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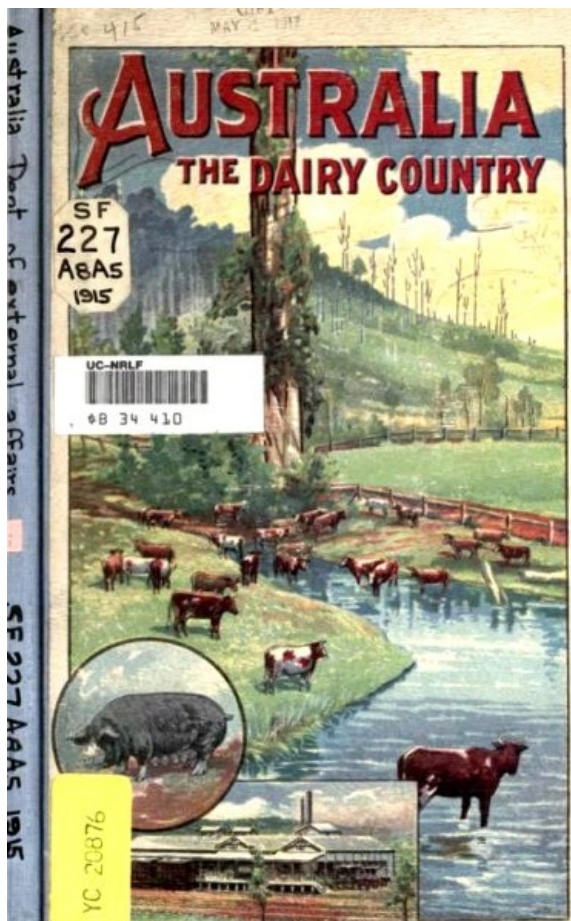
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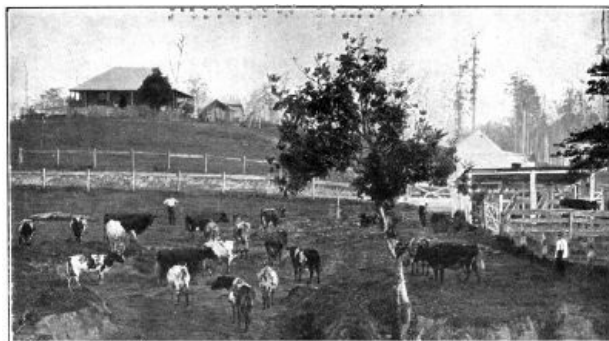


DEPARTMENT OF EXTERNAL AFFAIRS, MELBOURNE.

AUSTRALIA: *The Dairy Country*

Dairy Farmers are specially invited and assisted to come to Australia because it is considered that in a progressive young Country with so much Territory adapted for Dairying such Settlers will advance the interest of the Country and of themselves.

PUBLISHED UNDER THE AUTHORITY OF THE MINISTER OF STATE FOR
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Note the Shedding is of very light description.

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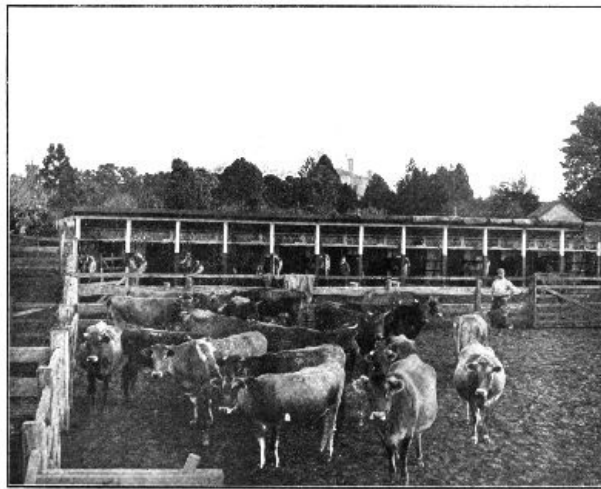
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72 Victoria Street, Westminster, London, S.W.

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THE SECRETARY,
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The suitability of Australia as a country for the dairyman is referred to in the report of the Scottish Agricultural Commission,^[A] who toured the States of the Commonwealth in 1910-11, in the following terms:—



An up-to-date Milking Yard.

"The practice of dairying, in a limited domestic sense, as applied to the milking of a few cows and the making of a little butter and cheese for family use, is as old as the history of mankind, and in that restricted meaning dairying has been carried on in Australia since the arrival of the first settlers. But the industry as existing there to-day is a vastly different matter, being already of great importance, and promising rapid and extensive development. It is a young industry, so recently out of its infancy that if this report had been written fifteen years ago the section on dairying might have been almost as brief as the famous chapter on snakes in Ireland.

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Cream Carts at the Factory.

"The live stock brought to Sydney by Captain Phillip in 1788, and sent to propagate their kind at Farm Cove, consisted of one bull, four cows, one calf, and seven pigs. Their descendants in 1908 included about ten and a-half millions of cattle, of which nearly two millions were dairy cows. This is about one cow for every two persons in the Commonwealth, which seems a large proportion, but as it means only one cow for every two square miles in Australia, there is ample room for expansion. In Great Britain we have about twenty-six cows for every square mile, and only one cow for every fifteen people. These figures indicate that in

proportion to its population Australia is much more of a dairying country than Great Britain, but that in proportion to its area, it has developed the industry much less extensively, and is still capable of making enormous growth. Until within comparatively recent years there was little dairying anywhere in the Commonwealth, and what little there was appears to have been carried on by somewhat primitive methods. Modern developments, the spread of scientific knowledge, the fostering care of Government, and, above everything, the advent of the separator, of the milking machine, and of the freezer have changed all that. To-day the industry is prospering and full of promise....

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"There is no denying the fact that every State in the Commonwealth has extensive districts where dairying could be carried on very profitably. Indeed there must be very few parts of the world where Nature does so much to help and so little to hinder the provident and industrious producer of milk.

"The most important advantage of all is undoubtedly the climate, and that, like many another thing of value, is a good servant, but a bad master. It would not be easy to overstate the benefit a dairyman receives from being relieved of the need for housing, hand-feeding, and tending his cows during a long winter. His cows are healthier, their feeding costs less, there is no cleaning of byres, no washing of floors, no preparing of food, no never-ending carting of turnips, no filling of sheds with hay or straw. His anxiety, his work, and his expense are reduced by half, through the simple agency of a friendly climate. And yet this same climate is also his most dangerous enemy.

"There are certainly also adverse influences which must not be forgotten, but a careful examination of the whole position will probably lead to the conclusion that Australia is, on the whole, a good dairyman's country.

"The advantages include:—(1) Cheap land, (2) cheap cows, (3) inexpensive buildings, (4) a climate permitting cows to be in the open all the year round, (5) a convenient market and a fair price at the factories, (6) helpful Government supervision.

"The disadvantages are:—(1) Dear and scarce labour, (2) an inferior stock of milk cows, (3) occasional dry seasons, and (4) the farmer's inexperience and ignorance of scientific dairying."

These several points are touched on in this pamphlet in the chapters dealing with the individual States, but some general remarks are offered here in regard to the four points mentioned as operating disadvantageously.

(1) *Dear and Scarce Labour.*—Every young country at times experiences the difficulty of procuring sufficient skilled assistance to keep pace with the rapid expansion of its industries. Australia is no exception. Dairy farmers there have not always been able to obtain experienced milkers. The farmer with children old enough to assist him is at a great advantage, and some of the most successful dairy farms in the Commonwealth are worked mainly by the owners and their families. But where the herd is too large, or the family too small, the milking machine, which is really a valuable aid to the dairyman, has been pressed into use, with satisfactory results.

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A fine herd of Holsteins.

There is no doubt that rapid as has been the expansion of this industry in Australia, its development has been distinctly retarded by the want of reliable milkers.

But what is the farmer's bane is the farm labourer's boon. The scarcity of labour has checked the farmer's operations, but it gives the man seeking employment a wider field.

Competent milkers readily find employment at \$4.80 to \$6.00 per week and keep. In every important district good dairy hands also have facilities extended to them for entering into arrangements for dairying on shares, with profit to themselves (see pp. 16-18).

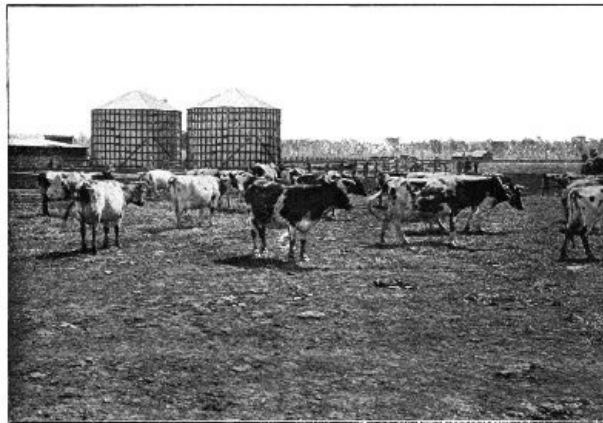
(2) *An Inferior Stock of Milk Cows.*—The fact that while in many districts there are to be found dairy herds averaging barely 300 gallons per cow per annum, with a butter fat percentage of little over 3.5, carried on the same class of land as herds which average over 500 gallons per

cow, with over 4 per cent. butter fat, will enable any dairy farmer to realise how much room there is for improvement in this thriving young industry, and what scope there is for the man accustomed to get the best results from his land and his herd. But the Governments of the respective States afford special facilities by way of importing and placing at the disposal of farmers stud cattle of the highest standards. Private persons are also doing a great deal in importing and breeding high-class animals. Herd-testing associations are becoming more numerous. Farmers are learning that it is profitable to keep milk records and to cull out of their herds the cows that do not give payable yields, and pronounced advancement is being made in this direction.

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(3) *Occasional Dry Seasons.*—The effects of dry spells, which sometimes occur even in the best-watered dairying districts, can be greatly minimised by the conservation of fodder, by cheap and easy methods of silage. So rich is the country in succulent natural grasses, and so congenial is the climate, that farmers exhibit a tendency to rely too much on the bounty of the seasons. This is what the Scottish Commission meant when they referred to the friendly climate as being the dairyman's most dangerous enemy. It is true that in normal years milch cows may depasture the whole year long on the natural pastures, and on this food alone yield milk of magnificent flavour, producing butter and cheese of the highest quality. But there should be put by to supplement the natural fodder during dry times a supply of food either as hay or silage. The experts of the various agricultural departments strongly advocate the use of the silo, but the advice has not yet been generally adopted.

