

SECTION IX.

FARMYARD AND DAIRY PRODUCTION.

§ 1. Introductory.

1. **General.**—The introduction of cattle into Australia, and the early history of the dairying industry are referred to in some detail in earlier issues of this work (see Official Year Book No. 6, p. 430). It may here be noted that the original stock has been crossed with specially imported stud cattle, while further judicious crossing of strains has resulted in an increased and improved milk supply. In Australia, dairy cattle thrive in the open throughout the year, local climatic conditions demanding no protection other than tree plantations for shelter, and rugging in the coldest weather. Indigenous and imported grasses furnish food during the greater part of the year, and winter fodder, when necessary, is given to the cattle in the fields. With the adoption of scientific methods in the treatment of animals and pasturage and in the processes of manufacture, coupled with effective State supervision, the dairying industry has shewn rapid expansion.

2. **Official Supervision of Industry.**—Dairy experts, under the supervision of the various State Agricultural Departments, give instruction in approved methods of production, and inspect animals, buildings, and marketable produce. A high standard of cleanliness, both of *personnel* and *matériel*, prevails. Financial assistance of a temporary nature is also given, advances made being generally repaid with promptitude.

The export trade is regulated by the terms of the Commonwealth Commerce Act 1905 and regulations thereunder. The provisions of this Act are set out in detail in Official Year Book No. 6, pp. 431–2. It will be sufficient to note here that the true trade description, etc., must be marked on all produce intended for export, while official inspection ensures the maintenance of purity and quality. Upon request of the exporter the goods are certificated by the inspector.

3. **Mixed Farming.**—Dairying is not now, as formerly, wholly confined to farmers, since many graziers in a large way of business have lately given it their attention. In non-coastal regions it is generally carried on in conjunction with agriculture and sheep-raising, sufficient fodder being grown to carry the cattle through the winter months. Local wants are thus met, and in many places remote from the metropolis well-equipped factories have been established.

4. **Factory System.**—Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or “creameries,” has resulted in a considerable reduction in the cost of manufacture, since improved appliances, such as refrigerators, may be profitably worked at the larger establishments. The product is also of a more uniform quality. The number of farmers who adhere to hand processes is rapidly diminishing. Formerly the average quantity of milk used per pound of hand-made butter was about 3 gallons, but separator butter requires less than 2½ gallons.

5. **Butter and Cheese Factories.**—The factories in the Commonwealth for the manufacture of butter, cheese, and condensed milk numbered 563 in 1919-20. These were distributed in the various States as follows:—New South Wales, 155; Victoria, 181; Queensland, 137; South Australia, 46; Western Australia, 7; Tasmania, 37.

§ 2. Milk, Butter, and Cheese.

1. **Dairy Herds.**—Following the drought year 1902 there was up to 1911 a general increase in the number of dairy cows; the returns for 1912 and the three years following, however, shew a decrease in all the States, with the exception of Western Australia. Satisfactory increases were again noted in 1916 and 1917, while during the next two years the numbers remained practically stationary. In New South Wales, Victoria, South Australia, and Tasmania—as will be seen from the table given below—the proportion of dairy cattle to all cattle is high. In Queensland, the Northern Territory, and Western Australia there is a greatly preponderating number of other cattle, dairying not being firmly established in the tropical regions of the Continent. In southern Queensland, however, the industry has developed remarkably during the last decade. The figures for the Northern Territory are rough estimates only:—

CATTLE AND DAIRY CATTLE, COMMONWEALTH, 1915 TO 1919.

State.		1915.	1916.	1917.	1918.	1919.
New South Wales	{ All Cattle ..	2,400,104	2,757,713	3,148,309	3,271,782	3,075,954
	{ Dairy Cows ..	743,058	742,544	776,662	717,910	697,140
Victoria ..	{ All Cattle ..	1,043,604	1,175,098	1,371,049	1,596,544	1,631,120
	{ Dairy Cows ..	451,088	488,086	534,388	592,079	623,652
Queensland ..	{ All Cattle ..	4,780,893	4,765,657	5,316,558	5,786,744	5,940,433
	{ Dairy Cows ..	335,243	343,311	399,508	381,505	373,146
South Australia ..	{ All Cattle ..	226,565	288,887	313,245	342,768	349,562
	{ Dairy Cows ..	78,515	86,311	96,661	103,230	106,982
Western Australia ..	{ All Cattle ..	821,048	863,930	957,086	943,847	880,644
	{ Dairy Cows ..	23,342	33,788	37,979	42,133	42,993
Tasmania ..	{ All Cattle ..	169,575	179,360	197,938	218,234	214,442
	{ Dairy Cows ..	47,540	52,522	58,910	64,511	64,073
Northern Territory ..	{ All Cattle ..	483,961	428,862	638,431	570,039	610,534
	{ Dairy Cows ..	70	70	70	70	70
Federal Territory ..	{ All Cattle ..	5,666	8,230	13,408	8,894	8,378
	{ Dairy Cows ..	537	719	728	508	480
Commonwealth ..	{ All Cattle ..	9,931,416	10,467,737	11,956,024	12,738,852	12,711,067
	{ Dairy Cows ..	1,684,393	1,747,351	1,904,906	1,902,036	1,908,536

