

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 579 in 1920–21. These were distributed in the various States as follows:—New South Wales, 168; Victoria, 184; Queensland, 141; South Australia, 44; Western Australia, 8; Tasmania, 34.

§ 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 the returns for the next two years remained stationary, followed by a substantial increase of over 100,000 dairy cattle during 1920. 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, 1916 TO 1920.

State.		1916.	1917.	1918.	1919.	1920.
New South Wales	{ All Cattle ..	2,757,713	3,148,309	3,271,782	3,075,954	3,367,880
	{ Dairy Cows ..	742,544	776,662	717,910	697,140	757,534
Victoria	{ All Cattle ..	1,175,098	1,371,049	1,596,544	1,631,120	1,575,159
	{ Dairy Cows ..	488,086	534,388	592,079	623,652	620,005
Queensland	{ All Cattle ..	4,765,657	5,316,558	5,786,744	5,940,433	6,455,067
	{ Dairy Cows ..	343,311	399,508	381,505	373,146	448,634
South Australia	{ All Cattle ..	288,887	313,245	342,768	349,562	376,399
	{ Dairy Cows ..	86,311	96,661	103,230	106,982	117,536
Western Australia	{ All Cattle ..	863,930	957,086	943,847	880,644	849,803
	{ Dairy Cows ..	33,788	37,979	42,133	42,993	47,719
Tasmania	{ All Cattle ..	179,360	197,938	218,234	214,442	203,202
	{ Dairy Cows ..	52,522	58,910	64,511	64,073	63,681
Northern Territory	{ All Cattle ..	428,862	638,431	570,039	610,534	659,840
	{ Dairy Cows ..	70	70	70	70	70
Federal Territory	{ All Cattle ..	8,230	13,408	8,894	8,378	7,387
	{ Dairy Cows ..	719	728	598	480	459
Commonwealth	{ All Cattle ..	10,467,737	11,956,024	12,738,852	12,711,067	13,499,737
	{ Dairy Cows ..	1,747,351	1,904,906	1,902,036	1,908,536	2,055,638

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. Seasonal conditions favourable to the dairying industry resulted in a gain of 36 gallons per cow during 1920. 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, 1916 TO 1920.

Heading.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth. (b)
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	6,326	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	333
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
1920—								
Dairy cows (a) .. No.	727,337	621,829	410,890	112,259	45,356	63,877	469	1,982,017
Production 1,000 gals.	250,038	204,522	104,659	34,617	10,234	19,000	105	623,275
Aver. per cow .. gals.	344	329	255	309	226	297	223	314

(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 production of butter was severely hampered by droughty conditions, and the output during 1918 and 1919 fell considerably. The 1920 season, unlike the two previous ones, was markedly favourable for dairying, uniformly good conditions conducive to high production existing throughout the dairying districts of the Commonwealth, with the result that the production of butter in 1920 was over 40,000,000 lbs. in excess of that for 1919.

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. The relatively higher prices ruling for butter was probably responsible for a decline in the output of cheese during 1920. Particulars for the past five years are as follows :—

PRODUCTION OF BUTTER AND CHEESE, COMMONWEALTH, 1916 TO 1920.

State.	1916.	1917.	1918.	1919.	1920.
BUTTER.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	a79,355,839	a80,460,225	a65,991,738	a63,127,160	a84,259,641
Victoria	a59,568,771	a64,405,711	a66,240,403	a60,218,945	a64,038,458
Queensland	28,967,279	38,930,690	32,371,575	26,213,514	40,751,373
South Australia	a9,798,142	a10,482,895	a10,444,789	a9,810,335	a11,897,279
Western Australia	1,080,466	1,361,484	1,789,300	1,980,273	2,212,311
Tasmania	3,691,649	4,848,227	4,947,560	4,290,724	4,014,402
Federal Territory	a8,832	a7,782	a17,220	a7,840	a8,400
Commonwealth	182,470,778	200,497,014	181,802,675	165,648,791	208,081,864
CHEESE.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	a7,830,239	a7,799,676	a5,982,120	a6,762,467	a6,407,209
Victoria	a5,869,562	a5,285,003	a6,055,964	a7,735,023	a3,636,571
Queensland	8,495,825	11,142,114	8,638,700	8,296,318	11,512,262
South Australia	a2,478,081	a2,449,716	a2,412,388	a2,540,183	a1,804,696
Western Australia	665	100	200	821	354
Tasmania	736,500	754,196	702,568	861,460	799,432
Commonwealth	25,408,872	27,430,805	23,790,240	28,196,272	24,160,524