As the loss in the silo is insignificant, it can be realised how cheaply ample stores of the best class of stand-by fodder can be conserved. Silos to hold 100 tons cost about \$480.00 to construct, and a cutter and elevator about \$144.00. To this would have to be added the cost of a horse-works or engine, but until a settler is in a position to indulge in the most up-to-date outfit, he can follow the usual practice of serving his greenstuff in the form of stack silage, which entails a very moderate outlay.



Silos, Victoria.

Many crops excellent for silage are easily grown, and the cultivation areas need never be idle for a day at any time of the year. As one crop becomes fit to use, the land can be replanted irrespective of weather conditions. For instance, in spring (September) maize or sorghum can be sown, either over the whole area at once or at intervals of a week or a month up to January. In three to three and a-half months, during which time the pastures are at their best, and there is no need for supplementary fodder, the first of the areas will be ready for use as green fodder, or for conversion into silage to serve as a cheap and juicy winter fodder. In many districts as soon as the earliest-sown maize crop is harvested a second maize or sorghum crop is planted, and by the time that is ready to cut, barley and vetches or field peas can be planted to come in to supplement the stores of winter fodder.

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A fine growth of Sorghum—Victoria.—An excellent fodder crop.

Maize is harvested for silage when the cobs are well filled, and the grain is beginning to glaze; at

this stage a normal crop will yield about 20 tons greenstuff per acre. Sorghum will produce about 15 tons, and barley and vetches or peas about 10 tons per acre. Wheat and oats are often grown in order to be cut for hay, and make an excellent fodder.

Another most valuable crop to the dairyman is lucerne, which will keep in a well-built stack for an indefinite time.

(4) *The Farmer's inexperience and ignorance of Scientific Dairying.*—To this last point the Scottish Commissioners furnish a reply in their report.

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A typical Australian Dairy Farm.

"A great many," the report states, "of those engaged in producing milk have had no training in the business. If a man can milk a cow, or is willing to learn, he thinks himself quite able to run a dairy farm. In time, if he is intelligent and observant, he becomes as expert at his trade as if he had never done anything else; but his experience has certainly cost him a good deal. The men who are neither intelligent nor observant learn little from experience, and their dairy methods leave much to be desired. It is they who breed their cows anyhow, who keep no kind of milk records, who think it economy to bring in their cows to the calving as hard as wood, who depend entirely on pasture for food, who make no provision for drought, who have nothing to learn from anybody, and who are keeping the reputation of the Australian cow at a level much below respectability. By-and-by, no doubt, this type of man will become scarcer. The State Governments are doing what is possible to spread abroad scientific knowledge in dairying matters, and a younger generation is growing up that has been made familiar both with the practice and the theory of milk production. When their time comes it is certain they will make dairying highly profitable. The fact that, with an average milk yield of 'something under 250 gallons per annum,' the industry as a whole is in a prosperous condition affords the most remarkable testimony possible to the excellence of Australia as a dairyman's country. What will happen when the average doubles itself, and attains, as it surely will, the moderate figure of 500 gallons per annum?"

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A Phenomenal Growth.

Starting out with splendid natural advantages—a wide range of soils of great fertility, indigenous grasses of high food value, and a congenial climate—the dairying industry in Australia has made phenomenal strides.

The establishment throughout the chief districts of co-operative factories, owned and managed by the farmers themselves, and the introduction of cold storage greatly stimulated its growth. During the last decade its advancement has been remarkable. The Australian dairy industry is based on the world's markets. Every year the demand in various countries for Australian and other dairy and farmyard products increases, and the large home market is also expanding.

The facilities for supervision, handling, and transportation are improving, and Australian dairymen to-day obtain high prices in both local and outside markets for their produce. It is stated that in South Australia dairymen who delivered good cream were able to secure from the factories an average of \$0.22 per lb. from the butter made therefrom.

The following table shows at once the advance of the dairying industry (including poultry farming and bee culture):—

	TEN YEARS		
	1902	1912	Increase.
Dairy Cows (No)	1,113,911	2,086,885	87.34 %
Pigs (No)	777,289	845,255	8.88 %

Hives (No)	80,111	167,441	109.01 %
Production (quantity)—			
Butter	79,572,327 lbs.	187,194,161 lbs.	13.525 %
Cheese	10,005,787 lbs.	16,160,491 lbs.	61.50 %
Bacon and Ham	30,608,345 lbs.	54,192,175 lbs.	77.05 %
Honey	2,873,763 lbs.	8,007,492 lbs.	178.63 %
Beeswax	68,243 lbs.	130,959 lbs.	91.90 %

FIVE YEARS.

	1907.	1912.	Increase.
Production (total value)	\$74,803,200.00	\$97,344,000.00	30.13 %

TEN YEARS

	1902	1912	Increase.
Exports (Value)—			
Butter	\$1,820,371.20	\$16,044,681.60	
Cheese	\$20,592.00	\$27,648.00	
Condensed Milk	\$55,689.60	\$92,308.80	
Bacon and Hams	\$37,060.80	\$328,814.40	
Lard	\$6,100.80	\$177,902.40	
Frozen Pork	\$70,339.20	\$79,972.80	
Honey	\$7,891.20	\$9,235.20	
Other items	\$269,246.40	\$78,859.20	
Total	\$2,287,291.20	\$16,839,422.40	636.21%

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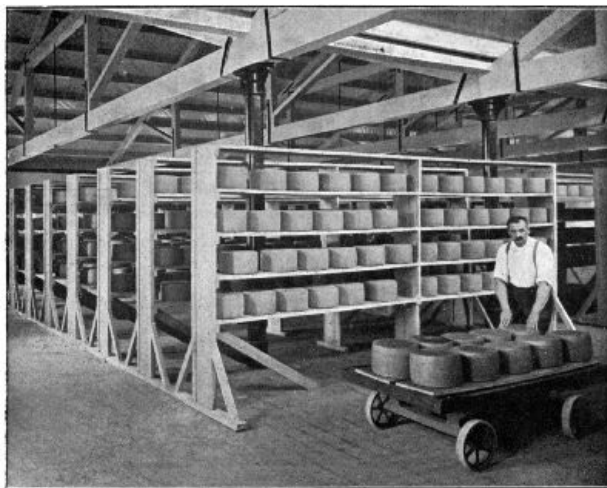


In the Butter Factory.

The United Kingdom purchases the great bulk of Australian butter—about 88 per cent.—but considerable quantities also go to Canada, Ceylon, China, the Dutch East Indies, Egypt, Hongkong, the Islands of the Pacific, Japan, Philippine Islands, the Straits Settlements and South Africa.

Besides the co-operative factories there are many proprietary concerns, and the farmer is benefited by the keen competition between them. The establishments in the Commonwealth where the manufacture of butter, cheese, and condensed milk is carried on number several hundreds. They are distributed throughout all the States, but they are larger and more numerous in New South Wales, Victoria, and Queensland.

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In the Cheese Factory.

Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or "creameries," has resulted in a considerable reduction in the cost of manufacture, since improved appliances, such as refrigerators, may be profitably worked at the larger establishments. The product is also of a more uniform quality. The number of farmers who adhere to hand processes is rapidly diminishing. Formerly the average quantity of milk used per lb. of hand-made butter was about 3 gallons, but separator butter requires only about 2.6 gallons.

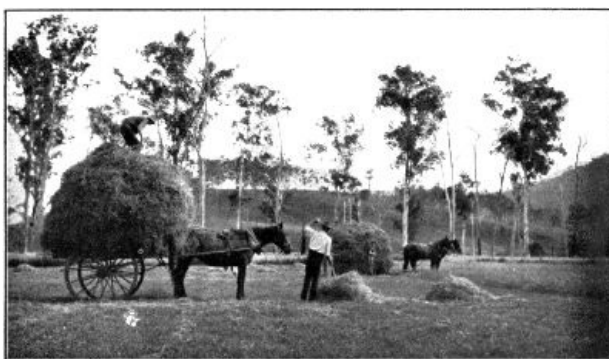
State Supervision.

Each of the State Agricultural Departments exercises considerable supervision in regard to the industry. Dairy experts are employed to give instruction in approved methods of production, to examine animals, to inspect the buildings used for milking, separating and butter-making, and to examine the marketable produce. A high standard of dairy hygiene, cleanliness of *personnel* and *materiel* and purity of produce have also been insisted upon under State laws. Financial assistance has been given to facilitate the economic handling of dairy products, and much benefit has resulted, the advances having generally been promptly repaid.

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For the maintenance of the purity and quality of Australian butter and other dairy produce, the Commerce Act passed by the Commonwealth Government requires that each of these articles shall conform to certain standards. Butter intended for shipment oversea must be covered with a true trade description, and that the following information should appear on each box:—The word "Australia," the name of the State in which it was produced, net weight, manufacturer's or exporter's name or registered brand, and the words "pure creamery butter," "pastry butter," "milled butter" (that is, butter which is a mixture or blend of two or more butters ordinarily packed alone and under separate names or brands), or "repacked butter," as the case may require. Other matters may be added, but must be true, and not liable to mislead. Margarine must be so stamped or marked. All butter and other dairy products intended for export must be sent for inspection to appointed places. The inspecting officer issues a certificate on the authorised form that it is up to the standard.

The regulations now in force contain important provisions in regard to the standard for export dairy products. By means of these provisions purity and quality are guaranteed. Trade is also facilitated, since quantities of butter are purchased solely on the certificate issued, without inspection. The standard for butter, the most important dairy article, is as follows:—Butter which contains only—No fat other than butter fat, not more than 16 per cent. of water, 3 per cent. of casein, 0.5 per cent. of boric acid, 4 per cent. of salt, or less than 82 per cent. of butter fat; or any colouring matter deemed by the Minister for Trade and Customs to be harmless.



Lucerne Hay.

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Subsidiary Industries.

Pig-Raising.—Not least among the rural industries awaiting a far wider development in Australia is that of pig raising. For very many years the number of these animals raised in the different States showed no appreciable increase, though of more recent years improvements in this direction have been noticeable. Yet the rate of progress is quite unequal to the requirements of local demand and of the export business.

