

PASTORAL RESOURCES AND DAIRY INDUSTRY.

NOTWITHSTANDING the fact that the soil, climate, and indigenous herbage of Australasia are admirably adapted to the sustenance of animal life, no attempt was made to test the capabilities of the land as a feeding ground for flocks and herds on a large scale, until the example of Captain Macarthur had demonstrated, beyond doubt, that Nature favoured the production in Australasia of a quality of wool unsurpassed by that of any part of the world. Then the settlers began to understand and utilise the natural resources of the country, and as the indomitable spirit of exploration gradually opened up the apparently boundless plains of the interior, pastoralists extended their domain, and sheep and cattle in increasing numbers spread over the face of Eastern Australia. The expansion of the pastoral industry is gradually converting the central and western portions of the continent into holdings, devoted to the production of the greatest element of the wealth of Australasia.

Commencement
of the pastoral
industry.

The beginnings of pastoral enterprise in the Colony were very humble. The whole stock of the community which accompanied Captain Phillip comprised only 1 bull, 4 cows, 1 calf, 1 stallion, 3 mares, 3 foals, 29 sheep, 12 pigs, and a few goats; and although the whole of the present flocks and herds of Australasia have not sprung from these animals alone, it will be seen on how small a scale the business of stock-raising was first attempted. No sys-

Humble
beginnings of
stock breeding.

tematic record of the arrival of stock seems to have been kept in the early days of settlement, but it appears that in the period between Governor Phillip's landing and the year 1800 there were some slight importations, chiefly of sheep from India.

Increase of live-stock.

In the last-mentioned year the stock in Australasia of the various kinds was—6,124 sheep, 1,044 cattle, 203 horses, and a small number of swine, the precise figures not being obtainable; in 1891 the numbers had increased to 124,547,937 sheep, 11,861,330 cattle, 1,785,835 horses, and 1,154,553 swine.

The following figures give the number of stock in the Colonies at various epochs ending with 1851 :—

Year.	Sheep.	Cattle.	Horses.	Swine.
1792	105	23	11	43
1800	6,124	1,044	203	4,017
1810	33,818	11,276	1,114	8,992
1821	290,158	102,639	4,564	33,906
1842	6,312,004	1,014,833	70,615	66,086
1851	17,326,021	1,921,963	166,421	121,035

The progress since 1861 is illustrated in the following table :—

Year.	Sheep.	Cattle.	Horses.	Swine.
1861	23,741,706	4,039,839	459,970	362,417
1871	49,773,584	4,713,820	782,558	737,477
1881	78,063,426	8,709,628	1,249,765	903,271
1891	124,547,937	11,861,330	1,785,835	1,154,553

Live stock per inhabitant.

The numbers of each class of stock per inhabitant at the same periods were :—

Year.	Sheep.	Cattle.	Horses.	Swine.
1861	18·8	3·2	0·4	0·3
1871	25·3	2·4	0·4	0·4
1881	27·7	3·1	0·4	0·3
1891	31·8	3·0	0·5	0·3

It will be seen that during 1861 there were 18·8 sheep for every person in the Colonies, increasing in 1891 to 31·8. On the other hand cattle had decreased from 3·2 per inhabitant at the former period to 3·0 in the latter. The breeding of horses and swine had about kept pace with the population.

SHEEP.

The suitability of the land discovered in the early days of New South Wales for pastoral pursuits was undoubtedly the means of leading the infant Colony to take its first step on the path of commercial progress; and it is not a little surprising at this distance of time how steadily some of the settlers, in the face of the almost insurmountable difficulty of transport which existed a century ago, availed themselves of the opportunities at their disposal. The importation of valuable specimens of sheep from England or the Cape of Good Hope, prior to the introduction of steam, was at all times attended with great risk, and it frequently happened that many of these costly animals died during the tedious voyage. These enterprises were, however, on the whole successful, and thus the flocks and herds of the colonists surely, if at first slowly, increased and multiplied.

By the year 1795, Captain Macarthur, one of the first promoters of sheep-breeding in New South Wales, had accumulated a flock of 1,000, which were held in great estimation, and gradually increased in value, until, as recorded by an entry in his journal ten years later, the market price of a fat wether had risen to £5. Not satisfied with the natural increase of his flocks, Macarthur sought to improve the quality of his fleeces, by which means he could see opening before him the promise of great wealth, and the prospect of establishing important commercial relations with Great Britain. With these ends in view, he procured from the Cape of Good

Country suitable
for sheep.

Captain
Macarthur
promotes
wool-growing.

