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Wisconsin Cheese Makers' Association

Madison, WI: Democrat Printing Company, State Printer, 1918

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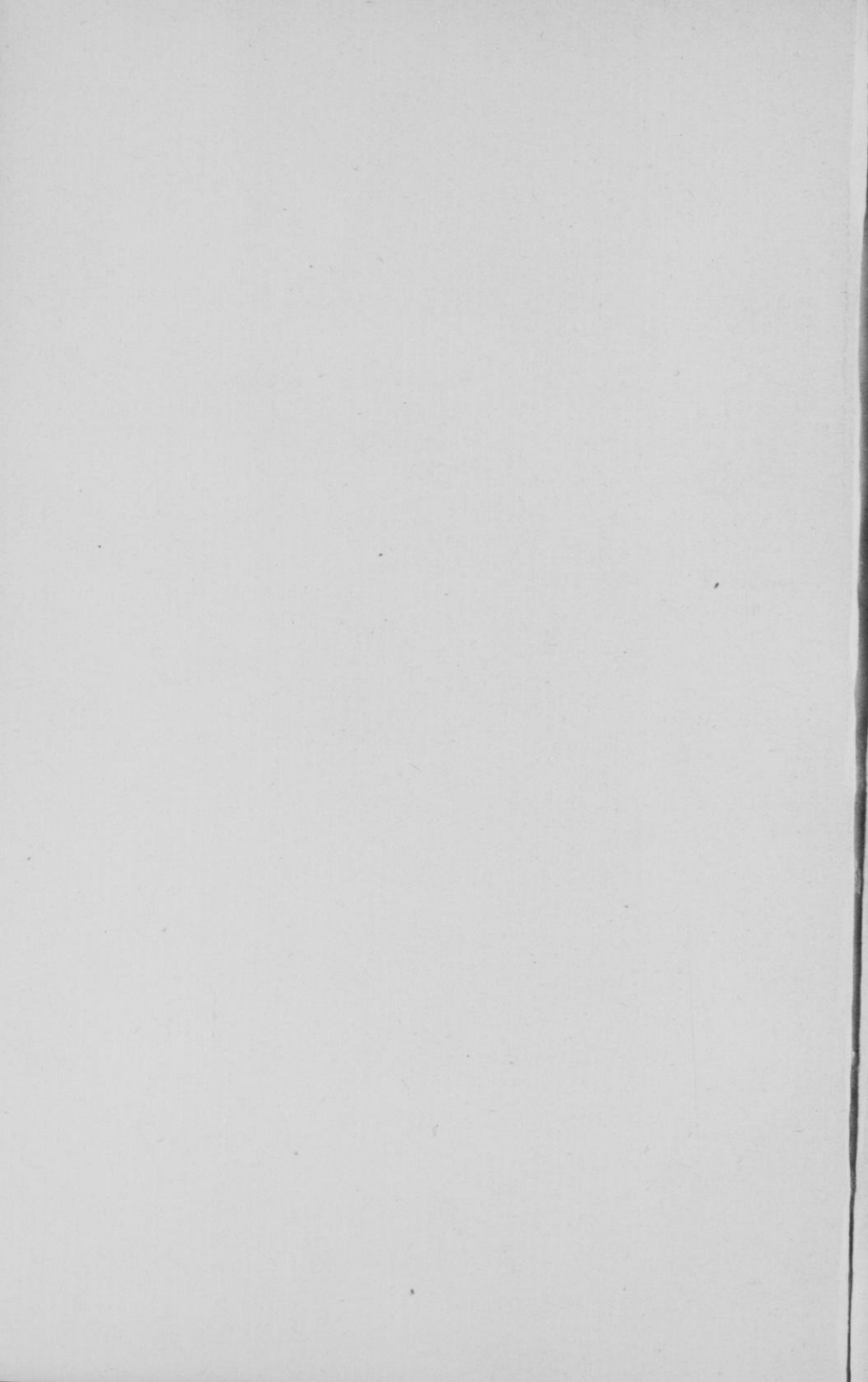
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PROCEEDINGS

OF THE

WISCONSIN CHEESE MAKERS' ASSOCIATION

ANNUAL CONVENTIONS 1916-17-18

Assembled in its Twenty-fourth Annual Convention in Milwaukee,
January 5, 6, 7, 1916; its Twenty-fifth Annual Convention in
Fond du Lac, January 10, 11 and 12, 1917; and its Twenty-
sixth Annual Convention in Milwaukee, January
9, 10 and 11, 1918

Compiled by

J. L. SAMMIS, Secretary, 1919

Madison, Wisconsin

Democrat Printing Company, State Printer

1918

PROCEEDINGS

WISCONSIN CHEESE MAKERS
ASSOCIATION

ANNUAL CONVENTION

HELD AT MILWAUKEE, WISCONSIN
ON THE 15TH, 16TH AND 17TH DAYS
OF SEPTEMBER, 1914

Published by
The Wisconsin Cheese Makers Association

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LETTER OF TRANSMITTAL.

Office of the Secretary,
Wisconsin Cheese Makers' Association,
Madison, Wis., 1918.

To His Excellency, EMANUEL L. PHILIPP,
Governor of the State of Wisconsin.

I have the honor to submit reports of the twenty-fourth, twenty-fifth, and twenty-sixth annual meetings of the Wisconsin Cheese Makers' Association, showing the receipts and disbursements the past three years, also containing papers, addresses and discussions had at the annual conventions held in Milwaukee, January, 1916 and 1918, and in Fond du Lac, January, 1917.

Respectfully submitted,

J. L. SAMMIS,
Secretary.

WISCONSIN CHEESE MAKERS' ASSOCIATION

TWENTY-FOURTH ANNUAL MEETING

Auditorium, Milwaukee, 1916

Officers

O. A. DAMROW, President.....Sheboygan Falls, Wis.
H. J. NOYES, Vice President.....Muscodia, Wis.
A. T. BRUHN, Secretary.....Spring Green, Wis.
T. A. UBBELOHDE, Treasurer.....Glenbeulah, Wis.

Directors

JACOB KARLEN, JR.....Monroe, Wis.
J. W. CROSS.....Milwaukee, Wis.
P. H. KASPER.....Welcome, Wis.

Judges of Cheese

J. D. CANNON.....New London, Wis.
E. L. ADERHOLD.....Neenah, Wis.
ALEX. SCHALLER.....Barneveld, Wis.
G. MARTY.....Madison, Wis.

Superintendent of Cheese Exhibit

FRED MARTY.....Monroe, Wis.

Superintendent of Machinery Exhibit

J. W. CROSS.....Milwaukee, Wis.

Official Organ

Sheboygan County News and Dairy Market Reporter.

**PROCEEDINGS OF WISCONSIN CHEESE MAKERS'
ASSOCIATION IN ANNUAL CONVENTION
MILWAUKEE, WIS., JAN., 1916.**

The twenty-fourth annual convention of the Wisconsin Cheese Makers' Association was called to order at 10 A. M. in the Auditorium building, Milwaukee, by President O. A. Damrow. Mr. Wm. H. Reese delivered the address of welcome in behalf of the Merchants and Manufacturers Association of Milwaukee, to which Mr. W. C. Thomas of Sheboygan Falls responded, on behalf of the cheese makers, giving an interesting account of the cheese exhibits seen by him at the Grand Union Dairy Fair held in the old Milwaukee Exposition building on the same site in 1882.

RESPONSE TO THE ADDRESS OF WELCOME

By W. C. THOMAS, Sheboygan Falls, Wis.

Mr. President, Mr. Reese, Secretary of the Merchants and Manufacturers Association of Milwaukee:

When a "Printers' Devil" is chosen to respond to an address of welcome at a Wisconsin Cheese Maker's Convention, while any one of the more than two thousand cheese makers in the state could do it better, it seems to me ample proof that there is no accounting for the taste of a certain "Melancholy Dane" who otherwise makes an excellent secretary of the largest association of its kind in the world. However, I will say in all sincerity, on behalf of the members of the Wisconsin Cheese Makers' Association that having met in your beautiful and famous city, for many years in succession, with pleasure and profit, we heartily appreciate your cordial greeting and warm hospitality, and on this occasion particularly we feel exceedingly grateful to you for providing more commodious quarters in this wonderful Auditorium building, for the sessions of the convention and also for the various exhibits.

This first meeting of the association in the Auditorium, on the site of the old Milwaukee Exposition building, recalls to my mind, the Grand

Union Dairy Fair held on this very spot the first week in December, 1882, (33 years ago).

This extraordinary Dairy Show was a combination of the National Butter, Cheese and Egg Association, the Northwestern Dairymen's Association, the Wisconsin Dairymen's Association and the International Dairy Fair.

The cheese industry in Wisconsin was not as extensive then as now, but conditions were different and there was shown a greater spirit of enterprise on the part of the wholesale dealers in cheese. They spared no labor or expense in those days to do things on a big scale and make the world sit up and take notice that Wisconsin was the coming cheese state of the Union.

Just to give you an idea of the vastness of the exhibits of this Grand Union Dairy Fair; I will mention a few of the more important ones.

Mr. S. H. Conover of Plymouth, the largest cheese exporter in Wisconsin at that time, (and still a prominent dealer) had a pyramid of American Cheese that was 18 feet in diameter at the base and 25 feet high. That pyramid was cone shape, constructed of 60 pound cheddars topped off with Young Americas. It contained over 700 cheeses, valued at over five thousand dollars.

Mr. K. H. Loomis of Sheboygan Falls, had a cottage 8x12, and 12 feet high, built entirely of Young Americas, and attractively decorated with national colors. Mr. Loomis also had a pyramid 20 feet in diameter at the base and 18 feet high, consisting of 300 tubs of creamery butter.

Mr. James Mallmann of Sheboygan, had an obelisk 8 feet square at the base and 26 feet high, built of cheddars, flats and Young Americas, 620 cheeses in all; and at each corner was a pile of cheddars three high, surmounted by an American flag.

Mr. A. J. W. Pierce, a well-known commission merchant of Milwaukee had a house of cheese, log cabin style, 18x12 feet and 20 feet high. The walls were built of cheddars, the roof of flats and the chimney of Young Americas; 850 cheeses being used in its construction.

And, by the way, all the cheese and butter exhibits I have mentioned, were made in Sheboygan county.

There was a creditable exhibit of foreign styles of cheese made in Wisconsin. There were towering piles of dairy salt in sacks; numerous exhibits of dairy supplies and machinery; a modern refrigerator car that attracted a great deal of attention, and John Boyd of Chicago and Chester Hazen of Brandon, Wis., exhibited pure bred dairy cattle.

A special train from Chicago brought forty delegates from Boston; thirty from New York; twenty-six from Philadelphia; while there were others from Pittsburg, Cincinnati, St. Louis, Elgin, Kansas City and San Francisco, escorted by two hundred members of the Chicago Produce Exchange, with Nevin's Military band of that city, and all marched through the streets of Milwaukee to the Exposition Building.

Now this may sound like a school boys composition, but I want to tell you it was "SOME SHOW" and the benefit that the dairy interests of Wisconsin derived from it cannot be overestimated. I thank you.

PRESIDENT'S ANNUAL ADDRESS

By OSCAR A. DAMROW, Sheboygan Falls, Wisconsin.

Mr. Chairman, Mr. Reese, Secretary, Merchants and Manufacturers Association, Members of the Wisconsin Cheese Makers' Association, Ladies and Gentlemen:

For the third time it is my pleasure to address you as President of this great organization, and I want to thank you for thus honoring me on three different occasions. I feel that the Association has been more than good to me and under no consideration will I be a candidate for reelection, but at any time that I can in my humble way be of any help to the Association, or aid in the betterment of the dairy industry of Wisconsin, you will ever find me ready to do so.

As I look back some twenty years when I first became a member of this Association, and recall how the organization has worked step by step, year after year, for the improvement of the dairy industry in general, I think we have done pretty well.

I do not want to say that we have done all that we might have done, but let us see what we have accomplished during the year just ended. A year ago I stood before you and asked that the Wisconsin Cheese Makers' Association go on record in favor of getting a bill before the legislature of the state to license cheese factories and creameries and to protect same from unfair competition.

We succeeded in securing the license law, but not the protection desired. Nevertheless, if we didn't get all we wanted, let's try again and work all the harder. Let us remember that Rome was not built in a day.

We must remember to keep on working to uplift our calling and there is still room for advancement. I believe in more thorough organization. I think the Cheese Makers' Association ought to have an organizer in the field, whose expenses should be paid by this association. I will not attempt to say exactly what the work of this organizer should be, but he should try to organize a county at a time; try to show the factory operators and makers the advantage of organization. Each county organization could hold meetings as often as local conditions would warrant. The officers of each county organization could work together with the officers of the state association to perfect plans for a state convention.

You may say the expense will be too heavy on the members of the association. Let me ask, who meets the expenses of other organizations? Surely its members. Why can we not do the same as other organizations have been doing?

We are manufacturing a food product that brings into this state nearly thirty million dollars annually. Therefore it would be absurd to say we cannot afford to bear the expense.

Listen! if that is the case, we are so much more in need of closer organization; for the betterment of our business, our homes, and our condition in general.

In every line of business and in every line of trade, the tendency is toward closer organization. But look at the cheese makers of the state. There are over two thousand of them and only a comparatively few meet with this Association once a year and exchange ideas. This will not do. We must get after the back numbers and show them the advantage gained through organization. We are too much in the habit of letting George do it, and George wants to leave it to some one else.

Gentlemen, if we do not take hold and do it ourselves, nobody else will do it for us. If we were organized in county associations and affiliated with the state organization, we could demand the rights we are entitled to.

Our Secretary has prepared an excellent program, and I predict that this will be one of the best conventions we have every held. This is all I wish to say to you at this time, and I thank you for your kind attention.

SANITARY PIPE AND FITTINGS

By CHAS. M. CUPPEL, Milwaukee

As the importance of cleanliness and better sanitary conditions in the handling and making of milk products is becoming more and more pronounced each year, I am pleased to know that the Wisconsin Cheese Makers' Association has recognized this fact and offered me an opportunity of giving a short talk upon the subject of "Sanitary Pipe and Fittings." This opportunity, I might say, is due to the efforts of your secretary, Mr. Bruhn and the courtesy of Mr. John LeFeber, president of the Gridley Dairy Company, Milwaukee.

Up to a few years ago, the methods of conveying milk and cream from one tank (or receptacle) to another were very crude and primitive, and the importance of keeping the pipe and fitting clean and sanitary was little thought of. The reason for this I do not believe to be absolute neglect, but lack of knowledge as to the great dangers in the growth of contagious disease germs in the several different kinds of pipe and fittings.

About this time, through our colleges of agriculture and departments of dairy husbandry, we began to receive scientific data, proving that unsanitary barns, weighing and shipping stations and factories where unsanitary equipment, such as cans, pails, coils, tanks, presses and last but not least, pipe and fittings used in the handling of milk and its by-products, were positively the rendezvous of many different species of bacteria. I shall not go into any detail concerning bacteria,

but shall endeavor to show you how and where they may propagate and thrive in unsanitary pipe and fittings.

Since I have been in the employ of the Gridley Dairy Company, it has been part of my work to study and purchase the simplest and most sanitary pipe and fittings obtainable. In the past ten years, I have had to deal with five different kinds.

First, galvanized iron.

Second, brass in standard pipe size, (both sweated and threaded).

Third, copper tinned tubing and fittings.

Fourth, German silver and

Fifth, Benedict nickel, which I believe to be the best on the market today.

Most of you can remember the time when you could get only galvanized iron, and were, therefore, not to blame for using it. However, an examination of any two fittings will show you at once, the reason for not using it at present. The threaded joints are very objectionable as they cannot be taken down every day to be cleaned and, since this is the case, the recess left in the fitting at the threaded end of the pipe is an ideal place for milk and milky water to stand and become sour, thickening in a few hours, especially during hot weather.

Though a very small one, the next step toward better handling was the use of brass made up of standard iron pipe size, its only advantage being, that it was closer grained and perfectly smooth, both inside and out; otherwise, it still had the same disadvantages of the iron pipe.

Then we came to the copper tinned tubing with a large variety of genuine sanitary fittings, including the introduction of the sanitary union which has made it possible to take down your lines at every joint, each day. This advance was a very marked one as the fittings and unions were all recessed to take the copper tinned tubing and leave a smooth surface where each joint was sweated or a union put together.

But, after using copper tinned tubing and nickel plated fittings two or three years, it was found that the tinning on the tube would finally wear off, leaving the bare copper exposed and the nickel plating would not hold on the fittings. Then the acid contained in milk and its by-products would chemically combine with the copper if left unwashed and the appearance of a greenish coating, known as verdigris, a very poisonous substance would be noticed.

If, at the collecting station, cheese factories, or creaming stations, fresh milk is allowed to pass through tubing or over copper coils where verdigris has collected there is almost a positive likelihood of contamination. Therefore, even copper tinned tubing and nickel plated fittings are not the best and most serviceable.

These serious objections were quickly noticed by the manufacturers of pipe and fittings and they soon placed upon the market a type called German silver, which is a white metal all through and can be used

for years with but very little care other than thoroughly cleaning by brushing, cleaning and rinsing.

I have used and am still using much German silver tubing, but, about two years ago, I began to use what is known as Benedict nickel, made by the Ameriman Brass Company. This tubing is an alloy made of copper, nickel and zinc with a small quantity of pure iron and manganese, properly fluxed and treated to make it especially homogeneous. It is approximately three-fifths copper, one-fifth nickel and one-fifth zinc, iron and manganese, which combination forms a white metal tube not to be excelled. It is smooth and white and with but little polishing has the luster and brilliancy of nickel plating. It is annealed in such a way that it does not crack or split as do many other tubes when being worked, and is least susceptible to verdigris.

I find that Benedict nickel takes fifty-fifty solder with the least cleaning and tarnishes the least with either Ruby Liquid Flux or acid, as a soldering media. Therefore, I would recommend the use of this tubing to all those contemplating changes in their respective factories or the building of new factories, weighing or shipping stations. So much for the sanitary tubing.

That you may readily comprehend the many changes in sanitary fittings in the past ten years, I have with me a number of fittings showing the wide gap between the galvanized iron and German silver, and as to price or any other information which I might be able to give any of the members of this association, I wish to say, that I shall be pleased to have them call upon me at the plant of the Gridley Dairy Company, 138—8th St., Milwaukee, where I will be at their service. I thank you.

DISCUSSION

Mr. Aderhold: I do not know whether the care of piping was thoroughly discussed. I know that the man that presented the subject knows a great deal more about materials and pipings than most any of us do and if it has not been fully discussed, or if any of you wish to take issue on anything that was said that you don't understand, I wish you would draw Mr. Cuppel out thoroughly because I don't think we ever had a man on the program that knows as much about pipe as this gentleman does.

Mr. Ubbelohde: How do you clean them in the factory?

Mr. Cuppel: In the first place we take them down. The union I maintain has been the boon to the sanitary pipe and fittings because of the fact that you can take them down. Now as I said before, most troubles caused or had with the sanitary piping is from the coating on them. They should have cold water run through them right after using and rinsed out, then any part of the milk and residue of cream or whatever product has gone through will not remain in the pipes. Just use water and not steam. All we do is to use cold water when

we first begin to wash them, then we take a solution of Wyandotte cleanser and we add a few pounds of the soda dissolved and that makes the water as soft as rain water. We heat that to a temperature of 150°; in that way we wash our sanitary pipes—then we turn steam into them and thoroughly steam them until the pipe becomes so hot, well you know how hot steam can get, and that is sufficient. We again cool them down. We do not leave the pipes hot because we believe there is a point at which bacteria can begin to grow again if there is the least opportunity to propagate. They will grow again at about 90°. So of course, we cool the pipes down again as quickly as we can. We do the same thing with our milk. After we are through our pipes are as clean looking as a gun barrel. I invite any and all of you to come to our institution and if you take down any joint and see how clean they are kept, you will understand this process is the best method of cleaning.

The Benedict nickel is better than the German silver as it maintains itself better because it has a little copper in it. It is a little softer and you can take it and draw it to a size that will fit the unions. German silver is too hard to solder and does not take the solder as well as the Benedict nickel.

If you have any questions, I would be glad to have you ask them.

Mr. Scott: If you clean your pipes out and do cool them down, and if the germ is there, it is going to stay there just the same, isn't it?

MR. CUPPEL: I expect the steam to be heated up to at least 150° or 160°; but once in a while we get a little careless and then we are liable to those troubles. We are liable to heat only up to a propagating temperature and then you are going to get into trouble there.

Member: If the pipe is heated up to 200° can there be any danger of allowing them to avoid the contamination of bacteria?

Mr. Cappel: That is still a question to be discussed. I could not give you any particular details on this. We do it this way as we think it is a little safer because it is the same thing as when you heat milk—you heat it up to a steam temperature and the quicker you cool it, the less trouble you are likely to have afterwards. Because of that one fact we have rather made it a business to cool our piping down just as quickly as possible after cleaning them. If it is possible to use spring water of course it is a good deal more sanitary and a good deal more free from bacteria. Of course, it is different with our lake water, which at times is not as good as it might be, but we have never had any trouble with contamination as we are using it safely and the piping shows up almost sterile at all times after using this process.

Mr. Aderhold: Have you explained the cost of the Benedict nickel?

Mr. Cappel: Benedict nickel does not cost as much money as the copper nickel. It requires but very little work to polish it. The copper is very hard to keep in shape; you can polish it but it is not as brilliant as the nickel. There is a big difference there. I would select the Benedict nickel and it is the cheaper of the two. It is also cheaper

than the German silver. I will give you definite information as to prices if you will write me.

A good tinner or a good coppersmith can fix it in half the time if something goes wrong with it than it takes to fix the other metals.

Mr. Marty: Does not the Wyandotte affect the pipes?

Mr. Cuppel: No, not if you use the proper amount of it dissolved. It will not harm the pipes in the least.

Mr. G. Marty: For many years we washed the cans at the Dairy School at Madison in Wyandotte solution and then steamed them, and we always had trouble with the cans rusting.

Mr. Cuppel: We, of course, wash our cans in big washers. We do not use any steam at all in the shippers cans. We have them practically sterile because we use such a high temperature and then cool them down as quickly as possible.

Mr. Chaplin: Have you had any bad results if you did not use the water?

Mr. Cuppel: I think because of the fact that we have cooled our milk as quickly as possible, that it was just the same with the pipings. We have had good results.

Prof. Sammis: I believe the speaker means rinsing the pipes after the steam is used. I know we have firms that make a practice of doing that just the other way around. To have sanitary pipes, always wash them out first and last of all they run the steam through and then let them dry that way. The fact is, that several large concerns do it that way with good results.

Mr. Ubbelohde: Do you think sal soda is good?

Mr. Cuppel: We have had excellent results with Wyandotte and we like it very much. We never had any trouble with it. Always have been able to remove the grease and oils and it dissolves the milk product so nicely that we always have preferred it.

Mr. Aderhold: Are visitors welcome at your plant?

Mr. Cuppel: Yes, sir. The Gridley Dairy Co. operate one of the biggest milk plants in the country and I think one of the best managed and certainly whenever any of you are in Milwaukee, if you have the time to go and see the plant, I would advise you to do it. I will be glad to show you through, and we also have guides that would be glad to take you around the building. We have a great many people come there during the week days and we would be glad to have the cheese makers as they would enjoy the visit very much I am sure.

At this point of the program, the Dairy School students who were present in a body under the leadership of Professor J. L. Sammis, were called on by the chairman, and responded with their Dairy School song and yells.

"Dairy School, Dairy School, Zip, Boom, Bah,
Cheese Makers, Butter Makers, Rah, Rah, Rah."

DEVELOPMENT OF THE CHEESE INDUSTRY IN NORTH WESTERN WISCONSIN

By J. G. AUNE, New Richmond

Ladies, and Gentlemen, Members of the Wisconsin Cheese Makers' Association:

It is by the request of your secretary, Mr. Bruhn that I have the pleasure to appear before this great Cheese Makers' convention as a representative from Northwestern Wisconsin. I must say, I am glad to be with you again. Last year was the first cheese makers' convention that a number of the cheese makers from the western border of this state attended. We all had a good time and it was a splendid meeting, so we decided that we would attend again this year; and we are as many more here this year. Hope we can double the attendance to every cheese makers' convention from the western border of Wisconsin each year.

The cheese industry in northwestern Wisconsin the past five years has more than doubled the number of cheese factories and more than four times as many pounds of cheese made. The kinds of cheese mostly made are, American, twins and daisies.

Four-fifths of the cheese factories are cooperative and owned by the farmers, and I am glad to state right here that they are giving the most wonderful results, and I believe that the farmers should own the cheese factories because there seems to be less dissatisfaction as to the cheese makers robbing them. Better satisfied patrons, I have never found than where I have been employed in cooperative factories. Northwestern Wisconsin is for cooperative cheese factories and creameries, first and last. Better equipped factories would be hard to find; they all have steam-heated vats; whey separators, milk paid by butter fat test. Whey butter is also made at a number of factories. There are also a number of combined butter and cheese factories. Some of the factories have electric lights and motors.

Furthermore, nearly every cheese factory is operating all the year round; a number making cheese every day in the winter. Farmers are finding out that winter months is the best time to milk cows for profits. In our community every farmer has one or two silos which goes to show that they are dairy farmers and that they are after cheap feed and pailfuls of milk.

Discussion

Mr. Ubbelohde: Did I understand the gentleman to say, that four-fifths of the factories are owned by the cooperatives?

Mr. Aune: Yes, sir.

Mr. Ubbelohde: What is your object that a farmer should own the cheese factory and then hire the help?

Mr. Aune: I find that they can give better satisfaction that way, than they can by the individual owning the factories.

A. J. Mensch: Don't you think a cheese maker ought to be paid as well as the farmer?

Mr. Aune: I think he is well paid.

Mr. Bruhn: He could then never advance himself further than a hired man—

Mr. Aune: I don't know.

Mr. Bruhn: Are you satisfied to be a hired man all your life?

Mr. Aune: Yes, as long as I could get good pay.

Mr. Chaplin: Now, I will tell you that I have been making cheese for more than thirty years and if I went farming at the time I started to make cheese and would have been successful in farming as I have been in cheese making, I would have three dollars where I have now got one. But if I would have been a hired man at \$80.00 a month, I wouldn't have half what I got today.

Chairman: Isn't it a fact that you would sooner have a home of your own than be a wanderer all of your life? I see that the patrons of the factories that are owned by the farmers, are not receiving any more for their milk than those that are run by the cheese makers.

Mr. Aune: That may be true to a certain extent, but from the experience I have had with the cooperative factories and from a viewpoint of working for wages, I have been successful.

Mr. Aderhold: You will not find any farmers that will pay over \$65 or \$70 a month.

Mr. Aune: I am speaking for the western part of the state where it is nearly all cooperative cheese factories. I have worked for individuals and for cooperative people and I am satisfied to be employed by the cooperative factory. I make my wages by the pound. I get three-fourth cent for each pound of cheese I make.

Mr. Bruhn: This idea that a man can do better work for himself, I object to—for I think that if a man is just working for the money he is going to get he is a mighty poor man. I think a man should take an interest in his work; and if he cannot do this, he ought to quit the business.

Mr. Scott: I think that a man that works all his lifetime could never make a successful business man. It is the men that own their own factories that have worked up the cheese business in Wisconsin. There was a time when men came over from other countries and were willing to work for so much a day, and keep on working all their lifetime and were satisfied as long as they made a living; but the Wisconsin man does not do this—he wants something to lay up for later on in life; he wants to be able to take care of himself in his later years of life. I do not believe in a man working for wages all his life.

Mr. Bruhn: If anybody thinks that in getting this convention together it was a snap, they are mistaken. I worked many nights until two o'clock, and if you think that I did that for the money there was

in it you struck the wrong party. There still are cheese makers in this state that are working for the good of the cause and not for that single dollar they earn a day, or even \$5.00 a day—they are doing the work well because of the satisfaction they get out of doing good work.

Mr. Chaplin: I agree with Mr. Bruhn that there are plenty of good men and that they are all doing good work and they are doing the work for the love of it—still if you put those men down on a plane below what he could get in any other line of work, it would soon take a lot of his interest away. A man may love his work, but most men get married and we have got to have some money to do that. We must have something to take care of ourselves with and to get a home.

ADDRESS

HON. S. A. COOK, Neenah, Wisconsin

Mr. President, Ladies and Gentlemen:

This is not altogether an unexpected pleasure of coming before you. I have been on the sick list for the last two weeks past, but I did not want to miss meeting with you here. If I should seem a little plain in my talk, I want you to receive it in the same spirit in which it is intended. It is not to tell you how to do things—you have men here who have made a study of that.

For several years you have permitted me to be a member of your organization and meet with you in your annual conventions. You have extended me the courtesy of being heard, using your time that perhaps could be better occupied listening to those who are qualified to speak from a more practical standpoint on conditions of vital interest to the great industry you are engaged in.

My efforts, though of a minor nature, have been on lines to encourage making a better article and more of it. Others may know more about how to accomplish that, but none are more earnest than I to see it worked out. A good article will always find a ready market and if the present product of good cheese was doubled, I feel confident it would find a good demand.

A high standard has been reached by many through rigid care in selecting the type of the animal, the sources from which the great cheese industry must draw its supply of milk, and also by the cheese maker becoming more of a master of his profession.

We may admire the man who from books can on the platform tell us how to conduct our business, the farms, and factories, and to tell the working man what constitutes a day's work; all from theory, but we can honor the man who can do these things himself, do something practical, whether it be in the cheese factories or in the bank. It is results that count either for or against us.

As stated a high position has been reached by many of you, but that many are confronted with the problem—"how to hold that position." You cannot do it by being content to rest where you are, if so you will fail. You are advancing or receding. You must go higher and to do so, you must have with you those who are content to be let alone. It is the indifferent farmer and the careless cheese maker you have most to fear. The former class is quite numerous yet and the careless cheese maker is helping to keep them where they are.

The indifferent farmer is to blame for bringing his milk to the factory in cans in a condition that would be a crime to allow his own family to use the contents of for food. The cheese maker becomes more of a criminal in receiving the milk—he is not deceiving the public as to the cleanliness and wholesomeness of his cheese, but he is wronging every one of his patrons who are bringing to his factory first-class milk in first-class condition.

No cheese maker need fear a low price for high grade cheese brought about by an overstock of the high grade article. It is the vast amount of poor cheese placed on sale as first-class goods—when as a matter-of-fact all it has to entitle it to be called an article of food is the name "cheese." It is the article with simply the name to recommend it that is, and will cause you more trouble and loss than all else in the cheese industry.

The great factor for that success for which your organization contends, can be reached through education and cooperation of your members for better work in the art of cheese making; the weeding out of the incompetent, the receiving of milk, and the care and management of the factory by thoroughly competent men only, also to demand the enactment and rigid enforcement of such laws as will protect the manufacture of honest dairy products against unjust competition from dangerous filth and deceitful imitations. You can no more tolerate a dishonest man in your organization than a coward in the army.

The ballot box is your sacred right under the constitution and the safeguard of our liberties. Approach it with a religious sense of duty and an honesty of purpose and through it express your solemn, intelligent and unbiased and patriotic judgment. And he, who interferes to prevent the free and fair expression of your judgment at the ballot box, should be branded as an enemy of both God and man.

We take much pride in the fact that fraud by adulteration and imitation of cheese has had the stamp of disapproval placed upon it and millions of dollars saved to the honest producer of pure dairy and farm products. But in my mind the great loss, the one that overshadows all other losses in the dairy products of Wisconsin farms, is that which comes from a seeming indifference on the part of many producers to the great loss or gain between a high and low grade article, and it is to help overcome that great loss to the cheese makers that I have for several years past in my humble way been trying to assist by holding out some inducement for a better article and more of it.

The chairs that I have offered to those who secure the highest mark in cheese may be, and I hope are, of some use in the home of the winner; but that value is nothing to the good hoped for, it will be an incentive to stir the cheese makers of Wisconsin to the pride and determination to have their cheese just as good as the best made in Wisconsin, and the best made in Wisconsin is good enough for any market in the wide, wide world.

No branch of agriculture in the state has made greater progress than the cheese making industry during the past few years and still the opportunities for further progress are very great. A vast area of the land suitable for dairy farming is yet undeveloped.

The markets of the world are each year becoming better acquainted with the high grade cheese of Wisconsin, and will take all the surplus if the product shall become many times what it now is. The opportunities are before you—the success rests with you.

The present alone is yours, wasted opportunities may never come to you again. You may start at the lowest step, but if your chosen occupation will bring you to a higher one, you need not be discouraged for only by perseverance are we able to overcome the opposition which we meet in life, the sweetest flowers are guarded by the sharpest thorns, so your greatest achievements are surrounded by the most trying difficulties.

This splendid gathering is one of the many that proves to the world that no nation has the equal of intelligent men, loyal mothers, wives, and daughters of this country. Are the mothers, wives and daughters getting their share of the benefits from the great help they are in carrying the burden for success in your work? Is the home being made so pleasant and their surroundings such that they prefer that home to any other place on earth?

With a happy home and earnest thoughtful care on your part, success must come and may God bless and prosper you in your every earnest effort.

I want to thank you for the privilege of being here, and I am in earnest in this. I hope I will live up to the time to see Wisconsin have the first place in the cheese industry; and I think you ought to have five thousand members in your association and that they all are present at your conventions. There is no reason why you shouldn't have—it is a great industry and something you should be proud of. God gave you young men probabilities. Study out and follow up closely this wonderful industry and stay in it, and as soon as success begins to come your way you will always find me ready to help. I thank you.

ADDRESS

MR. SAM SCHILLING, of Chicago

Ladies and Gentlemen: I am not to blame for my appearance here this afternoon, but I heard you had your meeting and was interested in the discussion that was going on. If I should undertake to talk to you at this time along cheese making lines I would have a task on my hands as what I know about cheese making would make a mighty big book, and what I don't know about it would also make a mighty good book—I would be placed in the position of the fellow who stuttered and who had such a hard time to make himself understood, so he decided that he would go to an institution where they treated people for the purpose and asked to see the manager. When the manager had asked him several questions he finally said, "how long a course do you want to take? Do you want to take a two months course; a six months course or will you stay until you are cured?" The young man answered: "I-I, don't k-kn-know, b-b-but I wa-wa-want t-to t-t-take a course long e-e-enough, so when I-I go into a f-fl-florist's and want to b-b-buy a chr-chr-chrysanthemum, I w-will get the d-d-damn thing forthwith."

However, ladies and gentlemen I do appreciate the opportunity of standing before you and I will assure you it is only for a very short time. I could not talk to you along cheese making lines as I would not know what to say, but I suppose you have the same trials and tribulations that the butter makers have to contend with. You have the same demands and solutions on your hands as they have, but I want to say to you that you are much more fortunate than are the butter makers from the fact that your products are in greater demand than theirs. I make this statement with this knowledge; that instead of having millions of pounds of cheese in storage, there is a demand for your products that is so great, that you are not keeping up with, which is hard to believe and realize; while with the butter makers it is different. They have millions of pounds of butter in storage today and on which the people who are holding it have got to take a big loss. It will never be placed in consumptive channels for at least a year to come. You are not burdened with any surplus, and if I was to indulge in the prophesy of the historians, I would say to you, that with the reputation of your product, that you can't ever possibly overdo the cheese industry, and I don't believe you will ever see the time that the storage houses in the country will have too much cheese. If we could have placed our product the same as you have placed yours, there would not be a surplus now.

We have exported more butter this year than ever in the past, but it has not been an advertisement for us. For that reason we

have got this surplus at the present time. It seems to me that with the terrible struggle that is now going on over on the other side, that it is going to be years and years before they will produce products of this kind enough to supply their demands; and you are practically assured that if you cultivate every foot of land in the sections of the country in which cheese is manufactured that you are going to market your cheese at a price which will be at a profit.

I would like to talk to you on the subject which was discussed a while ago about the hired man and the cooperative cheese factories. I confess my preference has always been on the cooperative lines, but of course my line has always been the butter end of it. Of course, the man that is working for wages can hold his head just exactly as high and enjoy his life just as well as if he owned the cheese factory, but judging the situation from the creamery man to the cheese man it is different. The hope of our existence in the manufacture of butter lays in the cooperative creamery and not in the individual creamery. For instance, in states like Kansas who had 300 creameries and Nebraska with 250 and Iowa with over 900; they have come down to a little over 500 in Iowa and with less than 50 in Nebraska and Kansas with less than 100. I can point out to you where a thousand butter makers are now holding jobs that were at one time controlling the manufacturing end of it in those three states. I hardly believe that it would be possible to conduct the cheese business the same as the creamery business for just as soon as it would get into the hands of the large corporations the small man would be forced out. I do not want to argue the justice of this, but let me call your attention to just one fact that I know of, and that is,—We have one large plant which has a selling branch in every large city in the country, who not only buy their own product from the farmer, but they sell it themselves, and who now are erecting a large cold storage of their own. I am not saying this with an idea of criticizing, but on the contrary, I am inclined to admire the set of business men that can control and manage and build up a business of this kind, but it takes the place of one-half of the butter makers in the states that I have mentioned and who are even now consolidating.

ADDRESS

By Mr. C. F. DOANE of the Bureau of Animal Dairy Division
of Washington, D. C.

Mr. President, The department of Agriculture at Washington is just now interesting itself in the possibilities of advertising cheese as a food. We have got our ideas mostly from the results that have been obtained by the lemon, orange and raisin growers of California

and also from the citrus fruit growers. A few years ago the growers of oranges and lemons in California organized an association for the selling of their products, and they hired a man from Washington, D. C. and gave him a salary of \$13,000.00 a year to manage the association. They started in to advertise oranges and lemons very extensively. If any of you have noticed the Ladies Home Journal for December you will see in same, a large page of advertisements for lemons. That of course, is costing a great deal of money but it also is getting big results; the actual figures of which I don't happen to have just at present. I did not expect to talk on this subject at all at this convention, but I just thought it comes in appropriately with what what I will tell you later about cheese. These wonderful results have not only been produced in California, but also in Florida. The fruit growers advertised their products and in that way produced a market for same. The results have been remarkable indeed, and I think that I can safely say that a person has to advertise in order to make a profit on their merchandise. I believe that Mr. White, my friend down here at the table will corroborate my statement in this. **Cheese needs advertising** and I have no doubt in my mind but that the same results will be attained in this as in the above mentioned fruit advertising.

I wish to state here, that but three and one-half pounds of cheese per capita is consumed in the United States whereas the Swiss people eat from 50 to 100 pounds a year and I don't think that is excessive at all. They are feeding cheese to the soldiers in the army and they find it a good substitute for meat. In my old home in Ohio, a family ate about fifty pounds of cheese a year. My own family would eat more than a pound of cheese a day, if we could get the good grade of cheese.

The possibilities of extending the eating of cheese is something enormous, if we could but educate the poor people to the food value of it. They would use it in place of meat for they are in great need of a good substitute for meat, and I believe before long you are going to be able to do this; but before we advertise anything, we have got to get the quality in the article; and that is what I most wish to express myself on this afternoon. Mr. Cook enlarged that subject in his talk It takes quality to sell cheese and I am going to say things here this afternoon which I would not say outside of Wisconsin, and in fact, outside of the convention hall especially to people who are not interested in cheese.

I practically learned the cheese business in Wisconsin, and naturally I have always been interested in this state. I took my course in Madison in 1896 and 1897, and when anybody gets to talking about cheese, I think of this great state and of the cheese I expected to make in future years. The northern part of this state is built up with many cheese factories and is producing the milk.

We like to pat ourselves on the back in regard to the product we put out yet I fail to find the good product in my travels. When I travel, and I do travel all over, I want to order cheese with my meals every place I can get it, and if I was to make a fair estimate of the actual good cheese that I am able to secure, and some must be Wisconsin cheese, because Wisconsin is making over half of the cheese made in the United States, I think it is only about one out of fifty hotels or restaurants that I get a piece of cheese that I like to eat. That is probably due to two things. Our Chief, Mr. Rawl is also commencing to get interested in the subject of the cheese industry. Not long ago he made a trip of six weeks and he claims that from the time he left Washington until he returned, he did not get much good cheese on the road, and he eats three square meals a day, and he said he would order it right along. Now some of this cheese must have been from Wisconsin.