2. **Milk.**—The annual quantity of milk produced per dairy cow varies greatly with locality and season, probably reaching as high as 500 gallons, but averaging for the whole of Australia, for all dairy cows and for all seasons, prior to 1916, considerably under 300 gallons per annum. During 1916 and 1917 the average yield exceeded that quantity, amounting to 320 and 333 gallons respectively, but, owing to adverse weather conditions, it again failed to reach the 300 gallons mark in 1918 and 1919, the respective averages being only 293 and 278 gallons per cow. The best yields over a series of years appear to be in Victoria, South Australia and New South Wales, while Queensland and Tasmania in normal years are above Western Australia. In the following table the annual average yields per cow for the last five years are taken from the number of dairy cows which were in milk during any part of the year. The average given is considerably below that for cows which were yielding during the greater part of the year. The highest averages obtain in those States which have most extensively adopted scientific methods of dairying, such as systematic breeding, culling of herds, milk testing, etc.

PRODUCTION OF MILK, COMMONWEALTH, 1915 TO 1919.

Heading.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth. (b)
1915—								
Dairy cows (a) . . No.	756,304	530,802	361,277	84,848	28,224	49,385	704	1,811,544
Production 1,000 gals.	183,935	142,115	70,094	22,185	6,059	10,300	79	434,787
Aver. per cow . . gals.	243	268	194	261	215	209	113	240
1916—								
Dairy cows (a) . . No.	742,801	469,587	339,277	82,413	31,065	50,031	628	1,715,802
Production 1,000 gals.	225,920	186,593	86,938	29,954	6,828	13,364	84	549,679
Aver. per cow . . gals.	304	397	256	363	220	267	134	320
1917—								
Dairy cows (a) . . No.	759,603	511,237	371,410	91,486	35,883	55,716	724	1,826,059
Production 1,000 gals.	247,398	199,738	105,384	32,309	7,550	14,843	131	607,353
Aver. per cow . . gals.	326	391	284	353	210	266	182	338
1918—								
Dairy Cows (a) . . No.	747,286	563,234	390,507	99,945	40,056	61,710	663	1,903,401
Production 1,000 gals.	206,925	207,102	87,580	32,243	8,544	15,796	170	558,360
Aver. per cow . . gals.	277	368	224	323	213	256	256	293
1919—								
Dairy Cows (a) . . No.	707,525	607,866	377,325	105,106	42,563	64,292	539	1,905,216
Production 1,000 gals.	203,707	196,884	71,856	30,899	9,608	16,503	90	529,547
Aver. per cow . . gals.	288	324	190	294	226	257	167	278

(a) Mean for the year.

(b) Exclusive of Northern Territory.

3. Butter and Cheese.—The butter output shews, in general, a tolerably steady increase since the drought year 1902, the most marked development being in Queensland. During the past five years the annual production of butter, after allowing for seasonal fluctuations, has practically remained constant, the average for the period amounting to nearly 174,000,000 lbs., which is considerably less than the record yield of 211,573,745 lbs. in 1911.

The manufacture of cheese has been steadily increasing throughout the Commonwealth during recent years, the 1917 production being the highest yet recorded. A sharp decline was noticeable in 1918, followed by a satisfactory increase, despite droughty conditions, in 1919. Particulars for the past five years are as follows:—

PRODUCTION OF BUTTER AND CHEESE, COMMONWEALTH, 1915 TO 1919.

State.	1915.	1916.	1917.	1918.	1919.
BUTTER.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	559,623,885	579,355,639	580,460,225	565,991,738	563,127,160
Victoria	42,345,113	559,568,771	564,405,711	566,240,403	560,218,945
Queensland	25,456,714	28,967,279	58,930,690	32,371,575	26,213,514
South Australia	6,317,613	59,798,142	510,482,895	510,444,789	59,810,335
Western Australia	716,408	1,089,466	1,361,484	1,789,390	1,980,273
Tasmania	3,204,922	3,691,649	4,848,227	4,947,560	4,290,724
Federal Territory	57,658	58,832	57,782	517,220	57,840
Commonwealth	137,672,313	182,470,778	200,497,014	181,802,675	165,648,791
CHEESE.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	55,979,636	57,830,239	57,799,676	55,982,120	56,762,467
Victoria	3,497,278	55,869,562	55,285,003	56,055,964	57,735,023
Queensland	4,383,410	8,495,825	11,142,114	8,636,700	8,296,318
South Australia	1,412,692	52,476,081	52,449,716	52,412,388	52,540,183
Western Australia	835	665	100	200	821
Tasmania	555,375	736,500	754,196	702,868	861,460
Commonwealth	15,829,226	25,408,872	27,430,805	23,790,240	26,196,272

(a) For year ended 30th June of year following.

