

DAIRY.

Western Ontario Dairymen's Convention.

(Specially reported.)

The thirty-fifth annual convention of the Western Ontario Dairymen's Association was held in the Opera House, Woodstock, Ontario, on Tuesday, Wednesday and Thursday, January 14th, 15th and 16th, 1902.

At eleven o'clock on Tuesday morning, the President, Mr. R. M. Ballantyne, of Montreal, read his address of welcome to an audience of about seventy-five people, in the course of which he touched upon the development of our export trade, as follows:

The year 1901 shows a falling off in cheese exports, but an increase in butter exports. The total exports of cheese, May to November, 1901, were 21,000,000 boxes, which, with the estimated balance at home of 550,000, makes a total of 21,550,000 boxes, against a total for 1900 of 28,000,000 boxes. This, however, was offset by a material increase in the butter exports, which were 410,893 boxes, against 256,563 boxes for 1900, an increase of 154,330 boxes, equivalent to about 350,000 boxes of cheese.

Mr. Ballantyne says that the cheese made in Western Ontario are the equal and really superior to the cheese in any other section of North America, and his position enables him to judge. They are stylish in appearance, uniform in quality, well-finished ends, and boxed better than any other, the chief defect being bad flavor. In this connection he said that makers should not wait for favorable markets, but sell. Our dry and hot curing rooms are unfit for holding cheese. We must have cooler temperatures. The increase in weight would pay the increased cost necessary. The President commented favorably on the good work done by Hon. Mr. Fisher, Dominion Minister of Agriculture, for the dairying interests, particularly the getting of cooled compartments on the steamships for carrying cheese, and intimated that the Minister was ready to do more when trade really deserved and required it. Comment was made that while our cheese in Western Ontario were better made than others, they suffered a great deal in getting to the port of Montreal in hot weather. He also recommended central cold-storage plants, and closed by a reference to the high standing of our cheese at the Pan-American, the credit of the same being due to the Western Dairymen's Association.

The Directors' Report was read by the President. In it a loyal reference was made to the death of the late Queen, occurring as it did soon after the closing of the last convention of the Association. Recommendation was made that the membership fee be \$1. Better transportation facilities were looked upon as very necessary. Factories were urged to engage services of instructors and to forge ahead. Grateful reference was made to the fact that the railways had agreed to allow all delegates to return free without restriction as to numbers present. The report was received and adopted.

Mr. Geo. Hatley presented the Secretary-Treasurer's report, which, on motion, was adopted. Receipts, \$6,169.82; payments, \$5,198.54. Balance on hand, \$971.28.

Inspectors' Reports.—The reports of Inspectors Jas. Morrison, Jas. Bristow and Arch. Smith were then presented, the chief points of value in which may be summarized as follows: The principal defects of the making rooms were poor buildings and bad flavors, which allowed the whey and wash water to leak through, causing bad odors. The temperature in the curing rooms was controlled chiefly by ice-boxes, and at some factories visited, by sub-earth ducts, the latter being preferable, as there is a better circulation of air, and the cheese are not so liable to mould.

The patrons are becoming more convinced of the reliability of the Babcock tester to determine the per cent. of fat in the milk. The whey-tanks are elevated in most factories, it being found much easier to keep them clean. The Barnard mill is recommended, where a power curd mill is used, as doing first-class work when in proper shape.

WASHING CURDS.

More of the makers have practiced washing curds this last season than formerly. Unless with a very fast working or sour curd, washing at dipping is not advised. With an ordinary working curd, it is apt to check the acid too much, causing the curd to be too long in maturing. To wash after milling, with 6 to 8 pails of pure water at a temperature of 94 to 100 degrees, according to the season or to the temperature of the room, will give good results in expelling white whey and flavors and also gives the curd a silkier feel. As washing of curds tends to weaken the body of the cheese, care must be taken not to salt too early, as this has been the means of a great many open cheese.

The curd test is one of the cheesemaker's best friends and should be in use in every factory. They can be purchased for about \$5, and the use of pint sealers is advocated instead of bottles with wooden corks, as it is the most effective

means of detecting bad-flavored milk. It was used this year at many factories visited, and the Babcock test very seldom used.

