

AGRICULTURE.

AUSTRALASIA may, as a whole, be considered as in the first phase of agricultural settlement, indeed several colonies have not yet emerged from the pastoral stage. Nevertheless, the value of agricultural produce, estimated at farm prices, is considerable, and amounts to about two-thirds the value of the pastoral produce. The return from agriculture in each colony for the season 1892-93 was, approximately :—

	Total value of Crops.	Average value of produce per acre under Crop.	Percentage of value to total value of Australasia.
	£	£ s. d.	
New South Wales	3,961,367	3 18 5	18·4
Victoria	6,665,955	2 19 6	31·0
Queensland	1,412,860	5 14 1	6·6
South Australia	3,327,286	1 12 8	15·4
Western Australia	278,140	3 9 11	1·3
Tasmania	1,032,620	5 15 1	4·8
New Zealand	4,837,079	3 9 8	22·5
Australasia	21,515,307	2 19 11	100·0

From this estimate it would seem that the value of crops, per acre cultivated, is much larger in Queensland and Tasmania than in the other colonies, which, in the case of Queensland, is due to the proportionately large area under sugar-cane, while in Tasmania the area devoted to fruit and hops, and the higher returns of cereals, account for the average per acre which the province shows. In point of gross value Victoria occupies a position much in advance of the other members of the group, the produce of that province having a value little short of one-third of that of all Australasia. The value of the principal crops,

and the percentage of each to the total production, are given in the following statement :—

Name of Crop.	Value.	Percentage to Total.
	£	
Wheat	6,273,455	29·2
Maize.....	1,312,747	6·1
Barley	311,839	1·4
Oats	1,472,237	6·8
Other grain crops	35,210	0·2
Pease, beans, &c.....	195,646	0·9
Hay	4,778,286	22·2
Potatoes	1,244,070	5·8
Other root-crops	1,103,362	5·1
Sugar-cane	493,537	2·3
Tobacco.....	22,114	0·1
Grapes for wine, table, and other purposes	571,479	2·7
Green forage.....	595,557	2·8
Grass seed.....	157,238	0·7
Hops	72,451	0·3
Orchards and market-gardens	2,636,484	12·3
Other crops	234,595	1·1
Total	21,515,307	100·0

The average value of agricultural produce per head of the population in each of the Australasian Colonies during the season 1892-3 is represented by the figures below, which also illustrate the fact that in the colonies of South Australia, New Zealand, Tasmania, and Victoria the development of agricultural resources is attracting the attention of the colonists to a greater extent than is the case in the other provinces of Australasia.

Colony.	Average value per head of population.
	£ s. d.
New South Wales	3 6 2
Victoria	5 14 2
Queensland	3 7 1
South Australia	9 17 9
Western Australia	4 14 10
Tasmania	6 14 10
New Zealand.....	7 8 9
Australasia	5 8 0

The value of the agricultural production of the Australasian Colonies in the years 1871, 1881, and 1891 will be found in the following table, which shows that, although the total value of the production is now just twice that of 1871, the value per inhabitant is rather smaller than it

was twenty years ago, and that all the progress the Colonies have made in agriculture falls into the period from 1871 to 1881 :—

Colony.	1871	1881.	1891.
	£	£	£
New South Wales	2,220,000	3,830,000	3,584,500
Victoria	3,300,000	5,894,000	7,009,100
Queensland	650,000	1,283,000	1,414,000
South Australia	1,789,000	3,283,000	3,045,000
Western Australia	258,000	248,000	380,900
Tasmania	724,000	981,000	1,046,300
New Zealand	1,955,000	4,650,000	5,518,000
Australasia	10,896,000	20,169,000	21,998,000
Per inhabitant	£ s. d. 5 12 8	£ s. d. 7 5 3	£ s. d. 5 14 6

Compared with the principal countries of the world, Australasia does not take a high position in regard to the gross value of the produce of its tillage, but in value per inhabitant it compares fairly well; indeed, some of the Colonies, such as South Australia and New Zealand, show an average equalling that of Denmark and France. The following figures, designed to illustrate this, are taken from various places in Mulhall's latest issue of the *Dictionary of Statistics* :—

Countries.	Value.	Per head.	Countries.	Value.	Per head.
	Million	£		Million	£
United Kingdom	141	3·3	Holland	20	4·3
France	322	8·3	Belgium	41	6·7
Germany	262	5·4	Switzerland	9	3·0
Russia	373	4·0	United States	467	7·5
Austria	225	5·6	Canada	35	7·0
Italy	153	5·0	Cape Colony	2	1·3
Spain	126	7·1	Argentina	18	5·8
Portugal	23	4·9	Uruguay	2	3·3
Sweden	31	6·5			
Norway	9	4·5			
Denmark	20	9·5	Australasia (1892) ...	22	5·4

The following figures, giving the areas under the principal grain and other crops, and the total extent of land under cultivation in each of the Colonies at different epochs since the year 1861, will serve to illustrate the progress agriculture has made. In this table, as well as throughout the whole of the chapter, the years 1861, '71, '81, '91, and '92 embrace the periods from 1st April in those years to the 31st March in the following year.

AREA UNDER CROP

AUSTRALASIA

7,185,849

Vic. 2,241,634 ac.

S.A. 2,037,653 "

N.Z. 1,389,105 "

N.S.W. 1,010,727 "

Qld. 247,731 "

Tas. 179,396 "

W.A. 79,603 "

1892

AUSTRALASIA

5,551,513 ac.

S.A. 2,156,407 ac.

Vic. 1,435,446 "

N.Z. 1,070,906 "

N.S.W. 569,243 "

Tas. 148,494 "

Qld. 117,664 "

W.A. 53,353 "

1881

AUSTRALASIA

2,686,518 ac.

Vic. 851,354 ac.

S.A. 837,730 "

N.S.W. 393,413 "

N.Z. 337,282 "

Tas. 155,046 "

Qld. 59,969 "

W.A. 51,724 "

1871

AUSTRALASIA

1,368,076 ac.

Vic. 410,406 ac.

S.A. 400,717 "

N.S.W. 295,917 "

Tas. 163,385 "

N.Z. 68,506 "

W.A. 24,705 "

Qld. 4,440 "

1861

Colony.	Year.	Area under—								Total Area under Crops.	Land under Permanent Artificial Grasses.
		For Grain.				Potatoes.	Vines.	Hay.	Other Crops.		
		Wheat.	Oats.	Maize.	Barley.						
		acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.
New South Wales ...	1861	123,468	7,224	57,959	2,924	10,040	1,692	45,175	47,435	295,917	1,658
	1871	154,030	13,795	119,956	3,461	14,770	6,618	51,805	28,978	393,413	24,388
	1881	221,888	16,348	117,478	6,427	15,943	6,624	146,610	37,925	569,243	75,825
	1891	356,666	12,958	174,577	4,459	22,560	8,281	163,863	103,019	846,383	333,238
	1892	452,921	20,890	167,549	4,618	18,502	8,264	214,468	123,515	1,010,727	361,280
Victoria.....	1861	196,922	91,061	1,714	3,419	27,174	1,464	74,681	13,971	410,406	12,654
	1871	334,609	175,944	1,709	16,772	39,064	5,523	103,206	174,527	851,354	6,282
	1881	926,729	146,995	1,783	48,652	39,129	4,923	212,150	55,085	1,435,446	241,947
	1891	1,332,683	190,157	8,230	45,021	57,334	24,483	369,498	89,248	2,116,654	174,982
	1892	1,342,504	177,645	6,667	37,533	40,594	26,443	512,648	97,600	2,241,634	233,114
Queensland ..	1861	392	69	1,914	13	512	40	280	1,220	4,440	.....
	1871	3,024	131	20,329	971	3,121	568	3,828	27,997	59,969	838
	1881	10,958	88	46,480	256	5,086	1,212	16,926	36,658	117,664	8,565
	1891	19,306	715	101,598	739	9,173	1,988	30,655	78,455	242,629	20,921
	1892	31,742	591	92,172	385	11,457	1,908	25,665	83,811	247,731	22,486
South Australia..	1861	310,636	1,638	18	10,637	2,612	3,918	62,874	8,384	400,717	838
	1871	692,508	3,586	.....	17,225	3,156	5,455	97,812	17,988	837,730	5,213
	1881	1,768,781	3,023	.....	11,953	6,136	4,202	333,467	28,845	2,156,407	16,438
	1891	1,552,423	12,637	.....	11,461	6,892	12,314	304,171	27,791	1,927,689	17,519
	1892	1,520,580	15,745	.....	13,285	6,014	15,418	434,116	32,495	2,037,653	20,210

Colony.	Year.	Area under—								Total Area under Crops.	Land under Permanent Artificial Grasses.
		For Grain.				Potatoes.	Vines.	Hay.	Other Crops.		
		Wheat.	Oats.	Maize.	Barley.						
Western Australia	1861	acres. 13,584	acres. 507	acres. 73	acres. 2,412	acres. 277	acres. 457	acres. 6,676	acres. 719	acres. 24,705	acres.
	1871	25,697	1,474	113	5,083	494	692	.....	18,171	51,724	.....
	1881	21,951	827	36	3,679	278	527	24,445	1,610	53,353	.....
	1891	26,866	1,301	23	3,738	532	1,004	28,534	2,211	64,209	.....
	1892	35,061	1,694	33	3,666	528	1,218	35,124	2,279	79,603	.....
Tasmania	1861	58,823	29,022	.....	7,279	9,349	.....	31,803	27,109	163,385	.....
	1871	63,332	29,631	.....	4,275	8,154	....	31,578	18,076	155,046	90,247
	1881	51,757	27,535	.....	4,597	9,670	.....	34,790	20,145	148,494	136,321
	1891	47,584	28,360	.....	2,650	16,393	.....	45,445	27,689	168,121	208,596
	1892	58,897	22,976	.....	3,929	16,535	.....	46,070	30,989	179,396	217,905
New Zealand	1861	29,531	15,872	770	3,457	7,292	.....	.....	11,584	68,506	157,994
	1871	108,720	139,185	.....	13,305	11,933	.....	30,717	33,422	337,282	792,529
	1881	365,715	243,387	3,177	29,808	22,540	.....	68,423	337,856	1,070,906	3,369,646
	1891	402,273	323,508	5,447	24,268	27,266	.....	46,652	595,363	1,424,777	7,357,229
	1892	381,245	326,531	4,491	24,906	18,338	.....	61,811	571,783	1,389,105	8,200,234
Australasia ..	1861	733,356	145,393	62,448	30,141	57,256	7,571	221,489	110,422	1,368,076	173,144
	1871	1,381,920	363,746	142,107	61,092	80,692	18,856	318,946	319,159	2,686,518	929,497
	1881	3,367,779	438,203	168,954	105,372	98,782	17,488	836,811	518,124	5,551,513	4,348,742
	1891	3,737,801	569,636	289,875	92,336	140,150	48,070	988,818	923,776	6,790,462	8,112,485
	1892	3,822,950	566,072	270,912	88,322	111,968	53,251	1,329,902	942,472	7,185,849	9,055,229

