

WINTER MEETINGS.

Mr. Publow was of the opinion that more could be done by holding these meetings during the winter months, at the time of the annual business meetings of the factories. There is still vast room for improvement. Many factories have asked for speakers at these meetings, and arrangements will probably be made with the Department of Agriculture to have something done along this line.

The improvements most needed are: better means of controlling the temperatures of the curing-rooms, better floors in the making-rooms, better drainage and sanitary conditions, improved water supply, and more attractive surroundings.

Wherever we find first-class equipment, there we almost invariably find a good product, but with small, poorly-equipped factories, with indifferent patrons and poor makers at low wages, trouble was always to be found. The most common defects were acidity, weak-bodied, yeasty and bad-flavored cheese. These faults were especially prevalent in the fore part of the season. To overcome the difficulty, a meeting of the instructors was held at Montreal. Visits were made to the warerooms of the leading exporters, and in this way comparisons were made of the products from the different districts; the instructors became more thoroughly acquainted with the difficulties, and by these direct object lessons were able to glean information of vast assistance to them in their work. The value of the work done can be seen from the fact that less than one-third of the cheese rejected by Mr. Woodard, the official referee at Montreal, were from the syndicated factories.

THE YEAST FERMENTATION.

The greatest defect in our cheese, and the one most difficult to remedy, was caused by the yeast fermentation. No remedy proved so effective as to have the patrons pay particular attention to the thorough washing and scalding of the cans. This was especially true where the whey was returned in the cans. The milk must also be cooled immediately after milking, to at least 65 degrees F. It was found that all cheese made from milk seeded with this fermentation, and containing more than 19 per cent. of acid, were more or less oren in character, and had a bitterness of flavor which became more pronounced as the amount of acid in the milk had been developed before the rennet was added. An improvement is noticed this year in the finish of the cheese. This is gratifying, as the fault is one easily overcome. Throughout the year the instructors have been everywhere well received, and the quality of the cheese, especially during the months of September and October, has greatly improved, thanks to the co-operation of all those interested in the industry.

IMPROVEMENTS IN INSTITUTES.

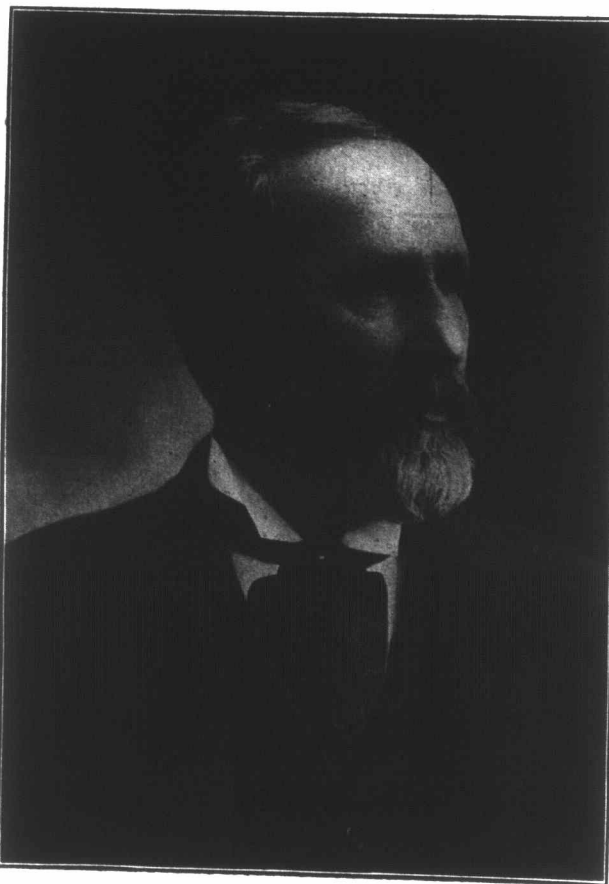
G. A. Putnam, Superintendent of Farmers' Institutes, was the next speaker. He referred to the steady onward march of the dairy industry, but still there is room for improvement. Factory owners are willing to make necessary improvements, but instructors are needed to give information as to the best methods of securing water supply, site, location, and other advice. More education is the crying need. Two hundred thousand people are engaged in dairying. Only five per cent. of these can be reached by dairy schools and colleges; the remainder must receive instruction through the press, by means of organizations already existing, or possibly by the organization of new societies.