(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 five years, however, the condensed milk industry developed considerably, particularly in Victoria, where the output for 1920 was 25,953,445 lbs. greater than that for 1915. There is still an import of milk, but the exports in each year far outweigh the quantity imported as will be seen from the tables hereunder. 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, CONCENTRATED, OR POWDERED MILK MADE, 1916 TO 1920.

Year.	N.S.W.	Victoria.	Queensland.	Commonwealth.
	lbs.	lbs.	lbs.	lbs.
1916	5,829,990a	33,280,635a	6,584,272	45,694,897
1917	8,973,916a	37,805,070a	9,409,059	56,188,045
1918	10,680,409a	45,251,710a	6,845,610	62,777,729
1919	12,969,679a	44,219,389a	9,170,034	66,359,102
1920	14,938,147a	42,643,871a	13,362,464	70,944,482

(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 of butter, cheese, and milk. In each of the five years the exports of butter, cheese, and condensed milk exceeded the imports.

IMPORTS, EXPORTS, AND NET EXPORTS OF BUTTER, CHEESE AND MILK, COMMONWEALTH, 1916-17 TO 1920-21.

Products.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
IMPORTS.					
Butter lbs.	517,091	8,610	16,439	36,774	33,762
" £	38,749	592	1,087	2,282	2,997
Cheese lbs.	86,035	45,976	13,903	28,625	72,110
" £	5,536	2,940	1,098	2,988	8,371
Milk—concentrated and preserved(a) lbs.	1,607,445	772,987	575,934	1,075,887	603,565
" £	63,713	42,458	30,802	49,029	30,883
EXPORTS.					
Butter lbs.	75,361,869	72,277,526	41,114,764	39,006,304	92,420,995
" £	5,338,848	4,904,417	3,193,086	3,201,695	11,067,104
Cheese lbs.	10,586,456	8,427,098	2,303,308	7,524,910	9,531,310
" £	420,600	350,819	118,855	377,905	514,252
Milk—concentrated and preserved(a) lbs.	16,453,839	25,690,663	27,962,938	35,568,218	37,381,955
" £	553,993	1,029,424	1,092,911	1,606,310	2,159,167
NET EXPORTS.(b)					
Butter lbs.	74,844,778	72,268,916	41,098,325	38,969,530	92,387,233
" £	5,300,099	4,903,825	3,191,999	3,299,413	11,064,107
Cheese lbs.	10,500,421	8,381,122	2,289,405	7,496,285	9,459,200
" £	415,064	347,879	117,757	374,917	505,881
Milk—concentrated and preserved(a) lbs.	14,846,394	24,917,676	27,387,004	34,492,331	36,778,390
" £	490,280	986,566	1,062,109	1,557,281	2,158,284

(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 for the corresponding period subtracted or added, gives approximately the quantity available for consumption in the Commonwealth. In the period considered hereunder the local supply of cheese was adequate :—

BUTTER AND CHEESE FOR LOCAL CONSUMPTION, 1916 TO 1920.

