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Edward M. Mills

[redacted]

Box 83.
Oamaru
New Zealand

Waitaki Boys' High School.

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Dairy Farming in New Zealand.

Prices may slump, the world may be in chaos, but the natural wealth of New Zealand grows steadily year by year. One has only to become familiar with the story of the progress and the development of the country through one hundred strenuous years, and to travel through the length and breadth of the Dominion, to realise how essentially rich New Zealand is in its resources. And by far the greatest portion of this wealth lies in the dairying industry.

Of fundamental importance is the fact that in respect to what may be termed human equipment or personnel, New Zealand dairying is excelled by none of its competitors and equalled by few, if any. This is a bold claim, but its proof lies in the record of achievements of the pioneers of farming sixty years ago. Inevitably one momentous fact stands out; without industry, initiative and courage of a high order, the pioneers would not have made the rapid progress that attended their endeavours. That the present rural community is well worthy of the pioneer stock, is illustrated by the figures of the production taken from the year following the Great War, and in 1930, the first year of the economic crisis.

In the year 1919, the butter production

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was requisitioned by the Imperial Government, and the New Zealand producer was allowed at least fifty per cent of the profits. The total number of boxes of butter exported from New Zealand in this year was 647,139, with a value of £3,402,223, and of this number 431,023 boxes went to the United Kingdom. In the same year, 883,430 of Cheese hundred-weights, with a total value of £4,087,278, were exported. The year 1930 saw a great improvement in the industry, for in butter production she was ninth in the world, and in butter export she was second. An improvement in the production of cheese raised New Zealand's standard to seventh, and in export to second in the world.

Sixty years ago the main sources of production and dairying were at Taranaki and Banks Peninsula. This fact is not surprising when one considers that most of Taranaki's first settlers came from the South West of England, where butter and cream have been famous for many generations. The Akaroa settlement had many emigrants for Normandy at its foundation, and had the Fates been less capricious, might have become the nucleus of another French province within a British Dominion. Normandy butter, Dorsetshire cheese and bacon, and Devonshire butter and cream have been on the top of the English markets, ever since transport was sufficiently rapid and regular to supply the increasing demand for those commodities. The war with the Maoris hindered the development for more than ten years, but by the time it was

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over, the children of pre-war days had become hardy and active young settlers, who entertained no fear of the forest, nor fear of the Maori. The Government, at the close of the war, offered large blocks of land for clearing and settling, and volunteers from other districts were offered special terms if they would take up holdings and land settlement in the Taranaki province.

By the year 1874, the total exports of dairy produce from the Dominion were valued at £250,000. The handling of butter had become an important addition to the ordinary business of a merchant. Naturally the butter from individual farms varied a good deal in appearance and quality. It was graded as far as possible, washed, reworked, and put into troughs of brine, to stand for some days before being packed into kegs. Marketing problems were stern facts in the expansion of the dairyings, and new outlets for the produce were established in all parts of the Dominion, and exports of salted butter were sent to Australia and Great Britain. Slowly the export trade of a few merchants expanded, and with their example before them, one or two producers began to see the advantage ahead. The refrigerator had reached New Zealand, and with it came a new element that was to give to the dairy industry a scope that was beyond the wildest dreams of the pioneers.

Dairy machinery, particularly the invention of the separator, had begun to indicate that the day of individual butter making

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was over. It was recognised that the purchaser overseas wanted good and even quality, two conditions almost impossible to fulfil when every farm manufactured in its own fashion, and the good and indifferent butter was blended in the merchant's store.

In 1884 the first dairy factory was built in Waitara, and factories were erected in other parts of the Dominion. A large company was formed, called the Crown Dairy Company, which did much to foster the dairying industry. It was strong enough financially to take risks, to establish factories and creameries where there seemed reasonable hope of supplies being available, and to finance settlers for larger herds and material for the improvement of their holdings. In addition it had the organisation available for the disposal of the output of its factories, no longer as salt butter in kegs but as a high class commodity sent to England as refrigerated cargo. With the foundation of the factory system, the dairy industry may be said to have been firmly established in New Zealand.

In order to further maintain the quality of dairy produce in the Dominion, the Dairy Industry Act was passed in 1894. Its general aim was to ensure the manufacture of produce in reasonably good surroundings; to provide for efficient packages and honest branding and grading; and to safeguard the buyer and consumer to the extent that when purchasing New Zealand dairy products he will receive foods which are not adulterated, and which

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comply with the legal requirements of the importing countries, and more particularly with those of the United Kingdom.

A New Zealand dairy farm is of small area, and the paddocks are so arranged as to waste as little time as possible in driving the cows. The principle underlying this arrangement is that lost time means lost milking, and lost milking means lost money. The milking-plant is housed in an open-front shed with a concrete floor and with bails of the 'walk-through' type, so that cows which have been milked do not re-enter the yard with the unmilked ones. The milking of the large herds is done by electrically driven machines, and the back countries of New Zealand are now served with electrical power for this purpose. Petrol and oil engines are not used for driving the machines, because the fumes are liable to taint the milk. Sterilized pipes carry the milk to the separator in an adjoining room, where the butter-fat is separated and the skim-milk pumped out to the pig-sties. If whole milk is being sold, the delivery pipes are switched from the separator to the cooler, the sudden reduction in temperature decreasing bacterial activity. In order that good drainage may be available, the milking shed is built on a rise, wherever possible, and in the best dairy farms the holding yards are concreted.