Hope, at great cost and trouble, a number of superior rams and ewes. A happy circumstance occurred which favoured his enterprise; for he had the good fortune to secure possession of three rams and five ewes of very fine Spanish breed, which had been presented by the King of Spain to the Dutch Government. These animals, out of a total of twenty-nine purchased at the Cape, arrived in Sydney in 1797, and were disposed of to various breeders. With the exception of Macarthur, however, those who had secured sheep of the superior breed made no attempt to follow up the advantage, being probably amply satisfied with the larger gains from the sale of an increased number of animals. Macarthur, on the other hand, thought little of present profits, and still less of breeding entirely for human consumption. He attentively watched the results of crossing his imported rams with the old stock, and by systematically selecting the finer ewes which were the offspring, for further mingling with the sires, he gradually improved the strain, and in a few years obtained fleeces of very fine texture which met with the ready appreciation of English manufacturers. It has been asserted that Macarthur was not the first to introduce merino sheep into Australia; but whether this be so or not, there is no doubt that to him is due the credit of having been the first to prove that the production of fine wool could be made a profitable industry in this Colony.

Improvement
of the flocks.

Spain formerly
chief wool-
grower.

Prior to the present century the production of the finest wool had been confined chiefly to Spain, and woollen manufactures were necessarily carried on in England upon a somewhat limited scale, which was not likely to improve in face of certain restrictions the operatives endeavoured to place upon their employers. These men, in support of their contention that the woollen trade could not be expanded, on account of the limited supply of the raw material, argued that fine wool was obtainable only in Spain; and it was at this favourable period that Macarthur arrived in England with specimens of the wool obtained from his finest sheep, conclusively proving the capabilities of Australia as

a wool-producing country. In this way he opened up a small trade with English manufacturers, which, as Australasian wool rose in public estimation, gradually increased until it reached its present enormous dimensions. During his visit to England, Macarthur purchased an additional stock of ten rams and ewes of the noted Spanish breed, nearly equal in quality to those which in 1797 he had procured from the Cape of Good Hope. That these animals were the finest obtainable in Europe may be gathered from the fact they also had formed portion of a present from the King of Spain to George III. Thus did Macarthur, after his return to New South Wales, patiently continue for many years the process of selection, with such success, that in 1858, when his flock was finally dispersed, it was estimated that his superior ewes numbered fully 1,000. Victoria secured a considerable portion of Macarthur's flock, and the process of breeding proceeded simultaneously in that and other adjacent Colonies.

Trade opened up
with Great
Britain.

Although the increase in the numbers of the finer sheep was satisfactory, the importation of superior stock was not discontinued, and the stock of the Colonies was augmented in 1823 and 1825 by the further introduction of Spanish sheep. Sheep-breeding was about this period commenced in the Mudgee district, and the climate of that region has produced a still more favourable result upon the quality of the fleeces than any other part of the Colony, and it was thence that the finest merinos were for a long time procured. As might have been anticipated, the climate has in some respects changed the character of the Spanish fleece. The wool has become softer and more elastic, and while having diminished in density it has increased in length, so that the weight of the fleece has only slightly altered. The quality of the wool has thus on the whole improved under the beneficial influence of the climate, and if no further enhancement in its value can be reasonably hoped for, there is at least every reason to believe that Australasian wool will maintain its present high standard of excellence.

Importation
of sheep.

Texture of wool.

Sheep in each Colony.

The following table shows the number of sheep at the close of 1861 and 1891 for each Colony; also, the annual increase per cent. in comparison to that of the population:—

Colony.	1861.	1891.	Annual Increase from 1861 to 1891.	
			Sheep per cent.	Population per cent.
New South Wales.....	5,615,054	61,831,416	8·3	4·0
Victoria	6,239,258	12,928,148	2·5	2·5
Queensland	4,093,381	20,289,633	5·4	8·9
South Australia.....	3,038,356	7,745,541	3·2	3·1
Western Australia	279,576	1,962,212	6·7	3·9
Tasmania	1,714,498	1,662,801	0·1	1·6
New Zealand	2,761,583	18,128,186	6·5	6·3
Australasia.....	23,741,706	124,547,937	5·7	3·8

* Decrease.

Progress of sheep-breeding.

Tasmania is the only Colony of the group in which the business of sheep-breeding has not advanced since 1861, though, strange to say, it is singularly well adapted for sheep raising, and its stud flocks are well known and annually drawn upon to improve the breed of sheep in the other colonies. In all the other provinces there has been a material increase, except in the case of Queensland, where the proportion of sheep has declined as compared with the population. There has been a very substantial increase in the number of sheep depastured in that Colony during the period covered by the table, but the population has progressed at a rate even more rapid. In South Australia the area adapted to sheep is limited, and no great expansion in sheep-farming can be looked for. As regards Victoria, the important strides made by that province in agriculture and kindred pursuits, afford sufficient explanation of the slow rate at which its flocks are increasing. The following statement shows the proportion of sheep in each Colony to the total flocks of Australasia. In 1861 out of every 100 sheep New South Wales depastured 23·7, while, in 1891, the proportion had increased to 49·5, or little short of one-half the total flocks. New Zealand came second, with 16·3 per cent. With the exception of

Proportion of sheep in each Colony.