You do make good cheese here as I saw some of it out here in the exhibits this afternoon. Now I wonder where all the good cheese goes to. I don't seem to be able to find it. I have lived in Washington for twelve years and not until about three years ago could I get what I call a good piece of cheese. My family all like cheese and they eat a good deal of it too. There is something wrong some place with the quality of the cheese that goes out. I know there are a lot of cheese makers in the state and I don't suppose there is any state that has as many good cheese makers as Wisconsin has. I think where the trouble comes in, is that the cheese makers are devoting their knowledge and energy to putting water in the cheese. The economical condition that exists throughout the cheese section; the competition that exists between the cheese factories where they are located from two to three miles apart, seems to make it absolutely necessary that they pay the most they possibly can for the milk. They have been able to pay more for milk when they get the quality than they have when they produce the quantity. There are about forty cheese dealers in Wisconsin and Chicago and they all want the best cheese that they can get hold of. If they turn down cheese from one factory they can immediately take it over to the other dealer and he takes it. The cheese dealers have the same competition as the cheese factories have.

How are you going to get that quality? I do not deny that it may be possible to get both quality and quantity, but I have never been able to put in 41 to 42% and more of moisture and get a good cheese. Some even use a higher percentage of moisture, as high as 44%. I cannot see where they expect to get the quality in that way. How can a cheese come out right with that much moisture. While there are a few that may be able to do it, I don't believe they can do it or will ever learn how to do it. It is impossible to try and regulate that moisture condition, but the question comes up how are you going to do it? I believe this condition to exist and there was a long

time when I thought the moisture test would regulate the moisture. Here is a proposition that appeals to me right now; I think if the cheese would be tested, and the only way that can be done is by a person who eats it at his own table and he finds it to be a good cheese, he will go to the consumer and buy more of it; but if he finds it is not good he may never buy another pound of cheese again. I probably know of a dozen men who have stopped eating cheese because they happened to get hold of a poor cheese. The men who like cheese are demanding the good product and will demand it in the future; and I can say right here, that I am sure the consumption of cheese will be just double what it is now in the United States if the people could get a cheese of good quality. I don't know how to regulate this moisture of cheese, but I do not think the individual factory will be able to do it. The one man would have to go out of business as the dealers would not pay him any more for the good cheese than they do to the others for the cheese with the moisture in it. Are there any questions you want to ask?

Mr. Bruhn: There is just one thing I do not believe you mentioned—something I did not know until a few minutes ago myself and that is, I just heard that two regiments of soldiers in Europe was given a diet of meat and a diet of cheese, and they found that the men who lived on the cheese diet did not have as much of a hardship in getting used to it as those that were living on the meat diet. It was not a cheese maker who told me of it either. It was the young man who is down there by the door. So you see how cheese will act as a food.

Chairman: Are there any other questions? If not, we will go on with the election of officers.

Prof. Sammis: Mr. Chairman, it seems to me that some excellent points are brought up in these meetings without any results. The president recommended that there should be more local or country meetings of organizations for the benefit of the cheese makers, taking up such questions as to how much it is worth to make cheese, what they ought to get for it, etc. and it seems to me that it is an excellent idea, but apparently no action has been taken so far in this matter. I think this is a good time at this cheese makers Convention to pass a resolution in favor of local or county organization, believing that those smaller meetings will do a lot of good for the cheese makers and more good for the state convention, as it will bring reports from the different local organizations telling what the men from each locality of the state want to have done. The local organization can meet frequently. You can call up the members by telephone, tell them that you are holding a meeting, and you can get 95% of the members of the county to attend, whereas we are fortunate to get from 25 to 35% of the membership of the Wisconsin Cheese makers' Association to attend the state convention, although fortunately the attendance has been increasing during the past few years. I believe it would be a

good thing to pass a resolution in favor of local organizations in every county.

Chairman: The Committee on Resolutions are as follows: Mr. Wm. Nesbit, J. G. Aune and J. H. Peters, who are requested to bring in the resolutions.

MOISTURE CONTENT OF CHEESE

Chairman: I have noticed there has been quite a little talk about the Wisconsin cheese having a little too much moisture. I would like to ask Mr. Aderhold to talk on this subject.

Mr. Aderhold: This was just sprung on me a few minutes ago, and I would rather that you would leave the subject open for discussion; but I would like to hear from Mr. Doane who is with the Dairy Division Department of Agriculture at Washington and who has given the question more or less thought, and I don't know but that you had better hear from him instead of me.

Prof. Doane: The proposition seems to be like this; there is an inclination amongst some of the cheese makers to put in a lot of moisture in the cheese. Perhaps I am not putting that as I ought to, as I don't know as there is that moisture; but I know of a number of instances where cheese makers in order to compete with other cheese makers, who were loading the cheese with moisture had to do the same thing in order to sell their product.

This year and for the last several years there has been practically a considerable larger portion of moisture in the cheese than most people are aware of made in Wisconsin. It is not as high in quality as the kind we used to make, nor the kind that we gained our reputation on. Some of the makers have made the better class of cheese and there are some that are making the cheese of the highest moisture content. I believe that we ought to have a legal maximum moisture limit, the same as the United States Government has a moisture standard for butter. Any butter that is made exceeding 16% is in contravention to this law and the sale of the same is unlawful. Now that is the situation in Wisconsin—Is it necessary to have a legal moisture standard or the maximum limited, or is it not necessary? If it is necessary, what is the proper maximum standard? I think I have said all I have to say on this subject unless it is to answer questions.

Mr. Scott: I promised my wife that when I came down here I would not butt in, but just sit and listen; but since I have heard so much about our not making a good quality of cheese, I cannot resist from saying what I have in mind. Mr. Aderhold says that you cannot get a good piece of cheese. Why, we got some very good cheese last night at the Republican House. There is nothing on our program

that would teach us how to make a better quality of cheese. All these men come down here for is a good time, and I don't blame them for wanting a good time, but what we need is an educational program so that when we meet once a year, we can learn something—the good time is not going to help you to know how to make a good cheese. All some of these men come up here for is the big chairs and to get their share of the pro rata money.

A man can make a good cheese with 44% moisture; but I don't care if it is 44% or 34%, if it hasn't got the flavor and quality, you cannot sell it. If you make a good cheese and take it to Fond du Lac next year, you will get every penny it is worth, and that is all you want.

If the cheese makers cannot afford to pay more to give the people a good cheese and to have an association that teaches us something, it is time to quit. We want an educational program. If the cheese with the 44% moisture is the cheese that sells the best, by all means that is the cheese to be made. Why manufacture a product containing a minimum of moisture and that does not sell, when the public evinces, by the product it buys, that it prefers one of greater moisture? Sheboygan county sells a great deal of cheese and good cheese too.

Mr Bruhn: First of all, I want to ask Mr. Scott a question. He gave me a little slam about not making the program more educational. If we did make it so, would you follow this teaching? Would you make a better cheese with less than 44% of moisture? We can prove to you that a cheese that contained 44% of moisture never received a high score as yet.

Mr. Scott: You all have read of Monrad, a man who has worked all his life trying to better the butter and cheese industry. When he was asked what a good cheese was, he said, "he just wanted a good cheese and he wanted more of it." If I make a cheese containing 44% of moisture and it has a good flavor and the people like it, that is the cheese for me to make. It is a fact that if you will follow the scoring contest of any cheese, you will find that they would score about 88 and if they are kept a little while they commence to deteriorate. 34% seems to be the maximum of the high scoring cheese. Any one bringing in a cheese of a different scoring would be docked from one-half to one cent a pound on the Plymouth Board. The cheese makers in Sheboygan county don't dare to make their cheese of that percentage. The dealers will not pay for it. They want a milder cheese. Mr. Deland who was one of the judges, told us we made the cheese the same as they do in Canada. There is a certain trade that want a mild flavor, and if that is the kind of cheese they want that is the kind of cheese to make. I still think the program should be more educational and I do not blame Mr. Bruhn or any of the officers regarding the making up of this program.

Member: I want to ask, that if we make the cheese as you would want it, would we get a better price for it?

Prof. Doane: As I said before, there is about three pounds of cheese per capita being eaten at the present time, and I honestly believe that it would get up to ten pounds per capita if it was good cheese. While you couldn't make a good cheese and make any more money—yet I think if all the cheese was made that way you would be able to get a better price than you are now getting.

Mr. Chaplin: Before we go on I would like to ask Mr. Noyes if Wisconsin does not make any more good cheese.

Mr. Luther Noyes: Some do make a good cheese and some do not make good cheese. One of the biggest faults they have now is that they are working for too much yield. The majority of the trade in the United States want a nice meaty cheese. We never have any trouble on that kind of cheese. I understand now that there are certain interests being worked in the state and it is likely to come about that a moisture test will be made on cheese. It will increase the quality a good deal if you get the right kind of milk to do it with. That only can be done by the cheese makers taking it up with their patrons and looking closely to that end.

Mr. Chaplin: Do you think that New York is making a better cheese than we in Wisconsin?

Mr. Noyes: I believe that you did not ship our best cheese across the water as a rule. For the export trade that we took care of last year, we had instructions to pick out the very finest and best cheese that we had. We had to get some Canadian cheese which we shipped and that gave very good satisfaction. I know of some cheese that was shipped from here that was rejected; saying it was too soft. They won't take it that way.

Member: Don't you think that it is the cheese buyer's fault that there is so much soft cheese made in Wisconsin. I can make a firm cheese, but I am compelled by competition to make a soft cheese on account of meeting that competition. I think if we would have a better standard in Wisconsin, and if the cheese buyers came down and demanded a firmer cheese we would make it.

Mr. Noyes: The South is the great eating place of cheese and you cannot ship anything soft down South—it will not stand up. I have never shipped a firm cheese and had any trouble, but if I ship a soft one, I get it back right away. The dealers should get in touch with their factories that they get their cheese from and try to work out some arrangement whereby the right kind of cheese is made for their class of trade. This year we had factories that made a very firm cheese. These factories were working for a better milk.

Mr. H. J. Noyes: A lot has been said here about the moisture test. If the moisture test is made, a happy medium, the boys will make it up to that standard. The question has been asked here and elsewhere in the assembly in regard to grading cheese. If we have one grade of cheese, it is better to give a moisture of 36 or 37%. We have cheese eaters in the United States, and they will eat all we can make

if we will only work it up to a standard. We can make enough to supply the United States if we could only educate them up to eating cheese the way they eat meat.

Yesterday I ordered Wisconsin cheese when we had our dinner and we got a piece of cheese that had not been developed in flavor or in color. Now the cheese dealers who pass this along are doing the market a great injustice.

Wisconsin wants a cheese that will go anywhere and when a man eats that cheese he will come back after some more of it. Another thing it seems to me that we might broaden out a little more on is, this;—we might have a labor bureau connected with our association, then if a man wants to learn to be a cheese maker, he can make an application to this labor bureau.

Whatever we do, let us hold the standard of our cheese high. Every time a hundred boxes of poor cheese is shipped, it makes a black eye for that section.

Mr. Chaplin: I want to differ from Mr. Noyes on simply one thing—he wants to fix the moisture of cheese to one standard. You cannot do it. I don't believe that that cheese could carry 36 or 38%. When you say that 37% is a standard, I don't agree with you. I don't think any man should be tied to that. I will venture to say that the majority of dealers in the state of Wisconsin do not know what moisture there is in the cheese they are handling. They will say, this is a good cheese—a firm cheese and that it stands up on the block, but they will not know the percentage of moisture it contains. The dealers should find out how much moisture there is in the cheese they are handling. A short time ago a man brought to me an American cheese made in the state of New York. It was dry, hard, and crumpled, yet that cheese carried 25% of moisture. I did not believe it until I tested it three times. Let every factory man buy a moisture test—then they will know what they are doing.

Mr. Scott: I believe that the excessive starter makes the cheese pasty in the fall. You should not use too much sour milk. The trouble with the Wisconsin cheese today is, the excessive use of sour milk starter.

NEXT YEAR'S MEETING PLACE

Chairman: We will now decide where to hold our next convention. Invitations have been extended to the Association to meet next year in Milwaukee, and in Fond du Lac. We have always come here for the past sixteen years, I believe, and I think we should be willing to hold our convention elsewhere and grant the privilege to hold it at Fond du Lac for once at least. Fond du Lac was the first city that gave

us an invitation last year, and I think we ought to take that into consideration. I would like to hear from you what you think about it.

Member: The cheese makers around Marshfield feel that the convention should be held a little nearer to them and they believe that you will be able to get the cheese makers in the northern and central part of the state more interested in the convention if it is held nearer their vicinity. We have not been able to draw the number of members that we should from that part of the country, and I think by going to Fond du Lac that we will be able to do so.

Mr. Reese: Before you put the motion to go elsewhere, I would like to on behalf of the citizens of Milwaukee and the Merchants and Manufacturers Association invite you again to come to Milwaukee. We have only just got to know the Cheese Makers' Association. In the past you did not let us get sufficiently well acquainted with you. Now I feel that we do know you, that we are in a better position than ever to give you a cordial welcome and better service. We have everything here that you need in the way of facilities. We assure you if you will come another year we will assist you to put on a show worth while. The Merchants and Manufacturers Association of Milwaukee offers a silver trophy to the county scoring the highest and making the largest exhibit in 1917. We give the trophy to you to be handled as you see fit, but all we ask is that it be known as the "Milwaukee Trophy."

Mr. Marty: There are other things to be taken into consideration. The cheese industry has grown from year to year. The cheese is expressed to a city like Milwaukee and every exhibitor expects to get top price for his cheese according to the Plymouth board of that week. Now then try and go up in the northern or the southern part of the state, or in fact anywhere else and see if you can get top price for your cheese, or even as good a price as you can get in Milwaukee. There is a bigger market in Milwaukee to dispose of your cheese. Take that same cheese in a smaller place and see who will be there to buy it. That is an item to be considered. I have charge of the cheese exhibits at the present time and unless the scoring of cheese is changed, I don't see where I have a right to let an individual cheese maker pluck it over. A dealer cannot pay top price for it when it is plucked over. Coming back to where we ought to hold our convention,—I notice we have a larger delegation here this year than we have had in the past, and I feel that we will not be able to get so many to come to the convention if we hold it up North.

Mr. Bruhn: A year ago Mr. Keenan told us if we needed any bigger hall than we had we could have it—if we needed the arena of the Auditorium we should have it. He did not at that time set any price. We took it for granted that it would be given to us. When I made the arrangements for this year, or rather started to make the arrangement, I wrote to Mr. Keenan regarding it. I understand that the Citizens Business League has dropped out and are now in a combination with the Merchants and Manufacturers Association. I later received

a letter from Mr. Reese saying that they would be very glad to welcome us. In a letter to Mr. Keenan, I asked him to get in touch with Mr. Cross here, and we were promised at first Walker Hall and Kilbourn Hall, and when they sent me the cuts of them, they gave the rates that they generally charged for those halls, but the prices were stricken out and they were marked "**Free of Charge**". Now then can you imagine my surprise when I find that they have charged \$25.00 for the booths to the people who are exhibiting here. Nothing was said about that to me. First of all they are paying us for their space in our program and then second, they are paying for their booth space. I now learn that if anything is left over after the actual cost of the halls are taken care of, that is, if there is anything left after the booths are paid for—then that goes to the Cheese Makers' Association. Now, I think that is getting a lot of money out of the manufacturers and dealers in cheese and dairy supplies—more than I would like to see them taxed even if we get the benefit of it. I tell you I got pretty warm under the collar when I found those conditions, because I was directly responsible for the arrangements made, and I want to right here, apologize to every man that is exhibiting anything in those booths, because I had no idea that was the condition that existed.

As I said before, I am in favor of Milwaukee personally, but if it is going to be any good for the association to take it somewhere else, take it where it is for the best interests of the members of the association. Use your own judgment about that.

Member: I make a motion that we vote by ballot, and only those who are members voting.

Chairman: The tellers have now counted the ballots and find that there are 130 in favor of Fond du Lac and 122 for Milwaukee. I wish some one would make a motion to make the ballot formal and that we vote by acclamation.

Member: I make a motion that the informal vote be declared formal and that we hold the next convention at Fond du Lac. Which motion was duly seconded and unanimously carried.

THE CANADIAN CHEESE FACTORY

(Illustrated with lantern slides)

By Prof. J. L. SAMMIS, Madison

The most interesting fact about the Canadian dairy industry is, that it is alive and growing. The census shows an increase of 31% in the total value of butter, cheese and condensed milk produced annually in Canada. This increase was mainly in butter and condensed milk, as the total cheese made in 1900 was 220,000,000 pounds, but

only 199,000,000 pounds in 1910, showing a decrease of about 9% in cheese production. In 1910 the total cheese production in the United States was about 320,000,000 lbs. and the amount had increased about 7.5% since 1900.

It is well-known that in the United States there are two leading cheese producing states, New York and Wisconsin, and of these two, Wisconsin is producing over half of the total cheese made in the United States.

There are nine large provinces in Canada as shown on this map, beginning at the west with British Columbia, there are only a very few creameries and no cheese factories at all in that region, which is just north of the states of Washington and Idaho. The next province to the east is Alberta which had only about eleven cheese factories and combined butter and cheese factories. The next province, Saskatchewan had only two cheese factories. The next province, Manitoba had twenty-one factories. Next is the province of Ontario, the leading cheese producing province of Canada. In Ontario, there were 1,007 cheese factories and 121 combined factories. To the east of Ontario lies Quebec which has 1,062 factories and 293 combined factories.

Although Quebec has about 20% more factories than Ontario, yet Ontario produces about two and one-third times as much cheese as Quebec. This brings out the interesting comparison that in Quebec on the average, each factory makes annually 43,000 pounds of cheese, while the Ontario factories average 121,000 pounds annually. In other words, the Quebec factories handle on the average about 2,000 to 2,500 pounds of milk per day, while the Ontario factories average about 6,000 pounds of milk per day throughout the season. There are many advantages which a large factory has over a small one, and it is a serious question in Wisconsin, also, as well as in Canada, whether the men in the factories can not encourage and induce the factory patrons to keep more cows and produce more milk and secure the advantage and economies which are possible only in the large factory.

The province of Ontario extends from Montreal on the northeast about 500 miles in a southwesterly direction to Windsor and Detroit. The city of Toronto divides the province into East Ontario and West Ontario. The eastern two-thirds of the province lying east of the city of Toronto contains 882 cheese factories which made an average of 97,728 pounds of cheese in 1913, or about 480 pounds daily. Western Ontario which includes Toronto and extends to Windsor on the west has about 140 factories which make an average of 750 pounds of cheese daily. The factories of western Ontario average larger than the factories of eastern Ontario or Quebec.

Among the advantages of a large factory as compared with a small one, are, first; that the large factory can get its work done more cheaply as there can be a number of helpers employed along with one or more expert makers. Second: the large factory can buy supplies in large quantities at the lowest possible prices. Third: the large factory

having a large output will attract the attention of numerous buyers, and its products will be preferred to those of a number of smaller factories. Fourth: the large factory has better financial backing and is able promptly to put in any needed improvement or new invention such as a whey separator, or an ice house.

During the last summer, I had the privilege of visiting near Woodstock, which is about the center of western Ontario, some of the largest cheese factories and some of the cleanest factories that I ever saw. Here is a picture of a row of seven cheese vats in one factory. There is an agitator over every vat. Two of the vats are steel jacketed, and they like them very well. The rest are the ordinary wood jacketed vat. The vats as you see have no gates for drawing the whey. All of the whey is drawn through syphons. The whey runs through the floor drain into a cistern, from which it is raised by a steam jet to an overhead tank from which the patrons fill their cans. A great deal of importance is attached to the pasteurization of whey as a means of keeping the patrons milk cans in good condition, and to prevent infecting the milk with old, sour whey. Over half the factories in western Ontario pasteurize their whey and they do it thoroughly. The whey is elevated into a wooden overhead tank, which has a close fitting wooden cover. The whey is heated up to 150 to 155 degrees in the covered tank, and is often as hot as 130 degrees next morning when the patrons get it. This heat kills yeasts in the whey and helps to keep the whey tank clean, and prevents bitter flavors in cheese caused by old sour whey.

The cleanliness of everything in this seven vat factory was remarkable. Every bit of tinware, the agitator paddles, weigh cans, etc., were not only washed daily, but also were scoured with sapolio and were shining bright when I saw them one afternoon. There are two intakes used daily.

The woodwork of the vats was varnished or painted fresh every spring. They formerly had a wooden floor, but in recent years, they have laid a thin layer of concrete and cement over the wood making it waterproof. The floor rafters are heavy, and there is good ventilation below the floor and the cement floor on top of boards is a success at the Innerkip factory.

A lever union or Hartford union is put in the steam pipe alongside of each cheese vat. By opening this union, steam is prevented from leaking under the vat in case the steam valve is leaky.

Wire curd knives are widely used at these factories, even knives with wires only $\frac{1}{4}$ of an inch apart being sometimes used.

At the Strathallen factory, there are ten vats in a row, each holding about 5,000 pounds of milk. Seven men are employed, one of them does all the milk testing. Thirteen haulers bring in the milk. They have a law in Ontario that Sunday must be observed as a rest day. At the cheese factories there are two ways of taking care of the Sunday milk. One way is to bring two days milk on Monday,

and the other way is to bring Saturday's night milk at six o'clock Saturday evening and make cheese between six and twelve o'clock Saturday night, and then rest on Sunday. Every day these ten vats are filled and usually two or three of them have to be filled twice on Monday mornings. This is possible because at all these factories, the vats are emptied early in the day. As soon as the whey has been drawn with a syphon, the curd is dipped up into curd sinks; two of which can be seen in the picture. The first vats filled with milk in the morning are thus emptied in time to receive the last of the milk received at the intake.

The curd is stirred up well in the curd sink, so that it drains thoroughly, and is then allowed to mat. The curd sinks are on wheels, and are wheeled out of the make room into the press room which is much smaller and warmer than the make room. In this way the curd is kept warm without heating the make room. Also, the curd can be stirred and turned and piled in the curd sinks with much less walking and without stooping as is necessary when no curd sink is used.

Instead of carrying a curd mill to each of these ten vats, the curd mill is hung permanently to the ceiling. The curd sink is wheeled under the mill, and after milling the curd, it is wheeled away and another curd sink of curd is wheeled up. The curd is milled into $\frac{3}{8}$ inch pieces. This ten vat factory building is 128 feet long and 32 feet wide. The curing room is in a separate building 110 feet long by 30 wide. The two buildings are connected by a board walk and there is a truck running on rails to carry cheese back and forth.

Nearly all the cheese are 80 or 90 pound cheddars, but these are sometimes cut in two to make flats or twins when ordered. A few Canadian Stilton size are made, which is about the same as our Young America size. No long horns, or daisies are made. The hoops used have no metal bandagers and no shoulder, but are smooth inside from top to bottom. A metal filler holds the bandage in place while the hoop is being filled. The filler is then removed, leaving the bandage in place.

In making cheese, the factories in western Ontario make use of the acidimeter every day. In the large ten vat factory one man does all the testing with the acidimeter and directs the work at all the vats. The other men handle the vats, draw the whey, etc., as he tells them. The whey is drawn when its acidity is about .165 to .18%, and the curd is hooped six to seven hours after adding rennet, when the acidity of the drippings is 1% or more. 3 to $3\frac{1}{2}$ ounces of rennet extract per thousand pounds milk are used, and the curd is usually cut into $\frac{3}{8}$ inch cubes.

One of the factors which contributes most to the excellence of the cheese and factories of western Ontario, is the system of Dairy Instruction. There are five instructors for about 150 factories. Every factory receives during the year two or three full day visits from the

instructor, and also two or three shorter visits, making about five visits per year to each factory. These instructors take pride in the factories in their section, and the cheese makers are always glad to see the instructor come in. The instructor at each visit samples the cheese in the curing room, and advises the maker, inspects the premises thoroughly for unsanitary conditions, tests the alkali solution which is being used in the acidimeter, and makes up fresh alkali solution at each factory when needed. The instructors carry with them the dry alkali and see that each factory has a continual supply of solution of the right strength. This system of instructors in western Ontario is very successful, and is under the immediate direction of Mr. Frank Hearn, chief instructor. In eastern Ontario there are twenty-three instructors under the direction of a chief instructor, visiting 882 factories or about 38 factories for each instructor.

The Canadian cheese has a very high reputation for fine quality. In company with Mr. Robert Johnson of Woodstock, Ontario, who is well-known to many Wisconsin cheese makers, I visited the cheese warehouse of the MacLaren Imperial Cheese Co. at Woodstock and saw a large number of fine cheese, very uniform in quality and all firm, close, meaty and clean flavored, such as any factory or warehouse might be proud of. The cheese made in Ontario are not overloaded with moisture. Only a few analyses have been reported which seem to indicate that the cheese usually contain 34 or 35% moisture when at the age of one month or less. But the Canadian reports show that on the average 10.77 pounds of milk (lowest 10.21 lbs., and highest 11.08 lbs.) are required to make one pound of cheese.

I have felt it desirable to call your attention to the firm quality and low moisture content of Canadian cheese, to the system of dairy instructors, the large factories, the pasteurization of whey, the use of the acidimeter and the cleanliness in Canadian factories. I thank you.

AFTERNOON SESSION

PAYMENT FOR MILK ACCORDING TO THE YIELD OF CHEESE

By PROF. J. L. SAMMIS, Madison

The cheese factory should aim to pay each patron according to the yield or weight of cheese obtained from his milk. This is true not only of the cooperative factory, but also of the privately owned factory. At either sort of factory, there is each month a definite sum of money to be distributed among the patrons, and each patron should be paid in proportion to the yield of cheese his milk is capable of producing.

Some factories make cheese with as high a per cent of moisture as 40%, and others with as low a per cent of moisture as 37%, and it can be easily shown that this increase of 3% in the moisture content of the cheese increases the yield about 5%. It should be understood, however, that such an increase in the moisture content and yield of cheese at a factory simply increases the amount of money to be distributed among the patrons, and does not effect the method or plan by which the distribution is made.

In order to have a standard with which to compare payments figured by the pooling system and other methods, we will figure the true cheese making value of several patrons milk, based on the average yield of cheese containing 37% of moisture from milk of different fat content, as determined in New York, at the Geneva Experiment Station from a large number of factory reports.

TABLE 1.—Yield of Cheese from Milk of Different Fat Content.

Per cent fat in milk	Pounds cheese per 100 lbs. milk	Pounds cheese per pound of fat
3.00	8.30	2.77
3.25	8.88	2.75
3.50	9.45	2.70
3.75	10.05	2.67
4.00	10.60	2.65
4.25	11.17	2.63
4.50	11.74	2.61
4.75	12.31	2.59
5.00	12.90	2.58

It is of interest to classify factories into different groups, according to whether the patrons milk fat tests are close together or far apart. Thus, a factory might be found where all the patrons fat tests in a

given month are exactly alike, but no such factory has been found among a great many factory reports collected by the Dairy Department of the University of Wisconsin. There are a few cases in which the highest and lowest fat tests at a factory on a certain month differed by only .2%, as from 3.0% to 3.2%. Only about 5% of all cases studied belong in this class. Third, we have found that in about 20% of all cases studied the highest and lowest patrons' fat tests differ by less than .5%. In the great majority of all cases, the highest and lowest fat tests differ by .5% to 1.5%. Fifth, in about 7% of all payments, occurring at about 15% of all factories, the difference between the highest and lowest test lies between 1.5% and 2.25%. Using the cheese yields given in table 1, we may calculate the payments at factories No. 2, 3, 4 and 5, where the highest and lowest fat tests differ by .2%, .5%, 1.5% and 2% respectively. We will consider only the two patrons, A and B at each factory, whose milk tests as shown in table 2 and who deliver each 100 pounds of milk.

TABLE 2—Payments based on yield compared with Pooling System Payments.

Factory	No. 2	No. 3	No. 4	No. 5
A—Highest patron's fat test....	3.2%	3.5%	4.5%	5.0%
B—Lowest patron's fat test.....	3.0	3.0	3.0	3.0
Yield from 100 lbs. A. milk.....	8.76 lbs.	9.45	11.74	12.90
Yield from 100 lbs. B. milk.....	8.30	8.30	8.30	8.30
Total yield	17.06 lbs.	17.75	20.04	21.20
Net amount due patrons @ 15c..	\$2.559	\$2.6625	\$3.006	\$3.18
A's payment @ 15c per lb. yield.	\$1.314	\$1.4175	\$1.761	\$1.935
B's payment	1.245	1.245	1.245	1.245
Payment by pooling system.....	1.279	1.331	1.503	1.59
Error in pooling system payment				
per 11 lbs. of milk.....	3.14c	8.6c	25.8c	35.5c
Per dollar paid to patrons.....	3.0c	6.5c	17.2c	22.3c

We will calculate first the yield of cheese from each patron's milk in table 2, next the amount of money to be distributed at each factory, at 15c per pound of cheese, and third, the amount of money due each patron according to the yield of cheese which we will consider to be the true value of the milk.

Next, we will calculate as shown at the bottom of table 2, the payments to the same patrons for the same milk, figured according to the pooling system. Comparing the payments figured in these two ways, it is seen that the pooling system payments are wrong by about 3.0 cents on the dollar at factory No. 2 by 6.5 cents on the dollar at factory No. 3 and wrong by 17c at No. 4, and 22 cents on the dollar at factory No. 5. These errors are so large at the factories 3, 4 and 5 that they cannot be tolerated for a single month, and the pooling system would not be used, if the patrons understood these facts. Even at factory No. 2 the error of 3 cents on the dollar is large enough to be avoided, if possible, but only in about 5% of all cases do the patrons'

tests at a factory agree as closely as .2% fat, so that 95% of all payments must be classed as belonging to factories No. 3, 4 and 5 where the use of the pooling system is not permissible. Even if a factory is like No. 2 for one month, there is no certainty that the same condition will hold for the next month, as shown by the reports now on file. No factory can be certain at any time as to whether it is in the same class as factory No. 2 or No. 5, above except by running the Babcock test each month, and having tested the milk—they might as well pay by the test.

It is of interest to observe in table 2, that the errors in payment are much larger at those factories where the patron's tests differ more widely than at those where the tests differ less widely. The same fact will be observed in other cases shown below.

Next, will be shown in table 3, a comparison of payments at these same factories, figured first by the yield as in table 2, and second figured in the usual way from the fat test.

TABLE 3.—*Payments by yield, compared with the usual fat test.*

Factory	No. 2	No. 3	No. 4	No. 5
A—Highest patron's fat test....	3.2%	3.5%	4.5%	5.0%
B—Lowest patron's fat test.....	3.0	3.0	3.0	3.0
Yield from 100 lbs. A milk.....	8.76 lbs.	9.45	11.74	12.90
Yield from 100 lbs. B. milk.....	8.30	8.30	8.30	8.30
Total yield	17.06 lbs.	17.75	20.04	21.20
Net amount due patrons @ 15c..	\$2.559	\$2.6625	\$3.006	\$3.18
A's payment @ 15c per lb. yield.	\$1.314	\$1.4175	\$1.761	\$1.935
B's payment @ 15c per lb. yield.	1.245	1.245	1.245	1.245
Total weight of fat in milk.....	6.21 lbs.	6.5	7.5	8.0
Price per lb. of fat.....	41.27c	40.96c	40.08c	39.75c
A's payment by usual fat method.	\$1.321	\$1.434	\$1.8036	\$1.9875
B's payment by usual fat method.	1.238	1.229	1.2024	1.1925
Difference in payments per				
100 lbs. milk.....	7c	1.6c	4.2c	5.25c
Per dollar paid to patrons.....	.6	1.3	2.6	3.5

From these figures it is seen that the fat test payments figured as usual, are very close to the payments according to yield at those factories where the patrons' fat tests do not differ widely; but at factories like No. 5, where the fat tests differ by 2.0%, the error in payments figured as usual from the fat tests, amounts to 3.5c on the dollar. About 7% of all payments fall into this class, and errors amounting to 3.5c on the dollar are certainly to be avoided if possible.

The question is very frequently asked by factory men and cheese makers as to whether payments figured in the ordinary way from the patrons' fat tests are exactly right at factories where there are both Holstein and other breeds of cows, where some patrons' milk tests high and others test low at the same time. It is stated that for example 4.5% milk will not produce 1.5 times as much cheese as an

equal weight of 3% milk, and table 1 shows that it will not. But the payments figured in the usual way from the fat test would pay 1.5 times as much for 4.5 % milk as for 3.0% milk.

A new method of figuring the payments from the fat test of each patron's milk will now be discussed briefly. This method of figuring has not been used or described by anyone so far as I know, and it is presented here today in order that you may discuss it and find fault with it if you will, and that I may get any suggestions you have to make about it.

First, we will divide the total weight of fat by the total weight of milk which gives the average per cent of fat in all the milk which was received during the month at the factory. Second: we divide the total money to be distributed by the total weight of milk received, which will give the average price per 100 pounds of milk. This price per 100 pounds is to be paid only to those patrons whose milk tests the same as the average test of the factory, which we figured above. Thus looking at factory No. 5 in Table 4, we pay the average price \$1.59 per 100 pounds to those patrons whose milk tests 4.0%, which is the average test for the month at that factory. Other patrons whose milk tests higher than 4.0% will receive more than the average price, and patrons whose milk tests less than the average will receive less than the average price. The city milk supply dealers have been using a somewhat similar method of paying for milk, but they offer a fixed price for what they consider to be milk of average test, and not determine exactly for each month the average test or the average price to be paid for milk having the average test as we are doing here for cheese factory payments.

TABLE 4.—*The average price is paid for milk of average test.*

Factory	No. 2	No. 3	No. 4	No. 5
A—Highest patron's fat test....	3.2%	3.5%	4.5%	5.0%
B—Lowest patron's fat test.....	3.0	3.0	3.0	3.0
Weight of fat received.....	6.2 lbs.	6.5	7.5	8.0
Weight of milk received.....	200	200	200	200
Average fat test of milk rec'd..	3.1%	3.25%	3.75%	4.0%
Total money due patrons.....	\$2.599	\$2.6625	\$3.006	\$3.18
Price per 100 lbs. milk aver.....	1.2995	1.3312	1.503	1.59

It is necessary to determine next, how much the price per 100 pounds of milk should be raised when the fat test of a patron is above the average fat test of the factory. Some factories have arbitrarily chosen to add one cent or two cents per tenth per cent fat above the average test, but it is doubtful if any fixed figure can be arbitrarily chosen which will suit every case. If we assume the value of cheese to the patron is 15 cents a pound, we may compare as in Table 5, the patrons' payments figured by the yield; with payments figured by adding 1, 2, 3, 3½ or 4 cents per tenth per cent fat above the average test, and subtracting similarly when the patrons' test is below the average test. These figures are shown in Table 5.

TABLE 5.—*Payments to other patrons, allowing 1 to 4 cents per tenth per cent fat, above average.*

From Table 2	Factory	No. 2	No. 3	No. 4	No. 5
A's payment @ 15c per lb. yield..		\$1.314	\$1.4175	\$1.761	\$1.935
B's payment @ 15c per lb. yield..		1.245	1.245	1.245	1.245
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A's payment adding 4c per lb fat above the average test.....		\$1.3395	\$1.4312	\$1.803	\$1.99
B's payment deducting 4c per .1% fat below average test.....		1.2595	1.2312	1.203	1.18
<hr/>					
A's payment adding 3½c per .1% fat above the average test.....		\$1.3345	\$1.4197	\$1.7655	\$1.94
B's payment deducting 3½c per .1% fat below the average test.....		1.2645	1.2437	1.2405	1.25
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A's payment adding 3c per .1% fat above the average test.....		\$1.3295	\$1.4062	\$1.728	\$1.89
B's payment deducting 3c per .1% fat below the average test.....		1.2696	1.2562	1.278	1.29
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A's payment adding 2c per .1% fat above the average test.....		\$1.3195	\$1.3812	\$1.653	\$1.79
B's payment deducting 2c per .1% fat below the average test.....		1.2795	1.2812	1.353	1.39
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A's payment adding 1c per .1% fat above the average test.....		\$1.3095	\$1.3562	\$1.578	\$1.69
B's payment deducting 1c per .1% fat above the average test.....		1.2895	1.3062	1.428	1.49

From Table 5 it can be seen that by adding 3½ cents per tenth per cent fat to the price paid for milk of average test, we are able to figure our payments more closely to the "yield" payments, given at the top of the table, than when we use any other figure under these circumstances.

The payments may also be figured by first getting the average price per pound of fat to be paid for fat in milk of average fat test, and then raising the price per pound of fat in a similar way for those patrons whose milk tests above the average; but this method of figuring is not so convenient as the price per pound of fat is a smaller number to figure with than the price per 100 pounds of milk.

The ordinary method of figuring payments from the Babcock test is, entirely satisfactory for nearly all cases, but in perhaps 7% of all payments where the highest and lowest fat tests differ widely, a modified method of figuring payments from the fat tests may be needed. The method here described is offered to you for criticism and discussion.

DISCUSSION

Prof. Doane: It is a well-known fact that up through Sheboygan county up to very recently there has been very little paying by fat test. They seem to have one breed of cattle up there and they would

not pay by the fat test. The lowest patron receives from \$64.00 to \$65.00 returns from his herd—there is no other county in the state where that can be true. The one breed of cattle is a very good idea as they give milk in much larger quantities. I think every county should try to have just one breed of cattle.

Mr. Aderhold: I was familiar with Sheboygan county before Mr. Doane was, and I know they had the black and white cattle there and the Babcock test is not to blame in that county. That is the reason it has kept the Babcock test out of that county. In Jefferson county and around Lake Mills where we have our greatest Holstein cows they are not afraid of the Babcock test, but the men who owned cattle in Sheboygan county have been afraid to use the Babcock test somehow.

Chairman: I have used the Babcock test for thirteen years and am very well satisfied with it. One farmer never got lower than 8c or more to the average for the season. I have another patron who never got closer than 5c to the average—that was in 1907. This farmer who got the 8c received \$38.00 for a cow. The other farmer received \$116.00 for his cows. The man that received the \$38.00 per cow had all scrub cows and now has all black and white ones.

Prof. Sammis: I wanted to be understood in saying that in the larger majority of factories the payment by the Babcock test method has been, I believe, satisfactory to every patron. They are as close as could be obtained by any other method. The great majority of the cheese factories ought to stick to the straight Babcock test, to get the best results.

Member: I find that the pooling system in Sheboygan county has proven very satisfactory to the patrons. They have meetings every now and then, and if they would have found that it was not satisfactory they would have changed to another method.

RULES AND REGULATIONS FOR LICENSES.

By Mr. E. L. ADERHOLD, Madison

The subject of licensing the cheese maker was merely to get an instrument for the better enforcement of the dairy laws that you have been operating under for the last ten years. There are no new dairy laws in force. It is simply an enforcement of the laws you have had to live under and operate under and that you are familiar with. Now the making up of these rules and regulations which the legislature put on us was no small job—I had a hand in it and I assure you it was the biggest job I have had to do for a long time because we have no precedent for it and nothing to go by. There were three things we had to aim to do. We had to make them comprehensive—we had to make them adequate so as to get good results, and we had to make

them reasonable, and I can assure you that the members of the Dairy and Food Commission department are a great deal more anxious that those regulations be reasonable than you are. We do not want to force any unreasonable law or regulations on you. We could have spared ourselves a good deal of work and worry. We could have had just one little paragraph simply requiring that everything in the factory be kept sanitary and that would have covered the whole thing; but instead, we had a conference and called in some of the butter makers and cheese makers and Mr. B. D. White and three members of the Dairy School, and we discussed the rules and regulations with them a whole day. This gave us a little courage for we had at least sixty cheese makers there. After we discussed them for several hours they passed a resolution strongly in favor of them.