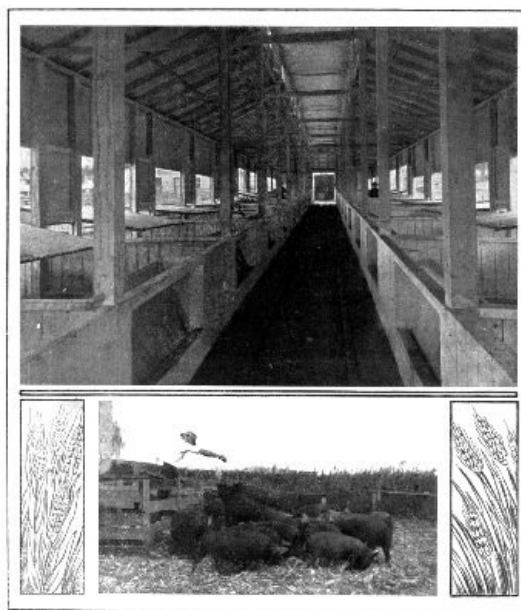
Pig raising for years has been a kind of subsidiary industry to dairying, and as such has seldom received the attention warranted by the returns yielded. To some extent it has been the ease with which these profits have been obtained that has brought about the condition of affairs existent to within a few years ago. Pig raising now, instead of being regarded merely as an adjunct to dairying, is being looked upon much in the same light as is a main line whether connected with dairying or general farming. This is indicated by the fact that where previously any description of boar or sow was good enough to produce a litter, now both farmers and dairymen are using chiefly the pedigree stock, and are giving attention to the different crosses most likely to give the largest litters suitable for bacon production, which can be brought into condition for market in the quickest time. The introduction of these businesslike methods has naturally resulted in greater gains, and has further given a stimulus to the pig-raising industry.

The policy of closer settlement which is entering freely into the rural development of the various States is furthermore causing farmers and settlers to give more careful attention to any side industry which can be made to return a good margin of profit on the labour expended. In other words, the modern farmer is becoming more alive to the business possibilities of what may be termed specialised production. It is in this fact that the future development of the pig-raising industry depends. A dairyman, general farmer, irrigationist, and even the fruitgrower finds the pig of inestimable value in using up the waste produce, and turning it into a commodity which will return high interest in a remarkably short space of time.

This turn of events is making itself felt in other directions. Bacon-curing establishments and co-operative factories are coming into existence where formerly supplies would never have justified their presence, and the result is that those who have suitable classes of pigs to dispose of find no difficulty in turning them over at lucrative prices.

This, however, can only be regarded as a commencement in the turn of affairs, for with the increased demand and added facilities of marketing, the sound establishment of the industry is each year becoming more assured.

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A Modern Piggery.
Feeding pigs with corn grown on the farm.

As an instance of the value of this side line to the settler, the experience of a Victorian irrigated block owner, as related in the columns of the Melbourne "Argus," is worth recording. Writing from Rochester, Vic., the local correspondent reported as follows:—"The pig industry is becoming of great and growing importance on our irrigation holdings, and that settlers are recognising its great value as an adjunct to dairying is proved by the fact that there are now on the settlements four times as many pigs as there were a year ago. A leading auctioneer estimates that, with improved facilities, the sales in Rochester would in the near future amount to 1000 a month. The methods adopted on the irrigation farm of Messrs. Jacob and Kennedy, at Nannulla, show that pig raising is a leading factor in their success. Mr. Jacob demonstrated that \$192 per acre a year can be realised from pigs reared almost wholly on lucerne, for half an acre suffices for the sustenance of a brood sow and her progeny of about 20 per annum till they are fit for market. Well-bred animals pay best, especially in the case of the sire, for which a Yorkshire is recommended. Mr. Jacob is prepared to submit his books and returns to those interested, as he did to the writer.... It has to be observed that pig raising does not require either the capital or experience demanded in

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the case of sheep."

These facts relate in a general way to the industry as it is possible to be carried on in all parts of the Commonwealth. A dairy man or mixed farmer finds that the carrying on of his work at a maximum of profit involves the growth of a number of different crops with which to supplement the rations of his dairy herd. Peas, barley, wheat, maize, pumpkins, carrots, mangolds, lucerne, rape, and other crops are more or less used for a succession. Each one of these is of special value from the pig-raiser's standpoint. Both peas and barley have a high value for fattening purposes, and some of the successful breeders maintain that the addition of wheat contributes largely towards rapid development. Similarly the root crops play an important part in the general rations, whereas lucerne and rape make an admirable pasture for the running of stores and breeding sows. General experience has shown that when pigs which are being fattened for market have the run of a good pasture of these crops they do better and fatten on much less food. Consequently with some one or another or several of these crops to supplement the skim milk provided by the dairying operations, no more favourable conditions could well exist for the development of this adjunct to the dairying industry.

With suitable root and pasture crops there is no reason why pig raising should remain merely as an offshoot of dairying and farming operations. It is sufficiently remunerative even when all food has to be purchased on the open market to justify attention being devoted to raising alone. But such circumstances do not enter into the operation of the industry as managed in Australia. The close proximity of separating factories would in many districts make it possible for a breeder to entirely ignore the dairying side of the question. From these sources such supplies of skim milk as were considered an advisable supplement to the ordinary rations might easily be obtained. With only very limited supplies of skim milk pig raising and fattening affords wide scope for the investments of men with limited capital. F. C. Grace, of Warrnambool, Victoria, who recently went into the matter of the cost of producing pork, indicates the possibilities of the bacon industry in a report furnished to the State Department of Agriculture. In this account he states:—"Over 6 tons of live pork have been produced, and the average cost per pound for all rations with pigs of all ages has been 4 cents. The actual selling price has been 10 cents per pound, but a number of the pigs were sold as studs, somewhat above market price. Taking the average of all pigs sold in the open yards for bacon purposes, about 4-1/2 tons, the selling price was 10 cents per pound—a margin of over 6 cents per pound over and above the cost of feed."

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This statement is of interest as showing the position of the industry when everything has been paid for at well above market rates for the produce, and in a degree serves to emphasise the much-improved position of the breeder who, with root crops and pasture land, is able to dispense with the costs incurred in purchasing foods for fattening purposes on the open market.



A Happy Family.

Throughout the Commonwealth there is a difference of opinion regarding the relative value of the manner in which the predominating breeds, the Berkshire and Yorkshire, are crossed in raising pigs for market. This no doubt will always exist, owing to predilection of breeders towards particular types, and to the relative merits resulting from the various crosses. The main point is that both breeds are wonderfully well suited to Australian conditions, and that they are prolific. Brood sows will, if kept in an ordinarily thrifty condition, farrow two litters of pigs in the year, which will number from eight to twelve pigs to the litter. If anything, the predominating cross favours the use of the Yorkshire boar with the Berkshire sow. The cross has this advantage that the litters will consist of all white pigs. The boar used should be pure and the sow of good type, preferably three-quarter bred. The average litter from such a cross is eight. These, if kept until about five months, will weigh out at about 140 lbs., and at 12 cents per lb., the ruling price, will return approximately \$16.80 apiece, or \$268.80 per year from each sow. In some instances as many as five litters may be obtained during a period of two years, but when this is done too much is taken out of the mother.

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Another aspect worth considering in the choice of crossing these two breeds is that the Yorkshire sow is a better mother than the Berkshire, and the litters produced are larger. In this case there is a lack of uniformity in the colour of the litters, a fact which no doubt must often cause slight depreciation when the marketing of large numbers of pigs is taken into consideration. From experience in the Commonwealth the middle Yorkshire of a pure strain is more favoured for breeding purposes. He is a quicker grower, of hardy constitution, and as a rule a better shaped

pig for market requirements.

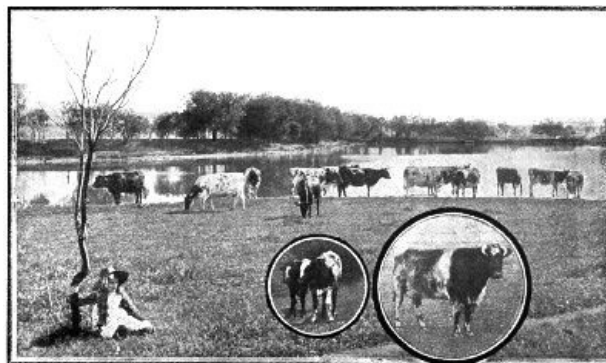


Typical Dairy Country.

But while there are differences of opinion in the matter of breeds for crossing purposes, it is clear that this subject has never been exhaustively determined. For example, while there are advocates for the maintenance of pure strains, and the crossing of the Tamworth with both the black and white pigs, the large white Yorkshire is practically an unknown quantity. Both in Great Britain and in Denmark this breed has done more to establish the bacon industry than any other breed. Its value is indorsed by experience at Dookie College, where the only pure strain of the breed in Victoria is located. The Berkshire sow used with the large white boar produces a shapely offspring, which takes on the short snout of the sow with the pure white colouring of the boar. The cross is a longer pig than the Berkshire, cleaner in the shoulder, but with much the same conformation elsewhere. A common plan is to use all the longest and deepest sows of the first cross for breeding baconers. The pure large Yorkshire is not as economical as the Berkshire if growing pigs for the pork trade, as it takes longer to mature. The sows, however, average about ten to the litter, and some have fifteen or sixteen. Only the fine-haired ones seem to scald, otherwise they stand the sun as well as the Berks. They are good doers under a wide range of conditions, prolific, vigorous, and more likely to do well under the rough circumstances to which they are accustomed on most farms than the more delicate Berkshires. When sold at the same time as other breeds and crosses, they always top the market; and a half-truck realised over \$20.00 per head when sold in Melbourne under six months old.

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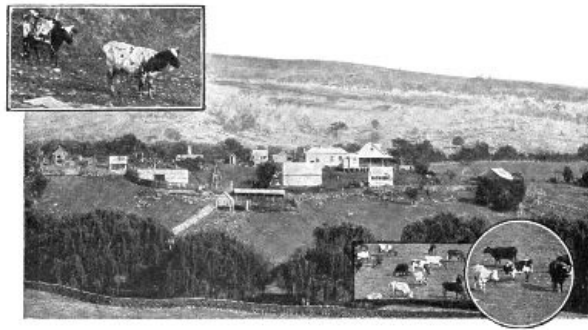
So far as Australian experience has gone there is everything to indicate that pig raising, while an extremely profitable occupation, has not yet attained the results which may be expected to follow as more attention is given to the choice of breeds, the selection of the hogs, and fecundity on the part of the sow. These are all matters which from the ordinary farming standpoint have never been gone into thoroughly. That pig raising will pay and does yield handsome returns is admitted, yet when so many avenues of improvement are open, it cannot be said that the industry is receiving the attention it deserves. Up to the present farmers and dairymen have been chiefly concerned with raising the pigs, disposing of them perhaps at two months, or, as more often is the case, of keeping them on till four months, when they are topped off and sent to market to bring what can be realised. Many send away their pigs too fat, and few engaged in the general branches of agriculture really give the animals full attention over the growing period.



