

rived at than by paying either by weight or by fat alone. Prof. Dean says that the experiments made by him have altogether pointed in this direction, and he has drawn the following conclusions therefrom:

"(1) An increased percentage of fat in the milk gives an increased yield of cheese, though not in the same proportion.

"(2) That a pound of butter fat in milk, averaging 3.37 per cent. of fat, will make more cheese than a pound of fat in milk averaging 3.94 per cent. of fat is shown by the results of the experiments at the dairy of the Ontario Agricultural College, and all the other Canadian experiments quoted point in the same direction.

"(3) There is little difference in the per cent. of fat lost in whey, whether the milk is rich or poor in fat, what difference there is being in favor of the whey from the poor milk.

"(4) Adding on 2 per cent. to the fat readings, and dividing the proceeds among the patrons according to this basis, appears to be more nearly correct for normal milk than paying by weight of milk or paying according to the percentage of fat alone. Though this is tentative or suggestive rather than conclusive, we expect that something more nearly correct will be discovered in the near future."

It will be seen that Prof. Dean, while urging the necessity of adding on a percentage to the fat readings, merely suggests 2 per cent. as being approximately correct. This point, and some of the other conclusions arrived at by him, notably the one that milk showing a poorer percentage of fat will make more cheese than that richer in fat, have been strongly combated by other good authorities.

The point is a most important one. Most factories had come to use the Babcock tester and to abide by its decisions in paying for milk, and, therefore, the doubt cast upon that as not being the fairest method of paying for milk for cheese is most disturbing. We hope that the question will be decided soon—the sooner the better.

Eastern Ontario Dairymen's Association.

The eighteenth annual convention of this association was this year held at Gananoque during the three days, January 2nd, 3rd, and 4th. The meetings each day were well attended, and the addresses of the practical men who spoke were listened to with great attention, and their remarks were frequently applauded.

The session was opened by an address by the president, Mr. T. B. Carlaw, Warkworth. In it he referred to the success that had attended the cheese industry during the past year, in spite of the general depression in most branches of agriculture. He would impress on those present the necessity of making the finest class of cheese every year, as such would be ever in demand. The dairy schools were doing good work, and our governments should be congratulated on giving such aids to the dairymen of the province. Thanks were specially due the Hon. John Dryden for the assistance he has ever been ready to give to them. The instructors and inspectors of the association had never done better work than during the last year. He counselled greater attention being given to more corn growing, the use of the silo, and better stabling for stock.

Mr. D. Derbyshire, Brockville, in welcoming the delegates, reminded them that Leeds county was the cradle of the Canadian cheese industry.

At the afternoon session Mr. George Taylor, M.P., spoke on legislation in regard to dairy products, referring especially to the prohibition of oleomargarine importation and manufacture in this country. Mr. Derbyshire also spoke on the importance of the dairy interests to the province.

The reports of the inspectors and instructors were then handed in, after which Mr. John Gould, the well-known Ohio dairyman, in his own inimitable way, made a capital address on the subject of "The Farmer as a Manufacturer." He claimed that the man who took a cow and got from the land the proper food for the animal, and fed that food to the cow in the way to produce the best results in the making of beef or milk, was as much a manufacturer as the man who took iron ore and by driving certain elements out of it turned it into steel.

Prof. H. H. Dean, Guelph, held forth on the advantages of the agricultural experiment stations in the province, and would like to see the association co-operating with the Ontario Experimental Union in dairy experiments.

Mr. G. V. Chown and Mr. J. A. Ruddick put forth the claims of the Kingston dairy school for general support.

At the second day's session Prof. Shutt, Ottawa, who took for his subject, "The Composition of Dairy Products," was the first speaker. Using large diagrams, he explained the constituents of milk, cheese, and butter, and the values of skim-milk and buttermilk. He urged the importance of plenty of water, and showed the need of pure water for stock. No well should be dug near stables, as, sooner or later, it would get contaminated. Farm wells should be inspected, especially those on farms from which milk is sent to factories.

Mr. John Gould told the meeting how to grow corn, how to build a silo, and how to make ensilage. Thorough cultivation was necessary in order to make a good seed bed for the corn, and early and shallow cultivation after planting in order to kill the young weeds were also strongly insisted upon. He described a cheap, light, homemade harrow, consisting of a triangular frame of 2½-inch wood, with 4-inch nails driven through, for this early cultivation. He advocated the use of the wooden silo entirely, even to the extent of discarding stone foundations. He preferred the square silo, as being cheaply and easily constructed. It should be built of a double thickness of good flooring, lined with tarred paper, and made perfectly air-tight. Fill around the sides first, and, at the last, level up in the centre. The best covering for a silo was made by pouring about ten pails of water over the ensilage, which developed a thin mould, this forming a natural covering, giving cheaper and better protection than any artificial covering could give.

Prof. Dean spoke upon recent cheese experiments, conducted at the Ontario Agricultural College, in order to find out the influence of butter fat upon cheese. He held that an increased percentage of fat in the milk gives an increased yield of cheese, though not in the same proportion; also, that a pound of butter fat in milk, averaging 3.37 per cent. of fat, will make more cheese than a pound of fat in milk averaging 3.94 per cent. of fat, as shown by the results of experiments at the dairy of the Ontario Agricultural College, and all the other Canadian experiments quoted point in the same direction. There is little difference in the per cent. of fat lost in whey, whether the milk is rich or poor; in fact, what difference there is in favor of the whey from the

poor milk. Adding on 2 per cent. to the fat readings, and dividing the proceeds among the patrons according to this basis, appears to be more nearly correct for normal milk than paying by weight of milk, or paying according to the percentage of fat alone.