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 124,547,937	N. S. W.	61,831,416
	Q'td.	20,289,633
	N. Z.	18,128,186
	Vic.	12,928,148
	S. A.	7,745,541
	W. A.	1,962,212
	Tas.	1,662,801

1891

the two Colonies named, and of Western Australia, whose flocks are small, the proportion of sheep depastured in each Colony to the total number of sheep in Australasia was less in 1891 than it had been in 1861 :—

Colony.	1861.	1891.
	Per cent.	Per cent.
New South Wales	23·7	49·5
Victoria	26·3	10·4
Queensland	17·2	16·3
South Australia	12·8	6·1
Western Australia	1·2	1·6
Tasmania	7·2	1·3
New Zealand	11·6	14·8
Australasia	100·0	100·0

The value of the sheep depastured in Australasia at the beginning of 1892 may be set down at £46,602,000, thus distributed among the various provinces :—

	£
New South Wales	20,868,000
Victoria	5,171,000
Queensland	6,340,000
South Australia	2,711,000
Western Australia	711,000
Tasmania	831,000
New Zealand	9,970,000
Australasia	£46,602,000

CATTLE.

Except in Queensland cattle breeding is secondary to that of sheep. In New South Wales the industry does not occupy so important a position as it formerly did, the decline being nearly 10 per cent. since 1861, or at the rate of 0·3 per cent. per annum. The lowest point was reached in 1885, when the herds only numbered 1,317,315, the result partly of continuous bad seasons, but principally of the more profitable character of sheep-farming, which induced graziers on many runs to substitute sheep for cattle. Since that period the improvement has been gradual, and, though small, would seem to indicate a disposition on the part of

pastoralists in some parts of the Colony to devote more attention to cattle-breeding. The progress of Victoria in this direction has been steady; but although the total number of cattle was nearly three times as great in 1891 as it was 30 years ago, the relative position occupied by the Colony remains much the same as in 1861 in regard to the proportional number of cattle depastured in the province. Queensland has largely increased her herds, and now possesses 52·2 per cent. of the total cattle of the whole group. New Zealand and Western Australia—especially the former—show decided improvement, and the breeding of this class of stock seems to be greatly in favour in those Colonies.

The following table shows the number of cattle in 1861 and 1891, with the yearly increase or decrease per cent. for the whole period, as well as the growth of the population :—

Colony.	1861.	1891.	Increase or Decrease per cent. per annum, 1861-1891.	
			Cattle.	Population.
New South Wales.....	2,271,923	2,046,347	*0·3	4·0
Victoria	628,092	1,812,104	3·6	2·5
Queensland.....	560,196	6,192,759	8·3	8·9
South Australia.....	265,434	676,933	3·2	3·1
Western Australia	33,795	133,690	4·7	3·9
Tasmania	87,114	167,666	2·2	1·6
New Zealand	193,285	831,831	4·8	6·3
Australasia.....	4,039,839	11,861,330	3·6	3·8

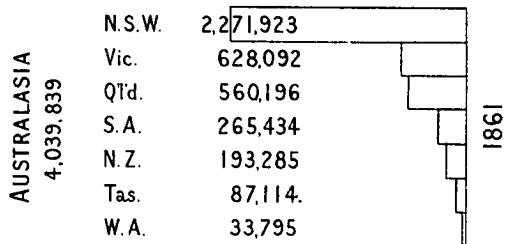
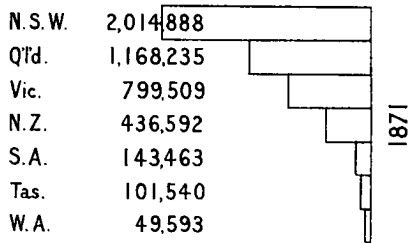
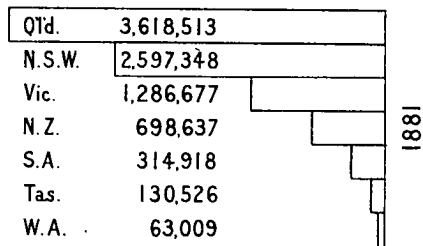
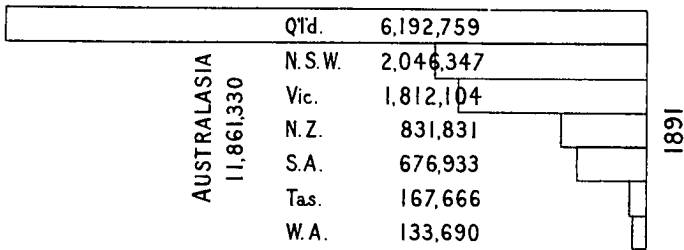
* Decrease.

Value of cattle.

The value of the cattle in Australasia at the beginning of 1892 may be set down at £55,139,000, thus divided amongst the various provinces :—

	£
New South Wales	11,940,000
Victoria	10,873,000
Queensland	21,675,000
South Australia	3,385,000
Western Australia	769,000
Tasmania	1,090,000
New Zealand.....	5,407,000
Australasia	£55,139,000

LIVE-STOCK — HORNE D CATTLE



HORSES.

