

SECTION VII.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

1. **Early Statistics.**—In earlier issues of the Year Book will be found a brief reference to the pastoral industry in Australia prior to the year 1860. (See Year Book No. 6, page 330.)

2. **Subsequent Statistics.**—While the statistical records of live stock in Australia prior to the year 1860 are somewhat defective, from that year onwards fairly complete particulars are available in most of the States. At the present time, statistics of live stock are collected annually in all the States, principally through the agency of the police, but in the years 1885 to 1888 inclusive, and 1893 to 1895 inclusive, these particulars were not collected in South Australia, and similar gaps occur in the Victorian records for the periods 1895 to 1899 inclusive, and 1901 to 1903. In order to obtain totals for the Commonwealth for these years the missing numbers have been supplied by interpolation. The results so obtained probably differ but slightly from the actual numbers for the respective years.

3. **Increase in Numbers.**—Particulars concerning the numbers of each of the principal kinds of live stock in the Commonwealth at quinquennial intervals from 1860 to 1910, and thence onwards in single years, are given in the following table, and are shewn continuously in the graphs hereinafter.

During the fifty-six years covered by the table the live stock of the Commonwealth increased considerably, horses by 465 per cent., cattle 164 per cent., sheep 281 per cent., and pigs 187 per cent. The average annual increases which these aggregates represent are as follows:—Horses, 3.14 per cent.; cattle, 1.75 per cent.; sheep, 2.42 per cent.; and pigs, 1.90 per cent.

COMMONWEALTH LIVE STOCK, 1860 to 1916.

Year.	Horses.	Cattle.	Sheep.	Pigs.
1860	431,525	3,957,915	20,135,286	351,096
1865	566,574	3,724,813	29,539,928	345,704
1870	716,772	4,276,326	41,593,612	543,388
1875	835,393	6,389,610	53,124,209	549,808
1880	1,061,078	7,523,000	62,176,027	815,776
1885	1,143,064	7,397,847	67,491,976	748,908
1890	1,521,588	10,299,913	97,881,221	891,138
1895	1,680,419	11,767,488	90,689,727	822,750
1900	1,609,654	8,640,225	70,602,995	950,349
1905	1,674,790	8,528,331	74,540,916	1,014,977
1910	2,165,866	11,744,714	92,047,015	1,025,850
1911	2,279,027	11,828,954	93,003,521	1,110,721
1912	2,408,113	11,577,259	83,263,686	845,255
1913	2,521,983	11,483,882	85,057,402	800,505
1914	2,521,272	11,051,573	78,600,334	862,447
1915	2,377,920	9,931,416	69,257,189	753,693
1916	2,437,157	10,459,237	76,668,604	1,006,763

4. **Fluctuations.**—The increases referred to, however, have not been continuous, marked fluctuations having taken place during the period, mainly on account of the droughts which have from time to time left their impress on the pastoral history of Australia. These were in evidence in 1869, 1877, 1884, 1895 and subsequent years, 1902, to some extent in 1908, and in a severer form during the earlier half of 1912, and again during 1914 and 1915. The falling-off in the number of sheep in 1915 was 9,343,145, of cattle 1,120,157, of horses 144,252, and of pigs 108,754, being 11.91, 10.14, 5.72 and 12.61 per cent. respectively. The number of horses for the year 1913 was the highest ever recorded in the Commonwealth. The winter of 1913 was dry over Southern Australia, though the crops subsequently recovered under the influence of fine spring rains, but in 1914 and 1915, very pronounced drought conditions developed—enveloping the whole of sub-tropical Australia (except the New South Wales coast) during 1914, and all the Central and North-eastern parts of the continent in 1915. Throughout many parts of Western Australia, South Australia, the Riverina, Victoria, and Tasmania, the year 1914 was the driest on record, and similarly throughout a large part of Queensland and North-eastern New South Wales, 1915 was the worst year ever experienced. The result was a general failure of the crops throughout the wheat belt in 1914, heavy stock losses, the failure of the sugar crops of the East Coast and of a large proportion of the cereal crops on the Downs in Queensland.

The extraordinary recuperative power of Australia is reflected in the large increases in the numbers of stock which occurred in the good seasons supervening on the various droughts. Thus, in the nine years from 1902 to 1911, horses increased by 754,426, cattle by 4,766,212, and sheep by 39,335,174, the corresponding increases per cent. per annum being horses 4.57 per cent., cattle 5.90 per cent., and sheep 6.30 per cent.

The years in which the numbers of live stock attained their maxima are as follows:—Horses, 1913, 2,521,983; cattle, 1894, 12,311,617; sheep, 1891, 106,421,068; and pigs, 1911, 1,110,721.

5. **Live Stock in Relation to Population.**—The number of each kind of live stock per head of the population of the Commonwealth has varied during the past fifty-six years in the manner shown in the succeeding table:—

NUMBER OF LIVE STOCK PER HEAD OF POPULATION, 1860 to 1916.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Year.	Horses.	Cattle.	Sheep.	Pigs.
1860	0.38	3.45	17.58	0.31	1905	0.42	2.11	18.48	0.25
1865	0.41	2.68	21.25	0.25	1910	0.49	2.65	20.80	0.23
1870	0.43	2.60	25.24	0.33	1911	0.50	2.59	20.36	0.24
1875	0.44	3.37	27.99	0.29	1912	0.51	2.45	17.59	0.18
1880	0.48	3.37	27.87	0.37	1913	0.52	2.36	17.46	0.16
1885	0.42	2.75	25.05	0.28	1914	0.51	2.24	15.91	0.17
1890	0.48	3.27	31.06	0.28	1915	0.48	2.01	14.04	0.15
1895	0.48	3.36	25.93	0.24	1916	0.50	2.15	15.73	0.21
1900	0.43	2.29	18.75	0.25					

Considered in relation to population, the live stock attained its maximum in the period 1890-5, and its minimum in the year 1902. During the period under review, the number of horses varied but slightly in proportion to population, the range being from 0.38 to 0.52 per head. In the case of cattle, the limits of variation were 1.82 and 3.45; sheep, 13.85 and 31.06; and pigs, 0.15 and 0.37.

6. **Live Stock in Relation to Area.**—The numbers of live stock per square mile in the several States and Territories of the Commonwealth are given in the following table:—

NUMBER OF LIVE STOCK PER SQUARE MILE.

States and Territories.	Date.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales ...	30th June, 1917...	2.37	8.91	116.62	1.16
Victoria ...	1st March, 1917...	5.85	13.37	143.10	2.90
Queensland ...	31st Dec., 1916 ...	1.04	7.11	23.15	0.19
South Australia ...	30th June, 1917...	0.63	0.76	13.40	0.31
Western Australia ...	31st Dec., 1916 ...	0.17	0.89	5.67	0.09
Tasmania ...	1st March, 1917...	1.63	6.84	64.95	2.30
Northern Territory...	31st Dec., 1916 ...	0.04	0.80	0.09	0.001
Federal Territory ...	30th June, 1917...	1.55	8.76	117.17	0.28
Commonwealth ...	1916-17 ...	0.82	3.52	25.77	0.34

7. **Minor Classes of Live Stock.**—The numbers of minor classes of live stock returned for 1916-17, were as follows:—Goats, 224,401; camels, 11,904; mules and donkeys, 11,713; and ostriches, 1194. Of these, goats were most numerous in Queensland, camels, mules, and donkeys in Western Australia, and ostriches in South Australia. In the raising of goats, considerable attention has in recent years been devoted to the angora goat and its product—mohair, and over 20,000 angora goats are included in the total of 224,401 goats shewn above. Of these, 7360 were in New South Wales, and 4462 in Queensland, while the quantity of mohair produced in the latter State in 1916 was set down at 4012 lbs., and the number of skins placed on the market was returned as 587.

8. **Net Exports of Principal Pastoral Products.**—The quantities by which the exports of the principal pastoral products of the Commonwealth exceeded the imports for the years 1912 to 1916-17 are as follows:—

**QUANTITIES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS
OF THE COMMONWEALTH, 1912 to 1916-17.**

Products.	Unit of Quantity.	1912.	1913.	1914-15. †	1915-16. †	1916-17. †
Animals (living)—						
Cattle ...	No.	16,050	14,548	10,121	5,417	2,743
Horses ...	"	7,055	7,761	23,655	14,589	14,228
Sheep ...	"	31,210	33,322	10,749	728	3,198
Bones ...	cwt.	20,885	37,948	33,802	16,378	26,884
Glue Pieces and Sinews	"	33,023	38,297	30,689	23,222	26,973
Glycerine ...	lb.	*	*	*	*	*
Hair ...	"	152,369	279,108	206,602	554,971	514,752
Hoofs ...	cwt.	10,416	12,476	11,012	8,347	10,497
Horns ...	"	*	*	*	*	*
Meats—						
Frozen Beef ...	lb.	142,186,123	218,911,159	292,056,035	114,654,569	242,040,115
" Mutton and Lamb	"	115,365,547	204,919,042	193,263,877	38,332,651	66,811,253
" Rabbits and Hares	pair	6,494,259	9,366,290	10,290,016	11,367,538	12,674,472
" Other...	lb.	4,797,512	7,685,149	13,107,560	3,004,290	10,773,154
Potted and Extract of	"	*	*	*	*	*
Preserved in Tins, etc.	"	33,571,112	51,731,741	57,326,285	13,059,238	21,922,630
Other...	"	2,957,745	1,154,580	298,019	130,672	35,833
Sausage Casings	"	*	*	*	*	*
Skins—						
Hides ...	No.	746,088	10,037,882	1,134,483	453,691	99,154
Sheep ...	"	10,650,834	10,997,873	10,396,987	7,254,642	4,753,464
Rabbit and Hare	cwt.	87,878	86,998	56,437	51,857	48,403
Other, including Undressed Furs	No.	*	*	*	*	*
Tallow ...	cwt.	1,058,341	1,435,156	1,106,023	250,519	555,427
Wool—Greasy ...	lb.	557,683,801	531,248,798	443,812,275	408,461,233	331,776,079
Scoured ...	"	60,232,936	60,873,478	60,846,240	74,880,215	51,727,629
Tops ...	"	3,018,050	3,561,722	4,095,966	4,961,975	4,869,452

* Quantity not available.

† For year ended 30th June.

The values of the net exports for the same five years are furnished in the next table, and amount to no less a total than £190,985,255 for the period, or an average of £38,197,051 per annum, of which wool represents 68 per cent. Meats, skins, and tallow rank next in order of importance.

**VALUE OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE
COMMONWEALTH, 1912 to 1916-17.**

Products.	1912.	1913.	1914-15.*	1915-16.*	1916-17.*
Animals (living)—	£	£	£	£	£
Cattle	64,233	50,229	19,558	10,089	4,582
Horses	—28,017	63,389	378,505	185,183	306,200
Sheep	61,879	46,565	14,204	—17,507	8,474
Bones	12,310	22,021	20,918	10,009	20,783
Glue Pieces and Sinews	18,139	23,328	17,641	12,815	21,416
Glycerine	13,621	13,769	13,900	16,078	26,459
Hair	29,950	28,160	26,445	26,684	26,802
Hoofs	4,922	6,178	4,156	2,361	6,363
Horns	30,339	30,444	15,300	6,379	4,191
Meats—					
Frozen Beef	1,630,306	2,652,144	4,989,810	2,175,343	4,945,716
„ Mutton and Lamb	1,592,302	2,896,292	3,413,846	769,434	1,545,546
„ Rabbits and Hares	320,887	497,568	531,920	724,624	913,142
„ Other	59,706	99,509	180,841	30,248	195,546
Potted and Extract of	60,779	203,412	347,471	31,467	65,471
Preserved in Tins, etc.	611,288	1,062,618	1,829,601	438,881	952,369
Other	12,944	17,677	4,375	3,195	1,151
Sausage Casings	8,735	32,133	25,372	—21,726	1,210
Skins—					
Hides	871,953	1,418,191	1,234,871	266,674	184,886
Sheep	1,988,122	2,480,900	1,743,209	1,242,358	1,137,832
Rabbit and Hare	576,179	620,487	230,139	261,868	433,546
Other, including Undressed Furs	647,959	746,023	106,319	253,458	190,738
Tallow	1,545,033	2,157,610	1,566,907	436,225	1,241,219
Wool—Greasy	22,066,585	21,472,360	17,470,385	20,172,243	21,870,118
Scoured	3,957,792	4,380,184	4,113,951	5,841,054	5,394,259
Tops	323,259	415,670	511,021	680,656	1,204,570
Total Values	36,481,245	41,436,861	38,811,167	33,558,093	40,697,889

* For year ended 30th June. Note. — signifies net imports.