Dam, Western Australia.

With the advent of the factories which are springing up in all the States, this condition of things will no doubt give place to better methods. In the first place breeders will be assured of markets for all the pigs produced, and, secondly, the differences in values of prime baconers will direct more attention to the greater profits for this class of produce.

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A well-established Dairy Farm, New South Wales Coast.

That there is opportunity for a great increase in pig raising is shown by the fact that Great Britain pays annually to foreign countries \$91,200,000.00 for pig products. Statistics show that two great sources of supply to the British market (United States and Canada) are gradually but surely declining, and before long must cease altogether on account of the rapid increase in population, and the consequent increased food requirements in those countries. In Denmark we cannot expect to see any great increase in production, as the limit also has been nearly reached. Holland and Sweden are the only other European countries from which we may anticipate competition. The rapid growth of the population in Central Europe increases the food requirements of those countries, where there is already a short supply of animal foods generally. The present condition of the industry shows that there is a possibility of the Commonwealth building up a large export trade, even though local demands are increasing, at prices which are higher than they were ten or twelve years ago, when the number of pigs in the Commonwealth was scarcely a thousand head more than at the present time. At the Franco-British Exhibition the grand champion prize against the world was secured by Australia for pig products in the form of frozen pork, as well as in hams and bacon.

Poultry-farming.—The fact that Australian hens and ducks have broken all records in laying competitions serves to indicate the suitability of the country for poultry-raising. On general farms, where the birds live on food that may otherwise be wasted, poultry are a source of considerable profit. The opinion of the Scottish Commission was that "Australia possesses natural conditions of almost unequalled value for the profitable keeping of poultry. In climate, soil, shelter, and in natural food she has the essential attributes to success." Poultry-farming is carried on together with wheat or dairying or pig farming, but in many places the raising of poultry is carried on as a single line. Poultry for consumption is extensively reared, and the egg-producing qualities of the birds have also been greatly improved by careful breeding. Egg collecting circles have been formed in some country districts, to develop (under Government supervision and with Government aid until the organisation is self-supporting) the industry on co-operative lines. A member of the circle is elected to act as secretary, and he receives all the eggs from the members, tests, packs, and forwards them to the metropolitan depot for shipment. Only clean and fresh eggs are to be delivered to the secretary under penalty of fine and expulsion from the circle. Another method of collecting and marketing the eggs is through the local butter factories, where eggs are delivered by the suppliers of milk and cream a number of times each week.

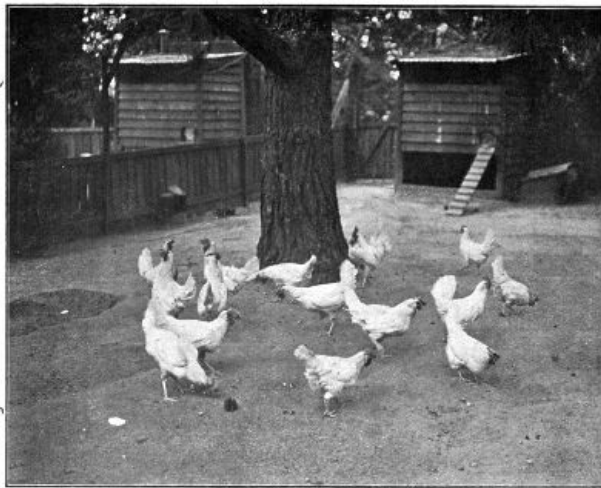
[Pg 21]



Government Farm.—Pens at Burnley, Victoria, for Egg-laying Competition.

Bee-farming.—Bee-farming has ordinarily been an adjunct to the agricultural or dairying industries, and can hardly yet be said to have been organised as a distinct industry. There are many prosperous bee farms in the Commonwealth. The indigenous flora is rich in nectar, and the quantities of honey stored in single hives are astonishingly large, sometimes reaching 400 lbs.

[Pg 22]



White Leghorns.

With the farmyard and dairy products of the Commonwealth standing now at over \$96,000,000.00 per annum, the industry may be said to be well in its infancy.

Under the large irrigation projects being carried out in several of the States there are splendid opportunities opening up for the carrying on of all these industries, either separately or in conjunction.

Share Farming.

The system of farming on shares is common in several branches of Australian farming, including dairying. To the intelligent and industrious man with a limited amount of capital, the system offers many opportunities for success. Practical dairymen, and especially those with children over fourteen years of age, may obtain a farm on shares. The arrangements made between landlords and their tenants on shares are not uniform. They differ considerably in individual cases, but the following broad outlines of the arrangements made between the parties may be set down as having a more or less universal application.

[Pg 23]

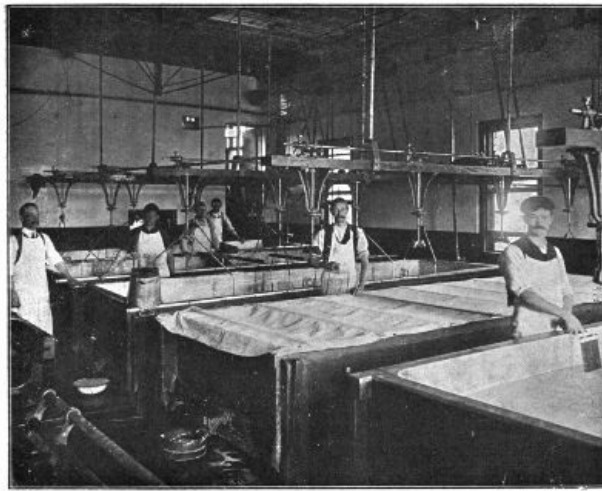
As a general rule the landlord provides—

- (a) The land cleared and fenced into convenient paddocks.
- (b) The dairy herd.
- (c) Cowbails and piggeries.
- (d) All necessary utensils and implements.
- (e) Dwelling.

On the other hand, the tenant supplies—

- (a) All the labour—milks the cows, separates the cream and carts it to the nearest butter factory.
- (b) His own horse and cart.
- (c) Cultivates sufficient land to grow green fodder for the winter.

In some instances the share farmer buys his own dairy utensils, but in the greater number of cases the landowner provides them and keeps them in repair. The sharing of the profits depends largely upon the character of the farm. As a general rule the tenant receives from one-third to one-half of the proceeds of all cream or butter sold. He also receives from one-third to one-half the value of the pigs raised, and from \$1.20 to \$1.80 per head for each calf reared to the age of six months. A man is generally given as many cows to milk as he can conveniently manage and care for.

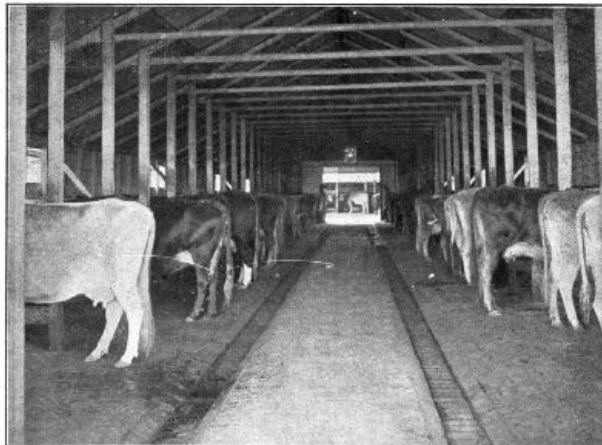


In the Cheese Factory.

There are cases which can be pointed to where a tenant farmer after even paying for assistance, makes a profit of from \$67.20 to \$96.00 every month. [Pg 24]

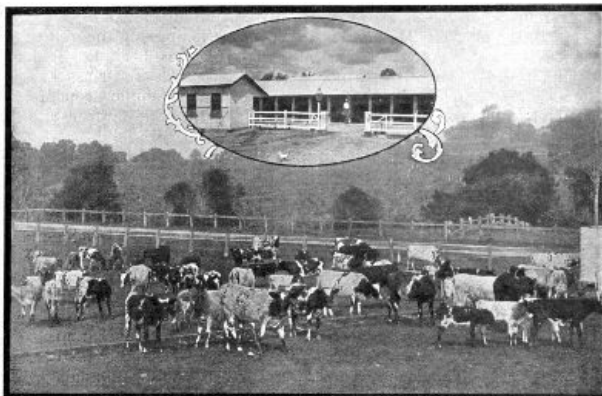
It is not possible to state definitely the size of herd that any individual can manage, but it is by no means uncommon to see a herd of forty head, with from twenty-five to thirty cows in milk at a time, managed comfortably by a man and his wife and one sturdy boy or girl of fifteen or sixteen years of age. The average returns from a fairly good herd, in the majority of districts, may be stated at \$4.80 per head per month, and as each cow will be milking for seven to eight months at least, and there will be the calves and ample separated milk for a good many pigs, it will be seen that there is at least a fair living to be made, especially when it is remembered that the share dairy farmer, under the ordinary arrangements, is living rent free and under conditions which enable him to keep household expenses at a minimum.

The conditions regarding cropping and keeping the farm implements in repair and caring for the dairy herd are not onerous, and are such as no good tenant could object to.



An Extensive Milking Shed.

Men who contemplate undertaking this class of farming should submit the fullest possible details of their experience and qualification to enable the officers of the Government Information Bureau to make arrangements which will permit of settlement immediately on arrival. It is needless to remind experienced dairymen that any owner of dairy cows naturally feels it necessary to know a good deal about anyone to whom he is to entrust the sole management of a good herd. [Pg 25]



Young Dairy Stock.

Monetary Aid to Settlers.

Besides aiding the settler in the various ways already mentioned, viz., by providing the expert personal instruction and advice of officers of the Agricultural Departments, in regard to feeding, breeding, management, and other matters, by the importation of high-class stud cattle, and making them available at cheap rates for herd improvement, and in the granting of facilities for the transportation and marketing of his produce, the Governments of the Australian States assist the dairyman with loans of cheap money. The Advances to Settlers' Board or Agricultural Bank in each of the States, lend money to settlers for the purpose of repaying existing debts, for building homes, for purchasing stock, or for improving and developing their holdings. The sums which may be advanced and the terms and conditions of the loans vary in different States. Broadly speaking, however, a settler may obtain on the security of his land or of his improvements sums ranging from \$120.00 to \$9600.00 at rates of interest varying from 4 per cent. to 6 per cent. on easy terms of repayment extending over a long period of years up to, as in the States of New South Wales and South Australia, thirty-one years.

