

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 for 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 decennial intervals from 1860 to 1910, and from 1916 onwards in single years, are given in the following table, and are shewn continuously in the graphs hereinafter.

During the sixty years covered by the table the live stock of the Commonwealth increased considerably, horses 460 per cent., cattle 241 per cent., sheep 287 per cent., and pigs 118 per cent. The average annual increases which these aggregates represent are as follows:—Horses 2.91 per cent.; cattle 2.07 per cent.; sheep 2.28 per cent.; and pigs, 1.31 per cent.

COMMONWEALTH LIVE STOCK, 1860 TO 1920.

Year.	Horses.	Cattle.	Sheep.	Pigs.
1860	431,525	3,957,915	20,135,286	351,096
1870	716,772	4,276,326	41,593,612	543,388
1880	1,061,078	7,523,000	62,176,027	815,776
1890	1,521,588	10,299,913	97,881,221	891,138
1900	1,609,654	8,640,225	70,602,995	950,349
1910	2,165,866	11,744,714	92,047,015	1,025,850
1916	2,436,148	10,459,237	76,668,604	1,006,763
1917	2,497,903	11,829,138	84,965,012	1,169,365
1918	2,527,149	12,738,852	87,086,236	913,902
1919	2,421,201	12,711,067	75,554,082	695,968
1920	2,415,510	13,499,737	77,897,555	764,406

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. Thus, at the commencement of hostilities, Australia was settling down to a disastrous drought, and the termination of the war likewise marked the beginning of a protracted dry spell which was not broken until the winter of 1920. Though the whole of Australia was visited by drought in this latter instance the visitation was not concurrent in all parts of the Commonwealth, and much country suitable for agistment purposes was available at intervals, which fact probably accounted for the slight losses of cattle recorded during 1919. The number of sheep however decreased by 11,532,154, and the wheat crop was practically a failure.

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, 1918, 2,527,149; cattle, 1920, 13,499,737; sheep, 1891, 106,421,068; and pigs, 1917, 1,169,365.

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 sixty years in the manner shewn in the succeeding table:—

NUMBER OF AUSTRALIAN LIVE STOCK PER HEAD OF POPULATION, 1860 TO 1920.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Year.	Horses.	Cattle.	Sheep.	Pigs.
1860 ..	0.38	3.45	17.58	0.31	1915 ..	0.48	2.00	13.94	0.15
1870 ..	0.43	2.60	25.24	0.33	1916 ..	0.49	2.12	15.53	0.20
1880 ..	0.48	3.37	27.87	0.37	1917 ..	0.50	2.36	16.97	0.23
1890 ..	0.48	3.27	31.06	0.28	1918 ..	0.49	2.48	16.99	0.18
1900 ..	0.43	2.29	18.75	0.25	1919 ..	0.45	2.38	14.15	0.13
1910 ..	0.49	2.65	20.80	0.23	1920 ..	0.44	2.49	14.35	0.14

Considered in relation to population, the live stock attained its maximum for the period 1860–1920 in the quinquennium 1890–4, 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 for the years shewn above being from 0.38 to 0.50 per head. In the case of cattle, the corresponding limits of variation were 2.00 and 3.45; sheep, 13.94 and 31.06; and pigs, 0.13 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.	Data.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales ..	30th June, 1921 ..	2.14	10.88	108.88	0.99
Victoria ..	1st March, 1921 ..	5.55	17.92	138.49	1.99
Queensland ..	31st Dec., 1920 ..	1.41	9.63	25.96	0.16
South Australia ..	30th June, 1921 ..	0.71	0.99	16.73	0.20
Western Australia ..	31st Dec., 1920 ..	0.18	0.87	6.69	0.06
Tasmania ..	1st March, 1921 ..	1.49	7.94	59.92	1.45
Northern Territory ..	31st Dec., 1920 ..	0.07	1.26	0.01	0.00
Federal Territory ..	30th June, 1921 ..	1.42	7.86	170.20	0.30
Commonwealth ..	1920-21 ..	0.81	4.54	26.19	0.26

7. **Minor Classes of Live Stock.**—The numbers of minor classes of live stock returned for 1920-21 were as follows :—Goats, 220,608 ; camels, 12,649 ; mules and donkeys, 13,844 ; and ostriches, 959. Of these, goats and mules were most numerous in Queensland ; camels 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 about 15,000 angora goats are included in the total of 220,608 goats shewn above. Of these, 4,517 were in New South Wales, 2,415 in Western Australia, and 3,210 in Queensland, while the quantity of mohair produced in the latter State in 1920 was set down at 1,858 lbs., and the number of skins placed on the market was returned as 314.

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 1916-17 to 1920-21 are as follows :—

QUANTITIES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE COMMONWEALTH, 1916-17 TO 1920-21.

Products.	Unit of Quantity.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
Animals (living)—						
Cattle	No.	2,743	1,117	644	3,133	4,396
Horses	"	14,228	23,876	8,686	5,787	8,195
Sheep	"	3,198	9,080	18,001	21,601	19,307
Bones	cwt.	26,884	20,363	25,669	29,198	24,160
Glue Pieces and Sinews ..	"	26,973	11,015	3,878	8,158	—3,920
Glycerine	lb.	(a)	(a)	1,633,510	—21,745	—854,254
Hair	"	514,752	324,523	402,869	600,595	100,434
Hoofs	cwt.	10,497	8,618	10,000	11,382	7,580
Horns	"	(a)	(a)	(a)	(a)	(a)
Meats—						
Frozen Beef	lb.	242,040,115	180,222,185	119,938,442	120,939,750	179,618,149
Frozen Mutton and Lamb ..	"	66,811,263	19,174,231	59,672,405	246,957,427	54,892,764
Frozen Rabbits and Hares ..	pair	12,674,472	13,164,307	5,132,983	9,622,150	3,925,004
Frozen, Other	lb.	10,773,154	8,286,035	12,329,539	11,397,792	7,901,468
Potted and Extract of	"	(a)	(a)	(a)	(a)	(a)
Preserved in Tins, etc. ..	"	21,922,630	43,036,310	65,118,256	47,550,045	8,296,500
Other (excluding Bacon and Ham)	"	35,833	261,301	424,777	755,141	489,401
Sausage Casings	"	(a)	(a)	(a)	(a)	(a)
Skins—						
Hides	No.	98,124	15,873	26,819	540,415	—8,317
Sheep	"	4,753,464	2,907,431	6,663,978	10,143,952	5,117,431
Rabbit and Hare	cwt.	48,403	71,990	117,569	127,452	49,427
Other, including Undressed Furs	"	(a)	(a)	(a)	(a)	(a)
Tallow	cwt.	555,427	345,849	870,950	712,307	524,220
Wool—Greasy	lb.	331,776,079	243,784,651	457,995,701	552,307,700	417,647,343
Scoured	"	51,727,629	62,865,373	106,313,411	84,900,446	61,523,697
Tops	"	4,869,452	4,571,357	2,822,578	6,148,118	6,598,681

NOTE.—The minus sign (—) signifies net imports. (a) Quantity not available.

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 £254,874,870 for the period, or an average of £50,974,974 per annum, of which wool represents 70 per cent. Meats, skins, and tallow rank next in order of importance.

VALUES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE COMMONWEALTH, 1916-17 TO 1920-21.

Products.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
Animals (living)—	£	£	£	£	£
Cattle	4,582	-10,993	3,567	-23,855	33,350
Horses	306,200	453,616	161,533	117,739	137,497
Sheep	8,474	15,049	35,007	57,854	140,975
Bones	20,783	21,806	27,156	31,534	21,839
Glue Pieces and Sinews	21,416	15,196	6,904	15,340	302
Glycerine	26,459	41,256	58,073	1,351	-39,374
Hair	26,802	21,243	29,335	66,043	28,416
Hoofs	6,363	7,848	11,091	14,526	8,180
Horns	4,191	13,309	18,474	52,383	29,609
Meats—					
Frozen Beef	4,945,716	3,697,957	2,471,136	2,474,904	3,819,094
Frozen Mutton and Lamb	1,540,546	452,627	1,298,086	5,482,263	1,578,634
Frozen Rabbits and Hares	913,142	985,190	308,965	762,936	432,745
Frozen, Other	195,846	199,847	381,780	305,948	190,795
Potted and Extract of	65,471	224,464	328,233	99,599	9,649
Preserved in Tins, &c.	952,369	2,308,989	3,771,373	2,778,592	380,694
Other (excluding Bacon and Ham)	1,151	7,655	15,380	37,845	16,741
Sausage Casings	1,210	-29,089	101,490	212,427	-43,160
Skins—					
Hides	184,262	211,449	156,084	1,089,731	-113,202
Sheep	1,137,832	808,782	1,921,411	2,585,171	1,228,012
Rabbit and Hare	433,546	1,155,824	1,314,366	3,670,791	968,972
Other (Including Undressed Furs)	188,738	276,537	313,472	2,268,748	715,656
Tallow	1,241,219	886,128	2,167,728	2,855,602	1,347,400
Wool—Greasy	21,870,113	18,981,347	31,477,707	38,414,608	25,298,176
Scoured	5,394,259	6,094,040	10,351,553	9,169,288	6,426,167
Tops	1,204,570	1,510,799	935,212	2,957,679	2,049,588
Total Values	40,695,265	36,350,876	57,665,116	75,499,858	44,663,755

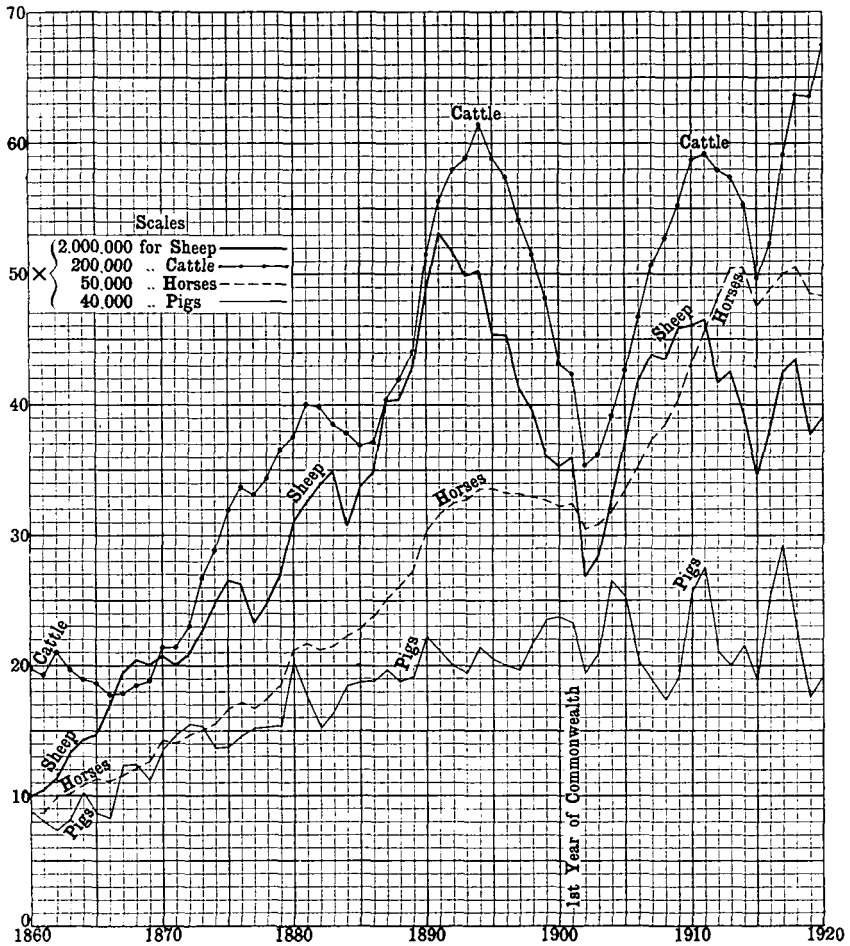
NOTE.—The minus sign (—) signifies net imports.