The following table indicates the increase in area and the proportional yearly increase of cultivation in each colony during the period of 31 years under review :—

Colony.	Increase in acreage from 1861 to 1892.	Rates of increase in acreage per annum.
	acres.	per cent.
New South Wales	714,810	4·0
Victoria	1,831,228	5·6
Queensland	243,291	13·9
South Australia	1,636,936	5·4
Western Australia	54,898	3·8
Tasmania	16,011	0·3
New Zealand	1,320,599	10·2
Australasia	5,817,773	5·6

Thus, although the provinces of Victoria, South Australia, New Zealand, and New South Wales have during this period provided the largest increase in the area of land cultivated, Queensland shows a much greater proportional increase, whilst agriculture in Tasmania has remained almost stationary. Considering the Colonies as a whole, it will be seen that the area under crop in Australasia is now than more five times as large as it was in 1861. If, however, the land artificially grassed be included, as is done sometimes, though incorrectly, the total is 16,241,078 acres, or more than ten and a half times the area under cultivation in 1861. A comparison with the increase of population may perhaps best serve to give an idea of the progress of agriculture. The following table gives the acreage under crop per inhabitant :—

Colony.	1861.	1871.	1881.	1891.	1892.
	acres.	acres.	acres.	acres.	acres.
New South Wales.....	0·8	0·8	0·7	0·7	0·8
Victoria	0·8	1·1	1·7	1·8	1·9
Queensland.....	0·1	0·5	0·5	0·6	0·6
South Australia.....	3·2	4·5	7·5	5·9	6·1
Western Australia	1·6	2·0	1·8	1·2	1·4
Tasmania	1·8	1·5	1·2	1·1	1·2
New Zealand	0·7	1·3	2·1	2·2	2·1
Australasia.....	1·1	1·4	2·0	1·7	1·8

The increase of agriculture, for the whole of Australasia, as compared with that of population, will be clearly seen in the following table, which shows their relative growth for each period :—

	1861-71.	1871-81.	1881-91.	1891-92.	Whole period 1861-1892.
	per cent.	per cent.	per cent.	per cent.	per cent.
Increase of acreage under crop	96·4	106·6	22·3	5·8	425·3
Increase of population	55·6	43·2	38·1	2·2	214·8

During the period covered by the table the population of Australasia was more than trebled, but the breadth of land devoted to agriculture increased more than fivefold, so that the rate of increase of agriculture was almost twice that of the population. This improvement took place entirely during the period from 1861 to 1881, and chiefly during the latter portion of that time; while in the years from 1881 to 1892 the rate of increase in the acreage under crops fell far short of the increase of the population, although from 1891 to 1892 the opposite occurred. This is what naturally might be expected, as the gold fever had altogether subsided about the end of the first period, 1861-71, and a large portion of the population was seeking employment of a more settled nature than was afforded by the gold-fields. The comparative decrease noticeable in the latter period, 1881-91, is owing to various causes, such as the general tendency, elsewhere alluded to, of the population to congregate in the several metropolitan centres; the difficulty of taking up good land within easy access to markets; and also to the fact that there have been large accessions to the numbers of those engaged in other callings, without a corresponding increase in the agricultural classes. Under any circumstances the area of land devoted to agriculture cannot be increased illimitably, and although enormous tracts of land adapted for tillage still remain untouched by the plough, it is not likely their cultivation will be attempted until a more certain market is assured for the produce.

As will be seen on reference to a subsequent chapter dealing with "Employment and Production," the total number of persons engaged in agricultural pursuits in the Australasian colonies at the time of the Census of 1891 was 310,642, of whom 286,272 were males, and 24,370 females.

In the following table will be found the proportion of land under crop in each colony to the total area, and the same with regard to Australasia as a whole. In instituting comparisons between the several colonies, however, it must be borne in mind that other circumstances than the mere area under cultivation require to be taken into consideration. It would not be fair, for instance, to compare Tasmania, with 5·6 persons per square mile, to Western Australia, which has only 0·05 inhabitant to the square mile. The table has a value chiefly

because it shows how each province has progressed in regard to cultivation during the periods named :—

Colony.	1861.	1871.	1881.	1891.	1892.
	per cent.	per cent.	per cent.	per cent.	per cent.
New South Wales	0·15	0·20	0·29	0·44	0·51
Victoria	0·73	1·51	2·55	3·76	3·99
Queensland	0·001	0·01	0·03	0·06	0·06
South Australia.....	0·07	0·15	0·37	0·33	0·35
Western Australia	0·004	0·008	0·009	0·01	0·01
Tasmania	0·97	0·92	0·88	0·99	1·07
New Zealand.....	0·10	0·50	1·60	2·13	2·08
Australasia.....	0·07	0·13	0·27	0·34	0·36

The subjoined table shows the proportion of cultivated area devoted to the principal crops in each province, as well as in the whole taken together. It will be seen that with two exceptions wheat and hay form the greater proportion of their tillage. This is especially the case in regard to South Australia, where little else is grown; and in Victoria the proportion of wheat amounts to 60 per cent. of the total area cultivated, while there is almost 23 per cent. under hay crops.

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The relative position of each of the principal agricultural products, in proportion to the total area under crop in Australasia since the year 1861, may be ascertained from the following table. The figures should, however, be used with the table on page 185, which gives the actual areas operated upon, since a decline in the proportion of land under any particular form of cultivation does not necessarily mean a falling off in the area devoted to it; on the contrary, in few instances has there been any actual retrogression. It will be satisfactory to observe that the proportion of cultivation of the more valuable crops is gradually increasing. Thus, in 1892, the percentage devoted to vines, sugar-cane, and "other crops," under which are included gardens and orchards, was 13·8, as against 12·9 in 1891, 9·6 in 1881, and 8·6 in 1861.

Product.	1861.	1871.	1881.	1891.	1892.
	per cent.	per cent.	per cent.	per cent.	per cent.
Wheat	53·6	51·4	60·7	55·0	53·2
Oats	10·6	13·5	7·9	8·4	7·9
Maize	4·6	5·3	3·0	4·3	3·8
Barley	2·2	2·3	1·9	1·4	1·2
Potatoes	4·2	3·0	1·8	2·0	1·6
Hay	16·2	11·9	15·1	16·0	18·5
Vines	0·5	0·7	0·3	0·7	0·7
Sugar-cane .....	.....	0·5	0·7	1·1	1·1
Other crops	8·1	11·4	8·6	11·1	12·0
Total	100·0	100·0	100·0	100·0	100·0

WHEAT.

Only three of the seven Colonies of Australasia—Victoria, South Australia, and New Zealand—produce sufficient wheat for their own requirements; but after the deficiencies of the rest of Australasia are supplied by them, there is, in most seasons, a large balance for export, which finds a ready market in Great Britain, where Australian wheat is well and favourably known.

The amount of wheat and flour exported, expressed in terms of wheat, the produce of each of these colonies, to countries outside Australasia, during 1892, was 7,849,019 bushels, valued at £1,284,721, of which 6,068,859 bushels, or over 77 per cent., were despatched to Great Britain.

As far as the figures for 1893 are available, they show that New South Wales exported wheat of the value of £216, and flour, £13,358—total, £13,574; Victoria, wheat, £717,087, flour, £330,470—total, £1,047,557; South Australia, wheat, £732,218, flour, £331,542—total, £1,063,760.

The subjoined table shows the progress of wheat-growing for 32 years :—

Colony.	1861.	1871.	1881.	1891.	1892.
	acres.	acres.	acres.	acres.	acres.
New South Wales	123,468	154,030	221,888	356,666	452,921
Victoria	196,922	334,609	926,729	1,332,683	1,342,504
Queensland	392	3,024	10,958	19,306	31,742
South Australia	310,636	692,508	1,768,781	1,552,423	1,520,580
Western Australia	13,584	25,697	21,951	26,866	35,061
Tasmania	58,923	63,332	51,757	47,584	58,897
New Zealand	29,531	108,720	365,715	402,273	381,245
Australasia	733,356	1,381,920	3,367,779	3,737,801	3,822,950

The production during the same period was :—

Colony.	1861.	1871.	1881.	1891.	1892.
	bushels.	bushels.	bushels.	bushels.	bushels.
New South Wales	1,606,034	2,229,642	3,405,966	3,963,668	6,817,457
Victoria	3,607,727	4,500,795	8,714,377	13,629,370	14,814,645
Queensland	5,880	36,288	39,612	392,309	462,583
South Australia	3,410,756	3,967,079	8,087,032	6,436,488	9,240,108
Western Australia	160,155	345,368	153,657	288,810	429,497
Tasmania	1,380,913	847,962	977,365	930,841	1,018,550
New Zealand	772,531	2,448,203	8,297,890	10,257,738	8,378,217
Australasia	10,943,996	14,375,337	29,675,899	35,899,224	41,161,057

The production of wheat per acre during 1892-3 varied from 6·1 bushels in South Australia to 22·0 bushels in New Zealand, the average for the whole of Australasia being 10·8 bushels. In the following statement is given the average yield for each province during the 10 years which closed with 1892 :—

Colony.	Average for the ten years, 1883-92.
	bushels.
New South Wales	12·2
Victoria	10·4
Queensland	13·4
South Australia	7·1
Western Australia	12·2
Tasmania	18·0
New Zealand	24·3
Australasia	10·3

A yield of 10 bushels per acre is certainly small compared with the average obtained in European countries, but a bare statement of averages may mislead. Thus, in South Australia it is found that, owing to favourable conditions of culture, a yield of 7 bushels is financially as satisfactory a crop as one of 15 bushels in New South Wales, or 20 bushels in New Zealand. These averages, however, are susceptible of being much increased if cultivation of a more scientific character were to be adopted in the Colonies. As a rule, the seed is simply put into the ground, and little is done to assist the natural growth of the crops.

