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of milch cows and bulls of milch strain. He urged on Mr. Motherwell and the department the necessity of considering the matter of assisting the farmer in better stock-raising. It was not charity he desired, but the taking of the matter in hand from a practical standpoint to provide facilities for the introduction of the best strain for the industry. He was confident the pursuit of the industry would lead to prosperity and happiness.

W. C. Paynton, of Tantallon; W. McCorkell, Moosomin, and J. Burton, of Langenburg, took part in the discussion.

DEAN RUTHERFORD SPEAKS

The evening session was opened by Dean Rutherford, who spoke on the manner of feeding milch cows to get the most out of them. The important point in this country was to have good feed the year around. He advocated the sowing of mixtures in the pasture, such as oats, barley and wheat, fall rye and brome grass. There was nothing a cow liked so much as variety. In summer time grasses generally become dry. Farmers should sow at intervals oats and peas and sorghum, or some fodder that keeps coming on. Clover with oats, sorghum and peas, was a mixture recommended. They should try corn, and, if possible, have a small silo.

The ensuing discussion showed that every dairyman has his particular way of feeding.

The chairman, W. A. Wilson, dealt with the effect of the feeding on the make of butter in spring and fall. He quoted statistics to show the great falling off in the make of butter during those months when the price was the best, and said that farmers should aim to prevent this by supplementing the pasture feeds by growing forage crops as suggested, so that they would have plenty of succulent feed for their cows at all times.

Dr. Flatt, of Tantallon, said that it was common to hear this province spoken of as a grain growing province. That was a difficulty in the way of dairying. It was easy to develop the dairy industry in Ontario or in Denmark. Here it would require more effort. The problem of labor was an important one. He urged that the male at the head of a herd should be a Short-horn of the milk-producing strain. They should avoid the beef type for successful dairying.

J. Noddell, of Moosomin, spoke on the grading of butter and said it should be of the first grade to secure ready sale. Turning to calves, he advocated hand feeding three times a day on whole milk for three weeks, after which they should start the grain ration, gradually increasing it and at the end of two years they would have one of the best milk cows obtainable.

Mr. Hartlein expressed his faith in the profitable nature of dairying, and advocated the fall calf. Professor Rutherford approved of this and told the delegates to feed for production at those seasons when the producer could get the highest price for his butter.

QUALITY AND CLEANLINESS

Speaking of the butter market, Mr. Wilson said that there was nothing so objectionable as bad butter, and nothing so sweet as good butter. Everybody eats butter, and the market would certainly continue to grow. Western dairymen were not supplying 40 per cent. of the Western demand. Butter was sometimes brought from Australia to supply British Columbia. Eastern Canadian houses, while looking for export, were also turning their attention to the West. This was the best market, and in order to hold it Saskatchewan dairymen must be ready to produce the best butter and the best only. So far, in order to increase the supply they had dealt leniently with careless patrons. But now he believed they had reached the stage where if the patrons would not follow the directions, they would be better without them. Last year they had made the first shipment of butter from Saskatchewan to the Yukon, and it was a splendid market. It could not be held without quality.

Coming to the patron's responsibility, he said that good butter could not be made without good raw material. A pound of butter is a pound of flavor. If the flavor is lost everything is lost. Cleanliness and keeping the milk cold were two essentials to flavor, and the cold tempera-

ture should be continuous until the cream is delivered at the creamery. Mr. Wilson also advocated a more frequent delivery to the creamery. He recommended the use of a thermometer. The use of the finger was an ancient method and not a reliable one.

Cleanliness was the all-important factor however: clean cows, stables, water and utensils. The cows' udders should be washed before each milking. Dust attaching to animals and the stable was largely contaminated with germ life.

F. E. Whiting, of Qu'Appelle; Wm. Schnell, of Langenburg; J. W. Brown, of Tantallon, and T. Pinson, of Lloydminster, took part in the discussion.