If we had just made a rule to keep the factory clean and in a sanitary condition, it would not have meant anything to the people that had bad conditions in their plants. We wanted to make these rules of educational value. We spread the thing out and divided them and then sub-divided them, and now we have thirty-six (36) rules and regulations on the cheese factory regulations. These will be furnished in placard form and placed in the factories so that if any operator or employer will study them, he will know if there are any bad conditions in his factory. This requires further that we furnish the factories with a booklet, which I have here called "Suggestions," which gives you the proper method of keeping your factory in the best condition possible. We simply cover those things that have been so commonly neglected in so many of our factories, so that if you discover from the rules and regulations that in some respects your conditions are not up to these requirements, and do not know the remedy for it, you can perhaps get the remedy by looking in this booklet. One will be furnished to each one of you.

At Marshfield these rules and regulations were very strongly endorsed. Now we do not claim that those rules and regulations are perfect. We knew that you would not all be satisfied with them, but we believe that if you will study them you will approve of same, and we expect that when you are acquainted with them that every factory man who has or intends to operate a clean factory will be governed by them.

I will now read these rules slowly and explain one by one as I go along.

DISCUSSION

There came a heated discussion as to whether the wooden followers were better to use than the metal followers. Some favored the wooden while others thought the metal followers were better. Mr. Aderhold explained why the metal follower is superior to the wooden one and displayed some wooden followers on the stage that proved his argument; he showed them how much harder it was to keep the wooden

followers clean. He said in time he thought all the cheese makers would be using the metal followers because of the convenience of handling, etc.

Chairman: Now I want to call your attention to another thing. We are a great dairy state—we brag about it, we tell how our factories are producing a million dollars worth of cheese every two weeks—that it is no infant industry. A cheese factory is not a thing that springs up over a night—they are permanent institutions. It is one of the best business things we have in Wisconsin—that is, the dairy business. Those factories should be permanent—they should be kept clean. Up to the present time with all the wonderful legislation we thought we had, it has been possible for anybody to make cheese any where and the Dairy and Food Commission had no power to stop it. Some of these awful factories have been closed up, but they have not been forced to keep closed. These rules and regulations will make better conditions. When a man can go ahead and make cheese in a poor old horse barn, that is no regulation. I think that if you gentlemen will just sit down and study out these rules and regulations and take into consideration that the inspectors are not going to ask anything impossible of you—they are willing to be reasonable; and if you will let these rules work out for a year or two, you will see that they are the best thing for the Wisconsin cheese and butter makers.

Member: I run a cheese factory and also make whey butter, and I want to find out how many applications I must make for a license.

Mr. Aderhold: I will let Mr. Lee explain that.

Chairman: The paper which Mr. Weigle was to have read will be read by Mr. Lee on account of Mr. Weigle's illness.

Mr. Lee: Friends and Fellow Cheese Makers, I am very sorry indeed that Dairy and Food Commissioner, Mr. Weigle could not be here in person and read his paper. I was just out to his house and found him in bed. It was a hard thing for him to stay home as he did want to be with you all. The fact is, he did start out to come here but felt so badly he had to turn around and go back home again.

When I left Madison last night at 5:30 every application blank to fill out for a permit to operate a factory to make butter and cheese was mailed out. I realize a large number of butter and cheese makers who have not applied for a license as yet should attend to this at once. We will not be able to get the permit out for two or three weeks as we are so rushed. Every factory should take out a cheese makers' license, a butter makers' license, a cheese operator's license and a butter operator's license.

I have been in the northwestern part of Wisconsin where several meetings in that section have been held and there is not a single cheese maker or cheese operator who has raised a voice against the licensing of cheese makers or operators. They are enthusiastic over the license law.

About a month ago I was asked by a cooperative factory to inspect

their plant and to tell them whether they should repair their plant or to rebuild it. I found it in such a terrible condition that I advised them to rebuild it. After explaining to them how a factory should be kept clean, etc., they decided to build a ten thousand dollar creamery, which if it had not been for the new license law, they would have continued to make butter this year in a place where it was not fit for a man to keep his hogs in.

The helpers do not have to have a license.

OBJECT OF LICENSING FACTORIES AND MAKERS

By Dairy and Food Commissioner, GEO. J. WEIGLE, Madison

The growth of the cheese industry in Wisconsin has been remarkable. It has been one steady progress since the building of the first factory to lessen the burden of the housewife. It is within the memory of the older cheese makers here assembled when the bulk of the cheese was made in the farmer's kitchen. In the early days the factories were not substantial nor were the American makers overly skilled. Some of the cheese makers had followed the profession in their native country across the waters, or possible others had become cheese makers because they followed the footsteps of their fathers. These men as a rule were experts and laid the foundation of what would one day be called the greatest industry of a great state. Little did they realize that cheese factories would replace the mile stones of Green, Fond du Lac, Sheboygan and other counties of the state. They did not expect that the dairy cow and the cheese factories would blaze their way into the northern woods, to assist in making of homes for a contented and happy people. The one thousand mark was passed. A little later the fifteen hundred mark. Then two thousand and no one can predict when and where the last factory will be built. The buildings of the early days were of the pioneer type and too long continued to be used as places where human food was manufactured. Fine modern barns were erected to replace the worthless former structures, but nothing was said about the cheese factory because no one wanted to take the lead in the spending of what could be termed public money. In fact, no one was responsible. Cheese makers grew over night. They could be found everywhere until the remark became common, "The woods are full of cheese makers."

In Europe the cheese maker is often the leader of his community and when the boy is told by his father that a certain man is a cheese maker, it is an inspiration to the boy. It makes him think of higher and of bigger things. In Wisconsin, so I am told, there are communities where the cheese maker stands no higher than the man who does the least unskillful work. In a certain town in our state a maker

made the remark: "I am drawing the highest salary of any man in our village," yet he was not classed with the business and the professional men. For ten years the dairy and food commission, the dairy school and other allied interests have done good work. The inspectors have worked early and late to better conditions. Some of the men have been made to part with their money, once, twice, thrice, yes four and five times for the benefit of the school fund, and yet they return to their places of business no better cheese factory operators or makers. Because of these conditions and better things to come, is why your dairy and food commission introduced and succeeded in passing the licensing law—a law that will make the beginning of a new era in the factory industry of Wisconsin. The few cheese operators who opposed this bill are those who have too long conducted a place of business that would have resulted in a failure had it been inspected by the consumers of cheese. Others were not looking at the licensing law from the viewpoint of the future or have not fully understood its merits.

The large number of men supporting this movement have given to the commission a great deal of encouragement and enthusiasm. In order that we may all have a clearer understanding of the licensing movement and its object, I shall make an attempt to discuss it from each distinct viewpoint.

Better Enforcement of the Dairy Laws

The primary object is to facilitate better enforcement of the laws relating to the operation of butter and cheese factories and of the products there manufactured. It is safe to assume that since the law was signed by the governor, more people have studied the dairy laws than ever before.

Too large a number of factory men, both operators and makers were not familiar with the dairy laws. Hence, in some cases they did not know when a violation occurred; or if they had read the law, it did not go home with sufficient force to make much of an impression.

On the other hand, men that had no respect for law and could not be made to obey it by the payment of a small fine and costs—in fact, it was easier for them to follow the lines of least resistance, when such lines of operation did not interfere with their plans.

The old cheese factory buildings that have long outlived their usefulness and for years have been an eyesore to the community, will be repaired or replaced with a new structure. The excuse that the farmer owned the buildings and consequently nothing will, or can be done, will no longer hold true. The farmers will do their part and will come more than half way when it is put up to them in the right light. It is not the farmer's fault entirely that these old buildings have been used. Why should they give it consideration or make the start when some one was willing to lease or operate the factory in the condition in which it was found or maintained. It was the cheese factory oper-

ator's and maker's fault that human food was made and continued to be made in a factory building that was not in a suitable condition to house their dairy cows.

Sanitary Condition Neglected

Even with the large number of prosecutions that have been made in Wisconsin during the past ten years on account of maintaining cheese factories in a filthy condition, it did not result in clean factories, nor did it result in making that part of the state where prosecutions were most numerous, a territory where nothing but clean factories were to be found. Hence, something more forceful or a measure that would make it possible to say whether or not a person, firm or corporation should operate a cheese factory had to be enacted into law. The person, firm or corporation that cannot manage a factory in such a manner as to have the building in good repair and in such condition that it cannot easily be maintained in a sanitary condition, who is not willing to furnish the maker with the necessary facilities and appliances for the proper cleaning, care and protection of the factory building, equipment and factory grounds, is not a credit to the cheese industry, nor a benefit to a great and growing industry of a great dairy state.

Wisconsin is proud of her great cheese men, fine, well-equipped factories maintained in a clean and sanitary condition, managed by broad-minded men. They could have wrought still greater things if the indifferent man had been cut off years ago. The load has been made harder to haul, hence the wasted energy has hindered progress.

Better Buildings

The license law will result in better buildings being used as cheese factories. It will eliminate the old structures that have long outlived their usefulness. The new buildings as well as the older, well-constructed and well-painted, will add to the wealth of each community. In a large measure land values are based on the value of the farm improvements. In those sections of the state where all farms show lack of prosperity and progress, farms do not bring the money when they change hands. Cheese factories are landmarks in Wisconsin. They advertise our state throughout the nation. Today even along the public highway and transcontinental roads, factories are seen that are a disgrace to the state and an eyesore to the national visitor. These conditions will change; in place of the sooty covered, dilapidated structure with surroundings that are untidy and neglected, one will see places that will compare favorably with our country homes and give to our cheese factories new life. These places will serve as an example of beauty and will furnish topics for discussion at dinner tables and community clubs.

Wisconsin Brand for Good Cheese

Under the old system of operating cheese factories it would be almost impossible to effectively work out a system of branding Wisconsin good cheese. Under the Wisconsin license law this is possible and it is one of the features that will be developed in the near future. At present, to the average consumer, cheese is simply cheese because it was bought at the nearby grocery store. When the good is separated from the inferior article by authority of the state such a demand will be created for cheese that every manufacturer will strive for quality and not quantity. Our great burden today is what to do with the watersoaked high acid and sour cheese. Competition has brought it upon us. When this kind of cheese is so branded it will no longer be made. We must return by the short road at that—to the making of the kind of cheese that was made in Wisconsin ten years ago. Cheesemen—place your shoulders to the wheel of the licensing law and it will be the means of making good cheese and the creating of a demand for your product that has never been equalled. Every up-to-date cheese maker in Wisconsin considers the license law as one of the best measures ever passed by the legislature for his welfare. It is the first time that he has been given the honor and the title of cheese maker by law. Heretofore, there was no chance for distinction. The name of cheese maker carried no weight—not even in his own association. Any one could say "I am a cheese maker."

Fellow cheese makers, do you realize that the licensing law will eliminate from your ranks such as lack experience and ability?

The license law will naturally cut out the incompetent factory manager and give a chance to a better man. Do you realize that it will eliminate from the ranks those who lack the control of the patrons that is necessary to induce them to furnish raw material of good quality.

As already stated, the license law will place the factory and the products therein manufactured on a higher plane. But that is not all. It puts the maker on a much higher level of competency.

This should be your slogan: "Clean factories and clean equipment in charge of a clean, competent maker."

THE LICENSE LAW FROM THE VIEWPOINT OF A CHEESE DEALER

By N. SIMON, JR., Appleton

What makes for the success of the cheese industry, helps all those connected with such industry and just so that which deters the cheese industry, will be a detriment to all those connected with such industry. Every one, be he dealer, maker or farmer, connected with the cheese industry, therefore desires the greatest success for the cheese industry, just as every man desires to make a personal success for himself. As the cheese industry is successful and all those connected with it are prosperous, so too the state gains in its prosperity and every one living in the state in some way becomes benefited.

No one will deny that a higher quality, better finished cheese than that produced by our competitors will inure to the success of the cheese industry of our state. This has been demonstrated by what has been done during the past in our state. Our state through its own legislature and through congressmen representing our state in congress, among them our Hon. S. A. Cook, has taken the foremost position in the enactment of laws making its cheese industry better and protecting it so that an honest product could be marketed without deception to the public. It has built up the best dairy and food commission to be found anywhere, with always an able commissioner assisted by able inspectors, and above all offering education along the best dairying lines through our excellent university at Madison, of which we all feel proud. With all this Wisconsin has become the premier of all states in the cheese industry and today the cheese industry is the most valuable of all industries in the state.

The legislature of 1915, ever true to the motto of our great state "FORWARD" has enacted another law to make the cheese industry better—The License Law. Lawyers, doctors, nurses, accountants, plumbers and many others must first have a license to practice their profession and why should the cheese makers be an exception? By means of a license the unworthy are eliminated and the worthy and able are protected. Furthermore the premises must be licensed by the owner.

Under the old laws when the premises were not kept in proper condition the punishment was merely a nominal fine, and did not always have the desired effect for the reason that unfortunately many makers felt that they could better afford to run a dirty establishment even if necessary to pay a fine, than put and keep their factories in fit and proper condition. It has been proven in other lines of work, such as the oleomargarine and liquor business that licensing facilitates and enforces the law more effectively.

Under this new license law where it is possible to revoke the license and put the man entirely out of business, I believe there will be a greater effort on the part of the cheese makers to keep factories and utensils clean and sanitary.

We have come to look upon Canada as one of the greatest cheese producing countries in the world, and there is no doubt that the Canadians are very successful in producing a high grade quality of cheese. They have adopted the licensing system for cheese factories and cheese makers, and we can well afford to look up to them, and if it is a good thing for Canada, it surely will be no hardship for us.

Where the cheese maker does not own the factory but is employed as a cheese maker by a company or another individual, it was not always possible for him to have his factory put in proper condition to be kept clean. Hereafter with the factory license the owners must see that the same is kept in good shape and that the cheese maker does his part in keeping it in such condition in order not to lose his license to do business. Now it is an inducement to the cheese maker to cooperate with the proprietor in order not to lose his license, while on the other hand, the owners replace the inspectors in insisting on the cheese makers keeping their premises in proper condition so that they do not lose their license.

In a great many instances cheese dealers themselves are the proprietors of factories and now that it will be necessary under the license system for all factory men to consider the depreciation in their property and to keep the same in proper condition, it will be an inducement to cheese dealers to invest more capital in better buildings and better equipment and more modern methods of manufacture.

Under the new law men must have a year's experience in the manufacture of cheese before they can secure a license. This will give us better educated cheese makers who undoubtedly will produce higher quality of cheese and who themselves will actually know the value of the quality of their product. At present many inexperienced men think they are making very good cheese and blame the dealer for complaining on inferior goods, when they themselves do not actually know the grade of goods they are making. This not only causes trouble for themselves and for the dealer, but leaves dissatisfaction in the mind of the consumer and a poor impression of the locality from which the cheese comes.

From now on we expect to make cheese making a profession—not hard labor. We expect to have better educated men, more prosperous and operating in sanitary comfortable, modern factories, which will be an advertisement of the greatest industry in the state of Wisconsin.

Some cheese makers may look upon this law as rather drastic and severe, but I cannot see it from this point of view. It will not effect any cheese maker who is neat and clean in his work; who understands his business and keeps his factory in a sanitary condition. The only one who need complain will be the maker who violates the

law and for the best interest of the cheese industry and the state of Wisconsin, this man should not be in business and the sooner he is put out the better for all concerned.

As the state in the past protected the cheese product itself from the dishonest competition of filled cheese by the enactment of laws, so that state today fosters under its wing of protection by a license, the able and worthy cheese maker from the unworthy cheese maker, and so also the state today protects the clean and sanitary factory from the dirty and unworthy establishment, so that Wisconsin under this law ought to produce a more honest product of higher quality and better finish in licensed, cleaner and more sanitary factories by licensed and more experienced cheese makers, than is produced by our competitors.

THE LICENSE LAW FROM THE VIEWPOINT OF A CHEESE MAKER

By H. A. CHAPLIN, Plymouth

Mr. Chairman, Ladies and Gentlemen, Brother Cheese Makers:

When your secretary wrote me asking me to take up the topic, I fully intended to refuse, but after talking with the boys of my neighborhood, found that although none of them wanted to take it, they all wanted some one to do it, and they seemed to think I might as well be the goat as any one. Now we have had a great deal of talk here today about this license law. We all wanted a license law, but we wanted a law that would protect us as well as help the Dairy and Food Commission. As Mr. Cook said yesterday, we want something that will protect us against dishonest and ignorant competition, but when we talked about that we could not do anything of the kind. The railroads and the street cars have protection, but we may live a lifetime in a community and according to these laws we could not get any protection out of that, you cannot keep a man that gets offended at you from setting a factory up across the road from you. If you make an enemy of one man, he can go into business and knock out your life's work.

You all know of cases, especially in the newer parts of the state where a young man with a little or no experience or knowledge of the business (although they think they know it all) have gone in where there was no need or place for a factory—where there could not be milk enough for a factory, and by big talk succeeded in getting the farmers to build a factory. Of course, when they started to run it, they found conditions they had never heard of; kinds of milk they did not know existed and expenses more than they could account for. The consequences were that in a year or two they left for parts unknown and the newspapers came out with black head lines—"Another cheese

maker absconds—farmers lose between two and three thousand dollars." Now a case of this kind is not your fault or my fault, yet it is a black mark against us as cheese makers.

Another thing, all this talk of sanitation is good. We want sanitary laws, but it is not the only thing we want. We have got to learn to make good cheese too. There are a lot of problems we must sift out. There is one thing with this law that I cannot understand. One man says one thing and another man says another. You say it is going to drive out a certain kind of maker, and then another man says you cannot do it. I think that every man should take an examination whether he has worked in the cheese factory two years or twenty years. In all other lines of business, such as dentists, doctors, druggists, lawyers, plumbers or even a barber, he must take an examination before a competent set of men in their business, before he can do business. But in our law all a man has to do to get a license, is to work twelve months in any kind of a cheese factory and be a good hand with a scrub brush so as to satisfy the inspector of the dairy and food commission that everything about the place is sanitary, and he is called a cheese maker.

You all know that there are factories in this state where they may have heard of a Babcock test, but have never seen one. Where they have never heard of an acidimeter, lactometer or moisture test, where they make good cheese when they get good milk, and poor cheese when the milk is poor, and don't know why; yet a man working twelve months in such a factory *must* be given a license, while a man working say, eleven months in the best equipped factory under the management of the best of makers cannot get a license. Look how much better they have done with the butter makers. It is an acknowledged fact by all, that it takes more skill to make cheese than to make butter; yet a butter maker must have worked twenty-four months in a factory, he must know how to run a Babcock test and how to figure returns. In fact, he must know how to run a creamery, and prove it before he can receive a license. This is the right way, and if the cheese makers were required to do the same things, most of us would be better satisfied with the law. We should put our shoulders to the wheel and get such a law passed at some future time.

I contend one thing too, that there is nothing in this law to help a cheese maker to make better cheese. It helps along to keep things more sanitary, but when it comes to the rules and regulations, there is nothing much to them except what nine-tenths of you are doing every day without this license law. They simply mean "keep clean," and it helps the Dairy and Food Commission to enforce the laws. We pay our license money, not to pay the Dairy and Food Commission, but we help to pay for the prosecutions of some of the cheese makers. I don't believe in prosecutions, except in a few cases. I could go back to more than thirty years ago, when Mr. Aderhold and myself were working for Henry Bamford and tell you of some of the conditions that

existed at that time, and yet we were not considered dirty, in fact, we were considered a little ahead of the other people. We cleaned our apparatus twice a week and did a lot of other extra work, yet there were other things about our factory that could have condemned it. We are all learning year by year and the cheese makers conditions are getting better right along.

Some scientists will tell us, that we are not making as good cheese as we used to—that we are putting in a little more moisture. I will admit that, because I am doing it myself, still at the same time our cheese will go on the market just the same as ever. Mr. Doane says he cannot get any good cheese any where. I wish to say, I also traveled for about six weeks and could not find it; but the dealers told me that it cost too much for them to handle our Wisconsin cheese out west and other places.

Mr. Aderhold will remember, that before the time when "swat the fly" came in, we were killing those flies as fast as we could get them out of the way and we managed to keep them out of our cheese. In fact, we were complimented on our cheese by some of the buyers who said, "there is not one fly in your cheese," yet some of those buyers were not willing to pay any more for our clean cheese than they paid for the other cheese that was not so clean.

We are making cheese for our southern and western trade, and when this terrible war is over and conditions are settled, and especially when we get it a little better advertised, we will get the Americans to eat more cheese.

But the main thing, I for one, do not like about the new law is, that it is a one man law. All the rules and regulations are to be made by the Dairy and Food Commissioner. Now the present Dairy and Food Commissioner may be as they say, a friend of the dairy business; but the law remains the same, and what the next commissioner will be, we do not know. This office is a political office and is liable to change with the changes of administration. Still we are in the hands of the commissioner, and I never have been in favor of a one man rule.

Mr. Aderhold tells us, there has not been a change made in the dairy laws—the license law simply makes it easier for the *Dairy and Food Commission* to enforce the laws, and yet I contend that there is not one thing in it to help or protect us as cheese makers.

Still, it is the law and as such should be obeyed. We are somewhat to blame ourselves for anything in it that we do not like. We should have an organization in every county, and these organizations should be bound together by the state organization with a representative in Madison to look after the interests of the cheese makers. We of Sheboygan county have an organization of this kind with over one hundred members and other counties; like Wood and Clark counties have organizations fully as large, but these are not bound together as they should be.

Again I will say, it is the law—let us give it a fair trial and then get *together* and see that such amendments to it are made as the majority of us think are fair.

DISCUSSION

Mr. Aderhold: I wish to set you right on the matter of persecution and prosecution. The method of inspection that our inspectors use is, they do not find any fault with anything or anybody unless they could show that the places were not clean. The other question that Mr. Chaplin raises in regard to their organization being represented, and that a committee work with the inspectors is a very good plan and can still be done. In fact, when I am out inspecting factories, the more people I have with me the better satisfied I am. If everybody all over the state in both makers and consumers were with us and saw the conditions that we see, you would not say persecution any more. If the inspectors objected to everything that they saw that was not right, they would have to make five times as many prosecutions or they could not hold their jobs.

Mr. Lee: I don't believe that most of these men on the commission are politicians. They are there to attend to business and to educate and help the men in the dairy business in their line of business.

Mr. Aderhold: I want to talk a little on the subject of the *one man power*. The Industrial Commission I notice has given the one man power to regulate the safety appliances in Wisconsin factories and the thing is working out fine. They have been given the power to work out sanitary conditions in bakeries and confectionery stores and they are getting fine results. We are going about this in the same way as they did. We can get better regulations suitable to the situation than the legislature can. What do the men in the legislature know about cheese factories or the conditions that exist there? Why not wait awhile and see how these rules and regulations work out and then if you find there is something that you do not like, we can modify them, and change them when it is necessary, and in that way we can be more responsive than the legislature could.

Mr. Voigt: I would like to say a few words on this subject. When the Dairy and Food Commission had worked out those rules and regulations, I must say this for them, they asked our association, and I also think they asked other associations to go over those rules and to adopt them if they thought they were fit. Delegates from the different associations were there and went over those rules and regulations, and they agreed that they were all right. Now I think a delegate should know what his fellow cheese makers want, and the delegates decided that they could not find anything against them.

Mr. Chaplin: I think we have got to learn to make good cheese and a better cheese and we should have discussion here on that subject and give us a chance to rub shoulders on the different methods

of making cheese. Let us know, if we are putting in too much moisture and tell us about it. If we are not putting in enough—all right, we will learn to put in more.

Mr. Aderhold: I realize that there is a big demand among the cheese men for changing the quality of making cheese. Some of them think there ought to be a longer period of study and others think differently.

Chairman: I do not agree with Mr. Chaplin saying a boy should take the examination. For instance, take some of our young men out of school—they could write a fine examination and then get a diploma, and sometimes they are not good cheese makers; whereas some of the older men that would not pass as good an examination on paper could in reality do better work. I do not think that the boy, no matter how bright he is, who studies cheese making for nine months can make a good cheese. I think they should be made to study at least three years.

THE BUSINESS SIDE OF CHEESE MAKING

By MR. LUTHER NOYES, Muscoda

Ladies and Gentlemen, Members of the Cheese Makers' Association: A few years ago a cheese maker came to me and said that he had just bought a cheese factory and wanted to know if I would like to get his cheese, now, I had been getting the cheese he had made the summer before and had had some trouble with him in regard to cheese that was out of shape, checked rinds and the general make-up of the cheese. His cheese were pretty fair on the inside. I did not like the outside at all. I said to him I would like his cheese all right, but I would like him to come to the warehouse the next spring before he began making cheese and spend a day or two there and that I believed he would be well paid for it.

The next spring he came to the warehouse and stayed there a day or two and I showed him the difference between a well-finished and a poor finished cheese; also how the poor and good finished cheese would look to a customer.

He started his cheese factory and for the past two years, I have received his cheese and during that time, every cheese has been turned in the press and he has not had a checked cheese. I asked him a few weeks ago how he liked the looks of his cheese as compared with what he used to make. "Well," he said, "I am attending to business now, before I was not, and I am finding it pays."

A couple of seasons ago I was surprised to see a cheese maker come into the warehouse right after dinner (he had driven four miles) and it was in the middle of the summer. I said to him, "are you through

making cheese today," and he said he was, he said, "he put the curd to press while it had pinholes in it yet, but he just had to see the base ball game in town today as he had not had a day off that year; and that he would stand the cut. He asked me how much the cut would be. I told him I would come over and look at them the latter end of the week and he paid a little over \$8.00 cut on that day's make. Do you call that good business? He said he guessed he had better stayed at home and made cheese.

Last fall a party came to one of the cheese makers near home, who has an auto and said to him, "it is getting pretty cool now and tomorrow I have about a twenty mile drive to make, if you will take me there and make up your cheese when you get home I will give you as livery hire, \$6.00." The cheese maker thought that would be some easy money so he took him after weighing in his milk. He got back late in the afternoon and made the cheese up that night and of course they were sour and it cost him just \$27.00 cut to make that \$6.00 livery hire—I would like to ask you if you think that is good business?

Last Thanksgiving one of the cheese makers thought he had to get out of the factory on that day in time for turkey at home. He hand-stirred the cheese without cook or acid, and made a cheese that was as soft as butter, and they soured on the shelves and he did not get much over half the price for them, which I do not call very good business.

Another thing a cheese maker should learn, is, to know when he has a good cheese in the curing room, and if there is anything the matter with the cheese, he should know what to do to make it right.

I know a good many cheese makers, who when the buyer comes around and tells him his cheese are a little sweet, or he is running too much acid in the whey, he is very much surprised to find they are off. He will always tell you that the cheese worked pretty well in the vat and he cannot see why they should be off. If he will learn to tell a good cheese when he sees one, and when he has one that is a little off, if he will learn what to do to make the next one right, he will be able to save a good many dollars.

Yield is another important thing in a cheese factory, and one of the things that all cheese makers are working for and is all-right, for it makes money both for the farmers and for themselves; but do not work for yield when it is a detriment to your cheese. Rather get after your patrons and get them to bring better milk, then if you work the milk right the yield will take care of itself.

Pasty cheese in the fall is quite a common thing and it may seem to you that it is a pretty good cheese, but you must remember that a good many of your cheese go south where it is pretty warm and they can not use that kind of a cheese; also a pasty cheese never develops a good flavor and you cannot export that kind of a cheese at all as they will take nothing but a good firm cheese.

You must remember that every pasty or poor cheese that you make

takes away just that much reputation of the state and every good cheese you make adds just that much to it and it is the business or should be, of every cheese maker to add just as much as possible to reputation as the cheese dealers are advertising your cheese to be the finest of Wisconsin cheese, and it is your cheese that must tell the story to the trade.

Your scales that you weigh your cheese on should be right, and you should have them tested and see that they are right, and then when you know that they are right be sure that you weigh your cheese right.

I have known many a row in a cheese factory to be started by being cut on-weights and you can just as well avoid that row if you know how those cheese are weighed in the factory.

It would also be good business for you to make the kind of a cheese the dealer you sell to, wants.

Last summer I wanted a carload of Whites made for a certain time of shipment. I went to one of our cheese makers and he said, "I cannot make whites, the curd does not look right to me." Now I do not call that good business, because if it is our business to make cheese, it is a good business to make the kind of a cheese that will sell the best. If your dealer reports a shortage of "daisies"—make them. If he reports a shortage of "twins" or any other kind in fact—make them, as that will keep a good market on hand most of the time and that is what we want.

LIST OF PRIZE WINNERS

American

	Score
1st—E. B. Williams, Richland Center.....	97½
2nd—P. H. Casper, Bear Creek, Wis.....	97¼
3rd—Fred Swenick, Loyd, Wis.....	97

Round Swiss

1st—Robert Emmenegger, Gratlot, Wis.....	96¾
2nd—Ernest Ziegler, Ramona, Wis.....	95¾
3rd—Jos. Lauber, Woodford, Wis.....	94½

Block Swiss

1st—Rudolph Walti, Barneveld, Wis.....	95¼
2nd—Gottlieb Warren, Mt. Horeb, Wis.....	93½
3rd—Rudolph Urben, Ridgeway, Wis.....	93¼

Brick and Muenster

1st—Fred Baertschi, Mayville, Wis.....	96
2nd—Oswald Schneider, Appleton, Wis.....	95½
3rd—Anton Sutter, Cambria, Wis.....	94¼

Limburger

1st—Carl Frehner, Beloit, Wis.....	95
2nd—Adolph Arn, Monticello, Wis.....	94

HOW THE PRIZE CHEESE WAS MADE

By E. B. WILLIAMS

In making my premium cheese, I want to say that I had good flavored, sanitary milk. It was made on the 19th of May, 1915, when I was receiving about 4,000 pounds of milk per day. About 75% of my milk is kept in 80 pound cans, stirred and put in springs and the balance is cooled and aerated. Always use morning's milk of best quality for starter. My receiving cans are always sterilized before receiving starter milk. I received my milk at about 8:30 in the morning. When the vat was about one-third full, steam was turned on slowly and was heated to 86 degrees when it was set at 55 sec. Monrad test with $3\frac{1}{2}$ ounces of rennet per one thousand pounds of milk and covered. It was then left until it would break clear over the finger, when it was cut four times with wire curd knives, stirred eight minutes and then the steam was turned on very slowly,—heated to 102 firming temperature in one hour and twenty-five minutes from time rennet was added. In about one hour and forty minutes, one-third of the whey was drawn and in two hours and fifteen minutes the balance was run with 15% of acid. It was then stirred through once, when it was sufficiently dry to pile on sides of vat with a good drain where it was left covered until well-matted. Then it was cut in pieces about ten inches wide, turned and one deep returned every ten minutes two deep until it had 5% of acid. Then it was milled, worked thoroughly and salted with $2\frac{1}{2}$ pounds of salt to every 1000 pounds of milk. The cheese was pressed 48 hours, being reversed next morning after being made.

I started in the spring to make cheddars for export and made them all season; so it took a close bodied firm cheese.

As can be seen by this report the increase in the membership of our association has been gratifying, namely, from 362 for the year 1914 to 438 for the year 1915. This is an increase of about 21 per cent in a year.

If you will look back a few years you will find that the increase in membership has been steady, advancing from 292 in the year 1912 to 343 for the year 1913, 362 in 1914 and 438 in the year 1915.

While this increase is gratifying it should continue until every cheese maker in the state is a member.

If you will read Article 1 of our constitution you will find there that "the business purpose and object of this corporation shall be the education of its members for better work in the art of making cheese, the care and management of factories, the sale of their product and the weeding out of incompetency in the business of cheese making."

Until each and every cheese maker in the state has become a member and each and every cheese factory in the state is producing a

strictly first-class article every day of its operation the work of this Association can not be considered completed.

Along this same channel I would urge each and every cheese maker to exhibit cheese at the scoring contest as you have no better means of determining the quality of your cheese as compared with that from other factories or with the cheese ideal, and last year's cheese exhibit was especially gratifying to me because of its size and quality. My only regret in connection with that exhibit was the fact that we did not have a larger pro rata premium fund at our disposal. Because, even though we raised it from \$200 to \$300 it was still inadequate for the number of high scoring cheese we had. For not only was it the largest exhibit of cheese in connection with the annual convention in recent years, but it was the best in quality that has even been assembled for exhibition in the United States.

The pro rata premium fund has this year been further increased, being now \$400.00 which as you know is twice the amount at our disposal for this purpose previous to last year.

Fellow Cheese Makers, I have served you to the best of my ability for some years past, I thank each and every one of you for your generous support and hearty cooperation and once more I want to voice my appreciation of your loyalty.

While the work has been hard and pressing at times, yet I have enjoyed it and it is only because I feel that I can not devote the necessary amount of time to this great cause which is its just due, that I now ask you to relieve me and to give the same loyal support to my successor, that you have accorded me.

REPORT OF DIRECTORS

By J. KARLEN, JR., Monroe

Mr. Chairman, Ladies and Gentlemen of the Convention: All I have to report is that we have examined the books of the secretary and treasurer and find them to be correct.

REPORT OF TREASURER

By T. A. UBBELOHDE, Glenbeulah, Wis.

Receipts.

Balance on hand.....	\$266.32
H. B. Stanz Co. for Convention cheese.....	664.77
J. W. Cross, local sales of cheese.....	26.18
Cash for pro rata premium fund.....	6.00
Deducted from sale of cheese for pro rata fund.....	284.00
Deducted for membership.....	71.00
Memberships, cash, taken at convention.....	341.00
Memberships taken later.....	26.00
Received from advertisers in 1915 convention program as per itemized account.....	335.00
Received from advertisers in 1916 convention program as per itemized account.....	95.00
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	\$2,115.27

Disbursements.

Pro rata premiums.....	\$298.40
Paid exhibitors on cheese.....	696.48
Shortage on exhibit.....	1.61
H. N. Wilson illustrating lecture.....	6.00
A. L. Cross picture of cheese exhibit.....	5.00
W. R. Purdy printing 1914 membership list.....	13.50
W. C. Thomas printing as per bill.....	48.50
Alex Schaller expenses as cheese judge.....	12.60
Fred Marty expenses as cheese judge.....	5.30
J. D. Cannon expenses as cheese judge.....	4.98
E. L. Aderhold expenses as cheese judge.....	3.72
T. A. Ubbelohde expenses as per bill.....	14.24
Republican House hotel bill.....	94.74
E. H. Farrington expenses attending convention..	4.28
H. P. Olson printing programs.....	225.75
Milwaukee Journal to advertising.....	19.60
Wm. Waterstreet expenses as market critic.....	17.21
J. W. Cross expenses as superintendent of cheese exhibit.....	28.90
	<hr/>
	\$1,500.81
Balance on hand.....	<hr/>
	\$614.46

SECRETARY'S REPORT.

By A. T. BRUHN, Spring Green

Mr. President, Fellow Members, Ladies and Gentlemen: I respectfully submit herewith my annual report for the past year:

Balance in state treasury to the credit of the association	\$470.40
Annual state appropriation.....	600.00
	<hr/>
	\$1,070.40

Disbursements Out of State Fund

Schwab Stamp and Seal Co. for badges.....	\$65.00
Geo. Burroughs & Sons for premiums.....	80.00
Louise D. Mason, reporting convention.....	66.00
H. P. Olson, postage on and mailing of programs.	66.61
J. Karlen, Jr., expenses attending meetings.....	10.98
W. R. Purdy, printing membership list.....	15.00
	<hr/>
	\$303.59

Balance in state treasury to credit of association.....	\$766.81
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Receipts for 1915

Balance on hand.....	\$266.32
H. B. Stanz Co. for convention cheese.....	664.77
J. W. Cross, local sales of cheese.....	26.18
Cash for pro rata premium fund.....	6.00
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Republican House hotel bill.....	94.74
E. H. Farrington, expenses attending convention.	4.28

Secretary's Report—Con.

H. P. Olson, printing programs.....	225.75	
Advertising .....	.60	
Wm. Waterstreet, expenses as market critic.....	17.21	
J. W. Cross, superintendent of cheese exhibit....	28.90	
		<hr/>
Total receipts		\$2,115.27
Total disbursements		1,500.81
		<hr/>
Balance on hand.....		\$614.46
Balance to credit of association in state treasury.....		766.81
		<hr/>
Total balance		\$1,381.27

ITEMIZED STATEMENT OF MONEY RECEIVED FROM ADVERTISERS

Damrow Bros., Fond du Lac.....	\$10.00
Wisconsin Dairy Supply Co., Whitewater, Wis.....	15.00
J. B. Ford Co., Wyandotte, Mich.....	10.00
Chr. Hansens Dairy Laboratory, Little Falls, N. Y.....	10.00
Marschall Dairy Laboratory, Madison, Wis.....	20.00
Joseph Dusek & Co., Chicago, Ill.....	10.00
Quincy Market Cold Storage & Warehouse Co., Boston.....	5.00
Wm. J. Haire, Boston, Mass.....	5.00
Carl Marty & Co., Chicago, Ill.....	10.00
The Dairy Record, St. Paul, Minn.....	5.00
Brillion Iron Works, Brillion, Wis.....	5.00
Louis F. Nafis, Chicago, Ill.....	5.00
Plymouth Cheese Co., Plymouth, Wis.....	10.00
Kiel Wooden Ware Co., Kiel, Wis.....	10.00
National Enameling & Stamping Co., Milwaukee.....	10.00
P. J. Schaefer Co., Marshfield, Wis.....	10.00
Woodland Box Co., Woodland, Wis.....	10.00
A. H. Barber Creamery Supply Co., Chicago, Ill.....	10.00
Diamond Crystal Salt Co., St. Clair, Mich.....	10.00
Republican House, Milwaukee, Wis.....	10.00
D. & F. Kusel Co., Watertown, Wis.....	10.00
Schwab Stamp & Seal Co., Milwaukee, Wis.....	5.00
Standard Oil Co., Milwaukee, Wis.....	10.00
Geo. Burroughs & Sons, Milwaukee, Wis.....	10.00
Vilter Mfg. Co., Milwaukee, Wis.....	10.00
DeLaval Separator Co., Chicago, Ill.....	20.00
Union Storage Co., Pittsburg, Pa.....	10.00
H. P. Olsen, Butter, Cheese & Egg Journal.....	5.00
H. J. Grell, Milwaukee, Wis.....	5.00
Fairbanks Morse & Co., Chicago, Ill.....	10.00
American Steam Pump Co., Battle Creek, Mich.....	10.00
Union Transfer Co., Milwaukee, Wis.....	5.00
Two Rivers Plating Works, Two Rivers, Wis.....	10.00
Colonial Salt Co., Akron, Ohio.....	10.00
Sharples Separator Co., Chicago, Ill.....	10.00
Automatic Adding Machine Co., New York.....	5.00
Toledo Fibre Co., Toledo, Ohio.....	5.00
Grunert Cheese Co., Chicago, Ill.....	5.00
Stanley Wooden Ware Co., Stanley, Wis.....	5.00
C. E. Blodgett, Marshfield, Wis.....	10.00

John Habhegger Co., Watertown, Wis.....	\$5.00
J. Hanson Co., Neenah, Wis.....	5.00
M. J. Caspers, Minneapolis, Minn.....	5.00
Lincoln Box Co., Merrill, Wis.....	10.00
Richardson Bros., Sheboygan Falls, Wis.....	10.00
Stoelting Bros., Kiel, Wis.....	10.00
H. L. Mueller, Sheboygan, Wis.....	5.00
S. H. Conover, Sheboygan, Wis.....	5.00
R. L. Frome Mfg. Co., Sheboygan, Wis.....	10.00
Sheboygan Dairy Products Co., Sheboygan, Wis.....	5.00
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	\$430.00

RESOLUTIONS ADOPTED

WHEREAS, It is easier to reach all cheese makers and others interested in the dairy industry in this state by means of local or community organizations, therefore, be it

Resolved, That we as an association favor such organizations which we believe can accomplish much good, not only in a local way, but throughout the state in general, by affiliating with this association; and

WHEREAS, When cheese is sold in the general market there is not sufficient inducement for a cheese maker to produce the finest quality possible, therefore, be it

Resolved, That we favor a system of marketing by which the cheese may be graded and paid for according to its real merit; and

WHEREAS, The late J. H. Monrad was a fearless advocate against any unjust or unfair practice in connection with the dairy industry, and was always helpful in promoting that industry, therefore, be it

Resolved, That this association deeply deplores his demise; and be it further

Resolved, That we express our deepest sympathy and sorrow to the widow and family in their great bereavement. It is further

Resolved, That we sincerely thank the Merchants & Manufacturers' Association of Milwaukee and all others who have helped to make this convention a success.