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NEW SOUTH WALES.

In the coastal districts of New South Wales and throughout a vast extent of the northern and central tableland districts dairy farming is a profitable and constantly-expanding industry.

In the older settled district of Illawarra, comprising the greater portion of the south coast district, dairying has been the main industry for many years, and there is not much first-class land unoccupied. There is, however, in this district ample scope for tenant farmers and for dairying on shares on several large estates where the experienced man of small means with children old enough to help in the work can make a good living, and save with the object of later on obtaining a farm of his own. In the north coast district the strides being made in dairying are phenomenal. There is a fair amount of first-class unimproved bush country available for settlement on the upper reaches of the Tweed and Richmond Rivers, and large estates have been subdivided by private owners, and offered for sale on very easy terms at from \$19.20 to \$28.80 per acre. Many farmers who find that better returns can be obtained by carrying a decreased number of specially good cows on a small area intensively worked are ready to dispose of areas, so that a new-comer with capital necessary to acquire land in this highly-favoured district can soon be suited. Owing to the big returns from dairying in the best parts of the settled portions of the north coast, land values are high, ranging to over \$96.00 per acre.

Suitable areas of Crown lands are brought forward from time to time in districts adapted for dairying at prices, as a rule, lower than the lands in private subdivisions.

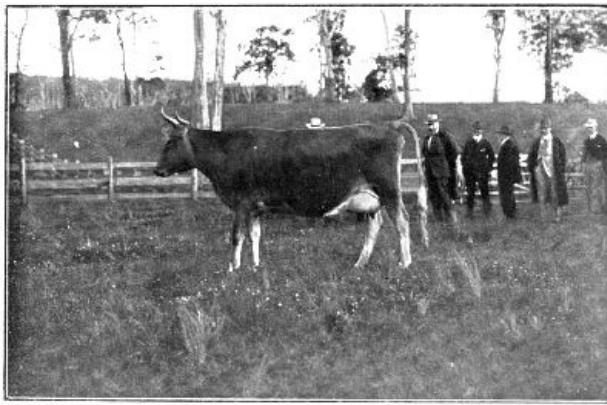
In the central and north coast district there are several large private subdivisions of excellent dairy land. In the tableland districts, where the rainfall averages 30 in. per annum, dairy farming has taken firm hold. Private owners are also cutting up tracts of splendid partially-improved land, and offering it at from \$19.20 to \$28.80 per acre, on liberal terms.

The natural grasses of New South Wales, especially in the well-watered districts along the coast, grow in great luxuriance, and are rich in milk-producing qualities. In many districts imported grasses, such as Rhodes, Paspalum dilatatum, and Phalaris, rye grass and red clover have been introduced, and soon become well established. In the most favourable portions of the State farmers are able to depend almost solely on the grazing qualities of their farms, although the experts of the Department strongly assert the wisdom of growing winter feed.

New South Wales has many fine herds of all the approved breeds. The Jersey is perhaps the most popular, but there are also many good herds of Ayrshires, Guernseys, Holsteins, and other approved breeds.

[Pg 27]

The co-operative system flourishes in New South Wales. Every important centre has its own co-operative butter, cheese or bacon factory. The Byron Bay Co-operative Company, situated in the heart of the rich north coast district, has an enormous turnover in the neighbourhood of \$4,800,000.00 sterling each year, and is at least one of the largest concerns of its kind in the world.



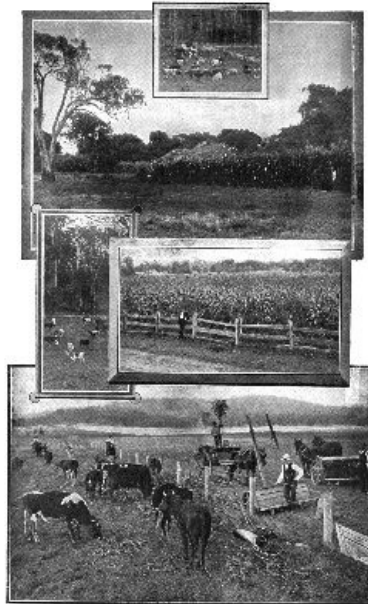
Calm II.—Champion Jersey Cow.

To stock a dairy farm of 100 acres, the detailed cost of stock and plant necessary to make a good start, exclusive of a bull, is given by practical farmers as follows:—

	\$
30 Cows at \$31.20	936.00
10 Heifers, springing, at \$24.00	240.00
2 Plough Horses at \$86.40	172.80
Harness for plough horses	31.20
Pigs—2 sows at \$10.08; one hog at \$15.60	35.28
Separator, cans, buckets, etc.	240.00
Cart and harness	86.40
Plough, \$21.60; harrow, \$14.40; cultivator, \$12.00	48.00
Sundry tools, etc.	24.00
	<u>\$1813.68</u>

Including the bull the cost might roughly be put down at \$1920.00

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How the Dairy Fodder Question is Settled in Australia.

VICTORIA.

For the past twenty years dairy farming in Victoria has been steadily advancing. The industry has proved very successful, so that thousands of farmers are not only making a comfortable living from it, but in many cases it has raised hard-working families into positions of comparative wealth. The principal markets supplied are those of Great Britain, South Africa, India, and the East. At present the industry is only in its infancy. It is capable of almost unlimited expansion. So far, farmers have confined their attention almost exclusively to butter, but the first steps have also been successfully taken to manufacture cheese and condensed milk, and to open up a regular market for fresh pork, hams, and bacon.

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A large portion of Victoria is suitable for dairy farming on account of the suitability of soil for the production of pasture and fodder crops, and the mild climatic conditions. For the most part the cows are fed solely on the natural pastures, little provision either in the way of food or shelter being thought necessary. Progressive farmers, however, find that it pays them to grow fodder for

their herd and to shelter the animals in the winter, and anyone beginning in Victoria is advised to make up his mind to cultivate a certain area of his land from the first, instead of trusting to grazing alone.



Shorthorn Cattle.

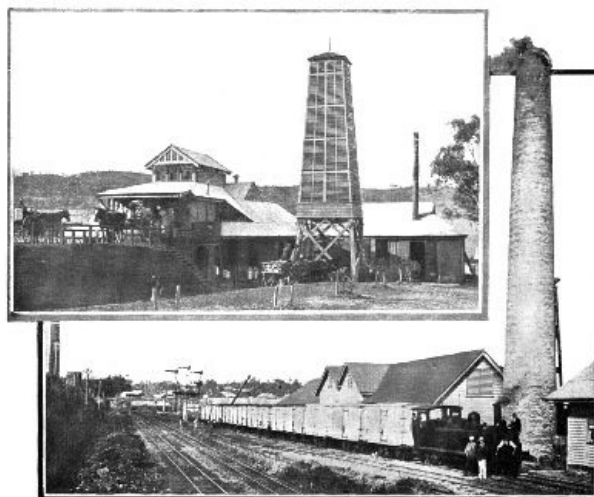
The southern half of Victoria is divided, roughly speaking, into the Western District and Gippsland. Two-thirds of the dairy cows are kept in these portions of the State. The Western District is famed for its rich soil of volcanic origin. Every town and hamlet has its butter factory.

Gippsland is a district of rolling hills and downs, and of a comparatively heavy rainfall. Many parts were once covered with dense forests, but these are rapidly passing away before the pioneer. Practically every railway station has become a centre of the dairying industry, and cans of cream are always in evidence on the platforms. Owing to its suitable climate Gippsland has become the centre of maize growing in the State, and much of this crop reaches the market in the form of butter and pork.

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In the north the summers are warmer and drier, but the soil is perhaps even more prolific than in the southern parts of Victoria. Large areas are suitable for dairy farming under ordinary conditions, and extensive water storage works have been provided for the irrigation of large tracts of country which is being made available in suitable areas for dairying under very liberal conditions.

The manufacturing and marketing of the butter is carried on, to a very large extent, on a co-operative basis, the factories being owned and managed by the farmers who supply the cream. Two hundred factories are scattered throughout the State, the largest of them producing upwards of 40 tons of butter per week in the height of the season. Where the farm is close to the factory the milk is taken to the creamery, where it is separated, and the corresponding quantity of skim milk is returned to the farmer. In other cases the farmer owns his separator, the milk is passed through the machine as soon as the cows are milked, and the cream is sent to the factory by road or rail every day or two, according to the size of the farm.



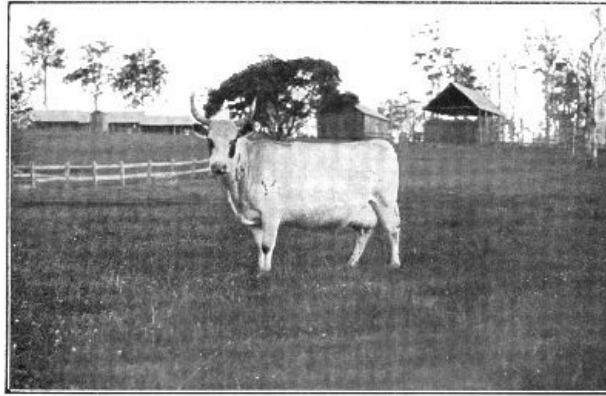
Dairy Factory—Refrigerating Butter Train.

[Pg 31]

Government Assistance to the Farmer.

Every branch of the producing interests is steadily fostered by the Government of Victoria in a way that may sound strange to the British farmer. Besides the facilities for acquiring farms and homes, the Government employs dairy supervisors, who assist the farmer with information and advice on matters relating to the farm and herd. The produce is conveyed by the railways (which belong to the Government) at special low rates. It is received into the Government cool stores, where it is graded and frozen ready for export. The State has contracts with the principal lines of

steam-ships, securing regular despatch, a minimum temperature, and a very low rate of freight for the British markets. It costs less to send butter from a farm in Victoria to London than it does to send it from a farm in Ireland.



"Miss Prim," Champion Ayrshire Cow.

QUEENSLAND.

Queensland as a Dairying Country.

Queensland, especially in its southern portions and along its coastal areas, is particularly well adapted for dairying. Large areas of magnificent soil exist, such as the Darling Downs, Lockyer, Stanley, Rosewood, Fassifern, Logan, Albert, Wide Bay, Burnett, and other districts, which, in addition to being well watered by rivers and creeks, enjoy a perfect winter climate. It is in these localities that dairying principally flourishes.

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While in Southern Queensland and on some of the northern tablelands it is desirable to rug milch cows during the winter months, up north, along the eastern coastland, it is not necessary.