§ 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 are 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. During the recent war Australian horses were found to be well adapted for all purposes, especially in Palestine.

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 till the year 1914, when it gave place to Queensland, where rapid progress had been in

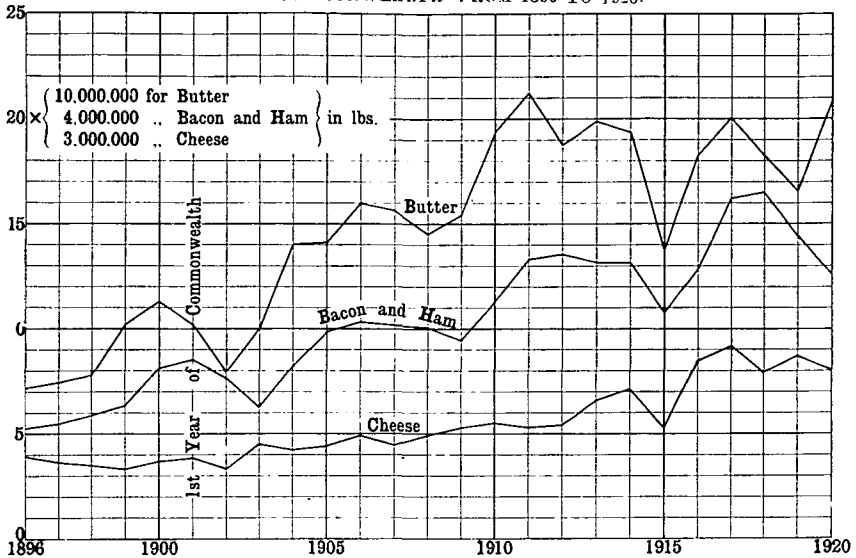
GRAPHS SHEWING NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS IN THE COMMONWEALTH FROM 1860 TO 1920.



(See page 205.)

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year. The totals of the horses, cattle, sheep, 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.

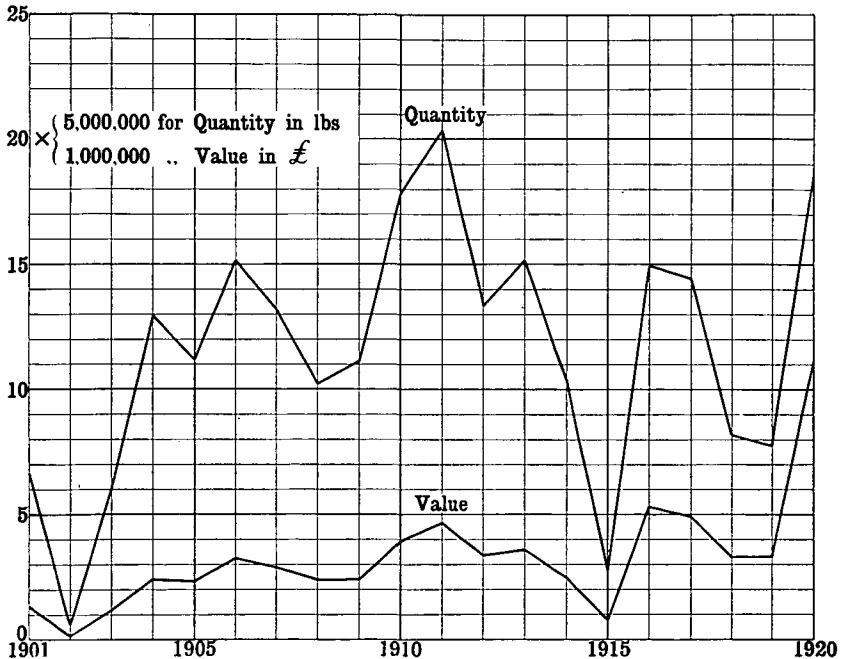
GRAPHS SHEWING THE PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM
IN THE COMMONWEALTH FROM 1896 TO 1920.



(See pages 298 and 301.)

EXPLANATION OF GRAPHS.—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 1920.



(See page 299.)

EXPLANATION OF GRAPHS.—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.

evidence during the previous decade. New South Wales regained the lead during the next three seasons, but Queensland again replaced the latter State in 1918, and has strengthened its position during the past two seasons. Particulars for the several States for a series of years are as follows :—

**NUMBER OF HORSES IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 TO 1920.**

Year.	N.S.W.	Vic. (a)	Q'land.	S. Aust.	W. Aust.	Tas. (a)	N.T.	F.T.	C'wealth.
1860 ..	251,497	76,536	23,504	49,399	9,555	21,034	..	..	431,525
1870 ..	337,597	167,220	83,358	83,744	22,174	22,679	..	..	716,772
1880 ..	395,984	275,516	179,152	148,219	34,668	25,267	c2,372	..	1,061,078
1890 ..	444,163	436,459	365,812	187,686	44,384	31,165	11,919	..	1,521,588
1900 ..	481,417	392,237	456,788	166,790	68,253	31,607	12,562	..	1,609,654
1910 ..	650,636	472,080	593,813	249,326	134,114	41,388	24,509	..	2,165,866
1916 ..	b732,334	514,403	696,508	b257,422	169,730	42,620	21,674	b1,457	2,436,148
1917 ..	b740,806	514,061	731,977	b262,840	178,151	42,396	26,231	b1,441	2,497,903
1918 ..	b721,302	523,788	758,632	b269,255	180,094	41,221	31,436	b1,421	2,527,149
1919 ..	b660,751	513,500	730,326	b264,901	174,919	39,462	35,839	b1,513	2,421,201
1920 ..	b661,846	487,503	741,024	b268,187	178,664	39,117	37,837	b1,332	2,415,510

(a) 1st March year following. (b) 30th June year following. (c) Statistics not collected prior to 1880.

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

**PERCENTAGE OF HORSES IN EACH STATE AND TERRITORY ON THE TOTAL
FOR COMMONWEALTH, 1916 TO 1920.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F.T.	C'wealth.
	%	%	%	%	%	%	%	%	%
1916 ..	30.05	21.11	28.62	10.56	6.96	1.75	0.89	0.06	100.00
1917 ..	29.64	20.57	29.33	10.52	7.13	1.70	1.05	0.06	100.00
1918 ..	28.53	20.72	30.05	10.65	7.12	1.63	1.24	0.06	100.00
1919 ..	27.29	21.21	30.16	10.94	7.23	1.63	1.48	0.06	100.00
1920 ..	27.40	20.18	30.68	11.10	7.40	1.62	1.57	0.05	100.00

During the period under review Queensland has shewn the largest increase, i.e., 2 per cent., gained at the expense of New South Wales. The position of the remaining States, with the exception of Victoria with a decrease of 1 per cent., has altered but little.

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 5,939 for the year 1919–20 and 24,172 in 1917–18, and in value between £166,817 in the former and £502,557 during the latter year. The total number of horses exported during the five years, exclusive of those shipped for military purposes, amounted to 63,758, an average of 12,752 per annum. The total value of the exports for the period

was £1,388,568, or £277,714 per annum. The average export value per head for the period was £21 15s. 7d. The numbers exported to the principal countries concerned in this trade are as follows :—

**NUMBER AND DESTINATION OF HORSES EXPORTED FROM THE
COMMONWEALTH, 1916-17 TO 1920-21.**

Country to which Exported.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
India	15,744	23,890	7,522	4,119	6,829	58,104
New Zealand	40	26	11	95	51	223
Java	148	..	633	609	..	1,390
Straits Settlements	224	21	89	457	60	851
Fiji	223	150	111	223	301	1,008
Philippine Islands	5	20	215	158	62	460
Japan	16	15	27	40	71	169
Mauritius .. ..	..	..	150	60	140	350
Papua	35	30	20	1	29	115
Other Countries	78	20	54	177	759	1,088
Total	16,513^a	24,172^a	8,832^a	5,939	8,302	63,758^a

(a) Exclusive of shipments 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,
1916-17 TO 1920-21.**

Country to which Exported.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 years.
	£	£	£	£	£	£
India	312,271	479,520	146,768	84,651	127,891	1,151,091
New Zealand	11,190	16,360	4,600	35,725	15,289	83,164
Java	3,818	..	18,336	14,464	..	36,618
Straits Settlements	6,427	900	5,915	15,192	6,406	34,840
Fiji	5,814	3,765	2,176	5,548	8,570	25,873
Philippine Islands	60	200	3,800	3,330	678	8,068
Japan	850	750	1,350	1,770	3,025	7,745
Mauritius .. ..	..	..	4,334	1,200	1,910	7,444
Papua	663	538	817	10	514	2,542
Other Countries	1,804	524	1,268	4,927	22,660	31,183
Total	342,897^a	502,557^a	189,354^a	166,817	186,943	1,388,568^a

(a) Exclusive of shipments 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 four years ended 30th June, 1918. In addition to the exports shewn in the above tables, there were 39,348 horses, valued at £815,300, shipped from the Commonwealth for military purposes from the commencement of the war to 30th June, 1918.