4. **Concentrated Milk.**—"Condensed" or "concentrated" milk denotes milk the bulk of which is reduced by evaporation. Small quantities of such milk were made prior to 1911, in which year the output for the Commonwealth was nearly doubled. Increasing quantities were annually manufactured till 1915, when a substantial falling off was in evidence in each of the three contributing States. During the next four years however the condensed milk industry developed considerably, particularly in Victoria, where the output for 1919 was 27,500,000 lbs. greater than that for 1915. There is still a considerable import of milk, as will be seen from the tables hereunder; but in each year, with the exception of 1915-16, there was an excess of exports. No condensed or concentrated milk is made in South Australia, Western Australia, or Tasmania. In New South Wales, Victoria, and Queensland the following are the returns for the last five years :—

CONDENSED AND CONCENTRATED MILK MADE, 1915 TO 1919.

Year.	N.S.W.	Victoria.	Queensland.	Commonwealth.
	lbs.	lbs.	lbs.	lbs.
1915	4,918,064 <i>a</i>	16,690,426	5,368,510	26,977,000
1916	5,829,990 <i>a</i>	33,280,635 <i>a</i>	6,584,272	45,694,897
1917	8,973,916 <i>a</i>	37,805,070 <i>a</i>	9,409,059	56,188,045
1918	11,192,325 <i>a</i>	45,251,710 <i>a</i>	6,845,610	63,289,645
1919	12,969,679 <i>a</i>	44,219,389 <i>a</i>	9,170,034	66,359,102

(a) For year ended 30th June of year following.

5. **Oversea Trade in Milk, Butter, and Cheese.**—The following tables give the imports, exports, and net exports or imports of butter, cheese, and milk. In each of the five years exports of butter exceeded imports, but there was a net import of cheese and milk in 1915-16.

IMPORTS, EXPORTS, AND NET EXPORTS OF BUTTER, CHEESE AND MILK, COMMONWEALTH, 1915-16 TO 1919-20.

Products.	1915-16.	1916-17.	1917-18.	1918-19.	1919-20.
IMPORTS.					
Butter lbs.	4,577,332	517,091	8,610	16,439	36,774
" £	349,110	38,749	592	1,087	2,282
Cheese lbs.	1,532,336	86,035	45,976	13,903	23,625
" £	66,936	5,536	2,940	1,008	2,988
Milk—concentrated and preserved(a) lbs.	4,191,493	1,607,445	772,987	575,934	1,075,887
" £	152,051	63,713	42,458	30,802	49,029
EXPORTS.					
Butter lbs.	18,038,317	75,381,869	72,277,526	41,114,764	39,006,304
" £	1,117,629	5,338,848	4,904,417	3,193,086	3,301,695
Cheese lbs.	159,003	10,586,456	8,427,098	2,303,308	7,524,910
" £	9,347	420,600	350,819	118,855	377,905
Milk—concentrated and preserved(a) lbs.	939,660	16,453,839	25,690,663	27,962,938	35,568,218
" £	31,340	553,993	1,029,424	1,092,911	1,606,310
NET EXPORTS.(b)					
Butter lbs.	13,458,985	74,844,778	72,268,916	41,098,325	38,969,530
" £	768,519	5,300,099	4,903,825	3,191,999	3,299,413
Cheese lbs.	-1,373,333	10,500,421	8,381,122	2,289,405	7,496,285
" £	-57,589	415,064	347,679	117,757	374,917
Milk—concentrated and preserved(a) lbs.	-3,251,833	14,846,394	24,917,676	27,387,004	34,492,331
" £	-120,711	490,280	986,966	1,062,109	1,557,281

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

(a) See definition above. (b) Excess of exports over imports.

6. **Local Consumption of Butter and Cheese.**—The total production of butter and cheese, with the net export or import for the corresponding period subtracted or added, gives approximately the quantity available for consumption in the Commonwealth. In the period considered hereunder, with the exception of the year 1915, the local supply of cheese was adequate:—

BUTTER AND CHEESE FOR LOCAL CONSUMPTION, 1915 TO 1919.

Products.	1915.	1916.	1917.	1918.	1919.
	lbs.	lbs.	lbs.	lbs.	lbs.
Butter .. Total ..	124,213,328	107,628,000	128,228,098	140,704,350	126,679,261
" .. Per head of population ..	25.19	22.08	25.93	27.97	24.26
Cheese .. Total ..	17,202,559	14,908,451	19,049,833	21,500,835	18,699,987
" .. Per head of population ..	3.49	3.06	3.86	4.27	3.58

The quantity available for consumption in 1919 averaged 24½ lbs. of butter and about 3½ lbs. of cheese per head of population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom in normal times is given as about 20 lbs. per head per annum.

§ 3. Pigs, Bacon, etc.

1. **Pigs.**—Attention has been paid, both privately and by the various State Governments, to improving the breed, and consequently the market value of pigs. The number of pigs in the Commonwealth from 1915 to 1919 is shewn below:—

NUMBER OF PIGS, COMMONWEALTH, 1915 TO 1919.

