

Maine State Dairymen Convene.

The Maine Dairy Association held its annual meeting at Auburn, December 13th to 15th. The best butter scored 97½, the cheese 96, and the lectures were interesting and well attended. The same board of officers was re-elected, F. S. Adams, Bowdoinham, being president, and L. W. Dyer, Woodfords, secretary. In accepting the office for the second time, Mr. Adams said, "I consider it more of an honor to be President of the Maine Dairy Association than to be Governor of the State."

The question of federation of all the agricultural societies of the State was discussed, and steps were taken to this end. In the middle and western States such a federation has been a powerful factor in the interests of agricultural legislation.

Better butter, by Prof. G. M. Gowell, of the U. of M., was the first subject on the programme. This gentleman would like to see a model dairy on wheels going from place to place, with an instructor to teach the details of good buttermaking. In short, he said: "There are two classes of dairymen, those who are in it from choice and those whom circumstances drive to it. The bulk of poor butter is made by the latter class. At the experiment station this is our method: Barns clean, light, well ventilated; no feeding or dust during milking; clean hands and clean overalls for milkers; clean cows; milk passed through absorbent cotton or into well-protected pail; strained into covered cans properly aerated, dropping from 90° to 66°; milk treated thus will keep twenty days. For butter we pasteurize the separated cream, keep it at a temperature of 40° or 50°, and ripen by means of a starter, which we make by heating to 90° sweet skim milk, from a cow fresh—not more than three months—keeping it 24 hours where the temperature will not drop below 60°, when it is ready for use.

Keep out the milk of the stripper, for mischief in taste and churn is traceable to her. A cow must be in sympathy with her food, and any change be made gradually. Turnips should only be fed after milking—one at first, then increase gradually to half a bushel.

Z. A. Gilbert outlined the work of the association, and C. S. Stetson spoke of the outlook for the Maine farmer, and was very optimistic in his views.

Straws picked up by the wayside were wafted over the convention by R. W. Ellis, a veteran farmer, who had recently made a trip through the State, and had arrived at the following conclusions:

Fall feed the pastures; not too close, however. When second growth is not worth cutting let the cattle feed.

Have the cows fresh in the fall; they will produce more, and you will get more for their product.

Haul out dressing and prepare the land for planting in the fall. Spread the dressing evenly, and plow it in. Spread from the cart with a fork; never put in piles and spread from them.

Change from hay to grass and the reverse gradually, and never let the cows eat grass that the frost has killed, for it lessens the flow of milk.

Dr. Fellows, President of the U. of M., gave a lecture on country life, taking it from the Garden of Eden to the present day, and was both instructive and interesting.

Prof. W. D. Hurd, from the same institution, spoke strongly in favor of teaching agriculture in the public schools, and illustrated its advantages by the stereopticon.

A banquet was given Wednesday evening, at which some hundred persons sat at table, and the post prandial exercises were very enjoyable.

In a paper on the Ayrshires, Rev. E. N. Pember, of Bangor, who keeps a herd of the animals, gave some of their characteristics, claiming for them ten noteworthy points, namely, good size, rugged constitutions, good appetite, docility, intelligence, ease and comfort of milking, large milk production, adaptability to the milkman, the cheesemaker, and the butter-maker. He also spoke in favor of the grades.

State and national legislation on Pure Food Laws was ably handled by Dr. George M. Whitaker, of Boston.

Sharp competition, catering to a critical and buying in a complex market, together with the fight against insect pests and fungous growths, was only a portion of what the twentieth century farmer is up against, according to Dr. W. H. Jordan, of the New York Experiment Station.

The "Head of the Herd" was an able paper by Dr. Twitchell, of the Maine Farmer. Taking the ground that dominion in the animal kingdom is mental, not physical, the gentleman would pay particular attention to the head in selecting the male. He urged all to make a personal selection, as individuality plays as important a part as breed, and the object of the selection is not only to maintain a high standard, but to lift it higher.

Prof. C. D. Woods, Head of the Maine Experiment Station, talked on "Economic Dairy Feeds," giving practical suggestions applicable to the farmers of the Middle and New England States and the Provinces. In brief he said: Economical usually means successful feeding. It is the food above maintaining the physical body that is productive, and the secret of success is to develop each individual cow to the limit of profitable production.