Australasia is eminently fitted for the breeding of most descriptions of horses, and attention has long been directed to this industry. At an early period the stock of colonial bred horses was enriched by the importation of some excellent thoroughbred Arabians from India; and the high name which was acquired by the horses of Australasia was largely due to this cause. The abundance of good pasture everywhere obtainable also contributed to this result. The native kangaroo-grass, especially when in seed, is full of saccharine matter, and young stock thrive excellently upon it. This abundance of natural provender allowed a large increase in the stock of the settlers, which would have been a great advantage, had it not been that the general cheapness of horses led to a neglect of the canons of breeding. In consequence of the discovery of gold, horses became very high priced. Under ordinary conditions this circumstance would have been favourable to the breed of horses, and such was the case in Victoria. In New South Wales it was far otherwise. The best of the stock of that Colony, including a large proportion of the most valuable breeding mares, was taken by Victoria, with the result that for twenty years after the gold rush the horses of New South Wales greatly deteriorated. One class of stock only escaped. The thoroughbred racer was probably improved both by the importation of fresh stock from England, and by the judicious selection of mares.

Horse-breeding.

Excellence of native grasses.

Partial deterioration of stock.

The Colonies are specially adapted for the breeding of saddle and light-harness horses, and it is doubtful whether these particular breeds of Australasian horses are anywhere surpassed. The bush horse is hardy and swift, and capable of making very long and rapid journeys, when fed only on the ordinary herbage of the country; and in times of drought, when the grass and water have become scanty, these animals often perform astonishing feats of endurance. Generally speaking, the breed of horses is improving,

Saddle and harness horses.

Endurance of Australasian horses.

owing to the introduction of superior stud horses and the breeding from good mares. Where there has been a deterioration in the stock, this has been due to breeding from weedy mares for racing purposes and from the effect of droughts.

Demand for horses for India.

Although the demand in India is fair, and Australia is a natural market from which supplies may be derived, the speculation of sending horses there is one open to many risks, as, apart from the dangers of the voyage, there is always an uncertainty as to the stock being accepted. Owing, therefore, to the limited foreign demand, it has not been found advantageous to breed horses for any but local requirements.

Foreign demand for horses limited.

Number of horses in Australasia.

The following table shows the number of horses in each Colony for 1861 and 1891, also the proportion in each case to the total at each period. In 1861, New South Wales possessed 50·7 per cent. of all the horses in Australasia, Victoria being second, with 18·3 per cent. In 1891, New South Wales still held the leading position as regards numbers, but her proportion to the whole had fallen to 26 per cent. Queensland and New Zealand exhibit the most relative progress, having increased their respective proportions of the total from 6·3 and 6·2 per cent. in 1861 to 22·5, and 11·9 per cent. in 1891. The numbers and proportion for each Colony were :—

Colony.	Number.		Percentage of each Colony to total of Australasia.	
	1861.	1891.	1861.	1891.
New South Wales...	233,220	459,755	50·7	26·0
Victoria	84,057	440,696	18·3	24·9
Queensland.....	28,983	399,364	6·3	22·5
South Australia.....	52,597	202,906	11·4	10·6
Western Australia...	10,720	40,812	2·3	2·3
Tasmania	22,118	31,262	4·8	1·8
New Zealand	28,275	211,040	6·2	11·9
Australasia	459,970	1,785,835	100·0	100·0

The value of horses in the various Colonies is estimated as follows :—

Colony.	Value.
	£
New South Wales	4,598,000
Victoria	4,407,000
Queensland	3,195,000
South Australia	2,029,000
Western Australia	408,000
Tasmania	326,000
New Zealand	2,532,000
Australasia	17,495,000

The following table gives the flocks and herds of each of the great divisions of the globe, the returns are the latest available, and are based on figures given in the report of the Statistician to the American Department of Agriculture :—

Flocks and herds of the world.

	Cattle.	Horses.	Sheep.	Swine.
Europe	104,166,000	34,865,000	214,499,000	46,152,000
Asia	70,850,000	4,443,000	71,669,000	417,000
Africa	8,203,000	721,000	60,820,000	840,000
America	117,249,000	21,920,000	143,581,000	53,974,000
Australasia	11,861,000	1,786,000	124,548,000	1,155,000
Total.....	312,329,000	63,735,000	615,117,000	102,538,000

STOCK CARRYING CAPACITY OF AUSTRALASIA.

None of the Colonies are stocked to their full capacity, while in the large territory of Western Australia, and the Northern territory of South Australia, the process has only begun. A clear idea of the comparative extent to which each Colony is stocked cannot be given unless the different classes of stock are reduced to a common value. Assuming, therefore, that one head of large stock is equivalent to ten sheep, and stating cattle and horses in terms

Capacity of the Colonies to carry stock.

of sheep, it will be found that the number of acres per sheep for each Colony is as follows :—

Colony.	No. of acres per sheep.
New South Wales	2·3
Victoria.....	1·6
Queensland	5·0
South Australia	35·0
Western Australia	183·0
Tasmania	4·6
New Zealand	2·3
Australasia	7·8

Limit of production not yet reached.