§ 2. Horses.

1. **Suitability of Australia for Horse-breeding.**—From the earliest times the suitability of the climate and pastures of Australia for the production of serviceable breeds of horses has been fully recognised. By the importation of high-class sires, and the careful selection of breeding mares, these natural advantages were utilised to the fullest extent, all classes of horses being bred. As a consequence of this combination of advantages, the Australian horse, whether of the heavy draught, medium weight, or light saddle and carriage variety, compares more than favourably with the product of other lands. The Australian horse has been found suitable for the army in India, and large numbers are obtained annually for remount purposes.

2. **Distribution throughout the Commonwealth.**—As regards numbers, the State of New South Wales, the earliest settled of the group, established a lead, which it retained up to the end of 1913. For some years past Queensland has made rapid progress in this regard, and in 1914 there were 742,159 horses in that State, as compared with 731,735 in New South Wales, and 552,053 in Victoria. The 1915 and 1916 figures, however, shew that New South Wales has regained the lead. Particulars for the several States for a series of years are as follows:—

**NUMBER OF HORSES IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 to 1916.**

Year.	N.S.W.	Victoria. ‡	Q'sland.	S. Aust.	W. Aust.	Tas. ‡	N. T.	Fed. Terr.	Common- wealth.
1860...	251,497	76,536	23,504	49,399	9,555	21,034	...	...	431,525
1865...	282,587	121,051	51,091	73,993	15,700	22,152	...	...	566,574
1870...	337,597	167,220	83,358	83,744	22,174	22,679	...	...	716,772
1875...	357,696	196,184	121,497	107,164	29,379	23,473	...	...	835,393
1880...	395,984	275,516	179,152	148,219	34,568	25,267	*2,372	...	1,061,078
1885...	344,697	304,098	260,207	164,753	34,392	28,610	6,307	...	1,143,064
1890...	444,163	436,459	365,812	187,686	44,384	31,165	11,919	...	1,521,588
1895...	499,943	424,995	468,743	181,839	58,506	31,580	14,813	...	1,680,419
1900...	481,417	392,237	456,788	166,790	68,253	31,607	12,562	...	1,609,654
1905...	506,884	385,513	430,565	197,099	97,397	37,101	20,231	...	1,674,790
1910...	650,636	472,080	593,813	249,326	134,114	41,388	24,509	...	2,165,866
1911...	687,242	507,813	618,954	259,719	140,277	41,853	21,407	1,762	2,279,027
1912...	714,952	530,494	674,573	276,539	147,629	44,039	18,382	1,505	2,408,113
1913...	744,458	562,331	706,472	283,641	156,636	43,941	22,792	1,712	2,521,983
1914...	†731,735	552,053	742,159	267,877	161,625	42,232	21,985	†1,606	2,521,272
1915...	†718,232	493,779	686,871	253,333	163,016	41,422	19,957	†1,310	2,377,920
1916...	†732,334	514,403	697,517	†257,422	169,730	42,620	21,674	†1,457	2,437,157

* Statistics not collected prior to 1880. ‡ 1st March year following † 30th June year following.

3. **Proportion in the Several States and Territories.**—The percentages of the numbers of horses in the several States and Territories on the total for the Commonwealth for 1901 and the past five years are as follows:—

**PERCENTAGE OF HORSES IN EACH STATE AND TERRITORY ON THE TOTAL
FOR COMMONWEALTH, 1901 and 1912 to 1916.**

Year.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tas.	North'n Terr.	Fed. Terr.	Common- wealth.
	%	%	%	%	%	%	%	%	%
1901...	30.03	23.90	28.52	10.20	4.55	2.00	0.80	...	100.00
1912...	29.69	22.03	28.01	11.48	6.13	1.83	0.77	0.06	100.00
1913...	29.52	22.30	28.01	11.25	6.21	1.74	0.90	0.07	100.00
1914...	29.02	21.90	29.44	10.62	6.41	1.68	0.87	0.06	100.00
1915...	30.20	20.77	28.89	10.65	6.86	1.74	0.84	0.05	100.00
1916...	30.05	21.11	28.62	10.56	6.96	1.75	0.89	0.06	100.00

During the period under review, the proportion in Western Australia has increased, that in Victoria has diminished, while in the case of the other States the proportion in 1916 was practically identical with that in 1901.

4. **Oversea Export Trade in Horses.**—Australia's export trade in horses is fairly considerable, though somewhat fluctuating. During the past five years it has varied in number between 8,562 for the year 1913 and 24,107 in 1914-15, and in value between £163,730 in the former and £459,978 during the latter year. The total number of horses exported during the five years, exclusive of those shipped for military purposes, amounted to 73,598, an average of 14,720 per annum. The total value of the exports for the period was £1,433,260, or £286,652 per annum. The average export value per head for the period was £19 9s. 6d. The numbers exported to the principal countries concerned in this trade are as follows:—

**NUMBER AND DESTINATION OF HORSES EXPORTED FROM THE COMMONWEALTH,
1912 to 1916-17.**

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
India	7,299	6,775	21,162	14,405	15,744	65,385
Java	584	799	65	280	148	1,876
Straits Settlements	410	436	24	174	224	1,268
Fiji	146	106	117	257	223	849
Philippine Islands	247	88	...	8	5	348
Ceylon	156	3	...	...	15	174
New Zealand	77	90	52	37	40	296
Mauritius	46	95	...	...	...	141
Japan	41	59	16	35	16	167
Papua	56	57	9	2	35	159
Siam ... ..	...	...	...	...	34	34
China	25	...	...	...	...	25
Union of South Africa	13	8	3	...	1	25
Other Countries	107	46	2,659	11	28	2,851
Total	9,207	8,562	*24,107	*15,209	*16,513	73,598

* Exclusive of shipment for military purposes.

The corresponding particulars relative to the value of the horses exported are given in the next table :—

VALUE OF HORSES EXPORTED FROM THE COMMONWEALTH, 1912 to 1916-17.

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 years.
	£	£	£	£	£	£
India	129,186	107,925	387,046	250,710	312,271	1,187,138
Java	13,459	21,465	1,243	5,352	3,818	45,337
Straits Settlements	11,322	11,614	555	3,755	6,427	33,673
Fiji	3,642	3,215	3,337	6,653	5,814	22,661
Philippine Islands	5,449	2,061	...	1,200	60	8,770
Ceylon	3,403	840	...	...	450	4,693
New Zealand	11,435	5,319	9,765	7,232	11,190	44,941
Mauritius	1,358	3,229	...	...	...	4,587
Japan	2,650	2,836	875	1,900	850	9,111
Papua	899	1,271	171	65	663	3,069
Siam ... ..	...	...	...	...	541	541
China	625	...	...	...	...	625
Union of South Africa	695	211	60	...	160	1,126
Other Countries	5,421	3,744	56,926	244	653	66,988
Total	189,544	163,730	*459,978	*277,111	*342,897	*1,433,260

* Exclusive of shipment for military purposes.

Consequent on the greater demand for remounts for the Indian Army, a large increase took place in the number of horses exported to that country during the last three years. Of the 2659 horses exported to "Other Countries" during 1914-15—2270, valued at £50,075, were shipped to France. In addition to the exports shewn in the above tables, there were 36,966 horses, valued at £743,940, shipped from the Commonwealth for military purposes from the commencement of the war to 30th June, 1917.

The number of horses imported into the Commonwealth is comparatively small, consisting mainly of valuable animals introduced for breeding purposes, and imported principally from New Zealand and the United Kingdom. The average value per head of the horses imported during the last five years was £122 10s. 2d., as compared with £19 9s. 6d. per head for the exports for the same period. The average number imported per annum was, however, only 862, and the average annual value £105,600. The following table furnishes a comparison of imports and exports of horses during 1901 and each of the five years 1912 to 1916-17:—

COMMONWEALTH IMPORTS AND EXPORTS OF HORSES, 1901 and 1912 to 1916-17.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901 ...	246	19,601	32,474	438,248	32,228	418,647
1912 ...	2,152	217,561	9,207	189,544	7,055	— 28,017
1913 ...	801	100,341	8,562	163,730	7,761	63,389
1914-15...	452	81,473	24,107	459,978	23,655	378,505
1915-16...	620	91,928	15,209	277,111	14,589	185,183
1916-17 ...	285	36,697	16,503	342,897	16,218	306,200

Note. — signifies value of net imports.

5. **Comparison with other Countries.**—The numbers of horses in some of the leading horse-breeding countries of the world, according to the latest available returns, are as follows:—

NUMBER OF HORSES IN SOME OF THE LEADING HORSE-BREEDING COUNTRIES IN THE WORLD.

Country.	Date.	Number of Horses. 000 omitted.	Country.	Date.	Number of Horses. 000 omitted.
Russian Empire ³ ...	1914	35,846	Sweden ...	1914	608
Utd. States America ⁴ ...	1916	21,126	Uruguay ...	1908	556
Argentine Republic ⁵ ...	1913	9,366	Spain ...	1914	525
Brazil ...	1913	7,289	Denmark ...	1916	515
Austria-Hungary ¹ ...	1910-1913	4,380	Bulgaria ...	1910	478
Germany ⁶ ...	1915	3,342	Chile ² ...	1912-13	458
Canada ...	1916	2,991	New Zealand ...	1916	374
Australia ...	1916	2,437	Finland ...	1910	361
France ⁹ ...	1914	2,317	Netherlands ...	1913	334
United Kingdom ...	1916	2,166	Belgium ...	1913	267
British India ¹⁰ ...	1913-14	1,643	Philippine Islands	1915	223
Japan ...	1914	1,579	Algeria ...	1912	221
Rumania ...	1916	1,219	Norway ...	1915	186
Italy ¹¹ ...	1908	956	Serbia ...	1910	153
Mexico ...	1902	859	Switzerland ...	1916	137
Union of S. Africa ¹² ...	1911	719	Portugal ⁷ ...	1906	88
Cuba ...	1914	673	Egypt ⁸ ...	1914	40

1. Austria 1910, Hungary 1913, Croatia-Slavonia 1911, Bosnia-Herzegovina 1910. 2. Also 38,000 mules and 33,000 asses. 3. Including Poland, Caucasus, and Siberia. 4. Also 4,639,000 mules. 5. Exclusive of army horses. 6. Also 584,000 mules. 7. Also 88,000 mules. 8. Also 22,000 mules and 632,000 asses. 9. Excludes invaded area. 10. Also 86,000 mules and 1,501,000 asses. 11. Also 388,000 mules and 860,000 asses. 12. Also 94,000 mules and 337,000 asses.

6. **Relation to Population.**—In proportion to population, horses are much more numerous in the Northern Territory than in any other of the principal divisions of the Commonwealth. Queensland is next in order, while Tasmania has the smallest number of horses per head. In all cases the number of horses per head of population was somewhat higher in 1916 than in 1901. Particulars for 1901 and the past five years are as follows :—

NUMBER OF HORSES PER HEAD OF POPULATION, 1901 AND 1912 to 1916.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Terr.	C'wlth.	
1901	...	0.35	0.32	0.91	0.46	0.38	0.18	2.76	...	0.42
1912	...	0.40	0.38	1.06	0.64	0.48	0.22	5.29	0.78	0.51
1913	...	0.41	0.40	1.07	0.64	0.49	0.22	6.21	0.86	0.52
1914	...	0.39	0.39	1.10	0.61	0.50	0.21	5.53	0.87	0.51
1915	...	0.39	0.35	1.01	0.58	0.51	0.21	4.37	0.53	0.48
1916	...	0.39	0.37	1.04	0.60	0.55	0.21	4.55	0.66	0.50

§ 3. Cattle.

1. **Purposes for which Raised.**—In all the States of the Commonwealth, cattle raising is carried out on a more or less extensive scale, the main object in certain districts being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. The great impetus which the development of the export trade in Australian butter gave to the dairying industry in the Commonwealth led to a considerable increase in numbers and improvement in quality of the dairy herds of Victoria, New South Wales, and Southern Queensland in particular, the sub-tropical portion of Australia being apparently the best adapted to this industry. On the other hand, by far the finest specimens of beef-producing cattle are those raised in the tropical districts of the Commonwealth, *i.e.*, in the northern parts of Queensland, in the Northern Territory, and in the Kimberley districts in the north of Western Australia.

