

the production of fine Canadian butter, but since Ontario has introduced the co-operative system she had forged ahead. The Canadian output of butter has for some three or four years been doubling up, and the price is improving with our improved reputation. Mr. Fisher referred to shipments of butter sent from Prince Albert, in the Northwest Territory, by cold storage transportation, bringing in England 114 shillings per cwt. He then outlined his intention, as Minister of Agriculture, to provide a system of cold storage so that all our creamery butter will reach the market in good condition. In order to keep the butter perfect after making, every co-operative creamery that will put up a suitable cold storage building will receive a bonus of \$100, in three payments—\$50 the first year, and \$25 each of the two following years. Weekly trains of insulated cold-storage cars will be run to carry the butter to the steamers, which will also be provided with insulated cold compartments. This is all to be done at the lowest possible cost.

Mr. Fisher interjected a few practical suggestions in dairy management from his own experience. He advised that men milk their cows twelve months of the year if by so doing they can make more money, but he preferred his cows to go dry about two months. He would not have his whole herd dry at the same time, but would have his cows come in at different seasons of the year. He advised that dairy farmers keep dairy-bred cows, and feed them a milk and butter producing food. Mr. Fisher has been feeding corn ensilage for 14 years, and claimed that he could not make a success in winter buttermaking without it. He also feeds bran, oil cake and cotton-seed meal to balance the ration; also clover hay once a day in winter. He has found the "Robertson mixture" of corn, beans and sunflowers a great success for silage. He finds his herd of pure-bred Guernsey cows profitable winter as well as summer butter producers.

Feeding Skim Milk.—Hon. Mr. Hoard referred to an experiment conducted at his creamery in which he fed 36 hogs for 56 days on skim milk alone, in which transaction he made 22½ cents per cwt. of skim milk. He then fed 36 more, of the same age and sort, 56 days with skim milk, oil meal and middlings, and made 27.35 cents per cwt. of skim milk, besides a profit on the other foods. He also found that 100 pounds of skim milk fed alone gave 10 pounds of gain, and a bushel of corn fed alone gave 5 pounds of gain, while the two fed together produced 13 pounds of gain.

The sum of the difference between the profits made by one dairyman and the profits made by another is largely determined by the ability and wisdom of the dairyman. The man who keeps and feeds poor cows puts his nose on the grindstone and bears down. Reference was made to an article on the "Cost of a Pound of Butter," in the FARMER'S ADVOCATE, in which it was estimated that a "200 pounds cow" produced her butter at 15½ cents per pound, while the butter from the "175 pounds cow" cost 18 cents per pound for food alone. We ought to breed, select, feed, and do everything possible to get rid of these costly cows. If half the dairy cows now kept in Canada were gotten rid of, and their feed and care put on the other half, we would make very much more profit. The butter from Mr. Hoard's Guernsey herd cost from 10 to 11 cents per pound.

"Fodder Grasses."—Prof. Fletcher, Dominion Botanist and Entomologist, upon taking up this subject said that he had carried on experiments sufficiently long to determine the best grasses for Canada. Awnless Brome grass he has found to be the best for the Northwest farmers, where corn cannot be successfully grown. It is succulent, hardy, palatable, and produces a liberal quantity. Orchard grass is too little grown in this country. It comes early, and therefore is suitable for mixing with red clover, as they each blossom about the same time. Lucern is not a grass, but it should occupy a larger place in our fodder crops. Prof. Fletcher recommended the following mixture for permanent pasture: Timothy, 6 pounds; meadow fescue, 4 pounds; orchard grass, 2 pounds; June grass, 1 pound; red top, 1 pound; mammoth clover, 2 pounds; lucern, 2 pounds; and white Dutch clover, 2 pounds per acre. This will cost about \$2.50 per acre, but it is worth it.

"Butter Packages."—Prof. Robertson spoke in favor of the square package. They should be made of 3-inch spruce or basswood by practical box-makers. They should hold 56½ pounds, so that good 56 pounds will come out of them when they reach England. The box should be painted inside with melted paraffine wax, and lined with the best quality of parchment paper. No brine nor salt should be put on the butter after it has been put in the box. The butter should be covered with two ply of heavy parchment paper, and the top should fit down snugly. For the British market no color should be used, and from ½ to ¾ of an ounce of easily dissolved fine salt to each pound of butter.

Dairy Salt.—Visitors had a good opportunity of examining first-class dairy salt exhibited by the Windsor Salt Works Co. It is what is known as the "Diamond Crystal," from the fact that the crystals are of uniform diamond form. It is fine in the grain and easily dissolved.