The most closely stocked Colony is Victoria, with 1·6 acres per sheep, but this is by no means the limit of the carrying capacity of that province. On the contrary, there is still a considerable tract yet to be brought under the sway of the pastoralist. Neither New Zealand nor New South Wales, with 2·3 acres per sheep, can be said to have reached their full carrying capacity. If the present average of New South Wales be taken as the possible limit to which Australasia may be stocked, then there is room in these Colonies for 600 million of sheep, or 60 million cattle more than now depastured. That Australasia can carry 1 sheep to 2·3 acres is an improbable supposition. In almost every Colony the best land is under occupation, and the demands of the farmer must diminish the area at present at the disposal of the grazier. This will more especially prove true in regard to Victoria, New Zealand, and Tasmania. On the other hand, by resisting the temptation to overstock inferior country, and by increasing the natural carrying capacity by water conservation and irrigation, and the artificial cultivation of grasses, the Colonies where agriculture has made most progress will be able to carry stock in even larger numbers than they have hitherto attempted. Taking all circumstances into consideration it may be fairly estimated that under the present system the Colonies are capable of maintaining, in ordinary seasons, stock equivalent to 390,000,000 sheep; that is, about 150,000,000 sheep, or their equivalent in cattle, more than are now depastured.

Stock-carrying capacity of the Colonies.

The number of stock in Australasia, expressed in terms of sheep, the number of acres per sheep, and number of sheep per head of population for the various dates herein mentioned, were :—

Year.	Sheep.	Cattle. In terms of Sheep.	Horses. In terms of Sheep.	Total.	Acres per Sheep.	Sheep per head of Population.
1861	23,741,706	40,398,390	4,599,700	68,739,796	29·4	54·3
1871	49,773,584	47,138,200	7,825,580	104,737,364	19·3	53·2
1881	78,063,426	87,096,280	12,497,650	177,657,356	11·4	62·9
1891	124,547,937	118,613,300	17,858,350	261,019,587	7·8	67·4

The total value of pastoral property, that is, improvements, plant, and stock, was estimated at the beginning of 1892 at £249,736,000, and of this large sum £152,068,000, or over one-half, belonged to New South Wales. In the amount quoted the value of stock alone (excluding swine), comes to about £119,236,000. No account is here taken of the value of land devoted to pastoral purposes, for, though much purchased land is used for depasturing stock, the larger area comprises lands leased from the State, so that a statement which omitted to take into account the value of the State lands would be misleading. The annual return from pastoral pursuits was £38,228,000, the share of each Colony in the total production being in 1891-92 :—

New South Wales	£14,725,000
Victoria	6,283,000
Queensland	6,616,000
South Australia.....	2,380,000
Western Australia	532,000
Tasmania	735,000
New Zealand	6,957,000
<hr/>	
Australasia	£38,228,000

Dairy cattle not included.

The products of dairy cattle and swine are not included in the foregoing statement, the figures being given in another place. It should be understood that the values quoted are those at the place of production. The value of the return from each class of stock may be approximately reckoned as follows :—

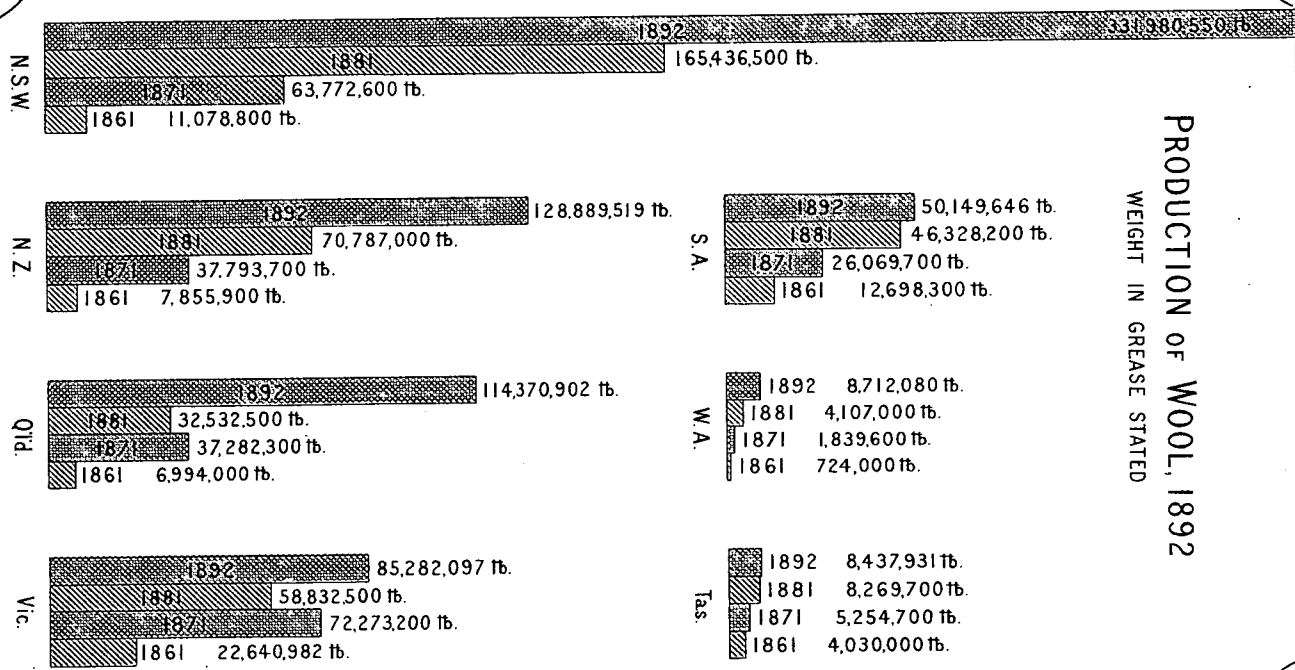
Sheep.....	£28,543,000
Cattle	6,550,000
Horses	3,135,000
	£38,228,000