2. **Distribution throughout Commonwealth.**—Until 1880 New South Wales occupied the leading position in the Commonwealth group as a cattle-raising State, but in that year Queensland forged ahead and obtained a lead which it has since maintained. The extent of this lead has, however, varied considerably, owing principally to the effects produced by the tick fever and droughts, from both of which causes the Queensland herds suffered more severely than those of the other States. In fact, during the period from 1894, when the number of cattle in Queensland attained its maximum of rather more than 7,000,000, to 1903, when the number recorded was less than 2,500,000, an uninterrupted decline was experienced. During the eleven years ended 1914, however, a rapid improvement took place, and the total reached on 31st December, 1914, was over 5,450,000. Owing to drought conditions the number at the end of 1915 had fallen to 4,780,893, with a further decline to 4,765,657 at the end of 1916.

The numbers of cattle in the several States and the Territories at quinquennial intervals from 1860 to 1910 and for each subsequent year are as follows :—

**NUMBER OF CATTLE IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 to 1916.**

Year.	N.S.W.	Victoria. †	Q'land.	S. Aust.	W. Aust.	Tas. ‡	N.T.	Fed. Ter.	C'wealth.
1860	2,408,586	722,332	432,890	278,265	32,476	83,366	...	...	3,957,915
1865	1,961,905	621,337	848,346	158,057	45,148	90,020	...	...	3,724,813
1870	2,195,096	721,096	1,076,630	136,832	45,213	101,459	...	...	4,276,326
1875	3,134,086	1,054,598	1,812,576	219,240	50,416	118,694	...	...	6,389,610
1880	2,580,040	1,286,267	3,162,752	283,315	63,719	127,187	*19,720	...	7,523,000
1885	1,317,315	1,290,790	4,162,652	271,478	70,408	138,642	146,562	...	7,397,847
1890	2,091,229	1,782,978	5,558,264	359,938	130,970	162,440	214,094	...	10,299,913
1895	2,150,057	1,795,314	6,822,401	355,867	200,091	162,801	280,957	...	11,767,488
1900	1,983,116	1,602,384	4,078,191	214,761	338,590	165,516	257,667	...	8,640,225
1905	2,337,973	1,737,690	2,963,695	304,027	631,825	206,211	346,910	...	8,528,331
1910	3,140,307	1,547,569	5,131,699	384,862	825,040	201,854	513,383	...	11,744,714
1911	3,185,824	1,647,127	5,073,201	393,566	843,538	217,406	459,780	8,412	11,828,954
1912	3,033,726	1,508,089	5,210,891	383,418	806,294	222,181	405,552	7,108	11,577,259
1913	2,815,113	1,528,553	5,322,033	352,905	834,265	205,743	417,643	7,627	11,483,882
1914	2,472,631†	1,362,542	5,455,943	300,579	863,835	176,524	414,558	†4,961	11,051,573
1915	2,400,104†	1,043,604	4,780,893	226,565	821,048	169,575	483,961	†5,666	9,931,416
1916	2,757,713†	1,175,098	4,765,657	288,887†	863,930	179,360	420,362	†8,230	10,459,237

* Statistics not collected prior to 1880. † 30th June year following.

‡ 1st March year following.

3. **Proportion in each State.**—During the period elapsing between 1901 and 1916 the proportion of cattle in the several States and the Northern Territory has varied considerably, as shewn hereunder :—

**PERCENTAGE OF CATTLE IN EACH STATE AND TERRITORY ON TOTAL FOR
COMMONWEALTH, 1901 and 1912 to 1916.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Territory.	C'wealth.
	%	%	%	%	%	%	%	%	%
1901 ...	24.11	19.12	44.43	2.65	4.69	1.99	3.01	...	100.00
1912 ...	26.20	13.03	45.01	3.31	6.97	1.92	3.50	0.06	100.00
1913 ...	24.51	13.31	46.34	3.07	7.27	1.79	3.64	0.07	100.00
1914 ...	22.37	12.33	49.37	2.72	7.82	1.60	3.75	0.04	100.00
1915 ...	24.17	10.51	48.14	2.28	8.27	1.71	4.87	0.05	100.00
1916 ...	26.37	11.23	45.57	2.76	8.26	1.71	4.02	0.08	100.00

A comparison of the positions of the several States in 1901 and 1916 shews that, while Victoria's proportion of the Commonwealth herds suffered considerable diminution, and those for Tasmania a falling-off to a slight extent, fairly large increases have taken place in Western Australia. New South Wales, Queensland and the Northern Territory also shewed an upward tendency.

4. **Imports and Exports of Cattle.**—Although the various products of the cattle-raising industry bulk largely in the export trade of the Commonwealth, the export of live cattle from Australia has never been considerable. The number of cattle imported is also small, consisting, as in the case of horses, mainly of valuable animals for breeding. Details are as follows :—

COMMONWEALTH IMPORTS AND EXPORTS OF CATTLE, 1901 and 1912 to 1916-17.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value	No.	Value.
		£		£		£
1901 ...	114	3,591	2,413	22,088	2,299	18,497
1912 ...	33	1,502	16,083	65,735	16,050	64,233
1913 ...	57	5,572	14,605	55,801	14,548	50,229
1914-15 ...	221	21,090	10,342	40,648	10,121	19,558
1915-16 ...	440	19,169	5,857	29,258	5,417	10,089
1916-17 ...	234	14,254	2,977	18,836	2,743	4,582

The average value of the cattle imported into the Commonwealth during the last five years was £62 10s. 6d. per head, while the average value of the cattle exported during the same period was £4 4s. 4d. As stated previously, the imported cattle were principally for stud purposes.

The comparatively large exports for the years 1912 and 1913 were due to shipments to Java and Philippine Islands valued at £42,230 and £61,766 respectively. The bulk of these cattle were exported from Western Australia.

5. Cattle Slaughtered.—Complete returns of the number of cattle slaughtered annually in the Commonwealth are not obtainable, as these particulars were collected in Tasmania prior to 1911 for Hobart and Launceston only, and were collected in South Australia for the first time in 1908 in respect of the year 1907. Estimates for these States have, however, been made, and the results are included in the following table:—

**CATTLE (INCLUDING CALVES) SLAUGHTERED IN STATES, TERRITORIES AND
COMMONWEALTH, 1901 and 1912 to 1916.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. †	N.T.	Fed. Ter.	C'wealth.
1901	335,823	251,477	377,433	*72,000	39,424	34,000	†	...	1,110,157
1912	612,773	368,512	580,332	113,344	59,695	41,000	\$4,061	267	1,779,984
1913	679,901	410,694	703,367	116,282	62,613	30,038	\$4,061	276	2,007,232
1914	||635,196	470,011	776,869	112,183	61,387	30,064	*4,000	||142	2,089,852
1915	||384,977	356,174	653,015	82,070	65,121	28,586	*4,000	||55	1,573,998
1916	||393,400	247,781	578,203	||63,167	59,038	25,972	*4,000	||122	1,372,683

* Estimated. † Partly estimated prior to 1913. ‡ Not available. § 1910 figures, those for 1911, 1912 and 1913 not available. || For year ended 30th June of year following.

6. Export of Beef Preserved by Cold Process.—A large export trade in beef preserved by cold process is carried on by the Commonwealth, mainly with the United Kingdom, the Philippine Islands, and the Union of South Africa. The quantities so exported during the five years 1912 to 1916-17 are as follows:—

**QUANTITY OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE
COMMONWEALTH, 1912 to 1916-17.**

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	108,886,860	169,963,291	253,396,440	108,906,118	239,384,893	880,537,602
Philippine Islands ...	13,996,124	14,535,447	11,352,425	4,089,865	548,398	44,522,259
United States ...	289	5,037,769	15,974,209	...	...	21,012,267
Union of South Africa ...	9,228,546	5,656,346	194,588	...	...	15,079,480
Egypt ...	2,084,806	3,990,804	4,281,049	109,969	...	10,466,628
Straits Settlements ...	1,781,817	2,053,514	2,260,587	1,411,876	1,691,256	9,199,050
Italy ...	2,127,876	6,356,514	170,159	...	...	8,654,549
Hawaiian Islands ...	1,198,140	2,356,115	1,538,997	...	200,396	5,293,648
Canada ...	904,632	3,352,675	60,540	...	...	4,318,047
Malta ...	1,090,044	1,142,092	1,338,439	...	...	3,570,575
Germany ...	97,491	1,813,799	...	...	...	1,911,290
Hong Kong ...	551,012	423,659	216,350	38,859	90,000	1,319,880
Gibraltar ...	...	353,582	487,289	...	...	840,871
Ceylon ...	150,620	221,521	210,903	1,330	83,752	668,126
Japan ...	1,098	36,705	...	...	...	37,803
Other countries ...	110,521	1,624,773	584,514	118,087	82,991	2,520,886
Total ...	142,210,076	218,918,606	292,066,489	114,676,104	242,081,686	1,009,952,961

The value of the beef preserved by cold process exported from the Commonwealth during the same years is as follows :—

**VALUE OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM
THE COMMONWEALTH, 1912 to 1916-17.**

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ...	1,245,536	2,037,978	4,430,370	2,055,045	4,890,927	14,659,856
Philippine Islands ...	162,565	183,047	169,327	86,011	11,139	612,079
United States ...	5	66,838	209,938	...	...	276,781
Union of South Africa ...	97,601	65,906	2,500	...	...	166,007
Egypt ...	24,537	49,134	71,040	2,520	...	147,231
Straits Settlements ...	20,141	25,576	33,447	28,040	34,397	141,601
Italy ...	23,173	75,130	2,130	...	...	100,433
Hawaiian Islands ...	20,325	38,003	24,498	...	4,358	87,184
Canada ...	16,831	44,456	1,272	...	...	62,559
Malta ...	11,491	13,214	22,349	...	...	47,054
Germany ...	1,219	23,388	...	...	...	24,607
Hong Kong ...	4,346	4,392	2,924	764	1,850	14,276
Gibraltar ...	...	3,595	6,691	...	...	10,286
Ceylon ...	1,367	2,643	3,003	25	2,352	9,390
Japan ...	13	350	...	...	...	363
Other countries ...	1,591	18,625	10,565	3,489	2,047	36,317
Total ...	1,630,731	2,652,275	4,990,054	2,175,894	4,947,070	16,396,024

During the five years under review, the largest of Australia's customers for beef preserved by cold process has been the United Kingdom, while the second largest customer has been the Philippine Islands; the United States and the Union of South Africa ranked next in order of importance. Consequent on the war over 97½ per cent. was absorbed by the United Kingdom during the last two years, while most of the balance was shipped to the Straits Settlements and Philippine Islands. The exporting States during 1916-17 were:—Queensland, 226,255,373 lbs., valued at £4,587,296; New South Wales, 10,453,222 lbs., valued at £227,147; Victoria, 4,895,505 lbs., valued at £121,329; and South Australia, 477,586 lbs., valued at £11,298.

7. Comparison with other Countries.—In the following comparison of the herds of Australia with those of some of the principal cattle-raising countries of the world, the latest available figures have been inserted in each case :—

NUMBER OF CATTLE IN VARIOUS COUNTRIES.

Country.	Date.	No. of Cattle. (000 omitted.)	Country.	Date.	No. of Cattle. (000 omitted.)
British India ¹ ...	1913-14	143,277	Rumania ¹ ...	1916	2,938
U. S. of America ...	1916	63,617	New Zealand ...	1916	2,575
Russian Empire ² ...	1913	52,994	Netherlands ...	1915	2,390
Argentine Republic...	1913	30,796	Denmark ...	1915	2,290
Brazil ...	1913	30,705	Chile ...	1915	1,969
Germany ...	1915	20,317	Belgium ...	1913	1,849
Austria-Hungary ² ...	1910-13	17,648	Philippine Islands ...	1915	1,756
France ⁴ ...	1916	12,724	Switzerland ...	1916	1,616
United Kingdom ...	1916	12,412	Bulgaria ...	1910	1,603
Australia ...	1916	10,459	Ceylon ¹ ...	1914	1,484
Uruguay ...	1908	8,193	Japan ...	1914	1,387
Italy ¹ ...	1914	6,646	Egypt ¹ ...	1913	1,169
Canada ...	1916	5,917	Norway ...	1915	1,121
Union of South Africa	1911	5,797	Algeria ...	1912	1,107
Mexico ...	1902	5,142	Serbia ...	1910	957
Cuba ...	1914	3,395	Portugal ...	1906	703
Sweden ...	1914	2,761	Tunis ...	1915	269
Spain ...	1914	2,743			

1. Including buffaloes. 2. Austria 1910, Hungary 1913, Croatia-Slavonia 1911, and Bosnia-Herzegovina 1911. 3. Including Poland, Caucasus and Siberia. 4. Excludes invaded area.