This Year Better than Ever.

"Your paper has improved very much during the past year," writes Mr. S. E. Parnell, Lincoln Co., Ont., "and this year so far is even better than ever. It should be found in every farmer's home, for it is money well invested."

Western Ontario Dairymen's Convention.

The 20th annual convention of the Western Ontario Dairymen's Association was held in Brantford on Jan. 19, 20 and 21. The attendance was hardly up to that of last year, but that may be accounted for by the fact that Brantford is not situated in a strictly dairy section. The interest from start to finish was well sustained by reason of the excellence of the speakers and the practical character of their addresses and papers.

The President's address referred to the live topics of the Association work. The proposed amalgamation of the three dairy associations into the butter and cheese associations of Eastern and Western Associations was referred to by Mr. McLaren as a step in the right direction, as the united forces will disseminate as much information as heretofore and at much less cost. Reference was made to the influence this Association has had in placing Canadian cheese in the prominent position it now holds in the markets of the world. Inspector Millar's season's work was referred to in the highest terms, as was also that of Mr. Muir in the Middlesex Syndicate formed last spring. A belief was expressed that more syndicates will be formed during the coming spring, as the one operated in the past season has had the effect of improving and bringing about a greater uniformity of cheese than had heretofore been made in the same factories. A regret was expressed that the improvement looked for throughout the western portion of the Province has not been in keeping with the opportunities provided in the dairy schools, travelling instructors, etc. Badly flavored milk, due to the carelessness of patrons and a lack of the best attention to curing the cheese during the fall and winter months, has had much to do in preventing the highest quality of cheese being made. The use of a "starter" was blamed for much poor cheese. The feeding of turnips, rye, rape, apples and the like to milking cows was condemned in strong terms on the ground of its causing a serious present loss, by reason of reducing the selling price of the cheese from ½ to 2½ cents per pound, and also because of the injury to the reputation of Canadian cheese. A hope was expressed that cheese factories would soon not open before May 1st, and close at the end of October, which would tend to improve the quality, price, and reputation of our whole cheese product. A strong appeal was made for the general introduction of some system of cold storage to be applied to the curing rooms during the hot summer weather, in order to prevent cheese becoming overheated. The same applies to the butter factories. The suggestion was made to have appointed a board of arbitrators in connection with each cheese board, for the purpose of settling disputes when they arise between makers, salesmen and buyers. The following resolution was therefore passed: "That this meeting would recommend to the Board of Directors that competent persons be appointed in the various dairy districts to arbitrate in cases where cheese have been rejected at the factories and to fix the loss sustained, if any, upon the proper parties."

The Secretary's report referred to the work accomplished during the past year as being much greater than that during the previous one. More addresses were given, a cheese and butter convention was held at Guelph College last spring, a number of local conventions were held, a greater number of factories were visited than ever before, correspondence has much increased, etc. A strong appeal was made for a larger membership, which was last year only 453. A regret was expressed that while there is urgent need of more instruction and inspection factorymen are not willing to pay their share of its cost. To make a visit to each factory in Western Ontario (350 in all) during the season, July and August, when instruction is most needed, at least eight instructors would be required, which would require almost three times as much money as the Association now has at its disposal for this purpose. It was recommended that each factory pay \$10.00, or a tax of 15 cents per patron be imposed to pay for sufficient instruction. Eastern Ontario is carrying on this work quite satisfactorily. This inspection is especially needed because of the unsanitary condition of many cheese and butter factories throughout the western portion of the Province. It has been suggested that the inspectors employed by the Associations be made officers of the Provincial Board of Health. The following resolution was therefore passed: "Recognizing the great need of better sanitary conditions in our cheese factories and creameries, this convention would urge this matter upon the attention of the Directors for the coming year, and also upon the attention of the Minister of Agriculture, and in order to bring this about would suggest that each inspector be appointed an officer of the Provincial Board of Health."

The endeavor to organize a number of syndicates, with the success of getting one into operation, was referred to; this one comprising seventeen factories, ranging from one making over 200 tons to some making less than 40 tons of cheese, located in the Ingersoll and London districts. The work of Mr. Muir, who had charge of the Syndicate, proved highly satisfactory and profitable. Letters were read from members of the Syndicate which testified strongly to the advantages of the system and their desire to join it next season, with Mr. Muir in charge. It was pointed out that one instructor could easily look after a larger number of factories than had the Syndicate in question,

which would lessen the cost to each. The financial condition of the Association was shown to be not over flush, there being a slightly heavier liability than the present assets would cover. Were even a small proportion of the dairymen to do their duty in becoming members of the Association, the condition of the treasury would experience no shortage.

