WEDNESDAY AFTERNOON SESSION

Meeting called to order at 2:30 o’clock by President McCready.

IMPROVEMENTS AT THE CHEESE FACTORY

DR. J. L. SAMMIS, ASST. PROF. DAIRY Husbandry, UNIVERSITY OF WIS., MADISON, WIS.

Mr. Chairman and Gentlemen of the Convention: At the present time there is in every line of business, whether in commerce, manufacturing, agricultural or mining, a distinct, a very marked tendency towards improvement. We are making a business of improvement. A few years ago there was less effort in this direction.

Once in a while a man happens on some improvement which he gave to the world and we were glad to receive it, but we did not make a business of looking for improvements as we do now. At the present time there are a number of men employed by the state and by private firms, by the breweries, by the iron works, by other industries, by the big stores, all looking to see where each line of business can be improved and how this can best be done. The search for improvements is becoming a business by itself, and that is a thing that I want to bring to the attention of the younger delegates here. It is not only your business to make good cheese and to do your daily duties well, but it is also your business to be looking for improvements. How can you make your factory better and your work better next year, than it is this year?

There are many signs that conditions are improving in the dairy business. A recent report from the Dairy and Food Commission states that we are making one-third more cheese in Wisconsin than we did five years ago, and there are about one-seventh more cheese factories, eight cheese factories, now where there were seven five years ago.

There are something less than four pounds of cheese per capita eaten in this country each year. That is not very much; it is not enough to make the consumer sick. They
would be stronger, healthier, fatter and wiser if they would eat more cheese. I am sure you will all agree that there is plenty of room in which the cheese industry may grow, if only we do our work well. During the last twenty years, many improvements have had the cheese factory as their center. I believe you will agree that one of the most important steps in the improvement of cheese making in this state was the founding of this association. Perhaps the Cheese Makers' Association and its annual meetings have done more to bring the cheese makers together and spread the good news that have come out from year to year than anything else. I do not believe the men who published bulletins, newspapers or anything else would want to claim a greater or more influential agency in the improvement of Wisconsin cheese than this association has had. We are all proud of it. We owe a great deal to the men who, twenty years ago, made a small beginning in this association, and who have worked for the success of its programs, who have written the letters and done the business to keep the association going since that time. We are to-day reaping the benefits of their successful efforts.

A good many other steps forward have been made. It is only a little more than twenty years since the Babcock test was invented. About five years later, the Marshall rennet test came out. About the time the Babcock test was given to the world, the Manns' acid test was first described by Dr. Manns, who was then at the Illinois Experiment Station. Those events stand out like great landmarks in the cheese world. They were great and remarkable accomplishments, noteworthy deeds, far above the ordinary events of every day in importance.

Not only has the number of cheese factories and the output of cheese increased, but the methods of making cheese have been improved, and the quality of Wisconsin cheese has improved. I think there is no doubt about that in the minds of men who knew the cheese industry twenty years ago. Improvement in quality is more important than improvement in quantity. If we make poor cheese, the more of it we have, the worse off we are; but if we make good cheese, the more we make of it the better off we are. The quality of cheese is the first thing to look at. It is often impossible for a given
factory to increase the quantity of cheese made, but the quality of cheese very often might be improved, if cheese makers and patrons would go at it in the proper way.

What are some of the ways by which we can make improvements at the cheese factory? How can each one of us start to make some improvement at the present time? If we think just a moment of how other people such as the big business firms manage their business, we can get some useful lessons. Take, for instance, one of the big retail stores here in Milwaukee. If you enter one of those you will perhaps see at the door an usher. Inside you will see a floor walker and a number of clerks. Then there are numbers of other people—down stairs where you do not see them, packing or unpacking goods, perhaps making goods to sell. There are buyers in New York and Chicago at work for that store. In the office there are bookkeepers, who do not sell goods; or buy goods, or make anything for sale, but keep an account of what is bought and sold. In addition to the salesmen and all those other classes of workmen there is the business manager. You do not see him hustling around all over the store, like the clerks, and others. In fact, he apparently does not do much of anything, except at certain important moments when he steps in and says "You men stop doing this and go to the other end of the building and do something different." Once or twice a day the main body of the people in the store will hear from that manager. He says to the buyers "Buy less of this material, and more of this other kind," and to the salesmen he says "Raise the price on this particular article," and so on. It is easy for us to do the things that have been done for twenty years, but it is hard for us to realize that times come when things have to be done differently. It is a difficult thing to understand, sometimes, that we ought to make some change in what is going on at the cheese factory.