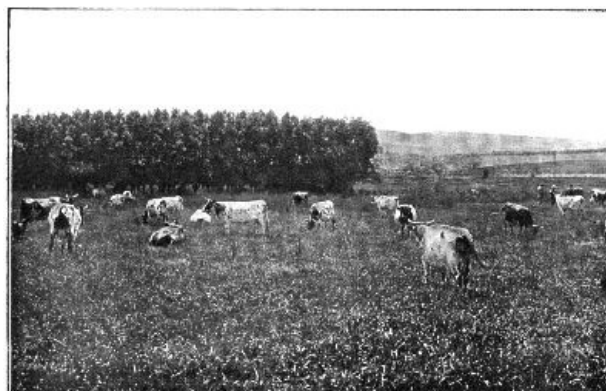
Along the eastern seaboard, which is well watered by running rivers and creeks, the Blackall Range is becoming an important dairy centre. This district lies to the north of Brisbane, and is a mountainous region containing exceedingly fertile soil.

Further north again, on the coast, there are large areas in the Burnett, Gladstone, Rockhampton, and Bowen districts suitable for dairying, and in these localities it is rapidly extending. Despite this, there still remain immense tracts as yet untouched by the dairy farmer, which are capable of being successfully brought under the Butter Industry. Considerable portions of the northern tablelands, and parts of Central Queensland, are also suitable for dairying, and a beginning has already been made in these localities. Large numbers of dairy cattle are being imported into the Atherton district in the North.

As yet, only a fractional part of the country able to support a large dairying population has been touched.

Dairy Land and Stock.

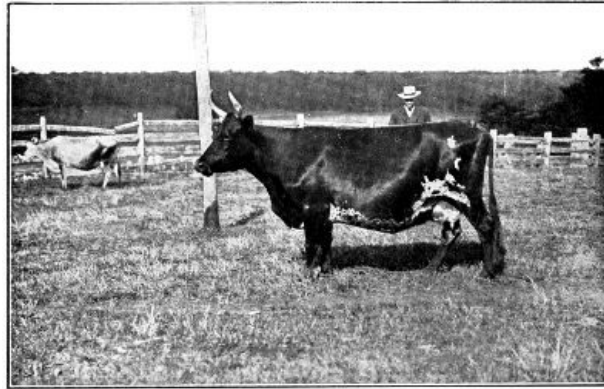
The class of land chiefly used for dairying is open forest country, plain scrub land, and rich alluvial flats. The scrub lands have first to be cleared by felling the scrub and burning it off when dry. When cleared, scrub soils are more prolific than any other. Cost of clearing is about \$7.20 to \$9.60 per acre, and in some cases more.



"Ayrshire Dairy Cows Grazing."

The price varies according to locality. Remoteness or proximity to market have to be considered. [Pg 33]

It is essential for the dairy farmer to be near a railway. The intending settler can either select Crown lands from the Government, at prices varying from \$0.60 to \$4.80 and upwards, or if he has some capital he can purchase a freehold farm. Good dairy freehold land can be bought from \$14.40 to \$24.00 per acre, but close to the railway in the older farming districts it reaches up to \$96.00 per acre.



"Ladylike," Ayrshire Dairy Cow.

In ordinary times \$24.00 to \$38.40 is paid for a good average cow; heifers up to \$21.60. Similar prices rule, generally speaking, in regard to all the States. An ordinary cow would earn from \$2.40 to \$4.20; and a good cow from \$4.80 to \$6.00 a month, whilst in profit, on an eight months' average milking.

Dairy Breeds in Use.

The milking breeds most in use in Queensland are the Ayrshire, Jersey, and Milking Shorthorns. Herds of Holsteins, Guernseys, and other breeds have also been established. Some fine specimens of these dairy cattle are to be seen throughout the State, and at the large annual shows of pure-bred stock, held at Brisbane, Toowoomba, and other centres.

The Queensland Agricultural College, a State institution, breeds high-class dairy bulls for sale to farmers, and herds are being also raised on the State Farms.

Cows should bring in not less than \$3.00 per month, or be turned out as useless. The average is about \$3.72. Up-to-date men will not keep a cow who does not average this for her milking.

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Cost of Starting on 160 Acres.

This, of course, varies with the circumstances of the case, and depends largely on whether a man has the capital to push forward his operations, or is content to gradually get his land into working order. A man with \$720.00 to \$1032.00 could make a good start. If the land was taken up at \$2.40 per acre from the Crown, his first year's deposit would be \$18.24, and he would have sufficient to fence the land, buy some cows, and put up some sort of a house. Necessarily a settler does not spend much on his house at first until he has made some money. On the other hand, many of the most prosperous farmers in Queensland have started with only a few pounds, sufficient to pay their first year's rent. By fencing his land himself, the settler can save a good deal of expense. And by working for neighbouring farmers, he can gradually acquire money to buy stock from time to time.

On the other hand, if he wishes to begin straight away, and has a little money, he can get assistance from the Agricultural Bank, a Government institution, which advances \$0.60 in the \$ towards improvements, and \$0.50 in the \$ for stock, machinery, and implements, charging 5 per cent. simple interest.

COST OF STARTING A DAIRY FARM ON 160 ACRES

	\$
Rent—1st year's deposit and survey fee	18.24
Fencing—2 miles at 96.00 per mile (posts 12 feet apart and 3 barbs)	192.00
12 Cows at \$28.80 per cow	345.60
2 Horses at \$72.00	144.00
Plough	28.80
Harness	24.00
Swingle bars and chains	6.00

House—24 × 12 feet, slabbed and floored, at \$4.80 per foot	115.20
Milking-shed	24.00
Yard	48.00
30-gallon Separator	60.00
Cart (second-hand)	24.00

Some small items, such as rations, milk-room, tinware, &c., have not been included in the estimate. If the fencing were erected personally, the cost would be materially reduced. If the settler built his own house, it would cost him little more than his own labour and the iron for the roof.

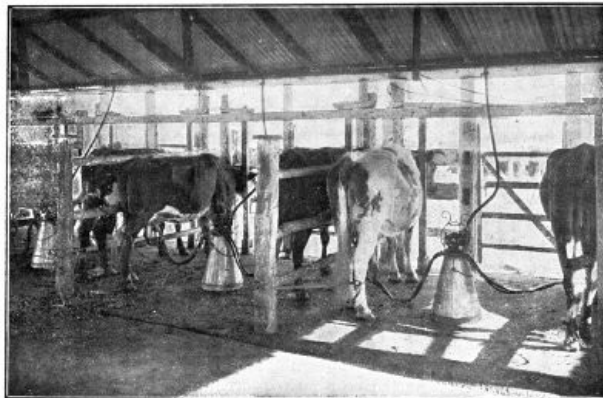
Many beginners put up cheap sapling yards for a start, and at a nominal cost. This would materially reduce this estimate.

The Average Herd.

The average herd is about thirty head, but many farmers milk from 80 to 150 cows daily. The number of cows that could be kept on an average farm of, say, 160 acres depends entirely on the land, and the amount of cultivation or area under artificial grasses. From thirty to eighty head would be about a fair estimate that good land would carry.

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One dairy farmer in the West Moreton, who landed in Queensland twenty-five years ago with \$0.36 in his pocket, now has 160 acres of freehold, of which he cultivates 50 acres for feed for his cows and pigs. He began by working for his neighbours for the first few years, and thus gained both cash and experience. He now milks thirty to fifty cows the whole year round, and he makes from \$720.00 to \$864.00 a year from his pigs. His income from all sources is from \$1920.00 to \$2400.00 per annum. Six or seven years ago he paid \$5280.00 for the place, but to-day he would not take \$14,400.00 for it, and there is not a penny of debt on the property.



An up-to-date Milking Shed.

Grasses.

The natural grasses of Queensland are sufficient in ordinary seasons during the summer months for the dairy stock, but no farmer can successfully carry on dairy operations in dry times, or in winter, by means of the grass alone. He requires to supplement the grass by growing fodder for the winter months.

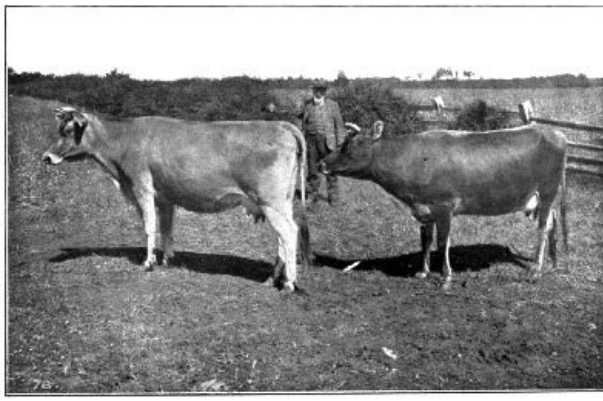
Splendid results have been obtained by sowing artificial grasses, such as *Paspalum dilatatum*, Rhodes, Prairie, Guinea, and Giant Couch grasses.

Winter Feed.

Barley, lucerne, wheat, rye, sorghum, &c., can be grown for winter feed. On land which will grow lucerne, a certain supply of fodder can be conserved. Lucerne (or alfalfa, as it is called in America), once planted, will last from five to ten years.

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The butter factories were first started by proprietary companies, and their cream depots were scattered all over the farming districts. Competition was exceedingly keen, and in some of the townships there were four or five rival cream depots, all endeavouring to get the biggest shares of the cream.



Jersey Cows.

Of late, a number of co-operative factories run by the farmers have started, and proved very successful, enabling their shareholders to get a higher price for their cream than hitherto. They are admirably managed, are essentially popular institutions, and have done splendid work.

The farmers establish, manage, and work them, and the profits, instead of going into the pockets of the middlemen, are distributed among the shareholders.

State Aid to Co-operative Factories.

Under a vote by Parliament the State makes advances to farmers to establish co-operative dairy factories. The loans extend over a period of fourteen years, and 4 per cent. interest is charged.

Condensed Milk.

The Preserved and Condensed Milk Industry promises to become important in the near future. Six factories are now in operation.

Messrs. Nestle and Co., the world-renowned firm, have invested \$480,000.00 in their Preserved Milk Industry in Queensland. It speaks well for a country when an old-world firm such as this is prepared to invest so largely.

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SOUTH AUSTRALIA.