The proportion of wheat produced by each province, compared with the total Australasian production in 1881, 1891, and 1892, is exemplified in the following figures :—

Colony.	1881.	1891.	1892.
	per cent.	per cent.	per cent.
New South Wales	11·5	11·0	16·6
Victoria	29·4	38·0	36·0
Queensland	0·1	1·1	1·1
South Australia	27·2	17·9	22·4
Western Australia.....	0·5	0·8	1·0
Tasmania	3·3	2·6	2·5
New Zealand	28·0	28·6	20·4
Australasia.....	100·0	100·0	100·0

Victoria takes the lead among the seven colonies with regard to the production of wheat, having to its credit 36·0 per cent. of the total yield ; South Australia comes next with 22·4 per cent. of the total production ; and New Zealand, though in 1881 it provided 28·0 per cent., and in 1891, 28·6 per cent., of the wheat grown in Australasia, shows a decline in the percentage to 20·4 ; while New South Wales, which was about stationary from 1881 to 1891, increased to 16·6 per cent. in 1892. Tasmania, in 1881, produced wheat to the extent of 3·3 of the total Australasian production, and was able to export a trifling quantity, but in 1892 that colony only produced 2·5 per cent., and had to import wheat and flour to the amount of 175,106 bushels.

Compared with most European countries, and with North America, the yield of wheat in Australasia is inconsiderable, both in regard to the total quantity obtained and the produce per acre. Thus, in the United Kingdom the average yield for the three years 1890-92 was 29·5. In the United States the average was 13·3 bushels ; the average for Manitoba during the same time was 20·6 bushels, and for Ontario 19·4 bushels, as against the Australasian yield of 9·9 bushels. With regard to other European countries, the averages for period 1890-92

are—Germany, 21·3 bushels; France, 17·3 bushels; Hungary, 18·6 bushels; Austria, 15·7 bushels; Roumania, 13·7 bushels; Italy, 11·3 bushels; and Russia (excluding Poland), 7·4 bushels.

The following table shows the net imports or exports of wheat and flour of each of the colonies during 1892, flour being stated in terms of wheat, on the assumption of 1 ton of flour being equal to 48 bushels:—

Colony.	Net Imports.	Net Exports.
	bushels.	bushels.
New South Wales	3,112,468	5,707,060
Victoria	2,005,323	3,928,012
Queensland	324,626	175,106
South Australia	175,106	2,678,975
Western Australia .....	.....	6,786,524
Tasmania .....	.....	.....
New Zealand .....	.....	.....
Net exports .....	.....	.....

According to a statement made under the authority of the Statistician of the Department of Agriculture, Washington, U.S.A., Australasia ranks fifth on the list of the wheat-exporting countries. Nevertheless, the present contribution to the markets of Europe does not amount to more than one-twentieth of the demand, so that these Colonies cannot be said to form, as yet, a factor of any consequence in the wheat trade of the world.

The figures contained in the statement herewith represent for the most part an average for several years:—

Importing Countries.	Net Imports.	Exporting Countries.	Net Exports.
	bushels.		bushels.
Belgium.....	19,170,059	Austria-Hungary	5,846,800
France	37,426,407	Bulgaria	5,690,996
Germany	18,767,319	Roumania	19,200,979
Greece	8,975,790	Russia	83,170,011
Italy	19,931,234	Servia	2,236,912
Norway and Sweden	1,909,362	India	30,946,842
Netherlands	8,591,639	United States.....	83,343,864
Portugal	3,663,852	Argentine Republic	3,747,733
Spain	6,111,449	Canada	2,416,821
Switzerland	10,867,766	Chili	3,924,346
United Kingdom.....	105,527,648	Australasia.....	9,197,913
Total	240,942,525	Total	249,723,217

The following table shows the average annual yield and consumption of each colony for the ten years ending with 1892, with the surplus or deficiency in each case :—

Colony.	Yield, less required for Seed.	Consumption.	Surplus available for Export.	Deficiency Imported.
	bushels.	bushels.	bushels.	bushels.
New South Wales	3,918,000	6,849,000	.....	2,931,000
Victoria	10,440,000	6,387,000	4,053,000	.....
Queensland	148,000	2,107,000	.....	1,959,000
South Australia	10,431,000	2,735,000	7,696,000	.....
Western Australia	322,000	491,000	.....	169,000
Tasmania	681,000	883,000	.....	202,000
New Zealand	7,354,000	4,644,000	2,710,000	.....
Australasia	33,294,000	24,096,000	9,198,000	.....

The acreage under wheat in 1892 in the various Colonies is compared below with that of 1881 :—

Year.	New South Wales.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tas- mania.	New Zealand.	Austra- lasia.
	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.
1892	452,921	1,342,504	31,742	1,520,580	35,061	58,897	381,245	3,822,950
1881	221,888	926,729	10,958	1,768,781	21,951	51,757	365,715	3,367,779
Increase ..	231,033	415,775	20,784	*248,201	13,110	7,140	15,530	455,171

* Decrease.

From the above table it will be found that the extension of this cultivation has not been uniform, for, while South Australia has decreased her acreage, there has been a tendency in the other provinces to increase the area devoted to this cereal. Taking Australasia as a whole, however, the area under wheat in 1892 was only 455,171 acres in excess of that of 1881, notwithstanding that in Victoria and New South Wales 646,808 acres were added to the breadth of land previously under this grain crop. As already pointed out, the greater portion of the area devoted to

agriculture is laid under wheat, and in an ordinary season the produce of 900,000 acres is available for export to Europe. Whether the extension of wheat-growing for export, after supplying local demands, will be profitable is for the present a matter determined by the prices obtained in the London markets. But as far as present indications can be followed, it is hardly possible that any large expansion of this industry can be expected, unless perhaps in New South Wales, the only colony of importance which, though adapted for wheat-growing, produces less than the requirements of its population. During the season 1893-94 the area under wheat had increased to 593,810 acres in New South Wales and to 1,456,647 acres in Victoria, while the area in New Zealand had decreased to 242,737 acres, or by 36·3 per cent., as compared with the preceding year.

In the subjoined table is given the value of the yield per acre for three of the colonies estimated on the market rates ruling in February and March of each year. It will be seen that a considerable decline has taken place since 1883, due for the most part to the fall in prices rather than to any decrease of production.

In regard to the value per acre the fall has been most marked in New South Wales :—

Year. ending March.	Average.					
	Yield in Bushels per acre.			Value of Yield per acre.		
	New South Wales.	Victoria.	South Australia.	New South Wales.	Victoria.	South Australia.
	bushels.	bushels.	bushels.	£ s. d.	£ s. d.	£ s. d.
1883	16·3	9·0	4·2	4 4 3	2 2 9	1 1 6
1884	15·0	14·1	7·8	3 3 9	2 11 8	1 11 3
1885	15·5	9·5	7·5	2 18 2	1 11 8	1 5 4
1886	10·4	9·0	*	2 5 1	1 14 6	*
1887	17·4	11·5	*	3 8 2	2 3 2	*
1888	12·1	10·8	*	2 2 10	1 16 0	*
1889	4·8	7·1	*	1 2 10	1 12 6	*
1890	15·6	9·7	7·8	2 14 7	1 15 7	1 8 0
1891	10·9	11·1	5·6	2 0 10	1 19 9	0 19 7
1892	11·1	10·3	4·3	2 2 6	2 2 3	0 17 11
1893	15·1	11·0	6·1	2 5 2	1 14 0	0 19 3

* No returns.

The United Kingdom is the largest importer of wheat, and the British demand largely influences the price throughout the world. The average rate per bushel in London for the season extending from September 1, 1892, to August 31, 1893, was 3s. 4d. In the latter months of 1893 the price of wheat ranged from 3s. 2d. to 3s. 6d. per bushel. The prices at the beginning of 1894 showed a further downward tendency, the price at the beginning of March being 3s. 0½d.; so the Australian wheat crop of 1893-4, plentiful as it is, may not represent a total value much in advance of that realised in the season of 1892-3, which is shown below :—

Colony.	Value.
	£
New South Wales	1,022,620
Victoria	2,283,924
Queensland	87,706
South Australia	1,463,017
Western Australia	68,004
Tasmania	161,270
New Zealand	1,186,914
Australasia	6,273,455

So far as the returns for the season 1893-4 are to hand, they were as follows :—The wheat crop in New South Wales, 6,502,715 bushels; in Victoria, 15,045,520 bushels; in Tasmania, 833,771 bushels; and in New Zealand, 4,891,695 bushels.