WILLIAM NISBET,

J. G. AUNE,

JOHN H. PETERS,

Committee on Resolutions.

WISCONSIN CHEESE MAKERS ASSOCIATION

TWENTY-FIFTH ANNUAL MEETING

Armory Building, Fond du Lac, 1917

Officers

CHAS. E. REED, President	Thorp
H. A. CHAPLIN, Vice President	Plymouth
GUS. W. SCHIERECK, Secretary	Plymouth
T. A. UBBELOHDE, Treasurer	Glenbeulah

Directors

JACOB KARLEN, Jr.	Monroe
J. W. CROSS	Milwaukee
H. J. NOYES	Muscoda

Judges of Cheese

W. A. AUSTIN	Green Bay
JAC. JAECKELS	Plymouth
H. L. NOYES	Muscoda
ALEX. SCHALLER	Barneveld
F. C. WESTPHAL	Randolph

Critic

H. C. DAVIS	Plymouth
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Superintendent of Cheese Exhibit

A. A. JONES	Fond du Lac
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Official Organ

THE SHEBOYGAN COUNTY NEWS AND DAIRY MARKET REPORTER.....	
.....	Sheboygan Falls

**PROCEEDINGS OF WISCONSIN CHEESE MAKERS'
ASSOCIATION IN ANNUAL CONVENTION
MILWAUKEE, WIS., 1917.**

The twenty-fifth annual convention of the Wisconsin Cheese-makers Association was called to order in the Armory Building, by President Chas. E. Reed. The address of welcome was given by Mayor J. M. Hchensee, for the city of Fond du Lac, and was responded to by Vice President H. A. Chaplin, of Plymouth.

RESPONSE TO THE ADDRESS OF WELCOME

By H. A. CHAPLIN, Plymouth, Wis.

Mr. President, Mr. Hohensee, Ladies and Gentlemen: I know the hour is late and we have a lot of work to do, so I will make the response as short as possible.

We have listened to the hearty welcome of the Mayor of Fond du Lac and I am sure we all appreciate his kindly welcome extended.

In 1893 I was a member of the Cheese Makers' Association, at the time it was organized, and at that time we tried to get the amendment of the skim cheese bill, and the filled cheese, but I am glad to say that there were men who had backbone enough so that it never went on record.

Today we have the same thing confronting us, namely, the Grell Bill on Skim Cheese that they are going to introduce. In the last publication of the Dairy Market Reporter there was an article written by one of the citizens of Fond du Lac, asking us to go on record as being in favor of skim cheese in shapes and forms of other cheese. I not only hope it won't be done but I hope to see a resolution passed condemning it.

At present they say you cannot make skim cheese because everyone knows it is skim cheese from the form it is made, but why do they want it made in shapes of Longhorns or Young Americas if it is not for the purpose of passing it off as full cream cheese. The oleomargarin men say they do not want to defraud anybody but if oleomar-

garin was colored, many would buy it as butter, the same way with skim cheese.

I also read an article in the Dairy Market Reporter from one of the cheese makers, I hope he is present today, asking two things. One of them was that all members of this Association should be actual cheese makers, the other was that we were doing too much in the educational line and not enough in the protection line and that we should bring that up to be discussed here in the meeting.

I don't believe that is right. I believe that the protection part of it should be taken care of through our local advancement associations. These local advancement associations should get together and could have a head body, composed of a number of men, each one with a local backup. To get this thing started on its way, and to see what can be done, the Sheboygan County Branch of Advancement Association have engaged a room down stairs and we have placed in that room five cheese as an example of what is being done and I want everyone to go and bore those cheese. These cheese will be marked by a practical man as to their quality and I think you will find them a good example of what to do and what not to do.

They are doing work in our local association that we want you to join with us in doing and for that purpose I have been asked to state that we will hold a meeting in this hall tomorrow night after the convention when we will discuss laws that are now being introduced into the legislature. We want you to talk about those things, not only to discuss them but if you can help do anything better, do it, and, if not, do the best you can. At the same time we will discuss other things that come up in our local association.

PRESIDENT'S ANNUAL ADDRESS

By CHAS. E. REED, Thorp, Wis.

Members of the Wisconsin Cheese Makers' Association, Fellow Cheese Makers:—This being my first experience in addressing this grand and great organization, I feel partially at a loss what to say.

However, I wish to thank you for the honor conferred upon me by being elected president, which came to me as a complete surprise, as I was not present at the Milwaukee Convention last year.

The past history of our organization has been gone over so many times that I feel it is unnecessary to say much about it, but let us get at the present and start with our twenty-fifth anniversary to make a history for the future twenty-five years more grand than of the past twenty-five years.

Ex-president Damrow in his last address urged county organization. I think that all will agree with me that his efforts were not in vain,

because several such have sprung up in different parts of the state and all are doing good work along the lines of advancement of the dairy industry.

Central Wisconsin has probably the largest of these associations, with a membership of 166 active members.

I would urge all of you to use your utmost efforts to help the Sheboygan County Association in their efforts to bring about certain legislation in regard to the promiscuous location of factories; such as setting them up in any place regardless of whether detrimental or beneficial to each other.

I would also say a word about the one great watchword of the day, cooperation: Work together, for without that, we, the cheese makers of Wisconsin, will not and cannot thrive.

One of the best methods of bringing this about is the maintenance of these local organizations; but do not get the idea that because the organization has been perfected in your locality that, that is sufficient and each and all who are interested in the cheese making business are not needed to further and better the project, and thereby fall into the too common error of letting a few carry on the work and they reap the benefits.

Remember it is the working members who are most benefited. Stop and weigh yourself in the balance and say, "have I done my share?"

When we have all done this we will have the Wisconsin Cheese Makers Association 3,000 strong; all cooperating one with another and each for all in the one common good, namely, the uplifting of the industry, the manufacturing of a better quality and a more efficient product.

Right here fits in the story of Pat and Mike.

Pat and Mike were traveling on foot to a distant city. Mike became weary and refused to go further. Pat, seeing a sign board a short way off read its inscription and at once exclaimed, "Cheer up, Mike, only 10 miles more, 5 apiece," illustrating that if we each do our share we can make this association, which has done so much for Wisconsin, go on into the future doubling its forces and strength each year until there is not one person in our great state who has any interest at all in this great dairy industry of cheese making who is not an active working member.

An excellent program has been prepared for this meeting, but let each of you take upon yourself to spread the good tidings to your neighbor who perchance stayed at home, and pledge yourself to one more New Year's resolution, which perhaps you have not thought of; that is, get one more to become a member and to attend the next year's convention.

I am certain by the interest shown that this 1917 convention will go down into history as having been, if not the best, one of the best in the life of the association.

Let each and every one of us start at once to help make the next

convention better and stronger and thereby improve and educate ourselves and others we may come in touch with, and improve the quality of, and increase the quantity of, Wisconsin's largest and most important industry; that of manufacturing the finished product from that raw material furnished from the good and so well-known Wisconsin dairy cow, namely; cheese.

DAIRY LAWS OF WISCONSIN AND ACCOMPLISHMENTS

By HON. GEO. J. WEIGLE,

Wisconsin Dairy and Food Commissioner

I am very glad to have this opportunity today of addressing the cheese makers of Wisconsin. This is the first time I have had the pleasure of appearing before you in my official capacity. Much to my regret, illness prevented my being with you last year.

The subject assigned me by your worthy secretary is "Wisconsin Dairy Laws and What They Have Accomplished." The first question is, Why do we have dairy laws. My answer is: First, to promote and develop the great dairy industry of Wisconsin; second to encourage men to take up the work of dairying; third, to prevent from adulteration and unfair competition, thereby offering protection to the honest producer and consumer. When we carefully consider our dairy laws, we find that they were constructed primarily to take care of certain conditions and requirements that existed at the time the laws were passed. They were not made at one time, but as circumstances demanded, to take care of emergencies that arose through natural or unnatural conditions and to regulate the industry as it developed. In the course of this development it was necessary to guard against unfair competition and fraud. The laws were made to protect the dairy industry against men who had no principle or honesty. Their greed for money was such that they cared very little what became of the industry so long as they filled their coffers with gold.

When we consider the dairy industry in its pioneer days and the men who fought its battles under the greatest difficulties without protection from the law, we often wonder how it survived and grew to what it is today. Their laws are an everlasting monument to such men of Wisconsin as Gov. W. D. Hoard, Professor Henry, Professor Babcock, members of congress, members of the legislature, my predecessors in office and members of your organization. These men have red blood in their veins and the backbone to oppose anything and everything that meant harm to the industry. They wanted cheese makers to make cheese out of good cows milk and not out of substances obtained from a rendering plant located somewhere in

Chicago. They wanted the consumer to enjoy a good and wholesome product made from cows' milk and not out of tallow and cottonseed oil. Some of you older members of the association can well remember the battle fought against the filled cheese and its half brother—skimmed milk cheese.

In 1889 under the leadership of Governor Hoard and others, the first laws were enacted for the suppression of the fraudulent manufacture and sale of imitation butter and cheese. Sixty million pounds of cheese were manufactured annually at that time. At no time since has the honest manufacturer met with such competition. These men were loyal to the industry, not for personal gain, but for the love of this great dairy industry, of Wisconsin. They did not want a dishonest product sold sailing under the flag of an honest product, which reminds me of the story of a little boy selling lemonade, one kind for two cents a glass and another for three cents. A preacher came along and bought a glass of the three cent kind. Still being thirsty, he thought he would try the two-cent kind. It tasted the same and out of curiosity he asked the boy why he asked two cents for one kind and three cents for the other. "Well, you see, Mister, the boy answered, the two cent kind is from the pail the dog fell in." Under the term dog I mean inferior product. The law has put a guard around the product so that the dog cannot fall into it, but if it does fall into it intentionally or by accident, the public must be so informed. I know men cannot be made honest by law, but dishonesty can be made to pay the penalty if it tries to steal the livery of honest products for dishonest purposes.

This fight against the counterfeiters brought about the standardization of butter fat in cheese. Then came the sanitary laws, the over-reading and underreading of the Babcock test and other laws of minor importance and finally the license law which was passed by the last legislature concerning which I shall speak briefly.

The object and purpose of the license law was to bring about better working conditions for the makers, to interest men who had ability and experience, and to weed out those who lacked ability and experience and finally to bring about a higher standard of our dairy products. I know some of the operators and makers had little faith in the license law. They were skeptical as to its practicability, but as the proof of the pudding is in the eating, we are now able to judge whether these men were justified in their belief.

The license law has been in force but a short time, and I want to say that from the reports we have received at our office, it has accomplished more than we anticipated. In many letters received, we are informed that it has done more for the butter and cheese industry than any dairy law ever enacted. It is constructive and vital in building up this great industry. The operator and maker have become better acquainted with the dairy laws of the state, which in itself is an education to them both. The license law has brought the dairy

and food department in closer touch with every creamery and cheese factory and every maker in the state, and has shown them we are interested in their problems.

On my inspection trip through a part of the state this summer, I was pleased to see factories that were formerly mere shacks now replaced by substantial buildings. It is not always necessary that new buildings be erected. We saw some factories that were converted from old, dilapidated buildings into clean modern factories, which fact demonstrates plainly what a little paint, interest, and effort can do to improve workrooms and premises. I remember in particular one factory in Dodge county where a liberal application of white paint had transformed what was formerly a dreary place into a bright and cheerful workroom. It was a pleasure indeed to go into this factory and note the complete transformation. When I went through the state about a year ago, I observed some factory premises very carelessly kept, and old implements, boxes, barrels, cans and refuse were scattered about, presenting a most untidy appearance. This reminded me of the old German adage, "By your front yard is your character judged." In some places factory premises such as I have described were cleaned up, the ground sodded, and flower beds were made. Such yards were a credit to the maker and had a moral effect upon the patrons and the community in which the factory was located. It was gratifying to see the splendid conditions of factories and to note the response on the part of the operators and makers. All whom I visited were proud to keep their factories and utensils clean and sanitary. I defy any state in the Union, without fear of contradiction, to show up cleaner factories than we have here in Wisconsin.

I want to congratulate the operators and makers for their untiring efforts to bring about a condition of which the state of Wisconsin may be justly proud. However, this is but the beginning of the good work; let us continue to improve until we have reached the highest plane of perfection.

One operator in a personal interview said: "I spent fifteen hundred dollars on my factory to comply with the license law. I think it needed it and I would not go back to the old method if it cost me double that amount." Another spent nine hundred dollars, another six hundred, and I can mention many instances of a similar nature. All were pleased that Wisconsin has a law of this kind. More progress has been made this year than ever before. It is true that there are some factories and makers that have not complied. It was my unpleasant duty to close some factories and deny licenses to some makers. We were patient and labored with them a long time. They showed no willingness to respond to our appeals. The object of the law was not to create unnecessary hardship. All it required was character, ability and cleanliness. The operator or maker who does not want to comply with the license law is generally a man who is sliding backward, and who himself is greasing the slide. Some men have no con-

ception of cleanliness, and as I said before, are a detriment to the industry and should be eliminated. They are the ones that are apt to say that a successful maker or operator is so because he is lucky. Fortune may find a pot for you, but your own industry and untiring efforts must make it boil. The successful man is the one who gets up from his knees and starts in to help answer his own prayers.

The trouble is we are generally ruled by our habits. It takes more power to stop a man from doing what he has been in the habit of doing than to take a new man and train him. As Elbert Hubbard said: "First we form our habits, and then our habits form us." We are what we are on account of what we have thought, said and done. After having done a thing once, there is a tendency in the brain to do it again. If continued we get the habit, that is, we do the thing without thinking, as a matter of course. Thus the habits become second nature. We are slaves to habit-willing slaves—not only to bad habits but to good ones. We cultivate habits; let us be careful that we cultivate good habits. Thinking is habit; as a man thinketh in his heart, so is he. He becomes the actual picture of his own thoughts. When a maker tells me, "Well my grandfather did this fifty years ago and no one was ever hurt" that man needs close inspection. The world is not today what it was fifty years ago. We are progressing every day, and it is just as necessary for every cheese maker to keep up with the times as it is for every other business man.

One of the greatest enemies the dairy industry has today is the indifferent man, the I-don't-care man, the one who is careless. Carelessness in all lines of work has caused more poverty, ruin and death in the world than the great war in Europe, and is more powerful than the combined armies of the world. Carelessness spares none, rich or poor, young or old, strong or weak. Every man should and must fight carelessness if he wants to be successful.

The license law is but a forerunner of what is going to be asked by the federal government sooner or later. We must look toward the future. We must be prepared to meet these demands, and we will be prepared if we follow out this law.

It is true you are all prosperous now, but unnaturally so, because of the world war now going on, which is causing the great demand for our products abroad, but when this war is over and conditions again become normal, then what? Competition will again be keen. We know that cheese factories are springing up everywhere, and right here I want to sound a warning to you. Don't let the high prices which you are receiving run away with your judgment. Whenever you build a cheese factory in a community where there already is one and which is able to take care of the milk produced, you are weakening the factory already established and you are limiting the number of factories in each community. It is economy; it means more money for your patrons.

I believe in organization. I have little respect for a man who does

not belong to an association. Something is wrong with him; he needs watching. We must work together. We must be loyal to ourselves; we must be loyal to our fellowmen. We must be loyal to our association and loyal to our industry, for in this way only can we expect to accomplish anything, for in unity there is strength. In this way only can Wisconsin maintain her supremacy as a dairy State.

I want to say to you cheese makers, be loyal to your calling; be loyal to your patrons and your patrons will be loyal to you. There is no man so great or so small a part of any structure or any organization that he can afford to ignore the significance of loyalty. It brings out and presses in deep the fact of individual importance. Let us all be loyal to our community, loyal to our state and loyal to our government. It will result in mutual happiness and prosperity. I thank you.

WHAT BENEFIT IS THE LICENSE LAW TO THE CHEESE MAKER AND HOW COULD THE LICENSE LAW BE IMPROVED

By O. J. SCHWANTES, Clintonville, Wis.

Mr. President, Ladies and Gentlemen: I have not been working to get before this audience to tell them just how the license law should be improved but I have been working to get this question in the program, to give every person the same chance to express their opinion.

The subject that has been given me is "What benefit is the license law to the cheese maker" and this question I could answer with a few words by saying it is no benefit to a good cheese maker, it has not been, but the old saying is, there is never a big loss but what there is a little gain. I will say, however, there are some benefited by the license law.

The question is how could it be improved? I will give you my opinion to the best of my ability and I want everyone to express their opinion. The cheese makers must get together and work to improve the quality of the cheese, as we have heard at our last convention, that we could get a much higher price per pound if Wisconsin would put out a better grade of cheese; and nearly all cheese makers here will say that cannot be done to improve the quality. It is in yield we have to keep up with our neighboring factory. That is why we are in need of a law to force the cheese makers to make a better quality and be protected by law. Now we have had one year's experience of the license law, but the question is, of what benefit is it? It has cost the cheese makers thousands of dollars to get the licenses, it has brought about more sanitary conditions but the quality of cheese is not improved, as dealers say. If a man can show up 12 months experience he can get a license and, according to law, can make all kinds of cheese.

Up to the present time the patrons of a cheese factory did not appreciate a good cheese maker. If he makes good cheese and works for quality, that is not satisfactory, but the cheese maker who works for yield, and makes a big quantity, he is the good man for the farmer today, but they do not realize what damage that is on the price per pound of cheese.

The cheese maker should be compelled by law to make good cheese, to a certain extent, but the patrons should be compelled to bring good milk. Most of us know that it only takes a little off grade milk to spoil the cheese, and the off grade milk is often found where the farmer has the same distance to more than one factory. If one cheese maker will not take the off grade milk the other one will, and will be glad to get it.

It would not be more than right that if a patron wants to change and take the milk to another factory to compel him by law to give a reason for leaving that factory and if the reasons are because he came too late, brought dirty or sour milk, or because he is getting too low a test, they ought not to take his milk. On the other hand we have what might be called boycott. This is when a cheese maker builds within three miles of another factory. During the life of the license law such a factory should be compelled by law to receive at least 4,000 pounds of milk. It is almost impossible for a cheese maker to make good cheese if they do not get a sufficient amount of milk. In many cases off grade cheese is the cause of a cheese maker not receiving enough milk, where the factories are too close together, or where the cheese maker is working for quantity and not quality, and that is wrong. The cheese maker should be compelled by law to work for quality and get protection by law that they can do it.

The article in the Dairy Market Reporter to prepare a bill to bring before the legislature would be a benefit to the cheese makers and I think there should be a committee appointed to draw a resolution to that effect. I thank you.

DISCUSSION

CHAIRMAN: Have you any questions to ask?

MEMBER: I would like to ask the speaker if he would like to stick himself into a factory of 4,000 pounds and hold out.

MR. SCHWANTES: That is the next question. No, I would not, but what have we got with a lot of factories going up within two miles from factories of not over 4,000 pounds, splitting up the territory and still making it more disagreeable. How are they going to keep it up? It will put some out of business.

MEMBER: I would like to ask you, does this license law do us a lot of good? We have spent thousands of dollars and we are trying to get some of it back. We can't do it if we have factories two or three miles apart.

MR. LEE: While I am here this afternoon there are a few things of importance that I would like to bring out that would help us materially in the office in handling the licenses. Up to Nov. 1st there were about 200 cheese makers in Wisconsin that applied for a license to make cheese and we could not find them. I can see where some of them changed their address between the time when the inspector called on the factory. The inspectors started out on April 17th. These nine men forwarded to the office at Madison 5,600 factory inspections and there are 2,340 cheese factories in Wisconsin, including 5 factories making cottage cheese. If a man takes out an application he ought to keep us posted as to where he happens to be. The cheese makers by this time have received a renewal card, that comes back to the office, it gives the number of the license, his address and with that renewal card \$1.00. It may take some time to get the renewal cards back. A number of these makers, creamery operators and cheese factory operators hand theirs over to the rural mail carrier with a dollar bill with the request that the rural mail carrier make out a money order payable to the Dairy and Food Commissioner. We have received dozens of letters unsealed. Some of them might be lost, we don't know. These are things that come and are worth consideration. If a factory operator takes out a license located on this block, a license is issued on this one block and when he sells that factory his license is destroyed. We have issued all the applications for Clark county and we have twice as many in Clark county as there are actually in operation. I think our inspectors can bear us out in that, one factory was operated by five different men during the past year. It is a difficult matter to handle those things unless you men are fair to us. If you know a factory is sold, please notify us, give us the name of the cheese factory. You men can help us out materially and we realize that you have cooperated with us and we appreciate it very much.

CHAIRMAN: Gentlemen, are you through discussing the license law, is there someone else who has anything to say on that subject?

MR. WEIGLE: I would be glad to hear every cheese maker ask any question. We want to put you right on the license law, it is not to be a hardship to anyone but a protection to the clean cheese factories. Is there any question, just fire away.

MR. LEE: From now on till the first of May our department is going to make a survey of the milk conditions throughout the State of Wisconsin. We are going to take city milk inspection first. We are going to help you cheese makers materially, and we are glad to help you, but we are very busy, you have to give us plenty of time.

MR. DAVIES: I want to bring one more thought to your mind about the license law. The misunderstanding on your part as to what you thought was a hardship has brought you to work together and you have accomplished more than ever before, and in that one point it is doing more good than you ever got out of anything.

MEMBER: I think this gentleman is right. I think we ought to

try to force this law to help and protect us. The license is a very good thing, provided we can get protected.

MEMBER: I know of a young man who made cheese in December and he only had five months experience and he started in the first of January again without a license, and is running today.

MR. LEE: You must remember we have 2400 factories and sometimes someone will slip by. This law is only one year in force, you must give this law a chance to show what it can do for you. Don't blame the law when you notify us to that effect, we will be glad to hear from you and get after them.

MEMBER: What would you do with such a cheese maker?

MR. LEE: Prosecute him.

MEMBER: I want to ask Mr. Weigle if it is the inspector's duty to look after these things, if the inspector should report.

MR. WEIGLE: Surely.

MEMBER: That factory, I think, was reported by our association. The inspector knows about it. That young man said it was no law, it was just a rule.

MR. WEIGLE: He better not try it, he has got to have twelve months experience.

MRS. DIX: I can give you the name of the man in the northern part of the state. Mr. Schultz has been denied a license and I understand he is running his factory with all the objections you gave him.

MR. WEIGLE: We have only nine or ten inspectors—but he will be prosecuted.

MEMBER: Mr. Schultz had another man with a license working for him for over three months.

MR. SOUTHARD: That man's license was revoked on my inspection report, he was to hire a maker or get out of the factory. I told him he would be prosecuted if I found him working alone in the factory. I have been there several times since but never found him alone.

MEMBER: If a cheese maker takes out a license and just holds the license and another man makes the cheese for him, what if the inspector comes around and the other man makes the cheese?

MR. LEE: If you know that is being done, you could help us by notifying us. Why do you want to keep a man out of his own factory? If a man owns the factory, has not had enough experience and he hires another man, we cannot determine who is the helper or who is the cheese maker, as long as he has a licensed cheese maker in the factory. We cannot go any further than the law calls for and that is reasonable. If I cannot get a license, I have a right to hire a cheese maker who can. Be reasonable, it takes a little time. Mr. Southard has a large territory, you people don't realize that. Say a man bought a certain cheese factory in Manitowoc county. How do we know unless someone notifies us that that man is making cheese and has not applied for a permit to make cheese or run a factory. Do you want us to prosecute that man, put him out of business at once? We

must admit that we have a few rascals in the cheese business, as well as in other places, there are always some who try to evade the law. One cheese maker in Wisconsin made cheese for 18 years, was put out of the business, refused a license. That man applied for a job to run a cheese factory in Idaho. They wrote to us, we told them he was refused a license here and he was refused there, he had no chance in Idaho. You men in the cheese business cannot comprehend for one minute what we have to contend with.

MEMBER: If a person is gone for a day or two, would your helper have to be a licensed man?

MR. LEE: No.

MEMBER: If the licensed maker got sick and his helper had six months experience and he takes charge of the factory and makes cheese, he can get no maker at that season of the year, are you going to make him close down the factory for the reason that he is not a licensed man? This man is doing good work, the patrons are very well satisfied.

MR. LEE: There is a student from the Dairy School, he is No. 1 in his classes, he says I left a farm last summer and hired out as a helper in a creamery. They have a licensed butter maker, getting \$120.00 a month. He says I am a friend of five of the directors of that creamery. If you could stretch the requirements so that I could get a license I could get that job, and the directors say I am a better butter maker than the man they have there. The man looked like a good man but if we should allow this man to take charge of the creamery in this case, if we granted a license to that man, it would be a disgrace to the butter makers in Wisconsin.

MEMBER: I have been in the cheese business for 26 years. I think the license law is about as good a law as the state ever made, but it is lame on one spot and that is, the cheese maker has not the right protection, after he has put his hard earned money in the business. Write to the legislature about the proposed bill. Get in touch with your senator and assemblyman and ask them to vote for that bill. We will do all we can towards it.

MEMBER: I think every cheese maker should make up a petition and get all the farmers to sign it and send it to your assemblyman, show him what the farmers want.

MEMBER: As a rule the farmers and cheese makers work in harmony, in that case it would be all right, but I have seen where the cheese maker put \$1400.00 into a factory, it was no price sure enough, another man came along and said we will give you \$700.00 or build across the road. The cheese maker would have to take the \$700.00. Another man would come along and say if you will not sell this factory to me I will build between the two and it will spoil them all.

MR. DAVIS: This bill is in the course of construction. It was our intention when completed and introduced the number would be given

us so that we could get a copy of the bill and send it to each local organization with a request to help us force this bill.

MR. SCOTT: You have all been notified of the meeting tomorrow night. That meeting is for the purpose of furnishing ways and means to push this bill through.

MEMBER: I am one of those fellows that believe only half that I see and nothing that I hear. On the train, this morning, some boys were talking about the license law, they didn't know I was a cheese maker. They were talking about an inspector coming to a factory where the operator could not get a license on account of unsanitary conditions in the factory. The inspector wrote the Dairy and Food Commission and that operator was taken into court and paid a fine but that he still operated the factory.

MR. LEE: I want to say this, that the judge, at the recommendation of the inspector, can fine the man and revoke his license or only fine him. If the fellow is making cheese today, his factory can be shut down. Can you give me the name of the man?

MEMBER: No, I did not want to be inquisitive, but I wanted to know if that could be true.

MR. SCOTT: A number of cheese makers have asked me this question. Suppose the Dairy and Food Commission revokes a man's license, can he come back and make another application if he complies with the law?

MR. LEE: A cheese maker in Northern Wisconsin was refused a license because the inspector in that territory inspected the factory two or three times and found unsanitary conditions. The license was refused on the 24th of November and he stepped out of the factory. He came back and said he made a mistake and wanted to know if he could not try it over again this year and if we found him in another factory that was not sanitary we could take his license from him. What are you going to do with a man like that. If he realizes he made a mistake and is willing to try and do better, give that man another chance.

MEMBER: We were supposed to get a set of rules, I did not get any.

MR. LEE: We cannot always say what became of them. When a letter comes into our office for an application blank a copy of the Dairy Laws goes out with the application blank. It may be possible that we skipped one. Our inspectors cannot go around and nail these up. We cannot go around to 2,400 cheese factories and put them up.

PROPOSED BILL ON FACTORY COMPETITION

Read by the Chairman.

Section 1. No permit or license, as provided in section 1410b—2 shall be issued to operate any butter factory or cheese factory which was not operated or which was not constructed and equipped ready for operation prior to the first day of January, 1918, unless the person, firm or corporation owning or seeking to operate such factory shall have secured a construction permit prior to the application for the license to operate provided for therein.

Section 2. Application for such construction permit shall be made upon blanks furnished by the Dairy and Food Commissioner and shall set forth the name or names of the applicant or applicants, the proposed location of the factory, the population of the town, village or city in which it is to be located, an estimate of the number of milch cows owned within a radius of six miles of such proposed location, the name, location, and an estimate of the output of every other butter factory and cheese factory within such radius of six miles of such proposed location, the investment proposed for such butter or cheese factory and by whom and how its capital is to be furnished, held and owned and such other information as shall be required by the said Dairy and Food Commissioner as of value to him in carrying out the provision of sections.

Section 3. The dairy and food commissioner shall forthwith and within sixty days from the date of the filing of the application determine, from the best sources of information at his command and by such investigation as may be necessary, whether public convenience and advantage will be promoted by allowing such proposed factory to be constructed and operated.

Section 4. If the dairy and food commissioner shall determine as a result of such investigation that public convenience and advantage will be promoted by the construction and operation of such factory he shall approve such application and issue to the applicant or applicants, a construction permit authorizing the construction and equipment of such butter factory or cheese factory; otherwise he shall disapprove of such application and such factory shall not thereafter be allowed to operate.

Section 5. The construction permit herein referred to shall be null and void unless the factory, the construction and equipment of which is referred to therein, shall have been constructed and equipped ready for operation within twelve months after the date of such construction permit.

PROPOSED BILL ON CHEESE MOISTURE

Read by Chairman.

A Bill to provide that American or Cheddar cheese shall not contain to exceed forty per cent of moisture.

Section 1. That portion of section 4601a—4 referring to cheese and denominated (9) is amended to read: (Section 4601—4a) (9) Cheese is the sound, solid and ripened product made from milk or cream by coagulating the casein thereof with rennet, pepsin or lactic acid, with or without the addition of ripening ferments and seasoning or added coloring matter, and contains, in the water free substance, not less than fifty per cent of milk fat, and cheese known as American or Cheddar cheese not more than forty per cent of moisture, except that Emmenthaler cheese, commonly known as domestic Swiss cheese, shall contain in the water free substance, not less than forty-three per cent of milk fat.

Skim milk cheese is the sound, solid and ripened product made from skim milk by coagulating the casein thereof with rennet, pepsin or lactic acid, with or without the addition of ripening ferments and seasoning.

Goat's milk cheese, ewe's milk cheese, et cetera, are the sound, ripened products made from the milks of the animals specified by coagulating the casein thereof with or without the addition of ripening ferments and seasoning.

Section 2. This act takes effect after passage and publication.

THE BENEFITS OF DISTRICT ORGANIZATION

By F. J. KABAT, Greenleaf, Wis.

District organization is necessary to educate cheese makers as to what can be accomplished by state organization. Such branches get better in touch with each cheese maker throughout the state, the same as in fraternal associations, they branch out into cities, have their officers and rules and regulations. They urge their members, the same as it is in the cheese makers association, or rather district organization. By having this organization in every town it will enlarge our state organization.

District organization is the same as if you build a stone wall. You get a big number of stones and get a man to go to work, by putting stone upon stone you will get a strong wall; the same way with district organization. The officers of the county, and their members, will go out

and try and get their neighbors to join them so as to make the state organization the strongest body in Wisconsin, the same as the stones will make the wall strong.

If we are strong enough we can help ourselves out of our troubles. District organization will bring the members together at least twelve times a year, they generally have a monthly meeting. There they meet one another and discuss their troubles, get different ideas about cheese making, and if they are in trouble they can help one another. It will make them feel more like brothers and sisters, instead of trying to pierce one another with a lance. We have seen where one would turn in a different direction so he would not have to meet another cheese maker and speak to him; where one would try to get the milk from your patrons and put you out of business. We have such makers right in our own neighborhood.

We organized our branch Sept. 6th, 1916 and now have 50 members. When we asked the makers to join they asked, 'what will you do for us?' and we told them we will do exactly what you want us to do, or at least try to. If they try not to organize we can do nothing. What can one man do? Some said, the organizations are trying to get the moisture test. I do not see that they are trying to get it, but it would be a good thing to have. Another cheese maker would say, well we will wait and see what the organization will do. That part is all right but if they all say so where is the organization going to start, one man alone cannot start it, and the organization is the only way to fight our troubles. Take the railroad men, bankers, telephone men, what position would they be in if they did not organize?

We can see why some do not want to join the organization, they are afraid they can not produce enough mush, not enough yield. It is all right to get a good yield, we've got to work for yield, but also for the quality and our protection, if we won't, nobody will.

We had fellows come up and say, we will see what you derive from your organization and by that they are putting us off because we must have members in order to be a strong body. They are afraid the farmer is going to shut down on them.

When we were notified that Mr. Scott, Mr. Chaplin and Mr. Davis were coming to Greenleaf to organize a branch, one of the same men who told me we were working for the moisture test, sent me a card saying "the cheese makers and buyers were going to organize and in a couple of years they were going to have all the factories." About noon one of my patrons came over, about four miles from my place, purposely to find out what we were going to do. I told him I didn't know, we were going to have a good time. He said he "heard we were going to organize with the cheese buyers and that would leave everything in our hands". I told him that was the only way because they had it all in their hands now.

We are giving them a chance to inspect our by-laws, all we look for is protection and who is going to give it to us if we don't go after it.

Yesterday morning we had a little difficulty with test. I am trying to give the man what belongs to him but I cannot give him any more. He says, "what is the matter with my milk?" I told him I didn't know, he was taking care of it.

If we can organize and get all the cheese makers in Wisconsin into it, I don't believe we would have any trouble, have one try to get the best of his neighbor, draw his milk away and underread or overread a test.

This is all I can explain to you about district organization.

SWISS CHEESE MAKING

By EMIL FORSTER, Blue Mounds, Wis.

This was the subject of an interesting paper of which some translated extracts are as follows.

Cleanliness on the part of the farmer as well as the cheese maker is of the first importance, as the best quality of milk is necessary in order to get good cheese. It is therefore the duty of the factory man to set for the farmer an example of cleanliness. For Swiss cheese making, great care must be used in the making of good whey rennet. For this purpose, fill a two-quart jar with fresh, sweet whey at 28 degrees, Reaumur, add the right amount of calf stomach, and leave 18-24 hours in a warm room. The liquid is then strained, and left 6-12 hours in a cool room, before being used.

The kettle of good quality milk at 27-28 degrees, R., and the strength of the rennet is then tested, and enough added so that the milk will thicken in 25-30 minutes, so as to split well over the finger.

The top layer of the thick milk is then taken up in the wooden scoop and turned over, after which the kettle of curd is cut into columns with the wire harp. Then stir slowly across the top with the scoop for 5-10 minutes, so as to bring the lower layers of thick milk to the top, and make all of uniform temperature.

The curd is then stirred with the harp for 45-60 minutes at least, if the milk is sound. Leave to stand 5-7 minutes, and then stir well and heat up to 40-43 degrees, R. in not less than 20-25 minutes. The final stirring should continue for 40-60 minutes. The longer the curd is stirred, the finer it will be in texture. The longer the curd is worked, the better will it become "open" in a reasonable time.

When the curd is found by test to be properly dry, it is taken out of the kettle, and at once pressed. The first time, it is pressed only 5-7 minutes, and later it is turned after one and one-half to two hours. The evening's cheese is turned two or three times before it is left at rest for the night.

After pressing 24 hours, the cheese is left 3 days in the salt brine

tank, then laid on the shelf, washed and turned each week at least three or four times.

If the weather is cool, the young cheese are left not more than 14 days in the cool room, and is then brought into the warm room for the curing, and fermentation. The warm room must be kept at a uniform temperature, not above 25-27 degrees. - If the cellar is dry, steam heat is preferable, or else the floor is sprinkled with water daily. Any cheese which begin to ferment too rapidly are moved to a cooler place, in the room. Ordinarily the cheese is well opened in 4-6 weeks time, after which it is taken to a cooler room, where the fermentation stops, and the resulting cheese has good "eyes."

With defective milk, the method of making must be varied to produce a cheese fit for food.

LIMBURGER AS IT IS WELL MADE

By CARL FREHNER, Beloit, Wis.

Limburger cheese is made from sweet milk. It takes the same kind of milk as it will for making Brick cheese. The same kind of steam vat, curd knife, draining tables, molds are used for Limburger as for Brick cheese.

The milk is set 96 degrees in the summertime and at 98-100 degrees in the Spring and late in the season when it is colder. Here is the point where most mistakes are made, by setting the milk too cold.

I use from 3 to 3½ ounces of rennet extract for every 1000 lbs. of milk. It will take from 20-25 minutes to coagulate the milk.

The curd is ready to cut when it will break clean from the finger and is cut coarser than for Brick cheese. When the curd is cut let it rest for about 10 minutes until some green whey is on top. The curd is worked with the scoop for about 10 minutes, then work begins with the rake, the same way as for American or Brick cheese, only slower for 25 minutes, longer in the summer time. Let the curd settle for 10 minutes and drain the whey off about two-thirds. Then stir the curd and whey with a rake and fill the molds.

The first turning of the cheese is when the cheese is taken in the cellar and then it is turned once more in the evening. Next morning the cheese will be cut in 5 X 5 inch square blocks and will be salted, then salted again in 24 hours. 12-24 hours after salting the cheese is taken to the curing cellar where the cheese is rubbed by hand about three times a week.

The temperature of the cellar should be about 65-70 degrees but in the summertime it will be from 75-80 degrees and often times more. Then is the time to work the curd longer in the vat, something that all cheese makers ought to know.

When the cheese show a nice yellow color they are ready to be packed. For packing material we use the best parchment, manila paper and tinfoil.

All you have to do then is to see that you get a good price for it on the market.

BRICK CHEESE MAKING

By FRED SCHULER, Ridgeway, Wis.

Mr. President, Ladies and Gentlemen: The topic assigned to me by your Secretary is Brick Cheese. It is not my intention to make a long speech covering the various methods of making brick cheese, but rather to tell some of my own experiences with brick cheese.

With brick cheese it is just as with any other kind of cheese; a clean, unadulterated milk from a healthy herd of cows is needed to make a good product.

Very often it happens when something goes wrong at the factory the cheese maker is the first one to be blamed. I must say that at most times the blame is misplaced. To tell one of my own experiences of last July, when I was troubled for about three days with what we call "off flavored cheese." When I found who brought the milk I went to his pasture and found it infested with several kinds of obnoxious weeds which tend to give cheese an off flavor.

There is one other thing that needs mention here and that is cleanliness. Without this no one can expect to make a good product. It is not the farmer alone that should be clean in milking and washing milk receptacles; the cheese maker should be particularly clean. If you find a dirty cheese maker at the factory you cannot expect to see clean patrons coming.

Now let us go over to the main subject, "The manufacture of Brick Cheese." As there are different conditions which affect the making of cheese I will try to tell you only how I make my cheese under normal conditions.

To coagulate the milk I use mostly rennet extract which I set at from 92 to 94 Fahrenheit. As a rule I use enough rennet to thicken the milk in from 25 to 30 minutes. When the curd breaks clean from the finger the milk is ready to be cut in cubes. I use a perpendicular knife and cut both lengthwise and crosswise the first time. Then I let it set until all the curd disappears under the whey, then I take the scoop and draw the curds slowly and gently across the vat, after which I cut once more, this time lengthwise of the vat. I then take the rake and work the curds very slowly for from 10 to 15 minutes, after that I turn on steam, very lightly at the start, so as not to cook the curd too quickly. It usually takes me from 15 to 20 minutes to heat

the curds, using according to season a temperature of from 112 to 116 Fahrenheit.

After I get through heating the curd, I keep on stirring for about five minutes, then I let the curd set for about the same time. It usually takes me as long to finish as it takes to heat the curd, then I am ready to draw off the whey.

After drawing off the whey I dip the cheese in moulds which I let set for about 45 minutes. Then I turn them over every two or three hours. At the end of from 18 to 20 hours I salt the cheese with good clean, dry salt. This I repeat for three consecutive days. Then I take them from the salting table and give them a good rubbing to get them nice and smooth. After that they are put on the shelves and get washed every day for the first week. After that three times a week will do, until the cheese is finally ready for market.