State.	1915.	1916.	1917.	1918.	1919.
New South Wales (b) ..	280,869	359,504	395,639	294,338	253,338
Victoria (a) ..	192,002	254,436	323,159	267,819	186,810
Queensland ..	117,787	129,733	172,699	140,966	99,593
South Australia ..	66,237	118,542b	110,353b	79,078b	60,295b
Western Australia ..	58,231	90,756	111,844	85,863	58,155
Tasmania (a) ..	37,778	53,033	54,653	44,328	35,530
Northern Territory ..	500	500	500	1,200	1,675
Federal Territory (b) ..	289	259	518	310	572
Commonwealth ..	753,693	1,006,763	1,169,365	913,902	695,968

(a) As on 1st March of year following. (b) As on 30th June of year following.

An examination of the returns of pigs shews remarkable fluctuations. There was a heavy falling off in 1915, followed by substantial increases during 1916 and 1917 in which latter year the number of pigs was the highest ever recorded in Australia. The figures for 1918 and 1919 reveal considerable decreases in practically all the States, the number of pigs in the Commonwealth being reduced by 473,397. The number of pigs per head of population, and the number per square mile, will be found in the tables of live stock, pages 213 and 214.

2. **Bacon and Ham.**—During the four years 1915–18, the production of bacon and ham increased considerably in all the States, the Commonwealth total of 66,171,428 lbs. for the latter year being the greatest quantity ever made in Australia. The 1919 figures, however, reveal a substantial falling off in production, the decrease being noticeable in all the States

PRODUCTION OF BACON AND HAM, COMMONWEALTH, 1915 TO 1919.

State.	1915.	1916.	1917.	1918.	1919.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ..	a13,569,022	a15,779,369	a18,544,053	a16,801,370	a16,657,362
Victoria ..	13,659,974	a18,115,028	a21,311,876	a22,202,605	a19,374,009
Queensland ..	12,363,939	10,427,649	14,791,540	16,476,480	12,155,489
South Australia ..	2,432,485	a3,993,137	a6,591,064	a6,567,394	a5,810,616
Western Australia ..	6202,824	c2,058,027	c2,362,604	c2,813,650	c2,609,284
Tasmania ..	895,020	992,779	1,298,819	1,309,633	1,128,096
Federal Territory ..	a7,619	a8,787	a11,091	a296	a12,236
Commonwealth ..	43,130,883	51,374,776	64,911,047	66,171,428	57,747,092

(a) For year ended 30th June of year following. (b) Made on farms only. (c) A portion only from pigs slaughtered in the State, balance imported and subsequently cured.

3. Oversea Trade in Pig Products.—The oversea trade in pigs and pig products is shewn in the following tables:—

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS, AND LARD, COMMONWEALTH, 1915-16 TO 1919-20.

Particulars.	1915-16.	1916-17.	1917-18.	1918-19.	1919-20.
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BACON AND HAM.

Imports	lbs.	425,277	90,626	5,097	42,624	15,047
"	£	20,643	4,787	353	2,169	1,067
Exports ..	..	lbs.	590,788	1,006,431	5,068,952	5,637,565	3,040,933
" ..	..	£	35,278	60,414	321,635	378,723	258,890
Net Exports ..	..	lbs.	165,511	915,805	5,063,855	5,594,941	3,025,886
" ..	..	£	14,635	55,627	321,282	376,554	257,823

FROZEN PORK.

Imports ..	..	lbs.	862,768	73,294	121	..	..
" ..	..	£	32,249	2,680	3	..	..
Exports ..	..	lbs.	2,783	32,681	262,503	839,557	371,397
" ..	..	£	108	1,341	11,915	40,325	19,149
Net Exports ..	..	lbs.	- 859,985	- 40,613	262,382	839,557	371,397
" ..	..	£	- 32,141	- 1,339	11,912	40,325	19,149

PIGS.

Imports ..	..	No.	12	6	20	4	16
" ..	..	£	63	23	438	102	94
Exports ..	..	No.	64	19	36	60	164
" ..	..	£	582	146	209	479	1,044
Net Exports ..	..	No.	52	13	16	56	148
" ..	..	£	519	123	- 229	377	950

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

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS, AND LARD, COMMONWEALTH, 1915-16 TO 1919-20—continued.

Particulars.		1915-16.	1916-17.	1917-18.	1918-19.	1919-20.
LARD.						
Imports..	lbs.	3,873,248	408,552	7,208	29,575	22,001
" ..	£	108,985	12,225	380	1,475	1,092
Exports..	lbs.	342,593	1,796,821	1,466,703	6,016,825	7,969,444
" ..	£	13,736	59,205	56,353	205,694	375,910
Net Exports	lbs.	- 3,530,655	1,388,269	1,459,495	5,987,250	7,947,443
" ..	£	- 95,249	46,980	55,973	204,219	374,818

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

From 1901 to 1903 there was a considerable net import of bacon and ham, but for the following years, up to 1919-20, with the exception of 1915-16, when the figure was small, there was a large net export. The local production of pork and lard for each of the years 1911 to 1913 was more than sufficient for the local demand; during 1914-15, 1915-16, and 1916-17, however, the imports of frozen pork exceeded the exports by 25,546 lbs., 859,985 lbs., and 40,613 lbs. respectively, while in 1915-16 the net import of lard amounted to 3,530,655 lbs.