Mr. Putnam is at present making an effort to secure definite information about the different agricultural districts, with a view to having speakers sent to these districts, who will be especially qualified to speak on the branch of agriculture in which the district is particularly interested. This would improve the institutes, and make the work of the speakers of more direct value to the people. The suggestion met with approval. The president was in hearty support of the idea. "Send only butter, cheese and bacon men to Brockville," said Mr. Derbyshire. "no ordinary man will do for Brockville." Mr. Putnam said, in reference to the remarks of Mr. Publow, that he was in favor of having speakers sent to the annual meetings of the cheese factories. Personal visits have a great effect. You may talk to hundreds of people, but you must get at them and show them how some of these improvements are to be made. More conventions, more extensive use of the press, the use of special reports and personal visits, are all essential to progress and continued prosperity in the dairy industry. In the discussion, Prof. Robertson said that telling people is not always sufficient. After a visit to a farm where things are properly done, let the instructor tell the local paper of the visit. Call the attention of the people to the object lessons in their midst, and they will learn to emulate them. Cheapness and selfishness are responsible for all the troubles of Canadian dairymen. Cheapness in the desire to live a maker for as low a price as possible, and by having the poorest equipment run the entire plant on a cheap scale. Selfishness is shown in the desire of some patrons to get the milk off their hands

with the least possible trouble to themselves, entirely regardless of what the effect of their negligence may be upon the dairy products of the country, and indirectly, the injury falling back upon the people themselves. "Dan" Derbyshire, with his characteristic energy, fired some hot shot. "Don't pinch the cheesemaker; pay him a decent price; sack him if he proves no good; and get a man who has the backbone to return poor milk and tell the patron it's rotten. That is the way to face the issue."

THE MAN WHO DOES THINGS.

Mr. Publow was on his feet several times in answer to questions from the audience. Who is to blame for the poor quality of some of the cheese? Sometimes the maker; sometimes the patron. Usually one or two small patrons, sending a few pounds of milk, are the cause of the trouble in cheese factories. The cheesemaker should be an educator. He should be able to do more than make cheese. Small factories are another frequent source of trouble. Unfortunately, all farmers are not heaven-born dairymen, and those who are most in need of instruction are those who fail to turn out to the meetings. The people must be gone to, they cannot always be brought out. Mr. Publow is a hustler, an enthusiast in his business, and a man not afraid of work. The appreciation of the audience was shown by the hearty welcome he received every time he rose to speak, and the progress made in the eastern part of the Province, bears testimony to the thoroughness of his work.



R. G. Murphy.

Secretary Eastern Ontario Dairymen's Association.

THE MIGHTY MICROBE.

Dr. W. T. Connell, Bacteriologist, Kingston Dairy School, spoke of the influence of bacteria on the problems of the dairymen. After a few general remarks on bacteria, in which he pointed out their resemblance to plants and their food requirements, he told of fermentations, injurious and otherwise, produced by them. Temperature is the greatest factor in the control of injurious ferments. Growth might be practically dormant at 50 degrees, but become abnormal at 98 degrees. Yeast, a low plant growth, similar to bacterial forms, had given the greatest amount of trouble. It carried a bitter flavor and an oren texture. The greatest cause of this trouble was lack of cleanliness. The cans should not be kept under trees; they should be covered to prevent the entrance of flies, and above all, they should be thoroughly washed. Seventy-five per cent. of the cans examined by the Doctor showed small particles of curd containing traces of this injurious ferment.

COWS AND COW STABLES.

Some truths about cows and cow stables, was the subject of Prof. Dean's talk at the afternoon meeting. Production cannot be economically pushed above a certain limit. Every hundred pounds of milk costs a certain amount, and the true basis of calculation must be net profits, not total amount of milk. By means of a chart, the record of the season was shown. Some cows dropped as low as \$1.25, others dropped as low as \$1.00. Yet strange to say, the cow with the high record showed considerable feed cost, while the one with the low record was,

apparently, an ideal dairy type. It is inherited tendencies, and care and training, not conformation alone, that goes to make the good dairy cow.