The number of horses imported into the Commonwealth is comparatively small, consisting mainly of valuable animals introduced for breeding purposes, and coming principally from New Zealand and the United Kingdom. The average value per head of the horses imported during the last five years was £214 19s. 10d., as compared with £21 15s. 7d. per head for the exports for the same period. The average number imported per annum was, however, only 197, and the average annual value £42,397. The following table furnishes a comparison of imports and exports of horses during each of the five years 1916-17 to 1920-21 :—

**COMMONWEALTH IMPORTS AND EXPORTS OF HORSES,
1916-17 TO 1920-21.**

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1916-17	285	36,697	16,513	342,897	16,228	306,200
1917-18	296	48,941	24,172	502,557	23,876	453,616
1918-19	146	27,821	8,832	189,354	8,686	161,533
1919-20	152	49,078	5,939	166,817	5,787	117,739
1920-21	107	49,446	8,302	186,943	8,195	137,497

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 OF THE WORLD.**

Country.	Date.	Number of Horses. (000 omitted.)	Country.	Date.	Number of Horses. (000 omitted.)
Russia (a) ..	1915-16	34,822	Union of South Africa	1919	695
U.S. of America ..	1922	20,805	Denmark	1921	598
Argentine Republic ..	1918	9,061	Spain	1917	558
Brazil	1916	6,065	Uruguay	1916	555
Canada	1921	3,814	Rumania	1919	552
Germany	1920	3,588	Colombia	1915	526
Poland	1921	3,187	Paraguay	1918	490
Australia	1920	2,416	Czecho-Slovakia ..	1919	481
France	1919	2,413	Chile	1918	411
Hungary (b) ..	1911	2,001	Netherlands	1919	362
United Kingdom ..	1921	1,903	New Zealand	1921	337
British India ..	1918	1,681	Finland	1918	309
Japan	1918	1,511	Java	1915	304
Jugo-Slavia	1921	1,059	Latvia	1921	283
Italy	1918	990	Austria	1919	243
Mexico	1902	859	Norway	1918	221
Lithuania	1913	762	Algeria	1914	203
Cuba	1916	750	India (Native States)	1918	203
Sweden	1919	716	Greece	1920	201

(a) Including Caucasus and Siberia. (b) Old boundaries.

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 of the States the number of horses per head of population was lower in 1920 than in 1916. Particulars for the past five years are as follows :—

**NUMBER OF HORSES PER HEAD OF POPULATION,
1916 TO 1920.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	F. Terr.	C'wealth.
1916 ..	0.38	0.37	1.03	0.59	0.55	0.22	4.65	0.57	0.49
1917 ..	0.38	0.36	1.06	0.58	0.58	0.21	5.46	0.58	0.50
1918 ..	0.36	0.36	1.08	0.57	0.58	0.20	6.78	0.60	0.49
1919 ..	0.32	0.34	0.99	0.54	0.53	0.19	7.88	0.68	0.45
1920 ..	0.31	0.32	0.99	0.54	0.54	0.18	9.48	0.52	0.44

§ 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 portion of Australia in the temperate zone being 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 next seventeen years, however, despite recurring droughts, a rapid improvement took place, and the total reached on 31st December, 1920, was 6,455,067, the highest number recorded since 1896.

Following the severe drought of 1914–15 an upward movement in numbers has been in evidence in all the States, and, though a temporary check was experienced in 1919, the 1920 Commonwealth total of 13,499,737 represents the greatest number of cattle ever depastured in Australia.

The numbers of cattle in the several States and Territories at decennial intervals from 1860 to 1910 and for each of the last five years are as follows :—

**NUMBER OF CATTLE IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 TO 1920.**

Year.	N.S.W.	Victoria. (a)	Q'land.	S. Aust.	W. Aust.	Tas. (a)	Nor. Ter.	Fed. Ter.	C'wealth.
1860	2,408,586	722,332	432,890	278,265	32,476	83,366	..	..	3,957,915
1870	2,195,096	721,096	1,076,630	136,832	45,213	101,459	..	..	4,276,326
1880	2,580,040	1,286,207	3,162,752	283,315	63,719	127,187	19,720c	..	7,523,000
1890	2,091,229	1,782,978	5,558,264	359,938	130,970	162,440	214,094	..	10,299,918
1900	1,983,116	1,602,384	4,078,191	214,761	338,590	165,516	257,667	..	8,640,225
1910	3,140,307	1,547,569	5,131,699	384,862	825,040	201,854	513,383	..	11,744,714
1916	2,757,713b	1,175,098	4,765,657	288,887b	863,930	179,360	420,362	8,230b	10,459,237
1917	3,148,309b	1,371,049	5,316,558	313,245b	927,086	197,938	541,545	13,408b	11,829,138
1918	3,271,782b	1,596,544	5,786,744	342,768b	943,847	218,234	570,039	8,894b	12,738,852
1919	3,075,954b	1,631,120	5,940,433	349,562b	880,644	214,442	610,534	8,378b	12,711,067
1920	3,367,880b	1,575,159	6,455,067	376,399b	849,803	208,202	659,840	7,337b	13,499,737

(a) 1st March year following. (b) 30th June year following. (c) Statistics not collected prior to 1880.

3. Proportion in each State.—Particulars concerning the relative importance of the various cattle-breeding States during the years 1916 to 1920 are as under :—

PERCENTAGE OF CATTLE IN EACH STATE AND TERRITORY ON TOTAL FOR COMMONWEALTH, 1916 TO 1920.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	%	%	%	%	%	%	%	%	%
1916 ..	26.37	11.24	45.56	2.76	8.26	1.71	4.02	0.08	100.00
1917 ..	26.62	11.59	44.94	2.65	7.84	1.67	4.58	0.11	100.00
1918 ..	25.68	12.53	45.43	2.69	7.41	1.71	4.48	0.07	100.00
1919 ..	24.20	12.83	46.73	2.75	6.93	1.69	4.80	0.07	100.00
1920 ..	24.95	11.67	47.82	2.79	6.29	1.54	4.89	0.05	100.00

During the past five years the percentages of cattle in the various States on the Commonwealth total have suffered little change. Queensland has shewn the largest gain, while the principal decreases occurred in Western Australia and New South Wales.

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,
1916-17 TO 1920-21.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1916-17 ..	234	14,254	2,977	18,836	2,743	4,582
1917-18 ..	222	23,570	1,339	12,577	1,117	- 10,993
1918-19 ..	66	3,373	710	6,940	644	3,567
1919-20 ..	337	55,656	3,470	31,801	3,133	- 23,855
1920-21 ..	127	10,979	4,523	41,329	4,396	30,350

NOTE.—The minus sign (—) signifies net imports.

The average value of the cattle imported into the Commonwealth during the last five years was £109 7s. 3d. per head, while the average value of the cattle exported during the same period was £3 11s. 3d. As stated previously, the imported cattle were required principally for stud purposes.

5. **Cattle Slaughtered.**—The numbers of cattle slaughtered in the several States and Territories of the Commonwealth during the years 1916 to 1920 are as follows :—

CATTLE (INCLUDING CALVES) SLAUGHTERED IN STATES, TERRITORIES, AND COMMONWEALTH, 1916 TO 1920.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
1916	6393,400	247,781	578,202	663,167	59,072	26,972	a4,000	b122	1,372,716
1917	6377,936	217,480	582,954	669,789	50,781	23,521	22,911	b 87	1,345,459
1918	6437,046	223,340	498,737	673,148	48,707	22,419	31,511	b141	1,335,049
1919	6593,859	362,475	461,197	685,978	55,056	15,753	23,286	b138	1,597,742
1920	6525,981	374,545	449,103	690,944	68,055	27,468	1,330	b 74	1,537,500

(a) Estimated.

(b) 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 in normal times, mainly with the United Kingdom, Egypt, and the Philippine Islands. The quantities so exported during the five years 1916–17 to 1920–21 are as follows :—

QUANTITY OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE COMMONWEALTH, 1916–17 TO 1920–21.

Country to which Exported.	1916–17.	1917–18.	1918–19.	1919–20.	1920–21.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	239,384,893	145,300,631	47,056,554	105,725,679	156,316,163	693,783,920
Egypt ..	..	30,359,072	68,681,034	6,616,637	10,202,633	115,859,376
Straits Settlements ..	1,691,256	1,535,005	1,480,201	2,368,035	3,305,162	10,377,659
Philippine Islands ..	548,398	1,368,713	1,094,336	2,928,722	2,479,724	9,319,893
Hawaiian Islands ..	200,396	502,067	489,640	2,104,769	2,437,135	5,734,007
Italy ..	..	..	..	467,974	3,096,341	3,096,341
Hong Kong ..	90,000	98,058	75,791	849,904	849,904	1,881,727
Ceylon ..	89,752	203,823	60,854	405,347	530,636	1,284,412
United States ..	..	..	40,086	301,673	133,304	475,063
Other Countries ..	82,991	881,932	111,021	162,075	291,477	1,529,496
Total ..	242,081,686	180,249,301	119,989,517	121,078,911	179,642,479	843,041,894

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, 1916–17 TO 1920–21.

Country to which Exported.	1916–17.	1917–18.	1918–19.	1919–20.	1920–21.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	4,890,927	2,976,301	958,164	2,130,527	3,302,283	14,258,202
Egypt ..	..	616,627	1,415,713	133,583	207,643	2,373,566
Straits Settlements ..	34,397	31,819	33,284	53,363	71,090	223,962
Philippine Islands ..	11,139	31,449	44,225	65,331	56,032	208,176
Hawaiian Islands ..	4,358	17,968	14,058	62,818	77,784	176,986
Italy ..	..	..	..	..	62,575	62,575
Hong Kong ..	1,850	2,032	1,704	10,426	18,553	34,565
Ceylon ..	2,352	4,582	2,130	11,539	13,478	34,081
United States ..	..	..	1,023	7,422	3,429	11,874
Other Countries ..	2,047	17,915	2,485	4,239	6,965	33,651
Total ..	4,947,070	3,698,693	2,472,786	2,470,248	3,819,841	17,417,638

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 Egypt; the Straits Settlements, the Philippine Islands, and the Hawaiian Islands ranked next in order of importance. The exporting States and Territories during 1920-21 were:—Queensland, 159,404,532 lbs., valued at £3,301,814; New South Wales, 12,401,397 lbs., valued at £346,465; Victoria, 1,911,841 lbs., valued at £42,803; Western Australia, 5,756,126 lbs., valued at £123,865; and South Australia, 168,583 lbs., valued at £4,894.