The types of cow used on a farm play an important part in the quality

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and quantity of the products. In most dairy herds there is a judicious blend of quality and quantity milkers. Jersey cows give the highest testing milk, and Friesians, or short horns, give the greatest quantity. Commercial dairy herds may contain some of each of these breeds, or they may be Jersey-short-horn cross or Jersey-Friesian cross.

In order to ascertain the production of the cows, a system of herd-testing is in vogue, involving regular periodical weighings and fat-testings, and the recording of the results. New Zealand dairy farmers are thus able to cull out wasters from the herd, and to replace them by more profitable animals.

With the advancement of the science of dairying, the old type of bucket machine for milking has given way to the releaser plant, where the milk goes straight from the cow to the separator room, the cows being stripped by hand. Pan-setting is now unheard of, and good centrifugal separators are in use on practically every farm. If the cream has to be stored before it is sent to the factories, it is kept in cool, airy dairies and stirred with metal stirrers.

The conversion of cream into butter at the factories is perhaps the most interesting phase of dairying. The cream is first graded by taste and then tested for butter-fat, payment being made on butter-fat content. The acidity in the cream is neutralised by soda, and it is then pasteurised to destroy bacterial activity, to be finally run down a cooler and transferred to collecting vats. From here it is admitted to churns and made into butter. The

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required amount of salt is worked into the butter, and pure water is run over it to remove any traces of butter-milk, and to insure that sufficient moist-ure is instilled into the butter. The butter for local shops is cut into one pound pats, while for export it is packed into special paper-lined boxes, stamped with the New Zealand fern brand.

Cheese factories deal with whole milk, which is first pasteurised to remove undesirable bacteria and odd odours or flavours. Starter is then added, and the curd is precipitated by rennit. The curd is cut to remove the whey, and it is then 'cooked' by gradual heating. After this it is salted, pressed, and cured, and pre-pared for export.

A dairy-farmer generally has some supplementary enterprises as a side-line on his farm. Pig-keeping is closely associated with dairying, as pigs may be successfully grown on a diet of skim-milk and some various feed meals on the market. On farms situated near a large town, it has proved profitable to raise vealer calves. High prices are realised for these, because they are regarded as luxuries in a city.

Undoubtedly the most important factor in dairy farming in New Zealand is grass, for at least eighty per cent of the dairy produce comes from this crop. Also it is an acknowledged fact that from grass dairy-produce is most economically produced. New Zealand has a soil and climate which is admirably suited to the establishment and successful mainten-ance of a high production dairying pasture. By artificial means the conditions suitable to the growth of first-class pastures are made avail-able. In New Zealand the rainfall is ample,

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while the land is, on the whole, well drained, and there is no reason why the bulk of the country cannot support a good dairying pasture.

In the year 1927, a Dairy Institute was founded in Palmerston North. It is a branch of the Department of Scientific and Industrial Research, and it is under the representatives both of the Government and of the dairy industry. It is a counterpart in New Zealand of similar research organisations which have existed in America and Europe for many years. The main object of the Institute is to aid the development of the processes of the dairying industry from the stage of an art to that of a science, and to investigate the main problems confronting the industry. Extension of existing knowledge, rather than application of knowledge already to hand, is the purpose for which the representatives of this Institute are striving.

As the whole system of quota restrictions is retarding the progress of the world, it is inevitable that New Zealand should suffer heavily by the reduction of her butter exports. By far the greater part of the land available for farming is suitable only for dairying, and much is still in the process of development. Unless this development can be continued, the whole financial structure of the industry will break down and a state of financial paralysis ensue. Great Britain consumes per head only twenty-four pounds of butter to New Zealand's forty pounds, thirty pounds of mutton to her eighty pounds, and eighty pounds of beef to her one hundred and forty-five pounds. Now, as the view that there is an over consumption in New Zealand is not accepted, it follows that the

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possibilities of consumption in Great Britain are not fully developed.

Much of the present doubt and discouragement arises from the view that further expansion in production would lead to glutted markets, which is not economically desirable, but there is some justification for the optimistic view that the present market situation is temporary and will eventually disappear, to be followed by an expansion of the prosperity of agriculture.

Today New Zealand has the responsibility of being faced with a deeply interesting and transitional phase in national and economic affairs. The challenge of the changing world is too obvious to be ignored, and the people of New Zealand must adapt themselves to it or suffer the consequences of their neglect. Of no section of this community is this more true than it is of the industry of the New Zealand farmers, because in production, marketing and distribution, they have new problems that call for unlimitable attention and cooperation.

An extract from a speech by Lord Beaverbrook, expresses admirably the sentiments of the bulk of the people of the British Empire.

"Freed from the menace of competitions from other countries with lower standards of life, rejoicing in the free interchange of the goods of one unit of the Empire with those of another, the British peoples can insulate themselves from the economic follies and miseries of the rest of the world.

They have led mankind in the achievement of liberty for all. Now they can provide an example to the world of plenty, wisely husbanded and widely shared, and of a

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security in strength which none dare challenge."

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