The net exports of pig products have assumed considerable proportions during the past five years. In 1915-16, owing to decreased production, a heavy net import of 4,225,129 lbs. was necessary, but during each of the next four years the net exports amounted to 2,463,461, 6,785,732, 12,421,748, and 11,344,726 lbs. respectively.

4. **Local Consumption of Bacon and Ham.**—From 1904 to 1919 the production of bacon and ham was sufficient to meet the local demand, and there was a surplus for export.

BACON AND HAM AVAILABLE FOR LOCAL CONSUMPTION, 1915 TO 1919.

Particulars.	1915.	1916.	1917.	1918.	1919.
	lbs.	lbs.	lbs.	lbs.	lbs.
Total ..	42,965,372	50,458,971	59,847,192	60,576,487	54,721,206
Per head of population ..	8.71	10.35	12.13	12.04	10.48

5. **Total Dairy Production.**—The total dairy production of the Commonwealth in 1919 is shewn below:—

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1919.

Where Produced.	N.S.W. (a)	Victoria. (a)	Q'land.	S. Aust. (a)	W. Aust.	Tasmania.	Fed. Terr. (a)	C'wealth.
MILK.								
Used for—	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.
Butter ..	147,342,103	139,539,903	53,761,827	21,850,595	4,745,576	10,467,010	29,650	377,736,664
Cheese ..	6,954,032	7,732,839	7,232,639	2,488,942	1,485	882,961	..	25,292,898
Condensing and concentrating ..	3,618,755	10,615,118	2,228,942	..	..	..	..	16,462,815
Other purposes ..	45,792,240	38,996,261	8,632,630	6,560,016	4,860,616	5,152,789	60,220	6110,054,772
Total ..	203,707,130	196,884,121	71,856,038	30,899,553	9,607,677	16,502,760	89,870	6529,547,149

BUTTER.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories On Dairy and other Farms ..	59,636,489	55,475,039	24,523,657	6,128,604	995,953	3,081,945	149,846,687
	3,490,671	4,743,906	1,684,857	3,681,731	984,320	1,208,779	15,802,104
Total ..	63,127,160	60,218,945	26,213,514	9,810,335	1,980,273	4,290,724	165,648,791

(a) For year ended 30th June, 1920.

(b) Including 10,000 gallons, Northern Territory.

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1919—*continued*.

Where Produced.	N.S.W. (a)	Victoria. (a)	Q'land.	S. Aust. (a)	W. Aust.	Tasmania	F. Ter. (a)	C'wealth.
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CHEESE.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ...	5,593,061	6,797,993	8,287,030	2,539,933	..	607,853	..	23,825,870
On Dairy & other Farms ..	1,169,406	937,030	9,288	250	821	253,607	..	2,370,402
Total ..	6,762,467	7,735,023	8,296,318	2,540,183	821	861,460	..	26,196,272

CONDENSED OR CONCENTRATED MILK.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ..	12,969,679	44,219,389	9,170,034	..	..	..	..	66,359,102

BACON AND HAM.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ...	14,930,080	16,675,090	11,638,911	4,935,017	62,339,691	809,461	..	51,328,250
On Dairy & other Farms ..	1,727,282	2,698,919	516,578	875,599	269,593	318,635	12,236	6,418,842
Total ..	16,657,362	19,374,009	12,155,489	5,810,616	2,609,284	1,128,096	12,236	57,747,092

(a) For year ended 30th June, 1920. (b) A portion only from pigs slaughtered in the State, the balance being imported and subsequently cured.

§ 4. Poultry Farming.

1. **Development of the Industry.**—Poultry stocks are largely maintained by farmers, and production therefrom furnishes a considerable addition to the annual agricultural or dairying returns. During recent years, however, poultry-keeping has assumed an independent position among rural industries, while it is also carried on in conjunction with pig farming. Special poultry farms have been instituted for scientific breeding, and poultry experts engaged by the State Governments give lectures and instruction. Poultry for consumption is extensively reared, and the egg-producing qualities of the birds have also been greatly improved by careful breeding. Co-operative egg-collecting circles have been formed in some districts; eggs are also delivered with the milk and cream to the local butter factories, and thence forwarded to market.

2. **Poultry Products.**—There is some difficulty in obtaining correct figures for the yield of poultry products. The following values are returned :—

ESTIMATED VALUE OF POULTRY AND EGGS, COMMONWEALTH, 1915-16 TO 1919-20.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania. (a)	C'wealth.
	£	£	£	£	• £	£	£
1915-16 ..	2,146,000	1,747,000	107,370	518,808	184,360	200,000	4,903,538
1916-17 ..	1,908,000	1,714,770	324,958	618,441	201,284	250,000	5,017,453
1917-18 ..	2,082,000	2,160,650	295,882	669,105	188,982	250,000	5,646,619
1918-19 ..	2,501,000	2,738,620	319,602	690,539	189,471	300,000	6,739,232
1919-20 ..	2,814,000	3,579,230	356,590	924,986	191,288	300,000	8,166,094

(a) Estimated.

3. **Oversea Trade in Poultry Products.**—The imports and exports of eggs shew a balance on the side of imports in 1915-16 and 1916-17. During the next three years, however, the exports exceeded the imports, the value of the excess amounting to £1,028, £577, and £17,231 respectively.