CHAIRMAN: Any questions to ask about Brick cheese?

MR. DAVIS: I would like to know about what the yield is per 100lb of milk for Brick cheese.

MR. SCHULER: It is different. At the present time I should judge a man ought to get about 11 to 11½ lbs., in the summer time it is much lower. If we make cheese for weight we do not get the quality.

POINTS IN THE USE OF SUBSTITUTES FOR RENNET EXTRACT

By MARTIN MEYER, of Milwaukee

Members of the Wisconsin Cheese Makers' Association, Ladies and Gentlemen: I wish to thank the secretary for giving me this opportunity to say a few words to you this afternoon, on the use of substitutes in making cheese in place of rennet extract.

In one sense it is rather a big subject to speak upon because there is such a great variation of conditions where pepsin is used; in the results where moisture tests are used, so I have made just a few notes that may cover in a certain sense a few of the conditions upon which rest the results and the action of pepsin and rennet as used in cheese making.

We find, at least that is what has been given me, that pepsin is a digestive agent and because of that it must necessarily find its action jointly with acidity in milk. Pepsin does not work in sweet milk, that is, it does not coagulate sweet milk, it must have acid as a basis upon which it may act, therefore, we find that as the percentage of acid increases in milk, action also increases in rapidity, so that cheese makers have found that to get along with it they must have a uniform reasonably high percentage of acid, it must be uniform, more so than when rennet preparations are used.

Rennet we find coagulates milk freshly drawn from the cow, whether there is acid or not, therefore, we find that under favorable conditions rennet will act where pepsin will not act as well, that is, up to a certain per cent of acid in milk, as stated, pepsin will not act.

That brings back to my mind the necessity of using a starter in connection, especially when using pepsin, so that you can get the acidity up to the proper per cent, and a definite per cent, before you add your pepsin to the milk. When you use .18 or .19% acid, or wish to have .2% acid in milk when you use pepsin, you have to use a starter at that definite per cent as quick as possible. This point I think is considered as vitally important.

The general impression prevails that there is a fundamental difference between pepsin and rennet. This naturally would mean that the finished product would be a little different on account of it. The latter point, however, has not yet been proven sufficiently, to determine the actual results that pepsin has on cheese and the difference of rennet in cheese, as far as the cheese makers of this state are concerned. Experiments have been conducted regarding this matter but today I will only dwell on a few points as carried on in the cheese factory, to determine how it can best be used. If they find that the results obtained are as good they naturally will use more pepsin. It is evident that we have a certain per cent that can make use of pepsin, otherwise they have to close their factories.

In connection with this work where we use substitutes, we use the acid tests more than the rennet test for determining acidity in the milk, to determine the time when to set. I would strongly advise from what I have learned from the cheese makers that it would be well to have a check with the acid test once in a while on the work you do, especially when you change from one kind of rennet extract or pepsin to another. Be sure to check up whether that is right so that when you use the rennet you know that the acidity is right.

When you have a weaker solution you have to wait longer, on the other hand, when the preparation is stronger it would show because it coagulates quicker, then you think you have a higher acidity and you haven't got enough.

These are factors you run up against and we have them in some sections very strongly. This I only mention to you as a guard against losses. We all know that the more uniform the product is the better will be the marketing, especially for export trade.

With these few fundamental differences, the cheese makers must bear in mind that these finer points have to be watched more carefully when we have to use pepsin preparation than at the time when you use pure rennet extract. That is the strong point, that it will act whether the milk is a little higher in acid, and also where we find abnormal difficulties existing in milk.

PEPSIN AND CURDALAC

By DR. J. M. FRANCIS,

Representative of Parke, Davis Co., Detroit, Michigan.

Mr. Chairman, Ladies and Gentlemen: I wonder how many of you ever heard the story of the roast pig. According to tradition, 1000 years ago men were in the habit of having pigs live in the houses and it seems on one occasion the house burned down and there happened to be a pig in the house. The late owner, in looking over the ruins, happened to spy the pig in a well-roasted condition. He picked up the pig, burnt his fingers, stuck them in his mouth and that was the first time a man ever tasted roast pig, consequently, from that time forward, whenever a man wanted to celebrate, whether it was the sale of a farm, or the birth of an heir, he celebrated with roast pig but he always burned down the house to roast the pig. That continued for several hundred years until one man discovered that pigs could be roasted without burning a house.

For over one thousand years human beings have extracted sugar from sugar cane but it only dates back 150 years to the discovery that sugar could be made from other products and in that way sugar was materially increased and prices decreased.

When the first man used an extract of the fourth stomach of the calf to curdle milk no one knows, it dates back to the day of the Egyptians, but at any rate the discovery of cheese and the fact that milk could be curdled by the calf's rennet is lost in history, but the point I want to make is this, that burning down-houses to roast pigs is a very expensive method. Being dependent all together on sugar cane for sugar is an expensive process, being dependent all together on rennet has likewise proved to be an expensive process, but I might say so long as the world is dependent on the fourth stomach of the calf to produce the one hundred million pounds of cheese for feeding humanity, it means an immense loss of money because the output of cheese is continuously increasing and its consumption is keeping pace with its production.

During the past thirty years there has been an increased demand for this valuable coagulant. There has been a decrease in supply, and this has been brought home to us in the past 18 months, since this European war. You think perhaps I am exaggerating when I state to the members of the Cheese Makers' Association, the outlook six months ago was truly appalling. You gentlemen know that you are dependent on Europe for 98%, I doubt if America produces as much as 2% of the total rennet necessary for cheese production so the point I wish to make is this, that we have in the United States, as a natural result of one of our greatest industries, the slaughtering of swine, a never ending source of supply of this necessary milk coagulant. Please do not

misjudge me, I am not urging that pepsin be used to the exclusion of rennet, that would be foolish. Rennet is good but the point is, using the rennet and paying the price necessary to obtain it. Still the price of rennet can be reduced by using pepsin with it.

I want to say at the very beginning that there are many questions I cannot answer in this connection. I never saw a cheese maker that I did not want to take off my hat to him. You have to deal with the most complex substance known, you have to deal with a substance, the constitution of which is not known even at its best. The constitution changes from day to day, from week to week, and from month to month. There are a lot of changes in your milk, converting it into cheese that no man knows. The chemist who has devoted fifty years to research does not know all the changes that milk undergoes until it is converted into cheese. Therefore, I repeat, that I do take off my hat, I honor a man who makes cheese. The wonderful thing to me is that the cheese maker succeeds so well when operating under such adverse conditions.

Now gentlemen, just at this point I want to pay a tribute to the State of Wisconsin. It is known the world over, not only because of its wealth, not only because of its natural resources, but for the greatest cheese producing section in North America. It is known in foreign countries for its cheese industry.

It really is astonishing, in view of the increased cost of rennet that the value of pepsin has not been recognized before. The fact that pepsin from the stomach of swine would coagulate milk was made public to the American people seventy years ago, but, like so many good things, this suggestion lay flat, but 13 years ago, as the result of some very painstaking research, and some splendid practical work in the cheese factory, the Agricultural College of Ontario published a statement to the effect that pepsin could be substituted for rennet and would produce a cheese in every way as good as regards ripening and keeping qualities. Notwithstanding this fact that it was given to the cheese makers of North America 13 years ago, it took a European war to attract the attention of the cheese makers to the fact that we have a cheap and reliable product in pepsin.

I am going to give you an astonishing fact. To procure the pepsin necessary to manufacture all the cheese in the State of Wisconsin, the Packers would have to slaughter 1,500,000 hogs to supply you. That is quite a number of hogs, I hope they will slaughter them.

Before going any further, I would like to do a little defining. The lining membrane of the fourth stomach of the calf is usually spoken of as the rennet. The active substance in the calf's stomach, which you gentlemen utilize in the coagulation of milk, we know under the name of rennin, and that is the subject I am going to talk about, rennin, and not rennet.

I suppose if some of you would be asked the question as to what Providence made the rennet from the calf's stomach for you would say, to make cheese. Now the fact in the matter is Providence did not make calf's rennet to make cheese but to digest the calf's food,

and not to make pepsin for man, but man found it out and has been slaughtering calves for thousands of years, but it is a very peculiar fact that this substitute, whatever you may choose to call it, rennet, rennin or pepsin, has been found not only in the stomach of the calf, in the hog, sheep and nearly all animals, not only in the stomach but in the small intestines, in the blood and various organs, but has been found in vegetables, and can be extracted from plants, although this is not a commercial product as yet. I merely mention this to show you how widely it is distributed.

I am going to make another statement with the idea of holding your attention for a moment, and that is, it is asserted by some scientists that there is no such thing as rennin and some others say there is no such thing as pepsin. I will explain that by saying a great many scientists claim that rennin and pepsin are exactly the same thing, and, therefore, if there is rennin there is pepsin and if there is pepsin there is rennin, in other words they are the same. My own belief is they are two separate substances which should be known as rennin and pepsin, and that the specific function of rennin is to bring about the coagulation of milk.

Now let us go back to the action. The first thing to be brought about is coagulation, the next step, and an absolutely necessary step, is digestion suitable for absorption for its nutrition. If the calf's stomach only contained rennin and nothing to digest or break down this protein food, the calf could not absorb the milk after coagulated. You must have rennin for coagulation and pepsin for digestion. That is one of the purposes that lies ahead of the scientific laboratory work, it is the kind of work that will be done to a greater extent in the Agricultural School in your state and other states, it is the kind of work that our Institution is attempting to do at the present time. There are a lot of these questions that must be worked out on a scientific basis.

I will now take the opportunity of extending my hearty thanks to a number of the best cheese makers in Wisconsin who have been so ready to cooperate and test out these things, they are willing to do anything to advance the cause of cheese making.

Let us now turn to the milk in the vat and see what takes place. Whether you are using rennet or whether you are using pepsin, or any coagulating ensign, when that is brought in contact with the milk the first thing that takes place is not, coagulation, there is something that takes place there that you gentlemen cannot see but it is taking place just the same, the first thing that takes place from contact from the pepsin with the milk is partial digestion, second you have coagulation, then the coagulated casein is converted into cheese and in the course of storing there takes place a second and more thorough digestion whereby this is converted into a well-flavored cheese. This portion of digestion, in so far as we know, is one of adding water chemically. If you take casein and add water your casein will float, there is no combination, which would be like adding sawdust to water. When

your enzyme comes in contact with the casein, the water combines chemically and instead of having the casein that you started with as milk coming from the cow, you have a new kind to which I say there is probably added chemically some water and this they have given the name of paracasein.

The casein in the milk as it comes from the cow and is delivered to the factory is not dissolved in the milk, the casein is a protein substance, similiar to the white of an egg, floating in the milk, but in such small particles that it will pass through a filter, nevertheless, it is up to us to prove that the casein is in small particles floating in the milk.

The casein in the milk is not pure casein, but casein containing lime salts, and that is very important. Casein contains lime in an insoluble condition and here is a somewhat astonishing statement. If there was no lime in your casein you could not coagulate it in a thousand years. True casein, without lime, will not coagulate so you see that lime salts are necessary for the coagulation in the casein in the process of cheese making. It is well to remember the necessity of two things in curding milk, soluble lime salts and some substance like pepsin or rennin to put through the process of digestion.

Some of you gentlemen remember if you took starch, one molecule of starch, and chemically added one molecule of water you converted it into sugar. If you take it out of sugar you convert it into starch. In the same way if you add water chemically to milk and sugar you convert it into glucose.

There is another rather interesting chemical problem that you have to deal with in the process of manufacturing cheese, aside from this matter of coagulation, and that is the ripening of milk. Every man here who has done any work in the cheese factory knows that if he will take sweet milk he can use a certain amount of rennet or pepsin and in thirty minutes he will have a good coagulation. Now then, he knows also that if he will add a starter and ripen that same milk until it has an acidity of about .2% that he can shorten the time but use less rennet or less pepsin. The idea is that in ripening milk the action is dependent on the fraction of acid. We do not know what it is, rennet, pepsin or something else, but it contains a natural digestion. It shows how a ripened milk will coagulate with less coagulant than the sweet milk will.

I do not know but before leaving this point I will leave a thought to you. It seems to me entirely possible that the slow coagulation of milk produced during the winter season may be due to a difference in lime salts when there would be no difference of lime salts with cows in the pasture in the summer time. Try it out and see whether there is a difference of lime salts or not.

That also throws a light upon the fact that sweet milk, or sweet curd cheese, requires more coagulant than the sour milk cheese, like the cheddar, because they do not contain as much acid. Acid hurries up the action of pepsin and rennet. Ripened milk contains acid.

Pepsin is more sensitive to the action of acid than rennet is. We do not know the reason for this except that this All-wise Providence that gave the calf rennet to curdle the milk decided that it was not necessary for the calf's stomach to have a lot of acid.

I do not want to detain you too long so I will just talk about pepsin. First of all, what is pepsin? I don't know, I don't know what rennin is. There is not a man on earth that ever saw any true rennin, there is not a man who saw any true pepsin. If you should ask me what is the active substance in tobacco, I could tell you and show it to you. If you ask me what is the active substance in a potato I can show you, but no man has ever separated any pepsin or rennet in a chemically pure condition. We know what the substance is that we call pepsin, we know what it looks like when we call it rennin. We have a white powder, one part will coagulate 30,000 times its weight of milk in ten minutes, and that we speak of as high grade powdered rennin, but not a thousandth part of that is pure rennet. I can show you some pepsin, which is a very beautiful article, one part would probably digest 4 to 5,000 times its weight of egg, but probably contains no grain of pure pepsin. One pound of it will digest 6 to 10,000 pounds of beef steak. Pepsin has been made so pure and concentrated that 1 pound will digest 500,000 pounds egg albumen or beef steak, that has actually been done, that is, in that proportion, and then it is not pure pepsin. That kind of pepsin is very expensive, it is worth its weight in diamonds, it is so expensive to manufacture.

The ordinary pepsin used for medicinal purposes will digest 3 to 6000 times its weight of albumen, the ordinary pepsin that is used by doctors.

The pepsin used for coagulation of milk, we don't care for its power digesting beef steak or eggs, the only thing is the milk it will coagulate, to be used by the cheese producer. The other kind of pepsin we make for the doctors. The firm I am representing has been employed in the manufacture of pepsin 45 years and 40 years ago if we could produce 1-2000 pepsin from the stomach of a hog, we thought it wonderful. The art has been followed, developed to such an extent that the production of 5000 strength is now very ordinary. We have gone beyond that point, our efforts lie in the production of pepsin, free from additional by-products or similar substances.

Some perhaps want to ask how you make pepsin. First, you have to have the lining membrane of the hog's stomach, or other animals, we could make very good pepsin from your stomachs, if you would give them. This must be thoroughly washed, then they are chopped up in a machine, the size of a quarter of a dollar, put into large crocks with the necessary amount of water. For one pound of this meat we would add one quart and add muriatic acid, about three tenths of one per cent, enough acid to make it sour, like weak lemonade, then it is heated to a temperature like the milk in your vats, 86 to 90 degrees, and under those conditions, in the presence of water, heat and muriatic acid, the pepsin in this stomach digests. The stomach makes its own pepsin and digests the tissues of the stomach.

Here would be the way one of these solutions would look, like soup after it is thinned. It has some floating particles of undissolved tissues, the muscular portions. Of course that solution is not fit for the doctors' use or your use, aside from the pepsin that it has it contains the dissolved flesh of the stomach and to produce a nice preparation, we must get rid of those. First of all it has to be filtered and then it looks like clear bouillon, soup. Then, there is a certain amount of mucus on the inside of the stomach, which is very necessary for our stomachs, for their protection. Then there is a substance very much like soft cheese, white in color. It is about like soft butter. We speak of that as syntonin. It is like rubber, you can take it with your hands and draw it out like a school boy does his chewing gum, but we cannot sell it for rubber, I wish we could today.

Finally we produce a purified solution, which is condensed at a temperature not above blood heat. It is perfectly clear, amber colored, and for the physician's use it is sold as solution of pepsin, or in combination as wine or essence of pepsin. It can also be made into powdered pepsin, but the point that I had in mind in giving you these details was this, that pepsin is extracted from the glands, where it normally is found, by a process of antolysis. You could extract a weak pepsin from the hog's glands by soaking it out, letting it stand for two or three weeks with the solution containing ordinary table salt. You can also extract with water containing glycerine, in a simple way, or scientific way, a more highly purified product.

Gentlemen, I don't want to impose on your patience any longer. I have tried to give you in a few words a general outline on pepsin but I want to recur to my original text. As the result of extraordinary conditions which has cut off this supply of the coagulant that the cheese makers formerly used and because this which they have used so long has become so expensive, I will make this plea that we, in junction with others, and in conjunction with some of the schools of agriculture, have drawn your attention to the fact that we have an enormous supply, and what should be an unfailing supply, of a coagulant for preparing milk for the manufacture of cheese and while we do not urge you to discontinue using rennet for that purpose, we do say to you that we believe that with the practical experiments that have been carried on so far, if we want to we can make ourselves independent of Europe for our cheese coagulating agents. Its coagulating power rather than the digestive power has given satisfactory results in the hands of men like yourselves, giving cheese of good flavor, giving good yield, giving cheese which ripens quickly and develops a good flavor.

There is really some chemical reason why a cheese made from pepsin should ripen quicker than a cheese made from rennet because, as I told you a while ago, after coagulation and the forming of the cheese in a chemical way, there must be a process of digestion before it becomes right to eat. Whether it will do that, I don't know, but the future will prove it. Perhaps some of the cheese makers may be in position to answer that question.

Is there perhaps some question you would like to ask before I leave the platform? If not, gentlemen, I will close with the statement. We can see a great future for the use of these coagulants in the cheese business, not only in Wisconsin but in New York state, Canada, Australia and the cheese making regions the world around.

I am going to tell you a secret. Australia is taking more cheese pepsin in proportion than Wisconsin, in other words, the cheese makers in Australia who are catering to the English Government are taking up the use of pepsin as a coagulative agent, using it just as fast as they can get their supplies from the United States.

It is used very extensively by Canadian cheese makers who are making cheese for export purposes. A large portion of the Canadian cheese has been during the last year, and will this year go across the water, and a large part of it is being made by the use of pepsin.

PRACTICAL RESULTS OF PEPSIN AND CURDALAC IN THE FACTORY

By H. M. SCOTT, Waldo, Wis.

Ladies and Gentlemen of the Wisconsin Cheese Makers' Association: When I was asked to read a paper on pepsin and later learned that Mr. Gift's paper preceded mine, it seemed there was little left for me to say about pepsin. This morning I learned that Dr. Francis was to take his place, I was scared, and I am scared yet. There is an old adage "Fools enter where angels fear to tread." I want to ask Dr. Francis' pardon, I was referring to myself.

Dr. S. M. Babcock, who probably knows more about the component parts of milk in cheese making than any other man in the world, yet has very little to say about it. I do not know about his being an angel but he is surely a wise man. He did at one time say "that there were three cardinal points entering into the manufacture of cheese; heat, acid and rennet," that was before pepsin was known. They must be properly combined to make a perfect cheese. He did not say how hot or cold, high or low, much or little, but left it to the fools' wit or wisdom to practice or write about.

There seem to be two extremes of acid to be used in the incorporation of moisture into cheese. With pepsin to use low acid we cannot get a perfect coagulation and precipitation. With high acid we are apt to incorporate too much moisture, causing bitter flavors. As a rule I am one of the high acid men because I think I can control the moisture in that way.

I believe to make a perfect cheese from a certain milk we must sacrifice yield to a large extent. In using pepsin alone it is much harder getting these maximum results. With rennet I have always worked with the idea that the lime in milk was a large factor in the

action of rennet on the milk. With pepsin, lime has little effect, if anything it retards its action.

When we began using pepsin on April 1st, 1916, we used an acidity of .20% temperature 90 to 92 degrees, using a small amount of hydrochloric acid. We continued until July along these lines, when we began losing too much fat in the whey, which meant, as I look at it, a loss of casein also. In June, in Sheboygan county, we had cold weather, in July hot weather and when the hot nights came we lost fat and so we lowered our temperature to 86-88 degrees and raised our acidity to .21%. This stopped the loss of fat but incorporated too much moisture and in trying to reduce it with salt, it made a tough, slow-curing cheese. Later we began using one half ounce of rennet with the pepsin to a thousand pounds of milk, still believing that the lime factor in milk must be taken into consideration in getting a perfect precipitation of casein, bearing in mind that this means a minimum loss of fat in the whey.

In summing up will say that the use of pepsin in cheese making is fully assured and that an entirely satisfactory cheese can be manufactured where all the elements are understood and controlled by the maker.

DISCUSSION

MEMBER: I have tried the pepsin and tried the curdalac, not to any extent, only three or four times, and I find that my whey looks milky, I have tried it at different temperatures, and also used acid, but it didn't seem to make very much difference, there seems to be a difference in the yield, there is a loss, and when I cut the milk it doesn't cut smooth.

MR. SCOTT: The cause must lie in the ripening of your milk because if your milk is normal and you have the required acid, pepsin will coagulate, and as smooth as rennet, but, as I told you, I believe there is a difference in localities, a difference in the milk. There are times when you get a vat of milk which will put your knife out, with rennet, but you can stop that by adding a lime solution. I always have a barrel of lime water at hand, that will harden your curd.

MEMBER: I would like to know what results you have had with curdalac, liquid pepsin.

MR. SCOTT: I tried curdalac and in my experience it took 4 ounces of curdalac to 1000 pounds of milk. I used 1% starter and ripened my milk to .21%. The first that I tried I heated the milk to 88, took 4 ounces of curdalac and 2.1% starter and it took 35 minutes to curdle, with a loss of about 15 to 18% of cheese. The next time I used 6 ounces of curdalac, 2% starter and set my milk in 23 or 24 minutes, with a loss of about 8 or 10%. Can anyone tell why I had that loss?

MEMBER: With the curdalac, the liquid pepsin, I understand it is a hard thing, it will deteriorate sooner than the dry pepsin. It is better not to mix it up too long.

MR. SCOTT: We had four gallons and I gave Mr. Dyke one gallon. I used about a gallon, and more of the boys used it there. We tried all kinds of ways. We are now using a half ounce of extract to every 1000 pounds of milk, with a loss of about .2% and that is about normal, very few lose less, even with the use of rennet.

MEMBER: Speaking of sandy curd after it is cut, I had that experience when I first used pepsin and I found it was not the pepsin's fault but my own fault and that was in not stirring it enough. When we use rennet we stir it quick and float it, then quiet it down as quick as possible. With rennet it can stand about again as much stirring and float a little longer than with the rennet and you have a nice smooth curd. Use your elbow grease, work it for 15 minutes, slowly, heating it to about 98 degrees.

MEMBER: I would like to ask you how you can stir 8000 pounds of milk by hand and heat it up to 98 degrees.

MEMBER: I will answer that question. About 35 years ago we used to do it, we had to do it.

MEMBER: Did you ever stir it with 9000 pounds?

MEMBER: No, but I stirred 8000 lbs. I have worked an 8,000lb. vat with a rake 4 ft. wide, I go over it twice.

MEMBER: I use curdalac the same as rennet. If you do not set your milk quick enough you will have sandy cheese. You can spoil a vat of cheese by stirring too long.

MR. SCOTT: We lay all our troubles, our trials and tribulations to the farmer not taking care of his milk but there is more cheese spoiled by the negligent cheese maker than by the actually bad milk. The farmers will bring you good milk if you tell them how to take care of it.

MEMBER: If I can get a cheese maker who can use pepsin and get results I will pay him well. I am willing to give \$25.00 to the man who will come to my place and show me how to use pepsin and get good results.

MR. SCOTT: Remember this boys, there are men using pepsin and curdalac and using it successfully. You may not be to blame that you do not get results, there are some that get results, good yield and good cheese. Men come to my factory and ask me how to use pepsin and when I show them, most of them are satisfied. I am glad to go to anyone's factory if I have time to do it.

MEMBER: Did any of the cheese makers ever try to use a little more starter when using pepsin to get better results. With rennet they generally use 1% starter where with pepsin we use 2% and in my factory it brings about the same result. I have used pepsin since last spring, see no difference in my yield from the year before.

MR. SCOTT: As Dr. Francis told you, pepsin depends more on the acidity of milk than rennet. I do not advise you to use an excessive starter as a lot of cheese is spoiled in that way. There is some difference in the strength of pepsin. Parke, Davis & Co. give the strength of their pepsin on the package.

MEMBER: What is the standard strength required by law?

MR. SCOTT: There is none. It has not been recognized long enough.

MEMBER: In using lime water, what strength do you use?

MR. SCOTT: I never tried it out.

MEMBER: Did you say you had a barrel of lime water in your factory?

MR. SCOTT: Yes.

MEMBER: Is that better than plain water?

MR. SCOTT: Yes, the lime affects the setting qualities of rennet.

MEMBER: How strong do you use the lime water? How do you prepare it?

MR. SCOTT: I took a half barrel of rain water and put a chunk of lime in as big as my fist. It doesn't take very much.

MEMBER: Would you advise using that with rennet extract?

MR. SCOTT: If you don't get a perfect coagulation. We never use it when we get perfect results.

LOCATION OF NEXT MEETING

CHAIRMAN: Yesterday afternoon we made an announcement here that there was to be a meeting of the Board of Directors of the different local associations in the corner room of the basement. Nobody went there and they had no meeting. I have been handed a list of the names of these gentlemen and they are requested to hold a meeting in this corner of the hall immediately after this session, to prepare for the mass meeting to be held in this hall at 7 o'clock this evening. There is a local organization at Wausau, I have not got the names of the officers but if they are here they are invited to be present. There is also one in Lincoln county.

MEMBER: We don't want anyone to feel slighted. We got all the names we could find but if there are any other organizations that we don't know of, we would like to have them meet.

CHAIRMAN: The representative of the Appleton Business Men's Association wants to leave at 4:30. We have invitations for our next place of meeting from Fond du Lac, Milwaukee, Marshfield and Appleton.

MEMBER: In Fond du Lac we did not find hotel accommodations, we had to go to Oshkosh or go to private houses and get a room. You have to accommodate people first, you cannot do it in small places like Marshfield. Milwaukee is the only place where people can be accommodated. We want no place where we cannot get rest.

MR. SCOTT: It has been discussed before that this cheese makers' convention is not meant to entertain people, to have fun, it is for the benefit of the American Cheese Makers. There has been more interest

shown by the cheese makers in this convention than ever before and I think we ought to meet where the cheese makers can get together.

MEMBER: I wish to say that this meeting is not only for the benefit of the American Cheese Makers. It is for the Swiss, Limburger and Brick Cheese Makers also and we are here to gain knowledge just as well as you American fellows. We come up here from Green county, Dane and Rock counties and a lot of others, who have been the forerunners of the cheese industry. The fellow that says we should go to Milwaukee is right, I came up here last night at ten o'clock and if it had not been for one of my friends from Chicago I don't know where I would have slept. When they took this convention up here to Fond du Lac I figured on just the same as when I go to Milwaukee. I put my John Henry on the hotel book and I got my room. I came up here and went to the Palmer House, then I went to the Arlington Hotel, and still nothing doing. The clerk said, if you have a friend you are liable to bunk in with him. Take your convention where you want to, but take it from me, the American Cheese Makers are not the whole thing in Wisconsin, there are the Swiss Cheese Makers, we are right there with the goods also.

MR. DAMROW: We don't want to ride on any street cars, we want to go to a room and have a night's rest.

MEMBER: I make a motion that we vote by ballot.

The motion was seconded and unanimously carried. There was a total of 359 votes cast, Fond du Lac receiving 3, Marshfield 11, Appleton 113 and Milwaukee 232. Ballot was declared formal, the next convention to be at Milwaukee.

CEMENTSEAL

By A. KAMMAN, Milwaukee, Wis.

I have been requested by Mr. Aderhold to say a few words to you in regard to using cementseal. I am not prepared to give a speech but it seems there is some misunderstanding in regard to using the first coat as a wall coating in connection with cementseal. Lots of factories have used cementseal alone. I wish to say that cementseal as a wall coating on new material or over old paint could not successfully be used. The first coat is absolutely necessary if you expect cementseal to last. It is simply a binding coat that acts between the two materials. You haven't anything in the first coat that you will find in the cementseal. It acts as a stain killer. We can use it now on any wall only four or six weeks old and formerly factories would have to wait a year to a year and a half.

For vats and tanks it is not necessary to use the first coating as conditions are entirely different.

I have been asked what cementseal will do on floors. In creameries or cheese factories it is not a success. We have a liquid hardener, a material that will put old floors in a good condition and stand wear and tear and prevents dust.

In applying this material three coats are necessary if thinned out with water. It can only be shipped in wooden receptacles as it contains acid.

There are a number of factories using cementseal in wooden whey tanks. It was a surprise to me that they use only one or two coats. We have seen 15 or 20 concrete whey tanks where they have used three coats of cementseal, put on after two or three months, and those tanks have been a success. I thank you.

MEMBER: When applying this material to floors, is it absolutely necessary that they be thoroughly dry?

MR. KAMMAN: It is not a success in the workroom because we cannot find a dry floor.

As to whey tanks, they would be empty from time to time. In the summer, of course, is the time to do it. It would have to be empty for several days and for another day or two after it is coated.

MEMBER: How about grease?

MR. KAMMAN: Grease is easy to remove in a whey tank. When a factory builds a new whey tank, a wooden whey tank should take the place until the concrete tank is finished. I would not suggest that whey tanks should be coated immediately after they are built. In the summer time it takes about ten days until the cement is ready to take this material.

MEMBER: What do you figure the cost on whey tanks?

MR. KAMMAN: From five to ten gallons, giving three coats.

MEMBER: How long would it last before it needed repainting?

MR. KAMMAN: We have now some in use two years. A large concern in Chicago has 17 pickling tanks out of concrete. They used to have a lot of trouble but have had none since they are using cementseal on the inside, they are in first-class condition. In La Crosse there is a big canning concern that used cementseal in 1911, two coats, it is in the tanks today and has never been recoated.

MEMBER: Can you apply that to metal with success?

MR. KAMMAN: It would not be practical, you would have to apply too many coatings.

Quite a few have asked me this question, whether cement seal can be used in the inside of a press. The inspectors say they cannot be kept perfectly clean, but you could scrape the inside perfectly clean, several washings with hot water, and then probably give a first coat and then put on two or three coats of cementseal.

MEMBER: Could you use that on wooden floors.

MR. KAMMAN: A number of cheese factories in Sheboygan county have used it, saying it outlasts four times any other paint. It seems to be all right on soft wood floors, it may not last as long on hard wood. The worst conditions we find in Brick Cheese factories.

CHEESE MAKING IN NORTHERN WISCONSIN

By C. A. VOIGT, Chili, Wis.

Ladies and Gentlemen: The subject assigned to me by the worthy secretary of this association was Cheese Making in Northern Wisconsin. Northern Wisconsin is an awful territory and there is a good, big part in Northern Wisconsin I have never seen, and probably never will. Marshfield is where I am situated and that is just about half way. That is all I can talk on, the conditions around Marshfield and cheese making in central Wisconsin.

It has been the idea of a good many cheese makers, as well as buyers, that Marshfield and vicinity is just starting in. Of course we are not quite what we will be, I expect but we are not starting in by any means. From the vicinity of Marshfield, within a radius of fifteen miles, and not all of it goes to Marshfield, Marshfield is receiving, as I get it from the buyers, in the neighborhood of about two million pounds of cheese. That means a good deal, it means a good profit to the farmers in that vicinity, and I think I am not wrong when I say that there isn't hardly two-thirds of the land tilled, up in that country now.

Our cheese making, I presume, is done the same up there as anywhere else, only we have not been trying to make quite such a soft grade of goods in that country as in the southern and eastern part, because our competition has not been so keen in that part of the state, but we are getting there fast, condenseries are coming, factories are coming closer together, competition getting keener, but that is not saying by any means that we do not make any poor cheese. We are making poor cheese.

About a week or two ago I went to Marshfield to find out just what per cent of poor cheese was made but you know the buyers will not give you the right per cent of poor cheese they are receiving. If they could, they would not, and there is where I blame the cheese buyers a good deal for the cause of so much poor cheese being made. They did not want to tell me what per cent of poor cheese was made in that county, although they knew it, they were afraid their cheese makers would find out where I got my information and get down on them, but, as near as I can find out, about 12% of the cheese made is really unfit for the market; cheese that ought to get a cut and a good big one sometimes.

To overcome this we have done everything in our power, through local organizations, we have a good strong one at Marshfield, I think 166 members. Through this organization we have had meetings about every two months and we have filled pretty fair sized halls at our meetings. In connection with that we have had cheese scoring contests, and also butter. We have had Mr. Aderhold with us to speak to us,

score our goods, and in that way we have tried to improve our quality of cheese the best we knew how, but we are not using these scoring exhibits, or scoring contests, the way we really should do. These scoring contests are for educational purposes and not for the sake, according to my idea, of trying to get as many prizes out of these contests as possible, it should be more for the sake of learning what you are doing at your day's work. To get the benefit of these scoring contests you should take your average run of cheese, the best you have in the factory at the time, take that and see what your average run of cheese really is and in that way it would better our grade of cheese to a good extent.

Another fault is that some of our younger cheese makers, will not exhibit any cheese because they are afraid their neighbor will find out that they are making a poor grade of goods. That will not educate them. Put in the best and then see what it does score, and ask questions. There isn't any cheese maker so pious but what he will tell his neighbor what he knows about cheese making, it will not hurt his business at all, but the younger ones are afraid to say anything or ask questions for fear his neighbor will find out and tell his patrons he is making a poor grade of cheese and lose customers. It is a pity that one cheese maker should take advantage of another in that way, but it has been done. I have some neighbors, not exactly near neighbors, that I cannot interest to join our association, it is impossible. One says, What good does it do me to exhibit? If we all said that, where would the association be? In that way we would never accomplish anything. I urge every cheese maker to exhibit but the trouble is those that I would like to see are at home, they do not hear it and if they ever read it in the papers they will say "That fellow is shooting off." That is what I am getting right along, but, nevertheless, the time is coming, they will see that I was right after all.

I have tried out the curdalac, not to any extent, three or four times, and have tried pepsin, spongy pepsin, three or four times. I also used the preparation that Hansen makes, the rennet pepsin, but I find in each case that there is a loss. It doesn't set the milk with me as good as rennet will. When I come to curd the milk it does not make a smooth cut and it looks sandy. I am not saying that this cannot be overcome, there may be cheese makers here that can overcome that but I do not know how and that is all the experience I had with substitutes for rennet. When manufacturers of that kind of goods come up and say that it is just as good as rennet and it does the work as good as rennet, they ought to know, but I have one idea in one corner of my noodle that it does not. They may know in some parts of the county but not all over. Mr. Gift has been at my factory twice. The first time he brought the spongy pepsin and left with me enough for one vat. That was in the flush of the season. I used it in one vat and for the other I used rennet. At that time I was too busy to get right down to the bottom of it and weigh up the two different vats, the cheese

of it, to see the per cent of loss but I could see that the vat that contained the pepsin and the other vat with rennet was not the same, there was a loss there, whether that loss was cheese or butter fat I cannot tell, but the loss was there.

The second time Mr. Gift came out there was after I had bought the substitute, curdalac, which is pepsin in fluid form. I had tried that out twice and made a report on it to P. J. Schaefer, through him I got the sample of the goods, in fact I bought the first gallon and got my money back, and was glad of it. The result I got out of it did not satisfy Mr. Gift one bit and one afternoon I was called to the telephone and Mr. Gift asked me what days I was making cheese. I told him and he said "would you try out curdalac again if I come out there and stay with you?" I said, "I certainly will." That is all I said through the phone, I thought it is time enough when he comes to the factory. When he did come and brought along another three quarts of curdalac and wanted to try it out that day I asked him, who is going to stand the loss if there is any? He says, "There won't be any." I told him, "I am afraid there will be, you have seen the report I sent to P. J. Schaefer on the other two tests and there certainly was a loss, and he says, "I would like to locate it." I told him, "So do I." I told him I was willing to try this out again that day with him if he was willing to stand for the shortage or loss of yield if we had any and he told me to better let it go till he sent me some of this lime solution, he called it a different name, and he says, "then you report to me and if you have any shortage of yield we will stand the loss." I did not want to come down as small as that, I did not send in the loss, I did not want to mention anything, I tell you why, I thought if my patrons would find out I would try any such preparations and there was a loss, they would object.

I have not tried it since and will not until I get all fresh milk. There may be a difference, I don't know, but as Mr. Gift says, he thought there was, but the doctor yesterday afternoon claimed there was absolutely no difference whether it was new or old milk, it absolutely answered the purpose as good as rennet. I fail to find it so. I think of course when we get so short of rennet that we cannot get it, then we are simply bound to use it and have to put up with a loss, I expect, but until that is the case I shall stick to rennet as much as I can.

There is one other drawback we have up in our section of the country. So many farmers asked me, my own patrons and others, why is it that you cheese makers up in Clark and Wood county, or at Marshfield, cannot pay up with the Eastern counties, Sheboygan, Manitowoc or those counties. I always used to explain as good as I knew how but one reason, and a very good reason, is this, there is one thing to overcome and that is the freight rates between Plymouth and Sheboygan and Marshfield, which is 1/4 ct. a lb., or 25%. In order to make that up they give us the full market but they take weights. We are obliged to give on Longhorns 7/8 of a lb. per box, Daisies 5/8, Twins 7/8, etc. That makes

up the difference in the freight rates they claim, but, nevertheless, there comes in our hardship, when it comes to asking, "why can't you pay as much for milk in Marshfield as in Sheboygan county?" It naturally would make a difference, $\frac{7}{8}$ pound per box and by comparing the statements from Marshfield with Sheboygan county, that is just about the difference. I have had statements sent to me from Sheboygan and compared them with my own and find that I am about 2 to 4 cts. a hundred lower than Sheboygan county men are. Of course there may be a good many that are lower and there are some lower in Sheboygan county, probably some pay not as much as I, I don't know, but there are some of the hardships we run up against.

As far as our license law is concerned, I get about as much slamming and kicking about the license law as any of you down here. I won't say I get as much as the Dairy and Food Commissioner but I am getting my share of it because they know I have worked for it, I thought it was a good thing, I do yet, but our license law has not really done us any good to tell the truth, it has not done the good cheese maker the benefit that it should but it is just in its infancy, as they say, and I hope some day it will be a benefit. So many of them say you cannot get any protection. I don't see why. When the State law comes out and tells us, put up such buildings and keep them in such a shape, put in such machinery, I don't see why we haven't a right to ask that we are also protected after we invest hard earned money in property that we are going to be sure we can stay in the business, not be crowded out by unfair competition. I don't think we are asking any too much.

MR. SCHULTE: In regard to these cheese scoring contests, don't you think it would be better to advertise them as educational contests, like Plymouth? If I enter cheese in a prize contest I am looking for a prize.

MR. VOIGT: Mr. Schulte, you are right. That is the idea. We have not come to that yet but we have been talking about them before and we are going to get there, we will advertise it as an educational contest instead of a prize contest. Still we may have those prizes, it does not hurt us, it will increase the exhibits if there are a few prizes there.

MR. DAVIS: You made a statement about freight rates from Marshfield. Are you aware that over half the country you take the same rate as Sheboygan county, that is through the Fox River territory. That extends down to New Orleans. To St. Paul, Minn., Marshfield takes a cheaper rate.

MR. VOIGT: No, I am not aware of that.

MR. DAVIS: You look up the rate to New Orleans and you will find it is exactly the same from your territory. The rate to Duluth, St. Paul and Minneapolis is the same.

MEMBER: Isn't it a fact that east of the Mississippi River takes a higher rate?

MR. DAVIS: It is not true to New Orleans but East it takes a higher rate.

MEMBER: Speaking about a poor quality of cheese, what is the reason that they make poor quality, aren't their conditions as favorable as in the eastern and southern part of the State?