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 (a) ..	1918	129,876	Java ..	1915	3,243
U.S. of America ..	1922	67,464	New Zealand ..	1921	3,139
Russia (b) ..	1915-16	53,145	Colombia ..	1915	3,035
Brazil ..	1918	37,500	Denmark ..	1921	2,591
Argentine Republic ..	1918	27,392	Sweden ..	1919	2,551
Germany ..	1920	16,807	Siam ..	1916	2,337
Australia ..	1920	13,500	Chile ..	1918	2,225
India (Native States) (a) ..	1918	12,691	Austrian Republic ..	1920	2,114
France ..	1919	12,374	Venezuela ..	1912	2,004
United Kingdom ..	1921	11,893	Netherlands ..	1919	1,969
Canada ..	1921	10,206	British East Africa ..	1917	1,943
Poland ..	1921	7,861	Bulgaria ..	1910	1,603
Uruguay ..	1916	7,803	Ceylon ..	1918	1,451
Madagascar ..	1917	6,676	Switzerland ..	1921	1,425
Italy ..	1918	6,240	Finland ..	1918	1,400
Hungary (c) ..	1911	6,028	Korea ..	1917	1,385
Union of South Africa ..	1919	5,575	Japan ..	1918	1,307
Paraguay ..	1918	5,500	Upper Senegal & Niger ..	1918	1,299
Mexico ..	1902	5,142	Belgium ..	1920	1,292
Jugo-Slavia ..	1921	4,834	Italian Somaliland ..	1920	1,246
Tanganyika Territory ..	1912	3,994	Rhodesia ..	1918	1,211
Cuba ..	1916	3,962	Western Morocco ..	1918	1,173
Turkish Empire ..	1919	3,740	Rumania ..	1919	1,125
Spain ..	1918	3,712	Algeria ..	1914	1,093
Czecho-Slovakia ..	1919	3,256	Norway ..	1918	1,054

(a) Including buffalo calves.

(b) Including Caucasus and Siberia.

(c) Old boundaries.

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 the past five years are as follows:—

NUMBER OF CATTLE PER HEAD OF POPULATION, 1916 TO 1920.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	F. Terr.	C'wealth.
1916 ..	1.45	0.84	7.03	0.66	2.82	0.90	90.09	3.22	2.12
1917 ..	1.62	0.97	7.73	0.70	3.02	1.00	112.75	5.42	2.36
1918 ..	1.64	1.11	8.20	0.73	3.05	1.08	122.85	3.77	2.48
1919 ..	1.49	1.09	8.05	0.72	2.69	1.02	134.27	3.77	2.38
1920 ..	1.60	1.03	8.58	0.76	2.57	0.98	165.29	2.86	2.49

For the Commonwealth as a whole the ratio of cattle to population has increased since 1916, and the increase has been in evidence throughout, the Commonwealth, with the exception of Western Australia and the Federal Territory.

§ 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, but in recent years the proportion has fallen away considerably.

The number of sheep in the several States and Territories at decennial intervals from 1860 to 1910, and for each year from 1916 to 1920, is as follows :—

NUMBER OF SHEEP IN STATES, TERRITORIES, AND COMMONWEALTH, 1860 TO 1920.

Year.	New South Wales.	Victoria. (a)	Queens- land.	South Australia.	Western Australia.	Tasmania. (a)	Nor. Terr.	Fed. Terr.	Total C'wealth.
1860	6,119,163	5,780,896	3,449,350	2,824,811	280,136	1,700,930	..	..	20,135,286
1870	16,308,585	10,761,887	8,163,818	4,400,655	608,892	1,349,775	..	..	41,593,612
1880	35,398,121	10,360,285	6,935,967	6,443,904	1,231,717	1,796,715	29,318	..	62,176,027
1890	55,986,431	12,692,843	18,007,234	7,004,642	2,524,913	1,619,256	45,902	..	97,881,221
1900	40,020,506	10,841,790	10,339,185	5,235,220	2,434,311	1,683,956	48,027	..	70,602,995
1910	45,560,969	12,882,665	20,331,838	6,267,477	5,158,516	1,788,310	57,240	..	92,047,015
1916	636,086,241	12,576,587	15,524,293	65,091,282	5,529,960	1,702,579	47,520	6110,142	76,668,604
1917	638,482,465	14,760,013	17,204,268	66,229,519	6,384,191	1,711,116	54,709	6138,731	84,965,012
1918	637,243,770	15,773,902	18,220,985	66,625,184	7,133,747	1,841,924	58,620	6138,104	87,086,236
1919	629,077,514	14,422,745	17,379,332	66,014,565	6,697,951	1,781,425	8,811	6171,739	75,554,082
1920	633,691,838	12,171,084	17,404,840	66,359,944	6,532,965	1,570,832	6,062	6159,990	77,897,555

(a) 1st March year following. (b) 30th June of year following. (c) Statistics not collected prior to 1880.

During the year 1919 the Avon Downs Pastoral Company in the Northern Territory disposed of the whole of their flock numbering about 50,000, and this property is now stocked with cattle only.

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 1916 to 1920 are as hereunder :—

PERCENTAGE OF SHEEP IN EACH STATE AND TERRITORY ON TOTAL FOR COMMONWEALTH, 1916 TO 1920.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	F. Terr.	C'wealth.
	%	%	%	%	%	%	%	%	%
1916 ..	47.07	16.41	20.25	6.64	7.21	2.22	0.06	0.14	100.00
1917 ..	45.29	17.37	20.25	7.33	7.52	2.01	0.07	0.16	100.00
1918 ..	42.77	18.11	20.92	7.61	8.25	2.11	0.07	0.16	100.00
1919 ..	38.49	19.09	23.00	7.96	8.86	2.36	0.01	0.23	100.00
1920 ..	43.25	15.62	22.34	8.16	8.39	2.02	0.01	0.21	100.00

During the period under review the percentage on the total Commonwealth flocks declined in the case of New South Wales and Victoria, whilst Queensland, South Australia, and Western Australia experienced substantial advances.

4. Oversea Imports and Exports of Sheep.—As in the case of cattle, the overseas exports of live sheep from Australia are of comparatively small importance. During the past five years the principal consignments of ordinary sheep have been made to the Straits Settlements from the State of Western Australia. The purchases made by South African and Japanese buyers at the Australian Stud Sheep Sales during recent years have opened up a regular export trade with these two countries in stud sheep, the bulk of which have been secured from the leading flocks of New South Wales, Victoria and South Australia. The following are particulars of the imports and exports for the years 1916-17 to 1920-21 :—

COMMONWEALTH IMPORTS AND EXPORTS OF SHEEP, 1916-17 TO 1920-21.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1916-17 ..	3,809	24,470	7,007	32,944	3,198	8,474
1917-18 ..	1,719	9,850	10,799	24,899	9,080	15,049
1918-19 ..	607	4,776	18,608	39,783	18,001	35,007
1919-20 ..	269	6,258	21,870	64,112	21,601	57,854
1920-21 ..	3,038	8,828	22,345	149,803	19,307	140,975

5. Sheep Slaughtered.—The numbers of sheep slaughtered in the several States during each of the years from 1916 to 1920 are as follows :—

SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1916 TO 1920.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania. (a)	Nor. Ter.	Fed. Ter.	C'wealth.
1916	63,756,477	2,647,200	909,615	6686,112	547,147	283,313	c500	b2,975	8,833,339
1917	63,198,465	2,499,002	689,905	6808,914	590,244	259,287	c500	63,713	8,050,030
1918	64,271,396	3,581,460	542,479	61,137,578	630,117	295,844	c500	63,334	10,462,708
1919	65,533,484	6,324,490	717,191	61,478,557	800,252	330,000	(d)	63,800	15,187,774
1920	63,847,498	4,244,798	461,449	61,058,977	839,963	387,346	(d)	63,765	10,843,796

(a) Partly estimated. (b) Year ended 30th June year following. (c) Estimated.
(d) Not available.

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 £492,114, while eleven years afterwards, in 1914-15, the value amounted to no less a sum than £3,413,848. During the next four years, consequent on drought and war conditions, the value of the exports fell considerably, averaging for the period only £1,015,351 per annum. With the release of shipping and the high prices ruling in England the trade rapidly recovered, and during 1919-20 the record shipment of 246,971,346 lbs., valued at £5,482,564, was made. The dearth of supplies consequent on the recent drought caused the 1920-21 consignments

to drop to 54,893,821 lbs. 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 South-down 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.

As in the case of frozen beef, Australia's principal customer in this trade is the United Kingdom, which has absorbed 92 per cent. of the total quantity exported from the Commonwealth during the past five years, while the balance was shipped mainly to Egypt, the Straits Settlements, and Sweden.

QUANTITY OF MUTTON AND LAMB PRESERVED BY COLD PROCESS EXPORTED FROM THE COMMONWEALTH, 1916-17 TO 1920-21.

Country to which Exported.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	65,140,182	9,532,577	49,784,705	239,154,276	47,792,058	411,403,798
Egypt ..	..	8,071,709	8,464,515	..	2,744,246	19,280,470
Straits Settlements ..	964,335	824,406	754,089	1,102,658	1,228,087	4,873,575
Sweden ..	..	..	..	2,119,602	1,217,551	3,337,153
Ceylon ..	284,130	252,716	189,875	383,518	398,214	1,508,453
Union of South Africa ..	..	..	..	1,578,839	193,709	1,772,548
Hong Kong ..	272,450	144,789	195,881	376,315	410,329	1,399,764
Philippine Islands ..	35,608	122,963	194,843	595,312	237,264	1,185,990
Canada ..	..	199,092	..	273,047	37,427	509,566
United States ..	..	..	..	148,304	124,535	272,839
Other Countries ..	116,104	27,058	103,547	1,239,475	510,401	1,996,585
Total ..	66,812,809	19,175,310	59,687,455	246,971,346	54,893,821	447,540,741

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

VALUES OF FROZEN MUTTON AND LAMB EXPORTED FROM THE COMMONWEALTH, 1916-17 TO 1920-21.