Products.	1916.	1917.	1918.	1919.	1920.
	lbs.	lbs.	lbs.	lbs.	lbs.
Butter .. Total ..	107,626,000	128,223,098	140,704,350	126,679,261	115,694,631
.. .. Per head of population ..	21.83	25.73	27.69	23.88	21.38
Cheese .. Total ..	14,908,451	19,049,683	21,500,835	18,699,987	14,701,324
.. .. Per head of population ..	3.03	3.82	4.23	3.53	2.72

The quantity available for consumption in 1920 averaged nearly 21½ lbs. of butter and about 2¾ 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 1916 to 1920 is shewn below :—

NUMBER OF PIGS, COMMONWEALTH, 1916 TO 1920.

State.	1916.	1917.	1918.	1919.	1920.
New South Wales (b) ..	359,504	395,639	294,338	253,338	305,967
Victoria (a) ..	254,436	323,159	267,819	186,810	175,275
Queensland ..	129,733	172,699	140,966	99,593	104,370
South Australia (b) ..	118,542	110,353	79,078	60,295	78,395
Western Australia ..	90,756	111,844	85,863	58,155	60,581
Tasmania (a) ..	53,033	54,653	44,328	35,530	38,116
Northern Territory ..	500	500	1,200	1,675	1,416
Federal Territory (b) ..	259	518	310	572	286
Commonwealth ..	1,006,763	1,169,365	913,902	695,968	764,406

(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. Since 1917 the numbers have decreased in all the States, and the Commonwealth total in 1920 represents a decline of 35 per cent. on the 1917 maximum number recorded. The number of pigs per head of population, and the number per square mile, will be found in the tables of live stock, pages 206 and 207.

2. Bacon and Ham.—During the past five years the production of bacon and ham has fluctuated between the record quantity of 66,181,218 lbs. manufactured in 1918 and 50,250,487 lbs. in 1920, the average for the period amounting to 58,104,078 lbs., which is far in excess of any previous five-yearly average.

PRODUCTION OF BACON AND HAM, COMMONWEALTH, 1916 TO 1920.

State.	1916.	1917.	1918.	1919.	1920.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales(a) ..	15,779,369	18,544,053	16,801,370	16,657,362	16,249,762
Victoria(a) ..	18,146,328	21,324,846	22,212,395	19,385,509	15,139,100
Queensland ..	10,427,649	14,791,540	16,476,480	12,155,489	11,337,050
South Australia(a) ..	3,993,137	6,591,064	6,567,394	5,810,616	4,172,372
Western Australia(b) ..	2,058,027	2,362,604	2,813,650	2,609,284	2,077,662
Tasmania ..	992,779	1,298,819	1,309,633	1,128,096	1,267,061
Federal Territory(a) ..	8,787	11,091	296	12,236	7,480
Commonwealth ..	51,406,076	64,924,017	66,181,218	57,758,592	50,250,487

(a) For year ended 30th June of year following. (b) 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, 1916-17 TO 1920-21.

Particulars.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
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BACON AND HAM.

Imports ..	lbs.	90,626	5,097	42,624	15,047	14,610
" ..	£	4,787	353	2,169	1,067	1,479
Exports ..	lbs.	1,006,431	5,068,952	5,637,565	3,040,933	3,113,578
" ..	£	60,414	321,635	378,723	258,890	323,280
Net Exports ..	lbs.	915,805	5,063,855	5,594,941	3,025,886	3,098,968
" ..	£	55,627	321,282	376,554	257,823	321,801

FROZEN PORK.

Imports ..	lbs.	73,294	121	..	..	..
" ..	£	2,680	3	..	..	..
Exports ..	lbs.	32,681	262,503	839,557	371,397	163,303
" ..	£	1,341	11,915	40,325	19,149	9,370
Net Exports ..	lbs.	-40,613	262,382	839,557	371,397	163,303
" ..	£	-1,339	11,912	40,325	19,149	9,370

PIGS.