8. **Relation to Population.**—The number of cattle per head of population differs considerably in the several States, and is also subject to marked variation from year to year in the same State. Particulars for 1901 and the past five years are as follows:—

NUMBER OF CATTLE PER HEAD OF POPULATION, 1901 and 1912 to 1916.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.Aust.	Tas.	Northern Territory.	Fed. Terr.	C'wealth.
1901 ...	1.49	1.34	7.44	0.63	2.06	0.96	54.68	...	2.22
1912 ...	1.71	1.09	8.19	0.89	2.63	1.13	116.71	3.66	2.45
1913 ...	1.54	1.08	8.06	0.82	2.60	1.02	113.74	3.84	2.36
1914 ...	1.33	0.95	8.06	0.68	2.67	0.88	104.34	3.57	2.24
1915 ...	1.29	0.74	7.04	0.52	2.58	0.84	106.06	2.30	2.01
1916 ...	1.48	0.84	7.12	0.67	2.80	0.90	88.18	3.70	2.15

For the Commonwealth as a whole the ratio of cattle to population is 3 per cent. less for 1916 than for 1901. An excess of the 1916 figures over those for 1901 is in evidence only in Western Australia, South Australia, and the Northern Territory, being most marked in the case of the latter. In all the other States the ratios for 1916, though shewing an increase over the previous year, are below those of 1901.

§ 4. Sheep.

1. **The Founding of the Commonwealth Pastoral Industry.**—Fortunately for Australia, the suitability of its climate and general conditions for the production of a high class of wool was, at an early date in the history of its settlement, surmised and tested by Captain Macarthur, one of the pioneer sheep-breeders of New South Wales. To the energy of this enterprising pastoralist is due in large measure the rapid and extremely satisfactory development of Australia as a producer of fine wool, and though

it would appear that the introduction of the Merino sheep into Australia was not due to Macarthur, a great deal of the credit for having successfully established the pastoral industry in Australia must certainly be his.

2. Distribution throughout Commonwealth.—With the exception of a short period in the early sixties, when the flocks of Victoria outnumbered those of the mother State, New South Wales has maintained amongst the Commonwealth group the lead in sheep production which naturally attached to it as the portion of the Commonwealth in which settlement was first effected. From 1878 to 1901, the number of sheep in New South Wales represented more than half the total for the Commonwealth. In subsequent years it has rarely fallen much below that proportion and has on several occasions exceeded it.

The number of sheep in the several States and Territories at quinquennial intervals from 1860 to 1910, and for each year onwards to 1916, is as follows:—

**NUMBER OF SHEEP IN STATES, TERRITORIES, AND COMMONWEALTH
1860 to 1916.**

Year.	New South Wales.	Victoria. ‡	Queens- land.	South Aust.	Western Aust.	Tas- mania. ‡	Northern Territory	Federal Territory.	Total C'wealth.
1860	6,119,163	5,780,896	3,449,350	2,824,811	260,136	1,700,930	...	...	20,135,286
1865	8,132,511	8,835,380	6,594,966	3,779,308	445,044	1,752,719	...	...	29,539,928
1870	16,306,585	10,761,887	8,163,818	4,400,655	608,892	1,349,775	...	...	41,563,612
1875	25,353,924	11,749,532	7,227,774	6,179,395	881,661	1,731,723	...	...	53,124,209
1880	35,396,121	10,360,285	6,935,967	6,443,904	1,231,717	1,796,715	*9,318	...	62,176,027
1885	37,820,906	10,681,837	8,994,322	6,593,648	1,702,719	1,648,627	49,917	...	67,491,576
1890	55,986,431	12,692,643	18,007,234	7,004,642	2,524,913	1,619,256	45,902	...	97,881,321
1895	47,617,687	12,791,084	19,856,959	6,531,006	2,255,832	1,523,846	73,313	...	90,689,727
1900	40,020,506	10,841,790	10,399,185	5,235,220	2,434,311	1,683,956	48,027	...	70,602,995
1905	39,506,764	†1,455,115	12,535,231	6,277,812	3,120,703	1,583,561	61,730	...	74,540,916
1910	45,560,999	12,882,665	20,331,836	6,267,477	5,153,516	1,788,310	57,240	...	92,047,015
1911	44,722,523	13,857,804	20,740,981	6,171,907	5,411,542	1,823,017	50,983	224,764	93,003,521
1912	38,855,651	11,892,224	20,310,036	5,481,489	4,596,958	1,869,669	75,808	188,641	83,263,686
1913	39,701,345	12,113,682	21,766,600	5,073,057	4,421,375	1,745,356	67,109	148,875	85,057,402
1914	†32,874,359	12,051,685	23,129,919	4,202,461	4,456,186	1,674,845	70,900	†134,679	78,600,334
1915	†32,498,046	10,545,632	15,950,154	3,674,547	4,803,850	1,624,450	57,827	†102,683	69,257,189
1916	†36,086,241	12,376,587	15,524,293	†5,091,282	5,529,960	1,702,579	47,520	†110,142	76,668,604

* Statistics not collected prior to 1880. † 30th June of year following.

‡ 1st March year following.

3. Proportion in the Several States and Territories.—Particulars concerning the relative positions of the several States and Territories with respect to the total flocks of Australia during the years 1901 and 1912 to 1916, and the variations in such positions which have taken place during those years are as hereunder:—

**PERCENTAGE OF SHEEP IN EACH STATE AND TERRITORY ON TOTAL FOR
COMMONWEALTH, 1901 and 1912 to 1916.**

Year.	N.S.W.	Vic.	Q'sland.	S. Aust.	W. Aus.	Tas.	N.T.	Fed. Terr.	C'wealth.	
	%	%	%	%	%	%	%	%	%	
1901	...	58.10	14.82	13.92	6.95	3.65	2.49	0.07	...	100.00
1912	...	46.67	14.28	24.39	6.58	5.52	2.24	0.09	0.23	100.00
1913	...	46.68	14.24	25.61	5.96	5.20	2.05	0.08	0.18	100.00
1914	...	41.83	15.33	29.43	5.35	5.67	2.13	0.09	0.17	100.00
1915	...	46.92	15.23	23.03	5.30	6.94	2.35	0.08	0.15	100.00
1916	...	47.07	16.41	20.25	6.64	7.21	2.22	0.06	0.14	100.00

During the period, the proportion of total Commonwealth flocks declined considerably in the case of New South Wales, and in a less marked degree in South Australia and Tasmania, while in the cases of Queensland, Western Australia and Victoria, substantial advances in proportion were experienced.

4. **Oversea Imports and Exports of Sheep.**—As in the case of cattle, the oversea exports of live sheep from Australia are of comparatively small importance. The principal countries to which such exports have been consigned during recent years are the Union of South Africa, Straits Settlements, and Papua, Western Australia being the principal exporting State. The following are the particulars of the imports and exports for the years 1901 and 1912 to 1916-17 :—

COMMONWEALTH IMPORTS AND EXPORTS OF SHEEP, 1901 and 1912 to 1916-17.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901	553	12,134	12,094	12,104	11,541	—30
1912	2,903	10,643	34,113	72,522	31,210	61,879
1913	8,448	28,508	41,770	75,073	33,322	46,565
1914-15... ..	6,140	23,622	16,889	37,826	10,749	14,204
1915-16... ..	6,597	36,511	7,325	19,004	728	—17,507
1916-17... ..	3,809	24,470	7,007	32,944	3,198	8,474

Note. — signifies net imports.

5. **Sheep Slaughtered.**—The numbers of sheep slaughtered in the several States during 1901 and from 1912 to 1916 are as follows :—

SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1901 and 1912 to 1916-17.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.†	N.T.	Fed. Terr.	C'wealth.
1901	4,519,133	2,469,797	554,705	*678,000	428,534	322,000	...	...	8,972,169
1912	5,805,595	4,153,269	1,273,332	1,332,838	610,214	357,000	‡516	6,587	13,539,351
1913	6,420,810	4,742,231	1,375,827	1,222,315	602,383	315,726	‡516	4,765	14,684,573
1914	¶6,006,190	4,550,272	1,351,145	1,156,957	588,342	312,275	*500	¶4,351	13,970,032
1915	¶4,173,511	2,973,803	1,316,152	918,526	564,535	288,419	*500	¶3,376	10,238,822
1916	¶3,756,477	2,647,200	909,615	¶686,112	547,041	283,313	*500	¶2,975	8,833,233

* Estimated. † Partly estimated. ‡ Figures for 1910; those for 1911, 1912, and 1913 not available. ¶ Year ended 30th June year following.

6. **Exports of Mutton and Lamb Preserved by Cold Process.**—Australia's export trade in mutton and lamb preserved by cold process has, in recent years, advanced rapidly. In 1903 the value of exports was £192,114, while seven years afterwards, in 1910, the value amounted to no less a sum than £2,161,513; the average for the two years, 1913 and 1914-15, was £3,155,190, while, consequent on the recent drought and war conditions, the value of the 1915-16 exports fell to £769,752, and to £1,540,572 in 1916-17. In all the States considerable attention is now being paid to the breeding of a class of sheep that will best meet the requirements of consumers. Crosses between the Merino and the Lincoln, or between the Merino and the Leicester breeds, have proved exceedingly valuable, as they furnish both a good quality of wool and an excellent carcase for export purposes. The breeding of Shropshire and Southdown sheep with a view to combining meat production with that of wool is also on the increase. Special attention is being paid to the raising of lambs, as it has become widely recognised that, with suitable breeds, the export trade in lambs is very profitable.

Australia's principal customer in this trade is the United Kingdom, which has absorbed 95 per cent. of the total quantity exported from the Commonwealth during the past

five years. As in the case of frozen beef, the bulk of the mutton and lamb exported during the last two years went to the United Kingdom. It amounted to 96.7 per cent. of the total, while the balance was shipped mainly to Straits Settlements, Ceylon, and Hong Kong.

**QUANTITY OF MUTTON AND LAMB PRESERVED BY COLD PROCESS EXPORTED
FROM THE COMMONWEALTH, 1912 to 1916-17.**

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	108,556,172	191,440,138	187,897,976	36,539,660	65,140,182	589,574,128
Germany	133,429	5,144,062	...	...	...	5,277,491
Straits Settlements	992,631	928,783	1,068,164	749,883	964,335	4,703,996
Union of South Africa	1,910,196	1,550,257	387,006	...	...	3,847,459
Canada	1,320,718	1,662,910	413,013	...	...	3,396,641
Egypt	624,506	633,109	902,604	319,156	...	2,479,375
Malta	266,036	1,059,183	798,996	...	...	2,124,214
Philippine Islands	677,076	778,693	370,296	132,134	35,608	1,993,807
Ceylon	293,523	365,065	304,115	302,839	234,130	1,549,672
Hong Kong	328,330	401,380	256,068	194,209	272,450	1,452,437
United States	2,051	571,008	195,225	...	...	768,284
Gibraltar ... ..	...	...	463,106	...	...	463,106
Hawaiian Islands	83,770	91,085	30,802	...	...	205,657
Japan ... ..	...	39	...	...	...	39
Other Countries	183,344	306,071	176,506	105,747	116,104	887,772
Total	115,371,981	204,931,783	193,263,877	38,343,628	66,812,809	618,724,076

The corresponding particulars concerning the values of the exports are:—

**VALUES OF FROZEN MUTTON AND LAMB EXPORTED FROM THE COMMONWEALTH,
1912 to 1916-17.**

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom	1,499,648	2,712,682	3,321,045	725,255	1,496,658	9,755,288
Straits Settlements	13,387	11,841	18,553	18,713	25,534	88,028
Germany	1,670	67,396	...	...	...	69,066
Canada	20,336	27,256	7,507	...	...	55,099
Union of South Africa	23,919	19,936	6,538	...	...	50,393
Egypt	8,282	9,435	16,577	7,719	...	42,013
Malta	3,228	14,142	12,920	...	...	30,290
Ceylon	4,448	5,091	5,346	7,524	7,250	29,659
Philippine Islands	9,271	9,649	6,212	3,039	965	29,136
Hong Kong	4,483	5,571	4,422	4,928	7,210	26,614
United States	35	7,793	3,066	...	...	10,894
Gibraltar ... ..	...	...	7,660	...	...	7,660
Hawaiian Islands	1,343	1,386	772	...	...	3,501
Japan ... ..	...	1	...	...	...	1
Other Countries	2,328	4,353	3,230	2,574	2,955	15,440
Total	1,592,378	2,896,532	3,413,848	769,752	1,540,572	10,213,082

7. Comparison with other Countries.—As regards the size of its flocks, and the quantity and quality of wool produced, Australia has long occupied a leading position amongst the sheep-raising countries of the world. From estimates published in the Year Book of the United States Department of Agriculture it would appear that the

approximate number of sheep in the world is in the neighbourhood of 614,000,000, to which total Australia contributes about 12½ per cent. The following comparison taken mainly from the same source, gives the latest available figures relative to the number of sheep in the principal wool-producing countries:—

NUMBER OF SHEEP IN VARIOUS COUNTRIES.

