

cost during each of the three following months over the cost during the second month was 86, 110 and 125 percentages respectively. Dairymen who support cheese factories would make better returns from the by-product of whey, if the young pigs were reared liberally on skim-milk during the winter and early spring. The extension of the economical feeding of swine in the country would be a source of increased income and profit to dairymen. This practice would also enable them to fatten and market hogs at the season of the year when the prevailing price is higher than during the fall or winter, which is too often the selling time for the fattened swine in Ontario. The average price in the Toronto market for six years has been almost \$5.50 per hundred pounds live weight; while the average price between July and September has been \$5.78. The average price between November and January has been \$4.92. The average price paid for Canadian-fed hogs in the Toronto market has been quoted at \$1.10 higher than the average price paid on the same dates in the Chicago and St. Louis markets. As yet Canada sends to England only about one and one-half percent. of the bacon and other swine products which is imported there. Our proportion might be raised to compare favorably with the quantities of cheese and live stock which we export.

EXPERIMENTAL DAIRY STATIONS.

Most of the dairymen in Ontario are now familiar with the commencement of the work of the Dominion Experimental Dairy Stations. Every experimental action has within itself a two-fold power of service. It has the possibility of discovering some fact that was before unknown; it also has the function of illustrating and teaching in an impressive way the advantages that result from the best practices of procedure. The work of the outside branch stations during the past summer has been mainly investigations of matters connected with the manufacture of cheese. The work of the experimental dairy at Ottawa has been directed towards butter-making.

CHEESE-MAKING.

In the investigations which have been carried on in cheese-making, an effort has been made to discover the relation that exists between the percentage of butter fat in milk and the quantity and quality of the cheese which can be made from it. Full particulars of that work will be given in the annual report, and also at the annual conventions of the dairymen's associations. Meantime, it might be said with safety, that a very large number of experiments point to the conclusion that the percentage of butter fat in milk may be taken as a basis for rating its actual value for the manufacture of cheese. Milk containing four per cent. of butter fat on an average is worth for the manufacture of cheese one-third more per hundred pounds than milk containing three per cent. of butter fat. In short, the experiments all point to the conclusion that the total quantity of butterfat in the milk which the several patrons furnish to a cheese factory might be used for determining with equity what share of the total proceeds from the sales of cheese should be distributed to each patron. The use of a Babcock milk tester makes it easily possible for every cheese-maker to test the milk of every patron twice a week. The milk furnished by the several patrons should be paid for according to its real quality and quantity. By the adoption of this practice the irritating, although present unavoidable, prosecutions in connection with cases of adulterated milk, would have no cause for existence. When every patron is paid for his milk according to its real quality there will be no incentive towards dishonesty in the matter of skimming, watering or retaining strippings. The conduct of a large number of patrons of cheese factories will be made decidedly more creditable when it has been arranged so that the furnishing of honest milk pays the patron in direct cash better than the furnishing of dishonest milk. The present practice of pooling widely different qualities of milk at precisely the same rate per hundred pounds puts a premium upon dishonest practices. The infirmities of the ordinary cheese factory patron are not always equal to resisting the attraction of that premium. By putting the

premium the other way, the cheese, the profits and the men will all be improved by the same act and at the same time. I hope to see the Babcock milk tester in every cheese factory during next season, and to see most factories paying for milk according to its true value as revealed by the percentage of butter fat which it contains.

"CANADIAN" BRAND.

Many tests have been made during the year to discover the effect of rennet upon the curing and the keeping of cheese. A discussion of this will be more suitable for a convention of cheese-makers than for a general audience of farmers. However, in this connection one matter is of importance and concern to every Canadian. While cheese buyers and exporters have during an average of five years paid the highest possible price which could be afforded by the English market for cheese in this country, our best factories have not realized their rightful share of the prices which have been paid by the English consumers for cheese of fancy quality. A large proportion of our fancy cheese are still retailed over the counters in England as fancy English cheddars. All the best factories in the country should brand on the cheese as well as on the boxes, the word "Canadian," so that it could not be mistaken in England. The difference on the retailers' counters in England between cheese of the common quality and cheese of a fancy quality is from four to six cents per pound. The difference here seldom exceeds half a cent per pound. Our best factories would receive the higher price, providing this extra profit, which is retained by the English retailer, could be brought to this side. The persistent and general use of the word "Canadian" on the cheese, as well as on the boxes, will help to remedy the matter complained of. The cheese from the Dominion Experimental Dairy Stations are branded "Canadian Full Cream Cheese" on the cheese as well as on the boxes.

WINTER BUTTER-MAKING.