Export of Wool. As might be supposed the greater part of the value of stock returns is due to wool. Thus, out of the £38,228,000 quoted above, £22,253,000 is the value of wool, viz.:—£22,037,750 for wool exported, and £215,250 for wool used locally. The wool export of the Australasian Colonies during 1891 was 707,010,242 pounds weighed in the grease, the export value being £24,591,324—that is to say, £2,553,574 more than the figures shown above. The excess represents the cost of freight, handling, and brokerage between the sheep-walks and the port of shipment.

Export of wool in the grease.

The quantity and export value of the wool clip in the grease is given for each Colony in the subjoined table for 1881 and 1891. The values of the clip for the latter year for South Australia and Tasmania do not compare favourably with those of 1881; all the other Colonies show an improvement both in quantity and value of the clip, but this increase was relatively greatest in Queensland, New Zealand, and New South Wales, in the order named. New South Wales maintains its high position as a wool producer, nor can it be denied that in New Zealand sheep-breeding is a flourishing concern, for though the number of sheep in 1891 was not largely in excess of that in 1885, this is mainly due to the heavy demand upon the resources of the province for the

PRODUCTION OF WOOL, 1892
WEIGHT IN GREASE STATED



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supply of stock to meet the requirements of the London market in regard to frozen mutton.

Colony.	Weight of clip in grease.		Values.	
	1881.	1891.	1881.	1891.
	lb	lb	£	£
New South Wales.....	165,436,500	353,704,668	7,175,200	10,927,487
Victoria	58,832,500	79,777,765	2,562,800	3,792,938
Queensland.....	32,532,500	89,069,525	1,331,900	3,453,548
South Australia.....	46,328,200	49,751,143	1,573,300	1,540,079
Western Australia	4,107,000	8,783,073	256,700	329,365
Tasmania	8,269,700	9,378,173	498,400	418,460
New Zealand.....	70,787,000	116,553,895	2,910,600	4,129,447
Australasia.....	386,293,400	707,018,242	16,308,900	24,591,324

The value of the clip of the year 1892 at the port of shipment was £24,169,970, and the weight, 674,285,057 lb.; of greasy, 567,209,721 lb.; of washed or scoured wool, 107,075,336, equivalent to about 727,822,725 lb., if all were exported in grease. Of this quantity, 490,541,376 lb. of greasy or washed was despatched to London, and 183,743,681 lb. to other European ports and to America. The British trade returns show that during the twelve months ended March, 1893, 491,892,542 lb. of Australasian wool, valued at £18,236,303, were imported into Great Britain, figures closely approximating to those just given, and demonstrating the correctness of the export returns of these Colonies.

Value of the wool clip.

The average price per lb. obtained for wool in grease, at the London Wool Sales, for the five series during each year from 1885, for the principal producing Colonies was:—

Price of wool in grease.

Year.	New South Wales. (Merino).	Victoria. (Merino).	New Zealand. (Cross-bred.)
	d.	d.	d.
1885	8½	10½	8½
1886	8½	10½	9½
1887	9½	10½	9½
1888	8½	10½	9½
1889	10	11½	10
1890	10	11½	10½
1891	8½	11½	10½
1892	7½	11	9½

New South
Wales wool
exported *via*
Melbourne.

It will be noticed that Victorian wool averages a little more than 2d. per lb. higher than New South Wales wool. The figures must be taken with qualification. Much of the New South Wales wool, the product of the Riverina districts, is exported *via* Melbourne, and sold as Port Phillip wool, and brings a price considerably in excess of the average given in the table for the Colony of which it is the produce.

Disposal of the
surplus sheep.

In view of the large increase of stock which a succession of favourable seasons has brought to the flock masters of Australasia the question of the disposal of the surplus cast has become a matter of very serious consequence. In New South Wales especially, and in the Riverina district in particular, it was found necessary to have recourse to the old method of boiling down, which a fortunate rise in the price of tallow has made it possible to carry on with a margin of profit. In New Zealand, however, a much better solution has been found, and a trade in frozen mutton with the United Kingdom has been established on a thoroughly payable basis. The first successful attempt at shipping frozen mutton to England was made in New Zealand in 1882, and since then the trade has attained great proportions, to the immediate benefit of the Colonial producer as well as to that of the English consumer. The trade initiated by the New Zealand Land Company has been extended by the formation of numerous joint stock companies, which now own twenty-three meat freezing works in the two islands, having an aggregate capability for freezing about 4,000,000 sheep per year. In New Zealand the sheep are generally killed up country, and transported by rail to the freezing works. Three fleets of steamers are engaged in the trade, and the freight rates charged enable the companies to realise satisfactory profits. The example of New Zealand is now being followed by the continental provinces, and by New South Wales in particular; the following figures will show how the trade is being extended:—In 1881 the value of the trade done by New Zealand was only £22,391, or 6 per cent. of that of Australasia; in 1891 it had increased to

Frozen meat.

