

not so well situated as many other competitive countries for the production of butter for export during that season. It is possible to develop the buttermaking industry during the winter months to as great magnitude, and with more remunerative profits to agriculturists, than arise from summer dairying. The possibilities of cheap and suitable winter feed by the use of ensilage have been so well and satisfactorily demonstrated that now milk can be produced at less cost during the winter than upon pasture only during the summer. In the winter season, the average price of butter is almost twice as much as during the summer. Safe transportation can be economically provided for during the cold weather.

VI. The buyers in England hardly know what fresh-made Canadian creamery butter is like. The quantities exported are often stale before they reach the consumer. That fact led the members of the Dominion Dairy Convention in Ottawa last year to pass a resolution urging upon the government the desirability of making a provision of at least \$5,000 for the purpose of making weekly shipments with a view to opening up this trade.

The Danish Government supervised the shipments of butter for a considerable period, and one of the Australian Governments gives bonuses now to promote shipments.

VII. These branch Dairy Experiment Stations would encourage the farmers to furnish milk during the winter season, and also provide small quantities of finest butter to be used as trial shipments for introducing fresh made creamery butter to foreign markets.

Butter has been carried by the Canadian Pacific Railway across our continent to Asiatic markets, and Canadians ought to be able to supply those markets.

The West Indies offer many markets that might be secured to Canadians by the making of a few trial shipments in specially adapted packages. The publishing of the results of these would furnish valuable commercial data and the enterprise of commerce would do the rest.

THE PLAN.

VIII. The plan is feasible, one, and well within the usual policy of the government in looking after the interests of the farmers, and the foreign as well as the domestic trade of Canada.

IX. Branch Dairy Experiment Stations should be organized in the several provinces for the stimulation and guidance of dairy farmers. Through them it would be practicable to spread acceptable information as to the best practices. Everyone would be welcome to visit and learn. Frequent publications of bulletins on the results of experiments would keep them before the public, and that within a few months from their establishment.

X. New, small and fancy varieties of cheese would be made.

XI. Investigations under the direction of the Dairy Commissioner would be made; and some of the cheese would be brought to the curing-room in the dairy building at the Experimental Farm to prosecute enquiries into the causes of bad flavor in cheese, which is becoming a menace to the success of the trade in recent years.

XII. Butter would be made at the Stations, particularly during the winter, for us as already indicated, viz., to promote winter dairying among farmers and to facilitate the getting a foreign demand at high prices for Canadian butter.

(I put this illustration in here. At the Colonial and Indian Exhibition in 1886 I had charge of over \$10,000 worth of butter and cheese sent there by the Provincial Government of Ontario. The fresh-made creamery butter was sold to take the place of Danish butter, and during intervening years I have had enquiries for such butter from importers, who state that they will pay the Danish price for quality similar to what they received then. Presently and up till now no provision has been made for promoting the commerce in butter.)

XIII. I would suggest that suitable cheese factories or creamery buildings be rented by the year in the several provinces. A guarantee by the Dairy Commissioner would be given to the farmers who furnish milk, that they would

receive for it a price equal to or slightly higher than the average price realized from neighboring factories.

XIV. A sum of \$1,500 annually for the running expenses of each station, and to provide for probable losses in trial shipments of butter would be sufficient to cover the expenditure; an extra sum of \$500, for each Station for apparatus and fittings, would be required the first year. The location of the Experiment Stations need not be permanent in one district in any province. After serving one district for a year or two the Station could be transferred to another; and after several years work, if the Stations had fully served the purpose of their existence, they could be discontinued, and the plant in each could be disposed of.

XV. The Imperial Parliament gives a grant of £5,000 sterling for the support of similar Stations and instruction.

THE ADVANTAGES.

XVI. Some of these have already been pointed out incidentally.

This is a most opportune time for the establishment of these Stations.

Recent occurrences that have interfered with commerce have directed the attention of farmers to the possibilities of making farming pay better by new methods and the acquisition of new markets. The time is ripe for leading the farmers in the right direction.

These Stations would be very useful and exceedingly popular with the agricultural classes. If provision is made for their establishment, no effort will be spared to make them realize more than has been set forth in this brief memorandum.

I have discussed the plan and its advantages with Professor Saunders, Director of Dominion Experimental Farms, and he approves of the proposals. Respectfully submitted by

JAS. W. ROBERTSON,
Dairy Commissioner.