Country to which Exported.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	1,496,658	213,710	1,082,646	5,292,542	1,393,179	9,478,735
Egypt ..	..	194,199	176,551	..	64,409	435,159
Straits Settlements ..	25,534	23,885	20,796	30,599	36,980	137,794
Sweden ..	..	..	..	49,303	29,805	79,108
Ceylon ..	7,250	7,103	5,058	10,401	11,784	41,596
Union of South Africa ..	..	..	..	34,788	4,535	39,323
Hong Kong ..	7,210	4,072	5,399	10,201	12,352	39,234
Philippine Islands ..	965	3,425	5,395	14,709	6,595	31,089
Canada ..	..	5,471	..	8,675	955	15,101
United States ..	..	..	..	3,603	4,684	8,287
Other Countries ..	2,955	782	2,586	27,743	13,380	47,446
Total ..	1,540,572	452,647	1,298,431	5,482,564	1,578,658	10,352,872

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 550,000,000, to which total Australia contributes about 14 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.)
Australia	1920	77,898	Hungary (c) ..	1913	6,560
Russia (a)	1914	71,708	Tanganyika Territory(b)	1912	6,440
Argentine Republic ..	1918	45,309	Germany	1920	6,150
U. S. of America ..	1922	36,499	Greece	1920	5,811
Union of South Africa	1919	28,492	Morocco	1916-18	4,858
United Kingdom ..	1921	24,273	Chile	1918	4,434
New Zealand	1921	23,285	Portugal	1920	3,851
British India	1918	22,895	Canada	1921	3,676
Spain	1918	18,601	Mexico	1902	3,424
Italy	1918	11,754	Tunis	1919	2,662
Uruguay	1916	11,473	Upper Senegal and		
Turkey	1919	11,200	Niger	1918	2,161
Algeria	1914	9,140	Poland	1921	2,093
India (Native States)(b)	1918	9,139	Sweden	1919	1,564
France	1919	8,991	Bolivia	1912	1,499
Bulgaria	1910	8,632	Basutoland ..	1911	1,369
Rumania	1916	7,811	Finland	1910	1,309
Brazil	1916	7,205	Norway	1918	1,185
Jugo-Slavia	1921	6,773	Latvia	1921	1,132
British East Africa ..	1916	6,565	French Equatorial Africa	1918	1,000

(a) Including Caucasus and Siberia.

(b) Includes goats.

(c) Old boundaries.

8. **Relation to Population.**—The relation of the flocks of the several States and Territories to the population at the end of each year from 1916 to 1920 is as follows :—

NUMBER OF SHEEP PER HEAD OF POPULATION, 1916 TO 1920.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F.T.	C'wealth.
1916 ..	18.96	8.95	22.90	11.58	18.04	8.70	10.18	43.09	15.53
1917 ..	19.83	10.41	25.02	13.82	20.83	8.64	11.39	56.10	16.97
1918 ..	18.66	10.97	25.83	14.14	23.19	9.08	12.63	58.59	16.99
1919 ..	14.07	9.59	23.56	12.36	20.46	8.48	1.94	77.29	14.15
1920 ..	16.03	7.96	23.14	12.78	19.75	7.38	1.52	62.04	14.35

A comparison of the ratios of sheep to population for 1920 with those for 1916 discloses increases in Queensland, South Australia, Western Australia and the Federal Territory, while the ratios have decreased in New South Wales, Victoria and Tasmania.

§ 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, 1921, being about £32,856,000. The bulk of the wool produced in the Commonwealth is exported, but with the greater 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 about 3 per cent. of the whole clip.

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 during recent years has been 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, fellmongers, etc. Particulars for years prior to 1916-17 will be found in earlier issues (see Year Book No. 6, page 346, and No. 10, page 306). The following table gives the estimates obtained in reference to the five seasons ended 30th June, 1917 to 1921 :—

ESTIMATED QUANTITY OF WOOL AS IN THE GREASE, SHORN, FELLMONGERED OR ON SKINS SHIPPED DURING THE SEASONS ENDED 30th JUNE, 1917 TO 1921.

State.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales (a)	270,525,000	284,188,000	305,613,000	296,641,000	240,231,000
Victoria ..	94,845,024	105,424,682	126,647,061	132,847,167	90,250,571
Queensland ..	102,220,125	87,425,558	113,777,272	118,035,461	114,809,963
South Australia ..	35,050,865	46,339,339	55,947,108	58,306,918	48,953,503
Western Australia ..	34,199,682	39,701,357	45,317,271	46,299,381	43,714,630
Tasmania ..	10,441,978	9,927,044	10,279,998	11,069,237	9,503,048
Northern Territory (b)	350,000	330,000	330,000	50,000	40,000
Commonwealth ..	547,632,674	573,335,980	657,911,710	663,249,164	547,502,715

(a) Including Federal Territory. (b) 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 manufactories. For the three seasons ended 30th June, 1914, this average annual shortage amounted to nearly 46,000,000 lbs. of wool. The abnormal conditions of wool

shipment obtaining during the last seven seasons do not admit of any similar comparisons being made. The appraisement figures of the Central Wool Committee, however, furnish further evidence of shortage in the figures supplied by the State Statisticians for the three seasons ended 30th June, 1920. During these years the total appraisements amounted to 2,094,261,297 lbs., thus revealing an average annual deficit of 66,469,057 lbs. in the estimated production for those seasons based on the State Statisticians' returns.

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

ESTIMATED WEIGHT AND VALUE OF WOOL PER SHEEP SHORN FOR THE SEASONS ENDED 30th JUNE, 1917 TO 1921.

Season ended 30th June.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
WEIGHT.							
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1917	7.39	6.26	7.00	7.47	5.82	5.79	6.96
1918	7.08	6.19	6.91	7.52	6.17	5.38	6.80
1919	7.13	6.21	6.30	7.41	6.09	5.09	6.68
1920	7.03	6.38	6.59	7.89	5.71	5.32	6.73
1921	6.93	5.77	7.03	7.56	5.76	5.19	6.65
VALUE.							
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1917	9 8	8 8	9 2	9 0	6 11	9 3	9 2
1918	8 9	8 6	9 7	9 1	7 11	8 5	8 9
1919	8 11	8 3	8 10	9 0	7 4	7 9	8 7
1920	8 10	8 4	9 3	9 3	7 1	8 3	8 9
1921	7 11	7 10	8 9	8 6	6 3	7 3	8 0

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

LOCALLY USED WOOL (Estimated as "Greasy"), 1917 TO 1920-21.

State.	1917.	1918.	1918-19.	1919-20.	1920-21.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	26,556,988	26,118,000	6,769,284	7,054,962	7,206,896
Victoria	28,669,460	27,344,035	7,823,050	11,300,400	12,799,593
Queensland	304,091	268,917	268,917	634,376	556,232
South Australia	6995,164	2734,723	654,758	693,297	683,779
Western Australia					
Tasmania	1,172,000	1,301,006	1,301,006	997,542	1,129,722
Commonwealth	17,697,703	15,766,681	16,817,015	20,680,577	22,376,222

(a) Year ended 30th June.

5. Bounties on Combed Wool or Tops Exported.—The details of the provisions and operations of the Bounties Act 1907, relative to Australian combed wool or tops exported, are contained in previous issues of the Year Book. During the eight years ended 31st December, 1915, in which the bounties were payable, a sum of £70,001 was paid on 17,990,131 lbs. of wool tops produced.

Figures shewing the exports of wool tops for the years 1916-17 to 1920-21 inclusive will be found on the next page.

6. Exports of Wool.—Prior to the war, about 31 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 five years have averaged 73½ per cent. The other leading consignees for the last five years were the United States of America, Japan, Italy, Belgium, and France. The following table shews for the years 1916–17 to 1920–21 the quantities of “greasy” wool exported from the Commonwealth and the principal countries to which consigned :—

COMMONWEALTH EXPORTS OF WOOL IN THE GREASE, 1916–17 TO 1920–21.

Country to which Exported.	1916–17.	1917–18.	1918–19.	1919–20.	1920–21.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	283,446,361	139,113,437	352,282,663	397,688,435	283,583,260	1,456,114,156
United States of America ..	16,174	57,425,217	71,776,334	28,326,008	34,291,220	191,834,953
Italy ..	25,608,163	17,641,985	10,036,918	44,597,155	15,975,186	113,859,407
France ..	12,254,213	5,675,577	3,719,125	32,243,017	32,484,058	86,375,990
Belgium ..	..	..	..	39,189,760	26,021,710	65,211,470
Japan ..	16,839,727	2,919,477	5,319,577	8,928,971	9,856,174	43,863,926
Egypt ..	..	15,522,281	10,950,893	..	..	26,473,174
Canada ..	727,923	4,726,317	3,152,424	..	362,915	8,969,579
Germany ..	..	..	..	..	8,715,299	8,715,299
India ..	297,218	778,286	795,792	..	381,516	2,252,812
Other Countries ..	32,471	..	..	1,360,782	6,223,698	7,621,951
Total ..	339,222,250	243,802,577	458,033,726	552,334,123	417,900,036	2,011,292,717

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

COMMONWEALTH EXPORTS OF “SCOURED AND WASHED” WOOL (a), 1916–17 TO 1920–21.

Country to which Exported.	1916–17.	1917–18.	1918–19.	1919–20.	1920–21.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	46,917,307	59,247,374	103,261,254	70,454,411	43,100,738	322,981,084
Belgium ..	..	..	..	13,931,527	10,648,048	24,579,575
Japan ..	5,081,183	4,779,081	3,447,825	3,676,467	3,719,499	20,704,055
United States of America ..	154,172	1,446,501	1,460,294	2,600,657	6,490,418	12,152,042
Italy ..	2,651,922	475,914	..	..	568,690	3,696,526
France ..	1,016,397	62,148	27,239	105,177	1,544,101	2,755,062
Egypt ..	..	1,074,558	35,780	..	..	1,110,338
India ..	299,060	51,664	216,326	..	130,260	697,810
Germany ..	..	..	..	..	279,822	279,822
Other Countries ..	567,059	299,490	687,271	282,537	1,642,802	3,479,159
Total ..	56,687,100	67,436,730	109,135,989	91,050,776	68,124,378	392,434,973

(a) Including “tops.”

The figures for “scoured and washed wool” include tops, amounting in 1916–17 to 4,869,452 lbs., valued at £1,204,570 ; in 1917–18, 4,571,357 lbs., valued at £1,510,799 ; in 1918–19, 2,822,578 lbs., valued at £935,212 ; in 1919–20 6,148,118 lbs., valued at £2,557,679 ; and in 1920–21, 6,598,681 lbs., valued at £2,049,588. The total exports of wool tops during the last five years amounted to 25,010,186 lbs., valued at £8,657,848, of which 18,824,633 lbs., or more than 75 per cent., were shipped to Japan.