Country.	Date.	No. of Sheep. (000 omitted)	Country.	Date.	No. of Sheep. (000 omitted)
Argentine Republic ...	1913	81,485	Algeria ...	1912	8,338
Russian Empire ^{1,2} ...	1913	80,805	Rumania ...	1916	7,811
Australia ...	1916	76,669	Germany ...	1915	5,073
United States of America ...	1916	48,483	Chile ...	1913	4,602
Union of South Africa ...	1913	35,711	Serbia ...	1910	3,819
United Kingdom ...	1916	28,754	Greece ...	1914	3,547
Ottoman Empire ...	1912	27,095	Mexico ...	1902	3,424
Uruguay ...	1908	26,286	Portugal ...	1906	3,073
New Zealand ...	1917	25,270	Canada ...	1916	1,965
British India ...	1913 } 1914 }	23,092	Norway ...	1915	1,330
Spain ...	1914	16,128	Finland ...	1910	1,309
Italy ¹ ...	1914	13,824	Tunis ...	1915	1,119
France ⁴ ...	1916	12,079	Sweden ...	1914	993
Austria-Hungary ³ ...	1910 } 1913 }	12,337	Netherlands ...	1913	842
Brazil ...	1913	10,653	Iceland ...	1912	601
Bulgaria ...	1910	8,632	Denmark ...	1915	533
			Belgium ...	1910	185
			Switzerland ...	1916	172

1. Including goats. 2. Including Poland, Caucasus, and Siberia. 3. Austria, Croatia-Slavonia and Bosnia-Herzegovina 1910; Hungary 1913. 4. Exclusive of invaded area.

8. **Relation to Population.**—The relation of the flocks of the several States and Territories to the populations at the end of the year 1901 and from 1912 to 1916 is as follows:—

NUMBER OF SHEEP PER HEAD OF POPULATION, 1901 and 1912 to 1916.

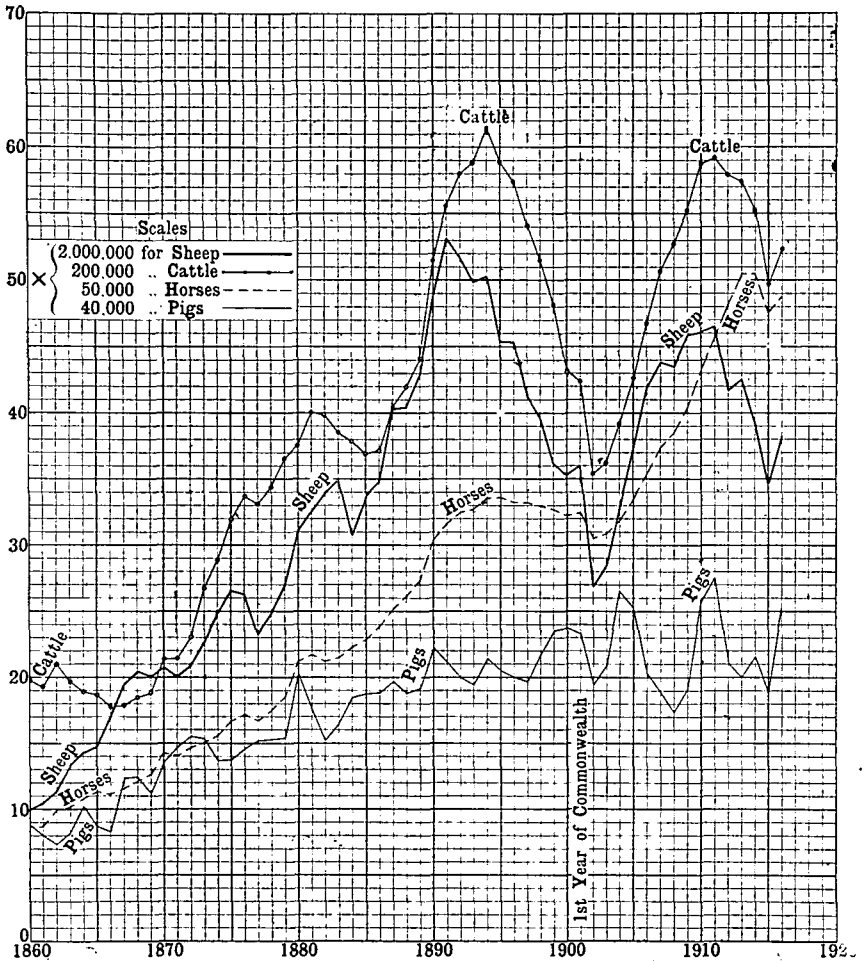
Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Ter.	C'wealth.
1901	30.43	8.82	19.80	13.95	13.56	10.23	10.34	...	18.83
1912	21.86	8.61	31.91	12.74	15.02	9.45	21.82	97.24	17.59
1913	21.67	8.58	33.00	11.53	13.79	8.65	18.28	74.89	17.46
1914	17.66	8.42	34.18	9.53	13.79	8.32	17.66	69.42	15.91
1915	17.42	7.43	23.50	8.88	15.11	8.08	12.67	41.64	14.04
1916	19.42	8.99	23.19	11.77	17.91	8.52	9.97	49.55	15.73

A comparison of the ratios of sheep to population for 1916 with those for 1901 discloses increases in the cases of Western Australia, Queensland and Victoria, and decreases in the other States and the Northern Territory.

§ 5. Wool.

1. **Importance of Wool Production.**—The chief contributing factor to the pastoral wealth of Australia is the production of wool, the value of the output for the season ended 30th June, 1917, being about £35,964,000. The bulk of the wool produced in the Commonwealth is exported, but with the increased activity of the local woollen mills there has, in recent years, been an increasing quantity used in Australia, although even now the quantity so used represents only 3½ per cent. of the whole clip.

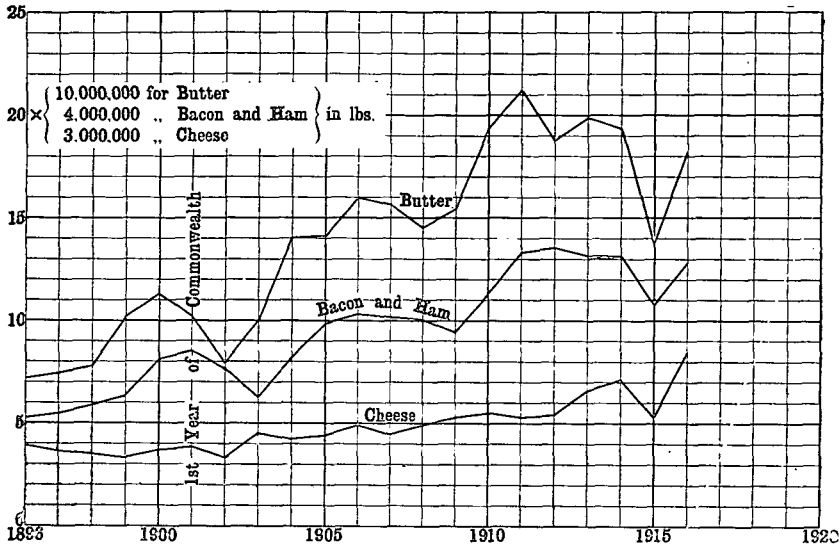
GRAPHS SHEWING NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS IN THE COMMONWEALTH FROM 1860 TO 1916.



(See pages 305 *et seq.*)

EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. The totals of the sheep, cattle, horses, and pigs for the Commonwealth are indicated by the several curves or graphs, the vertical side of a small square representing 2,000,000 in the case of sheep; 200,000 for cattle; 50,000 for horses; 40,000 for pigs.

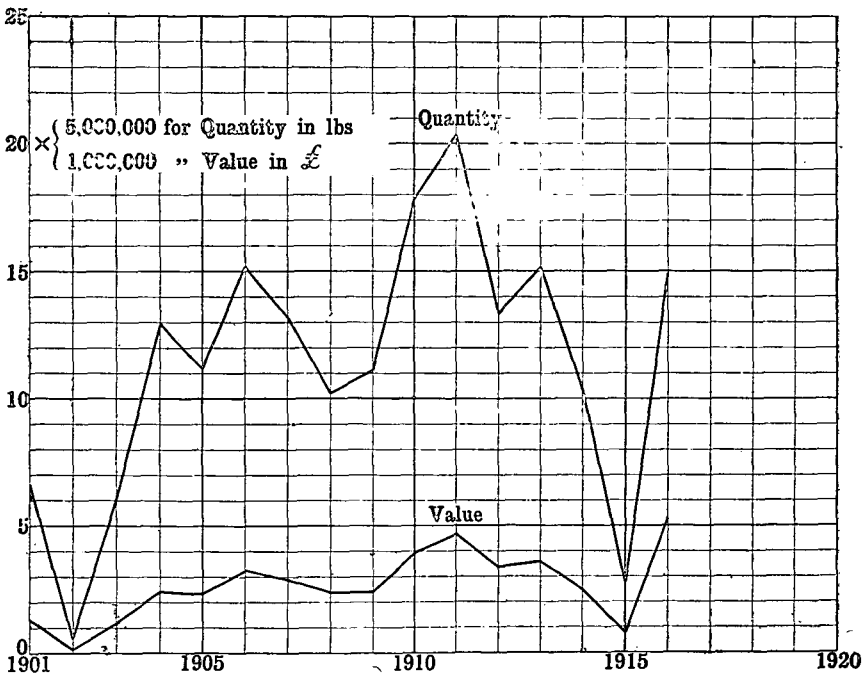
GRAPHS SHEWING THE PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM, IN THE COMMONWEALTH, FROM 1896 TO 1916.



(See pages 339 and 402.)

EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle denotes in the case of butter 10,000,000 lbs.; in the case of bacon and ham, 4,000,000 lbs.; and in the case of cheese 3,000,000 lbs.

GRAPHS SHEWING THE QUANTITY AND VALUE OF NET EXPORTS OF BUTTER FROM THE COMMONWEALTH, FROM 1901 TO 1916.



(See page 400.)

EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle represents 5,000,000 lbs. in weight, or £1,000,000 in value.

2. Greasy and Scoured Wool.—For the purpose of comparing the clips of the several States or of the Commonwealth as a whole for a series of years, it is convenient to have the total production expressed in terms of greasy wool.

The quantity of Australian wool scoured and washed before export is, on the average, about 20 per cent. of the total clip. The loss of weight in scouring varies largely with season, locality, breed, and condition. It seems preferable to express "scoured and washed" wool in terms of "greasy" rather than *vice versa*, since the absolute error arising from uncertainty as to average loss of weight has thus the less effect.

In the following tables relative to the production of wool, "scoured and washed" wool has been converted into the estimated equivalent amount of "greasy" wool, on the assumption that two pounds of "greasy" wool are on the average required to produce one pound of "scoured and washed" wool.

3. Total Production.—The estimated production of wool in the several States, formerly based on the Customs returns, being no longer available from that source, an effort has been made to arrive at approximate figures from data collected by the State Statisticians from growers and fellmongers, etc. Particulars for years prior to 1910 will be found in earlier issues (see Year Book No. 6, page 346). The following table gives the estimates obtained in reference to the five seasons ended 30th June, 1913 to 1917:—

**ESTIMATED QUANTITY OF WOOL AS IN THE GREASE, SHORN, FELLMONGERED
OR ON SKINS SHIPPED DURING THE SEASONS ENDED 30th JUNE, 1913 to 1917.**

State.	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales*	326,804,000	357,985,000	318,935,000	262,044,982	270,525,000
Victoria...	88,762,612	106,833,690	95,406,867	82,330,198	94,845,024
Queensland ...	136,878,270	154,183,114	155,478,740	130,783,277	102,220,125
South Australia ...	56,691,036	55,014,048	38,848,978	33,969,975	35,050,865
Western Australia	26,849,981	26,625,787	24,562,110	31,914,040	34,269,303
Tasmania	12,416,014	10,092,564	9,103,030	9,212,203	10,441,978
Northern Territory†	450,000	400,000	400,000	350,000	350,000
Commonwealth	648,851,913	711,134,203	642,734,725	550,604,675	547,702,295

* Including Federal Territory. † Approximate figures.

