

We have large grain-exporting countries within easy reach of New Zealand, such as Australia, Argentine, Canada, China, India, &c. The grain and stock-foods wanted in New Zealand are oats, barley, linseed, and linseed cakes and meals, cotton-seed cakes and meals, wheat-offals, maize, beans, &c.

These grain and grain-products would not only help New Zealand farmers to supplement and balance their farm-grown feeds, so that these could be utilized to best advantage, but it would enable us to make much better use than we do of the large quantity of offals from our freezing-works. These make excellent stock-foods when mixed and balanced by grains. They are used entirely for stock-foods in the United States, where they are mixed with grains. In New Zealand we use these offals almost entirely as fertilizers, because we have no grains to use with them to make a balanced ration. These freezing-works offals are worth much more as stock-foods than as fertilizers. Their use as fertilizers can be replaced by mineral phosphates and synthetic ammonia.

Fish-meals, which can be produced largely in New Zealand, are very valuable as stock-foods when mixed with grain products to produce a balanced and palatable ration.

It is recognized in leading pig-raising countries that properly balanced rations for the economic production of pork must contain, in addition to grain, roots, or grass, a proper proportion of proteins of animal origin. These animal proteins we have in abundance in New Zealand in our skim-milk, buttermilk, whey, freezing-works offals, fish-meals, &c. For the want of grains to balance the rations, we are not making proper use of these valuable animal proteins. Making full use of these animal proteins in conjunction with imported grain and the grass and roots that our farmers can produce in abundance will largely increase our per-acre production, and this will bring about the profitable working of farms of a smaller average size than we have at present. In Denmark about one-third of the pigs are reared on farms of less than 37 acres, and nearly seven-eighths on farms of less than 150 acres. Throughout the world pigkeeping is associated with small-scale farming. There can be no doubt that the development of a large industry in pig-products in New Zealand would facilitate closer settlement.

The Imperial Economic Committee has recently (1929) made a very valuable report on pigs and pig-products in relation to the necessary supplies of Great Britain. This report contains the following remarks which are of particular interest to New Zealand:—

New Zealand has probably greater possibilities than any other new country for the development of the pig industry. It is the greatest exporter of dairy-products in the world, and there is the additional advantage that the bulk of the milk-separation is done on the farms. It is true that the present production of cereals is not sufficient for any great extension of the industry, but we are assured that the problem of obtaining increased quantities of cereals for pig-feeding can be successfully solved. At present the fullest use is not made even of the dairy by-products. The greatest obstacle to increase pig-farming is the geographical position of New Zealand, which is five or six weeks' voyage from the chief market for bacon and pork. The investigation into these problems of transport is so important that the Low-temperature Research Station, Cambridge, which receives aid from the Empire Marketing Board, has formed a special section to deal with the general problems of the pork, ham, and bacon industries. The experiments so far conducted show that thoroughly satisfactory bacon can be made by the usual methods of curing from frozen pork, which is now transported in good condition in commercial quantities. Any defects noticeable are attributable not to the freezing of pork, but to prolonged subsequent storage. New Zealand has not, as yet, taken full advantage of its dairying industry for the development of pig-raising. This is clearly indicated by the following figures showing the ratio of pigs to milch cows in New Zealand and Denmark:—

—	Number of Pigs.	Number of Dairy Cows.	Ratio of Pigs to Ten Dairy Cows.
New Zealand, 1927 ..	520,000	1,303,000	4
Denmark, 1927 ..	3,731,000	1,514,000	24½

Whey, which is the by-product of cheese-manufacture is not of the same value per pound of butterfat as skim-milk and buttermilk, which are the by-products of butter-manufacture. New Zealand manufactures a larger proportion of its milk into cheese than Denmark does, and on this account New Zealand could hardly expect to attain the same ratio of pigs to dairy cows as Denmark, but New Zealand should reach twenty pigs per ten cows as compared with Denmark's twenty-four and a half. This, on our present number of dairy cows, would mean that our average pig stock would increase from 520,000 to 2,600,000. The experience of advanced pig-raising countries, such as the United States and Denmark, is that their annual production of pork and lard amounts to about 200 lb. per head of their average pig stock for the year. An average pig stock of 500,000 pigs will produce all the pig-products that we require for home consumption. On the basis of twenty pigs per ten cows, we would then have 2,100,000 pigs producing for export, which on an annual production of 200 lb. per pig carried would give us an export surplus of roughly 420,000,000 lb. of pork and other pig-products. This is the equivalent of 7,000,000 freight carcasses of meat, which equals the total of our present meat-exports. In other words, the volume of our present meat exports would be doubled.

The effect of such a development would be that the present comparatively short season of employment at our freezing-works would be largely extended, and this would help to solve the employment problem always created by the closing of our freezing-works.