The nutritive value of food depends upon its digestibility, as well as its chemical composition. Two foods may have nearly the same amount of protein, but much more of it be digestible in the one than in the other.

Because of loss of leaves in curing, green fodder is more digestible than cured. Other things being equal, the more rapid the curing the more digestible the hay. The best time to cut most of the forage plants, however, to be used, is when in full bloom.

Among the cattle feeds grown upon the farm, the legumes (peas, clover, etc.) are more valuable than ordinary grasses, because they contain large quantities of protein, respond readily to mineral fertilizer, and obtain a large amount of nitrogen needed for growth from the air.

The best crop for soiling and silage is Indian corn. The largest yield of digestible nutrients per acre is obtained from varieties that will carry the grain at least as far as the milk stage; the mature corn contains less fiber and more soluble carbohydrates than the immature, hence for palatability, digestibility and yield the corn should mature before being harvested.

Experiments at the station show that oats cut in the milk contain a great deal more digestible protein than at any other stage of their growth. In cutting, leave a high stubble, for the loss in quantity is more than made up by the gain in quality.

Roots and potatoes are excellent, because of succulence, palatability and keeping qualities, and are excellent substitutes for corn where that product cannot be grown. Supposing the farmer has grown upon his land as much as possible of the nitrogenous feeds, and the corn, that will be his chief dependence, he will supplement the home-grown with commercial feeds, buying that rich in protein, with bran, which furnishes needed mineral matter.

Hon. J. A. Roberts, of Norway, talked on Maine's dairy interest and Maine's interest in dairying, claiming that with a slow and sure growth in the past its limit was far from being reached, and urged the farmer to be alert, keep in touch with the financial side of his work, and adopt modern methods.

Resolutions of co-operation with the National Dairyman's Union were passed, and also resolutions relating to the introduction of agriculture into the curriculum of the Normal School, besides the usual set relating to courtesies received.

Dairymen's Discussion.

During the first week in December, the dairymen assembled at Guelph took advantage of their meeting there to discuss questions relating to buttermaking. Supt. Barr, of the Western Ontario district, gave as the chief defects of Ontario butter poor flavor and poor keeping quality, largely due to the delivery of thin and overripe cream at the creameries. The method of testing by the oil test, he believed, tended to encourage rather than disapprove the supplying of ripe cream, consequently, a greater effort should be made to introduce the system of buying by the Babcock test. Already in the Western district there are nine or ten creameries which buy by this more approved plan, and it is believed that it will be more generally adopted. During the past season over one thousand farms were visited by the two instructors, and it is hoped that for next season another instructor will be put on. So far, the funds for the prosecution of instruction work have been very limited, and the co-operation of patrons and maker is earnestly solicited toward the production of a greater percentage of first-class butter.

Prof. Harcourt asked if Prof. McKay's method of treating overripe cream had met with success here, namely, to treat with sodium carbonate to neutralize acid, then pasteurized starter added, and the cream churned. Mr. Barr was not aware of the method having been tried.

Prof. Harcourt then took up the discussion of the points affecting the keeping quality of butter. In butter there is present delicate unstable fats and nitrogenous matter, and the causes of deterioration in the quality of these substances is due to light and air, and to the work of micro-organisms. There are no micro-organisms in pure fat, but they flourish in nitrogenous compounds. Rancid flavor is due to bacterial secretions, decomposition of nitrogenous compounds, and enzymes of bacteriological origin, which split up fats, liberating glycerine and fatty acids. These causes may give rise to taints soon after butter is churned, or taints may develop later from absorption of bad odors. Taints are most difficult to remove, but may be retarded by the use of preservatives, pasteurization and cold storage. In answer to a question, Prof. Harcourt recommended as preservatives compounds of borax, but not boracic acid.

Prof. Dean showed the audience a box of butter containing no salt, but treated with preservatives, that was badly moulded, and the same result had accrued from the use of all preservatives. At present, neither Prof. Harcourt nor Prof. Dean were prepared to make any definite statements regarding preservatives.

Mr. Widmeyer, of Fergus, gave his experience with pasteurizing cream during the past season. Usually, he maintained a temperature of 175° F., but to drive off such insidious flavors as that of turnips, a higher temperature was employed. Butter made from pasteurized cream was in every respect superior to that made without pasteurizing, but the buttermilk is hardly as good.