MR. VOIGT: I presume that the conditions are just as good up in that country, that is, the country is just as good, the pastures, if anything, are better, but we have too many new things to contend with up there. In the first place, we have a good many small farmers, not saying that a small batch of milk could not be taken care of as good as big one, but we all know up there that we are getting our poorest milk from the smallest farmers. The reason is this; the small farmer is generally stuck in some corner of the stumps, he is digging stumps just as long as that bright light shines, if not after, he usually forgets the time. If you get after him he will say, "I cannot sit up here half the night and stir my milk." He thinks he hasn't time to attend to those 50 lbs. of milk, or less. Those are the conditions.

MEMBER: Do you instruct your farmers to stir the milk to cool it?

MR. VOIGT: I instruct the farmers to cool their milk in a hurry, by stirring.

MEMBER: Mr. Voigt is a little behind time.

MEMBER: Don't you believe in stirring milk you stir in bacteria? Supposing you have your barnyard on one side, as nine-tenths of them are, don't you think there is a tendency of drawing this scent, and everything flying around, into your milk. Don't you believe by covering it just as quickly as possible that the animal heat will have a tendency of killing germs that are in it?

MR. VOIGT: You may be right but I have always received the best milk if they took care the way I told them and that was when they had a good place to cool their milk, a tank if they have enough, and pump fresh water in it. That is the way I educate my farmers. That is the way my farmers are cooling milk, those that I can get to do it, and I have had no bad effects.

MEMBER: What do you call a poor cheese?

MR. VOIGT: There are a lot of different makes of poor cheese. I call a poor cheese one with a poor make-up, a poor finish. For instance, down in that boring room there is one mighty poor cheese in finish. There is another one that is running acidity, sour cheese. Another cheese I call poor is an excess moisture cheese, cheese that will not stand up in any climate, especially when they come up with 44% moisture. Some say 50% moisture and claim it good cheese, and some buyers pass it up as good. I believe it is a sin, I believe Saint Peter will never forgive them. As I told Mr. Davis last night, in our moisture standard law that we may get, I believe there ought to be this one clause in it. He gave me an awful rub, I don't blame him. There ought to be a clause saying if there are cheese made, sometimes there may be a case where you get too much moisture, what are you

going to do, it is in there, we are going to sell it. In this clause, as soon as the cheese is made, stamp it excessive moisture or what per cent of moisture. You probably could not get a premium on this cheese but perhaps a certain buyer has orders for such cheese, let him get a certain cheese maker to make them for him. If there is a certain trade that wants that moist cheese, why should they not have them? I don't see it.

MR. DAVIS: I would like to ask the gentlemen if, where there is a disagreement as to quality between the factoryman and buyer, a cut is agreed upon and accepted, the salesman promptly informs all the rest that it has been cut, or is it kept quiet?

MR. VOIGT: It is certainly kept quiet, that is why the buyers would not tell me what amount of poor cheese they get.

MR. DAVIS: Don't blame it all on the buyers.

MEMBER: Mr. Voigt has spoken on poor cheese, what is a good cheese?

MR. VOIGT: Mr. Damrow knows better than I do but I will tell you as good as I know how. A good cheese is a very aged cheese. A good cheese will score 90%. It isn't only the 97 or 98% scoring cheese that is good. Cheese that is firm enough to stand up under any trade, that is fit to be shipped to the South at any season or fit for export to any country, I would call good cheese, and I think that the buyer will tell you whether it is fit for that or not, but the buyers are getting so that they will not. It is a fact. Mr. Davis will not like it. A few years ago, I am sorry to say, some buyers, not all, went out and encouraged cheese makers to make poor stuff. Why? Because he was trying to get control of the cheese in that vicinity, trying to put the other man out.

MR. DAVIS: I would like to answer the question of what constitutes a good and bad cheese. A good cheese is one that is satisfactory to the trade that it is intended for. If one trade wants one kind of cheese you satisfy him in giving him that kind of cheese. A bad cheese is one that is not satisfactory to a trade, that perishes, turns bitter, gets mould in it. That I think will classify the two kinds of goods. Certain sections want certain qualities, and, as dealers, we believe the best way to satisfy a trade of a section is to give the kind of goods they want, and that is good cheese for that trade.

MEMBER: Mr. Voigt said where trade wants 40% moisture cheese that the law should allow to make such a cheese. No, if there is a certain trade that wants 40% cheese, or better, it ought to allow it to be made under certain conditions, it should be stamped so.

MEMBER: Don't you think in that case the average customer would look at that stamp and would not know what per cent of moisture meant? I don't think a dealer would say, "I want cheese that contains 40% to 42% moisture" and sell it for what it is. I think they should pass a law and allow every cheese man to sell it for what it is.

MEMBER: You mean to say to pass a law instead of simply compelling them all to stay within that limit, is that it?

MEMBER: Yes.

MEMBER: I want to call Mr. Voigt's attention to the fact that the printing of the cheese does not necessarily protect the consumer. The cheese may be used in a hotel or restaurant and you would not get the printing on it.

MEMBER: I would like to ask Mr. Davis if there is any demand for cheese that has over 40% moisture.

MR. DAVIS: I think there is, and yet in another sense, no. The trade wants a soft cheese in certain sections. They can make a soft cheese within 40% moisture. That trade is not for a moist cheese but for a soft cheese and the factorymen, knowing that they want a soft cheese, deliberately fill it with water, for their benefit. It helps them pay dividends. There are certain sections that like a soft cheese and we want cheese that is made by the other process, besides that of filling it with water.

MEMBER: Talking about soft cheese, will you explain how to make soft cheese without moisture?

MR. DAVIS: I would be delighted to qualify, to explain just how, but not being a cheese maker I refer him to many in this state who have produced that kind of article without the excessive moisture.

MEMBER: I believe this high per cent of moisture has got the better of the cheese makers in Wisconsin. I believe we ought to have a standard, the same as butter. The soft cheese can be made and not exceed 40% moisture. Some people advocate making skim cheese. If we get the high moisture test, and skim cheese, where are we going to land with it? The same place where we were fighting filled cheese. We got Wisconsin out of the mire and put on a high grade quality, one that the world recognizes. Let us not see it go to pieces, let everyone make a standard cheese, protect the business and its makers. Do not allow one man to make a 45% moisture cheese and another man 40%, let us make an even grade.

MR. VOIGT: That does not answer the question, how to make a soft cheese. 40% is not excessive moisture, you want the standard lower than 40 to make a soft cheese. I have never run a moisture test and am not capable of answering that question but there are some here that have and I wish they would answer how they are doing it. I think Mr. Kalk could answer that question.

MEMBER: I would like to ask Mr. Davis what per cent of moisture is the best eating quality of cheese.

MR. DAVIS: For domestic or export?

MEMBER: Domestic.

MR. DAVIS: For domestic, I think about 36 or 37% moisture in a cheese, with proper amount of salt, will retain and carry the best, to mature within seven or eight months, for marketing purposes in the fall, that is a cheese made in June or July, put in the proper cooler, made at about that moisture, and taken out along in October or Nov-

vement, will be about the best grade. We have found a 34% to 36% had been carried a year and a half and developed in break-down and texture, about the same as a 37% or 38% would in six or seven months. The decrease of moisture will permit you to carry a cheese longer without it becoming sharp than if you increase the moisture. The carrying qualities of the cheese decrease as you increase moisture, both in shrinkage and break down. The lower moisture, and with proper salt, develops a better flavor, it ripens it better and with age develops all the fine, rich, nutty flavors that should be in cheese and this quick curing moisture cheese does not develop to the fine article with age that the lower moisture goods do.

MR. DOAN: Isn't it a fact that the trade will eat more cheese if they could get a soft cheese, the kind of cheese they want?

MR. DAVIS: I find that the women of the United States do the marketing and it is a peculiar fact, a woman will go into a store and, almost invariably, pick out a tasteless, fresh cheese.

MR. DOAN: But they won't eat any more of it.

MR. DAVIS: We know that with age a dryer cheese develops a higher flavor, the curd breaks down, it becomes more waxy, it has a finer flavor and it is a better eating article than the moist cheese that never develops to what a real cheese is or should be.

MEMBER: Regarding making soft cheese without excessive moisture, I have never run a moisture test but I am satisfied that you can make a soft cheese without excessive moisture by cooking it a little higher and a little less acid, not so much acid on your curd, and cook it, say 2 degrees higher. If that cheese is left in a warm curing room for any length of time you have an open cheese, but you make a cheese of that kind and put in cold storage within ten days after it is made you will have a soft cheese, without excessive moisture.

MR. DOAN: I want to relate an experiment carried on by a concern in the West. California cheese resembles very much the soft cheese made in Wisconsin, very poor quality, and yet the people of California take that kind of cheese. However, one of the large companies in the East thought they would like to test that thing out and see whether California wanted a soft, tasteless cheese. They established a grocery store that never handled anything else but well cured and firmly made Cheddars, and this is the result, with the same number of consumers, the consumption of cheese was just about double in a little over four weeks. Here is the proposition. Everybody is scared about what is going to happen to the cheese markets at the end of the European war. Cheese production has increased enormously within the last two years. I was surprised to see some figures the other day, I don't know whether they were published, to the effect that Wisconsin produced 289,000,000 lbs. of cheese in the year 1915. It is probable those figures went to 300,000,000 lbs. in 1916. Other localities are increasing, particularly in the West. Cheese factories are going up in the South under the direction of the Department of Agriculture, in a country that has unusual conditions for the manufacture of a good product.

What is going to become of your markets if we go back to an export market, such as existed before the war, and especially under the low buying power in foreign countries after the war closes. We have got to stimulate consumption in the United States if we are going to continue with good cheese markets and take care of the cheese that this country produces at that time. We ought to look forward to increase the consumption by better quality, as was demonstrated in California. I know in my office at Washington of six different families who would be large consumers if they could get cheese that was good. We eat on the average of 10 lbs. of cheese a year, that is the six families. We probably would eat 200 lbs. if we could get a kind of cheese we liked but we cannot get it. These other men do not eat any cheese but they would if they could get the kind they would like. How many more people are in that same condition in the United States. I know personally of six families in my own office, and there are about 20 families. I am making it my business, being with the Department of Agriculture, to try and find some way that will make these conditions come to us. If the United States is going to take the surplus cheese it must do it on the basis of quality, advertising won't do it but quality will do it.

MR. DAVIS: Mr. Doan, have you got any figures relative to the consumption of cheese in the United States as compared with some other countries?

MR. DOAN: England consumes 12 lbs. a year, per capita, we consume 3.7 lbs. We surmise that Germany and Switzerland go way beyond that amount, probably 30 to 40 lbs., we are not sure, but of England we have it quite definite. Germany and Switzerland use cheese in place of meat. We eat less than 4 lbs. of cheese when in fact, it is the better food of the two.

MR. ADERHOLD: I think we ought to consider what Mr. Doan has told us. Another thing I want to put out for your consideration is that there are only two states in this United States that have a good reputation for cheese as an asset, that is, New York and Wisconsin, but New York makes less cheese every year because the city milk trade and other industries are encroaching upon the cheese factory and taking the milk away. With Wisconsin it is different. We are increasing the production of cheese very rapidly, so to Wisconsin a reputation for a good cheese is a much greater asset than to the city of New York. I just want to throw that out to you and also this fact that the good reputation of Wisconsin cheese was built up on cheese that contained less than 38% moisture, we ought not forget that.

MEMBER: I would like to tell this gentleman, this cheese without excessive moisture, high cooked, a small amount of acid, if we want to send that cheese to Washington it is going to throw the cover off the boxes before it gets to Washington, but give it a fair amount of acid and then it will be all right when it gets to Washington. I think we are more safe that way.

MEMBER: I wish to say I enjoyed a soft cheese trade. I was manufacturing cheese for one firm in Minneapolis, they took all the soft cheese, about \$25,000 to \$30,000 worth of cheese a season, but as they branched out in their cheese business they demanded a little firmer cheese, after a while they wanted cheese as firm as the people in the South wanted and finally we made them cheese just as firm as any. About five or six years ago we had a firm in Iowa taking two or three cars of soft cheese a month. I tried to have them take a firmer cheese but they insisted and we kept on making soft cheese until they began to work for firmer cheese. We shipped a number of cars of cheese in October and November carrying a high per cent of moisture and before Spring the rind came off and they could not sell the cheese to their trade so they went to Chicago and sold them for half price. That man today is buying cheese that will go anywhere, no special cheese, the same kind that the general trade wants. I believe the cheese to stick to and the kind they want should contain 38 to 40% moisture, that will help our reputation and keep it.

MERCHANDISING CHEESE

By M. L. BRINKMAN, Sheboygan, Wis.

Mr. President, Ladies and Gentlemen: A short time ago your worthy secretary called me up by phone and asked me to take the place of another gentleman, who is much more able than I to address you on the subject of merchandising or marketing cheese. After much thought, and with a great deal of reluctance on my part I finally consented to do so. Since that time I have given the subject more or less consideration and the more I have thought about it the less I knew as to what I wanted to say on this subject. I finally came to the conclusion that rather than bore you with a long, and perhaps uninteresting paper, it would be better to present this subject in a rather informal way, believing that if anything that I might say to you would possibly draw out a suggestion here and there, it might lead to a discussion far more interesting and beneficial than a mere formal talk.

The information has been given to me that about fifty years ago there were four American cheese factories owned and operated in Sheboygan county by the following gentlemen, who were pioneers in the making and manufacturing of American cheese, namely: Ira Strong, Hiram Conover, James Smith and Robert Blair. Since that time the manufacture of cheese has greatly increased until at the present time cheese is made in nearly every county in the State of Wisconsin.

From the time the first cheese was made the subject of merchandising or marketing from the standpoint of a cheese maker has been a very interesting one. The quantity made in the early years of this

industry was very small and the number of buyers were limited. There were probably not more than three or four cheese buyers or dealers about that time. At the present time it is probably safe to say there are about fifty cheese buyers and dealers in the State of Wisconsin. The pioneer cheese buyers and dealers have been instrumental to a very large extent in creating a demand and making a market for Wisconsin cheese all over this country, which was accomplished at the sacrifice of a great deal of expense and years of very hard work. The cheese makers from the very beginning up to the present time have also played a very important part in the development of the cheese industry, which is at the present time one of the leading industries of the State.

I take it for granted that you wish me to address you on the marketing of cheese from the standpoint of the cheese maker. Indirectly we can say that the merchandising of cheese from the cheese maker's standpoint begins in the morning when he takes in his milk, through the various steps in the manufacturing of cheese until it is taken out of the hoops, placed on the shelves and finally boxed and made ready for shipment to some dealer. The dealer in turn receives it, inspects it, tests weights, paraffines, puts lot number on boxes, takes weights, and puts it up in orders for shipment to various parts of the country. It might be pertinent to add right here that Wisconsin has established and enjoyed an enviable reputation as to the quality of her cheese which is second to none, but it seems to me that during the last four or five years we have lost this reputation somewhat because of the manufacture of a poorer grade of cheese. This remark may not be pertinent to the merchandising of cheese, but I want to impress upon you the absolute necessity of maintaining the high standard of cheese that is so necessary in order to hold our own with competitors from other states.

You should make it a point to make the very best cheese that is possible for you to make. You should be particular about the make-up of the cheese, see to it that the cheese are of an even weight when put in boxes. You should also see to it that the bandages are well put on the cheese and that the caps are placed on the ends of the cheese and not, as is frequently the case, on the side. A great many cheese makers have fallen into the habit when boxing their cheese, to pick them out so as not to lose a fraction of an ounce in weight, disregarding entirely whether the cheese are of an even height in the boxes or not. This causes the dealer receiving the cheese an extra amount of labor in sorting and sizing them up. Be sure to mark the weight of the cheese on the boxes in good plain figures sufficiently large to enable one to read the figures readily. You should use a black or blue crayon, black preferable, and not an ordinary hard pencil, also date your cheese.

A great deal of trouble and loss is caused by mouldy cheese. This in many instances is directly traceable to the cheese maker, who uses

curd left over from the previous day which he has carelessly placed in a box which might be contaminated by mould germs. The next day the cheese maker puts this old curd in with his new curd and the mouldy curd is mixed with the fresh and new curd. If this curd, as before stated, has mould germs it will rapidly cause streaks of mould to form through the entire cheese. This mould will not be discovered by the dealer when he first receives the cheese but will be discovered after it has been shipped out by him and is cut in the store by some retailer, who promptly returns it to the jobber or wholesale grocery man from whom he purchased the cheese, who in turn will return it to the wholesale cheese dealer from whom it was originally purchased and charge up the loss to that dealer, and in every instance the loss is a total one. Please bear this in mind and see to it that left over curd is kept in a clean receptacle and is free from all mould germs when you mix it with your curd the next day.

You should always send the railroad receipts or bill of lading with your bill, so that in case there is any shortage or damage done to the shipment, it will enable the dealer to file claim with the transportation company promptly.

Another practice which I am glad to say is not very general and which should be eliminated entirely, is that of placing bottles, containing the name of the maker in the interior of the cheese or anything else for that matter. My attention was called, by a fellow dealer, to a cheese that had been returned to them a short time ago wherein the maker had placed a dead mouse in the center of the cheese. The dealer was enabled to trace out of what shipment this cheese came and eventually discovered that when this dealer presented a bill covering the loss, the maker gladly paid the loss. I merely mention this fact to show you what damage and loss you may cause your dealer when placing anything in the center of a cheese.

The merchandising of cheese from the cheese maker to the cheese dealer has generally been accomplished through one of three ways. In the early history of the industry various buyers would drive through the country, call upon the factorymen and purchase their cheese outright at the factory. This custom followed for sometime was not satisfactory. Later on there was established what was called the "Button Hole Board," and which a great many of the older cheese makers will recall. The evil in this method of buying was that the buyer never knew if the cheese that has been bought would be shipped or not. Since that time the method of buying cheese on contract has sprung up and also the method of buying cheese on an open call board. The call board is, in our opinion, the most desirable way for a cheese maker to sell his cheese. If all the cheese made in the State of Wisconsin were placed on open or call boards it would be practically impossible for any one to get control of the output of cheese, which a great many now fear will be the ultimate result if the cheese is not sold on an open or call board.

I cannot too strongly impress upon you the absolute necessity of selling your cheese on the open call board system. Unless you do so, it is only a matter of time before the cheese industry will be in control of the larger handlers of cheese. A great deal of missionary work can be done along this line by you makers, and you should encourage any and all efforts to have call boards established in your respective localities. You offer a sufficient quantity of cheese for sale and you can rest assured you will have plenty of buyers present to bid on your cheese. At the present time one Call Board establishes the price of cheese for all the cheese made in Wisconsin. This is not fair or just and does not establish a true market value.

COMPARISONS AND CRITICISMS ON CHEESE

By H. G. DAVIS, Plymouth, Wis.

Mr. President and Gentlemen: It is very self-evident that this portion of the program doesn't seem to be very interesting.

Your judges regret the smallness of the exhibit room. They had to pile the cheese one upon the other and you cannot get a fair idea with the size of that room of what you have really shown.

The three judges, Mr. Jaeckels, of Plymouth, Mr. Austin, of Green Bay, and Mr. Noyes, of Muscoda, were selected to represent three sections of the country.

They were instructed to judge cheese for domestic or commercial purposes of the United States. Each one of them was to draw a trier of cheese and judge what he found himself that the plug showed. He was given a piece of paper and on that scored the cheese on a basis of 45 points for flavor, texture 30 points, color 15 points, make-up 10 points, a total of 100 points. They pursued that method, I was with them from Tuesday morning till we finished the general scoring Wednesday noon. I made my own memorandum upon each of the score cards for each lot as we went through. We took each score and added it up, then we added up the total of the three scores and divided by 3. You might have 21 points left over and 3 into 21 goes 7 times and we would call it the score and 7 points.

We judged these cheese, first, the general make-up, the way they were pressed, how the bandage was taken care of, if you had them bandaged even, uniform, arranged all around the surface of the cheese, it was most desirable. If you had your bandage on one end right to the edge, or too close to the edge, and not on the other end, we scored it off. If we found a heavy ridge where the follower had let some of the curd come up, we did not consider it well dressed. In some of the exhibits we found where you had torn hoop cloths off which had stuck to the cheese to the extent of pulling up some of the curd, leaving a

rough, unsightly surface, we scored that off. We found some cheese that were thicker on one side than another, we scored that off.

Each judge bored a plug of the cheese, we tried to get in a triangle, and on the plug that he bored he judged that article, strange to say that these three plugs in most cases did not show the same quality of cheese. We would find one plug bore close, we might find two close and one full of mechanical, loose holes, a difference of 16 points being made in one cheese between the scoring of the high and the low on account of the plugs shown from the cheese that were drawn. Why, gentlemen, should a cheese show such a variance, that is something for you to consider and try and figure out. I have asked a good many and have had some replies, that they thought probably in filling the hoop you did not fill it even, too much cheese on one side and that the pressure might force a certain quantity over, yet not enough to make that close desirable boring cheese we ought to have. We would suggest that more care be given when you fill the curd into your hoop to get it even, to give the advantage of an even pressure. We found one cheese there that one of the plugs showed pinholes and the others did not. We would find other plugs that would be quite loose, mechanical holes and some Swiss holes, and other plugs would not. That is something you as cheese makers can understand maybe better than I and rectify. We found several exhibits that were checked and cracked on the faces and in putting a trier in one of the cracks we found the mould had gone into the cheese about half an inch, that was scored off. The crack in a cheese lets in air, it starts that blue mould in the cheese and it will permeate the whole cheese, destroying the value. We were surprised to find also cheese exhibited there that were decidedly cracked around the sides. A man exhibiting cheese should not send in an open faced, or open under the rinds, as a prize cheese. We found several cheese that had finger marks on it, where the maker very likely had dirty hands, probably coal dust on them, when he pressed his cheese or handled it, and paraffined over it. Not being very familiar with reading finger marks, I could not give you his name.

In all the exhibits that you had we only found three cheese that we called good flavor. There was one cheese that was high flavor, the one that takes the high score was a high, good flavored cheese. There was one other with fair flavor but the bulk of your exhibits lacked flavor, they were flat, there was an absence of flavor. We find a great deal of sweet flavored cheese and contribute it largely to the lacking of salt. I don't believe you are salting your product enough to bring out the real flavor that should be obtained from your curd. This is more forcibly impressed on my mind from the fact that there were exhibits of several summer-made or earlier cheese that were very pronounced in their heated off-flavor. These exhibits did not have enough salt in them to hold them against the heat and I would recommend on what I have seen here that you use more salt to obtain a finer, better keeping article. A summer cheese particularly, that has

to be carried a length of time, should receive decidedly more salt than the earlier cheese that you had exhibited. We found quite a good deal of evidence of what we thought was the hooping of your curd too soon. It produced, seemingly, a sandy condition of the curd. It looked to us as though the curd had not been allowed to assimilate the salt properly before hooping.

We judge these cheese entirely by number, we did not know who the exhibitor was, but I have found since then that a great many of the cheese makers have gone down and raised up the cards to see whose name was on the other side, which was the first we knew that there was any name on the other side. I would suggest in the future that the exhibit card be given a number and retained by the secretary and a new card, without any name but simply a number, be put on the cheese.

Now I have here the score on the three highest exhibits. I am going to read them to you as we got it, remembering that we figure flavor 45. One scores 43, another 43 and the other 42.75 on flavor. The three of them added together, 128.75, divided by 3=42.92. This cheese on texture is the basis of 30. It was scored 30, 29.5 and 30. On color, the standard is 15, it was scored 14.5, 15 and 15. Make-up was scored, 10 for each one. That brought a total of 97.6 and was made by Thomas Martin, of Leeman, Wis.

No. 68, this cheese was the least of the flavor of the three. I have got it marked* that a little more use of salt would have brought out the stronger flavor. This gentleman scores off about 3 points for flavor, a little over a point for texture and about $\frac{1}{2}$ point for color. Exhibit No. 68 on flavor 42.5, 43.5 and 44; on texture 29, 28.75 and 28.5, a total of 28.75, while the color was perfect and make-up perfect, scoring 97.7. It was made by Jule Boullinger, of Brussels. Use a little more salt.

The high score was No. 70. Flavors of the three judges, 44.5, 43.5 and 43.75; texture 29, 29.5 and 29.5; color 15, 15 and 15; make-up 10, 10 and 10. That cheese, boring the three plugs, we were just about the same. The total of the score 98.2 and was made by H. J. Tuschel, of Coleman, Wis. A heavy bodied, clean color, clean flavor, fine texture, lacking just a little in full flavor, a trifle more salt would have brought it out.

Now, gentlemen, we are surprised to see in the exhibit three that were rancid flavor, one of them very decidedly so. We cannot understand why a maker should send to us here a strong rancid flavored cheese and when we get a strong rancid flavored cheese, flavor drops pretty fast in scoring. The make-up, the appearance was good.

Then we found one exhibit that was fruity. Those people should at least look at one other cheese of the same vats make, we presume they do but they must have had a very bad cold that they could not detect that strong flavor on it.

We notice generally though a little inclination for sweetness. There was quite a good deal of curd of the plugs that did not have that strong, resisting full body that they could have obtained by letting

their curd lay a little longer, giving more acid and more salt and it is my recommendation that the increased use of salt would have benefited very materially a large number of the cheese exhibited.

If there are any questions that I can answer for you I will do it with pleasure.

DISCUSSION

MR. ADERHOLD: These cheese that the judges scored 16 points apart, what were their scores, do you remember?

MR. DAVIS: The cheese scored up along about 86 to 88. I don't want to delay you by looking for the number. One plug I believe scored up to 96 and one was an open, ragged cheese that did not bore, it was a regular curd hole all through the whole plug. I never in my experience have seen two such opposites, where two plugs would be fine and one was poor. It was a regular mechanical open hole, some places barely enough good cheese to hold the plug together.

MEMBER: What style of cheese was it?

MR. DAVIS: If I remember right it was a Flat. I did not suppose that there could be such a tremendous difference in three plugs as we found in some of these exhibits.

MEMBER: What causes that?

MR. DAVIS: I think that in pressing the cheese in the hoops they must have got too much curd to one side, it may have been a little hard so it did not get even through the whole cheese; they should have leveled off the curd more in the hoop before putting to press but seemingly one part did not press.

MR. SCOTT: Don't you think it might have been an uneven distribution of salt?

MR. DAVIS: I would leave that to your judgment, Mr. Scott. That particular cheese seemed to be well salted. The result was a very peculiar one. We have found those things in judging but we have never got as far apart as that but often we have found where we would score two points apart because in the difference in the texture and I think largely because it is an uneven distribution of salt and the curd being lumpy. The larger lumps will not get their share of salt and will have more moisture. If the trier bores through a place where there is a large lump, it will be weaker and more open and some times a little lighter colored because there was less salt and more moisture. Sometimes the color is affected because they have not protected their curd, have allowed the surface to dry and become reddish in color, where the rest is lighter in color. Those things can be regulated so there will not be such differences.

MEMBER: Wouldn't it be caused by the followers?

MR. DAVIS: I don't think so. I have here a judgment on one lot, flavor 30, 28 and 31, rancid.

MEMBER: What do you call rancid flavor?

MR. DAVIS: A condition brought about in curing, where it has a strong rancid smell, a smell and taste of grease that gets old. A piece of rancid grease or cheese takes pretty near the same flavor.

MEMBER: Was it what they call a fruity flavor?

MR. DAVIS: No. A fruity flavored cheese smells like pineapple. We also have some that we call weedy in flavor. I think we all know what a rancid flavor is but to describe it is a little difficult. I would take great pleasure, however, in asking you to look at some of these exhibits and if you smell a rancid flavor once you will always know it in the future.

MEMBER: Would not some stale butter give the idea what rancid flavor is?

MR. DAVIS: Yes, old butter gets rancid. Very old grease that has not been kept right has a rancid flavor.

MEMBER: Wouldn't it be a good idea to have the cheese brought to this hall and let everyone see it?

MR. DAVIS: The judges have absolutely nothing to do with that.

MR. BIERBAUM: Mr. Davis, I think you could get a rancid cheese when you make a starter from milk that is two or three days old.

MR. DAVIS: Mr. Bierbaum, I have seen old cans, or not properly cleaned, where along the seams there was a lot of grease that you could take out with your thumb nail, that would have a rancid flavor. I think it gets into the milk and makes the rancid flavor just the same as you get a carrion flavor from a cow smelling like putrid meat. It has been my misfortune once to get tangled up in a lot of cheese. I sold it at a price to a dealer where the factoryman abused me for selling it so cheap and the party I shipped it to abused the buyer for paying the price, with instructions never to buy carrion cheese again.

MEMBER: Mr. Chairman, I believe that this association ought to have the cheese with the rancid flavor put up here and have it tested and see what it is like. I make that a motion. Let everybody have a chance to try that cheese and get an idea what it is like, and get the flavor. Also the cheese that scores 16 points apart.

MEMBER: I second the motion.

CHAIRMAN: Motion has been made and seconded that this association expend the price of these two cheese, styled rancid flavor and the one with the wide difference in scoring, and they be brought on the floor here.

MR. DAVIS: It will take a few minutes to find the numbers.

MR. CHAIRMAN: Mr. Jackels, will you go down stairs and bring up these two cheese.

MEMBER: Our understanding was that it took 20 pounds of cheese to make an exhibit.

MR. DAVIS: We were informed to that effect so on single Long-horns we scored them complimentary, and single Americas we scored complimentary. If you have any disagreement with the Association as to that rule, that is between you and them. We threw out several cheese that had been plugged and marked the scoring "cheese plugged",

that is between you and the association. We have three sheets on every exhibit. The gentlemen that inspected these cheese inspected them and put their report of quality down on the sheets. I have here in my hand 5 that we have been running over and not found the particular one yet where a difference of 8 to 10 points is made between different inspectors. That is their judgment on the plug they had and I am satisfied that each one of these gentlemen gave his opinion of what he had before him, without considering the plug that might be in someone else's hands.

You have here a Longhorn. It is quite peculiar. Here is a cheese that in certain portions of it is close. A man putting a trier into that cheese in one part would get an almost perfect plug but you can see those curd holes, another man in boring that same cheese gets a different plug and the third man might strike right into that mould. The man that would strike that mould would score it right down, he could not do otherwise, the man that strikes the mechanical hole would score accordingly, the one striking the close part would put down a high score. We found that quite generally in our boring. No. 35 scored by one man for flavor 38 points, texture 26, color 14, make-up 6. His total was 84. By the second man, flavor 35, texture 25, color 15, make-up 7, total 75. By the third one, flavor 25, texture 19½, color 13, make-up 6, total 67½, against 84. 84, 75 and 67½ are the three scores on that cheese, exhibit No. 35, that makes six where the judgment of three judges varied very materially on the same cheese.

I see you had two cheese brought up here. Gentlemen, there is a rancid cheese. You will never forget it after you smell it. Here is the cheese that was bored right in the center, where, if you will examine the curd, seems to be the closest together, and this same cheese you see all around the outside is curd open. I feel, gentlemen, that the three gentlemen that inspected your cheese are due a great deal of credit, they are three men that are constantly traveling from factory to factory through the state, and they are constantly examining, classifying and grading goods, and, knowing them in their work as I do, I consider them fully competent, really experts, to do this work and the work that I have seen them do has been satisfactory to me as I watched them and I hope will prove satisfactory to you. Thank you.

8—C. A.

SECRETARY'S REPORT

Balance on hand	\$614 46
Membership fees	25 00
" " " from A. Schaller	18 00
" " " at convention	300 00
For cheese from Grossenbach	947 57
" " " F. Marty	1 80
Memberships	61 00
Deducted for prorata fund	358 00
" " " memberships	103 00
Plymouth R. L. & P. Co.	5 00
Standard Oil Co.	10 00
Wis. Coal Co., (old acct.)	15 00
Wm. J. Haire Co.	5 00
Schmitt Bros.	5 00
Total receipts	\$2,478 83

Disbursements

Alex Schaller, expense as judge	\$10 60
R. A. Smith, stereopticon lantern	16 00
J. Karlen, Jr., railroad fare	4 00
J. W. Cross, expense	28 35
Republican House	117 44
Porter and dray	3 00
A. L. Cross, photo of cheese	5 00
H. P. Olsen, printing	4 00
Paid exhibitors for cheese	948 75
" " " pro-rata premiums	489 25
O. A. Damrow, expenses	14 54
J. D. Cannon, expenses as judge	5 83
Fred Marty, Superintendent	5 69
E. L. Aderhold, as judge	3 72
G. Marty, as judge	3 28
H. P. Olsen, printing	4 75
T. A. Ubbelohde, postage and expense	9 32
Balance on hand	805 31
Total	\$2,478 83

STATE TREASURER'S ACCOUNT

Balance forward	\$766 31
<i>Paid out</i> W. C. Thomas, printing	\$47 75
Butter, Cheese Egg Journal printing ..	237 19
Cantwell Bros.	224 60
Schwaab Seal Co.	75 00
L. Miller	64 00
Printing Board	12 05
Balance on hand	105 72
Total	\$766 31

TREASURER'S REPORT, READ IN FOND DU LAC, 1917.

1916	<i>Receipts.</i>	
Jan. 7	Balance on hand.....	\$614 46
Jan. 7	From A. T. Bruhn, secretary.....	24 00
Jan. 24	From A. T. Bruhn.....	18 00
Jan. 30	From A. T. Bruhn.....	300 00
Feb. 21	From A. T. Bruhn.....	1 80
Feb. 21	From A. T. Bruhn.....	947 57
Feb. 25	From A. T. Bruhn.....	61 00
July 12	From A. T. Bruhn.....	50 00
	Total	\$2,016 83

1916	<i>Disbursements.</i>	
Jan. 7	To J. W. Cross, Supt. Cheese exhibit.....	\$28 35
Jan. 7	J. Karlen, Jr., expense.....	4 00
Jan. 7	Ray A. Smith Co.....	16 00
Jan. 24	Alex. Schaller, cheese judge.....	10 60
Jan. 7	Republican House	117 44
Jan. 20	Porter	3 00
Jan. 20	A. L. Cross, photograph.....	5 00
Jan. 20	Mr. Olson, printing.....	8 75
Jan. 20	O. A. Damrow, expense.....	14 54
Jan. 20	Paid exhibitors and pro rata.....	975 60
June 5	Fred Marty, expense.....	5 69
June 5	Gottlieb Marty, cheese judge.....	3 28
June 5	J. D. Cannon, cheese judge.....	5 83
June 5	E. L. Aderhold, cheese judge.....	3 72
June 5	Postage	6 00
June 5	T. A. Ubbelohde, expense.....	3 32
	Balance on hand.....	805 71
	Total	\$2,016 83

RESOLUTIONS ADOPTED

Resolved, That this Association extend a resolution of thanks to the Business Men's Association of Fond du Lac, for their loyal support, and also to the citizens of Fond du Lac for the hearty welcome given us. Further be it

Resolved, That we thank Mr. Damrow and Mr. A. A. Jones for their special effort in looking after the comfort and pleasure of the members, and the care of the cheese exhibits.

Realizing that more interest is created and a larger exhibit of cheese made, due to the large and valuable number of special premiums offered, therefore, be it resolved, that we extend our thanks to the donors of such premiums.

WHEREAS, rumors are afloat that efforts will be made to amend the present skim milk cheese law at the present session of the legislature, and believing any change of the present law would be detrimental to the dairy industry of the state, therefore be it

Resolved, That we strongly oppose and will use our influence against any such legislation. Further, be it

Resolved, That the Secretary of this Association be instructed to have a copy of this resolution sent to the Honorable Governor, E. L. Phillip, and to each Senator and Assemblyman.

WHEREAS, Under the present license law, combined factories are compelled to have two operators' licenses, therefore be it

Resolved, That we petition the Hon. George Weigle, Dairy and Food Commissioner, to use his influence to have the present license law so amended that one operator's license will be sufficient for the manufacture in one building.

WHEREAS, There is considerable ignorance among the consumers as to the method employed in the process of manufacturing cheese, therefore be it

RESOLVED, That we, as an Association, favor and support to a reasonable extent, an Exhibit by the Wisconsin Cheese Makers' Association, demonstrating the actual process of manufacturing cheese, at the Dairy Building, State Fair Park, during the 1917 State Fair.

H. M. SCOTT,

H. J. NOYES,

WM. RUSCH,

Committee on Resolutions.

DISCUSSION

MR. SCOTT: Since the resolutions were made, parties came to me and stated that they have been talking to Mr. Weigle and he would be glad to have the license law changed so it would run on, instead of applying for renewal every year.

MR. ADERHOLD: That question is new to me, I have not heard it mentioned before.

MEMBER: It isn't for the expense but we would not have to send in for the applications and then send them back again.

MR. ADERHOLD: I don't know about this, I have not heard it talked about before, but as far as the writing is concerned, it would be a good thing for some cheese makers to get in the habit of writing once in a while. You mean you would want it this way, that you pay your license once, your license is in effect as long as you comply with the law, that it would run along year after year. At the present time, if you don't put in another application your license runs out. If you have a license you send in your fee and the license goes right along, but you pay your money every year. Those are the requirements.

MEMBER: Where does that money go to?

MR. ADERHOLD: To the Dairy and Food Department.

MEMBER: We have to support them twice, once, when we pay the taxes, indirectly, and when we pay the license fee we support them directly.

MR. DAMBOW: All this money comes out of the working man. I think the State of Wisconsin, taking in millions of dollars in taxes, should be able to pay the Dairy and Food Commission, without asking the makers to pay them, and I believe it would be a good idea to have the license hold over unless revoked by the Dairy and Food Commissioner.

MR. ADERHOLD: The bill was first introduced requiring a \$5.00 fee for the operator. I objected to that, and others did, Mr. Bruhn did, and it was lowered to \$2.00. Now, I don't know if there are licenses that can be granted without a license fee. My impression is that a license fee of any kind is never less than \$1.00 and a factoryman's license was left at \$2.00. Of course the object is not primarily to raise money but to get proper control over the industry rather than to raise money, and perhaps the other way will work out all right, where the license would be in force for any length of time, unless revoked. I don't know whether it would be good.

MR. BRUHN: I objected to the license. It looked to me like a special tax. I told them at the time, I have no objection to it but if we should pay the whole expense of the cheese factory inspectors, let us have the use of them and not send them over to the cities. I believe we need the inspectors just as much as the city of Milwaukee. I believe we ought to get up a letter to the legislature that we want inspectors enough so we can get some benefit out of them. It seems to me we

don't have backbone enough to get what we want, we go on year after year and never get any more. I don't object to the license law tax but I expect protection.

Mr. NOYES: I believe that this is the feeling throughout the state. I think it is an injustice, they are taxed to have somebody come around and check them up. They are willing to conform to the law. I believe it is an unjust act and believe that this can be adjusted.



HON. G. J. WEIGLE
Wisconsin Dairy and Food Commissioner

WISCONSIN CHEESE MAKERS' ASSOCIATION

TWENTY-SIXTH ANNUAL MEETING

Auditorium Building, Milwaukee, 1918

Officers

CHAS. E. REED, President.....	Thorp
P. H. KASPER, Vice President.....	Bear Creek
GUS. W. SCHIERECK, Secretary.....	Plymouth
T. A. UBBELOHDE, Treasurer.....	Glenbeulah

Directors

JACOB KARLEN, JR.....	Monroe
A. T. BRUHN.....	Spring Green
H. J. NOYES.....	Muscoda

Judges of Cheese

WILLIAM HUBERT.....	Sheboygan
JOHN CANNON.....	New London
JOSEPH ACKERMAN.....	Monroe
ALEX. SCHALLER.....	Barneveld

Critic

H. C. DAVIS.....	Plymouth
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Superintendent of Cheese Exhibit

J. W. CROSS.....	Milwaukee
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Official Organ

The Sheboygan County News and Dairy Market Reporter, Sheboygan Falls.