A large area of South Australia is eminently adapted to successful dairying, and while the summer is dry, rendering it necessary to make provision for succulent feed for several months, the temperate nature of the climate enables the dairyman to keep his cows in the open right through the year, the natural shelter in timber country being sufficient, except on a limited number of days of extreme wet and cold. Stall feeding for weeks at a time is unknown; the necessary shelter sheds can be cheaply provided, while the labour of feeding is, under these conditions, reduced to a minimum. In the northern districts conditions are not so favourable as in the south, but even here dairying can be profitably carried on; the fact that land is much cheaper compensates for the shorter period during which the natural herbage supplies practically all the feed required. In some of the driest of our farming areas dairying has largely replaced wheat-growing, and, although the yield per cow is naturally not so high as under more favourable conditions, still low rents and large areas of natural pasture enable the farmer to make a fair profit.



The Cream Cart, North Coast, N.S.W.

The Dairy Industry, though of considerable magnitude, has not made as much progress as was anticipated. This is probably due to the fact that wheat-growing and sheep-breeding combined offer greater attractions to the farmer. These industries require a great deal less labour than dairying, besides which the work is not so continuous. So long as highly profitable returns can be obtained from the production of cereals and the breeding of lambs, the Dairying Industry is hardly likely to make the progress that would otherwise be possible, though there has of late years been steady and continued development in the industry, especially in the northern districts. In the south and south-east, where conditions are more suitable, there has, on the other hand, been very little extension.

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Large quantities of butter are exported to Broken Hill and West Australia throughout the year, while during the spring months shipments are made to Great Britain.

Butter is exported in increasing quantities to Great Britain each year. In normal years from 1400 to 1600 tons are shipped.

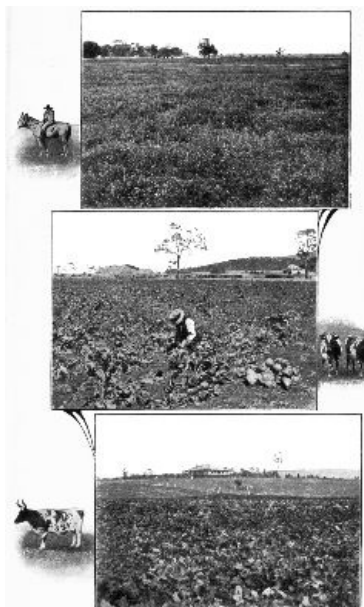
Cheese is not made on such an extensive scale proportionately to butter; indeed, in some seasons sufficient for local consumption is not produced. Practically all the cheese is manufactured on the Cheddar system, and an article of very high quality is produced in the best factories.

Special facilities are afforded by the railways for the conveyance of perishable goods, and cream is forwarded by the dairyman to the city factories from districts 300 miles distant. Payment is usually made on the butter-fat percentages; and in order to afford suppliers an opportunity of checking the returns received from private factories the Government established a butter factory in connection with the export freezing works at Port Adelaide. At this factory every can of cream is sampled, and the quantity of butter it will produce is ascertained by the usual methods, and the supplier is paid accordingly.

A considerable number of butter factories have been erected in South Australia, and the butter produced is generally of high quality. The butter made from the milk of cows grazing on the natural herbage of the country is of splendid quality and colour. Hand separators are in general use, the cream being sent to the factories for treatment. The percentage of butter-fat in the milk of cows grazing on the natural pastures is unusually high.

Practically the whole of the midland, central, and south-east districts, excepting that portion east of the Murray, are suitable for dairying practice when carried out on systematic lines. The prices for such land for dairying would range from \$24.00 to \$240.00 per acre according to location, soil, and rainfall. No special terms are offered by the Government for the occupation of dairy lands. Most of the repurchased estates are in districts suitable for dairying, and these are allotted under covenant to purchase. The purchase money is paid off in seventy half-yearly instalments (the first ten bearing interest only at the rate of 4 per cent. on purchase money). Purchase money may be completed at any time after nine years. Reliable particulars of successful dairying are difficult to obtain. It is safe to say that there are many hundreds of dairymen making comfortable livings throughout the State.

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Fodder Crops—Lucerne, Mangels, Rape.

Capital may be safely expended for dairy practice, especially by careful and intelligent men who have families, and they may depend upon making a good living, especially when they combine dairy practice with pig-raising. There are many instances where gross returns are obtained of from \$38.40 to \$72.00 per cow per annum, and this in districts where the milk is sold to the local co-operative or private factories, but where they are situated within forty miles of Adelaide, and are able to take advantage of a good train service, they can deliver their milk to the capital and obtain gross returns equal to about \$76.80 to \$96.00 per cow per annum.

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Interior of a Cheese Factory.

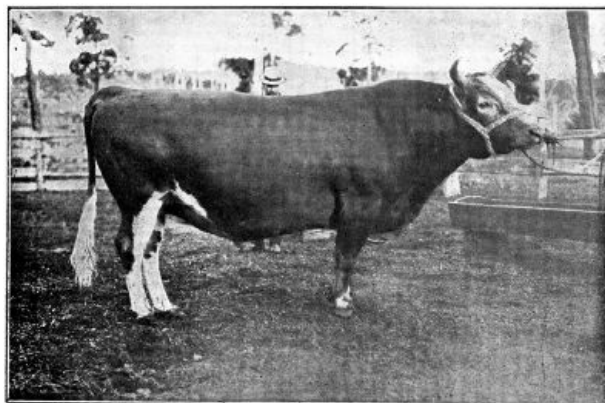
WESTERN AUSTRALIA.

The Dairying Industry has not developed as rapidly as other branches of farming in the State during recent years. The cause of this is attributable to various reasons, one of the number of which has been the difficulty of obtaining suitable farm labourers. The majority of young men who have embarked on farming in the Western State during the last decade have favoured the lightly-timbered belts more suitable for wheat and sheep raising in preference to the heavily-timbered land suitable for dairying situated in the coastal districts of the south-west. That there is in the State an enormous area of land which is eminently adaptable to the growing of fodders necessary for successful dairying has been amply demonstrated. Since 1905 indefatigable efforts to advance the Dairying Industry have been made. An estate at Brunswick, in the vicinity of Bunbury, about 100 miles south of Perth, was purchased by the Government, and 800 acres of it was vested in the Department of Agriculture for the purpose of a State Dairy Farm, on lines that could be copied by a practical dairy farmer; also—

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- (1) For supplying stud stock of the best strains procurable at reasonable prices to dairy farmers.
- (2) To demonstrate that with the assistance of irrigation a small acreage of land can be made to carry a large number of stock.
- (3) Where a variety of fodder crops can be introduced, and experimented with so as to ascertain their value for feeding-off, both in a green state for curing into hay or for preserving into big silos in a succulent form.

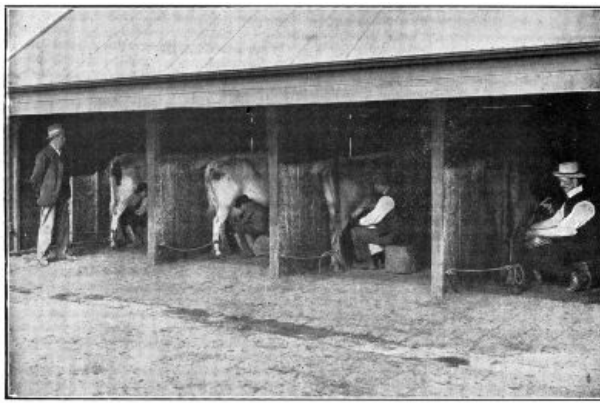
Capacious cow and calf stables, suitable sheds, and piggeries were designed and constructed as an example to be followed in starting an up-to-date dairy farm. A herd of dairy cows, of some of the best Ayrshire strains in Australia, was collected, as well as a fine number of Berkshire pigs, purchased from the most successful breeders and importers. Three large tub silos, capable of holding 250 tons of fodder, were erected in which to store winter-grown crops as well as the summer crops under irrigation.



"Crown Prince," Guernsey Bull.

An irrigation scheme was carried out, and the results have been most successful. The following dairy fodder crops have yielded prolifically:—Oats, rye, maize, sorghum, pearl millet, vetches, field peas, cow peas, lucerne, mustard, Jersey kale, field cabbage, turnips, swedes, mangel wurzel, silver beet, buckwheat, potatoes, linseed, pig melon, paspalum, Italian canary grass. The irrigation plant is capable of dealing with 80 acres of land in the summer months. Some of the land thus treated is the rich dark alluvial on the river bank, while a portion is on the higher clay plateau, and consists of land typical of many thousands of acres in the same locality. The land in its virgin state was timbered with red gum and flooded gum, and cost about \$38.40 an acre to grub and clear, and on such land with irrigation in the summer two heavy crops a year can be depended on.

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Milking Shed.

Shortly after the State Farm was established the Government purchased over 500 dairy cows in the eastern States, and these were sold to Western Australian farmers in lots of ten at cost price on two-year terms, with 5 per cent. interest added.

The Government engaged a highly-qualified dairy expert in the person of Mr. Kinsella, of New Zealand, to visit the districts most likely to give attention to the dairying industry in the immediate future, and by means of personal interviews, addresses, leaflets, and concisely-written pamphlets, Mr. Kinsella did valuable work in distributing information and directing the beginner on the right road to successful dairying. Mr. Kinsella subsequently severed his connection with the department, and he has been recently succeeded by Mr. Abernethy, who has obtained the very highest diplomas in England in connection with dairying. Mr. Abernethy recently arrived from Great Britain, and has now entered upon his duties, and it is confidently believed that his efforts will result in a number of farmers being induced to embark in the industry on sound and practical lines. The new selector will also have the benefit and the advice of the Director of Agriculture, Mr. McNulty, on all matters concerning his soil, his stock, and the marketing of his produce.

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Lands for Dairy Farming.

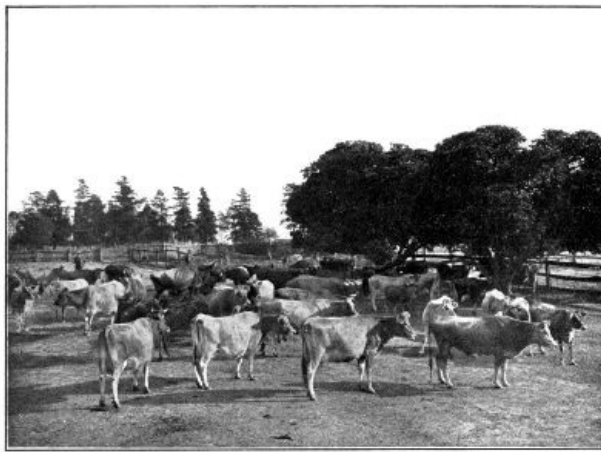
With a view to settling practical farmers with limited means on the rich and heavily-timbered lands in the southern portion of the State the Government have a large number of surveyors at work surveying the land into suitable sized blocks, ranging from 200 to 700 acres each. Main roads have been cleared to serve these areas, and a proposal to clear 10 acres on each block for the plough is now under consideration. Railways will be pushed through this country as rapidly as possible. The annual average rainfall over this country averages from 35 in. to 40 in., and the land contains some of the richest soil in the State.

