024,328 | 1,569,553 | 166,373 | 418,760 | 440,295 | 360,849 | 4,980,158 |
| Total amount of wages paid during year | £ 189,293 | 135,045 | 36,307 | 61,569 | 46,330 | 22,901 | 491,445 |
| Value of fuel used | £ 244,752 | 77,149 | 28,834 | 34,433 | 89,443 | 7,827 | 482,438 |
| Total value of output | £ 1,096,205 | 536,251 | 315,029 | 155,766 | 278,806 | 102,699 | 2,484,756 |

* Including one establishment for manufacture of electric apparatus.

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

GAS AND COKE WORKS, 1916.

| Items. | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S.A. 1915. | W.A. 1916. | Tas. | C'wlth. |
|--|--------------------|---------------|------------------|---------------|---------------|---------|------------|
| Number of factories | 59 | 47 | 18 | 5 | 4 | 2 | 135 |
| " employees | 2,021 | 2,175 | 542 | 387 | 57 | 173 | 5,355 |
| Actual horse-power of engines employed | 4,706 | 1,686 | 186 | 562 | 43 | 34 | 7,217 |
| Approx. value of land and buildings | £ 668,923 | 476,265 | 194,582 | 11,612 | 21,366 | 30,000 | 1,402,748 |
| " plant and machinery | £ 1868,933 | 1,343,392 | 693,215 | 455,036 | 63,451 | 159,091 | 4,783,118 |
| Total amount of wages paid during year | £ 283,921 | 347,434 | 82,153 | * | * | 24,689 | 817,016† |
| Value of fuel used | £ 64,888 | 4,610 | 5,443 | * | * | 3,625 | 84,367† |
| Value of raw material used | £ 535,377 | 306,043 | 73,368 | * | * | 18,844 | 1,010,944† |
| Total value of output | £ 1558,163 | 1,035,941 | 287,403 | * | * | 68,214 | 3,192,815† |
| Value added in process of manufacture | £ 1022,786 | 729,898 | 214,015 | * | * | 49,370 | 2,181,871† |

* Not available for publication.

† Including South Australia and Western Australia.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1916 :—

PRODUCTION OF GAS AND COKE WORKS, 1916.

| Particulars. | | | | N.S.W. 1915-16. | Vic. 1915. | Q'land. 1916. | S. Aust. 1915. | W. Aust. 1916. | Tas. 1916. | C'wlth. |
|--------------|-----|---------------|------|--------------------|---------------|------------------|-------------------|-------------------|---------------|-------------|
| QUANTITY. | | | | | | | | | | |
| Gas made | ... | 1000 cub. ft. | | 6,220,011 | 4,107,578 | 902,357 | * | * | 205,350 | 12,227,463† |
| Coke | ... | ... | tons | 648,279 | 204,957 | 61,105 | * | * | 8,988 | 954,928† |
| VALUE. | | | | | | | | | | |
| Gas | ... | ... | £ | 985,321 | 776,000 | 233,927 | * | * | 53,195 | 2,224,368† |
| Coke | ... | ... | £ | 453,283 | 180,000 | 44,721 | * | * | 10,588 | 725,240† |
| COAL USED. | | | | | | | | | | |
| Coal | ... | ... | tons | 1,016,197 | 307,902 | 103,186 | * | * | 17,193 | 1,506,940† |

* Not available for publication.

† Including South Australia and Western Australia.