

factory may not be in serious competition with the cheese factory.

Taking all things together I do not hesitate to say that for many years to come cheese will compare very favorably in price with other farm products.

REPORT OF CHEESE INSTRUCTORS.

John B. McCready.

Mr. President, Ladies and Gentlemen: I submit the following report of my season's work for your consideration.

I started my road work May 1st, 1902, and finished November 3d, 1902, earlier this year than usual on account of having to be present at the opening of our Dairy School.

The first part of this season, I visited 12 factories where I was not called and made short visits; was called and worked from two to three days in 47 factories; 18 of these received second visits. Five of these factories were making Brick, Swiss or Limburger.

Hold evening meetings at nearly all factories visited and found only three American factories not paying by the test.

The evening meetings have been productive of much good; yet the patrons whom we really wish to reach (namely, the careless ones) are often the ones who do not attend.

As a cheese instructor of this association, during the past year I have had an opportunity of studying existing conditions as found in that section of the country in which I worked.

The past summer was one of the finest in the history of my experience for the manufacture of good cheese. Cool weather, plenty of rain, excellent pasture and a fine, strong market all went in to make it so.

The demand for cheese was good and prices paid were high; the result was that the buyers were not so strict in their inspection as might have been the case had the prices been low.

The weather could not have been better for our work than it was this last year. Our curing rooms were held at a lower temperature this year than they generally are, and the improved quality of our goods showed only too plainly the necessity of having curing rooms in which the temperature can be reduced and controlled.

I think I am safe in saying that we are making improvements rapidly in cheese production. This is plainly shown by the uniformity of our goods, especially in those districts where instructors are employed and where the patrons and factory-men are interested enough in up-to-date methods to attend conventions and institute meetings.

In southwestern Wisconsin the work of cheese instructor has been made somewhat lighter this past year on account of a few firms contracting with the factory-men for their season's make of cheese and furnishing them with the services of their own instructor.

These factories are scattered about among the factories I have generally visited and have cut up my territory to quite an extent, thus making it necessary for me often to travel far, thereby losing time in order to visit some other factories. As a rule we are not called to a factory unless the cheesemaker really needs our services. I believe that our cheese could be improved if this association had sufficient funds to employ more instructors who would be given the power to visit any and all factories in a certain territory.

I had occasion to visit a district where instructors were unknown. At one factory I found a very bad condition of affairs. The factory itself was not equipped with one-half the necessary apparatus and the cheese made were not fit even for local trade or immediate use.

An appeal to the factory owner was made by me and everything necessary obtained. The cheesemaker himself had often made this same appeal but without getting his wish. The result of this improved machinery was that a better cheese was made and the last I heard from this place was that they did not need to depend on the local market and their cheese were going at top price in Chicago.

When our worthy Secretary asked me to make my report, he also asked me to mention some of the things which cause defects in our cheese.

These causes are not hard to find and for fear that I should conflict with some other paper which I believe covers this ground thoroughly, I shall say but little on this, but, briefly, they are as follows: Inexperienced cheesemakers; poor curing rooms in which the temperature cannot be controlled; poor care of milk utensils, etc., on the farm; bad water, both for cows and at factories; unclean cheese factories, underground whey tanks, lack of proper equipment of machinery at factories. These cover most of the causes of defects in our cheese and although they cannot be found in all factories, yet, I am sorry to say they can be found.

I cannot say too much in regard to factory equipment; our factories lack two of the most important pieces of equipment that there are: First the Curd Sink; second, the Curd Stirrer or Agitator. While in Canada last spring I was requested by Mr. Johnston, of Boaz, one of our most successful cheesemakers, to look into the idea of bringing back a set of Canadian Curd Agitators. I did so and found that whereas they used to cost about \$40.00 per vat, the patent having run out, they can now be bought for \$20.00. In order to save freight and customs duty I just bought two sets of gearing without the frames or stirrers, the gearing for two vats costing \$16.00. When they arrived, I spent three days at Mr. Johnston's where we made the frame and the irons and stirrer at a small cost. The first one we put on a vat holding about 7,000 pounds of milk and the work done was very satisfactory. The advantages of an agitator are, 1st, the milk can be stirred continually from the time you start weighing in until the desired temperature is obtained; 2nd, one man can attend to six vats if need be, while the milk is warming or the curd cooking; 3rd, the curd is cooked uniformly throughout the whole vat. Last, but not least, the curd is not broken in the least as is the case when rakes are used, but the pieces remain the same shape and almost the size as when first cut. There can be no doubt that a better yield is obtained by their use owing to the careful manner in which the curd is stirred.

We obtained a set of these at a late date for our Dairy School and those who used them were very much pleased with them.

I would recommend their use to all cheesemakers and hope to see them come into general favor as I feel sure they will.

DISCUSSION.

Ex-Gov. Hoard: Mr. Aderhold spoke about the excellent prospect of cheese in the future and enumerated some of the causes that he thought would lead to that condition, and among them one of the chief causes I wish to speak of, and that is the remarkable increase in the consumption of milk in cities and towns. Our people have no adequate idea of this. The cheese making districts in New York today are almost entirely given over to the shipping of milk to the city. This invasion of the old cheese district by the milk shipment to the cities is constantly working to decrease the supply of cheese. Milk is now shipped to New York from a distance of three to four hundred miles, and the cities are calling for milk constantly. In Wisconsin, many of our districts, where they used to make cheese and have since been making butter are invaded by this same influence, whereas the growth of the number of cows is not anywhere near adequate to the growth of the people who consume dairy products. From 1860 to 1890 the growth of the number of cows in Wisconsin was only $5\frac{1}{2}$ per cent. The census reports give us about 12 to 15 per cent. increase of people. Now, you know, these facts, if they are rightly understood, are clearly in favor of the farmer as to whether he shall embark in this business, and they are clearly in favor of another fact, that he should embark in it with capital fitted to the business, and not be led off by the siren cry of more beef. The dairyman who sticks to his business is going to be the surest man in the agricultural field for the next ten years to come.

Prof. Henry: Governor Hoard has called attention to a very important point, and he might have gone a little further; he might have told you that in 1883 the United States exported \$10,000,000 worth of cheese. He might have told you that at