The number of eggs imported into the Commonwealth since 1915-16 amounted to 700,980 dozen. Of this number China has supplied 654,518 dozen; Japan, 30,230 dozen; Straits Settlements, 6,190 dozen; and United Kingdom, 4,230 dozen.

There is at present only a small oversea trade in either live or frozen poultry, the values of the net exports during 1919-20 being £884 and £10,158 respectively.

IMPORTS, EXPORTS, AND NET EXPORTS OF EGGS AND OF LIVE AND FROZEN POULTRY, COMMONWEALTH, 1915-16 TO 1919-20.

Particulars.	1915-16.	1916-17.	1917-18.	1918-19.	1919-20.
Eggs.					
Imports doz.	649,399	35,762	9,171	2,633	4,015
" £	27,791	1,485	434	169	230
Exports doz.	3,541	8,651	16,136	8,409	211,034
" £	262	585	1,462	746	17,461
Net Exports .. doz.	- 645,858	- 27,111	6,965	5,776	207,019
" £	- 27,529	- 900	1,028	577	17,231
Egg CONTENTS.					
Imports lbs.	37,421	20,452	8,669	344	4,992
" £	4,486	3,480	1,708	94	1,523
Exports lbs.	(a)	(a)	(a)	(a)	(a)
" £	481	14,259	1,508	1,823	48,675
Net Exports .. lbs.	(a)	(a)	(a)	(a)	(a)
" £	- 4,005	10,779	- 200	1,729	47,152
LIVE POULTRY.					
Imports No.	931	480	753	693	721
" £	1,107	1,127	383	878	1,564
Exports No.	1,959	3,105	988	1,699	2,477
" £	781	3,523	823	1,231	2,448
Net Exports .. No.	1,028	2,625	235	1,006	1,756
" £	- 326	2,396	440	353	884
FROZEN POULTRY.					
Imports lbs.	6,643	3,096	931	3,752	10,273
" £	293	137	39	208	602
Exports pair	2,155	5,400	6,541	8,298	13,346
" £	1,050	3,904	3,549	5,141	10,760
Net Exports .. (a)	(a)	(a)	(a)	(a)	(a)
" £	757	3,767	3,510	4,933	10,158

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

§ 5. Bee Farming.

1. **The Bee-farming Industry.**—Bee farming, like poultry farming, is ordinarily an adjunct to agricultural or dairying industries. The returns of honey from productive hives during 1919-20 gave an average of 41½ lbs. per hive, while the average quantity of wax was ½ lb. per hive.

2. Production of Honey and Beeswax.—The particulars of honey and beeswax production are as given in the following table :—

NUMBER OF HIVES AND PRODUCTION OF HONEY AND BEESWAX,
SEASON 1919-20.

State.	Bee Hives.			Honey Produced.		Beeswax Produced.	
	Pro- ductive.	Unpro- ductive.	Total.	Quantity.	Value.	Quantity.	Value.
	No.	No.	No.	lbs.	£	lbs.	£
New South Wales ..	17,509	10,350	27,859	472,020	13,374	12,195	1,235
Victoria ..	27,324	13,646	40,970	1,396,704	36,809	24,735	2,721
Queensland ..	7,770	4,280	12,050	305,586	6,132	7,215	648
South Australia ..	11,719	7,385	19,104	552,976	11,520	7,350	643
Western Australia ..	7,493	1,537	9,030	336,206	5,652	6,611	476
Tasmania ..	4,019	3,341	7,360	80,468	3,353	2,329	233
Federal Territory ..	25	34	59	320	9	..	..
Commonwealth ..	75,859	40,573	116,432	3,144,280	76,849	60,435	5,956

QUANTITY OF HONEY AND BEESWAX PRODUCED, 1915-16 TO 1919-20.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Ter.	C'wealth.
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HONEY.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1915-16	1,585,634	933,933	460,599	358,469	122,125	56,468	4,750	3,521,978
1916-17	1,660,518	1,547,023	352,099	961,723	184,910	84,121	4,780	4,795,174
1917-18	3,863,430	4,974,888	771,015	1,279,433	353,019	124,482	12,081	11,383,348
1918-19	879,356	1,644,447	410,182	1,683,725	415,616	151,605	420	5,185,351
1919-20	472,020	1,396,704	305,586	552,976	336,206	80,468	320	3,144,280

BEESWAX.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1915-16	29,874	18,707	8,890	7,410	4,584	1,397	45	70,907
1916-17	29,387	22,131	7,042	9,793	3,985	2,059	47	74,444
1917-18	53,314	64,980	11,519	12,942	5,459	2,857	28	151,099
1918-19	19,231	25,286	9,099	14,653	6,621	3,087	..	77,977
1919-20	12,195	24,735	7,215	7,350	6,611	2,329	..	60,435

The quantity of honey and beeswax produced from year to year naturally varies according to the conditions of the seasons. During the last five years New South Wales has produced 8,460,958 lbs. of honey and 144,001 lbs. of beeswax, while the Victorian figures amounted to 10,496,995 lbs. and 155,839 lbs. respectively for honey and beeswax. These two States together accounted for 67½ per cent. of the total production of honey, and 69 per cent. of that of beeswax. The States following next in order of importance were South Australia, Queensland, and Western Australia.