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,
1916-17 TO 1920-21.**

Country to which Exported.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	23,431,942	15,648,660	34,563,566	37,256,915	21,889,438	132,790,521
United States of America ..	13,513	4,389,755	4,982,056	2,516,142	3,836,987	15,738,453
Japan ..	2,470,414	1,796,089	1,400,192	2,010,732	2,107,473	9,784,900
Italy ..	1,845,861	1,005,058	548,142	2,832,951	1,164,280	7,396,292
Belgium ..				3,356,349	2,380,519	5,736,868
France ..	963,097	372,453	304,410	2,352,749	1,357,358	5,350,067
Egypt ..		939,149	613,814			1,552,963
Canada ..	77,267	338,087	238,924	63,520	79,588	797,386
Germany ..					364,196	364,196
India ..	87,860	66,780	78,336		45,198	278,174
Other Countries ..	63,384	30,833	37,315	154,445	555,723	841,700
Total ..	28,953,338	24,586,864	42,766,755	50,543,803	33,780,760	180,631,520

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 are the latest available, and represent for the respective years the imports of wool into Europe and North America :—

**IMPORTS OF WOOL INTO EUROPE AND NORTH AMERICA,
1912 TO 1921.**

Year.	Australia and New Zealand.	Cape Colony.	River Plate.	Total.	Average Value of Australasian and Cape Bales.
	Bales.	Bales.	Bales.	Bales.	£
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
1917(a) ..	..	..	..	..	32.5
1918(a) ..	..	..	..	..	..
1919(a) ..	..	..	..	..	47.0
1920(a) ..	..	..	..	..	52.0
1921(a) ..	..	..	..	..	18.0

(a) No figures are obtainable since 1916 other than the average value of bale.

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 five years shewn above the importations from Australia and New Zealand represented 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 1920 from the principal wool-producing countries discloses the premier 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, 1920.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ..	571,103,300	52,960,346	Uruguay ..	6,526,500	870,616
New Zealand ..	161,600,500	12,545,997	U.S. of America	7,812,600	857,724
Union of S. Africa	63,247,500	7,346,457	Falkland Is-		
Argentina Re-			lands ..	8,016,700	718,542
public ..	48,353,200	4,960,958	Turkey ..	6,476,000	508,974
British India ..	76,585,500	2,776,176	Other Coun-		
Belgium ..	12,954,000	1,993,190	tries ..	18,098,300	1,750,284
Chile ..	17,949,900	1,861,020			
France..	10,302,100	1,719,746	Total ..	1,009,026,100	90,870,030

It will be seen that of the total importations of wool into the United Kingdom, Australian wool represented 57 per cent. of quantity and 58 per cent. of value, and New Zealand 16 per cent. of quantity and 14 per cent. of value. It is interesting to note that a total of 884,598,000 lbs., valued at £76,593,508, was received from British Possessions, being 88 per cent. of the total weight imported and 84 per cent. of the total value.

10. **World's Wool Production.**—The following table compiled by the Textile Division of the United States Department of Commerce, furnishes statistical evidence of the importance of Australia as a wool-producing country. Out of a total production of 2,608,445,050 lbs. in 1921 Australia's contribution amounted to 631,290,000 lbs., or nearly one quarter of the world's supply.

WORLD PRODUCTION OF WOOL.(a)

Countries.	Average Annual Pre-War Production. (b).	Production.	
		1920.	1921 (c).
	lbs.	lbs.	lbs.
NORTH AMERICA.			
United States ..	314,110,000	302,207,000	224,564,000
Canada ..	11,210,000	24,422,531	24,050,000
Mexico ..	7,000,000	750,000	500,000
Total ..	332,320,000	327,379,531	249,114,000
Central America and West Indies ..	1,000,000	750,000	750,000
SOUTH AMERICA.			
Argentine Republic ..	358,688,000	308,560,000	286,000,000
Brazil ..	35,000,000	27,000,000	27,000,000
Chile ..	17,430,000	33,069,000	33,069,000
Peru ..	9,940,000	9,420,000	12,000,000
Falkland Islands ..	4,324,000	3,200,000	3,200,000
Uruguay ..	156,968,000	100,000,000	95,000,000
All other ..	5,000,000	5,000,000	5,000,000
Total ..	587,350,000	486,249,000	461,269,000

(a) Computed on greasy basis. (b) Average for years 1909 to 1913 inclusive. (c) Where 1921 figures were not obtainable an earlier figure or an unofficial estimate has been inserted.

WORLD PRODUCTION OF WOOL(a)—continued.

Countries.	Average Annual Pre-War Production.(b).	Production.	
		1920.	1921 (c).
EUROPE.			
Austria	15,360,000	..	..
Belgium	1,060,000	825,000	1,205,000
Bulgaria	23,700,000	17,802,365	17,636,800
Czecho-Slovakia .. .. .	..	5,952,420	5,952,420
Denmark	3,508,000	3,508,000	3,508,000
Finland .. .. .	..	3,250,000	3,250,000
France	80,688,000	39,400,000	39,400,000
Germany	25,600,000	37,278,242	42,975,000
Greece	14,000,000	16,000,000	16,000,000
Hungary	26,240,000	25,516,000	25,516,000
Iceland	1,980,000	1,980,000	1,980,000
Italy	35,000,000	50,000,000	50,000,000
Jugo-Slavia	25,446,000	48,859,000	23,800,000
Netherlands	3,556,000	5,500,000	5,500,000
Norway	8,160,000	7,247,000	7,247,000
Poland .. .. .	..	6,724,030	6,724,030
Portugal	10,000,000	6,232,000	6,232,000
Rumania	13,228,000	13,228,000	14,000,000
Russia	320,000,000	150,000,000	150,000,000
Spain	52,000,000	142,000,000	165,347,000
Sweden	6,060,000	5,354,000	5,354,000
Switzerland	1,049,000	1,049,000	800,000
Turkey	28,000,000	..	..
United Kingdom	150,000,000	100,000,000	101,100,000
Total	844,635,000	687,705,057	693,527,250
ASIA.			
British India.	60,000,000	60,000,000	60,000,000
China	50,000,000	50,000,000	50,000,000
Persia	12,146,000	12,146,000	12,146,000
Russia in Asia	60,000,000	45,000,000	45,000,000
Turkey in Asia	90,000,000	60,000,000	60,000,000
All other	1,000,000	1,000,000	1,000,000
Total	273,146,000	228,146,000	228,146,000
AFRICA.			
Algeria	35,221,000	33,184,000	33,184,000
British South Africa	157,761,470	127,176,800	127,176,800
Tunis	3,735,000	3,735,000	3,735,000
All other	13,000,000	13,000,000	13,000,000
Total	209,717,470	177,095,800	177,095,800
OCEANIA.			
Australia	705,146,000	547,502,715	631,290,000
New Zealand	198,474,000	181,480,000	167,153,000
All other	100,000	100,000	100,000
Total	903,720,000	729,082,715	798,543,000
Grand Total	3,151,888,470	2,636,408,103	2,608,445,050

(a) Computed on greasy basis. (b) Average for years 1909 to 1913 inclusive. (c) Where 1921 figures were not obtainable an earlier figure or an unofficial estimate has been inserted.

11. **The Wool Market.**—(i) *Purchase by British Government.* Particulars of the scheme under which the British Government purchased Australian wool were given in previous issues of the Year Book. Owing to the demand for wool for British and Allied military clothing the British Government decided to acquire the Australian clips for the seasons 1916–17 to 1919–20 at the flat rate of 15½d. per pound greasy—an increase of 55 per cent. on the prices ruling in the season immediately preceding the war, viz., 1913–14. An arrangement was subsequently made with reference to the later purchases whereby the growers should participate to the extent of 50 per cent. in profits made by the Imperial Government on sales of wool for civilian purposes. 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, the allotment of freight being on the basis of the quantity of wool appraised in each State.

Funds received from the British 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 total quantity of wool appraised under the control of the Central Wool Committee since the inception of the scheme in November, 1916, to 30th June, 1920, the date of termination, was as follows:—

**WOOL APPRAISED UNDER THE CONTROL OF THE CENTRAL WOOL
COMMITTEE, 1916-17 TO 1919-20.**

Season ended 30th June.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
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TOTAL QUANTITY, ON GREASY BASIS, OF WOOL APPRAISED.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1917 (a) ..	158,412,247	112,369,332	70,316,116	23,337,744	18,353,414	9,579,648	392,368,501
1918 ..	263,375,038	168,533,204	118,689,484	62,075,970	41,473,524	10,146,213	664,293,433
1919 ..	269,536,025	201,017,291	114,781,383	62,873,893	46,030,073	10,521,018	704,759,688
1920 ..	266,347,330	205,852,590	124,659,489	73,032,403	44,029,729	11,286,635	725,208,176
Total ..	957,670,640	687,772,417	428,446,472	221,320,010	149,886,745	41,533,514	2,486,629,798

**TOTAL VALUE AT BRITISH IMPERIAL GOVERNMENT'S PURCHASE PRICE OF 15½d.
PER LB. (FLAT RATE).**

	£	£	£	£	£	£	£
1917 (a) ..	10,085,355	7,443,985	4,513,584	1,339,831	1,204,023	753,568	25,340,346
1918 ..	16,161,924	11,426,905	8,177,356	3,711,546	2,641,612	782,622	42,901,965
1919 ..	16,856,209	13,313,876	7,952,945	3,818,345	2,773,546	800,613	45,515,534
1920 ..	16,792,399	13,373,662	8,776,514	4,288,281	2,736,065	869,440	46,836,361
Total ..	59,895,887	45,558,428	29,420,399	13,158,003	9,355,246	3,206,243	160,594,206

(a) Portion of clip only.

WOOL APPRAISED UNDER THE CONTROL OF THE CENTRAL WOOL COMMITTEE, 1916-17 TO 1919-20—continued.

Season ended 30th June.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
AVERAGE VALUE PER LB.							
1917 (a) ..	d. 15.28	d. 15.90	d. 15.40	d. 13.78	d. 15.74	d. 18.88	d. 15.50
1918 ..	14.73	16.27	16.53	14.35	15.28	18.51	15.50
1919 ..	15.01	15.89	16.63	14.58	14.46	18.26	15.50
1920 ..	15.13	15.59	16.89	14.09	14.91	18.49	15.50
Total ...	15.01	15.90	16.48	14.27	14.98	18.53	15.50

(a) Portion of clip only.