The average London prices during the last decennial period were the following, the years extending from September 1 to August 31 :—

Year.	Price per bushel.	Year.	Price per bushel.
	s. d.		s. d.
1884-5	4 1½	1889-90	3 10½
1885-6	3 9½	1890- 1	4 5½
1886-7	4 1½	1891- 2	4 2
1887-8	3 10½	1892- 3	3 4
1888-9	3 10		

The importance of Australasia as a producer of wheat is but small when compared with the great wheat-producing centres of the world. Out of 2,313,161,000 bushels produced in 1893, only 41,161,000 bushels, or 1·8 per cent., were of Australasian growth. The subjoined statement, based on the returns of the United States Department of Agriculture,

except as regards Australasia, gives the approximate crop of the world for the year 1893 :—

Countries.	Bushels.	Countries.	Bushels.
Europe—		Africa—	
Austria-Hungary	203,450,000	Algeria	18,415,000
Belgium	16,961,000	Cape Colony.....	3,890,000
Bulgaria	26,111,000	Egypt	9,692,000
Denmark.....	4,846,000	Tunis.....	2,423,000
France.....	269,299,000		
Germany.....	116,060,000	Total	34,420,000
Greece.....	6,300,000		
Italy	116,008,000	America—	
Netherlands	5,331,090	Argentine Republic..	55,002,000
Portugal	4,846,000	Canada	40,074,000
Roumania	57,753,000	Chili	18,609,000
Russia	390,637,000	Mexico	9,692,000
Servia	5,815,000	United States	383,931,000
Spain	83,351,000	Uruguay	5,519,000
Sweden and Norway..	4,270,000		
Switzerland	2,423,000	Total	512,827,000
Turkey in Europe.....	23,261,000		
United Kingdom	50,850,000	Australasia—	
Total	1,387,572,000	New South Wales ...	6,817,000
		Victoria	14,815,000
Asia—		Queensland	463,000
Cyprus	1,938,000	South Australia	9,240,000
India	258,676,000	Western Australia ...	429,000
Japan	14,538,000	Tasmania	1,019,000
Persia	18,415,000	New Zealand	8,378,000
Turkey in Asia	43,614,000		
Total	337,181,000	Total	41,161,000
		Grand Total.....	2,313,161,000

The following figures show that the average consumption for Australasia is higher than that of any other part of the world for which records are available, with the exception of France :—

	Consumption per Head. (Bushels.)
United Kingdom.....	5·9
France	8·1
Germany	3·0
Russia	2·1
Austria	2·9
Italy	5·4
Spain and Portugal.....	6·4
Belgium and Holland.....	5·0
Scandinavia	1·4
Turkey	6·1
United States	5·0
Canada	6·5
Australasia	6·5

That of the Australasian Colonies will be found below :—

New South Wales	6·5
Victoria.....	6·0
Queensland	6·1
South Australia	6·5
Western Australia	9·3
Tasmania	6·7
New Zealand	7·5

The figures for Western Australia may appear abnormal, but are the result of a careful computation from the official returns for the last seven years.

OATS.

The cultivation of oats, coming next in importance to wheat as a grain crop, is increasing, as the following figures show :—

Colony.	1861.	1871.	1881.	1891.	1892.
	acres.	acres.	acres.	acres.	acres.
New South Wales.....	7,224	13,795	16,348	12,958	20,890
Victoria	91,061	175,944	146,995	190,157	177,645
Queensland	69	131	88	715	591
South Australia	1,638	3,586	3,023	12,637	15,745
Western Australia	507	1,474	827	1,301	1,694
Tasmania	29,022	29,631	27,535	28,360	22,976
New Zealand.....	15,872	139,185	243,387	323,508	326,531
Australasia.....	145,393	363,746	438,203	569,636	566,072

The production for the same periods was as follows :—

Colony.	1861.	1871.	1881.	1891.	1892.
	bushels.	bushels.	bushels.	bushels.	bushels.
New South Wales ...	152,426	280,887	356,566	276,259	466,603
Victoria	2,136,430	3,299,889	3,612,111	4,412,730	4,574,816
Queensland .....	.....	.....	1,121	16,669	12,965
South Australia	33,160	38,894	32,219	80,876	166,489
Western Australia...	8,162	28,330	8,270	18,539	29,645
Tasmania	751,475	593,477	783,129	873,173	631,746
New Zealand	512,665	3,726,810	6,924,848	11,009,020	9,893,989
Australasia	3,594,318	7,968,287	11,718,264	16,687,266	15,776,253

The average yield per acre in each province for the ten years which closed with 1892 was:—

Colony.	Bushels
New South Wales	21·6
Victoria	22·5
Queensland	17·8
South Australia	11·0
Western Australia	17·7
Tasmania	27·1
New Zealand	31·3
Australasia	27·5

The average yield of oats for the group was therefore 27·5 bushels per acre, New Zealand, with its high average yield, furnishing during 1892 nearly 63 per cent. of the total production. The cultivation of this cereal is comparatively neglected in New South Wales; in Victoria, however, it is next in importance to wheat, whilst in Queensland, South Australia, and Western Australia, the yield being small and the climate ill-adapted, oats count for very little in the total grain production.

The average yield of oats in the United Kingdom for the years 1890–92 was 29·7 bushels; the average for the United States was 24·3 bushels; for Ontario, 34·5 bushels; for Manitoba, 41·1 bushels; France, 26·7 bushels; Hungary, 23·6 bushels; Austria, 22·7 bushels; Germany, 27·7 bushels; Russia in Europe, 14·5 bushels; while the Australasian average was 27·5 bushels.

The total value of the oats crop and the return per acre in each of the Australasian Colonies for the season 1892–3 will be found below:—

Colony.	Value.	Value per acre.
	£	£ s. d.
New South Wales	46,660	2 4 7
Victoria	400,296	2 5 1
Queensland	2,047	3 9 3
South Australia	24,973	1 11 9
Western Australia	4,447	2 12 6
Tasmania	86,865	3 15 7
New Zealand	906,949	2 15 7
Australasia	1,472,237	2 12 0

The net import or export of oats for each of the Colonies is given below. New Zealand was the only province which exported to any considerable extent; 2,136,536 bushels, or more than one half of her export, were forwarded to the United Kingdom:—

Colony.	Oats.	
	Net Imports.	Net Exports.
	bushels.	bushels.
New South Wales	1,324,276	.....
Victoria.....	26,318	.....
Queensland	114,071	.....
South Australia	65,508	.....
Western Australia	227,244	.....
Tasmania .....	.....	247,453
New Zealand .....	.....	3,830,334
Net Exports.....	.....	2,320,370

According to a carefully-compiled estimate of the average production of oats throughout the world, recently issued by the United States Agricultural Department, the commercial supply of this grain is represented by the following condensed results:—

	Bushels.
Europe (official estimates)	1,592,114,138
„ (unofficial estimates)	34,050,000
United States	594,961,401
Australasia.....	15,776,253
Canada	117,772,147
Total	2,354,673,939

MAIZE.

Maize is the principal crop grown in Queensland, and is one of the most important products of New South Wales; in the other colonies the climate is little adapted to its growth, and the cultivation of this cereal extends to little more than 11,000 acres.

The following figures show that fair progress has been made in the cultivation of maize since 1861. The first table shows the area under

maize for grain in four decennial periods, and in 1892 ; the second gives the quantities produced :—

Colony.	1861.	1871.	1881.	1891.	1892.
	acres.	acres.	acres.	acres.	acres.
New South Wales	57,959	119,956	117,478	174,577	167,549
Victoria	1,714	1,709	1,783	8,230	6,667
Queensland	1,914	20,329	46,480	101,598	92,172
New Zealand	770	.....	3,177	5,447	4,491
Other Colonies ...	91	113	36	23	33
Australasia ...	62,448	142,107	168,954	289,875	270,912

Colony.	1861.	1871.	1881.	1891.	1892.
	bushels.	bushels.	bushels.	bushels.	bushels.
New South Wales	1,727,434	4,015,973	4,330,956	5,721,706	5,037,256
Victoria	20,788	30,833	81,007	461,447	373,183
Queensland	42,100	508,000	1,313,655	3,077,915	2,333,553
New Zealand	31,570	.....	127,257	238,746	171,661
Other Colonies ...	367	2,000	648	483	776
Australasia ...	1,822,259	4,556,806	5,853,523	9,500,297	7,916,429

The following is the average rate of production of each colony, and of the whole group, for the ten years ending with 1892 :—

Colony.	Bushels.
New South Wales	30·6
Victoria.....	49·7
Queensland	24·0
Western Australia	18·5
New Zealand	*41·6
Australasia	29·0

* Last six years only.

The figures for Victoria and New Zealand are worth little, as the land under maize is small in area, and very favourably situated, while Western Australia had but 33 acres under cultivation, producing 776 bushels. The average yield of maize in the United States for the years 1890-92 was 23·7 bushels ; while for Austria the average was 20·3 bushels ; for Hungary, 22·9 bushels ; for France, 18·2 bushels ; for

Italy, 14·3 bushels ; and for Roumania, 13·8 bushels. The Australasian average for the same period was 30·3 bushels. Little good, however, is to be gained by comparing these figures with the Australasian averages, as the acreage devoted to maize in Australasia is too small to make any such comparison useful.

The total value of the maize crop of 1892-3, and the average return per acre of the maize-growing colonies of Australasia, will be found below :—

Colony.	Total value of Crop.	Average value per acre.
	£	£ s. d.
New South Wales	858,255	5 2 5
Victoria	69,972	10 9 11
Queensland	350,033	3 15 11
New Zealand	34,332	7 12 11
Other Colonies.....	155	4 13 11
Australasia	1,312,747	4 16 11

The high average value of production of maize per acre in Victoria and New Zealand is due to the fact that the area operated upon is small, and the local average prices are relatively higher than in New South Wales and Queensland, where large areas are devoted to the cultivation of this cereal.

The net import or export of maize for each Colony during 1892 was :—

Colony.	Net Imports.	Net Exports.
	bushels.	bushels.
New South Wales	305,623	.....
Victoria .....	.....	98,177
Queensland .....	.....	108,269
South Australia	5,840	.....
Western Australia.....	7,700	.....
Tasmania	1,415	.....
New Zealand .....	.....	96,616
Net imports.....	17,510	.....