Messrs. Parkinson, of Jarvis, and Robertson, of St. Mary's, both expressed satisfaction with results obtained by pasteurizing. Mr. McFeeters, of Owen Sound, explained the installation of a cooler, and highly commended its services. Prof. Harrison delivered a very interesting technical lecture on bacteria with which the dairyman had to do.

Testing Dairy Herds.

WHAT THE DANES HAVE DONE—AN OBJECT LESSON FOR CANADA.

The little kingdom of Denmark occupies an almost unrivalled position as a producer of first-class bacon and butter, as Canadian exporters of these products fully realize. This pre-eminence has been brought about chiefly by the general diffusion of agricultural information, and the hearty co-operation of the farmers along every line that will be to their mutual advantage. There are many directions in which Canadians might profitably imitate these energetic rivals of ours, not the least important being in the improvement of dairy herds. The aim of intelligent dairymen, in Canada as well as in Denmark, is to produce the largest amount of first-class milk, butter or cheese at the least cost. Let us see, then, what co-operative testing has done for the Danish dairy herds in the way of cheapening the cost of production.

The first of these co-operative testing associations was formed in 1895. Each society is composed of a limited number of farmers, about twelve or fifteen, who agree to have careful tests of their cows made at frequent intervals during the whole milking period, by a competent man hired for the purpose. Fairly accurate records are thus obtained, not only of the yield of milk and butter-fat, but of the amount, kind and cost of the feed consumed. The information thus secured has proved remarkably effective in inducing the Danes to adopt better methods of breeding, feeding and culling dairy cows.

In 1895, when the first testing association was formed, the value of the butter exported from Denmark was \$19,000,000. In 1901, when over three hundred of these associations were scattered over that country, the value of the butter exports amounted to \$29,000,000, an increase of over fifty per cent. in six years. It is generally agreed that the greater part of this enormous increase was due to the work of the testing associations in weeding out the poor cows. Not only was the average production of the milking cows largely increased, but so much additional skill in feeding was acquired that the cost of feed necessary to produce a pound of butter is now estimated to be less than two-thirds of what it was when the first co-operative association started operations in 1895.

Canadian dairymen who are looking for dividends on their investments should consider these figures. The reports of the testing societies showed that the cost of keeping these yearly records was from forty to sixty cents per cow, while the increased returns per cow, as a result of five years' testing, were from six to fifteen dollars per annum. Surely this is an eminently satisfactory rate of interest. The extraordinary increase in the number of these societies in Denmark shows how highly their work is appreciated. The tests made by the original associations were sufficient to convince the Danish farmers that they were not dairying on business principles—that they were allowing a lot of robber cows to eat up the profits produced by their good cows—and they were quick to adopt better and more profitable methods.

The hundreds of co-operative cheese factories and creameries doing business throughout Canada prove conclusively that we can work successfully along co-operative lines. It is only a short step from the co-operative factory to the co-operative testing association, and it would seem that methods which have proved of such marked benefit in Denmark could not much longer remain unheeded in this country. In every dairy community there is at least one particularly intelligent and progressive man, who would have little trouble in inducing twenty or thirty of his neighbors to join him in an enterprise that has proved so profitable elsewhere.

It has been demonstrated by the census returns and other official statistics, by the work of the experimental farms and agricultural colleges, and by numerous private investigations of dairy herds, that a large proportion of our cows are kept at an actual loss. An educational campaign that will bring dairy farmers face to face with facts as they exist on their own farms is urgently needed in this country. The problem of weeding out the cows that cannot be made to yield milk at a profit is by far the most important one that confronts our dairymen to-day. The possibilities in this connection were well illustrated by Prof. Grisdale, at the recent Winter Fair at Guelph. He told of a friend of his who had increased the average production of his herd from \$35 in one year to \$45 the next, although the price of cheese remained the same. In the third year, with cheese considerably higher, the average of his herd came up to \$60, and in the year following to \$70. This was accomplished by more skilful feeding, by weeding out unprofitable cows, and by buying from neighbors better producing cows, of whose value the owners were ignorant.

W. A. CLEMONS.

Clean milking, careful straining, immediate cooling, are the cardinal principles of the dairy creed of the Danes, who are the most successful dairy folk, and this is sound doctrine for all.