Imports ..	No.	6	20	4	16	11
" ..	£	23	438	102	94	65
Exports ..	No.	19	36	60	164	166
" ..	£	146	209	479	1,044	1,199
Net Exports ..	No.	13	16	56	148	155
" ..	£	123	-229	377	950	1,134

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

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS, AND LARD, COMMONWEALTH, 1916-17 TO 1920-21—*continued.*

Particulars.		1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
LARD.						
Imports..	lbs.	408,552	7,208	29,575	22,001	42,795
" ..	£	12,225	380	1,475	1,092	1,825
Exports..	lbs.	1,796,821	1,466,703	6,016,825	7,969,444	3,118,105
" ..	£	59,205	56,353	205,694	375,910	153,034
Net Exports	lbs.	1,388,269	1,459,495	5,987,250	7,947,443	3,075,310
" ..	£	46,980	55,973	204,219	374,818	151,259

From 1901 to 1903 there was a considerable net import of bacon and ham, but for the following years, up to 1920-21, 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 fairly large proportions in recent years. During the five years ended 1920-21, the average annual net export amounted to nearly half a million pounds sterling, the bulk of the shipments consisting of bacon, ham and lard.

4. **Local Consumption of Bacon and Ham.**—From 1904 to 1920 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, 1916 TO 1920.

Particulars.	1916.	1917.	1918.	1919.	1920.
	lbs.	lbs.	lbs.	lbs.	lbs.
Total ..	50,490,271	59,860,162	60,586,277	54,732,706	47,151,519
Per head of population ..	10.27	12.01	11.92	10.32	8.71

5. **Total Dairy Production.**—The total dairy production of the Commonwealth in 1920 is shewn below:—

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1920.

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 ..	191,324,370	151,513,321	82,252,993	26,333,714	5,372,040	9,760,000	31,510	466,587,954
Cheese ..	6,649,023	3,612,143	9,355,216	1,728,728	618	825,200	..	22,170,928
Condensing and concentrating	4,143,860	9,742,363	3,360,824	..	..	..	..	17,247,047
Other purposes ..	47,950,951	39,654,643	9,690,451	6,594,267	4,860,900	8,414,800	73,280	117,279,292
Total ..	250,093,210	274,522,400	104,659,484	34,656,709	10,233,558	19,000,000	104,790	662,328,521

BUTTER.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories	79,864,745	59,851,735	33,464,870	8,222,020	1,218,631	2,458,978	..	190,081,929
On Dairy and other Farms ..	4,394,896	5,036,723	2,286,503	3,674,359	993,630	1,555,424	8,400	17,999,935
Total ..	84,259,641	64,938,458	40,751,373	11,897,279	2,212,311	4,014,402	8,400	208,081,864

(a) For year ended 30th June, 1921.

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

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1920—*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 ...	5,646,248	3,143,619	11,509,762	1,804,696	..	563,554	..	22,667,879
On Dairy & other Farms ..	760,961	492,952	2,500	..	354	235,878	..	1,492,045
Total ..	6,407,209	3,636,571	11,512,262	1,804,696	354	799,432	..	24,160,524

CONDENSED, CONCENTRATED OR POWDERED MILK.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ..	14,938,147	42,643,871	13,362,464	..	..	..	..	70,944,482

BACON AND HAM.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ...	14,604,807	13,393,107	11,031,691	3,389,170	51,874,220	833,106	..	45,121,101
On Dairy & other Farms ..	1,644,955	1,755,993	305,359	783,202	203,442	428,955	7,480	5,129,386
Total ..	16,249,762	15,139,100	11,337,050	4,172,372	2,077,662	1,267,061	7,480	50,250,487

(a) For year ended 30th June, 1921. (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, 1916-17 TO 1920-21.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania. (a)	C'wealth.
	£	£	£	£	£	£	£
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	924,988	191,288	300,000	8,166,094
1920-21 ..	3,196,000	4,545,620	449,827	1,164,999	189,658	300,000	9,846,104

(a) Estimated.

3. **Oversea Trade in Poultry Products.**—The imports and exports of eggs shew a balance on the side of imports in 1916-17. During the next four years, however, the exports exceeded the imports, the value of the excess amounting to £1,028, £577, £17,231, and £52,130 respectively.

