

Reference was made to the transportation facilities provided by the Dominion Government in securing the marketing of Canadian butter in the best condition. These efforts should not be relaxed and something should be done in the way of improved service in the shipment of cheese.

After the appointment of the usual committees for carrying on the work of the convention, short addresses were delivered by A. F. Wood, ex-M.P.P., Madoc; J. R. Dargavel, Elgin; E. Kidd, North Gower, and J. Augustus Hay, of the District of Bedford Association, Quebec; all bearing along the line of cheaper production and the improvement of the quality of the product.

THE DAIRY HERD.

The development of a dairy herd of cows was dealt with in a practical way by Prof. Grisdale, of the Experimental Farm, Ottawa. After describing the ideal dairy cow as one with a long deep barrel, showing large stomach capacity, with a large mouth to take in food to fill that big abdomen, and with large milk veins and a big udder, he urged selection of food to meet the requirements of that type of animal and the heavy draughts made on it by milk production. Plenty of rich nitrogenous foods, such as meals, should be given with her ensilage and roots. Selection in breeding was also dwelt upon. Only pure-bred sires should be used, and only the best. The dam of both sire and dam should have been good milkers. Cull pure-breds were worse than good grades.

PASTEURIZATION.

This important topic was discussed on the first day by Mr. J. W. Hart, Superintendent of the Kingston Dairy School, in which he strongly advocated the pasteurizing of milk, and the use of pure cultures in butter making. This was calculated to improve the quality of butter, and so equal Danish butter in quality and price. He stated that 95 per cent. of creameries in Denmark practised the system, and so did many of the best establishments in the United States and Canada. Pasteurization has been most successful at the Kingston Dairy School, and was easy to accomplish in any well-regulated creamery. He then described the method in detail as practised at the Kingston Dairy School.

ROMANCE OF AGRICULTURE.

At the evening session of the first day an able address was delivered on this subject by Mr. C. C. James, Deputy Minister of Agriculture, Toronto. He showed that agriculture was the leading industry of Canada, and that while the annual value of our factories was four dollars per head, our mines six dollars per head, and our forests sixteen dollars per head, our annual agricultural wealth totalled 120 dollars per head. The gold product of the whole world in 1898 was \$280,000,000, while the agricultural product of Ontario alone equalled that sum. The wheat crop of this Province nearly equalled the mineral product of the Dominion for the year. He claimed that selection of seed and greater care in tillage would add millions of dollars to the one item of wheat alone. He explained the method adopted of fighting the San Jose scale, showed the value of clover in increasing the nitrogen in the soil, and gave other useful hints regarding agricultural development. He closed by showing how certain fruit-growers had added untold value to the wealth of the world by developing certain varieties, such as the Concord grape, and then pointed out that entomologists had saved millions annually to the country by discovering parasites and other remedies for insects and fungi that attacked fruits.

CHEESE-MAKING.

This subject was ably discussed by Mr. G. G. Publow, of the Kingston Dairy School. He dwelt more particularly upon the importance of using the milk of cows in good health which had eaten no food which would give bad flavors. Filthy surroundings should be avoided by the

dairymen. Great care should be exercised as to the time of setting milk for cheese-making, and the quality and quantity of rennet should receive close attention. Salting also required more care than many makers gave it. He said that many makers were often astray in thinking that the acidity came from the whey around the curd, and that the draining of the whey removed the acid. He held that the acidity came chiefly from the whey in the curd. He believed in using starters in making cheese under certain conditions, but if there was a good flavored milk he would not use a starter. In fact, he would use a starter only to get rid of taint or bad flavor. Cheese which had developed too fast and with too much moisture in it, would soon break down. He would let the curd lie for two and one-half or three hours from the time of adding the rennet. He advised deep piling for best flavor, although the contrary plan, perhaps, gave a greater quantity of cheese.

In the discussion which followed makers were strongly warned against curing cheese at too high a temperature. Careful and frequent turning of the cheese was necessary to prevent bitter flavors developing. The whey tank and the returning of whey to the patron in the milk can were strongly condemned by most makers present, though some advocated returning in the milk cans under cleanly methods.

THE CURING-ROOM.

The methods of securing proper conditions in the curing-room were discussed by Mr. J. W. Newman, whose chief points were proper insulation, lessening radiation and makers having a knowledge of and keeping records of their particular conditions. He then described the three leading methods, recently introduced, to control temperature in curing-rooms. First, the air-duct under an ice-house near by; secondly, water being evaporated by the air over a low simple curing-room; and, thirdly, by compressed air, through means of the Westinghouse air brake.

"Bacterial contents of cheese in regulated and unregulated curing-rooms," was the subject of a valuable paper by Dr. W. T. Connell, of Queen's University. He held that normally in cheese the greatest bacterial contents are found in cheese from one to four days old. Following that period there is a gradual and continuous decline in the number of bacteria. The bacterial contents remain high longer and the decline is more gradual in cheese kept at the regulated room temperature, or about 65 degrees. Lactic acid bacteria are practically the only bacteria found in normally cured cheddar cheese. Gas producing allied forms of bacteria are found in large numbers in tainted or "open" cheese. Cheese in the ordinary or variable curing-room ought to go off flavor more commonly and earlier than that in the regulated curing-room. Bacteriologists are still practically unaware of the rationale of the curing process. It is quite certain, however, that the curing agent is either in the milk or is formed during the process of manufacture and in the few days immediately following the placing of the cheese in the curing-room. Cheese made under the same conditions was more valuable and likely to keep better when cured in a regulated temperature than when cured in an ordinary curing-room under varying conditions.

This address was followed by an address by Prof. Grisdale, on hog raising, in which he advocated the use of whey and skim-milk in connection with pasture for young pigs. He regarded skim-milk as worth twice as much as whey, and which elicited much discussion.

EVENING SESSION.

At the evening session of January 11th a number of speakers took part and discussed topics of a more or less general nature. Mr. F. W. Hodson, Dominion Live Stock Commissioner, described the methods followed by the Ontario Department of Agriculture in the shipment of pure-bred stock and the development of inter-Provincial trade. Mayor Johnston, Belleville, gave a patriotic address, and Prof. H. H. Dean, of the Ontario Agricultural College, gave some interesting experiences at the Vermont Dairy