3. Oversea Trade in Bee Products.—In normal years honey is produced in the Commonwealth in sufficient quantities to supply all local requirements, and a considerable quantity is sent oversea. During the past five years the value of the exports amounted to £357,296, or an annual average of £71,459. It is believed that this export could be considerably increased. Australian honey exhibited at the Franco-British Exhibition in London in 1908 obtained the highest award. The more general use of frame hives in recent years has affected the production of wax, and as a result the quantity imported has exceeded that exported during each of the past five years.

**IMPORTS, EXPORTS, AND NET EXPORTS OF HONEY AND BEESWAX,
COMMONWEALTH, 1915-16 TO 1919-20.**

Particulars.	1915-16.	1916-17.	1917-18.	1918-19.	1919-20.
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HONEY.

Imports lbs.	59,324	491	382	150	1,093
" £	692	18	12	4	35
Exports lbs.	25,162	333,407	3,199,691	8,747,760	588,384
" £	1,045	9,526	79,225	248,685	18,815
Net Exports .. lbs.	- 34,162	332,916	3,199,309	8,747,610	587,291
" £	353	9,508	79,213	248,681	18,780

BEESWAX.

Imports lbs.	38,807	19,195	54,686	36,136	26,149
" £	2,868	1,544	4,842	3,493	1,969
Exports lbs.	3,506	7,234	1,471	7,269	15,853
" £	234	548	134	598	1,467
Net Exports .. lbs.	- 35,301	- 11,961	- 53,215	- 28,867	- 10,296
" £	- 2,634	- 996	- 4,708	- 2,895	- 502

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

§ 6. Summary of Australian Farmyard and Dairy Products.

The value of the principal farmyard and dairy products raised in the Commonwealth in 1919 was as follows :—

**VALUE OF THE PRINCIPAL FARMYARD AND DAIRY PRODUCTS RAISED
IN THE COMMONWEALTH DURING THE YEAR 1919.**

Produce.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Ter.	C'wealth.
	£	£	£	£	£	£	£	£	£
Milk, consumed as such	3,243,617	2,762,235	611,478	464,668	344,294	364,989	708	4,266	7,796,255
Butter	5,296,402	4,900,442	2,128,716	833,710	172,139	320,640	..	658	13,652,707
Cheese	339,840	344,262	375,321	104,948	34	35,060	..	..	1,199,465
Condensed and concentrated milk ..	883,837	1,469,110	287,523	..	..	..	..	..	2,140,470
Bacon and ham ..	1,026,512	1,417,485	795,463	344,289	164,906	66,022	..	754	3,815,431
Poultry and eggs ..	2,814,000	3,579,230	356,590	924,986	191,288	300,000	..	..	8,166,094
Honey and wax ..	14,609	39,530	6,780	12,163	6,128	3,586	..	9	82,805

§ 7. Summary of Australian Farmyard and Dairy Products Exported, 1915-16 to 1919-20.

The quantities and values of Australian farmyard and dairy products exported from the Commonwealth during each of the last five years are shewn below :—

QUANTITIES OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING EACH OF THE YEARS 1915-16 TO 1919-20.

Products.	1915-16.	1916-17.	1917-18.	1918-19.	1919-20.
Beeswax lbs.	3,506	7,234	1,450	7,252	14,438
Butter "	16,722,010	74,878,634	72,277,526	41,114,764	39,006,304
Cheese "	128,229	10,569,279	8,426,641	2,303,276	7,516,412
Egg albumen and yolk (a)				(a)	(a)
Eggs doz.	3,469	8,386	15,922	8,359	210,784
Feathers, undressed (a)					(a)
Honey lbs.	25,162	333,407	3,199,691	8,747,760	588,384
Lard "	342,569	1,681,918	1,465,352	6,016,383	7,931,014
Meats—					
Bacon and ham "	556,251	1,005,171	5,087,946	5,636,891	3,040,933
Frozen poultry pair	2,131	5,400	6,541	8,298	13,346
Frozen pork lbs.	2,783	32,681	262,503	839,557	371,397
Milk, concentrated and preserved "	708,643	15,777,333	25,581,708	27,934,998	35,548,082
Pigs, living No.	64	19	36	60	164
Poultry, living "	1,939	3,105	983	1,699	2,477

(a) Quantity not available.

VALUE OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING THE YEARS 1915-16 TO 1919-20.