Report of Inspector Millar.—One hundred and fifty-six visits were made to 109 cheese factories and 9 butter factories during the season, being the most ever made in one season. In June and July, by reason of much bad milk being sent to the factories, very many inferior cheese were made. This was considerably corrected after Mr. Millar's visits were made. When prices are low Mr. Millar believes in closer inspection, with a view to create a demand for Canadian cheese and therefore a better price. Five hundred and seventy-two samples of milk were tested with the Lactometer and 462 with the Babcock tester. Very few cases of tampering with milk were detected. Mr. Millar regrets that the system of paying for milk according to quality is not gaining much ground, and also that too many still persist in hauling home whey in the milk cans, which undoubtedly causes the loss of thousands of dollars to the dairymen of the Province each season.

Out of 51 factories reported upon in group I., only 2 were in first-class condition, 42 fair, and 7 in bad condition. Thirty-four were classed as clean, 10 as fair, and 7 as dirty. Thirty are tidy in appearance and 19 untidy. As to finish of cheese, 21 are reported as fine, 21 medium, and 9 as rough. In group II., including 52 factories, the average condition was much similar to those of group I., which was visited in December, with a view to giving instruction in curing, when much need was found for such a visit, as in many cases the temperature of the curing room was too low and the atmosphere too dry. The average condition of the Syndicate factories was somewhat better than the other groups, although one or two were classed untidy, dirty and rough, with curing rooms in bad condition during the latter part of the season.

The whey tanks are in too many cases positively dirty and are excellent breeding places for foul bacteria. They should be thoroughly cleaned at least once a week. Too often the floors, gutters, etc., are in bad, leaky condition, causing rotten pools of whey to lie beneath the factory. A strong appeal was made for a means of improving this condition. During the fall season bad flavor in cheese was caused by feeding cows turnips, apples, rape, and other bad food, which seriously lowered the price of such cheese.

Syndicate Instructor's Report.—Work commenced 2nd of June by making a hurried visit to all the factories, when suggestions thought necessary were given. Three factories were found making fine cheese, eight a harsh, gritty cheese, and five making cheese of uneven quality. The cause of the poor cheese was pointed out, with suggestions as to the manner of correcting the faults. Some were not using the hot-iron test, and some of those using it were not doing it properly. Owing to an accident after his second visit Mr. Muir was laid off for a month. As the season advanced a steady improvement was effected in the uniformity, quality, and finish of the cheese throughout the Syndicate factories. It is expected that better work will be accomplished next season, since the makers have learned the advantage of obeying the wishes of the Instructor.

"Care of Milk."—Mr. T. B. Millar, Instructor and Inspector, read the following paper: In the first place I would like to give you a slight idea of how I find the milk as delivered at factories. In the summer when the milk is being poured into the weighing-cans you will quite often find it off flavor—gassy, sour, or "cowy"; these three are very common, but there are innumerable other flavors. In the fall months such flavors as rape and turnip are frequently met with. The first three can be avoided by careful attention. The only remedy for the last two is in not feeding to milch cows rape, turnips or any other food that will produce bad flavored milk. Amongst the weeds that give bad flavors I would mention the leek, the ragweed, and the wild camilla. It is, therefore, the duty of every patron to see that these weeds do not exist in his pasture field. Then again, tainted milk may be caused by cows drinking dirty or stagnant water, lack of cleanliness in milking and in the care of the milk, neglect of straining and airing immediately after milking. But the chief cause of bad milk is dirt—dirty milk pails and cans, dirty milking yards, and dirty hog pens too near the milk stand or the place where the milk is left over night.

A number of the patrons do not strain the milk, and if you take a look at the strainer in the factory while the milk is being delivered you will see a sight that for variety would be hard to equal and harder to enumerate; but all these things tend to give a highly-flavored article. The milk for factory purposes is to be manufactured into food for human consumption, and so should receive the most careful attention. Only the milk from healthy cows having a plentiful supply of pure food and water and free access to salt every day should be used. The milker must be clean and tidy, using only tin pails, and should immediately after milking strain and thoroughly air the milk, handling it always in as cleanly a manner as possible until delivered at the factory. Milk that is sent to a factory without being strained should be returned to the patron at once, as it is not fit for the making of a first-class article of cheese.