Dairy Observations.

In the month of January Denmark lost by death the greatest dairy scientist, Prof. N. J. Fjord, who for thirty years past has devoted himself to experimental work on practical dairy subjects.

At every convention the question crops up, "Which is the best dairy cow? or which is the best dairy breed?" The reply of Col. Curtis, at a New York institute, to that conundrum, was, "The cow that will make the most milk, containing the largest amount of solids for the food consumed."

Here are four important subjects that present themselves for investigation at the new Canadian Experimental Dairy Stations: The loss of fat in cheesemaking; percentage of fat required to make a good edible, keeping and shipping Cheddar cheese; the causes of cheese going off flavor, and is butter fat percentage a fair measure of the value of milk for cheesemaking?

The necessity of thoroughly washing milk cans is frequently mentioned at dairy conventions. No wonder! It is next to impossible to properly clean an old can which has stood full of sour, half-rotten whey until noon, or perhaps all day, in a broiling sun. If factories will continue sending home whey in the cans, the factory tank must be thoroughly washed out twice a week—once at least. As soon as the can comes home it should be emptied, well rinsed out with cold water, and then with hot. Let them stand where pure air will have access to them.

"Feed a common cow like a Jersey, and you'll think you have a Jersey," somebody remarked

at an Ohio dairy meeting. In practical experience that thought applied would do many farmers good and increase their profits, but it is only a half truth, and to that extent misleading. The potency of good dairy blood must never be overlooked—it is the foundation.

The idea that more frequent and friendly meetings of creamery and cheese factory patrons should be held to discuss the care and feeding of cows and milk-handling methods is a good one that should be generally adopted. One such gathering, and that at the annual business meeting, is not enough. Why not hold a second, say in early summer or early fall? If patrons do their part in milk production honestly and faithfully, they should drop in at the factory occasionally for the purpose of observing whether or not the factoryman and maker are doing their share in keeping the premises in good clean condition, etc.

Now that Canada is making fresh advances in dairying, the question of uniform feeding and care of milk deserves close attention by dairy farmers in every locality. Col. Curtis, a recognized authority on dairying, recently stated at a meeting in New York State, that "To reach uniformity of product it is my belief that a uniform ration and system of feeding, as well as of manufacture, must be adopted by the dairymen and makers. All the milk that goes into one lot of cheese should be made from the same foods. Uniformity of food is of more importance than is the question of breed. In all our best cheese and butter factories there is a newly uniform system of manufacture, but there is nothing uniform in the methods pursued or the foods employed by the dairymen."

As readers of the ADVOCATE are aware, Scotch Cheddars have made a great advance in the British markets—overselling Canada—since the advent of qualified travelling instructors, like Messrs. Robertson (brother of Prof. Robertson) and Drummond, of Canada, aided, no doubt, by the influence of the dairy school. Scottish cheesemaking is carried on in large private farm dairies, where the milk is all from one herd, receiving one class of water (pure), food and care, and uniformly good treatment throughout.

A most important part of this process of butter-making is washing out the buttermilk. A new method (patented) is reported in Germany: As soon as gathered in the churn in particles of about a tenth of an inch in size, it is transferred to a centrifugal machine, whose drum is pierced with holes and lined with a linen sack, that is finally taken out with the butter. As soon as the machine is set in rapid motion, the buttermilk begins to escape; a spray of water thrown into the revolving drum washes out all foreign matters adhering to the butter. This washing is kept up till the wash-water comes away clean, and the revolution is then continued until the last drop of water is removed, as clothes are dried in a centrifugal wringer. The dry butter is then taken out, molded and packed. It is claimed that the product thus so fully and quickly freed from all impurities, without any working or kneading, has a finer flavor, aroma and grain, and far better keeping qualities than when prepared for market in the ordinary way.

In Sweden they are getting tired of the butter shows, where old stagers, who know all the fine points in getting up a tub of butter for show, are handicapping the innocent maker, who sends a tub out of his regular make. A modification of the Danish idea of permanent butter shows has been proposed by the Skane Provincial Agricultural Association; the shows to take place two or three times a year, and each time three consignments will be called for within about six weeks. Creameries declaring themselves willing to show receive wire orders for shipment by express without previous warning. The butter is bought by the Association so as to indemnify the creameries, but no large premiums are offered. A sum of \$2,600 is intended to be spent this way in that province only.