L. A. Zufelt, the newly appointed dairy instructor for the province, then delivered an address on "The cream test from the farmers' point of view; causes of variation; methods of separation." In a technical, yet interesting manner, Mr. Zufelt dealt with the different heads of his subject from departmental and local standpoints, explaining the Babcock test in detail. He explained fully the different component parts of milk and the scientific use of the separator.

The results of analyses of milk in different stages of souring was also gone into, and Mr. Zufelt concluded with an interesting statement of figures showing the great difference between the fertility taken out of the land by ton quantities of wheat, cheese, beef, butter and milk, the last showing a ratio greatly below any other production.

E. J. Elves, T. Ross, Thos. Jones and N. O. Simpson joined in the discussion.

RESOLUTIONS ADOPTED

Following are some important resolutions passed:

That this convention heartily endorse the policy of the department of agriculture in judiciously centralizing the creamery work, and that our energies be concentrated in promoting the same, and further that we do strongly advise against the erection of creameries in close proximity to each other.

In view of the fact that the government is asked to sanction and help the establishment of creameries in districts in the province where sufficient cream is not in sight, be it resolved that such amendment be made to the dairy act that shall prevent danger to the dairy industry, and we recommend the following amendment to the act: That the full stock of any government controlled creamery be fully subscribed, and that 50 per cent. of stock be paid up, and the balance secured by approved promissory notes.

That the management of creameries under government supervision has been such as to warrant commendation, and we do hereby express our appreciation and confidence in their work and methods.

That too great emphasis cannot be placed upon the following: 1, Cleanliness; 2, the use of the covered milk pail; 3, the advisability of skimming a 35 per cent. cream which lessens germ contents and propagation; 4, the uniform adoption of cooling cream in cans placed in ice water; 5, the regular use of a thermometer.

That in order to obtain a still higher standard of excellence in the butter from Saskatchewan creameries, that all patrons carefully peruse bulletin No. 15, issued by the dairy branch of the department of agriculture, explaining the best methods of handling and caring for cream on the farm.

That in the interest of dairying, a system of cold storage should be established within the province, and that this matter be brought to the immediate attention of the government, with a view to the establishment of same at an early date.

That dairymen be urged to give more attention to the improvement of their present herds from the standpoint of milk production, and to provide forage crops to supplement the natural pasturage in the early spring and fall months, as well as succulent foods for the winter production of milk.

That this convention urges the government to give assistance in the vicinity of creameries to the introduction of dairy stock, and particularly bulls.

That in view of the success of this convention, the delegates from the various creameries under government control, both from the standpoint of education and the strengthening of the hand of the government in the good work they are doing in the development of the important industry of dairying, it would be in the interest of all concerned if the holding of their convention were made an annual affair.

Supt. W. A. Wilson expressed his gratification at the enthusiasm shown throughout the entire proceedings. He begged the delegates to carry that enthusiasm into the various districts. Those most in need of education would not attend such meetings, and it lay with the delegates to take that education to such people. He assured them of the loyalty and anxiety of his department, which would always be at their service.

* * *

Pasteurization is not without its drawbacks, and it is in trying to overcome these that several new methods have been brought to light. The curdling of the cream into larger or smaller lumps during the process of pasteurization has caused considerable trouble and financial loss in many creameries, and in some cases a discontinuance of the process altogether. The factors favoring this trouble appear to be medium acidity of cream (0.3 per cent. to 0.4 per cent.), low fat content (below 25 per cent.), and heating only to medium temperature (140 degrees to 160 degrees F.). Of these, the acidity appears to be the most important, and is, moreover, the factor which is the most easily changed. By the addition of an alkali, the acidity can be so reduced that trouble from curdling is no longer experienced. Viscogen (succrate of lime) has been used for this purpose, sufficient being added to the cream to bring the acidity down to .2 per cent. The cream is then pasteurized, as usual, cooled to ripening temperature, a large starter added, and acid allowed to develop to about .4 per cent., when the cream is cooled for churning.



SOME OF THE ENTHUSIASTS WHO ATTENDED SASKATCHEWAN'S FIRST DAIRY CONVENTION HELD AT SASKATOON RECENTLY