An effort is being made through the Experimental Dairy Stations to change the practice of the dairy farmers of Canada, from having their cows dry all winter to having butter-making carried on during that period of the year. One of the advantages that would accrue from winter dairying would be the increased quantity of milk that would be realized from every cow. A cow will give about 30 per cent. more milk during ten months if she calves between October and December, than if she calves between April and June. By winter dairying a large supply of milk would be available for use during the time of the year when the price of milk and its products is highest. On an average, milk is worth from 50 to 100 per cent. more during December, January and February than it is worth in June and July. Winter dairying would provide a liberal quantity of skim milk to the farm for raising larger numbers of calves. The common practice for killing calves from dairy cows is a most wasteful one. A well-bred calf has in its life the possibility of leaving \$20 of profit for somebody, even if the life be cut short at the end of two years, as a well-fattened steer. The more calves that can be raised for the dairy and for the feed in stalls, the more chance of profit is there for the farmers who adopt the practice. Then, winter dairying will make it possible for Canada to develop an export trade in butter, which may by and by exceed her present export of cheese. During the past year, the total value of our exports of cheese in round figures was nine millions of dollars. Great Britain imported altogether about \$20,000,000 worth of cheese. From this country we sent altogether about 42 per cent. of the total quantity that Great Britain purchased abroad. Of butter, Great Britain imported about \$40,000,000 worth, we Canadians contributing to her supply a little more than one half of one per cent. Through winter dairying and the altering of cheese factories into creameries for the winter season, it is quite possible to build up and develop an export trade in butter to a greater magnitude than that presently attained by our cheese trade. During the present winter this change will be effected in two cheese factories in the Oxford district. Near Woodstock one factory will be operated as

a cream-gathering creamery. Cream alone will be collected and the skim-milk will be left at the farms for such uses as have been suggested. At Mount Elgin the whole milk will be taken to the factory and run through a centrifugal separator. The skim-milk will be carried home by the farmers while it is still sweet. These two factories will be operated under the direct supervision of the Dairy Commissioner and will be managed by his assistants. The butter product will be shipped regularly to the British markets for the purpose of calling attention to the possibility of a Canadian supply of fancy fresh-made creamery butter for the winter months. Cheese makers from all districts will be welcomed at these factories, where they will have an opportunity of learning the methods of butter-making and using the milk-testing apparatus at the season of the year when they will have leisure time. It is expected that operations at both places will begin about the 20th of the current month (November). The probability is that 30 or forty factories will be altered into creameries for next winter, and the cheese-makers who are first and best equipped for this work will secure the best places. The milk from over 700 cows has been promised at the Mount Elgin creamery from within an area of 3½ miles around the factory. In the Listowel district there are several factories that could adopt this winter dairying with advantage during the next year. Every help and encouragement towards making the change will be given by the Dairy Commissioner's office. Cheese-makers, salesmen, patrons and all others interested are invited to correspond there for information on the subject. It is to be hoped that the Listowel district will not be behind the Oxford and London districts in this regard in the course of next winter. When the Listowel Dairymen's Board of Trade continues its market the year round, and has an offering of butter equal in quantity to its offering in the cheese branch of the industry, the whole district will feel the effect of the increased prosperity among the dairy farmers.

American Pork Abroad.

American hog producers have expected much from the removal of the German embargo on their pork products. The two great hog killing establishments located near Boston have not increased their output, nor is there any liability that they will until our government provides money enough for the sufficient maintenance of a much larger corps of inspectors than is now the case. The present number employed at the port of Boston is but fifteen, only enough to inspect about 800 per day, about one-eighth of the number killed. If the export included the whole carcass, perhaps this number would be sufficient, but as only certain parts of the carcass can be exported, it is obviously plain, that about all the animals killed will need inspection. If the truth was known, our great American pork packers care little whether the embargo was removed or not, for it was only necessary in order to reach the German citadel to send their products through the doors of Denmark or England, then to be rebilled to Germany. These two latter countries are not prohibited in their exportations, consequently, after pork was received there, Germany did not know whether it was raised there or not. It would probably be a little cheaper to send direct to Germany, but since the price there was sufficient to cover the roundabout course, American packers are not beholden to the sufficient inspection force of this country, or the provisions demanded by the new order of things in Germany.

Secretary Rusk, of the United States Board of Agriculture, in his annual report asks for an increased appropriation, so that the Bureau of Animal Industry may provide means to maintain a sufficient force of inspectors to fully comply with Germany's demands; but it is thought that the increased appropriation will not be available until the commencement of the new fiscal year, July 1st, 1892. In the meantime our exporters will be content to reach their goal through the backdoors of unrestricted countries.