The number of eggs imported into the Commonwealth since 1916-17 amounted to 79,033 dozen, of which number China supplied 61,511 dozen, or nearly 78 per cent.

There is at present only a small oversea trade in either live or frozen poultry, the values of the net exports during 1920-21 being £1,891 and £29,635 respectively.

IMPORTS, EXPORTS, AND NET EXPORTS OF EGGS AND OF LIVE AND FROZEN POULTRY, COMMONWEALTH, 1916-17 TO 1920-21.

Particulars.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
Eggs.					
Imports doz.	35,762	9,171	2,633	4,015	27,452
" £	1,485	434	169	230	1,802
Exports doz.	8,651	16,136	8,409	211,034	413,602
" £	585	1,462	746	17,461	53,932
Net Exports .. doz.	- 27,111	6,965	5,776	207,019	386,150
" £	- 900	1,028	577	17,231	52,130
EGG CONTENTS.					
Imports lbs.	20,452	8,669	344	4,992	23,898
" £	3,480	1,703	94	1,523	4,446
Exports lbs.	(a)	(a)	(a)	(a)	(a)
" £	14,259	1,508	1,823	48,675	27,298
Net Exports .. lbs.	(a)	(a)	(a)	(a)	(a)
" £	10,779	- 200	1,729	47,152	22,852
LIVE POULTRY.					
Imports No.	480	753	693	721	484
" £	1,127	383	878	1,564	850
Exports No.	3,105	988	1,699	2,477	2,886
" £	3,523	823	1,231	2,448	2,741
Net Exports .. No.	2,625	235	1,006	1,756	2,402
" £	2,396	440	353	884	1,891
FROZEN POULTRY.					
Imports lbs.	3,096	931	3,752	10,273	4,087
" £	137	39	208	602	328
Exports pair	5,400	6,541	8,298	13,346	22,376
" £	3,904	3,549	5,141	10,760	29,963
Net Exports .. (a)	(a)	(a)	(a)	(a)	(a)
" £	3,767	3,510	4,933	10,158	29,635

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 1920-21 gave an average of 57 lbs. per hive, while the average quantity of wax was $\frac{1}{2}$ 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 1920-21.**

State.	Bee Hives.			Honey Produced.		Beeswax Produced.	
	Pro- ductive.	Unpro- ductive.	Total.	Quantity.	Value.	Quantity.	Value.
	No.	No.	No.	lbs.	£	lbs.	£
New South Wales ..	28,001	6,386	34,387	1,441,617	48,054	23,234	2,323
Victoria ..	31,306	5,769	37,075	1,721,912	47,436	24,222	2,444
Queensland ..	10,661	4,727	15,391	426,662	10,631	7,501	707
South Australia ..	20,063	2,212	22,275	1,821,811	37,954	17,501	1,604
Western Australia ..	5,215	1,486	6,701	149,226	3,318	3,819	306
Tasmania ..	3,863	2,308	6,171	85,125	3,014	1,788	156
Federal Territory ..	40	1	41	1,760	58	86	9
Commonwealth ..	99,152	22,889	122,041	5,651,143	150,465	78,181	7,549

QUANTITY OF HONEY AND BEESWAX PRODUCED, 1916-17 TO 1920-21.

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.
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
1920-21	1,441,617	1,724,942	426,662	1,821,811	149,226	85,125	1,760	5,651,143

BEESWAX.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
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
1920-21	23,234	24,222	7,501	17,501	3,819	1,788	86	78,181

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 8,316,941 lbs. of honey and 137,361 lbs. of beeswax, while the Victorian figures amounted to 11,288,004 lbs. and 161,354 lbs. respectively for honey and beeswax. These two States together accounted for 65 per cent. of the total production of honey, and 67½ 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 £361,579, or an annual average of £72,316. It is believed that this export could be considerably increased. Australian honey exhibited at the Franco-British Exhibition in London in 1903 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, 1916-17 TO 1920-21.**