New South Wales is the only colony importing maize to any extent from abroad, chiefly from United States and New Caledonia. Australasia practically consumes the whole of its production of maize, and excesses of imports or exports, as the case may be, during any individual year, are of little importance. In this part of the world, however, corn does not enter into consumption as an article of food, as

it does in other countries, and particularly in America, which produces and consumes nearly 80 per cent. of the whole maize crop of the world, as the following figures—compiled on the authority of the Department of Agriculture in the United States—will show :—

	bushels.
Europe (official)	311,820,759
„ (unofficial)	54,196,250
Asia (official)	823,868
Africa „	2,904,979
„ (unofficial)	13,620,000
United States (official)	1,680,696,600
America (unofficial)	229,109,606
Australasia	7,916,429
Various Islands (unofficial)	30,147
Total	2,301,118,638

BARLEY.

Of the cereal productions of Australasia, barley is grown on the smallest acreage. The area and production for each period under review were as follow :—

Colony.	1861.	1871.	1881.	1891.	1892.
	acres.	acres.	acres.	acres.	acres.
New South Wales.....	2,024	3,461	6,427	4,459	4,618
Victoria	3,419	16,772	48,652	45,021	37,533
Queensland.....	13	971	256	739	385
South Australia.....	10,637	17,225	11,953	11,461	13,285
Western Australia	2,412	5,083	3,679	3,738	3,666
Tasmania	7,279	4,275	4,597	2,644	3,929
New Zealand	3,457	13,305	29,808	24,268	24,906
Australasia.....	30,141	61,092	105,372	92,330	88,322

Colony.	1861.	1871.	1881.	1891.	1892.
	bushels.	bushels.	bushels.	bushels.	bushels.
New South Wales.....	41,054	55,284	135,218	93,446	91,701
Victoria	68,118	335,506	927,566	830,741	774,207
Queensland.....	158	11,836	3,207	21,302	6,969
South Australia.....	168,137	164,161	137,165	107,183	175,468
Western Australia	2,412	5,083	36,790	48,594	56,823
Tasmania	169,381	76,812	102,475	71,400	80,205
New Zealand	96,658	287,646	664,093	688,683	654,231
Australasia.....	545,918	936,328	2,006,514	1,861,349	1,839,604

204 IMPORT AND EXPORT OF BARLEY AND MALT.

The average production of barley per acre for each colony is given in the following table for the ten-years period 1883-92.

Colony.	Bushels.
New South Wales	19·2
Victoria	18·8
Queensland	23·7
South Australia	12·9
Western Australia	15·2
Tasmania	23·8
New Zealand	28·3
Australasia	20·7

The trade in barley and malt for each colony in 1892 was:—

Colony.	Barley.		Malt.	
	Net Imports.	Net Exports.	Net Imports.	Net Exports.
	bushels.	bushels.	bushels.	bushels.
New South Wales	48,641	.....	359,466	.....
Victoria .. .....	.....	61,024	.....	136,817
Queensland	2,627	.....	55,477	.....
South Australia	67,608	.....	42,169	.....
Western Australia	14,461	.....	6,853	.....
Tasmania .....	.....	6,568	1,153	.....
New Zealand .....	.....	43,560	.....	88,339
	22,185	.....	239,912	.....

Barley is not cultivated to the extent it deserves. In fruitful seasons, Australasia produces sufficient barley, exclusive of that required for malt, for home requirements, and a small surplus for export; but if the combined trade in barley and malt be considered, all the colonies, with the exception of Victoria, Tasmania, and New Zealand, are dependent upon external sources. The high import duties in Victoria on both these articles practically prohibit importations.

The total value of the barley crop and the average return of this cereal per acre during the season 1892-3 in each of the provinces of Australasia will be found below :—

Colony.	Total value of Barley Crop.	Average value per acre.
	£	£ s. d.
New South Wales	11,460	2 9 8
Victoria	127,456	2 7 11
Queensland	374	0 19 5
South Australia	26,320	1 19 8
Western Australia	8,523	2 6 6
Tasmania	15,038	3 16 7
New Zealand.....	122,668	4 18 6
Australasia	311,839	3 10 7

POTATOES.

The cultivation of the potato is not confined to any particular colony, but Victoria and New Zealand are the leading growers, as will be seen from the subjoined table :—

Colony.	1861.	1871.	1881.	1891.	1892.
	acres.	acres.	acres.	acres.	acres.
New South Wales	10,040	14,770	15,943	22,560	18,502
Victoria	27,174	39,064	39,129	57,334	40,594
Queensland.....	512	3,121	5,086	9,173	11,457
South Australia	2,612	3,156	6,136	6,892	6,014
Western Australia	277	494	278	532	528
Tasmania	9,349	8,154	9,670	16,368	16,535
New Zealand.....	7,292	11,933	22,540	27,266	18,338
Australasia	57,256	80,692	98,782	140,125	111,968

The production for the same periods was :—

Colony.	1861.	1871.	1881.	1891.	1892.
	tons.	tons.	tons.	tons.	tons.
New South Wales	30,942	44,758	44,323	62,283	52,105
Victoria	59,364	125,841	134,290	109,786	142,623
Queensland	1,080	6,585	11,984	25,018	36,666
South Australia	7,726	10,989	18,154	27,824	20,057
Western Australia	817	1,457	556	1,596	1,584
Tasmania	47,428	22,608	33,565	62,995	60,245
New Zealand.....	37,554	42,130	121,890	162,046	104,173
Australasia	184,911	254,368	364,762	451,548	417,453

The average production of potatoes per acre, expressed in tons, for Australasia and for each of the separate colonies is next given, for the ten years which ended with 1892. New Zealand, it will be seen, shows a considerably larger return per acre than any of the other provinces :—

Colony.	Per acre.
	tons.
New South Wales	2·7
Victoria.....	3·7
Queensland	3·2
South Australia	3·9
Western Australia	3·0
Tasmania	4·0
New Zealand	5·3
Australasia	3·9

Only three of the colonies are in a position to export potatoes in any quantity—Tasmania, New Zealand, and Victoria. The apparent excess in the case of South Australia arises chiefly from re-exports. The surplus in Victoria, though at one time considerable, has now very much decreased.

The following were the imports and exports of potatoes :—

Colony.	Net Imports.	Net Exports.
	tons.	tons.
New South Wales	54,551	.....
Victoria .....	.....	10,461
Queensland	9,532	.....
South Australia .....	.....	1,855
Western Australia	2,068	.....
Tasmania .....	.....	24,267
New Zealand .....	.....	28,948
Net Export.....	620	.....

The total value of the potato crop and the average return per acre for 1892-3, in the Australasian Colonies, will be found below :—

Colony.	Total Value of Crop.	Average value per acre.
	£	£ s. d.
New South Wales	208,420	11 5 4
Victoria	374,385	9 4 5
Queensland	108,407	9 9 3
South Australia	60,171	10 0 1
Western Australia	6,336	12 0 0
Tasmania	225,919	13 13 3
New Zealand	260,432	14 4 0
Australasia.....	1,244,070	11 2 3

HAY.

Considerable quantities of wheat, oats, and barley are grown for the purpose of being converted into hay. This crop in point of value is second in importance of the agricultural production. The area under

crop for hay has since 1881 steadily and largely increased, as will be seen from the table herewith.

Colony.	1861.	1871.	1881.	1891.	1892.
	acres.	acres.	acres.	acres.	acres.
New South Wales	45,175	51,805	146,610	163,863	214,468
Victoria	74,681	103,206	212,150	369,498	512,648
Queensland	280	3,828	16,926	30,655	25,665
South Australia	62,874	97,812	333,467	304,171	434,116
Western Australia	6,676	*14,342	24,445	28,534	35,124
Tasmania	31,803	31,578	34,790	45,445	46,070
New Zealand	†27,160	30,717	68,423	46,652	61,811
Australasia.....	248,649	333,288	836,811	988,818	1,329,902

* In 1869.

† In 1867.

The production for the same periods was :—

Colony.	1861.	1871.	1881.	1891.	1892.
	tons.	tons.	tons.	tons.	tons.
New South Wales.....	57,363	77,460	198,532	209,417	302,134
Victoria	92,497	144,637	238,793	505,246	740,049
Queensland	459	6,278	19,640	58,842	53,933
South Australia.....	78,886	98,266	240,827	193,317	389,277
Western Australia	6,609	14,288	24,445	28,534	43,905
Tasmania	59,851	30,891	44,957	66,996	53,544
New Zealand.....	36,666	35,674	89,081	67,361	92,293
Australasia.....	332,331	407,494	856,275	1,129,713	1,675,135

The average production of hay per acre for each colony will be found in the next table, the period embraced by the average being the ten years which closed with 1892 :—

Colony.	Per Acre.
	tons.
New South Wales	1·3
Victoria	1·3
Queensland	1·7
South Australia	0·9
Western Australia	1·0
Tasmania	1·2
New Zealand	1·4
Australasia	1·2

The greater portion of the hay is made from wheat, though large quantities of oaten and lucerne hay are produced in Victoria, New South Wales, and New Zealand. Hay is, for the most part, grown in each province in quantities sufficient for its own requirements, New South Wales being the only one which imports to any extent.

The net import or export of hay and chaff for each colony for the year 1892 was :—

Colony.	Net Imports.	Net Exports.
	tons.	tons.
New South Wales	56,921	.....
Victoria .....	.....	33,411
Queensland	1,992	.....
South Australia .....	.....	4,167
Western Australia	3,938	.....
Tasmania .....	.....	9,274
New Zealand .....	.....	556
Net imports	10,443	.....

The total value of the hay crop, and the average return per acre for the season 1892-3, in the Australasian Colonies, will be found below :—

Colony.	Total Value of Hay Crop.	Average Value per Acre.
	£	£ s. d.
New South Wales	755,335	3 10 5
Victoria	2,035,135	3 19 5
Queensland	137,580	5 7 3
South Australia	1,216,490	2 16 1
Western Australia	142,691	4 1 3
Tasmania	214,176	4 13 0
New Zealand	276,879	4 9 7
Australasia	4,778,286	3 11 10

GREEN FORAGE AND SOWN GRASSES.