Mr. D. M. McPherson, M.P., Lancaster, urged the necessity of more intensive farming.

Addresses were then presented to Hon. John Dryden and Mr. N. Awrey, M.P., to which suitable replies were made.

The subject of "Good Roads in the interest of the Dairy" was well handled by Mr. A. Pattullo, Woodstock. He referred to the great difference in price in handling milk, which ranged from 3 to 17 cents per 100 lbs., and claimed that bad roads were the cause of the increased cost of handling.

Prof. Robertson spoke on "First Principles of Agriculture," which he held to be a desire for exact knowledge, the exercise of energy, skill in management, and the practise of economy.

The evening session was largely taken up with an important address by the Hon. John Dryden. After referring to the extension of dairy work in the province, he congratulated those present on the improved condition of the home market for dairy produce. He held that the decrease of our butter exports was largely due to the improved demand in our cities for high-grade creamery butter. He would like to see better facilities provided for exporting dairy produce. Cold storage buildings were necessary at shipping points. He then went on to refer to the suitability of a good portion of Algoma for dairying, and mentioned that the Ontario Government would, at its next session, ask the legislature for a small grant with which to establish a pioneer dairy farm near Wabigoon, on the line of the C.P.R. Here it is proposed to show by actual test what are the possibilities of that district in dairying.

The election of officers for next year resulted as follows: President, Edward Kidd, North Gower; first vice-president, E. J. Madden, Newburg; second vice-president, John McTavish, VanCamp. Directors: Wm. Eager, Morrisburg; R. N. Craig, North Gower; J. R. Dargavel, Elgin; James Whifton, Wellman's Corners; T. B. Carlaw, Warkworth; Henry Wade, Toronto. Auditors: Morden Bird, Stirling; and Wm. J. Bissell, Algonquin.

The auditors' statement for 1894 showed the receipts of the year to be \$5,978.56 and the expenditure \$5,599.35, leaving a balance on hand of \$379.21.

Mr. John Gould gave a masterly address on "The Dairy Cow and her Functions," deprecating too early breeding. He did not think that the dairy business would be overdone.

Prof. Robertson advocated the mixed ration of sunflower and beans for dairy cattle in winter, and exhibited some of the food to show its keeping qualities. He ridiculed the idea of over-production so far as milk, cheese, or butter was concerned. He advised a more binding form of agreement between buyers and sellers of cheese, and thought that the salesmen were sometimes in an awkward place between the patrons and the exporters.

Ontario Creameries' Association.

In view of the fact that Chesley is the centre of an important creamery section, it was this year selected for the meeting place of the tenth annual convention of the Ontario Creameries' Association. The proceedings commenced on January 8th and lasted through-

out the two following days. The meeting was a most successful one, and was well attended.

The president, Mr. D. Derbyshire, in the course of his annual address, reviewed the work done by the association during the past year, which he felt sure would have good results. Their instructor, Mr. Sprague, by his practical instruction to the creameries, especially to new ones, had done excellent service. Nineteen winter creameries and eleven regular creameries were established last winter, making seventy-four regular and thirty-one winter creameries now in operation in the province. One of the largest creameries in Canada, and probably in the world, had just been completed at Renfrew. The usefulness of the association was only beginning. While the price of creamery butter had been low, still it had been profitable. New markets must be sought for, and economical methods of production adopted. Co-operation is needed for this.

In the afternoon the subject of "Corn for the Silo" came up for discussion. Mr. John Gould, of Ohio, in taking part, said that the farmer was a manufacturer, and he must manufacture, as cheaply as possible, nutritious food for his cows. Corn was the best of all coarse feeders, and farmers must plant corn and have silos if they would be prosperous dairymen. Corn required heat and moisture to grow in best form. To obtain the former the best plan was to sow the corn on a sod soil, and the decomposition of the sod would raise the temperature of the soil eight or ten degrees, and assist development very materially during the earlier months of the year. He next spoke of the culture of the crop, and said he did not believe it was a good practice to cultivate the soil as was done at present; the fine roots which exist near the surface, whose chief purpose is to absorb moisture, were cut off by the excessive and deep cultivation now in vogue. He believed that the best plan was to thoroughly prepare the seed bed, and then, by means of a light harrow, keep the weeds down. After the corn was up, he thought it best to desist from further cultivation. He advised the sowing of the corn in drills, three and a half feet apart, the kernels to be planted at a distance of six inches in the rows. By this means the plant would have ample opportunity to absorb its nourishment both from the soil and atmosphere.

Prof. Shutt described some experiments that he had conducted some years ago with varieties of corn. One-tenth of an acre of each variety was cut at five stages in the growth of the plant, viz., tasselling, silking, early milk, late milk, and glazing; the yields per acre were calculated from the weight off this area. At the same time a chemical analysis was made of these corns in their several stages of growth, in order to ascertain their true food value. From these chemical data, together with the weight of yield, he had found that there was a very large increase in the real food value of the corn plant from the tasselling to the glazing period, so that, by merely allowing the plant to grow, over 100 per cent. of true cattle food was added to the corn crop between the tasselling and the mature condition.

Mr. Alexander E. Wark, Paisley, in his address on "How to get butter on the market in full bloom," made several suggestions. While Ontario was most adapted for dairying, our buttermakers had a bad reputation for butter. For this the patrons of the creamery, the creamery owners, and the buyers and exporters were to blame. The first named were too careless about the milk and cream sup-