It is to be noted that a shortage has apparently occurred in the collection of these statistics, the estimates falling considerably below the approximate totals obtained from oversea shipments of wool and skins, together with the quantity used in local manufactory. The Commonwealth total so obtained represented 668,667,078 lbs. for the season 1912-13, and 768,586,806 lbs. for 1913-14. The abnormal conditions of wool shipments obtaining during the last three seasons do not admit of any similar comparison with the estimated production.

The weight and value of wool per sheep shorn in the past five seasons is shewn in the following table:—

**ESTIMATED WEIGHT AND VALUE OF WOOL PER SHEEP SHORN FOR THE
SEASONS ENDED 30th JUNE, 1913 to 1917.**

Season ended 30th June.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
WEIGHT.							
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1913 ...	7.07	5.68	6.46	7.95	5.29	5.91	6.66
1914 ...	7.94	6.46	7.19	8.37	5.49	5.15	7.37
1915 ...	7.20	5.58	6.75	6.98	5.31	5.00	6.68
1916 ...	7.09	5.79	6.37	7.65	6.17	5.29	6.63
1917 ...	7.89	6.26	7.00	7.47	5.84	5.79	6.96
VALUE.							
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1913 ...	5 9	4 11	5 5	5 10	4 0	5 5	5 6
1914 ...	6 4	5 5	6 2	6 0	4 2	4 8	5 11
1915 ...	5 6	4 10	5 3	4 10	3 8	4 6	5 2
1916 ...	6 8	6 9	6 1	6 10	5 5	7 2	6 6
1917 ...	9 8	8 8	9 2	9 0	6 11	9 3	9 2

4. Wool Locally Used.—The quantity of wool used in the manufactories of the several States of the Commonwealth during the past five calendar years was approximately as follows:—

**LOCALLY USED WOOL, ESTIMATED AS "GREASY," COMMONWEALTH AND
STATES, 1912 to 1916.**

State.	1912.	1913.	1914.	1915.	1916.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	2,420,000	2,484,446	*4,173,576	*6,467,800	*6,556,988
Victoria ...	5,535,483	5,917,410	6,118,450	11,052,250	*8,669,460
Queensland ...	583,892	406,829	356,553	377,538	358,504
South Australia ...	710,000	645,000	389,700	1,065,180	995,164
Western Australia ...	...	...	...	...	...
Tasmania ...	1,082,000	1,105,000	1,141,200	1,217,780	1,244,844
Commonwealth ...	10,331,375	10,558,685	12,179,479	20,180,498	17,824,960

* Year ended 30th June, year following.

5. Bounties on Combed Wool or Tops Exported.—Under the Bounties Act 1907, bounties were payable on combed wool or tops exported from the Commonwealth, provided they were produced therein. The maximum amount to be paid might not exceed a total of £10,000 per annum; any unexpended sum might be carried forward and be available for the years following. For the three years commencing 1st January, 1909, the rate of bounty granted was 1½d. per lb., and for the two years commencing 1st January, 1912, 1d. per lb. was payable for all combed wool or tops produced; thenceforward to the end of 1915, 1d. per lb. was payable up to 1,000,000 lbs. to any one manufacturer during a year, and ¾d. per lb. in excess of that quantity. No bounties have been paid on combed wool or tops since 1915. During the year 1908-9, an amount of £326 was paid in bounties, in 1909-10, £4,933, in 1910-11, £8,522, in 1911-12, £16,898, in 1912-13, £13,061, in 1913-14, £12,706, in 1914-15, £7,727, and in 1915-16, £5,828. The quantities of wool on which these amounts were paid were 52,085; 789,216; 1,363,555; 3,122,244; 3,134,614; 3,068,170; 3,635,811 and 2,824,436 lbs. respectively.

Figures shewing the exports of wool tops for the years 1912 to 1916-17 inclusive will be found on the next page.

6. **Exports of Wool.**—During the two calendar years prior to the war, about 38 per cent. of the exports of wool from the Commonwealth was despatched to the United Kingdom, whereas the shipments for the same destination during the past three years have averaged over 66 per cent. The percentage for the past five years was just under 55 per cent. The other leading consignees were France, the United States of America, Japan, Italy, and, prior to the war, Germany and Belgium. The following table shews for the years 1912 to 1916-17 the quantities of "greasy" wool exported from the Commonwealth and the principal countries to which consigned :—

COMMONWEALTH EXPORTS OF WOOL IN THE GREASE, 1912 to 1916-17.

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	211,386,638	185,387,090	319,614,894	202,384,381	233,446,361	1,202,219,164
France ...	151,555,672	159,782,827	12,787,863	13,746,706	12,254,213	350,127,281
Germany ...	107,523,165	94,068,893	3,036,083	...	...	204,628,141
United States of America ...	8,686,125	14,666,551	61,731,511	115,112,628	16,174	200,512,989
Belgium ...	54,679,915	51,881,724	2,984,856	...	...	109,546,495
Italy ...	4,856,997	5,778,424	18,191,774	43,167,206	25,608,163	97,602,564
Japan ...	9,339,817	7,199,671	22,670,413	34,725,863	16,839,727	90,775,491
Austria-Hungary ...	7,908,480	11,731,933	829,746	...	...	20,470,159
Canada ...	126,517	88,916	951,452	453,950	727,923	2,348,758
India ...	390,536	501,827	443,451	198,228	297,218	1,831,260
New Zealand ...	147,794	101,104	541,513	11,059	...	801,470
Other Countries ...	1,231,062	247,918	170,474	1,452,965	32,471	3,134,890
Total...	557,832,718	531,436,878	443,953,830	411,252,986	339,222,250	2,283,698,662

Similar particulars concerning the exports of "scoured and washed" wool are as follows :—

COMMONWEALTH EXPORTS OF "SCOURED AND WASHED WOOL,"*

1912 to 1916-17.

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	28,303,314	26,176,484	48,171,821	37,569,727	46,917,307	187,140,653
France ...	15,037,742	18,804,399	2,154,275	1,190,494	1,016,397	38,203,307
United States of America ...	49,849	124,301	4,557,800	27,933,634	...	32,665,584
Japan ...	2,750,614	3,564,433	6,141,036	7,499,571	5,081,183	25,036,837
Germany ...	10,541,771	10,135,857	1,748,008	...	154,172	22,579,808
Belgium ...	5,681,005	5,269,908	920,506	...	...	11,851,419
Italy ...	390,550	188,298	655,302	4,920,545	2,651,922	8,796,617
India ...	47,826	100,434	135,408	240,663	299,060	823,391
Austria-Hungary ...	69,036	62,932	147,864	...	...	299,832
New Zealand ...	42,927	11,042	1,879	104,864	...	160,712
Other Countries ...	347,472	11,998	315,392	426,553	567,059	1,668,474
Total...	63,254,106	64,450,086	64,949,291	79,886,051	56,687,100	329,226,634

* Including "tops." See preceding page.

The figures for "scoured and washed wool" include tops, amounting in 1912 to 3,018,050 lbs., valued at £323,299; in 1913, 3,561,722 lbs., valued at £415,670; in 1914-15, 4,095,966 lbs., valued at £511,021; in 1915-16, 4,981,975 lbs., valued at £680,656; and in 1916-17, 4,869,452 lbs., valued at £1,204,570. In 1914-15, Japan took 4,052,965 lbs., valued at £506,161; in 1915-16, 4,894,577 lbs., valued at £665,442; and in 1916-17, 4,845,515 lbs., valued at £1,199,180.

The total value of the wool exported from the Commonwealth to the principal countries during the five years under review was :—

TOTAL VALUE OF WOOL EXPORTED FROM THE COMMONWEALTH, 1912 to 1916-17.

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom	10,418,577	9,456,636	15,413,174	12,608,971	23,431,942	71,329,300
France	6,527,854	7,429,856	694,751	952,026	963,097	16,567,584
United States of America	460,275	745,354	3,110,301	8,381,302	13,513	12,710,745
Germany	5,050,974	4,693,157	295,376	...	...	10,039,507
Japan	703,371	735,018	1,502,576	2,587,091	2,470,414	7,998,470
Italy	230,436	256,718	716,260	2,116,891	1,845,861	5,165,166
Belgium	2,480,348	2,386,892	187,755	...	...	5,054,995
Austria-Hungary	360,125	519,477	50,436	...	...	930,088
India	18,739	30,586	30,739	32,442	87,860	200,366
Canada	7,155	5,404	50,063	53,316	77,267	193,205
New Zealand	8,844	5,199	19,962	4,931	...	38,936
Other Countries	87,865	12,765	30,789	118,121	63,384	312,924
Total	26,354,563	26,277,062	22,102,182	26,854,091	28,953,338	130,541,236

7. Care needed in Comparing Clips.—The Customs returns prior to 1914-15 do not furnish a reliable indication of increase or decrease in successive clips, since in each case they relate to the year ended 31st December, and include imports and exports of wool belonging to two distinct clips. A further defect in the comparability of successive clips is due to the circumstance that owing to climatic or other conditions, the time of shearing may be so far delayed that one clip may include almost thirteen months' growth of wool, while the succeeding one may include little more than eleven months' growth.

8. Wool-producing Countries in Southern Hemisphere.—The next table, compiled by one of the leading English wool-broking firms, furnishes interesting evidence of the relative importance of the three great wool-producing areas of the Southern Hemisphere. The figures given represent for the respective years the imports of wool into Europe and North America:—

IMPORTS OF WOOL INTO EUROPE AND NORTH AMERICA, 1901 and 1912 to 1916.

Year.	Australia and New Zealand.	Cape Colony.	River Plate.	Total.	Average Value of Australasian and Cape Bales.
	Bales.	Bales.	Bales.	Bales.	£
1901 ...	1,745,000	217,000	532,000	2,494,000	10.5
1912 ...	2,463,000	463,000	497,000	3,423,000	15.0
1913 ...	2,296,000	484,000	437,000	3,217,000	16.5
1914 ...	2,332,000	499,000	406,000	3,237,000	17.0
1915 ...	2,157,000	519,000	378,000	3,054,000	19.0
1916 ...	1,919,000	500,000	344,000	2,763,000	27.0

As the River Plate bale is much larger than the Australasian or Cape bale, a comparison of the number of bales is somewhat misleading. Allowing approximately for the difference in size of the several bales, it may be said that during the last five years the importations from Australia and New Zealand represent about 65 per cent. of the total.

9. United Kingdom Importation of Wool.—The quantity and value of wool imported into the United Kingdom during the year 1916 from the principal wool-producing countries, furnish evidence of the important position which the Commonwealth occupies in the supply of wool to the mother country. This is shewn in the following table:—

IMPORTS OF WOOL INTO THE UNITED KINGDOM, 1916.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ...	241,722,083	15,448,409	Spain ...	223,891	38,113
New Zealand ...	157,852,797	10,927,874	China ...	418,637	30,339
Union of Sth. Africa ...	90,071,988	4,632,338	U.S. of America ...	289,213	26,850
British India ...	64,793,105	2,556,794	Iceland & Greenland ...	345,089	23,608
Argentine Republic ...	31,782,139	2,060,499	Portugal ...	349,440	13,674
Chile ...	8,115,218	483,224	Morocco ...	13,300	668
France ...	3,808,053	283,171	Canada ...	8,432	640
Egypt ...	5,418,775	258,946	British Posses-		
Falkland Islands ...	4,352,042	235,768	sions, n.e.i. ...	704,958	41,597
Peru ...	2,734,506	176,952	Foreign Coun-		
Turkey, Asiatic ...	2,703,700	143,216	tries, n.e.i. ...	752,774	32,492
Persia ...	1,607,450	84,579			
Uruguay ...	879,094	60,263	Total ...	618,946,684	37,560,014

It will be seen that of the total importations of wool into the United Kingdom, Australian wool represented 39 per cent. of quantity and over 41 per cent. of value, and New Zealand over 25 per cent. of quantity and over 29 per cent. of value. It is interesting to note that a total of 564,924,180 lbs., valued at £34,102,366, was received from British Possessions, being a little over 91 per cent. of the total weight imported, and slightly under 91 per cent. of the total value.

10. **The Wool Market.**—(i.) *General.* A résumé of Australian wool market conditions for the seasons 1907-8 to 1912-13 will be found in Year Book No. 7 (pages 296 and 297), for the season 1913-14 in Year Book No. 8 (page 297), and for the seasons 1914-15 and 1915-16 in Year Book No. 10 (page 310).