One of the chief defects in the butter is excessive moisture, and poor keeping quality, which is largely due to the care the cream receives at the farmer's home, the high churning temperature and lack of skill on the part of the maker. This would not have the same force in connection with the separator creamery.

DEFECTS IN CHEESEMAKING.

Mr. G. G. Publow, Instructor at Kingston Dairy School, then gave his address on "Defects in Cheesemaking," commencing by emphasizing the necessity of makers getting a knowledge of the "why," rather than the "how" simply, and indicating that if this were better understood, greater uniformity would prevail in the cheese of a factory and of a district. The causes of long-keeping cheese were given as follows, viz.: Sweet milk, less rennet, higher cooking, more salt, lower curing temperature. Cut curd uniformly to get uniformity of results afterwards, and the faster it works the smaller it should be cut. Cook in accord with the development of the ferment—fast or slow.

Makers should be educated to the "touch" in curd-cooking, and should mix plenty of brain with the work. Milling is chiefly for the purpose of getting the salt more evenly distributed through the curd. Salt to give flavor and texture; it also retards rennet action, but lengthens keeping quality.

DISCUSSION.

Q. Does the richness of the milk affect the cooking? A. Yes; the richer the milk the higher and longer the cooking should be, and the more salt should be added—this is to ensure uniformity.

Q. T. B. Millar—What is the cause of hard, dry cheese? A. Too much stirring and not properly cooking before acid is developed, or over-cooking, resulting in a lack of moisture.

Q. Mr. A. T. Bell, Tavistock—Would you cook lower in spring? A. Yes, because less fat in the milk; cook just enough to get the curd firm—"lively" to the feel. We use in the East a temperature of 92 to 96 degrees F., and draw the whey at 1-16 inch on the hot iron. Mr. Bell said that 98 suited them better.

Q. Might more rennet be used instead of lowering temperature? A. It might be with inexperienced makers.

Q. Has rennet an effect on curing cheese? A. Yes, much.

Q. What is the cause of leathery cheese? A. Not enough acidity for the amount of moisture taken out.

Q. Has curing room anything to do with it? A. No, not likely.

Q. How much salt do you use, Mr. Publow? A. Up to about May 10th, 2 lbs.; June, 2½ lbs.; August and September, 3 lbs.; using judgment as to amount of moisture.

The President here observed that the main objection to the fall cheese is softness or pastiness, and Mr. T. B. Millar indicated that the cause of this is curd not being properly cooked and not given enough acid.

Q. Is cheese usually harmed by too much acidity after dipping? A. Not usually, if not too much moisture. About .2 per cent. acidity when adding rennet is correct, and one per cent. at time of salting.

Prof. Dean intimated that the knowledge of the alkali test was a very important part of the present-day cheesemaker's education, and, if properly used, a source of great power; indeed, he did not consider a cheesemaker up-to-date who did not thoroughly understand it.

Prof. Dean then addressed the meeting on the subject, "Cold Storage for Hot-Weather Cheese." The Professor expressed himself to the effect that the growing work and growing needs of the Canadian dairy interests require the assistance of a half dozen special chemists and as many bacteriologists. The burden of the Professor's address may be couched in the sentence, "Canadian cheese are being cured at too high a temperature." The lower the temperature at which we can get right and proper curing, the better.

In an experiment carried on in 1898, cheese cured at a temperature of 60, 65 and 70 degrees F. lost 3.4, 3.8 and 4.2 per cent of their weight, respectively; 30-lb. cheese were used.

The cheese cured at 60 degrees F. were worth 1 to 1½c. more per pound and lost one per cent. less in weight than those cured at 70 degrees F.

The 1900 results confirmed those of 1898. During 1901, going one step further, we desired to study: (1) Would cheese cure properly at 40 degrees F.? (2) Would it be better to cure a while in the usual curing room and then in cold-storage? The experiment was carried on from April to November, two to four times each month, and covered work as follows: cheese cured direct from the hoop at 40 degrees F.—

2-1 week in the curing room and then cold storage.
3-2 weeks " " " "
4-3 weeks " " " "
5-4 weeks " " " "
6-5 weeks in the curing room and no cold storage.