(ii) *The 1920-21 Season.* The wool trade passed through a year of great difficulty in 1920-21, and the results were unsatisfactory to all sections of the industry. It was the first season after the acquisition of the whole of the wool production on account of the British Government, and was looked to as a return to wool selling through the ordinary channels of trade. When sales were resumed, however, it soon became apparent that the bulk of the wool could not be realized at reasonable prices. Economic factors had depressed the markets of the world, and this depression was reflected in the demand for wool. The huge stocks of wool which had accumulated under the Imperial Purchase Scheme were a further menace to the disposal of the incoming clip. Enormous quantities of low-priced wools were available, and though the millions of Europe required cheap woollen textiles and other woollen goods the European exchanges prevented the removal of any appreciable quantities by making the conversion charges too costly.

In addition to these drawbacks, the 1920-21 clip was grown under very adverse pastoral conditions which rendered the bulk of the staple thin, tender, dusty, and otherwise faulty. Not only was the season's wool production below the standard of average years but it was far more costly to produce. So bare were the pastures over large areas of wool-growing country that it became necessary for pastoralists either to pay exceptionally high prices for agistment country, or to hand-feed with fodder at famine rates.

During the season the quantity of wool sold in the Commonwealth only totalled 791,409 bales, valued at £13,114,997; compared with 2,045,912 bales, valued at £46,192,087, in the previous year; a decrease of 1,254,503 bales in the quantity and £33,077,090 in the value. At the commencement of the season scoured merino skin wools and super greasy merino of good length were in great demand, and record prices were paid for choice clips, while crossbred and faulty merinos were either neglected or prices bid below appraisement levels. Greasy merino fleece from the northern and southern tablelands of New South Wales, and the Western District of Victoria, sold from 38d. to 42d., and, in occasional instances, as high as 49½d., compared to 28d. to 31d., and, in odd cases, to 31½d. under the appraisement scheme. These high rates for super wools, however, did not last throughout the year; the market sagged even for good to super wools in the second half of the season when the special orders were filled, and at the March sales values for the best wools dropped 20 per cent., and the prices realized were about on a par with appraisement rates, while faulty merino and all but the very best crossbred were practically unsaleable. There was a fair demand for good to super merino, but very little for other descriptions, with the result that of the 791,409 bales sold 666,628, or more than 84 per cent., were merino wools.

Despite the unfavourable season a notable feature of the sales was the record prices obtained for greasy and scoured merino wools—prices far in advance of previous records. Greasy merino fleece sold to 49½d., and scoured merino fleece to 64d., being 16d. and 15d. respectively per lb. above the previous highest prices realized at auction or appraisement in the Commonwealth markets. The record prices for the past nine seasons for wools

sold at auction, or made by appraisalment at selling centres in the Commonwealth of Australia, are as follow :—

**RECORD PRICES OBTAINED FOR WOOL IN AUSTRALIAN MARKETS, 1912-13
TO 1920-21.**

Description.	Price.	Brand.	Bales.	Selling Centre.	Season.
	<i>d.</i>				
Greasy merino :					
Fleece ..	49½	Ware (conj.) ..	5	Geelong ..	1920-21
Broken ..	32	Ware (conj.) ..	5	Geelong ..	1920-21
Pieces ..	27	R/Carngham ..	13	Geelong ..	1920-21
Bellies ..	24½	Plains ..	..	Geelong ..	1916-17
Stained pieces ..	18	CWL/Lower Thornville	..	Brisbane ..	1918-19
Locks ..	13	MP (conj.) ..	..	Western Australia	1917-18
Lambs ..	29½	R/Carngham ..	..	Geelong ..	1913-14
Greasy comeback :					
Fleece ..	37½	North Station	6	Geelong ..	1920-21
Lamb ..	24½	JM/Table Top	1	Albury ..	1917-18
Greasy crossbred :					
Fleece ..	30½	CLF/Warrawie	13	Geelong ..	1920-21
Lamb ..	23½	JM/Table Top	3	Albury ..	1919-20
Scoured merino :					
Fleece ..	64	WG/Kedron ..	58	Brisbane ..	1920-21
Pieces ..	40½	M/Moselle Downs	3	Brisbane ..	1919-20
Lambs ..	44	PB & Co/Notus Downs	4	Brisbane ..	1919-20
Scoured crossbred :					
Fleece ..	40¾	O'Beirne/Linton	..	Geelong ..	1917-18

(iii) *Wool Realization Scheme.* The British Australian Wool Realization Association Ltd. ("Bawra") was formed on 27th January, 1921, for the purpose of selling, in conjunction with the present clip, 50 per cent. of the Australian carry-over wool acquired by the Association on account of the Australian growers, also, as agents, all carry-over wools owned by the British Government, consisting of New Zealand, Falkland Islands, South African and 50 per cent. of Australian wools as promptly as market conditions would permit, and to the best advantage, while at the same time contributing to stabilize the wool market which had become demoralized on the return to free wool sales.

The assets of the Association consisting of cash, wool and other assets were capitalized at £22,000,000, and, subject to certain reservations, each supplier of the Australian wool during the British Government purchase scheme was allotted negotiable documents in proportion to the appraised value of the wool which he contributed.

The details of wool owned and controlled by B.A.W.R.A. at the 1st January, 1921, were as follows :—

Wool Owned by B.A.W.R.A.					Wool Owned by British Government.	
					Bales.	Bales.
Australian :—						
Merino ..	..	..	..	452,090		452,090
Crossbred ..	..	..	..	465,912		465,913
				918,002		918,003
New Zealand :—						
Merino ..	..	..	..	..		3,181
Crossbred ..	..	..	..	..		769,762
						772,943
Falkland Islands						2,329
Total ..	..	..	..	918,002		1,693,275
Grand Total					2,611,277 bales.	

Towards the end of the year, 1921, 80,550 bales of South African wool owned by the British Government were handed over to the Association for disposal under the Agency Agreement.

The marketing of B.A.W.R.A. wools has been successfully carried out at various centres in England, and on the Continent, and during the eighteen months ended 30th June, 1922, 1,391,221 bales were disposed of, leaving the stocks on hand at that date 1,300,606 bales, consisting of 205,043 bales of merino and 1,095,563 bales of crossbred. The details of stocks and disposals are set out in the following table :—

STOCKS AND DISPOSALS OF B.A.W.R.A. WOOLS 31ST DECEMBER, 1920, TO 30TH JUNE, 1922.

Description.	Stocks, 31st December, 1920.	Disposals. 1st January, 1921, to 30th June, 1922.	Stocks, 30th June, 1922.
	Bales.	Bales.	Bales.
Australian :—			
Merino	904,180	701,653	202,527
Crossbred	931,825	281,684	650,141
New Zealand :—			
Merino	3,181	665	2,516
Crossbred	769,762	342,664	427,098
Falkland Islands	2,329	2,329	..
South African	80,550 (a)	62,226	18,324
Grand Totals	2,691,827	1,391,221	1,300,606

(a) South African wool was not controlled by B.A.W.R.A. until the end of the year 1921.

On the 30th July, 1921, 47.5 per cent. of the value of Priority Wool Certificates, equal to £4,750,000, was retired. On the same date, the interests of those wool-growers whose wool was of an appraised value of £100, or less, and fractional share interests, were retired on a cash basis involving a payment of £249,696 11s. 10d. With the payment on the 18th May, 1922, of the balance of 52.5 per cent., equal to £5,250,000, less payments in respect of small interests, a total distribution of £10,000,000 was effected. Thus, within sixteen months of the foundation of the Association, the whole of the Priority Wool Certificates have been redeemed.

12. Average Export Value.—The average values per lb. of Australian greasy wool according to the export returns for the past five years have been as follows :—

EXPORT VALUE PER LB. OF AUSTRALIAN GREASY WOOL, 1916-17 TO 1920-91.

Year	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
	d.	d.	d.	d.	d.
Average value per lb.	15.81	16.71	16.49	16.69	14.53

13. Exports of Wool from each State, and Quantity sold Locally. Over 86½ per cent. of the wool grown in Australia was sold in the local markets prior to export from the Commonwealth during 1913-14. 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, 1921, and bales sold for shipment, for use in local woollen mills, 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 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 222.

EXPORTS OF WOOL TO PLACES OUTSIDE THE COMMONWEALTH, AND THE QUANTITY SOLD IN THE SEVERAL STATES, DURING THE SEASON ENDED 30th JUNE, 1921.

State.	Overseas Exports.		Local Sales.	
	Bales.	%	Bales.	%
New South Wales	544,677	36.08	318,928	40.30
Victoria	392,961	26.03	206,354	26.08
Queensland	262,296	17.38	129,911	16.42
South Australia	157,925	10.46	80,048	10.11
Western Australia	126,844	8.40	32,237	4.07
Tasmania	24,837	1.65	23,931	3.02
Commonwealth	1,509,540	100.00	791,409	100.00

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

EXPORTS OF WOOL FROM THE COMMONWEALTH, AND THE QUANTITY SOLD LOCALLY FROM 1895 TO 1914.

Year ended 30th June.				Overseas Exports.	Local Sales.(a)	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

(a) 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.

15. Quantities of Various Descriptions of Wool Sold in Each State.—The quantities and ratios of the various descriptions of wool marketed in each State are shewn in the following table :—

PROPORTIONS OF THE VARIOUS DESCRIPTIONS OF WOOL SOLD LOCALLY IN THE SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON ENDED 30th JUNE, 1921.