Price of Land.

The price of land ranges from about \$4.80 to \$19.20 an acre, and each new selector over sixteen years of age will have the right to practically a free grant of 160 acres, additional land being available at approximately the prices quoted, the payments for which will be spread over twenty years without interest. The selector will also have the privilege of borrowing from the State Agricultural Bank for ringbarking, clearing, water conservation, and subsequently for stock and implements, the loan being repaid over a term of thirty years, for the first five years of which interest only at the rate of 5 per cent. per annum will be payable. Prior to the blocks being thrown open the prices will be advertised and the amount of loan the bank is prepared to advance to suitable applicants on each block will be fixed.



Devon Cattle in Australia.



Prime Herd of Jerseys.

Butter Factories.

At the present time there are three butter factories operating in the State, and no doubt when the Dairying Industry has developed sufficiently a number of co-operative factories will be started.

The men who decide to devote their energies to the Dairying Industry will have the advantage of a magnificent local market to start on, as at the present time Western Australia is sending something like \$4800.00 a day to the eastern States for dairy produce.

TASMANIA.

The conditions of Tasmania are eminently favourable for dairy farming. Up till recent years the industry did not receive much attention, but now that a start has been made butter production is advancing rapidly.

The Land Required.

The foundation of the Dairying Industry is grass, and to get grass, good land and plenty of moisture is required. Therefore anyone proposing to go into this business should endeavour to secure the very best land obtainable. There is a large quantity available, especially in the north-western and north-eastern parts of the island. There is a great deal also in the southern districts. Information can always be obtained from the Lands Department and the district surveyors, and no difficulty should be experienced by the intending dairy farmer in finding land suitable for his purpose. The more open parts of the State, such as the midlands and the east coast, where there is natural grass, have largely passed into private hands, and later selectors have had to take up, clear, and lay down in pasture the more heavily-timbered portions. This, however, is not altogether the handicap it appears at first sight, as the returns from the very rich scrub lands are by far the highest. It is easy to judge of the quality of land by the indigenous timber upon it. Rich land, suitable for laying down in grass, is covered with a dense growth of sassafras, tree-fern, musk, and pear tree, with large blue or swamp gums, and an underbush of what are known as cathead ferns. Stringy-bark trees mean a poorer soil, and any land bearing them should be avoided if possible.

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Any person of eighteen years of age and upwards may select an area not exceeding 200 acres of first-class land, provided he does not hold land on credit under any previous Act. He is required to pay a cash deposit of \$0.04 an acre at the time of sale, an instalment of \$0.06 an acre for each of the two following years, \$0.24 an acre annually for the next four years, \$0.36 an acre for the next four years, and \$0.48 per acre for the next eight years. The survey fee is paid, one-fifth in cash and the balance by four equal annual payments, with interest added, unless the selector elects to pay it off at once, when interest is remitted. Every encouragement short of giving the fee simple of the land away for nothing is afforded the intending settler, and he can acquire a freehold on easier terms in Tasmania than anywhere else.



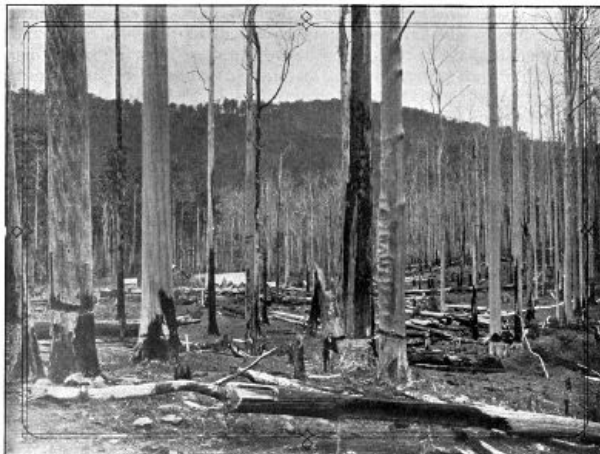
Ayrshire Herd, New South Wales.

Clearing the Land.

Clearing a selection for dairy farming is a very different operation from the clearing required for fruit-growing. Where the land is to be laid down in pasture, no ploughing has to be done, consequently the cost is very much less. In clearing land for grass it is the best plan to first of all "ring" all the eucalyptus trees. This consists in cutting a ring round the tree with axes through the bark and sapwood, or alburnum, into the brown wood beneath. The crude sap, bearing in solution the various organic matters which the roots have extracted from the soil, ascends by the outer layer of wood immediately beneath the bark to the leaves, where it is elaborated into plant food. When this layer is cut through, the food supply is immediately stopped, and the tree dies. The operation of ringing is best done during the winter, when the sap is down, and if properly performed at the right time the tree always dies very soon. If possible, the ringing should be done a year or two before the general clearing is commenced, as all the dead leaves, small branches, and dead bark have time to fall, and are then burned off with the rest of the scrub. The next operation is to cut down all the brushwood and smaller growths with bill-hooks, and then the rest of the scrub is felled with axes, and allowed to lie until quite dry, when it is burned off. A good burn should leave very little to be cleared up, but sometimes, where there is such vegetation as sassafras or fallen tree-ferns, a good deal of "picking-up" has to be done. This means that all the unburnt timber on the ground has to be rolled together and burnt. Tree-ferns should not be felled, as they do not burn well. The best way of killing them is to cut off the fronds just below where they spring from the stem. Some knack is required to cut in just the right place, but it is easily acquired. There are certain precautions to be observed in burning-off, which the settler should make himself acquainted with. Information on this point and in regard to any matters of practical interest to the beginner will be furnished gladly and without charge by experienced officers of the Department of Agriculture.

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Clearing the Land.

As soon as the land is burnt off the grass may be sown upon it. No cultivation is usually given, the grass-seed being sown upon the ashes remaining from the burnt scrub, which forms very effective manure. Cocksfoot is the grass par excellence for this work, as it is very hardy and nutritious, and not attacked by insect pests to the same extent as others. Sometimes a mixture of cocksfoot, English rye-grass, and white clover is used, or the two grasses alone are planted. Local information is the best guide obtainable as to what it is best to plant. Dairying thus becomes practicable in a year or two, and returns are received much sooner than from any other branch of agriculture. It will, of course, be necessary to clear a certain amount of the selection for cultivation, so that crops may be grown, and it is often better and cheaper in the end to devote the poorer and less heavily timbered parts of the holding to this purpose, and buy manure. Some selectors clean up a part of the ground of roots and logs, leaving all the big ringed timber standing, and plough it up. It requires some skill to steer a plough under these conditions, but very good crops can be grown in this way.

Butter Factories.

Properly equipped butter factories are situated at Launceston (2), Deloraine, Burnie, Emu Bay, Wynyard, Stanley, Smithton, Wilmot, Ringarooma, Derby, and Pyengana. In the south there are only two of any magnitude, one in Hobart, and the other at Bream Creek. A well-equipped factory has been established on King Island, in Bass Straits, a locality that has been found very suitable for dairying.

Dairy Herds.

The dairy herds of the State until a few years ago were of a somewhat nondescript type, very few farmers having realised the necessity of improving the butter-yielding capacity of their stock. Recently, however, great improvements have taken place, as the dairying industry has advanced, until now many Tasmanian dairymen own herds of the highest standard. The work of improving the milking strains of cattle is in the hands of the farmers themselves, but advice and assistance are always obtainable from the Government Dairy Expert.

Cheese-making.

This is a highly profitable branch of dairy farming, and the product is so small in bulk compared with its value that it is eminently portable. Cheese-making can therefore be carried on under conditions where other forms of production would be difficult. Some skill and knowledge are required, but the Dairy Expert regularly gives lectures and demonstrations on the subject in all the principal agricultural centres, so that any intelligent person can easily obtain all the information he requires.

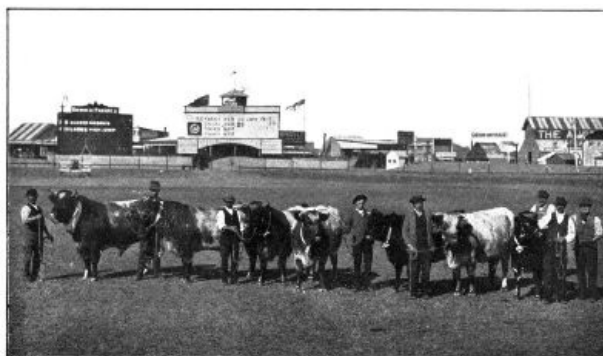
[Pg 48]

The principal cheese factories in the State are situated at St. Mary's, Pyengana, Emu Bay, Devonport, and Circular Head.

The cheese produced is very good in quality, and a considerable export trade will soon be developed in it.

Bacon-Curing

The production of hams and bacon is one of the collateral industries connected with dairying, as the skim-milk and waste products form a very valuable food for fattening pigs. Excellent bacon is produced in Tasmania, and a good deal is exported, but not nearly what might be produced.



Group of Prize Bulls.

Dairy Factories.

It is the introduction of the dairy factory system that has solved the problem of success or failure for the dairy farmer. These institutions are becoming fairly numerous throughout the State, and are all equipped with the most modern machinery and managed by expert men. The farmer nearly always, nowadays, has his cream separator, and all he has to take to the factory is the cream, which does not occupy much space, while the skimmed milk remains on the farm for feeding pigs or calves. Some of the dairy factories in the State are proprietary, but others are on the co-operative system, under which the farmers are the owners, and share in the general profits, as well as being paid for their cream.

[A] The personnel of the Commission was as follows:—Sir T. Carlaw Martin, Edinburgh (Chairman); Sir John R. G. Sinclair, Bart., Barrock House, Wick (Vice Chairman); Dr. J. H. Wilson, F.R.S.E., St. Andrew's University; Dr. Shirra Gibb Boon, Lauder; William Barber, M.A., Tererran, Moniaive; J. McHutchen Dobbie, Campend, Dalkeith; James Dunlop, Kilmarnock; R. B. Greig, F.R.S.E., Cults; William Henderson, Lawton, Coupar-Angus; James Keith, Pitmeddan, Udney; E. E. Morrison, M.A., Bonnington, Siravithie; and Alex. M. Prain, Errol (Secretary).

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