£1,316,848, or 73·5 per cent. of the total. New South Wales and Queensland are the principal exporters in this trade after New Zealand, the value of export being £197,916 for New South Wales, and £246,871 for Queensland. In 1881 New South Wales and Victoria exported meat to the total value of £304,909; in 1891 their joint export had decreased to £218,312, two-thirds of the decrease being due to Victoria. A revival of this industry may, however, be looked for in the near future.

The following table shows the quantity of fresh and preserved meats exported, the produce of each Colony, in 1881 and 1891:—

Colony.	Quantity.			
	1881.		1891.	
	Fresh and Frozen.	Salt and Preserved.	Fresh and Frozen.	Salt and Preserved.
	Cwt.	Cwt.	Cwt.	Cwt.
New South Wales...	17,740	62,094	106,810	68,192
Victoria	8,136	35,947	110	10,486
Queensland.....	.....	22,051	106,307	80,639
South Australia.....	22	746	940	2,131
New Zealand .....	.....	9,595	998,277	61,490
Australasia.....	25,898	130,433	1,212,444	222,938

The seriousness of the question of the disposal of the surplus cast may be grasped when it is understood that, apart from New Zealand, there is a surplus of from 60,000 to 100,000 head of cattle, and 4,500,000 sheep, which in any ordinary year could be exported without trenching upon the local requirements, while if a satisfactory trade were opened up the surplus could be made much larger.

DAIRY-FARMING.

Dairy-farming has of late years made fair progress in Australasia, especially in New South Wales, Victoria, and New Zealand. The introduction of the factory system at convenient centres, and the use of the cream separator, have done much to cause the extension of this industry. The number of dairy cows and the

Quantity and value of meats exported.

Progress of dairy-farming.

PRODUCTION OF BUTTER AND CHEESE.

estimated quantity of milk produced by them in each Colony were as follows in 1891 :—

Colony.	Dairy Cows.	Quantity of milk produced (estimated).
	No.	Gallons.
New South Wales	343,477	123,652,000
Victoria	405,973	146,150,000
Queensland	120,000*	36,000,000
South Australia	79,864	28,751,000
Western Australia	10,000*	3,600,000
Tasmania	33,687	13,475,000
New Zealand	206,906	82,762,000
Australasia	1,199,907	434,390,000

* Estimated.

The value of the milk and its products, butter and cheese, and of the return obtained from swine, together with the total value of dairy produce for each Colony in 1891 were :—

Colony.	Value of Milk, Butter, and Cheese.	Value of Return from Swine.	Total Value of Dairy and Swine Produce.
	£	£	£
New South Wales	1,684,275	348,675	2,032,950
Victoria	1,916,000	430,000	2,346,000
Queensland	531,375	162,250	693,625
South Australia	396,575	114,800	511,375
Western Australia	53,125	31,350	84,475
Tasmania	196,850	93,025	289,875
New Zealand	1,398,900	405,150	1,804,050
Australasia ..	6,177,100	1,585,250	7,762,350

Butter and cheese.

The production of butter and cheese for 1891 in each Colony is estimated to have been as follows :—

Colony.	Butter.	Cheese.
	lb.	lb.
New South Wales	18,363,000	5,506,000
Victoria	23,582,000	5,748,000
Queensland	6,701,000	1,986,000
South Australia	2,948,000	416,000
Western Australia	310,000	58,000
Tasmania	2,414,000	650,000
New Zealand	16,310,000	6,976,000
Australasia	70,628,000	21,340,000

The Colonies having a surplus of butter and cheese available for exportation are shown in the following table :— Export of butter and cheese.

Colony.	Quantity.	
	Butter.	Cheese.
	lb.	lb.
Victoria	4,337,534	82,621
South Australia .....	.....	547,065
New Zealand	4,416,160	4,451,664
Total	8,753,694	5,081,350

New South Wales is in the anomalous position of being both an importer and an exporter ; this is explained by the circumstance that only during the spring and early summer months is the production larger than the local requirements ; in other months it is less, hence the necessity of importations, which are made chiefly from New Zealand. The balance of trade is, however, in favour of imports.

The Colonies which, on the other hand, are obliged to import butter and cheese are shown below :— Import of butter and cheese.