Particulars.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
HONEY.					
Imports lbs.	491	382	150	1,093	201,548
" £	18	12	4	35	5,838
Exports lbs.	333,407	3,199,691	8,747,760	588,384	97,541
" £	9,526	79,225	248,685	18,815	5,328
Net Exports .. lbs.	332,916	3,199,309	8,747,610	587,291	- 104,007
" £	9,508	79,213	248,681	18,780	- 510
BEESWAX.					
Imports lbs.	19,195	54,686	36,136	26,149	28,235
" £	1,544	4,842	3,493	1,969	2,452
Exports lbs.	7,234	1,471	7,269	15,853	7,535
" £	548	134	598	1,467	810
Net Exports .. lbs.	- 11,961	- 53,215	- 28,867	- 10,296	- 20,700
" £	- 996	- 4,708	- 2,895	- 502	- 1,642

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

§ 6. Summary of Australian Farmyard and Dairy Products.

The value of the farmyard and dairy products raised in the Commonwealth in 1920 was as follows :—

**VALUE OF FARMYARD AND DAIRY PRODUCTS RAISED IN THE
COMMONWEALTH, 1920.**

Produce.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Ter.	C'wealth.
	£	£	£	£	£	£	£	£	£
Milk, consumed as such	3,948,432	3,263,217	797,443	542,653	400,012	692,468	823	6,090	9,651,108
Butter	9,305,581	7,642,610	4,200,138	1,376,503	247,608	356,554	..	928	23,129,927
Cheese	374,390	218,716	532,614	97,600	19	39,342	..	..	1,262,631
Condensed and concentrated milk	535,818	1,885,070	509,066	..	..	..	..	..	2,929,954
Bacon and ham ..	1,080,127	1,375,345	927,797	312,235	146,892	93,900	..	497	3,936,703
Pork	378,433	445,830	221,567	166,486	155,047	98,122	1,305	..	1,466,790
Lard	24,922	49,551	34,531	11,581	4,789	5,378	..	11	130,763
Livestock	52,629	..	3,583	36,200	6,065	1,940	..	..	100,417
Poultry and eggs	3,196,000	4,545,620	440,827	1,164,999	189,658	300,000	..	(a)	9,846,104
Honey and wax	50,377	49,850	11,332	39,558	3,624	3,170	..	67	158,014
Total	18,946,709	19,475,869	7,637,904	3,747,820	1,153,624	1,590,874	2,128	7,533	62,612,461

(a) Not available.

§ 7. Summary of Australian Farmyard and Dairy Products Exported, 1916-17 to 1920-21.

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

QUANTITIES OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH, 1916-17 TO 1920-21.

Products.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
Beeswax lbs.	7,234	1,450	7,252	14,438	5,338
Butter "	74,878,634	72,277,526	41,114,764	39,006,304	92,420,995
Cheese "	10,569,279	8,426,641	2,303,276	7,516,412	9,530,221
Egg albumen and yolk (a)				(a)	(a)
Eggs doz.	8,386	15,922	8,359	210,784	413,477
Feathers, undressed (a)				(a)	(a)
Honey lbs.	333,407	3,199,691	8,747,760	588,384	97,541
Lard "	1,681,918	1,465,352	6,016,383	7,931,014	3,118,105
Meats—					
Bacon and ham "	1,005,171	5,067,946	5,636,891	3,040,933	3,113,488
Frozen poultry pair	5,400	6,541	8,298	13,340	22,376
Frozen pork lbs.	32,681	262,503	839,557	371,397	163,403
Milk, concentrated and preserved "	15,777,333	25,581,708	27,934,998	35,548,082	37,281,554
Pigs, living No.	19	36	60	164	166
Poultry, living "	3,105	983	1,699	2,477	2,880

(a) Quantity not available.

VALUE OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH, 1916-17 TO 1920-21.