Products.	1915-16.	1916-17.	1917-18.	1918-19.	1919-20.
	£	£	£	£	£
Beeswax "	234	548	133	596	1,325
Butter "	1,022,742	5,301,273	4,904,417	3,193,086	3,301,695
Cheese "	7,915	419,628	350,791	118,850	377,398
Egg albumen and yolk "	4	8,327	854	1,823	48,675
Eggs "	259	573	1,450	743	17,434
Feathers, undressed "	45			61	793
Honey "	1,045	9,526	79,225	248,685	18,815
Lard "	13,735	56,126	56,292	205,675	374,641
Meats—					
Bacon and ham "	33,583	60,358	321,573	378,685	258,890
Frozen poultry "	1,033	3,904	3,549	5,141	10,760
Frozen pork "	108	1,341	11,915	40,325	19,149
Milk, concentrated and preserved "	24,589	531,976	1,025,895	1,091,889	1,605,161
Pigs, living "	582	146	209	479	1,044
Poultry, living "	766	3,523	819	1,231	2,448
Total "	1,106,640	6,397,249	6,757,122	5,287,269	6,038,228

§ 8. British Imports of Dairy Products.

1. Value of Britain's Imports of Dairy Products.—In the following table are given the quantities and values of the principal dairy products imported into the United Kingdom during the years 1915 to 1919 :—

PRINCIPAL DAIRY PRODUCTS IMPORTED INTO THE UNITED KINGDOM, 1915 TO 1919.

Products.	1915.	1916.	1917.	1918.	1919.
Butter cwts.	3,853,855	2,175,415	1,806,516	1,578,658	1,560,204
Butter £	27,022,745	18,964,002	18,895,707	19,769,738	19,854,427
Cheese cwts.	2,726,536	2,604,124	2,946,066	2,357,103	2,118,250
Cheese £	11,107,100	12,945,765	19,462,390	15,905,858	15,170,620
Milk—Concentrated and preserved cwts.	1,661,321	1,752,292	1,700,511	2,707,761	3,347,645
Milk £	3,551,592	5,120,879	6,623,666	13,472,544	17,088,310
Bacon and ham cwts.	8,003,835	8,990,791	7,747,740	12,028,505	10,094,352
Bacon £	30,721,776	41,223,147	48,769,759	103,410,221	89,681,616
Pork (a) cwts.	238,459	334,284	184,177	111,345	160,263
Pork £	650,783	1,301,209	899,346	763,484	1,075,563

(a) Frozen, chilled, and salted.

2. **Butter.**—Australia has for many years past contributed large quantities of the butter annually imported into the United Kingdom. During the past five years the value of the imports from Australia has considerably increased, amounting in 1919 to £5,251,176, which was the largest sum paid by Great Britain to any country for butter during the year.

IMPORTS OF BUTTER INTO THE UNITED KINGDOM, 1919.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	Cwt.	£		Cwt.	£
Australia ..	417,371	5,251,176	Norway ...	6,240	86,560
New Zealand ..	318,872	3,910,432	Foreign Countries		
Argentine Republic ..	265,675	3,344,213	n.e.i. ..	1,645	20,839
United States ..	216,495	2,746,908	British Possessions		
Canada ..	33,337	417,588	n.e.i. ..	3,324	41,268
Denmark ..	290,291	3,947,835			
Russia ..	6,954	87,608	Total ..	1,560,204	19,854,427

The average price of the best quality Australian butter in London during the past ten years is shewn in the following table:—

AVERAGE PRICE OF AUSTRALIAN BUTTER IN LONDON, 1910 TO 1919.

Year.	Average Top Price per Cwt.	Year.	Average Top Price per Cwt.
	s. d.		s. d.
1910	112 0	1915	144 6
1911	114 0	1916	169 6
1912	119 0	1917	(a) 206 0
1913	114 6	1918	(b) 252 0
1914	119 0	1919	(b) 252 0

(a) Proclaimed price.

(b) Flat rate for all imported butter.

The British Government under contract purchased the surplus output of Australian butter during the period from 1st July, 1918, to 31st July, 1920. The price paid was 175s. per cwt. for butter scoring 90 points, a shilling per cwt. being added or deducted as the grading score exceeded or came below that standard. On the 1st August, 1920, this contract was extended for a further period, the price of butter having been increased to 240s. per cwt., subsequently raised to 272s., the grading price being likewise increased to 1s. 6d. per cwt. This contract terminated on 31st March, 1921, after which date butter sales again reverted to the open market in the United Kingdom.

3. **Cheese.**—The value of the United Kingdom cheese imports in 1919 was £15,170,620, of which nearly eight and a half million pounds' worth was received from New Zealand, and nearly five million pounds' worth from Canada. Small experimental shipments from Australia were made in 1908 and following years, fair prices being realised. The value of the imports from Australia has increased from £91,729 in 1915 to £830,935 in 1919.

4. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1919 at £89,681,616, the United Kingdom received imports to the value of £67,379,260 from the United States, and £19,534,159 from Canada. The import from Australia was small, experimental shipments only having been made during recent years.

5. **Pork.**—The total value of the United Kingdom imports of pork (including refrigerated, frozen, and salted) was £1,075,563 in 1919. There was no import from Australia, the chief supplying countries being Argentine Republic and the United States.

6. **Other Products.**—There is practically no United Kingdom import from Australia of beeswax, poultry, game, lard, or eggs, but honey to the value of £305,056, and frozen rabbits to the value of £553,106 were received from the Commonwealth in 1919.

§ 9. Graphical Representation of Dairy Production.

Two graphs shewing respectively the development in dairy production and in the exports of butter will be found on page 242.