Colony.	Quantity.	
	Butter.	Cheese.
	lb.	lb.
New South Wales	838,296	158,463
Queensland	303,608	965,878
South Australia	401,779	.....
Western Australia	546,744	186,693
Tasmania	267,090	5,377
Total	2,357,517	1,316,411

From the foregoing figures it will be seen that those Colonies which produce a surplus of butter and cheese have, after providing for the deficiency of the other provinces, a balance available for exportation. The quantity in 1891 amounted to 6,396,178 lb. butter, and 3,764,939 lb. cheese, valued at £213,200 and £63,000 respectively. An export trade in butter and cheese Butter and cheese for export.

has long been maintained from New Zealand, but since 1890 Victorian and New South Wales butter has been sent to the London market, and its very favourable reception there gave a fresh stimulus to the dairying industry in those Colonies. The rapidity with which this trade is growing may be gauged from the following table, which shows the quantity and value of butter exported to the United Kingdom during the years 1890 and 1891 :—

Colony	1890.		1891.	
	Quantity.	Value.	Quantity.	Value.
	lb	£	lb	£
New South Wales	589,160	18,914	391,180	17,278
Victoria	1,286,583	47,516	3,778,775	186,437
South Australia	10,850	326	23,864	1,150
New Zealand	2,976,848	92,646	3,246,768	106,446
Australasia	4,863,441	159,402	7,440,587	311,311

Progress of
the industry.

The increase in trade for one year only, in the provinces of Victoria and New Zealand, is certainly remarkable. New South Wales appears to have been lagging behind the other Colonies but the force of the example was not lost upon the province, for in the following year, 1892, the direct butter trade from New South Wales to the United Kingdom suddenly increased from 391,180 lb. to 1,532,782 lb. in weight, and from £17,278 to £63,129 in value.

British market
for dairy
produce.

From latest advices it would appear that the price obtained for Australian butter in London, was higher than the rates ruling in the local market, and as there can hardly be a limit placed to the capacity of Australasia to produce butter and cheese, it is probable that these high prices will have the effect of greatly stimulating the dairy industry throughout all these Colonies. In connection with this subject it may be mentioned that the value of the butter, cheese, and eggs imported into the United Kingdom during 1891 was £11,591,183, £4,813,404, and £3,505,522 respectively. The supply is chiefly drawn from the Continent of Europe, and from America.

The breeding of swine is usually carried on in conjunction with dairy-farming. Below will be found a return of the number of swine in each Colony in 1861, and in 1891, together with the proportion owned by each in comparison with the total stock. It will be observed that the actual number owned by the various Colonies has in all cases increased, though the relative proportions have altered considerably. New South Wales, for instance, held over 40 per cent. of the stock of swine in 1861, but in 1891 the proportion had receded to 21·9 per cent., while Victoria, which possessed little less than 15 per cent. in 1861, has now nearly 25 per cent. of the total number. In the same interval New Zealand had increased from nearly 12 per cent. to something over 26 per cent. of the whole:—

Breeding of swine.

Colony.	Number.		Percentage of each Colony to total of Australasia.	
	1861.	1891.	1861.	1891.
	No.	No.	Per cent.	Per cent.
New South Wales.....	146,091	253,189	40·3	21·9
Victoria.....	43,480	286,780	12·0	24·8
Queensland.....	7,465	122,672	2·1	10·6
South Australia.....	69,286	83,797	19·1	7·3
Western Australia.....	11,984	25,930	3·3	2·2
Tasmania.....	40,841	73,373	11·3	6·4
New Zealand.....	43,270	308,812	11·9	26·8
Australasia.....	362,417	1,154,553	100·0	100·0

The products of the swine—bacon, ham, lard, and salt pork—are still imported by all the Colonies with the exception of South Australia and New Zealand, as is shown in the following table, which relates to the year 1891:—

Products of the swine.

Colony.	Bacon and ham.	Salt pork.	Lard.	Net value imported.
	£	£	£	£
New South Wales...	40,571	12	20	40,603
Victoria.....	3,588	928	*188	4,328
Queensland.....	15,034	515	*523	15,026
South Australia.....	695	242	.....	937
Western Australia.....	7,097	.....	423	7,520
Tasmania.....	2,042	30	.....	2,072
New Zealand.....	*25,182	*3,647	*1,475	*30,304
Australasia.....	43,845	*1,920	*1,743	40,182

The figures marked (*) show an excess of exports, all the others represent an excess of imports. There seems to be considerable scope for an extension of this particular branch of farming in most of the Colonies.

POULTRY AND MINOR INDUSTRIES.

Poultry, eggs,
and honey.

An estimate is given below of the value of the production of poultry and eggs, together with that arising from bee culture. The value of the production in each Colony in 1891 was as follows:—

Colony.	Poultry and Eggs.	Honey and Beeswax.
	£	£
New South Wales	683,000	20,000
Victoria	662,000	30,000
Queensland	242,000	10,000
South Australia	241,000	16,000
Western Australia	30,000	1,500
Tasmania	89,000	4,000
New Zealand	376,000	16,000
Australasia	2,323,000	97,500

The most remarkable feature is the trade in eggs between South Australia as supplier and Victoria and New South Wales as buyers. The figures for 1891 show that during that year South Australia exported eggs to the value of £48,544, viz., £21,230 to Victoria, £26,606 to New South Wales, and £708 to Western Australia. The bulk of the New South Wales trade was done with the Barrier district, which is commercially a dependency of South Australia.