If you will compare the cheese factory with this big store I think you will agree with me that the cheese maker must be good all around. The cheese maker is the buyer; he is the man who has to look over the raw material every morning and see that it is of good quality. Oftentimes he is the salesman. He makes the goods that he offers for sale, often he is the bookkeeper. This one man does all these different
kinds of work. It is also his duty to be the business manager, and if he works as business manager but five minutes a day, this is the most important part of his day’s work. What are his duties as business manager. To look over things about the factory carefully, think them over, and see where there is need of change and improvement. If you as business manager look the work over in the factory critically you may find several things that need improvement. In the intake, after carefully inspecting the milk as it comes in every day, would it be for the advantage of the factory if you could leave out Tom Jones’ milk, every day? Has he the filthiest milk that comes to your factory? If so, how can you show him that that is the case without offending him? How best can you get him to clean up his cow stables, build a suitable tank for cooling milk, and how best to keep the milk clean and sweet? That is a fair question for it is your duty to help him all you can. There are late improved ways and appliances for examining milk. We have had the curd test for a number of years. Then there is the new sediment test. In operating this latter test, about a pint of milk is filtered through a piece of cotton, and any dirt that may be in the milk will remain on the little cotton disc. This is a very quick and simple way to show the patron whether his milk is clean or unclean.

There are some other ways to improve conditions at the cheese factories. Many farmers of the state are interested to know whether dairy farming pays better than grain farming, tobacco raising, or some other kind of farming. Some farmers have general farms, keep a few cows, raise some grain, and so on, but they could not tell you which line of farming pays the best. If they were convinced that well managed dairy farming brought in the most money, they would naturally want to keep more cows. It will improve the cheese factory business if the cheese maker will take the trouble to show patrons how they can produce more milk on the same amount of acreage, how they can improve the herd, how to test the different cows in the herd and know which are giving the most milk and which are not paying for their keep. By so doing you are simply working to your own benefit and the benefit of the cheese factory in helping the farmer build up his dairy herd. You will be able to show the people of
your locality that it is better to have one good cheese factory, well managed, than to have two or more small ones, none of which is well supported or managed. The large cheese factory can well afford a skilled cheese maker, modern up-to-date apparatus, which invariably result in a better product, selling at remunerative prices.

This association has for twenty years advocated the use of the Babeock test instead of the pooling system in payment of milk delivered to the cheese factories of the state. Still we have some factories that are not as yet paying for milk on the milk fat basis. It is of course to their disadvantage.

This is one line of improvement that I think ought to be especially emphasized. Patrons are much better satisfied to be paid by the test system than by the pooling system when they learn to understand it thoroughly. It is only when they do not understand fully the facts underlying the testing of milk that they insist on being paid by the pooling system.

If all the milk brought to a factory tested alike there would be no difference between payments by the two systems. The test varies among different patrons at every factory. At some factories the test will vary from 3% to 4.9%, while at others the tests will vary from 3.2% to 3.5%. The difference between payments by the pooling system and payments by the Babeock test system will be greater in proportion as the test varies from the average test of all milk delivered to the factory. That is, a factory where the average test is 3.5%, if a patron delivers milk testing 3.5%, he would get the same price for his milk by either system; but if the average test was 3.5% and the patron’s milk tested 4%, then he would get 14 cents on the dollar more by the Babeock test than by the pooling system. How do we find that out? If we take the 4% and the 3.5%, the latter being the average factory test, dividing one by the other we will get $1.14, which means that the patron would get $1.14 by the Babeock test system for every dollar which he would receive by the pooling system. Take another patron whose average test is 3%; divide 3% by 3.5% and you will find that the patron will get 86 cents, by the Babeock test system, whereas he would receive $1.00 by the pooling system. Again, a patron whose milk tests 3.6% if divided by 3.5%, the factory average, we will get $1.03, which means
that for every dollar the patron gets by the pooling system he would receive by the Babcock test system $1.03.

I have been asked a good many times how much difference there was between payment by the fat test and by the pooling system, on the average, at different factories. The only way to answer this, is to figure out the difference found at a number of factories. This has been done at nine factories in Wisconsin, three in Sheboygan county, four in Wood county and two in Richland county. The milk at those factories was correctly tested by a skilled man sent out to do this work by the university. In the following table the factories are designated by letters, A to I, and the number of composite samples tested at each factory is also given, the total number at the nine factories being 475. The difference was then figured for each patron at factory A between his payments figured by the Babcock test and also figured by the pooling system. This difference was greater for some patrons than for others, but the average difference at factory A between the two methods of payment was found to be 3.4 cents on the dollar. The difference at the other factories varied, running as high as 8.8 cents on the dollar for factory G. The difference between payments to farmers for milk by the pooling system and by the test was found to be 6.19 cents on the dollar, on the average among the 475 payments covered by the study.