The cultivation of maize, sorghum, barley, oats, and other cereals for the purpose of green food, and the laying down of lands under lucerne and grass, engage attention in the districts where dairy-farming is carried on. The agricultural returns of some of the colonies do not admit of a distribution being made between these forms of cultivation prior to 1887. The following table shows the area under such green food for 1887, 1891, and 1892, and it will be seen that there have been

large developments in most of the colonies, chiefly in New Zealand. After a consideration of the figures relating to the last-mentioned province, little difficulty will be experienced in accounting for its superiority in the dairy-farming industry:—

	Green Food.			Sown Grasses.		
	1887.	1891.	1892.	1887.	1891.	1892.
	acres.	acres.	acres.	acres.	acres.	acres.
New South Wales..	20,403	32,138	44,424	192,678	333,238	361,280
Victoria	6,036	9,202	16,605	154,612	174,982	233,114
Queensland	9,582	10,727	14,690	13,619	20,921	22,486
South Australia ..	10,079	6,416	7,789	23,217	17,519	20,210
Western Australia..	...	238	214	.....	.....	.....
Tasmania	1,246	1,101	1,518	184,653	203,596	217,905
New Zealand.....	98,029	118,484	132,140	5,869,247	7,357,229	8,200,234
Australasia ...	145,375	178,306	217,380	6,438,026	8,112,485	9,055,229

In Victoria, Tasmania, and New Zealand large quantities of grass-seeds, chiefly rye-grass and cocksfoot, are produced, the quantities in 1892 being given as 30,430, 38,491, and 928,731 bushels, respectively, valued at £5,075 in Victoria, £5,774 in Tasmania, and £146,389 in New Zealand, or a total of £157,238.

THE VINE.

The history of the vine in Australia dates from the year 1828, when cuttings from the celebrated vineyards of France, Spain, and the Rhine Valley were planted in the Hunter River District of New South Wales, and formed the nursery for the principal vineyards of that colony. Years afterwards the vine was planted in the Murray River District and other parts of New South Wales, and was afterwards introduced into Victoria and South Australia, and is now cultivated in all the provinces of the Australian continent. In South Australia a large proportion of Germans are employed in the industry of wine-making.

The climate and soil of Australia are peculiarly adapted to the successful cultivation of the vine, and with an increasing local demand, and the opening up of a market in England, where Australian wines have obtained due appreciation, the future expansion of wine-growing appears fairly assured. The depreciation which French and other foreign wines have suffered, both in quantity and quality, owing to the devastation of the vineyards by phylloxera is an additional reason for the vine-growers of this continent looking forward to largely-increased operations for their industry.

The progress of vine cultivation since the year 1861 is illustrated by the table subjoined. The areas given include the vines grown for table use, as well as for wine-making; also the young vines not yet in bearing :—

Colony.	1861.	1871.	1881.	1891.	1892.
	acres.	acres.	acres.	acres.	acres.
New South Wales	1,692	6,618	6,624	8,281	8,264
Victoria	1,464	5,523	4,923	24,483	26,443
Queensland	40	568	1,212	1,988	1,908
South Australia.....	3,918	5,455	4,202	12,314	15,418
Western Australia	457	692	527	1,004	1,218
Australia	7,571	18,856	17,488	48,070	53,251

Until the year 1881 New South Wales contained the principal wine-growing districts, but at present the area devoted to vines is much larger in Victoria and South Australia. Of recent years great attention has been paid to the industry in Victoria, and that province now produces nearly half the wine made in Australia. The following tables show the progress made in wine-growing during thirty-two years :—

Colony.	1861.	1871. *	1881.	1891.	1892.
	gallons.	gallons.	gallons.	gallons.	gallons
New South Wales.....	85,328	413,321	513,688	913,107	931,542
Victoria	47,568	713,589	539,191	1,554,130	1,694,745
Queensland.....			72,121	168,526	193,357
South Australia.....	312,021	852,315	313,060	861,835	594,038
Western Australia			99,600	166,664	160,776
Australia	444,917	1,979,225	1,537,660	3,604,262	3,574,438

The production of table-grapes during the same period is shown below :—

Colony.	1861.	1871.	1881.	1891.	1892.
	tons.	tons.	tons.	tons.	tons.
New South Wales.....	224	508	1,103	3,694	5,916
Victoria	849	1,545	740	2,791	3,877
Queensland.....			255	1,169	1,012
South Australia.....	1,161	1,692	1,498	4,590	3,640
Australia... ..	2,234	3,745	3,596	12,244	14,445

It is impossible to tabulate the averages of all the colonies, as in many instances the acreage under cultivation for wine-making purposes cannot be separated from young unproductive vineyards or areas cultivated for table varieties of grape only. Making, however, due allowance for this fact, it would appear that the average production for the season 1892-93 was about 132 gallons in Western Australia, 80 gallons in South Australia, 105 gallons in Victoria, 225 gallons in New South Wales, and 225 gallons in Queensland. Taking an average year, the production for Australia may be set down at 190 gallons. The average production in gallons per acre for other countries is shown by the following figures, those marked by an asterisk being for the three years 1890-92, while the others are for the latest available periods:—

Country.	Gallons per acre.	Country.	Gallons per acre.
Algeria	300	Spain	130
Cape Colony	220	Russia	130
Switzerland	210	Austria*	129
Roumania*	194	Chili	100
Portugal	175	Argentine Republic	100
Servia	150	Italy*	87
France*	143	Hungary*	51
United States	140		
Germany*	134	Australia	190

Compared with the wine production of other countries, as given hereunder, that of Australia is certainly trifling, but the prospects of this industry are sufficiently promising to encourage a hope that the coming years will witness important developments:—

Country.	Production in million gallons.	Country.	Production in million gallons.
Italy*	732	Hungary*	34
France* ..	634	Turkey and Cyprus	20
Spain	550	Chili	20
Portugal	90	United States	18
Austria*	74	Switzerland	15
Roumania*	73	Argentine Republic	6
Servia	45	Cape Colony	6
Germany*	40	Australia	4
Russia	40		
Algeria	40		
Greece	34	Total	2,479

NOTE.—The figures in the above table marked with an asterisk are the averages of the three years 1890-92, while the others are the latest available.

The following table illustrates the progress of the Australian wine trade with Europe since 1881. The total value of this trade in 1892, it

will be noticed, had grown to thirteen times what it was in 1881, while the number of gallons exported to Europe had increased twenty-two fold :—

Colony.	1881.		1891.		1892.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
New South Wales..	gallons. 13,271	£ 3,520	gallons. 9,451	£ 2,255	gallons. 23,573	£ 5,362
Victoria	5,588	2,341	136,213	24,727	208,734	34,533
South Australia	2,859	580	226,587	38,630	267,023	45,082
Australia ...	21,718	6,441	372,251	65,612	499,330	84,977

Including the trade of one province with another, as well as the foreign trade, the exports of each during the same years is shown as under :—

Colony.	1881.		1891.		1892.	
	gallons.	£	gallons.	£	gallons.	£
New South Wales..	22,377	7,233	54,143	11,644	27,857	7,081
Victoria	12,544	5,388	160,982	32,516	225,517	40,066
South Australia	57,812	12,879	286,188	58,684	325,039	64,783
Australia ...	92,733	25,500	501,313	102,844	578,413	111,930

The total value of the grape crop and the average return per acre for the year 1892 in the Australian Colonies will be found below :—

Colony.	Total value of Crop.	Average value per acre—	
		Of total area under Vines.	Of productive Vines.
	£	£ s. d.	£ s. d.
New South Wales	163,771	19 16 4	25 15 3
Victoria	249,160	9 8 5	15 8 6
Queensland	32,266	16 18 3	18 11 4
South Australia	106,185	6 17 9	14 6 7
Western Australia	20,097	16 10 0	18 9 5
Australia	571,479	10 14 8	17 9 0

SUGAR-CANE.

The growth of the cane and manufacture of sugar are important features in the industry of Queensland and New South Wales, but whilst the climate of the former colony renders the employment of white labour in the field almost impossible, the plantations of the latter are worked without the assistance of coloured labour. The owners of Queensland plantations usually combine the functions of cane-growers and sugar-manufacturers, but in New South Wales, where the numerous holdings are, as a rule, small in area, the cane is purchased from the planters, principally by the Colonial Sugar Refining Company, whose various crushing-mills and refinery are fitted with machinery of the most modern character. The importation of coloured labour into Queensland has been renewed under stringent regulations to protect the Kanakas. The attempt made in 1891 by the planters to solve the difficult problem as to whether successful sugar-growing is compatible with the employment of white labour, by the introduction of Italian farm-labourers under contract to work in the sugar-plantations for a number of years, was a failure. Japanese immigrants are now being introduced.

The area under cane for the years specified below was :—

	1864.	1871.	1881.	1891.	1892.	1893.
	acres.	acres.	acres.	acres.	acres.	acres.
New South Wales.....	22	4,394	12,167	22,262	26,751	28,112
Queensland.....	94	9,581	28,026	50,948	55,815	59,250
Total	116	13,975	40,193	73,210	82,566	87,362

The progress of this industry has been very rapid, especially in Queensland, the area of suitable land being very large in that colony. Some years ago sugar-growing was started on the Daly River, in the Northern Territory of South Australia, but no statistics are available regarding acreage or production.

The area given includes all the cane planted, whether cut during the year or not. The following table shows the acreage actually cut during the last six years :—

	1887.	1888.	1889.	1890.	1891.	1892.	1893.
	acres.	acres.	acres.	acres.	acres.	acres.	acres.
New South Wales	8,380	4,997	7,348	8,344	8,623	11,560	11,755
Queensland	36,806	32,375	29,438	40,208	36,821	40,572	43,668
Total	45,186	37,372	36,786	48,522	45,444	52,132	55,423

The returns of the sugar industry, both for Queensland and New South Wales, are incomplete. In those of the former colony the yield of cane per acre is not stated; and in the latter the production of sugar per ton of cane crushed cannot be given. As regards the latter, it varies, of course, with the density of the juice, but in ordinary seasons it may be set down at something over 9 per cent.