Description of Wool.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Commonwealth.
	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
Greasy ..	296,001	196,628	112,667	79,396	30,945	23,931	739,568
Scoured ..	22,927	9,726	17,244	652	1,292	..	51,841
Total ..	318,928	206,354	129,911	80,048	32,237	23,931	791,409
Fleece, etc. ..	315,260	200,946	126,188	77,696	31,042	23,312	774,444
Lambs' ..	3,668	5,408	3,723	2,352	1,195	619	16,965
Total ..	318,928	206,354	129,911	80,048	32,237	23,931	791,409
Merino ..	286,142	133,803	127,304	78,193	30,956	10,230	666,628
Crossbred and all strong breeds ..	32,786	72,551	2,607	1,855	1,281	13,701	124,781
Total ..	318,928	206,354	129,911	80,048	32,237	23,931	791,409
	%	%	%	%	%	%	%
Greasy ..	92.81	95.29	86.73	99.19	95.99	100.00	93.45
Scoured ..	7.19	4.71	13.27	0.81	4.01	..	6.55
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Fleece, etc. ..	98.85	97.38	97.13	97.06	96.29	97.41	97.86
Lambs' ..	1.15	2.62	2.87	2.94	3.71	2.59	2.14
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Merino ..	89.72	64.84	97.99	97.68	96.03	42.75	84.23
Crossbred and all strong breeds ..	10.28	35.16	2.01	2.32	3.97	57.25	15.77
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Wool in the grease represented more than 93 per cent. of the total marketed during 1920-21. Of fleece and lambs' wool, the former represents 97.86, and the latter 2.14 per cent. The class of wool produced is largely merino, which is almost exclusively grown in the northern, western, 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. The development of the frozen mutton and lamb export trade and the resultant raising of a type of sheep suitable for both mutton and wool have led to a

considerable increase in the production of crossbred wool throughout Australia during recent years. The proportion of such wool sold in Australia to the total sales amounted to 18.6 per cent. in 1912, whereas, eight years later, in 1919-20, the proportion had increased to 33.9 per cent. This expansion was arrested in 1920-21 by the decline in crossbred wool values mainly through the accumulation of large stocks of coarse wools in practically all the producing countries of the world. This is, however, only a passing phase, and when the keen demand and higher prices for the carcass manifest themselves, the suitability of the country for the rearing and fattening of crossbred sheep will assure a further increase of crossbred, once the trade returns to normal conditions. The whole of the crossbred and other strong-bred wools are grown in Victoria and Tasmania and in the southern parts of New South Wales, South Australia and Western Australia.

16. Percentages of Various Descriptions of Wool Sold in each State.—The following table gives the percentages of each description of wool sold in the several States during the season 1920-21 :—

PERCENTAGE OF BALES OF EACH DESCRIPTION OF WOOL SOLD IN THE SEVERAL STATES ON THE TOTAL SOLD OR APPRAISED IN THE COMMONWEALTH, 1920-21.

Description of Wool.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Commonwealth.
	%	%	%	%	%	%	%
Greasy ..	40.02	26.59	15.23	10.74	4.18	3.24	100.00
Scoured ..	44.23	18.76	33.26	1.26	2.49	..	100.00
Fleece, etc. ..	40.71	25.95	16.29	10.03	4.01	3.01	100.00
Lambs' ..	21.62	31.88	21.95	13.86	7.04	3.65	100.00
Merino ..	42.92	20.07	19.10	11.73	4.64	1.54	100.00
Crossbred and all strong breeds ..	26.27	58.14	2.09	1.49	1.03	10.98	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 cattle hides and sheepskins exported from Australia during the five years 1916-17 to 1920-21 being no less than £10,917,466, or an average of £2,183,493 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 1916-17 to 1920-21 are as follows :—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITH WOOL, 1916-17 TO 1920-21.

Country to which Exported.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom	2,152,016	2,172,176	6,005,229	5,866,862	3,406,199	19,602,482
France ..	753,530	..	..	..	565,649	1,319,179
U.S. of America	..	..	..	179,260	140,426	319,686
Belgium ..	..	..	..	..	275,446	275,446
Canada ..	46,668	..	..	..	80,843	127,511
Other Countries	..	..	62	..	10,290	10,352
Total ..	2,952,214	2,172,176	6,005,291	6,046,122	4,478,853	21,654,656

The next table furnishes corresponding particulars as to value :—

**VALUE OF SHEEPSKINS WITH WOOL EXPORTED FROM THE COMMONWEALTH,
1916-17 TO 1920-21.**

Country to which Exported.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom	738,483	732,030	1,845,036	1,940,088	956,368	6,212,005
France ..	250,783	..	..	..	110,499	361,282
U.S. of America	..	..	..	27,266	36,641	63,907
Belgium ..	..	..	..	..	32,751	32,751
Canada ..	10,869	..	..	..	16,456	27,325
Other Countries	..	..	21	..	2,928	2,949
Total ..	1,000,135	732,030	1,845,057	1,967,354	1,155,643	6,700,219

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,
1916-17 TO 1920-21.**

Country to which Exported.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
U.S. of America	1,618,517	749,570	181,461	3,066,531	228,478	5,844,557
United Kingdom	155,189	66,996	444,943	729,903	419,855	1,816,886
Canada ..	184,460	74,710	162,477	306,592	16,350	744,589
New Zealand ..	24	..	4,968	3,024	16,242	24,258
Sweden ..	..	..	..	1,170	19,552	20,722
Japan ..	2,949	7,368	216	10,932	..	21,465
France ..	1,098	..	..	18,060	2,900	22,058
Other Countries	..	..	..	40,872	919	41,791
Total ..	1,962,237	898,644	794,065	4,177,084	704,296	8,536,326

Corresponding details concerning value are given hereunder :—

**VALUE OF SHEEPSKINS WITHOUT WOOL EXPORTED FROM THE
COMMONWEALTH, 1916-17 TO 1920-21.**

Country to which Exported.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 years.
	£	£	£	£	£	£
U.S. of America	126,612	74,693	21,802	473,257	29,351	725,715
United Kingdom	12,019	9,656	54,669	115,524	49,343	241,211
Canada ..	13,750	10,335	19,282	35,764	1,370	80,501
New Zealand ..	2	..	279	367	3,615	4,263
Sweden ..	..	..	..	205	2,614	2,819
Japan ..	337	685	24	1,486	..	2,532
France ..	89	..	..	787	259	1,135
Other Countries	..	..	..	4,055	111	4,166
Total ..	152,809	95,369	96,056	631,445	86,663	1,062,342

4. **Hides.**—The Commonwealth trade in cattle hides has assumed considerable proportions, and during 1914–15 the total value of such hides exported amounted to £1,303,201. The exports were principally to the United Kingdom and the United States of America. The disastrous drought of 1914–15, coupled with the increased local demand for leather, more especially for military purposes, resulted in a considerable falling-off in the quantity of hides available for export during the war period. Much of the former trade was regained in 1919–20, and the enhanced prices made the total value of the exportation equal to any pre-war shipment. The slump in prices of all pastoral products was responsible for a reduced export in 1920–21. Large quantities of hides are imported into the Commonwealth, mainly from New Zealand and the Pacific Islands.

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

COMMONWEALTH EXPORTS OF CATTLE HIDES, 1916-17 TO 1920-21.

Country to which Exported.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
United Kingdom ..	147,408	136,425	245,517	171,982	97,296	798,628
U.S. of America ..	2,783	4,943	2,734	336,092	63,986	410,538
Italy ..	2,334	..	..	21,185	49,355	72,874
Belgium ..	..	..	..	26,189	11,589	37,778
Japan ..	..	3,300	5,883	6,399	4,773	20,355
Canada ..	19,210	3,338	1,302	2,525	..	26,375
New Zealand ..	11,526	1,218	3,950	10	..	16,704
Denmark ..	..	..	..	2,370	7,394	9,764
Germany ..	..	..	..	..	18,855	18,855
France ..	3,733	..	..	1,500	20	5,253
Hong Kong ..	..	..	..	1,208	6,000	7,208
Other Countries ..	..	..	..	5	2,670	2,675
Total ..	186,994	149,224	259,386	569,465	261,938	1,427,007

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

VALUE OF CATTLE HIDES EXPORTED FROM THE COMMONWEALTH, 1916-17 TO 1920-21.

Country to which Exported.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	270,718	335,562	538,012	396,767	149,861	1,690,920
U.S. of America ..	5,217	10,638	2,078	931,660	86,472	1,036,065
Italy ..	3,772	..	..	56,072	61,204	121,048
Belgium ..	..	..	..	77,739	18,454	96,193
Japan ..	..	8,929	15,479	22,471	6,405	53,284
Canada ..	33,243	5,812	2,823	7,013	..	48,891
New Zealand ..	24,158	3,456	8,328	42	..	35,984
Denmark ..	..	..	..	5,841	18,207	24,048
Germany ..	..	..	..	..	21,312	21,312
France ..	7,152	..	..	4,040	21	11,213
Hong Kong ..	..	..	..	2,450	8,368	10,818
Other Countries ..	..	..	..	21	5,108	5,129
Total ..	344,260	364,397	566,720	1,504,116	375,412	3,154,905

The number and value of cattle hides, including calfskins, imported into the Commonwealth during the five years 1916-17 to 1920-21 are as follows :—

CATTLE HIDES IMPORTED INTO THE COMMONWEALTH, 1916-17 TO 1920-21.

Particulars.			1916-17.	1917-18.	1918-19.	1919-20.	1920-21.	Total for 5 years.
No.	..	..	94,065	132,218	260,237	205,662	313,442	1,005,624
Value	..	£	161,380	151,531	424,339	579,915	500,460	1,817,625

During the past five years the exports of calfskins amounted to 258,268, valued at £197,379, and of horse hides, 5,683, valued at £8,395; the imports of horse hides during the same period amounting to 12,420, valued at £14,730.

§ 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 209, covers the period from 1860 to 1920.

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 total for 1913 being the highest then recorded. The disastrous drought of 1914-15 was responsible for heavy losses, but subsequent annual increases made the total number of horses in 1918 the greatest ever recorded. As the result of the prolonged drought recently experienced throughout Australia the number of horses declined by 111,639 during the past two years.

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 12,311,617 cattle recorded in 1894. The fourth period of decline set in in 1912 and terminated with the heavy losses of the 1914-15 drought. In 1916 the number of cattle commenced to ascend, and, assisted by considerable increases during three of the next four seasons reached its highest point in 1920.

4. Sheep.—In the case of sheep the graph shews that the upward movement in number is subject to periodic reversals.

The greatest of these occurred between 1891 and 1902, when the number of sheep declined by one-half, or nearly 53,000,000.

So great are the recuperative powers of Australia that at the end of 1911, nine years later, the number had increased by 40,000,000.

The second great period of decline set in in 1912, and at the end of the severe drought of 1914–15 the number of sheep had decreased by 24,000,000 as compared with 1911.

During the recent drought of 1918–20 the number fell by 11,532,154 in 1919, the greatest decline in any one year save the disastrous drought year of 1902, when the decrease amounted to 18,371,864.

A satisfactory increase of more than $2\frac{1}{2}$ millions was recorded in 1920, mainly as a result of the ideal pastoral conditions existing in New South Wales, where the flocks increased by more than $4\frac{1}{2}$ millions during the year.

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. The position fluctuated considerably during subsequent years, first descending then ascending, until in 1917 the number of pigs attained its maximum. During the next two years considerable decreases occurred, but the decline was arrested by a small increase of 68,438 in 1920, the increase being noticeable in all the States save Victoria.