**PROCEEDINGS OF WISCONSIN CHEESE MAKERS'
ASSOCIATION IN ANNUAL CONVENTION
MILWAUKEE, WIS., 1918.**

The twenty-sixth annual meeting of the Wisconsin Cheese Makers' Association was called to order Wednesday, January 9, 1918, in the Auditorium Building, Milwaukee, by President Chas. E. Reed. A patriotic address of welcome by Mr. John L. Klingler, president of the Milwaukee Association of Commerce was responded to by Mr. H. J. Noyes of Muscoda, who spoke in part as follows:

ADDRESS OF WELCOME

By JOHN L. KLINGLER, President Milwaukee Association of Commerce

I shall assume that you all come from cities that are equally as thrifty, enterprising and handsome as is Milwaukee, and will, therefore, forego a description of Wisconsin's great metropolis.

I am anxious, to give you full assurance on behalf of the great commercial and industrial interests of this city, which I represent, that you are most welcome in our midst. We hail the convention guest not merely because he has a commercial value for the city that he visits, but, because his coming also possesses an educational and social value. Your gathering here today is strictly in the interest of the material progress of the great state of Wisconsin. You are concerned in one of its leading products and one which is adding in a large degree to the economic vitality and stability of the state. The metropolis recognizes your industry, its importance and its magnificent future.

The dairy industry of Wisconsin reads like a romance. When the grain crops of a former day became more meagre from year to year, and were attended with great uncertainties, the state was induced to turn to the dairy industry.

It may not be amiss, on this occasion to touch briefly upon Wisconsin's place in the economic life of the nation. The country's annual farm production has for many years ranged about the twenty billion dollar mark while the factory production has come somewhere near the thirty billion mark.

In Wisconsin the proportion has been more decidedly in favor of the factory. While the farm has produced a half billion dollars worth annually, the value of the factory products have been nearly double that figure. When you deduct, however, the value of the raw materials which go into manufacture and estimate the value added by the manufacturer in the finished product, it will be found that the producing ability of the Wisconsin farm and of the Wisconsin factory are alike.

The Dairy Industry

I had occasion recently to consult the government statistics on the dairy products of this country. In 1914 Wisconsin's production for the year in butter, cheese and condensed milk, was approximately \$73,000,000. New York's production, a state which stood at the head of the list of dairy states for many years, showed an annual production of \$43,000,000. Then came the state of Minnesota with \$34,000,000; Iowa \$27,000,000; Illinois \$21,000,000; Michigan \$21,000,000 and California \$20,000,000. This was three years ago. Today the figures may not have undergone a great relative change, but, with an increased production and enhanced prices it is safe to say that Wisconsin's dairy production exceeds the \$150,000,000 mark. There are those who believe that the sum is nearer \$200,000,000.

No doubt, you are all more familiar than I am in the progress made in your own specific industry, but I am more than gratified in noting that the cheese industry of Wisconsin has experienced a tremendous impetus in recent years and that much of its product which has become popular in nearly all sections of this country, also has gone into the export trade. I understand that before the war there was little or no Wisconsin cheese sent to foreign countries. I am sure that the Wisconsin product will enjoy a market in foreign lands even after the war. Where its quality has once become recognized, it does its own advertising. It will simply remain with yourselves to hold the high standards in quality and to honorable selling methods.

The Pride of our Industry

In concluding this brief discussion, I want to impress upon you the sense of pride in an industry. In every occupation of life there is something higher than the dollar mark.

I ask you, therefore, to infuse your efforts with a sense of pride, conscious of the fact that by performing your services to the best of your ability, you are also adding to the cause of human advancement.

In these days all men are called upon to serve their country. Every man, in his own way, can do something for the unity, the strength, and the power of a great nation, be this in industry, commercial lines, or on the field of battle. It is only the concerted action of all the forces that make a nation strong and invincible. By doing full justice to your own calling you will render a service to your country.

You and I have been trained in the citizenship of peace; we must now adjust ourselves to the citizenship of war. The nation is engaged in a world conflict. It is fighting for a great human principle. Its cause is a just one. It, therefore, becomes our sacred duty to stand loyally, steadfastly and enthusiastically by the nation's cause.

We must, therefore, stand united in thought and action. Production must be stimulated, economy must be exercised in food and clothing, efficiency must be infused in all our activities. Every man must consider himself, at home or abroad, a soldier in the service of his country. The war must be fought to the bitter end. *The war must be won.*

The citizenship of Wisconsin which has thus far met every responsibility so splendidly must continue to serve, and render itself ever more worthy of the proud title and great privilege, namely, citizenship in the greatest Republic on earth.

RESPONSE

By H. J. NOYES, Muscoda

Mr. President, Ladies and Gentlemen of the convention: In the first place I wish to state to you gentlemen it gives me great pleasure to come back to Milwaukee to hold this convention. I wish to say also that I was one of the charter members of this association twenty-six years ago, and this association has been through many difficulties since that time. Some of the time it has been splendid. But it seems to me at the present time that the responsibility of every cheese maker is greater than ever before.

It gives me great pleasure to thank the Chamber of Commerce and also the Merchants and Manufacturers' Association and the city of Milwaukee in general. We have always had a splendid time in Milwaukee. They have turned the key of the city over to us and we were at liberty to enjoy the city as a whole and at all times. We have this privilege this year, gentlemen, and we ought to have the best convention we have ever had this year. I hope that every one will do his bit in making this convention a success.

I am a little surprised we haven't a larger attendance at the opening of this convention than we have. We ought to have at least a thousand members. The responsibility upon us this year is more than ever before. The cheese industry has received less attention, it seems to me, from the Food Administration than it should receive. They have done something towards introducing cheese in the way of food, but it seems to me not as much so as it deserves. I want to read to you a few paragraphs from a recent paper.

"The food value of cheese as compared with other protein foods is too little known among the consuming public, although this subject has

been taken up by the Food Administration, the Department of Agriculture, and other organizations, and has received considerable publicity through the press. The publicity that has so far been given to the food value of cheese and the comparative cost of cheese with other similar foods, however, has been donated. Those most directly interested in the increased consumption of cheese, the cheese factory operators themselves, have given the least of time and effort to increase this consumption.

"We need but a few examples to prove what a trade organization can do toward molding the sentiment of the public as regards their product. Trouble was brewing for the city milk dealers a little over a year ago when the prices of cans, glass, help, milk, coal, etc., began to get their wing feathers. Milk dealers in the large cities organized themselves into a body—and some of them undertook the work alone—of telling the people in a truthful, convincing manner and in a non-competitive way, that at 10, 12 or 15 cents a quart, milk is still a cheaper food, and a better food, than any other food known, and that the young child must have milk and plenty of it, if it is to maintain its normal growth and thrive. They told the people of these facts through advertisements in the daily papers, and these advertisements were signed and paid for by the milk dealers' association, or by a lone milk dealer if no organization had been formed and he felt equal to the job. They put up signs on the bill boards, they used the advertising spaces in the street cars and even flashed their message on the screen in the moving picture theaters. There is still a considerable decrease in the consumption of milk when the price is raised, but they have started people thinking about it, and where an educational campaign of this kind has been conducted, there is notably less decrease in sales and less complaint."

It seems to me that is just what we need today. We need at the present time to organize ourselves into a body of men that will look after and advance the product we are manufacturing. We also need to organize ourselves in regard to the price of manufacture. You all understand very clearly that everything has advanced about a hundred per cent over a year ago, and that we cannot afford to manufacture cheese at the price we have been doing. It is up to us to make a uniform price for the manufacture and get what is our just due, simply to protect ourselves. If we do this we will put an impetus into our business such as we never had before. Every cheese maker in the state should be here to help do this. I see in the northern part of the state they have organized associations and they are doing good work. I believe those associations should come down here to the State Association and they would be able to help us more than any one.

Gentlemen, I hope everyone of you will be in every session of this convention, and when you leave this convention this afternoon bring as many back tomorrow as you possibly can, and let us make this the best convention we ever had. There are so many things to discuss, let us lay aside our fun and take that up during the time when the sessions are off, but when the sessions are on let us be here and everyone of us do our best.

Again we thank the citizens and organizations which our speaker represented this afternoon and who have always given us a hearty welcome.

PRESIDENT'S ADDRESS

By CHARLES REED, Thorp

Fellow Cheese Makers and Friends: Again we are assembled together in connection with the Wisconsin Cheese Makers' Association. Let all of you bear in mind what the one word advancement means.

This, as I think of it, has a very and perhaps the most important place in the name of our association. First there must be advancement in cheese makers, second advancement in cheese making, and last, but by no means the least, advancement in cheese, and to gain those three points one of the easiest and best ways is to attend our cheese makers' convention and hear the different ideas brought out by those whose names appear one after another on your programs. But not that alone will do, you must not be afraid to enter into discussions of the different subjects. Every one of you has a question at one time or another that is uppermost in your mind. Not only a question, but a problem pertaining to cheese making. Something that has puzzled you at one time or another. Now is the time to ask for a helpful hint. There is always one who will be able to answer so that either one or another is benefited by it. Exchanging of ideas is a great help to what you as cheese makers are meeting here together for—advancement, education and improvement in your especial line of business.

Through this same school we all will learn more of cheese making after taking an active part in every one of our sessions. We will return to our respective homes with at least one thought uppermost in our minds that will tend to produce a decided effect upon the improvement of cheese making in Wisconsin.

But let us not forget advancement in cheese. At the 1917 convention you will all remember that considerable legislation was recommended by you to be introduced into the legislature for the improvement of cheese and cheese making in general, some of which you all know was passed and enacted into laws, but some of which was not passed. I earnestly request you to work for any legislation that may be proposed at this meeting, that is if you feel that it is for the best, for when we have as a state enacted a set of laws governing our greatest industry, cheese making, which is perfect, or nearly so, then and not until then will we have a uniform quality of good and wholesome cheese, which is the end towards which we are all striving. For then competitors in the dairy industry will have to cater to the cheese and our cheese will have a greater demand and a uniform top notch price.

One thing we should especially remember at the present time, is to induce the public to use more cheese locally. One way to bring about this is to advertise our product and its uses, also the many different ways in which it can be used. You certainly will find a large percentage of the population of this city and all other communities of the

state not using cheese daily, chiefly because they consider it only a luxury and do not know of its food value nor the various ways in which cheese can be used on their tables. I therefore suggest that this convention go on record as having done something in this particular, namely, to "boost" the local use of cheese. This cannot be done by the wholesale cheese dealers alone. The cheese makers must also do their part in this matter. So let each member go from this convention with a feeling that he has taken some active part, and not left the labor of the many to the few whom he might think are better adapted to do so. "Where there's a will there's a way."

In my address one year ago I laid particular stress upon the idea that the cheese makers of the state should organize local associations where they could meet more often and thereby work out the problems which might confront them locally because no two sections of the state are exactly alike in this. A large number of these locals have been organized during the past year and all are in a thriving condition and doing a great deal of good for the cheese makers and to the cheese industry.

Before I conclude this I would like to mention a little problem that was brought to mind this morning concerning our convention a year ago, and that is there was a little bit of a harsh feeling on the part of a great many because of the lateness of their returns in the pro rata money. That was laid up to the door of our secretary. He is not to blame for that and he should not be blamed. The cheese became almost unsalable and it took a very great length of time to get it to market; therefore please excuse him. There are a great many here who were in that convention. There was a feeling throughout the state that the secretary was holding back while he was not. Furthermore I found lately there were a great many cheeses stolen at the convention hall. All of these claims have been paid in full under the recommendation of the board of directors. There are two that have not been paid.

Stick to your state association and attend every session. Our secretary has arranged a fine program. We have been delayed some in not getting started this forenoon so we will have to double up and make everything as brief as possible this afternoon in order to get through today's program. Therefore enter into the spirit of the day and make this 1918 convention one full of life and usefulness long to be remembered, never forgotten.

REPORT OF THE BOARD OF DIRECTORS

By J. KARLEN, JR., Monroe

Mr. Chairman, Ladies and Gentlemen: All I have to report is we have examined the books of the secretary and treasurer and find them correct.

REPORT OF TREASURER

By T. A. UBBELOHDE, Glenbeulah

Balance on hand January 10, 1917	\$805.31	
Memberships received	131.00	
525 memberships, but this is part, the Secretary received the other part.		
Received from Secretary Schiereck	93.54	\$1,029.85

Disbursements.

A. T. Bruhn, salary and expense—2 years	\$497.62	
W. C. Thomas, printing	45.75	
Catalog and other printing	298.80	
Total		842.17
Leaving a balance of.....		\$187.68

STATE TREASURER IN ACCOUNT WITH WISCONSIN CHEESE MAKERS' ASSOCIATION*Debit*

1916			
July 1	Balance Forward	\$106.22	
	State Appropriation	600.00	
			\$706.22

Credit

1917			
Dec. 26	To G. W. Schiereck for postage	\$94.08	
Mar. 26	To G. W. Schiereck.....	200.00	
Mar. 26	To Schwaab Stamp and Seal Co.....	76.50	
Mar. 26	To Marie Koenig, stenographer.....	60.00	
	Balance forward	275.64	
			\$706.22

SECRETARY'S REPORT

Cash received

Wm. J. Haire for program ad.	\$5 00
Kiel Woodenware Co.	10 00
J. Hansen Co.	5 00
S. H. Conover	5 00
Sheb. Dairy Products Co.	5 00
The Chas. F. Kletsch Co.	5 00
Plymouth Cheese Co.	10 00
Louis F. Nafis	5 00
Marshall Dairy Lab.	10 00
Butter Cheese & Eggs Journal	5 00
Stanley Woodenware Co.	5 00
Lincoln Box Co.	10 00
Joseph Dusek Co.	10 00
Chr. Hansen's Lab.	10 00
Sheb. Bandage Factory	5 00
Northern Wis. Prod. Co.	5 00
C. H. Hanson Co.	5 00
Grunert Cheese Co.	5 00
S. A. Konz (2 pages)	20 00
Iwen Box & Veneer Co.	10 00
Produce Reporter Co.	10 00
A. H. Barber & Co.	10 00
J. S. Hoffmann Co.	5 00
L. H. Pieper	5 00
Carl Marty & Co.	10 00
Winnebago Cheese Co.	5 00
Callaway Fuel Co.	5 00
Stoelting Bros. Co.	10 00
Sheb. Co. News & Dairy Market Reporter	10 00
Wis. Dairy Supply Co.	15 00
Damrow Bros. Co.	10 00
Plymouth Refrigerating Co.	5 00
H. G. Liebzeit	10 00
P. J. Schaefer Co.	20 00
C. E. Blodgett C. B. and Egg Co.	10 00
Vitter Mfg. Co.	10 00
Brillion Iron Works	5 00
The Dairy Record	5 00
J. B. Ford Co.	10 00
H. J. Grell Co.	5 00
Diamond Crystal Salt Co.	10 00
Geo. Ehrat & Co.	10 00
Un. Oxygen Co.	5 00
De Laval Sep. Co.	20 00
Creamery Package Mfg. Co.	25 00
Neenah Cheese & Cold Storage Co.	10 00
Republican House	10 00
C. L. Santee for booth	10 00
Sharples Sep. Co.	10 00
Luecke Mfg. Co.	5 00
Damrow Bros. Co. for booth	10 00
Hansens Lab.	10 00
Un. Oxygen Co.	10 00
Stoelting Bros. Co.	10 00
Parke Davis & Co.	10 00
Two Rivers Plating Works	5 00
J. B. Ford & Co.	10 00
A. Kammore	10 00

D. & F. Kusel	10 00
A. H. Barber Cream Sup. Co.	7 50
De Laval Sep. Co.	20 00
Swiss Cheese sales	338 58
American Cheese	495 52
1 Block Swiss	5 28
Brick & Limburger	102 20
Sour Cheese	2 00
Cream Prints	3 60
Received from State Treasurer, for postage	94 08
Cash Receipts from 394 memberships	394 00
Total Receipts	\$1,987 76

Disbursements

H. J. Noyes, expense	\$13 58
Chas. E. Reed, expense	10 35
M. L. Brinkman	5 76
H. L. Noyes, Judge	17 38
Carl Frehner	8 90
Fred Schuler	11 28
Jacob Karlen, Jr.	5 00
Emil Forster	10 00
F. C. Westfahl	5 45
Alex Schaller	12 95
W. A. Austin	9 39
Typewriter rental	75
The Palmer House	40 15
Louise Ackermann	5 00
Huber Bros. Drug Co.	30
John Carpenter, assistance & hotel	14 00
Summerfeld & Humleker	53 55
Henry Buining	1 50
Robert Candlish	50
W. F. Arndt, trunk	15 00
A. A. Jones, cheese sup't.	20 95
Winnebago Cheese Co., dray	15 00
H. G. Davis	15 00
The Commonwealth	10
J. C. Jaeckels	13 45
Chas. E. Reed, expense	2 00
Palmer House, frt. & express	1 80
H. A. Chaplin, auto trip	6 00
Chas. E. Reed, expense	12 50
Grunert Cheese Co., refund	5 00
Plymouth Reporter, printing (1916)	31 00
W. C. Thomas, printing	43 75
Postage omitted in 1916	94 08
Freight on cheese	10 54
To cheese exhibitors, and pro-rata	937 68
G. W. Schiereck, expense	7 75
Postage, telegraph, etc.	104 85
Paid by Secretary to Treasurer, Jan. 10 1917	93 54
Balance (to) Treasurer	331 98
Total	\$1,987 76

EFFECTS OF THE WAR ON THE CHEESE MARKET

By J. B. McCREADY, Chicago, Ill.

Mr. President, Ladies and Gentlemen: I am going to have an alibi today. I just dug myself out of the trenches yesterday in Chicago, the only place we haven't any snow is on Michigan Boulevard. They are still delivering milk for the babies, but we still have plenty of snow.

Your Secretary apparently thought that I would be a good man as a wheel horse or someone to fill in, but I got word just one day before I went to Canada that he wanted me to appear on this program, taking as my subject the Effects of the War on the Cheese Market. Incidentally he mentioned in my telegram that I should work in a little patriotism. Now I don't believe he has got the right fellow. He should wire Mayor Thompson of Chicago to make the patriotic address. Coming up on the train today I had two or three different notions as to what I would say. I went to Canada the week before Christmas and I saw some of the results of the war. Maybe I had better not give a patriotic address. You will probably see it later on here. There are twelve thousand wounded men in the city of Toronto, and they are not slightly wounded by any means. I went into a moving picture theater and a fellow came in sitting on the crossed hands of two of his pals with his arms around their necks. They sat him down in the chair near mine and he was without his lower limbs. He was a volunteer who went to France for the reason he felt he wanted to help make the world safe for democracy, those men told me. I asked him in regard to his wound, how he got it and he told me. I said, "Why did you go over there?" The Canadians didn't have to go. He said, "I would a darn sight sooner go over there than have them come over here." That is the way I think we ought to feel; in fact that is how I think we all do feel.

There may be something in this address that may jar on some of you against the Germans—the German people as a whole. If there is, it is not because I have any grudge against the German people. If I did I would have to go back and thrash my wife, because I married one. I am an adopted citizen of the state of Wisconsin and of America, and I am proud of both facts.

The war has been blamed for practically every advance in food prices. The same holds good both directly and indirectly in regard to the cheese market. There can be no doubt but what it has had a direct bearing on our cheese market.

Up until May 1917, there seemed to be no limit to the prices that the importers in Great Britain would pay for cheese and there was a scramble among the cheese dealers to get as much cheese as they

possibly could to supply this demand. In fact, competition was so keen among the buyers, that the quality of Wisconsin cheese suffered to a certain extent, as a result.

In 1916, cheese factories paid so much better than creameries, that the spring of 1917 saw hundreds of Wisconsin creameries putting in cheese making equipment and turning to the manufacture of cheese. This with the cool summers and plenty of rain, gave us in 1917 one of the biggest makes of cheese we have ever known.

When the Canadian factories opened up in the spring of 1917, the exporters withdrew from our markets and any cheese that went across from this country after that were cheese that had been bought previously or had been held up owing to the lack of shipping space. When the Canadian factories opened up, the Canadian Cheese Commission in conjunction with the British Food Controller fixed prices on cheese subject to change at

21 $\frac{3}{4}$ c	per lb. on board boats for No. 1 cheese
21 $\frac{1}{4}$ c	" " " " " " " " 2 "
20 $\frac{3}{4}$ c	" " " " " " " " 3 "

and any cheese grading below this were bought at a proportionate lower price. Apparently, they were getting enough cheese at these prices, for the prices never changed from the time it was fixed until the factories closed. In the Spring of 1917, despite the fixing of these prices, our markets in this country continued to soar and from then on a great deal of the buying in this country was more or less of a speculative nature. The argument was used that as they needed all our cheese last winter, paying as high as 27 $\frac{1}{2}$ c for it, that they would want it again this winter at as much money if not more. There was one fact however that was overlooked; that was, that all cheese entering Great Britain was handled by the Government—each dealer got his proportionate share from the allotments as they arrived. I understand that there were very few times when the dealers got their full allotment; lots of times 50% or less of what they really needed, so it is safe to state that there was not as much cheese marketed in Great Britain this year as last, for what they did not get, they could not sell. I speak of the civilian population when I say this, because it is a fact that the army has never been skimped on their supply.

Another fact that was overlooked was that the winter of 1916 and 1917 the British Government took over the entire output of New Zealand at a fixed price of 18c a pound—remember, our winter season is New Zealand's summer season and they produce a great deal of cheese. I understand that all this New Zealand cheese bought at 18c is still being held in New Zealand with the exception of a very small amount which has already been shipped to Great Britain. In addition to this, this season's New Zealand cheese will be taken over by the British Government at the same price as was paid the Canadian

dealers last season, less the difference in ocean freight rates as between New Zealand and Canada to Great Britain. Taking all this into consideration, our cheese markets were too high all last season; yet, comparing cheese prices with other food products they were not and comparing the prices paid farmers and cheese factories with the prices paid condenseries, we were away low. There was a heavy production of cheese this past season but owing to the demand for milk for condenseries and creameries the make of cheese is apt to be very light this winter. It is unfortunate but true that patrons of cheese factories received more for their milk at the season of cheapest and greatest production than they are receiving at the present time. Indirectly, the war can be blamed for this.

Before this country decided to make the world safe for democracy we were interested in getting the longest price we could from the Allies on what we sold them. Today, we are plunged into a death struggle for the preservation of humanity's right to live and to make this world a safe place for you and me, our women and children, to live in peace and contentment and we today are of the Allies. I ask of you, what will it benefit us if we amass a lot of wealth from our milk, cheese, etc., and then have the Kaiser and his horde of baby killers come here and levy on our wealth, flesh and blood, as he has done and is still doing to the poor, but heroic Belgians. No, ladies and gentlemen, our Allies and our soldiers have got to be fed. Every man on the far flung battle line today stands between us and slavery or worse and is willing to make the supreme sacrifice if need be—why should we be exempt? Surely, we would be willing to make some sacrifice to gain our end.

Our Government feels that to further this end, we should furnish food to the Allied Armies at as reasonable a price as we can possibly furnish it. In this respect, our Government is right—he who says or thinks differently is not an American and if he is not an American he has no right here in America.

What effect will war have on the cheese market? Cheese prices will be stabilized and speculators will be eliminated and excessive profits will be curtailed. In December 1917, there was created a General Food Purchaser's Board consisting of, Paymaster General Samuel McGowan of the navy, Chairman, Major. Gen. Henry G. Sharpe, quartermaster general of the army, W. V. S. Thorn, chief of the food administration's division of coordination of purchases and representative of allied purchasers, and F. J. Scott, of the federal trade commission.

The functions of this Board Mr. Hoover says are far-reaching. The plan is so to coordinate the purchasing as to place it strictly on an official basis and to disturb as little as possible market conditions, having due regard for the interests of the producer and the consumer as well as our fighting forces and those countries dependent on us for their supplies of food. The demand for certain food

commodities by the army, navy, neutrals, allies and civil population is greater than the supply of such commodities. The shortage of supplies and the aggregation of buying in large units has effectually suspended the law of supply and demand as an effectual regulator of fair prices and stimulates speculation. So you can see with this Board doing all the buying for our forces as well as for the Allies, speculation will surely be eliminated and our markets will be more stable as a result.

Our Government will be fair, but they will expect us to be fair with them. Every cheese dealer doing business today is working under a government license and is expected to follow the instructions of the government in conducting his business. Under this license system, we will be required to keep the price of cheese as close to its actual cost and food value as possible and still make a fair living margin of profit. We will not be robbed—our property will not be confiscated, but we will be regulated all along the line. We will be permitted to make a decent living which is more than the Kaiser would permit us to do in his present frame of mind if he should defeat the Allies and invade America.

I have two suggestions to make before I close. One of them is this—make every Dairy Board in the State of Wisconsin a buyers as well as a sellers board. Some cheese makers have fought this, and at the time they might have been right, but today they are not right under these war conditions. Let any dealer when he feels that he has a few more cheese than his regular trade will require, put his surplus cheese on the Board and allow any responsible person who feels he needs and wants these cheese, buy them.

My second suggestion and most important of all is, let us all remember that we are all Americans first last and all the time.

THE USE OF PEPSIN

By FRED UBBELOHDE, Somerset.

Mr. President and Fellow Cheese Makers:

The Use of Pepsin as spoken of in this paper covers my experience with pepsin in the making of cheese. Some makers may not agree to all I say, but it must be remembered that in different cases the conditions may be different, and that the conditions in the locality where I am situated may be very much different than in a lot of other places. I do not expect to have you accept my statements as being the ideas of all the makers who have used pepsin. I am only trying to tell of my experience with pepsin and why I am using it in place of rennet.

I do not advise any one to stop using rennet altogether, because I do not think that we can get along without rennet at all times.

In using pepsin I have been convinced that I cannot use it under the same general conditions that rennet could be used. In the first place I found that the milk must be riper to set with pepsin than when rennet is used, to get the same results.

We always worked our milk rather sweet while using rennet. I never set it any riper than from three to three and one fourth ($3-3\frac{1}{4}$) spaces on the rennet test, when the milk was normal. In order to get the same set with pepsin I had to ripen it a little more. It was necessary to ripen it to $2\frac{1}{2}$ to $2\frac{3}{4}$ spaces on the rennet test. If I did not get the milk that ripe before setting, the curd would be hard to handle without the loss of butter fat, and then too, it is hard to get a good cook on the curd. The curd would stay soft and quite mushy.

Even in ripening the milk to a higher acidity in order to get a proper set, I find it necessary to cook the curd a little higher than in using rennet.

After the curd is cooked I handle it the same as when I use rennet, until it comes to salt, when I use a little more salt.

In winter months I use a different method in using pepsin than in summer. I can not use it the same in winter and summer and get the same results. The pepsin does not seem to have the same action upon the milk in cold weather as in warmer weather. The milk sets slowly even if quite ripe, and the curd is hard to get firm.

I now am using rennet with pepsin in winter and have very good results. I have heard of some makers using one-half pepsin and one-half rennet. I tried that also, and had good results, but I get just as good results by using less rennet, and more pepsin. I use one ounce of rennet to 1000 pounds of milk and pepsin at the rate one and one-eighth ($1\frac{1}{8}$) oz. dry measure, to 2500 pounds milk. This gives me a good mixture, and the milk sets in a reasonable length of time. I always plan on having my milk set in thirty minutes after adding the rennet and pepsin.

In preparing the pepsin to add to the milk a great deal of precaution must be taken, or you may not get it all dissolved, or on the other hand it may lose strength before it is added to the milk. I always measure out the amount of pepsin I intend to use and have it all ready to dissolve about five minutes before I intend to add it to the milk. I usually dissolve it in a pail in about twenty to thirty times as much water as pepsin. In summer I dissolve it in water at 105° and add it to cold water when I stir it into the milk. In winter I use water at 106° , and add it to water that will bring the solution to the same temperature as the milk. When the pepsin is stirred into the milk in cold water in cold weather it does not seem to set at all the way it should.

The finished cheese does not seem to cure quite as fast when made with pepsin as when rennet is used. After it is well cured, I can

not see but what it is just as good in every way as cheese made with rennet.

At the present prices of rennet, and all other supplies that are absolutely necessary to our business, and the ever threatening shortage of supplies, it stands us in hand to resort to the use of substitutes as far as it is practical, not only as an economical measure, but as a safeguard against any future shortage. And if we are satisfied that we can in the manufacturing of cheese, resort to the use of pepsin as a substitute for rennet without detracting from the quality of the cheese by so doing, it is our duty to do so as much as possible, not only a duty to ourselves, but to our country as well. By so doing we can help our country in the great struggle we are now engaged in.

MR. MCCREADY: I would like to ask the gentleman if he had an opportunity to see any of his cheese after five or six months?

MR. UBBELOHDE: Yes, they turn out pretty well. We make twins altogether. I usually make a small cheese for the store—the man I am working for has a large retail business—and by the time they are used they are pretty old.

MR. MCCREADY: I just wanted to bring that point up. We have been having cheese that are coming out of the coolers now that were put away in June and July. The man that is looking at cheese now-a-days is pretty critical. It doesn't matter how your cheese appears at the age of two or three weeks. What your buyers are interested in is if there is going to be any trouble about these cheese keeping.

MR. MOERSCH: It was my pleasure last week to cut up a cheese that was eighteen months old that was made out of pepsin. It took the second highest score in the Milwaukee State Fair last fall. It was made out of pepsin and it is one of the best cheeses I ever ate. It showed very nice texture at the present time, now, eighteen months old.

MR. MCCREADY: That is all very true. I have seen that myself. The best factory doesn't turn out cheese as well as they used to.

MR. NOYES: I think there is a great deal of trouble in using pepsin because of ripening the milk. Some manufacturers invariably carry the acid test too far. They have experienced trouble in their first using of pepsin and curdelac. In doing that they have ripened too far and hastened the method of manufacturing, and they have shortened the life of the cheese. I believe some of the trouble comes from that. I believe if more pains were taken in ripening the cheese and getting a good cook, salting a little more heavily as the speaker has said, there would be less difficulty. I don't think in several years to come we will have enough rennet. We have got to use some substitute. Let us understand how to use it and use it in the best way. Gentlemen, we have been in the cheese business a great many years and we have learned a great deal and there is a great deal to learn yet, and

that is what we are here for. I hope this hall will be crowded tomorrow in both sessions.

MEMBER: I have used curdalac. I couldn't see any difference in pepsin and curdalac, and I have used rennet and R—P Extract and I can't see any difference in it. I couldn't get the yield out of pepsin or curdalac, otherwise as far as the working parts and the quality of cheese I guess it works just as well as rennet, but that is one reason I cut that out. I was just about a quarter of a pound short when I used curdalac or pepsin.

MR. UBBELOHDE: In regard to the use of pepsin on yield. We have had a pretty good chance to work this out. The man I am working for has three factories at the present time besides mine. The four factories started using pepsin at the same time. You will understand they were all in different localities and conditions are different. I have used pepsin right along and my yield has kept up with the others.

MR. NOYES: How is the butter fat test?

MR. UBBELOHDE: Practically the same. There was very little variation.

MR. MCCREADY: I don't want to have it appear that I am knocking substitutes, I am tickled to death. They are paying \$12.50 a gallon for rennet at Toronto, Ontario. If there is a better way of handling these substitutes we want to learn it. You have got to ripen your milk more to use these substitutes, that is where the trouble comes in. We must preach that one point of ripening and all get uniform on that, but it is something we have got to study. We have got a new condition arising that we have got to be more careful of because I know we are not getting the results with our storage stuff that we were. The Canadian cheese factories tell me the same thing.

PRESIDENT REED: Do you notice any difference in the body and texture of cheese made from pepsin or from rennet?

MR. MCCREADY: Very much. We notice that the cheese doesn't cure as readily. We also notice they have more acidity.

MR. T. A. UBBELOHDE: I would like to ask Mr. Ubbelohde how long a time he allows from drawing the whey to grinding his curd and salting it?

MR. FRED UBBELOHDE: I used to figure as near to two hours and two and a quarter as we can. In ripening your milk more you have got to cook a little more, in order to keep ahead of the acid you have got to work a little faster than under ordinary conditions by using the rennet. I figure on about that time from the time I set until I draw the whey off, and after that I usually figure on an hour and a half before I salt.

MR. T. A. UBBELOHDE: Then I understand that the point is to get the curd firm enough before the acid develops in the whey. That may be the reason he has had better results than others.

MR. FRED UBBELOHDE: I ripen my milk more in using the pepsin than in using the rennet, and you have got to cook your milk higher in order to keep ahead of the acid. Sometimes your milk may be a little bit riper; sometimes you can't cook the whey two and a quarter hours, sometimes only two hours, but those conditions have to be studied by the maker himself. You can't set down one rule and work by it day after day, because if you do that you are going to be up against it.

MR. ROCK: Why is it you get more whey cream from the pepsin than from rennet?

MR. FRED UBBELOHDE: If you are not careful in setting your milk with your pepsin, your curd doesn't seem to get firm in setting, and we know what a soft, mushy curd will do in cooking and stirring. You are going to lose quite a bit more butter fat, that is the only reason I can see.

MR. ROCK: Do you find it necessary to cut your curd finer in using the pepsin?

MR. FRED UBBELOHDE: Yes I do find it is necessary to cut it a little finer than in using the rennet.

MR. ROCK: Why do you?

MR. FRED UBBELOHDE: In order to get a good cook on it, because in ripening your milk after you get started to cook it your acid is going to gather fast.

MR. NOYES: It might be well to consider this ripening of your curd where you use something beside rennet because it is very important. The boys tell me that they are very careful and not bring it up to the ripening point, they stop a little before they get right down to the point, and this way they consider it more safe, that they are not near so apt to carry it over and get a little acid. I noticed in all the cheese last spring we found they ran acid and we got the boys to ripen a little less. It is very important you watch your ripening where you use pepsin.

MR. VOIGT: I talked to different cheese makers—very particular cheese makers—and they put much stress on cutting the curd. The first time they cut it horizontally. After they cut it they let it stand from five to eight minutes, ten minutes, it won't hurt it, just let it stay there. Let the whey come up, and then cut with the curd knife, twice I always cut it, and after they cut that crossways then it is set again for five or six minutes and let the whey rise. That will firm enough so that when you get to stirring it it will not mush up so, and in that way you won't have to ripen your milk so much because you give it a little chance. The acid will come along while you are waiting and probably you will have the same acid as you would have if you kept right along cutting, and in that way I think you are even.

MEMBER: I don't agree with that man, and I think most of the trouble is before setting the milk. We are always in trouble with that thing, too much acid. We don't have to wait for acid.

MR. VOIGT: You would have to have your set a little bit sweeter than at other times, while letting that wait or you will develop too much acid and it will get away from you.

MEMBER: The main point is to get the coagulation.

MR. VOIGT: And you claim it makes a better coagulation that way, you are not mushing up your curd so.

MEMBER: When the milk is very rich is it a good idea to work it right away? In fast working over-rich milk is it all right to apply the heat fast or let it stand? I find that it is better in fast working curd by giving it plenty of time the acid won't develop as quickly as it will when you apply that right away. You get a firm cook and better yield. It is a much better way. It used to be a rule that everybody applied heat right away. That is wrong, it should not be done so. It should be worked slowly and not apply heat for fifteen minutes, even half an hour.

MR. VOIGT: How long would that take you from setting?

MEMBER: I don't know exactly. The reason we can't answer that is because of the different conditions. You can keep it and firm it, the acid don't develop fast, then apply your heat fast and you will get the proper cook in shorter time and it will not disturb the curd so much. There will not be so much waste.

MEMBER: I think that is the trouble between the rennet and the pepsin on that line. I am lazy and I don't like to work fast, and with your pepsin you have got to ripen it quite a little. I generally mix a little rennet with it. In cooking, the whey won't separate as fast as with the rennet, even with the ripe milk. Keep that heat back for the first fifteen minutes, cut it fine and hold the heat back for a minute, and then let it have all the boiler will let it have. That is the only way I know of getting a firm curd.

PROF. SAMMIS: What most of us will agree to is that in the use of pepsin we are a little more likely to get sour cheese. It has an advantage in thickening the milk with pepsin to get it a little riper, and that extra ripening makes a little more danger in finishing the work up. Now please remember that a pepsin-made cheese will stand no more acid than a rennet cheese before becoming sour but we try to work with riper milk with pepsin than with rennet. We have got to be more careful not to let the acid get ahead and spoil the pepsin cheese. One of the speakers said he had seen a good deal of cheese come out of storage at the age of five or six months and it was a little short, and he was surprised. No doubt, people work as close as they can safely to the acid line. It takes a little more skill to make cheese with pepsin than it does with rennet because we have got to watch the acid closer not to let it get away. That calls for more attention and more skill and more earnestness on the part of the cheese maker, which I believe he can give it when he realizes the situation.

CONDITIONS AS THEY ARE VIEWED BY AN OLD-TIME CHEESE MAKER

By MATH. MICHELS, Peebles.

Mr. President and Gentlemen: The discussion just ended on the use of pepsin is very interesting to me, for I have made cheese for a good many years, and it seems that this gentleman here off to the left some place came pretty near when he cautions you to not ripen the milk too much but give it more time before cutting the curd. When I started in making cheese, which was a good many years ago, we didn't know anything about any acid test then, we did it all by the sense of smell, and many times I think we did more damage to the cheese made by underripening it than by overripening it. I will admit that in the summer months when hot weather appeared we oftentimes got the milk a little too ripe, because it wasn't in our control to get it in a sweet enough condition for setting and making up as we were taught at that time. At that time we were taught to make cheese; to add the rennet, at the rate of 4 ounces to the 1,000 pounds of milk, and then leave it so for an hour before cutting it once, and then leaving it another twenty minutes before cutting the second time, and another ten minutes before cutting a third time. You all know that is a long time in the cutting process. It often happened that the milk was over-ripe and the result was a short, raspy cheese. Later on when we got tests these difficulties were overcome. You are up against one danger on these by going a little too far, especially by the inexperienced maker who may go a little too far in the ripening process. I don't know anything personally about the use of pepsin. I think your discussion was very good.

In looking over this year's program compiled by your worthy officers I must say that it is the best ever and we all know that the Wisconsin Cheese Makers' Association has always had not only an excellent program from year to year but that the lively discussions following the topics have always made these meetings of exceptional interest to all who attend. Therefore it is very fitting that you have such a fine attendance at this your first day's meeting and such a large and fine exhibit of all kinds of cheese. I am always glad to meet with you because my first experience as a cheese maker dates back to 1886, from which date I continued as a cheese maker for more than twenty years.

Possibilities never were more promising for the cheese industry than they are today. Not only for the cheese maker and cheese factory owner, but also for the factory patrons. There are ups and downs in all lines of business and so it is in the cheese business. Those that attend strictly to their work and stand by cheese making will make

no mistake as there are still better times coming than we are having right now.

I do believe that the time has arrived, owing to the high price of condensed and city milk, when all interested in the cheese business must combine their efforts in letting the public know the real food value of cheese. This I think is necessary at this time as the public does not understand that the actual food value in one pound of cheese is equal to two pounds of meat, etc. The various milk producers' associations and condenseries are doing all in their power to let the public know the food value in their products. I think the time is here when something must be done along this line to successfully compete with these organizations in the prices paid the dairyman for his milk.

By educating the public not only as to the value of milk as a food but also as to the high price of production, both the Chicago and the Twin Cities milk producers associations have gained a substantial raise in the price for their milk within the last two months.

The cheese maker in order to hold his business must be able to compete with the condenseries in the price paid for milk, which is hard to do just now since the government promises the condensed milk industry 30 cents per case profit above all costs of putting up their product. There is nothing unreasonable in this amount of profit, but by this arrangement no matter what they pay for milk their profits are assured. This will eventually take the milk away from the cheese factories and creameries, unless the price of both butter and cheese advances considerably from what it is.

Much can be done to create more of a demand for cheese by letting the public know its true food value, particularly so by comparing cheese with meats and meat products. Today the consumer is willing to pay 30 to 40 cents per lb. for meat when he can get more than twice the food value for the same money in buying cheese.

There is so much to be said on the subject of food value in cheese that I will not attempt to do this field justice, the more we study, think and work on it the more we find that good cheese is not only the most palatable but also by far the most economical food to buy.