The loss in weight at one month old was as follows, viz.:

1-2.1% of total weight.
2-2.8% " "
3-3.2% " "
4-3.6% " "
5-4.4% " "

Cheese put directly into cold storage required three to four months to cure to the condition of four to six weeks curing in a good ordinary curing room.

Three experts were called to the Dairy Department of the O. A. C. to judge these cheese, the average score being as follows:

1-91½ out of a possible 100.
2-90.8.
3-92.1.
4-90.5.
5-Off flavor.

On Nov. 11th, 1901, these cheese were sent to Montreal and judged by Montreal experts, the average score being as follows:

1-... out of a possible 100.
2-89.8.
3-81.8.
4-80.0.
5-Off flavor.

The cheese were made July 6th, 1901. If similar results continue to show from like experiments, we shall have to change our methods. We can say that when July and August cheese are put into cold storage soon after they are made there is less bad-flavored stuff. Holding cheese in ordinary rooms is suicidal, especially if we are to hold our own in British markets. Large factories should have their own cold storage, but for a number of small factories a central cold-storage plant is undoubtedly a step forward in improvement.

Prof. Harrison, Bacteriologist at the Ontario Agricultural College, spoke at some length on

"BITTER MILK AND CHEESE."

The basis of the address was the isolation and identification of the "yeast" that causes bitterness in milk and cheese, the basis of working being the difficulties which arose in a factory in the vicinity of Woodstock. Mr. Harrison explained the system followed in securing samples and data re the isolation of this "yeast" in question and the inoculation of the same into sterilized mediums for propagation. When it is remembered that in this investigation samples of milk were taken from each of 82 patrons, that the can-washings were also examined, that the mixed milk supplied the creamery and the first milk from a number of the cows were given careful examination, the amount of work may be imagined. The original source of infection was found on the leaves of maple trees in the vicinity of milk-stands. The can-washings showed infection by the bitter organism to a very large extent, showing the need of very careful washing of the cans.

Prof. Harrison, during the course of his investigations re bitter-milk organisms, also found a red-color-producing mould in the factory, which he located at thirty different stables of the patrons. He also found great numbers of gas-producing organisms in the air of the stables. These facts point strongly to the grave necessity of careful handling of milk and milk cans. Ordinary washing of cans is quite inefficient. Thorough washing and thorough scalding in boiling water is a necessity on all farms.

THE EVENING MEETING.

At the evening session, besides a very excellent programme of music and song, several pithy and encouraging speeches were delivered.

Dr. Mearns, mayor of the city, welcomed the visitors in a very cordial and very complimentary address, the welcome being gratefully accepted by the President.

Mr. D. Derbyshire, President of the Eastern Dairymen's Association, spoke in his characteristic way, encouraging the earnest worker to go on and improve, and soundly rating the laggard. He touched upon the need of enriching our stores of knowledge. "Get well versed in your business," he said to the maker. "Go to a dairy school and learn the why and the how."

Mr. Nesbitt, President of the Board of Trade, spoke briefly, but with point; as also Mr. A. F. McLaren, M. P. Mr. Andrew Pattullo, M. P. P., of the Sentinel-Review, addressed the audience in a reminiscent way. He considers that the greatest educational power to-day in Ontario is that under the Department of Agriculture and worthily headed by the O. A. C.

WEDNESDAY MORNING.

A nominating committee was appointed, after which Mr. A. Wenger, proprietor of a cream-gathering creamery at Ayton, was the next speaker. Owing to the extreme disorder in the meeting, it was not possible to hear Mr. Wenger's remarks, but he shortly asked Mr. A. Smith, of Beachville, Superintendent of the Western Dairy School, to finish the address. Mr. Smith responded promptly, and spent the first part of his time in a somewhat laudatory account of the position held by the cream-gathering creamery. In the course of his remarks he spoke of the use of cement and skim milk mixed to the consistency