Prof. Dean recommended cement floors in the stables. They were not perfect, but were, as far as cleanliness was concerned, away ahead of anything else. Mangers are unnecessary. The natural method is for the cow to eat from the level of the ground. The depression in the central feed passage admirably serves the purpose of a manger, and it is easily kept clean. Prof. Dean does not approve of water being kept constantly before the cattle. It soon becomes impure. It is better to use a galvanized iron trough, to which the water can be admitted at will. The cost is in this way much reduced; in fact, can be put in for not more than 60c. a cow. In conclusion, Prof. Dean urged this audience to continually strive for improved conditions. Satisfaction is the greatest foe to progress. Study methods of lowering the cost of production; get the best cows in the best stables, attended with the greatest care; and if we work together, we shall achieve the highest results.

RUDDICK SPEAKS ON COOL CURING.

Cheese have been successfully cured as low as forty degrees, and even much lower than that, but it is questionable whether this will ever be used in a commercial way, because:

1. The extra expense involved in such low temperatures in the cooling-room.

2. The curing would be retarded so long that cheese would not be fit to place on the market for several months.

3. Cheese cured at such low temperatures may show "soft rinds" after a few weeks storage, and possibly such a cheese would not find favor on the English market. So that, taking everything into consideration, it is, perhaps, better to adopt a temperature of fifty-five to sixty degrees.

COOL-CURING ROOMS.

During the past three seasons 119,832 boxes of cheese have been cured in the central cool-curing rooms. The result of the work during the past three years shows a saving in shrinkage of 1.51%, 1.23%, and 1.36%, making a saving of \$3,130.64, \$4,813.00, \$4,325.67 during the years 1902-03-04, respectively.

In addition to saving in shrinkage, there was a considerable improvement in quality. The increased price is difficult to estimate, but the product usually brings from $\frac{1}{4}$ to $\frac{1}{2}$ of a cent a pound more than the highest price paid for the ordinary cured product.

Improvement is now needed in our cheese factory curing-rooms. To get this the dairymen must understand the conditions, viz., control of temperature and humidity. If the atmosphere is too dry we have an excessive shrinkage; if too moist we have an excessive production of mould. It is for this reason that it is recommended that we have an ice chamber in connection with the curing-room. The air passing over the ice is chilled and dried before returning to the curing-room. With such a system the air can be kept sweet and clean.

GROWTH OF MOULD.

If cheese are kept for a few hours at an ordinary temperature, the surfaces become dry, and are much less liable to mould when placed in the curing-room. Disinfect the shelves with formalin, or when new shelves are put in give a coat of hot linseed oil.

The necessity for factory cool curing-rooms is apparent. The people must be able to help. They will derive the profit, and should stand part of the cost. Competition among manufacturers may lead to the establishment of curing-rooms in some factories, but we should be careful to have thoroughness in the work, or we may have the name "cool-cured" without the reality.

THE MERCHANTS' END OF THE BUSINESS.

Following the address of Prof. Ruddick there were a number of short addresses by members of the Montreal Merchants' Association. Mr. R. M. Ballantyne referred to the excessive railroad rates on cheese, and expressed a hope that the time would come when cheesemakers would be forced to pass an examination and take out a license. A. W. Grant thought a tax might be imposed on cows, and the money received used to pay for Government inspection of cheese at the factories. Mr. Wieland said the talk had been of the foreign origin, the bacterial origin, and even the yeasty origin of some of the flavors found in our dairy products, but, unfortunately, there is, in too many cases, a dirty origin that demands more attention. Mr. Hodgson favored the system of inspection at Montreal. Mr. Publow brought the discussion to a close by an appeal for higher ideals.

Mr. Woodard, the official referee at Montreal, who was introduced as the best abused man in the dairy business, spoke of the necessity for using better boxes on our cheese. Bottomless, topless and half-sideless boxes were shown. These had only received ordinary handling and judging from appearances, they should certainly be labelled, "Handle with care." A good box only costs a few cents more, and the extra is well repaid.

Evening Session.

Prof. Dean of Guelph, spoke on economics of dairying. What the dairy industry needed was the application of the best scientific knowledge to the production of the product. There was a considerable exhaustion