*Average Difference at Each Factory Between Payments by the Pooling System and by the Babcock Test.*

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<tr>
<th>Factories</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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<th>H</th>
<th>I</th>
<th>A to I</th>
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<tr>
<td>Number of Payments</td>
<td>27</td>
<td>39</td>
<td>48</td>
<td>77</td>
<td>102</td>
<td>70</td>
<td>48</td>
<td>24</td>
<td>40</td>
<td>475</td>
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<td>Average difference between payments by the two methods, in cents on the dollar</td>
<td>3.40</td>
<td>4.58</td>
<td>4.95</td>
<td>8.11</td>
<td>5.53</td>
<td>5.03</td>
<td>8.81</td>
<td>8.06</td>
<td>5.87</td>
<td>619</td>
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Recently another proposition has been brought out, namely, that milk should not only be paid for on the butter fat basis, or milk fat content but also on its casein content. Every cheese maker ought to understand how the casein test is made and what it means so that he can tell his patrons how it works and what its purpose is. The average difference between pay-
ments by the fat test, and by the fat and casein tests, from 475 samples tested at the nine factories above mentioned was found to be 2.83 cents. In studying the figures it was found that with 60% of the 475 samples tested the difference was less than 2 cents; but on 40% it was 2 cents or more. In 11% it was 4 cents or more.

Prof. Emery: I am very glad that this discussion has occurred here because I think this matter of testing, this matter of giving back to the patrons their exact dues, just what belongs to them, no more, no less, is fundamental with all this line of dairy work in Wisconsin, and the indifference in getting that test and getting it accurately is reprehensible.

Some years ago, before the law was passed making it a misdemeanor to over-read or under-read the Babcock test, we found creameries where the butter makers were, in times of great confidence, admitting to our men that they had deliberately lessened one man's percentage and put it on another man’s. No better than highway robbery! Why a man that would do that sort of thing should go to state's prison! The cheese factories and creameries in conducting their business with their patrons have to have first the patron's confidence, and the way to get that confidence is first to deal with every patron with exact justice, and the way to do that in handling the Babcock test is that the cheese maker and butter maker have to know how to do it, and they must have back of them a factor that says “Give those men their exact justice,” and not a factor that says “You take from this man and give it to the other.” I know we have touched on an exceedingly important part of the work in the dairy industry, and any emphasis that can be placed on the great importance of giving all those patrons their exact justice should be encouraged.

Those men that are handling the cows, that get up early in the morning and feed those cows, that milk them twice a day during the year, that water and feed those cows and see that they are in a healthy condition, free from disease, and so forth, and when they have taken all this trouble and concentrated this work into milk taken to the factory, they have a right to have returned to them what is coming to them, as much as the man that places his money in the bank has a right to have that money accounted for.
A very interesting talk on "Milwaukee, the Beautiful," showing many splendid stereopticon views of the parks, lake front and handsome residences was given by Mr. F. A. Cannon, Sec'y, Citizens' Business League of Milwaukee, which was much enjoyed by the audience.

SANITARY MILK PRODUCTION.

C. J. Steffen, Milwaukee, Wisconsin.

Mr. President, Ladies and Gentlemen and Members of the Wisconsin Cheese Makers' Association: No profession requires more careful and more skillful mechanics, than does cheese making. No business demands more responsibility and intelligence. A successful cheese maker must be quick to think and act, especially so if he has poor grades of milk to handle, and expects to make a cheese which will command the highest market price.

No milk product requires purer milk than does cheese making or the manufacture of American cheddar cheese, and without question there is no profession or trade in my estimation, where greater miracles are wrought or wonders accomplished than in the manufacture of No. 1 cheese from an inferior quality of milk.

How to obtain pure milk, how to handle pure milk, how to educate the producer to produce clean milk, and the consumer to pay for clean milk and milk products are problems confronting every cheese maker and butter maker as well as health department officials.

The profits to be derived from the sale of milk and milk products has been the incentive to keep cows so to speak—and not the least the conservation of the fertility of the soil. Wisconsin dairymen are without a doubt as progressive and wide-awake as can be found anywhere and yet statistics show approximately only 200 pounds of butter per cow per year as the average. Do you know that this means the average cow was kept at an actual loss to her owner? In other words she did not pay for the feed consumed at present market prices,