Products.	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
	£	£	£	£	£
Beeswax "	548	133	596	1,325	628
Butter "	5,301,273	4,904,417	3,193,086	3,301,695	11,067,104
Cheese "	419,628	350,791	118,850	377,398	514,128
Egg albumen and yolk "	8,327	854	1,823	48,675	27,035
Eggs "	573	1,450	743	17,434	53,920
Feathers, undressed "			61	793	1,133
Honey "	9,526	79,225	248,685	18,815	5,328
Lard "	56,126	56,292	205,675	374,641	153,084
Meats—					
Bacon and ham "	60,358	321,573	378,685	258,890	323,253
Frozen poultry "	3,904	3,549	5,141	10,760	26,063
Frozen pork "	1,341	11,915	40,325	19,149	9,370
Milk, concentrated and preserved "	531,976	1,025,895	1,091,889	1,605,161	2,184,761
Pigs, living "	146	209	479	1,044	1,199
Poultry, living "	8,523	819	1,231	2,448	2,731
Total "	6,397,249	6,757,122	5,237,269	6,038,228	14,373,657

§ 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 1916 to 1920:—

PRINCIPAL DAIRY PRODUCTS IMPORTED INTO THE UNITED KINGDOM, 1916 TO 1920.

Products.	1916.	1917.	1918.	1919.	1920.
Butter cwt.	2,175,415	1,806,516	1,578,658	1,560,204	1,702,203
" £	18,964,002	18,895,707	19,769,738	19,854,427	24,518,748
Cheese cwt.	2,604,124	2,946,066	2,357,103	2,118,250	2,750,260
" £	12,945,765	19,462,390	15,905,858	15,170,620	20,633,946
Milk—Concentrated and preserved cwt.	1,752,292	1,700,511	2,707,761	3,347,645	2,127,199
" £	5,120,879	6,623,666	13,472,544	17,088,310	13,083,697
Bacon and ham cwt.	8,990,791	7,747,740	12,028,505	10,094,352	5,935,981
" £	41,223,147	48,769,759	103,410,221	89,681,616	53,339,250
Pork (a) cwt.	334,284	184,177	111,345	160,263	485,181
" £	1,301,209	899,346	763,484	1,075,562	3,443,332

(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. The quantity sent forward during 1920 was less than in previous years, owing to diminished supplies in Australia resulting from unfavourable seasons, still the value of the shipments amounted to more than £3,000,000.

IMPORTS OF BUTTER INTO THE UNITED KINGDOM, 1920.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	Cwt.	£		Cwt.	£
Denmark ..	817,268	11,762,845	Russia.. ..	19,308	280,654
New Zealand ..	275,406	3,828,280	Norway ...	2,050	28,436
Australia ..	227,542	3,282,376	Foreign Countries		
Argentine Republic	138,862	2,038,594	n.e.i. ..	10,231	143,103
Netherlands ..	102,567	1,583,482	British Possessions		
United States ..	37,261	557,152	n.e.i. ..	5,367	78,821
Canada ..	32,140	477,250			
Belgium ..	34,201	457,755	Total ..	1,702,203	24,518,748

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

AVERAGE PRICE OF AUSTRALIAN BUTTER IN LONDON, 1911 TO 1920.

Year.	Average Top Price per Cwt.	Year.	Average Top Price per Cwt.
	s. d.		s. d.
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
1915	144 6	1920	(b) 299 9

(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 1920 was £20,633,946, of which over nine million pounds' worth was received from New Zealand, and eight and a half 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 £514,923 in 1920.

4. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1920 at £53,339,250, the United Kingdom received imports to the value of £32,052,521 from the United States, and £13,365,810 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 £3,443,332 in 1920. There was a small importation of £1,000 from Australia, but the bulk of the supplies were forwarded from the Argentine Republic and the United States.

6. **Other Products.**—There was practically no shipment to the United Kingdom from Australia of beeswax, poultry, game, lard, eggs, or honey, but frozen rabbits to the value of £1,531,495 were received from the Commonwealth in 1920.

§ 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 210.