The production of sugar from cane crushed for the last seven years was as follows :—

	1887. tons.	1888. tons.	1889. tons.	1890. tons.	1891. tons.	1892. tons.	1893. tons.
New South Wales	22,500	11,279	19,016	26,533	25,245	24,289	23,930
Queensland	57,960	34,022	44,411	68,924	51,219	61,368	76,147
Total	80,460	45,301	63,427	95,457	76,464	85,657	100,077

The figures in the foregoing are from the returns made by the millowners, and, possibly, as regards Queensland, somewhat understate the truth.

The net imports of sugar by each colony for 1892 are shown in the subjoined table. Queensland was the only colony that was able to supply sugar enough for its own requirements, and spare some for export. The surplus amounted to 38,485 tons, valued at £588,822, which was mostly exported to the other colonies, only 1,231 tons having been for foreign export. The following figures include the 37,254 tons from Queensland :—

	Quantity.	Value.
	tons.	£
New South Wales	29,273	435,736
Victoria	50,954	750,887
South Australia	13,295	181,181
Western Australia	2,260	56,491
Tasmania	5,484	105,529
New Zealand	27,485	391,267
Australasia	128,751	1,921,091

The imports, therefore, amounted to 90,266 tons, valued at £1,332,269, of which only 89,630 tons, of the value of £1,235,220, can be traced to the original country of shipment, viz. :—

Country.	Quantity.	Value.
	tons.	£
Mauritius	9,744	196,288
Fiji	17,258	185,161
Java	56,877	742,458
Hong Kong	4,690	91,100
Other countries	1,061	20,213
Total	89,630	1,235,220

The total value of the sugar crop, and the average return per acre, for the year 1892, in the sugar-growing colonies of Australia, will be found below :—

Colony.	Value of Cane grown.	Average value per acre.
	£	£ s. d.
New South Wales	139,037	5 3 11
Queensland	354,500	6 7 1

TOBACCO.

The cultivation of the tobacco-plant has received attention in the three eastern colonies. The following table shows the area and production of tobacco at various periods :—

Year.	New South Wales.		Victoria.		Queensland.		Australasia.	
	acres.	cwt. of leaf.	acres.	cwt. of leaf.	acres.	cwt. of leaf.	acres.	cwt. of leaf.
1861	224	2,647	220	2,552	..	.....	444	5,199
1871	567	4,475	299	2,307	44	.....	910	6,782
1881	1,625	13,311	1,461	12,876	68	521	3,154	31,708
1888 *....	4,833	55,478	1,685	13,355	123	1,418	6,641	70,251
1891	886	9,314	545	2,579	790	7,704	2,221	19,597
1892	848	8,344	477	658	318	3,808	1,643	12,810

The figures for 1892 are exclusive of 4 acres in New Zealand, producing 20 cwt. of leaf, and of a small area in the Northern Territory in South Australia, for which returns are not available.

Owing to over-production and the want of a foreign market, the area devoted to tobacco-culture has greatly declined since 1888, when 6,641 acres were devoted to this industry, and 70,251 cwt. of leaf was grown. The Australasian tobacco-leaf has not yet been prepared in such a way as to find acceptance abroad, and until such is accomplished it will be useless to expect the cultivation of the plant to become a settled industry. The soil and climate of Australia appear to be suitable for the growth of the plant, but sufficient care and skill have not been expended upon the preparation of the leaf. The quantity just mentioned as having been produced in 1888 was so greatly in excess of local requirements that very low prices only could be obtained, and a large portion of the crop was left upon the growers' hands. The result was that many farmers abandoned the cultivation of tobacco, so that the area under this crop during 1889 was only 3,239 acres in New

South Wales, and 955 acres in Victoria, producing respectively 27,724 cwt. and 4,123 cwt. of leaf—less than half the crop of the previous year. In 1891 the acreage showed a further decline to 886 acres in New South Wales, and 545 acres in Victoria, with a yield of 9,314 cwt. and 2,579 cwt. respectively. In Queensland, on the other hand, the acreage increased from 123 acres in 1888 to 540 acres in 1890 and 790 in 1891. In 1892 the acreage decreased in New South Wales to 848 acres, in Victoria to 477 acres, and in Queensland to 318 acres, and the production to 8,344 cwt., 658 cwt., and 3,808 cwt. respectively. In Victoria the crop on two-thirds of the acreage was destroyed by a fungoid disease.

The average production of tobacco per acre for the ten years ended on 31st December, 1892, was :—

Colony.	Cwt.
New South Wales	10·8
Victoria	5·9
Queensland	8·6
Total	8·8

The following table shows the production per acre in foreign countries, in those marked with an asterisk and in Australia for the three years 1890-92, in the others for the latest available period ; but the comparison with Australia is not of much value, as the acreage under tobacco is so very restricted :—

Country.	Cwt. per acre.	Country.	Cwt. per acre.
Holland*	16·1	Japan	8·0
Germany*	15·8	Turkey.....	7·8
Russia	13·6	Manilla, &c.	7·4
Austria*	12·5	United States*	6·3
France*	11·5	Brazil.....	7·0
Hungary	10·4	India	5·9
Italy	9·5	Roumania*	5·0
West Indies	8·8		
Java.....	8·4	Australia	8·0

The Agricultural Department of Queensland is endeavouring to assist the tobacco-growers by the importation of American seed of first quality, suitable to the Queensland climate. New Zealand also has commenced the cultivation of tobacco, but it is only so far in the condition of an experiment, and a small area has also been planted in the Northern Territory of South Australia.

The following table shows the imports for home consumption of tobacco, cigars, and cigarettes into Australasia during 1892 :—

Colony.	Quantity.
	lb.
New South Wales	1,940,472
Victoria.....	2,287,318
Queensland	913,279
South Australia	689,664
Western Australia	202,251
Tasmania	296,793
New Zealand	1,379,069
Australasia	7,708,846

The total value of the tobacco crop and the average gross return per acre for the year 1892 in the Australasian Colonies are given below :—

Colony.	Total value of Crop.	Average value per acre.
	£	£ s. d.
New South Wales	15,575	18 6 11
Victoria.....	1,316	2 15 2
Queensland	5,203	16 7 3
New Zealand	20	5 0 0
Australasia	22,114	13 8 6

As will be seen from the above table, in Queensland and New South Wales the returns are fairly comparative, but in Victoria they are very small, whilst the experimental stage of the industry in New Zealand gives no test of its possible value.

GARDENS AND ORCHARDS.

The cultivation of fruit does not attract anything like the attention it deserves, although the soil and climate of large areas in all the provinces are well adapted to fruit-growing. Nevertheless, some progress has been made, especially of recent years. In 1891 and 1892 the proportion of the total cultivation allotted to fruit was 2·1 per cent., while in 1881 the proportion was 1·5; the area per 1,000 persons in 1892 was 38·4 acres; in 1891, 36 acres; in 1881 it was 29·4 acres. Grapes, oranges, apples, pears, and peaches are the principal fruits grown, but with an unlimited area suitable for this class of cultivation, and the climatic conditions so varied, varying from comparative cold

in New Zealand and the high lands of New South Wales and Victoria to tropical heat in Queensland, a large variety of fruits could be cultivated, and the industry only languishes for want of sustained demand for fruit products. The area under orchards and gardens in 1881, 1891, and 1892 was :—

Colony.	1881.		1891.		1892.	
	Area.	Percentage to total area under Crops.	Area.	Percentage to total area under Crops.	Area.	Percentage to total area under Crops.
	acres.		acres.		acres.	
New South Wales	24,565	4·3	40,116	4·7	45,646	4·5
Victoria	20,630	1·4	37,435	1·8	39,926	1·8
Queensland	3,262	2·8	9,758	4·0	9,177	3·7
South Australia	9,864	0·4	14,422	0·7	15,771	0·8
Western Australia .....	.....	.....	.....	.....	1,611	2·0
Tasmania	6,717	4·5	10,696	6·4	10,881	6·1
New Zealand	16,360	1·5	29,235	2·0	29,848	2·1
Australasia	81,398	1·5	141,662	2·1	152,860	2·1

With the extension of artificial irrigation and the increased facilities of export by the adoption of the cool chambers for the preservation of fruit for long voyages, the fruit-growers of Australasia are now enabled to compete with foreign States in the fruit supply for the English market, which during each of the last three years was valued at nearly £8,000,000. The Tasmanian fruit trade with England has passed the experimental stage, and every season large steamers visit Hobart to receive fruit for the home market.

The following table shows the import and export trade of each colony in green fruit and pulp for 1892, from which it will be seen that with the exception of Tasmania all the other colonies import considerably more than is exported :—

Colony.	Imports.	Exports of Domestic Produce.
	£	£
New South Wales	206,440	111,241
Victoria	234,753	14,106
Queensland	63,020	41,334
South Australia	21,339	19,212
Western Australia	2,229	1
Tasmania	12,811	138,891
New Zealand	67,743	3,813
Australasia	608,335	328,598

The total value of the gardens and orchards crop, and the average returns per acre of this branch of agriculture in 1892 in each colony, save Western Australia, were :—

Colony.	Total value of Crop.	Average value per acre.
	£	£ s. d.
New South Wales	522,387	11 8 11
Victoria	811,290	20 6 5
Queensland	223,923	24 8 0
South Australia	328,930	20 17 2
Western Australia	25,776	16 0 0
Tasmania	141,453	13 0 0
New Zealand	582,725	19 10 6
Australasia.....	2,636,484	17 4 11

The average returns per acre of gardens and orchards in each colony have but little value for purposes of comparison, as much depends on the proportion of the areas under certain kinds of fruit, and under vegetable gardens, which would tend to raise or decrease, as the case may be, the general average returns per acre in certain provinces. In New South Wales, the smallness of the average is explained by the fact that in a great number of instances, owing to a lack of facilities for disposing of the fruit crops, which is a source of complaint from the growers, the produce of the orchards did not reach the markets, and in some cases was not even gathered. In Tasmania and New Zealand stone fruits are principally grown, the gross returns from which are much smaller than those obtained from the cultivation of sub-tropical fruits such as the orange and citron, &c., which tend to increase the average returns in the continental and northern provinces.