(ii.) *Purchase by British Government.* The purchase by the Imperial Government of the balance of the Australian wool clip, for the season 1916-17, was brought about as a result of war conditions. Owing to the demand for wool for British and Allied military clothing, it was decided to acquire the Australian clip at the flat rate of 15½d. per pound greasy—an increase of 55 per cent. on the prices ruling in the pre-war season. The control of the scheme was placed in the hands of a body called the Central Wool Committee, assisted by a committee in each State. These committees consisted of representatives of the wool growers, wool sellers, wool buyers, manufacturers and scourers or fellmongers. In addition the Central Wool Committee had a Government nominee, who acted as chairman. The broad policy laid down was that existing trade conditions were not to be disturbed; this meant that the carrying out of the details of the scheme was left to the trade itself. The wool was prepared, catalogued and shewn in the usual way, but instead of being sold by public auction, it was valued by duly appointed Government Wool Appraisers, according to a table of limits prepared by a body of experts acting as an Advisory Board to the Central Wool Committee. On appraisal the wool became the property of the Imperial Government, and was shipped as freight space became available, it being prescribed that the allotment of freight should be on the basis of the quantity of wool appraised in each State.

The Central Wool Committee, at the request of the Imperial Government, undertook to scour and re-class as much wool as would keep the local industries going to their full capacity.

(iii.) *Financial.* Funds received from the Imperial Government, were used to effect a payment of 90 per cent. of the appraised price to wool brokers for distribution to the growers within fourteen days from the final date of each series of appraisements.

The balance of 10 per cent. was withheld for possible adjustments. The money so retained was placed at interest, the earnings being added to the amount available for final distribution.

The average appraised price per pound having worked out less than the purchase price of 15½d. per pound, the money retained, amounting to £2,313,461, was paid over on the 14th August, 1917. A dividend—the first—of 10 per cent. was paid on 23rd October, 1917, amounting to £2,312,608. This represents slightly more than the payment in full of the flat rate of 15½d. per pound. A small final dividend will follow as soon as circumstances will permit.

(iv.) *Quantity and Value of Wool Appraised, 1916-17.* The quantity of wool appraised under the Imperial Government's purchase of a portion of the clip for the season 1916-17 amounted to 323,748,376 lbs. greasy, and 34,310,645 lbs. scoured, or equivalent to 392,369,666 lbs. of wool in the grease. The actual quantities finally distributed between the British Government and Commonwealth manufacturers are set out in the table hereunder. The average appraised price per pound of wool in the grease was 14.72d., the average for scoured wool was 22.86d. per pound, and the average of all wool—greasy, and scoured calculated as greasy—appraised under the scheme was 14.15d. per pound. The difference of this average and the 15½d. basis being equal to 9.5 per cent. on the average appraised price, there is every probability of the total dividends approximating 10 per cent. of appraised prices. The quantities of wool shipped and the distribution thereof, also wool stored for shipment, are not available for publication.

The figures given in the following table are not final, as slight adjustments may eventually be necessary, though the result cannot be materially affected:—

PARTICULARS OF PURCHASE OF BALANCE OF 1916-17 AUSTRALIAN WOOL CLIP.

Purchased by	—	Quantity of Wool Appraised.				Values.	
		Bales.	Butts.	Bags.	lbs.	Appraised.	Based on
						£	Flat Rate.
British Government*	Greasy	940,872	8,171	110,274	309,789,055	18,985,169	20,007,210
	Scoured	141,247	153	823	33,188,552	3,170,381	4,286,854
	Total	1,082,119	8,324	111,097	342,977,607	22,155,550	†24,268,127
Woolen Manufacturers	Greasy	24,077	511	9,139	8,316,016	406,519	445,281
	Scoured	3,845	34	71	945,909	71,708	78,546
	Total	27,922	545	9,210	9,261,925	£ 478,227	523,827
Wool Top Manufacturers...	Greasy	17,427	...	...	5,643,305	473,635	518,797
	Scoured	820	...	...	176,184	27,197	29,790
	Total	18,247	...	...	5,819,489	500,832	†548,587
Total Purchased ...	Greasy	982,376	8,682	119,413	323,748,376	19,865,323	20,908,749
	Scoured	145,512	187	894	34,310,645	3,269,286	4,431,792
	Total	1,128,288	8,869	120,307	358,059,021	23,134,609	25,340,541
Grand total in terms of Greasy ...	...	...	...	...	‡392,369,666	...	|| 25,340,541

* Actually purchased by British Government after meeting requirements of Commonwealth manufacturers. † After crediting £25,937 to the British Government for slightly higher grade wools selected by the Commonwealth manufacturers. ‡ On the assumption that two pounds of greasy are required to produce one pound of scoured, this total is made up by:—British Government, 376,166,159 lbs.; woolen manufacturers, 10,207,834 lbs., and wool top manufacturers, 5,995,673 lbs. of wool as in the grease. § Paid for by woolen manufacturers at appraised value. || Paid for at the flat rate basis of 15½d. per pound greasy, tops to be sold at prices fixed by Army Contracts' Wool Committee, London, a certain percentage of profits to be returned to the Commonwealth Government by wool tops manufacturers. || At flat rate of 15½d. per pound.

(v.) *Purchase of 1917-18 Clip.* The organisation for the carrying out of the Imperial Government's purchase of the Australian wool clip 1917-18, was the same as for the balance of the season 1916-17.

With the exception of a few modifications necessary for the better working of the scheme, no alteration was made in the method of appraisement.

Ninety per cent. of the appraised value was paid to wool growers through the wool-selling brokers fourteen days after the completion of each series of appraisements, ten per cent. again being withheld for possible adjustments.

The total quantity of greasy wool appraised was 569,629,520 lbs., and scoured wool 47,340,403 lbs., a total of 616,969,923 lbs., equal to 664,310,326 lbs. greasy.

The average appraised price of the greasy wool is 14.98d. per lb., and of the scoured wool 25.62d. per lb.. The average appraised price on the greasy basis works out at 14.68d. per lb. The difference between this and the flat rate of 15½d. is equal to 5.59 per cent. of the appraised price.

The ten per cent. retention money, together with a dividend of five per cent., was distributed in all centres on the 21st August, 1918, involving a sum of approximately £6,094,713.

PARTICULARS OF PURCHASE OF 1917-18 AUSTRALIAN WOOL CLIP.

Purchased by	—	Quantity of Wool Appraised.				Values.					
		Bales.	Fadges.	Sacks.	Weight in lbs.	Appraised Value.		Based on Flat Rate Value.			
						£	s. d.	£	s. d.	£	s. d.
British Government	Greasy	1,627,360	18,136	190,587	553,713,279	34,619,564	19 9	36,555,476	4 11		
	Scoured	197,246	697	745	46,196,661	4,956,855	0 7	5,234,040	4 10		
	Total	1,824,606	18,833	191,332	599,909,940	39,576,420	0 4	41,789,516	9 9		
Woollen Manufacturers ...	Greasy	37,187	493	15,682	13,185,745	715,302	10 3	755,301	18 6		
	Scoured	4,632	16	23	1,132,587	95,444	17 0	100,782	1 8		
	Total	41,819	509	15,705	14,318,332	810,747	7 3	856,084	0 2		
Wool Top Manufacturers ...	Greasy	7,936	1	...	2,730,496	242,287	10 4	255,836	2 9		
	Scoured	46	...	...	11,155	1,835	18 7	1,938	11 9		
	Total	7,982	1	...	2,741,651	244,123	8 11	257,774	14 6		
Total Purchased ...	Greasy	1,672,483	18,630	206,269	569,629,520	35,577,155	0 4	37,566,614	6 2		
	Scoured	201,924	713	768	47,340,403	5,054,135	16 2	5,336,760	18 3		
	Total	1,874,407	19,343	207,037	616,969,923	40,631,290	16 6	42,903,375	4 5		
Grand total in terms of Greasy ...	...	...	...	...	664,310,326	...		42,903,375	4 5		

NOTE:—Woollen Manufacturers obtain their supplies at the appraised price, but Wool Top Manufacturers are required to pay the flat rate value for all their purchases.

Arrangements have now been concluded for the purchase by the Imperial Government of the Australian wool clip for the currency of the war, and for one full wool year thereafter.

(vi.) *Average Export Value.* The average values per lb. of Australian greasy wool according to the export returns for the past ten years have been as follows:—

EXPORT VALUE PER LB. OF AUSTRALIAN GREASY WOOL, 1907 to 1916-17.

Year ...	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914-15.	1915-16.	1916-17.
Average value per lb. ...	d. 10.73	d. 9.17	d. 9.35	d. 9.58	d. 8.87	d. 9.50	d. 9.70	d. 9.45	d. 11.86	d. 15.81

(vii.) *Exports of Wool from each State, and Quantity sold Locally.* Over 89 per cent. of the wool grown in Australia was sold in the local markets prior to export from the Commonwealth during 1915-16. Under normal conditions prior to the war buyers from the United Kingdom, France, Germany, and other European countries, also from America, Japan, China, and India, attended the sales conducted in Sydney, Melbourne, Geelong, Brisbane, Adelaide, Fremantle, Hobart, and Launceston.

The following table shews the number of bales of wool exported overseas from each State during the season ended 30th June, 1917, and bales appraised or sold for shipment, for use in local woollen mills and for scouring, etc. It must be noted that as considerable quantities of wool grown in some States are sold in or shipped from others, these figures therefore do not shew actual local production, but total overseas shipments and sales. The estimated quantity of wool produced in each State is given on page 323.

EXPORTS OF WOOL TO PLACES OUTSIDE THE COMMONWEALTH, AND THE QUANTITY APPRAISED OR SOLD IN THE SEVERAL STATES, DURING THE SEASON ENDED 30th JUNE, 1917.

State.	Oversea Exports.		Sales or Appraisements.	
	Bales.	%	Bales.	%
New South Wales	590,372	46.74	707,254	42.34
Victoria	277,394	21.96	467,034	27.96
Queensland	220,437	17.45	275,141	16.47
South Australia	100,052	7.92	136,513	8.17
Western Australia	58,256	4.61	51,350	3.08
Tasmania	16,625	1.32	32,989	1.98
Commonwealth	1,263,136	100.00	1,670,281	100.00

(viii.) *Exports of Wool from Commonwealth and Quantity sold Locally.* The number of bales of wool exported from the Commonwealth and sold at local sales prior to shipment, or taken for local use, during 1895, 1900, 1905, 1910, and the past seven seasons is shewn in the following table:—

EXPORTS OF WOOL FROM THE COMMONWEALTH, AND THE QUANTITY SOLD LOCALLY FROM 1895 to 1917.

Year ended 30th June.		Oversea Exports.	Local Sales.*	Ratio of Wool sold locally to Exports.
		Bales.	Bales.	%
1895		1,595,652	817,333	51.22
1900		1,221,163	807,031	66.09
1905		1,218,969	926,940	76.04
1910		1,921,705	1,624,561	84.54
1911		1,975,378	1,642,555	83.15
1912		2,020,547	1,700,494	84.16
1913		1,718,486	1,518,650	88.37
1914		1,966,576	1,703,744	86.64
1915		1,575,688	1,222,872	77.61
1916		1,619,259	1,443,118	89.12
1917		1,263,136	1,670,281	...

* Including wool absorbed by Local Woollen Mills, and Wool Scouring establishments.

The steady development of the Australian wool market is clearly shewn in this table. In the nineteen years ended 1914, the quantity sold locally more than doubled, and the ratio of wool sold locally to that exported increased from 51 per cent. in 1895 to over 86½

per cent. in the season ended 30th June, 1914. The abnormal conditions obtaining since the outbreak of war have materially affected the ratios, which in consequence are no longer serviceable as a measure of growth of the local market.

During the past season 1,670,281 bales of wool were sold in Australia, and 546,300 bales in New Zealand, representing a total value of £45,631,102. This enormous quantity far exceeds the sales of any other wool producing country in the world.