MINOR CROPS.

Besides the crops already specifically noticed there are small areas on which are grown a variety of products, chiefly rye, bere, onions, beans, peas, turnips, rape, mangold wurzel, and hops, but none of these crops are sufficiently important to warrant a special notice, except turnips and rape in New Zealand, where no less an area than 379,447

LIVE-STOCK — SHEEP

AUSTRALASIA
23,741,706

Vic. 6,239,258
N.S.W. 5,615,054
Q'td. 4,093,381
S. A. 3,038,356
N. Z. 2,761,583
Tas. 1,714,498
W. A. 279,576

1861

AUSTRALASIA
49,773,584

N.S.W. 16,278,697
Vic. 10,002,381
N. Z. 9,700,629
Q'td. 7,403,334
S. A. 4,412,055
Tas. 1,305,489
W. A. 670,999

1871

AUSTRALASIA
78,063,426

N.S.W. 36,591,946
N. Z. 12,985,085
Vic. 10,267,265
Q'td. 8,292,883
S. A. 6,810,856
Tas. 1,847,479
W. A. 1,267,912

1881

AUSTRALASIA
121,939,965

N.S.W. 58,080,114
Q'td. 21,708,310
N. Z. 18,680,448
Vic. 12,965,306
S. A. 7,197,949
W. A. 1,685,500
Tas. 1,622,338

1892

acres was planted with them. The area under such crops for each province in 1892 was :—

Colony.	Area.
	acres.
New South Wales	5,846
Victoria	38,342
Queensland	4,106
South Australia	8,935
Western Australia	454
Tasmania	15,877
New Zealand	409,791
Australasia	483,341

Although considerable progress has of late years been made in some directions, it must be admitted generally, that agriculture in the Australasian Colonies has scarcely passed the tentative stage. The typical Australian agriculturist, relying largely on a bountiful nature, does not exercise upon crops anything approaching the same patience, care, and labour that are bestowed by the European cultivator ; nor, as a rule, does he avail himself of the benefits of scientific farming and improved implements to the extent that prevails in America and Europe. It may be expected that improvements will take place in this respect, and that the efforts made by the Governments of New South Wales, Victoria, and South Australia for the promotion of scientific farming will bear good fruit. Agricultural colleges and model farms have been established in the three colonies, and travelling lecturers are sent to agricultural centres.

IRRIGATION.

Originally cultivation in Australia was confined to the banks of the coastal rivers and the country near the sea, and within the influence of regular rainfall. Now, however, that cultivation has spread beyond the coastal districts and the adjacent tablelands, into the interior of the continent, where the irregular character of the rainfall makes harvesting uncertain, irrigation has become necessary to ensure successful husbandry. For some years past small areas have been irrigated by private enterprise ; 29,342 acres were returned as irrigated in New South Wales, and about 5,000 acres in Queensland, during 1892, and in 1889 there were 24,574 acres irrigated in Victoria. In 1892 the number of acres capable of being irrigated annually from the irrigation works then constructed or in course of construction in Victoria was returned as 353,662.

A few years ago a special Act was passed by the Victorian Legislature, enabling the Government to hand over to the firm of Chaffey Brothers an area of 250,000 acres of mallee scrub, situated at Mildura, in the Swan Hill district, about 340 miles north-west of Melbourne. The land was then uninhabited and practically valueless. Now it has grown into a flourishing colony, with about 4,000 inhabitants. The Act obliged the promoters to spend £35,000 on the land within the first five years, but they actually expended £275,000 within less than four years, and have thus become entitled to the freehold of 50,000 acres, holding the balance of the 250,000 acres on lease. In addition to the sum mentioned, it is estimated that the settlers have spent at least £100,000 in improving the land.

The raisin industry is so far the leading one at Mildura, but all kinds of fruit grow to perfection, and out of 7,494 acres cultivated in 1892, 2,900 acres are orchards and gardens, and 2,784 acres are vineyards.

A number of irrigation trusts have been formed in Victoria, and extensive works constructed in various districts, chiefly on the Goulburn, Loddon, Wimmera, and Avoca Rivers.

In New South Wales matters are in a more backward state. The Water Conservation Branch attached to the Department of Works is at present engaged in obtaining sufficient hydrographical data to form the basis of a scheme of irrigation for vast areas in the vicinity of the Murray, Murrumbidgee, Lachlan, Macquarie, and Darling Rivers.

A company of capitalists had also commenced operations a few years ago under what appeared to be great promise of success, and had secured an area of about 20,000 acres in the Mulgoa district, within a distance of 30 miles of the metropolitan market. The soil consists chiefly of a rich friable loam, but the district suffers from an unequal rainfall. An Act, passed by the New South Wales Legislature in 1890, gives the right to tap the Nepean, and if necessary the Warragamba River, for the purpose of irrigating this area, and it is proposed to devote the land chiefly to the cultivation of vines and fruit-trees. Up to the present matters have, however, remained at a standstill.

In October, 1888, the firm of Chaffey Brothers commenced operations in South Australia, at a place called Renmark, situated on the river Murray, close to the boundary of New South Wales, and about 70 miles below Mildura, where an area of 250,000 has been set apart for irrigation purposes, and although Renmark has not progressed so rapidly as Mildura, it promises in time to become an important settlement.

ARTESIAN WELLS.

The necessity of providing water for stock in the dry portions of the interior of the Australian Continent, induced the various Governments to devote certain funds for the purpose of sinking for water and bringing to the surface such supplies as might be obtained from the

underground sources which geologists stated to exist in the Tertiary drifts and the Cretaceous beds which extend under an immense portion of the area of Central Australia, from the western districts of New South Wales to a yet unknown limit into Western Australia.

In New South Wales the question of the existence of underground waters had long been a subject of earnest discussions, but doubts were set at rest in 1879 by the discovery, on the Killara Run, at a depth of 140 feet, of an artesian supply of water, which rose 26 feet above the surface. The Government undertook the work of searching for water, and since the year 1884 the sinking of artesian wells has proceeded in a scientific and systematic manner, under the direction of specially-trained officers. Private enterprise, which had shown the way, has also followed up its first successes. It has been ascertained from official sources that contracts have already been let by the Government of New South Wales for the sinking of fifty-nine wells; of these, twenty-one have been completed, ten are in progress, and the others will shortly be commenced; of the completed wells, nineteen are flowing, and five sub-artesian, yielding large pumping supplies; these wells represent 40,000 feet of boring. From the completed wells a total of about 5,000,000 gallons of water flow every day to the surface; at the Mongulla bore and at the Native Dog bore the daily supply reaches respectively 750,000 and 500,000 gallons, and other wells yield even larger supplies. But these are far from being the most successful artesian wells in New South Wales, for some wells sunk by private enterprise have tapped much larger supplies; the Coomburrah well, for instance, is stated to have a daily flow of 5,000,000 gallons, and those at Leila Springs, Lissington, Briwara, &c., are reported to give aggregate flows exceeding 2,000,000 gallons of water per diem. A better idea of the importance of these wells to the community will be obtained when it is known that the aggregate flow of underground water brought to the surface since the year 1884 reaches the enormous quantity of over 40,000,000 gallons of water in New South Wales alone. The average depth of the various completed Government bores, on 31st December, 1893, was 1,269 feet per bore, ranging from 138 feet to 2,753 feet, with temperatures varying between 90° and 125° Fahrenheit. The cost of the completed bores to 31st March, 1894, including caretakers' wages, casing, carriage, &c., was £52,303. Experimental cultivation by means of irrigation with artesian water has been most successfully carried out at the Barrington and Native Dog bores. Lucerne, maize, wheat, tobacco, sugar-cane, date-palms, pine-apples, bananas, and many other tropical and sub-tropical products have been found to do exceedingly well.

The Queensland Hydraulic Engineer reports that at the end of 1892 ten bores had been successfully completed by private contractors on Government account, while three were in progress and six had been abandoned, the most remarkable being that at Charleville, where a daily supply of 3,000,000 gallons was struck at a depth of 1,571 feet.

The number of private bores is given as two hundred and one, of which one hundred and forty-one were successfully sunk; in some cases, however, the supply is sub-artesian, and has to be pumped to the surface. The largest daily supply was yielded by the well at Burrumbilla, where a flow of 4,000,000 gallons was struck at a depth of 1,811 feet; on the Noorama Run there are three wells yielding—one, 3,456,000 gallons, and two, 1,500,000 gallons each. Several other wells yield over 1,000,000 gallons of water per diem, and the aggregate flow from artesian sources in Western Queensland alone, were most of the wells are located, at the end of 1892 was estimated at about 105,000,000 gallons per day.

In South Australia a number of bores have been put down with success in widely distant parts of the territory, and an essay was made on the Great Australian Bight, which resulted in a supply being struck on the Nullarbor Plain, at a depth of 777 feet, yielding 68,000 gallons per diem; the supply is, however, sub-artesian. Other wells have been sunk since with better results, the water rising to the surface in several instances. The most successful wells, however, are situated in the central portion of the territory; those at Hergott Springs, Coward, Strangways, and Lake Harry, giving supplies of 50,000 to 1,200,000 gallons per diem. A bore has recently been completed at Tintinarra, in the south-eastern portion of the colony, thus showing that the marine tertiary area is water-bearing.

The Government of Western Australia, following the example set by those of the eastern colonies, proposes to sink a line of wells in the direction of the Coolgardie gold-field, and of the South Australian Border.

In the province of Victoria the Government have since the year 1886 executed several experimental borings, but, so far, the results have not been encouraging. Artesian water was, however, struck at Sale, in Gippsland, as early as the year 1880, but the bore is not now used.

The fears so long entertained that the search for underground water might prove unsuccessful have now been dissipated by the results already attained, and both private firms and the State are emulating each other in extending their operations throughout the arid portions of the continent, meeting generally with the most pronounced success.