(ix.) *Quantities of Various Descriptions of Wool Sold or Appraised in each State.* The quantities and ratios of the various descriptions of wool marketed in each State are shewn in the following tables:—

**PROPORTIONS OF THE VARIOUS DESCRIPTIONS OF WOOL SOLD OR APPRAISED
LOCALLY IN THE SEVERAL STATES OF THE COMMONWEALTH DURING THE
SEASON ENDED 30th JUNE, 1917.**

Description of Wool.	N. S. W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Common-wealth.
	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
Greasy ...	630,703	438,231	196,268	129,007	50,878	32,931	1,478,018
Scoured ...	76,551	28,808	78,873	7,506	472	58	192,263
Total	707,254	467,034	275,141	136,513	51,350	32,989	1,670,281
Fleece, etc.	664,819	418,090	263,520	123,698	41,167	31,305	1,542,599
Lambs ...	42,435	48,944	11,621	12,815	10,183	1,684	127,682
Total	707,254	467,034	275,141	136,513	51,350	32,989	1,670,281
Merino ...	579,948	222,449	268,261	124,890	43,529	11,254	1,250,331
Crossbred and all strong breeds	127,306	244,585	6,880	11,623	7,821	21,735	419,950
Total	707,254	467,034	275,141	136,513	51,350	32,989	1,670,281
	%	%	%	%	%	%	%
Greasy ...	89.18	93.83	71.33	94.50	99.08	99.82	88.49
Scoured ...	10.82	6.17	28.67	5.50	0.92	0.18	11.51
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Fleece, etc.	94.00	89.52	95.78	90.61	80.17	94.90	92.36
Lambs ...	6.00	10.48	4.22	9.39	19.83	5.10	7.64
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Merino ...	82.00	47.63	97.50	91.49	84.77	34.11	74.86
Crossbred and all strong breeds	18.00	52.37	2.50	8.51	15.23	65.89	25.14
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Wool in the grease represented 88½ per cent. of the total marketed during the period under review. Of fleece and lambs wool, the former represents 92.36, and the latter 7.64

per cent. The class of wool produced is principally merino, which is almost exclusively grown in the northern and central parts of the continent, the bulk of the merino wool dealt with in Victoria coming from Riverina and other parts of New South Wales. Victoria, the southern parts of South Australia and of New South Wales, and Tasmania, produce nearly the whole of the crossbred and other strong bred wools.

(x.) *Percentages in each State of Various Descriptions of Wool Sold or Appraised.* The following table gives the percentages of each description of wool sold or appraised in the several States during the season 1916-17 :—

PERCENTAGE OF BALES OF EACH DESCRIPTION OF WOOL SOLD OR APPRAISED IN THE SEVERAL STATES TO THE TOTAL SOLD OR APPRAISED IN THE COMMONWEALTH, 1916-17.

Description of Wool.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Commonwealth.
	%	%	%	%	%	%	%
Greasy ...	42.67	29.65	13.28	8.73	3.44	2.23	100.00
Scoured ...	39.82	14.98	41.02	3.90	0.25	0.03	100.00
Fleece, etc. ...	43.10	27.10	17.08	8.02	2.67	2.03	100.00
Lambs ...	33.23	38.33	9.10	10.04	7.98	1.32	100.00
Merino ...	46.38	17.79	21.46	9.99	3.48	0.90	100.00
Crossbred and all strong breeds ...	30.31	58.24	1.64	2.77	1.86	5.18	100.00

§ 6. Hides and Sheepskins.

1. **Extent of Trade.**—In addition to the hides and sheepskins treated in the tanneries of the several States, a very considerable export trade is carried on, the total value of the hides and sheepskins exported from Australia during the five years 1912 to 1916-17 being no less than £13,635,549, or an average of £2,727,110 per annum.

2. **Sheepskins with Wool.**—By far the largest item included in the amount mentioned in the preceding paragraph arises from the value of sheepskins with wool exported, which are shipped principally to the United Kingdom and France. Details concerning the number so exported during the five years 1912 to 1916-17 are as follow :—

COMMONWEALTH EXPORT OF SHEEPSKINS WITH WOOL, 1912 to 1916-17.

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 Years.
	No	No.	No.	No.	No.	No
United Kingdom	3,707,050	3,861,161	5,844,442	3,506,365	2,152,016	19,071,034.
France ...	5,297,141	5,932,257	2,227,714	1,863,904	753,530	16,074,546.
Belgium ...	1,277,530	996,821	29,366	...	...	2,303,717
U.S. of America...	129,899	59,037	1,016,958	331,706	...	1,577,600.
Canada...	679	...	206,876	61,103	46,668	315,326.
Germany ...	63,112	57,735	2,578	...	...	123,425
New Zealand ...	661	...	39,083	25,283	...	65,027
Italy ...	...	960	...	9,949	...	10,909
Other Countries ...	...	261	1,051	24	...	1,336.
Total ...	10,476,072	10,948,232	9,368,068	5,798,334	2,952,214	39,542,920.

The next table furnishes corresponding particulars as to value :—

**VALUE OF SHEEPSKINS WITH WOOL EXPORTED FROM THE COMMONWEALTH,
1912 to 1916-17.**

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom	666,962	804,432	1,021,432	779,615	738,483	4,010,924
France ...	980,298	1,315,156	387,692	283,293	250,783	3,217,222
Belgium ...	314,301	335,569	10,877	...	...	660,747
U.S. of America...	12,713	15,127	213,249	97,890	...	338,979
Canada...	66	...	46,374	12,553	10,869	69,862
Germany ...	10,576	11,620	812	...	...	23,008
New Zealand ...	113	...	9,748	6,268	...	16,129
Italy ...	...	100	...	875	...	975
Other Countries ...	...	55	468	5	...	528
Total ...	1,985,029	2,482,059	1,690,652	1,180,499	1,000,135	8,338,374

3. Sheepskins without Wool.—In the case of sheepskins without wool the principal countries to which export takes place are the United States of America and the United Kingdom. Particulars concerning the quantities exported are as follows :—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITHOUT WOOL, 1912 to 1916-17.

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United States of America	271,028	21,760	640,302	1,815,725	1,618,517	4,367,332
United Kingdom ...	131,103	128,578	720,417	103,497	155,189	1,238,784
France ...	55,845	5,364	...	...	1,098	62,307
New Zealand ...	1,515	...	12	...	24	1,551
Canada ...	...	...	3,096	540	184,460	188,096
Japan ...	...	...	...	1,047	2,949	3,996
Belgium ...	167	...	...	...	...	167
Total ...	459,658	155,702	1,363,827	1,920,809	1,962,237	5,862,233

Corresponding details concerning value are given hereunder :—

**VALUE OF SHEEPSKINS WITHOUT WOOL EXPORTED FROM THE COMMONWEALTH,
1912 to 1916-17.**

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 Years.
	£	£	£	£	£	£
United States of America	8,730	1,550	35,766	86,908	126,612	259,566
United Kingdom ...	3,854	5,130	37,875	5,243	12,019	64,121
France ...	5,948	382	...	...	89	6,419
New Zealand ...	27	...	2	...	2	31
Canada ...	...	...	233	39	13,750	14,022
Japan ...	...	...	...	83	337	420
Belgium ...	4	...	...	...	...	4
Total ...	18,563	7,062	73,876	92,273	152,809	344,583

4. **Hides.**—The Commonwealth trade in hides has now assumed considerable proportions, and during 1913 the total value of hides exported amounted to £1,657,971. The exports were principally to the United Kingdom, the United States of America, Belgium and Germany. The disastrous drought of 1914-15 greatly reduced the quantity of hides in the succeeding years. This, in conjunction with the increased demand for leather, more especially for military purposes, resulted in a considerable falling-off in the quantity of hides available for export. To insure against a shortage of supplies for home consumption, on the 28th October, 1914, the Government by proclamation prohibited the exportation of hides unless the consent in writing of the Minister for Trade and Customs was first obtained. The embargo when enforced was in the case of heavy hides only. Large quantities of hides are imported into the Commonwealth, mainly from New Zealand and the Pacific Islands. The total value of hides imported during 1916-17 was £161,380.

Particulars concerning the export of hides during the past five years are as follows:—

COMMONWEALTH EXPORT OF HIDES.* 1912 to 1916-17.

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom	350,519	360,549	485,500	237,707	147,540	1,581,815
U.S. of America	82,808	136,687	371,364	...	2,783	593,642
Canada ...	65,407	11,205	264,785	208,355	25,210	574,962
Belgium ...	108,455	244,394	40,211	...	...	393,060
Italy ...	117,352	85,984	9,830	131,894	2,334	347,394
Germany ...	78,059	206,588	18,773	...	...	303,420
France ...	15,151	16,208	8,873	1,129	3,733	45,094
Japan ...	5,025	155	6,863	4,063	...	16,106
Austria-Hungary	1,275	3,631	203	...	...	5,109
Union of S. Africa	...	...	480	2,705	...	3,185
Other Countries ...	9,717	7,674	11,600	15,288	11,619	55,898
Total ...	833,768	1,073,075	1,218,482	601,141	193,219	3,919,685

* Including calf and horse hides.

In the next table are given particulars relative to the value of hides exported:—

VALUE OF HIDES* EXPORTED FROM THE COMMONWEALTH, 1912 to 1916-17.

Country to which Exported.	1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom	430,609	580,195	670,421	271,364	270,848	2,223,437
U.S. of America...	94,783	196,583	375,270	...	5,217	671,853
Belgium ...	139,188	385,627	52,647	...	35,043	612,505
Germany ...	103,081	339,605	30,259	...	...	472,945
Canada ...	74,273	16,622	198,421	130,157	3,772	423,245
Italy ...	125,744	102,834	12,299	128,906	...	369,783
France ...	19,865	20,078	13,933	1,780	7,152	62,808
Japan ...	8,378	335	13,063	8,524	...	30,300
Austria-Hungary	1,757	5,545	355	...	...	7,657
Union of S. Africa	...	...	531	3,038	...	3,569
Other Countries ...	9,576	10,547	13,687	16,446	24,234	74,490
Total ...	1,007,254	1,657,971	1,380,886	560,215	346,266	4,952,592

* Including calf and horse hides.

The number and value of hides imported into the Commonwealth during the five years 1912 to 1916-17 are as follows:—

HIDES IMPORTED INTO THE COMMONWEALTH, 1912 to 1916-17.

Particulars.		1912.	1913.	1914-15.	1915-16.	1916-17.	Total for 5 Years.
No. ...	...	87,680	135,193	83,999	147,450	94,065	548,387
Value ...	£	135,301	239,780	146,015	293,541	161,380	976,017

§ 7. Graphical Representation of Pastoral Production.

1. **General.**—As comparatively complete statistics relative to the number of horses, cattle, sheep and pigs are available from 1860, the graphical representation of the fluctuations in numbers for the Commonwealth as a whole, shewn on page 321, covers the period from 1860 to 1916.

2. **Horses.**—With relatively unimportant fluctuations the number of horses in the Commonwealth increased at a fairly consistent rate until 1895, when a decline set in, culminating in the losses of the drought of 1902. At this latter point the number was practically identical with that for 1890. From 1902 onwards a rapid improvement was experienced, the totals for 1913 and 1914 being the highest recorded. The disastrous drought of 1914-15 was responsible for heavy losses, the number recorded at the close of the latter year being considerably less than in 1912. The 1916 figures, however, shewed a substantial increase, the returns being somewhat below those for 1913, but above those for 1912.

3. **Cattle.**—The graph for cattle furnishes evidence of rapid increase in number, interrupted by four marked periods of decline, of which the first extended from 1862 to 1866, the second from 1881 to 1885, the third from 1894 to 1902. So extensive was this last-mentioned decline that the number receded to that of 1879. From 1902 a rapid recovery took place, and the total for 1911 exceeded that existing at the end of the year 1895, though still short of the maximum attained in 1894. The fourth period of decline commenced in 1912, the figures from that year to 1914 shewing a slight decline, while those for 1915 shew a very serious falling-off, the difference between the 1911 and 1915 returns amounting to over 16 per cent. In 1916 the number of cattle commenced to ascend, an increase exceeding 500,000 being in evidence over the number for the previous year.

4. **Sheep.**—In the case of sheep the graph furnishes evidence of six periods in which the upward movement in number has been arrested or reversed. The first of these occurred between 1868 and 1871, the second between 1875 and 1877, the third during 1884, the fourth, by far the most serious, between 1891 and 1902, the fifth during 1912, and the sixth during 1914-15. From 1902 to 1907 a rapid increase took place, succeeded by a slight decline in 1908, and a rapid advance in 1909, 1910 and 1911, the point reached in the latter year being the highest since 1894. The return for 1912 shews a considerable decrease; this was followed by an increase in 1913, but there was a heavy falling-off in 1914, amounting to $7\frac{1}{2}$ per cent., and a still heavier one in 1915, amounting to over $11\frac{1}{2}$ per cent., the total number of sheep in the latter year being the lowest since 1904. As in the case of all other live stock there was a very substantial increase in the number of sheep during 1916, an increase of nearly 11 per cent. having taken place.

5. **Pigs.**—The graph for pigs exhibits more numerous fluctuations than that for any of the other classes of live stock represented, and from 1904 to 1908 furnished evidence of a persistent decline. In 1909, however, an upward movement took place; and this was well maintained during the two succeeding years, the 1911 returns exceeding all previous records. There was a considerable decrease in 1912, and a smaller one during 1913. The 1914 returns, however, shew an upward tendency, followed by a sharp decline during 1915, and an even sharper increase in 1916.