I want to mention another point of which little has been said and of which the general public knows practically nothing about and especially so in connection with cheese, I refer to the life giving substance found in abundance in all milk fats called "Vitamines". It has been found by our College of Agriculture, that cheese, butter, alfalfa and clover leaves are very rich in these "Vitamines" which are so essential in maintaining not only the health of the human race but also the health of all our farm animals.

It has been said that since the beginning of the European war that when milk fats went up to \$1 per pound and were eliminated, that in certain hospitals where this was practiced, that wounds of soldiers would not heal, neither could they regain their strength and health until milk fats were again supplied in some form with their rations

At the Wisconsin College of Agriculture they found that there "vitamines" were absolutely necessary to keep animals in normal health. Animals fed on foods lacking these "vitamines", such as wheat, though a well-balanced ration being prepared, animals would "run down quickly" and regain when fed foods containing "vitamines." In no instance where cows were fed rations lacking these "vitamines" did they produce a living calf.

Much has been done in the past through legislation and otherwise, for the benefit of the cheese industry, but comparatively little has been done to let the public know of the great food value in all kinds of cheese and for this reason I want to suggest that this association, the largest of its kind in the world, take such steps as are necessary toward a move, not only to educate the public as to the food value in cheese but also as to the high cost of producing it.

As a former officer and one of the first members of this association, I feel highly honored to have had this opportunity to appear upon your program of the 26th annual meeting of the Wisconsin Cheese Makers and I sincerely hope that this Association and all of its members may continue to prosper and to meet you often in these annual meetings for many years to come

DISCUSSION

MR. NOYES: I wish to call the attention of the cheese makers to the fact that instruction in testing cheese for moisture will be held at the Wisconsin Dairy School Exhibit in Walker Hall, Auditorium, between 8 A. M. and 6 P. M. before and after the sessions of the Association. Everyone interested is welcome. Every cheese maker ought to be interested in this test, especially those of you who haven't seen anything of the test. As you will notice the latter part of this year the Dairy and Food Commissioner has given the cheese makers warning that next year the moisture test will be looked after more closely as the cheese makers have been given enough time to familiarize themselves with it, and I think it is vitally important that each one look into the matter.

On the program tomorrow there is something that ought to be of interest to us all and that is "Over the Hill to the Poorhouse." I hope we won't all go over there. We have an interesting program for tomorrow.

MR. ADERHOLD: I heard one of the cheese makers say he was headed for the poorhouse. Mr. Noyes just mentioned it again. It is not the right way in going over the top to my notion, but if you are going to the poorhouse I think you ought to choose the smoothest road, and that question is before us, the high cost of manufacturing cheese as Mr. Michels pointed out to us. I think every local association and this association ought to do whatever can be done as early as possible to

acquaint the dairymen especially, with the high cost of operation and to lay your program to get the increased cost in making that you are entitled to.

There is another thing coming for you that perhaps some of you haven't heard of, the pasteurization of whey in the cheese factories. The State Live Stock Sanitary Board at the last session went before the legislature for legislation to give them a better opportunity to prevent the spread of contagious diseases amongst live stock, and one thing they asked for was compulsory pasteurization of by-products from creameries and cheese factories, and that instrument was given them so that you will probably be called on before long to pasteurize your whey in order to kill disease germs that might affect the farm animals. That will cause another increase in the cost of factory operation. It will cause a large increase in those factories that are not equipped with a boiler. The benefit of the pasteurization will redound to the patron rather than the cheese maker or the factory operator, and it is none too soon to begin to agitate that when you are trying to make out the cost for increasing the price of making. I was in Madison last week and I saw Dr. Eliason, State Veterinarian, and I asked him to come to this convention. He said he could be here on the second day of the convention. If he is coming he will be here tomorrow. He will probably tell you how the thing is going to be carried out.

MR. STEFFEN: I understand that an old friend of our Association, Mr. S. A. Cook, is ill and cannot be here, and I move you that a suitable resolution of greeting be sent to Mr. Cook of Neenah. I make that as a motion.

MR. NOYES: I second the motion.

Which motion was carried unanimously.

CHAIRMAN: I appoint on the resolutions committee Mr. Luther Noyes, Muscoda, Mr. O. A. Damrow, Sheboygan Falls, and Mr. C. A. Voigt, Chili. On the Legislation Committee I appoint Mr. H. G. Davis, Plymouth, E. J. Garling, Glenbeulah and L. Klessig, Fredonia.

CHEESE MOISTURE TEST EXHIBIT FROM DAIRY SCHOOL

DISCUSSION

PROF. SAMMIS: Mr. Chairman, with respect to the cheese moisture test, to which your attention has already been called, I am going to say you are very welcome to come in and use the cheese moisture test. This morning there were 27 cheese makers who came in and made the complete moisture test. I would like to have 27 of you come in every morning. We will be there from eight to six o'clock

and you are all very welcome to come in. You will have a chance to do the work yourselves, and everything is ready.

The second matter is, several cheese makers have said to me they were looking for helpers, to hire cheese makers another year. Between 30 and 40 of our Dairy School students this year came down and they are going to stay through the convention. Most of them are looking for positions next year. Those who want to hire men as helpers with little experience or much experience, come over, and look them over, and pick them out.

CHAIRMAN: There was a suggestion brought to me concerning where you get your samples from. Will you have plenty using the plugs or is it up to the Association to buy one of those cheese and turn it over to you for that special use. I think it would be a very good educational feature for this association.

MR. ROCK: Why do you?

PROF. SAMMIS: I meant to ask you to see if it would be right and proper for the Association to give us one or two of those small cheese for the makers here to use in making moisture tests. If you will it will save us paying the retail price for material.

MR. NOYES: If it can be done, I suggest you to take two of the small cheese, one containing a large moisture content and one containing very little moisture to test with, and get two samples in that way, and it might be a good demonstration.

PROF. SAMMIS: There are several young Americas and quite a number of Long Horns. We can get one cheese with a lot of moisture and one that is drier.

CHAIRMAN: That can be done. Those two cheese could be bought and put up for use and everybody have a chance to try them for educational purposes. That is one of the main purposes of this Association. A motion is in order to buy the cheese.

MR. NOYES: I move you that two of those small cheese be picked out, one carrying a large amount of moisture and one a small amount, and the Association buy them at the present market value, and these cheese be purchased by the Association and paid for out of the funds of the Association and turned over to Prof. Sammis for his demonstration in the other room.

Which motion was seconded and unanimously carried.

MR. NOYES: Mr. President, owing to the high cost of material for manufacturing cheese, I wish some fellow in this convention would figure out and give us what it will cost at the present market price of material to manufacture Daisy cheese and Twin cheese. We find the present price of Daisy boxes this spring will probably cost the cheese maker three-quarters of a cent to box this cheese, then the advance in bandages and other material would be very instructive. Not only that, but I believe if we could get up and talk on this matter which would enable the cheese makers to get together on the price of manufacture we could go to our farmers from this convention showing

them we don't want any more than what is right and what we must have in order to still continue to manufacture. The very fact of the case is we can't compete with the condenseries at the present time on the matter of cheese, and I don't think the farmers ought all to leave the cheese factories and go to the condensery. The farmers who patronized the condenseries in the last twenty years depreciated their farms and didn't make as much money as those who sold to factories. I can prove that in the condensery districts in Illinois I can buy farms for \$50.00 an acre cheaper than in the cheese factory districts. Those farms haven't made the money we have made in Wisconsin. I can go down there and buy good level farms at \$60 an acre in the neighborhood of Chicago.

MR. VOIGT: We should increase the price of our making. Well and good, most every cheese maker is for that, but the next thing is how can we do it? In my neighborhood there are a lot of what we call cooperative factories and they are mostly all rich farmers and they say, "We don't have to make any surplus, we will simply deduct the actual expense of each month and what is left goes to the farmers". We can't get ahead of that.

MR. ADERHOLD: They don't figure all their expenses?

MR. VOIGT: Last month a neighbor paid \$2.38 a hundred for cheese and in addition to that they had 26 cents a hundred for whey cream. You talk about raising the price of the making! Where are we going to get ahead of that? Over the hills to the poorhouse! If there is 26 cents a hundred left in the whey after the cheese is made I will have to go and learn. I can't do it. That particular cheese maker was in my factory last Wednesday and tested a certain farmer's milk. I asked him, "How do you do that?" He said, "I sell the whey." I says, "Is that all? Do you really mean to tell me that you have 26c. a hundred on the whey cream?" "Well", he says, "where do you suppose I got it?" I says, "Either you put out a bum statement or you skim some milk", and he didn't deny either. That is where we stand today in my neighborhood.

MR. MICHELS: It seems to me all these little differences are small, while they exist and we always have to contend with them, even as far back as thirty years ago, and I suppose we always will have to contend with them in one form or another. In the creamery business we always had the same troubles. All these differences I think are small compared with those we are up against when we touch the condenseries. I don't want to see the cheese factories go out of business. As Mr. Noyes has pointed out to us, where there is no skim milk naturally the farm will run down. The thing is to compete against the condenseries, and in order to accomplish that we will have to work for some years.

CHAIRMAN: There was a gentleman in our part of the state three or four weeks ago from New York City, who represents the National Milk Sugar Company. He was there for the purpose of buy-

ing the whey from the cheese factories. They evaporate the sugar out of that whey after it has been separated. The cheese factories were to separate the whey. They offered if they could get a minimum of 80,000 pounds within a radius of five miles they would pay 15 cents a hundred pounds for that whey. They wanted an agreement from the farmers that they would deliver for a certain length of time. We worked very hard with that man to get that thing in there, but we couldn't get them to build the plant.

MR. LEE: You wouldn't advise the farmer to sell his whey at 15 cents a hundred pounds?

CHAIRMAN: Yes, after it had been separated, 15 cents a hundred pounds.

MR. LEE: It is worth more than that for feed.

CHAIRMAN: The farmer don't see that. The cheese factories and the cheese men are looking forward to something, but the average farmer and patron isn't.

MR. LEE: Isn't it the big problem of educating the farmers?

CHAIRMAN: Yes, it is a big problem.

MR. PAULY: Mr. President, Ladies and Gentlemen: Some of you probably wonder what this new organization is that is going around with these badges. I want to enlighten you. This is not a rival organization. It is going to be a cooperative organization, but the work that this organization proposes to carry out cannot consistently be carried out by the present organization, and we are going to ask the President to give us some time on tomorrow's program to explain this fully to you. I am not going to take the time now. Briefly this is going to be the business end of the organization. The present organization is educational to a large degree. The secretary of this organization has a desk in the machinery hall and if any of you care to talk to him personally he will be there practically all the time. I think we can arrange with the President and Secretary to give us some time on tomorrow's program to present this matter to you fully. I thank you.

FOREIGN CHEESE

By FRED MARTY, Monroe.

Brother Cheese makers: I am sorry that I will have to read what little I have to say this morning. I was stuck on this program a little unexpectedly and I didn't have time to memorize. My few remarks are very brief and I trust I will have your kind consideration and if possible your support along the different lines of foreign cheese. Here are the four foreign types of cheese, Swiss, Block, Brick and Limburger cheese, to which has been in the last two years an addition

of Italian and Greek origin which today are manufactured in the state of Wisconsin, and during my remarks I have something I want to bring before you for your consideration.

The Domestic Foreign Cheese Industry of Wisconsin has had a very successful period of three years, considering it from the milk producer's standpoint of view.

Before the outbreak of the war, we imported millions of pounds of Swiss cheese, which gradually diminished and finally shifted to export in place of import. These conditions alone were naturally a stimulant to promote higher prices, and with the aid of local competition and wild speculation, a climax has been reached and a reaction taken place.

It was overdone. 43c. per pound, wholesale on the lumping basis, straight over the shelves, good and poor, for one month's make, was offered and bought for this price. The factories, which sold at this price, netted \$3.43 per hundred pounds of milk for the month of August. But these wholesale prices to the producers made the final retail price prohibitive to the ultimate consumers, and aided by a gradual decrease of exportation, brought about a slump in the domestic Swiss cheese market. A considerable stock of 40c. domestic Swiss cheese is today in the hands of wholesale dealers with the result that the factory buying prices range all the way from 20c. to 36c. per pound, on the grading system, depending on quality.

However, the domestic Swiss cheese factories have been more fortunate in meeting the competition of the condenseries, who in the eyes of the American cheese factory operators, are in a class by themselves, so far as competition is concerned, and are forced to give way wherever they put in their appearance.

In justice to the producers of milk and the dairy industry in general in Wisconsin, it would be gratifying if on part of the government, an equalization of milk prices could be established on all different branches of the cheese industry, which would give us all an equal chance for existence.

For example, in the cheese line. Is there any good reason why Swiss cheese should sell for 40c. per pound wholesale, and American cheese at 23c.? I am taking 23c. as about the average on Daisys, Long Horns and Young Americas. They will fluctuate all the way from 23c. to 25c. f. o. b. Wisconsin, that is Chicago market. In my opinion, one should be lowered and the other raised to a point covering the difference of yield and the cost of manufacture. In this class, our fellow brother butter maker should be included, as it is he who is the pioneer of all dairying, and is hit hardest of any who are today engaged in the dairy industry.

Let us meet the competition of the condenseries with a patriotic spirit, for we know that their product is intended for the needy ones in Europe, whose cows are being slaughtered. We know that if all milk was made into cheese tomorrow by the Wisconsin condenseries,

it would not help our cheese prices any. We know that it was the creamery man who went into the wilderness and promoted dairying, and when he was nicely established, we followed him, and put him out of business. Today we are getting the same thing with the condenseries. We have driven the creameries back into the woods and they are satisfied. So we are getting the same thing with the condenseries.

In my opinion, an equalization of prices in the various types of cheese, on part of the government, for the duration of the war, including butter, taking into consideration the difference of yield, cost of manufacture, and value of by-products, such as skim milk and whey, would be a just solution for the general satisfaction of the milk producers, whereas under present conditions the difference to the milk producer ranges all the way from \$2.20 to 3.20 per hundred pounds of milk; taking the \$2.20 referring to the American cheese factory prices. These prices are based upon the summer months, not at the present time, when the yield is somewhat increased and you get somewhere from \$2.40, \$2.50 or \$2.60. The Swiss cheese factories stay around \$3.20 for the summer months, so you see there is always the difference of one-third to the producers of milk, consequently discord and dissatisfaction.

In conclusion, I wish to bring before your kind consideration the fact that new brands of foreign types of cheese are today manufactured in the state of Wisconsin. These types of cheese are of Italian and Greek origin. Some are manufactured of whole milk, some of partly skimmed milk and some are made of the albumen of the whey.

These different types of cheese, such as Romano, Reggiano, Myzethra, etc., add a new branch of foreign cheese to our cheese industry which we should welcome by going on record and passing a resolution petitioning our legislature to provide a standard for the different makes and their final enactment into law; for this new branch of the cheese industry is here to stay and if we do not provide for them, other dairy states will.

CHEESE FACTORY DRAINAGE

By A. J. MINCH, Glenbeulah, Wis.

Before we had any dairy laws, or a dairy and food commission we were able to see most cheese factories disposing of their sewage by running it along the roadside, alongside of the factory and under the factory, or wherever it seemed most convenient to permit to run, as long as it was out of the factory and most of the time these conditions send forth a very foul smell and unhealthy odor, offering at the same time an ideal breeding place for flies; with such conditions as these,

there was not much of an inducement for anyone to invite himself to visit a cheese factory, neither was it a good advertisement for Wisconsin cheese.

There were others of the cheese makers' fraternity who had the inclination to permit all sewage to run into the whey tank; which certainly was not a wise idea as the whey is carried home in the same cans that the milk is delivered in. On the average farm, dairy cans are not washed any too clean and one cannot reasonably expect a farmer to deliver good clean milk when it devolves upon him to haul mud and filth in his cans, or speaking more plainly to have him haul to his home the factory sewage in the milk cans. The ideal way to handle factory sewage is to have a connection with a sanitary sewer system as found in the cities, but as most of the cheese factories are located in rural districts the purpose is well served if the sewage can be conducted into a lake or stream which is large enough so that it is not fouled by the sewage emanating from the cheese factory. If you do run the sewage under a body of water, have it piped out on the water edge so there are no sewage puddles standing, for if live stock happens to be in the field where the standing puddles are, they may drink of it which would be pretty certain to spoil the milk; or mud-holes result offering excellent place for the breeding of flies and vermin as well as pouring forth this foul odor.

Next to either of the above systems I should recommend the Septic Tank, which should have a capacity large enough so that when the water runs from it, it would be as clear as water should be.

We know of some who have tried digging a hole in the ground like an old-fashioned well, then walling it up and putting a good cover on same but as a general thing these kind of wells soon become coated with grease and then clog up and are worthless for the purpose unless you strike a large bed of gravel for seepage, perhaps in this event there is always the danger of spoiling your own or some neighboring supply of water which would cause a good deal of trouble. Have also seen a hole dug and filled with loose rock but it did not last long as the subsoil is very hard and was soon clogged and water-loaded. The past summer we permitted the waste water from our factory to run into a large barrel and had a jet pump to pump it out of the barrel and force it through a hose about 50 ft. in length and this way we were able to sprinkle it over an area as long as we could cover with that length of hose and since introducing this system of doing away with waste water we have had no trouble in the matter of disposing of our sewerage. Our main trouble in this has been that our barrel was not large enough to hold the waste-water, being too small for a full day's accumulation but we intend to put in a tank large enough to hold a full day's catch which will enable us to run it off at any time that it is convenient for us to do so and not at such times as the barrel is full. This is the first time I have ever seen this method of disposing of cheese factory waste water but cannot see why it will not

work if given a little attention and it can be distributed in the manner that it is possible to do it is easy for the sun to get at it and dry it up.

One could also utilize this waste water from the cheese factory for sprinkling a garden, or the road in front of the factory where cheese factories are situated within a distance of 50 ft. of a public highway. This would do away with considerable amount of dust.

If you do not have steam in your factory but have any kind of power, you could use most any kind of a pump to force the waste water where you desire it as long as it is a force pump. I would recommend a common rotary pump which is not expensive and easy to operate. I would explain that in using this system we do not dispose of the surplus whey in that manner for in the flush of the season we compel each patron to haul his portion of whey away from the factory, but in most of the seasons there is not enough to go around.

The valve on the steam pipe of our jet is inside the factory so we do not have to go outside to start the jet and it will not freeze as might be the case if it were placed on the outside, those we use are $\frac{3}{4}$ of an inch but our jet is for $1\frac{1}{2}$ in. pipe and we have to put a T into the discharge pipe and a valve on one side of it and have it open in starting the jet. After same is started we close the valve and the water is forced through the hose. We also experimented with a nozzle at the end of the hose, but it would not work as the discharge was too small and the jet would stop working. It may be possible that a nozzle would work with a smaller jet or with a force pump. Neither do we use the hose in the winter time but pump the sewerage to run down the hill and when the spring rain comes it will all be washed away and then we can get out our hose and use it for the spring and continue until the cold weather again prevents.

In closing I wish to state that I do not call this system a cure for the disposal of factory sewerage, but if you are having trouble at your factory from this cause give it a fair trial and in a year from this time we will know more about it.

DISCUSSION

MR. ADERHOLD: This is a very important subject. We have had a great many factories in Wisconsin where they haven't had a good opportunity to dispose of their sewage in a satisfactory way. They didn't have any stream near by which they could run it into or any sand or gravel subsoil that they could run it into, and it had to be carried away on the surface of the ground, sometimes carried underground for a ways and then on the surface. In any case it created a lot of bad odors which were sometimes very close to the factory, and even where they are some distance from the factory they are more

or less of a nuisance. It has been very hard to overcome it and it is quite an eyesore to the cheese industry.

The plan Mr. Minch carried out this summer, the philosophy of it is this. In putting the factory wastes on the ground in the same place every day it has not any time to sweeten up from the sun and air and rain and it decays there. Necessarily there will be foul odors. I suggested this plan to Mr. Minch last summer and my idea was this, that if this waste was taken fresh every day from the factory when it is practically sweet and there are not very much solids in it, and in that condition distributed over a large enough area every day it will not cause any foul odors. It is mostly water and the water will evaporate, and what little solids are left probably the rain would take care of. That is the philosophy of this system and Mr. Minch has tried it out. He didn't get started until the middle of August, I guess. It seems as though it is working fairly successfully, doesn't it?

MR. MINCH: It is so far.

MR. MARTY: I would like to ask Mr. Minch whether that system is working successfully in the winter months?

MR. MINCH: No, it will not work in the winter for the reason that any hose or piping outside, unless it is thoroughly drained out, will become frozen, and there is no objection to running it in one place in the winter as long as you don't make a hole in the ground, and when the spring rain comes it will all be washed away, and I can't see as there is any harm, none at all in that way.

MR. T. A. UBBELCHIDE: At this factory I am perfectly familiar with the conditions represented. The water or waste is run into a ditch at the side of the street and about ten rods from the factory there is a large ditch that carries the waste off into the river. There will not be any foul odor from this waste because this ditch will carry off all the water in the spring freshet. The soil at this factory is a heavy clay subsoil and will absorb nothing. We have tried that. The soil is that heavy, heavy blue clay subsoil.

MR. BRUHN: It may be a little bit out of the ordinary, but there are some things I think ought to be called attention to along with this, and that is I believe nine-tenths of the cheese makers use entirely too much water in the sewage. They can keep cleaner and keep the factory drier and healthier if they use a little bit less water in cleaning up. I have seen some factories where a half hour after the man gets in there in the morning it is pretty wet. There is no more necessity of having much more water on the floor than there is in a kitchen, and I believe that a great deal of the waste product from the factory could be done away with much easier if we didn't have so much slop in the factory. I know one maker who had it dry enough so you could have rugs on the floor, and he kept his factory clean. I would like to see the average factory today have rugs on the floor. The less water you have, the better. It is absolutely unnecessary.

MR. MARTY: I want to bring out for consideration that this organization here don't only represent American cheese factories. The section I come from they manufacture brick, block and many others. I would like to see anybody down there get along with using less water. If Mr. Bruhn would come down there and try to make cheese I have an idea he would use considerable water. Furthermore we have limburger cheese factories. There is considerable woodwork that has to be washed daily, and especially in the Swiss cheese factories. We use a considerable amount of water.

I wish to bring out a system I inaugurated some twelve years ago, which has never been cleaned up, never had any attention given to it. My plan is the simple old system of a grease trap and a sediment trap. The waste goes through one compartment into the second compartment for further filtering and from there is piped either on the cheese factory premises or otherwise. If you find that the subsoil is not good, then go to somewhere where you can find a sandy sub-soil against a hill or bluff. In a two-inch pipe of common gaspipe or old iron pipe you can carry all the water necessary. It doesn't make any difference where that cesspool is located, ten or fifteen or thirty rods from the factory. If your sub-soil is good, put it near the cheese factory. I find that system gives considerable satisfaction. The cesspool is a deep hole, the deeper the better. Leave the hole open and build up a loose wall without putting any mortar in between the rocks. Build the walls to the top. Raise the top at least two feet off the surface line and put a cover on it. Two feet under the surface line finish it off with cement so that woodchucks, gophers or whatever may be around there will not keep working dirt in from the top. In my locality with a clay sub-soil that has been the best plan of any, and it works summer and winter.

MR. MINCH: I have seen some of these cesspools, and I think Mr. Bruhn has too. About two years ago they were as good as nothing. If you have sand or gravel, as I said, you can get rid of the water, but when you get to a hard sub-soil I don't see how it is going to work. Wont this water go through this dirt at the top just as well as the dirt at the bottom?

MR. MARTY: Never.

MR. MINCH: Why not?

MR. MARTY: You take surface soil which has been exposed and it is of a different nature. It settles. It is a good deal like hardpan. There is a lot of difference in surface soil that settles down to the bottom. In building the cesspool two feet over the surface line, it then should be banked up from all sides so as to keep surface washing; the same dirt we were referring to, from flooding into your cesspool. If the surface dirt gets down there it will pack and it will certainly hold water.

The next question—and I think there isn't one here who does not agree with me—and that is cleaning a cesspool or cleaning a grease

trap is a very unpleasant occupation, and consequently the result is that they are not cleaned. The piece of machinery that is not taken care of when the time arrives, naturally will become inefficient. Any amount of cesspools today are bad simply because they are neglected, and they are good until the water comes into where the pipe runs into it, and then—well, I guess we will have to dig another hole. But that grease trap is put in where you can get to it with an instrument, and then reach down there and scrape the bottom and gradually take the dirt up. I advise every one to have an old wagon box handy as you take the scum off the grease trap. That scum has a tendency to float. In all cases it will float and it comes to the top. I have seen it in grease traps eighteen inches thick, but instead of that being removed when it ought to be removed they let it go. They thought that cesspool was doing good work. Here is the point. If you put in a cesspool and grease trap don't put it in with the expectation it is a permanent proposition, but you will have to provide some way to clean that every three months of the summer season. You can run something to the bottom and see how much settling you have got.

MR. MINCH: How often would you clean your second compartment, and how large would you make your second compartment, also your first compartment?

MR. MARTY: It all depends on the size of your factory and the amount of disposal. In the limburger factories I advise them not to put them in so big. I am speaking of the foreign cheese factories. For an American cheese factory 12 feet by 4 wide by 4 deep and divided in two would be sufficient for a grease trap.

MR. BRUHN: Several years ago I dug a cesspool. It was hard, solid clay most of the way down. We went down about 10 feet and we drove a crow bar down, I don't remember, I should judge about three or four feet and we stuck two or three sticks of dynamite in the bottom of that to loosen up the subsoil.

MR. ADERHOLD: Did you discharge that dynamite?

MR. BRUHN: You bet we did. We got results there the first day. That part of the clay that was loosened up was porous enough to dispose of the first day's sewage. I will take the raw clay from the bottom of it and make a basket out of it without lining it and it will hold water. He speaks of running a two inch pipe to sandy soil. At my factory they would have to run out at least two miles, unless we run it up hill, and I don't know as Mr. Marty could make it do that. I have not gone down two miles yet, but whenever I dug down for a moderate distance I struck solid rock.

MR. ADERHOLD: I have seen one or two cases where they did run it up hill by means of a jet pump. They ran it some twelve or fifteen rods until they found a place where it would absorb water. But there are many factories where they have the septic tank or the settling basin and once in a while we hear of a case where they get good results with it. I know of a case where within the last two years the

fellow was running his sewage in the ditch and of course there was a very strong odor there. It was very level country, and some expert came to him and explained this settling basin and supervised its construction, and after it had been in use for a number of months I was curious as to how it was working because I thought it was going to be something good, supervised by an expert. I questioned the cheese maker. He said it was working fine, the discharge from that basin was clear. There was only one thing wrong with it, it stunk like blazes just as before.

MR. MINCH: I would like to ask Mr. Marty whether they ran any surplus whey into these cesspools?

MR. MARTY: I have made cheese in a cheese factory for twenty-six years. During my boyhood days it was my occupation to divide the whey, and I want to tell you right now if I didn't give each fellow his share of the whey I heard from it. I don't quite understand this idea of surplus whey, and I would like to have anybody give me a definition of surplus whey. There may be a man in a community who doesn't want the whey, but if there are half a dozen of them that don't want it the seventh will take all he can get.

MR. MINCH: You will probably find in most factories they haven't enough whey a good share of the year, but in the flush of the season there will be quite a little left over, and I had to be continually after them. At least 2,000 pounds of whey was dumped along the road through the flush of the season at this place. I think as you say, there will be much surplus whey, but your whey tank ought to be washed out regularly. Will that be all right to run into these cesspools?

MR. MARTY: Where you have the amount you mention there I would absolutely refrain from running it into any cesspool. There is too much grease and fat there and too much solid there to be disposed of.

MR. MINCH: If there was only 100 pounds or so left in the bottom of the tank, would that be all right?

MR. MARTY: You could get away with that.

MR. T. A. UBBELOHDE: In Sheboygan County the surplus of whey is in March, April, May and June and part of July. They can't raise enough hogs to use all this whey. It is all a dairy country.

CHAIRMAN: You find that condition in Manitowoc, Wood, Clark and Chippewa counties too.

MR. MARTY: The steam pump and the gasoline engine have brought more peace into the southwestern cheese factories than anything that came along. Since the gas engine and the steam engine the cheese makers have got to the point where they give the patrons all they wanted.

MR. BRUHN: In our section we have the same condition you have in Sheboygan, Manitowoc, and in fact I think nearly all the American cheese district. The hogs are not large enough to take care of the whey

that comes home and the farmers are not inclined to haul any more than is needed. I have solved the problem in this way. I generally raise quite a few fall pigs and by the time the flush comes next summer they are good sized, they will make good porkers-by fall. It is a little extra work. In fact I think the hogs are paying a little bit better than the factory.

MR. VOIGT: Mr. Bruhn, which smells the most, the whey or the hogs?

CHAIRMAN: That depends on which way the wind blows.

MR. BRUHN: A firm I heard of had about 225 hogs on the place and the firm cleared about a thousand dollars more out of the hogs than out of the factory. I concluded that is a pretty good idea and we started it up in our own factory.

CHAIRMAN: There are a few announcements I have been asked to make. There is a man in here with a gun and he wants the audience as large as possible on the east side of the hall to take your pictures.

Some are coming to the door and inquiring why they can't bring a friend in on their membership. There has been a ruling made by the Board of Directors of this Association to allow none to enter these meetings unless he is a member or becomes a member or pays his annual dues to renew his membership. The reason for that was this, we overheard lots of remarks at the Fond du Lac convention a year ago where good cheese makers went from their homes to Fond du Lac that it was no object to them to pay that dollar to join this Association because they could sit in the meetings and reap all its benefits without paying a cent. If everybody felt that way we would never have a dollar to pay these same gentlemen when they are taking the pro rata money out of the prize fund. Therefore we made a rule that no one would be allowed to enter without a membership. From now on you must be members to sit in this convention.

MR. T. A. UBBELOHDE: The printing has gone up almost double what it was to print the programs, the badges, everything, but the memberships are the same. Our income hasn't increased any, unless we get more members, while our expenses have increased so much we have got to be more careful or we can't pay the pro rata money that the fellows ought to have who exhibit cheese.

CONDENSERY COMPETITION WITH FACTORIES

By WM. H. PAULY, Manitowoc.

Prior to the war only a few condenseries had located directly in cheese territories, and this competition did not worry the average cheese maker very much. Modern factories with dwelling house had a ready market value, practically on a basis of a dollar for each pound of milk that the factory received during the flush. For example, a ten thousand pound factory would bring ten thousand dollars. Bankers and Loan Agencies considered cheese factory mortgages good collateral and didn't hesitate in making substantial loans. In fact everybody in the cheese business, producer, manufacturer and dealer, felt that the industry was absolutely secure.

The war has brought about radical changes in a good many industries, some have profited others have lost. Cheese factories unfortunately are in the latter class. It is estimated that one hundred cheese factories were forced out of business in the past three years. In the majority of cases it resulted in a total loss of property. The only thing that was saved was the equipment. The balance of the factories suffered more or less, either losing a portion of the milk, or losing through depreciation of their property in a sympathetic way. There is an old adage which claims that one man's loss is usually another man's gain. In this case the cheese maker's loss in condensery territories is truly the condensery's gain. The loss in depreciation of practically every factory in the state on account of the condensery scare, isn't anybody's gain although conservatively speaking it will exceed a million dollars. This is figuring two thousand factories on the basis of an average shrinkage in value of five hundred dollars each. These are indisputable facts and only too well-known to most of you.

Let us make a comparison of the cheese factory and its recent competitor namely, the condensery. In doing this we will also show the relative position of the creamery. The first cheese factories were started in Sheboygan County back in the seventies, and this industry has enjoyed a steady growth throughout the state since that time. At present we have over twenty-two hundred cheese factories and we look for additional factories to be started, especially in the northern part of the state, for several years to come. The creamery growth in the state up to about ten years ago was just as phenomenal. These two dairy products along with the demand for whole milk from cities, developed the dairy industry, and today Wisconsin ranks foremost in the union as a dairy state.

About twenty years ago Mr. Borden of New York placed on the market condensed milk. A demand for this new commodity was gradually

developed and today it has become a staple article like canned goods of many descriptions. Since the war canned milk, either in condensed or evaporated form, has had an exceptional export demand at enormous profits. Additional condenseries were erected in dairy sections throughout the country and our own state increased approximately by thirty in number making a total of about fifty up to the present time. These factories in our state were located in the most highly developed dairy centers, and the milk that they received was taken from cheese factories in the majority of cases. Condensery methods, and especially the initial price lure, made short work in closing and crippling cheese factories in those localities. The cheese makers that lost out are the unfortunate ones referred to in the beginning of this paper. We all know that it was practically the cheese industry that developed dairying so highly in the invaded sections, and in most cases the little cheese factory gradually grew to a good sized factory. It doesn't seem fair and just, that a legitimate pioneer business that has proven satisfactory to the milk producers and that involves investment of five to ten thousand dollars should be virtually confiscated in this manner, especially by a so-called war bride. If the foreign trade wants our canned milk, should our Government permit its exportation when some of her own tax paying people are to suffer financial loss of over a million dollars, or should the condenseries be forced to pay indemnity out of their war profits? Condensery men have made the statement that this is a case of "survival of the fittest" and because they can pay more money to the producer than the cheese factories they are justly entitled to the milk. They also accuse the cheese factories of treating the creameries in a similar way during the past decade. It is true that cheese factories have replaced quite a number of creameries, but in practically all cases the creamery man made the change himself and didn't entail any losses worth mentioning.

Economic conditions, a few years ago, resulted in the enactment of a law creating a Federal Trades Commission. Mr. Joseph E. Davies, United States Commissioner of Corporations and a member of the Federal Trades Commission and from our own state, his home being at Madison, gave a talk before the Merchants and Manufacturers Association of Milwaukee a short time ago and as an illustration of some of the cases handled by the trade commission he cited the following:

"Some months ago a dealer in a remote part of the country complained that he was being put out of business by the unfair practices of a large competitor. His complaint came not by attorney, but informally by letter. In due course it was investigated. Pursuant to our rule in all such cases we called in the large competitor complained of. The officers of the company were entirely sincere in their professions that no such condition could possibly have existed because of the extraordinary care their company exerted to enforce the highest standards of fair dealing in their policy. They offered to turn over their entire records without resort to the exercises of power, which the commis-

sion had under the law. The records were examined, the case fully developed, and again the facts were set forth to the officers of the large concern.

To their genuine amazement, the case was completely proved by their own records. They were compelled in fairness to admit the case. The situation had come about, not because of their intent or design, but because of the unscrupulous zeal of an ambitious local sales manager. The complainant had, however, been completely destroyed. His capital of \$40,000.00 was gone, his life's work wrecked, his sons taken out of college and he, himself, a broken man of middle age. We subpoenaed him and paid his expenses to Washington. His property had been sold under the hammer. He came, without one cent of cost to him, his case had been fully investigated at government expense. He went back home with a check for \$35,000.00 paid voluntarily by the competitor, who had ruined him. He bought back his plant and is today doing a prosperous business, freed from the menace of destruction by a powerful rival who, though no more efficient, yet by reason of size had power to destroy. The offending concern not only voluntarily made this restitution, but agreed to spend a large sum of money to reorganize its business so as to more clearly conform with the law. The case was not exploited through the press; but the man was saved when he was not big enough to save himself; the public interest was protected and fair competitive conditions established in the industry."

This case seems to cover to a certain extent the present condensery competition. And it may be possible that the commission can do some thing for the cheese industry. In case, however, that no relief can be secured in this way we ought to work with the view of getting a law on the statute books of the state, similar to the one proposed a year ago on limitations of cheese factories and protection in general.

While we are seeking relief from the National and State Governments we also ought to do something in the way of raising the standard of quality of cheese and naturally increasing the demand of this commodity. As to quality, there is no question that the moisture limit is going to result in more honest values, and every cheese maker ought to do his utmost to produce a clean flavored cheese of good texture, under strictly sanitary conditions.

The average cheese maker underestimates the importance of good flavor. A cheese may have the finest texture, but if the flavor is off it is needless to state what the consumer thinks of such cheese.

You will all agree that the standard quality is absolutely essential in increasing the demand for cheese at values equal to similar protein food articles such as meats. We are a meat-eating nation, as the majority of American people eat meat two and three times a day three hundred and sixty-five days in the year. These same people probably eat cheese as an accessory in the way of an occasional cheese sandwich, or small piece of cheese with pie. This is not doing justice to this great wholesome food article. Furthermore it is a common

belief that cheese if consumed in large quantities is indigestible and causes physiological disturbances. Experts of the department of agriculture have carried on extensive studies of cheese and have determined that it can easily be used as the chief source of nitrogenous food and if served with crisp vegetables such as lettuce, celery and fruits, that it seldom causes physiological disturbances. In comparing the food energy of cheese with steak we find that cheese per pound has approximately twenty-five hundred calories and steak per pound only eleven hundred. On this basis if steak retails at thirty cents, cheese should bring at least sixty cents. This would be considerably higher than the present retail price. As a matter of fact the average consumer now considers a forty cent price prohibitive. From these statements you can readily see that something ought to be done to enlighten the American public as to the real value of cheese and to secure increased demand at better prices for the producer.

A good many of you cheese makers have heard your patrons complain this winter that cheese isn't high enough considering the cost of production and comparing it with meats. Now how can we get increased demand and incidently better prices? The answer is, that we must show the American public what cheese is actually worth in food energy, and that it is a staple, the same as meat, and not any more indigestible or harmful. The estimated consumption of cheese by American people is three pounds per capita a year. England, Holland, Switzerland, and Italy consume ten times that amount. These nations appreciate the value of cheese and make same more or less a part of their daily diet.

If we could increase domestic consumption a hundred per cent we would not have to worry about export business and would get more nearly what cheese is actually worth. The modern way of accomplishing this is through the medium of advertising.

There is a movement afoot to carry on the work outlined in this paper through a separate organization known as the Wisconsin Cheese and Butter Industry Protective Association.

This paper may be included in the records of this convention, and I am going to follow it up with an informal talk on condensery competition and advertising of cheese.

I am going to take up first the question of condensery competition. Those of you who are not located in condensery territories probably don't realize what condensery competition means. I have the statement that on the average for the last three or four years (I haven't got the figures for the present year) figuring a fair value for whey, the cheese factories have paid more than the average condensery in the state. Why do cheese factories lose out in condensery territories when they pay more money than the other fellow? I am going to show you how they do.

A condensery starts in a certain locality, and in most cases every pound of milk is then going to a cheese factory or creamery. Every

pound of milk the condensery is going to get has to be taken away from the cheese factory and creamery. They start out with an initial "price lure", as I call it, and that is with a price of 15 or 20 cents higher than the average condensery is paying. That price is going to get a good many farmers. Then they proceed with their field men. They put out four or five men with automobiles and they drive the country from morning until night. They go to a patron of a cheese factory and they say to him, "What is your test at the factory?" The patron will say, "I have got a pretty fair test, around 4%," and this field man will insinuate that practically everybody that has started at the condensery has had a raise in test of 3, 4, or 5 points. That is naturally going to start the farmer to thinking, and in some cases the farmer is only too ready to jump to conclusions and openly condemn the cheese maker by saying that the cheese maker in all probability has been beating him for years. They are going to get a good many patrons in that way. I have met patrons and talked to them on that very proposition. I said, "Do you feel that your milk actually tests more than you get at the cheese factory?" Invariably he would say "No, I don't. I have tested my milk myself and as a matter of fact the factory gives me more than I can get out of it, but if the condensery is willing to raise my test 4 or 5 points I am going to be money ahead at the condensery and I am going to take this extra money as long as they are willing to pay me the higher test whether I have it or not."

The next procedure is with their routes. Condensery field men go to a point four or five miles from the condensery and select a man and they say to him, "We want you to start a route," we will guarantee you so much a day whether you get any milk or not." They tell him they expect some work on his part in the way of securing patrons to get the wagon filled up. This man starts out and solicits the milk of his friends along the route and he persuades most of them to put their milk on his wagon. By this time they have crippled the cheese factory and have probably cut his patronage down to half. Considering the present expenses you cannot operate a factory on three or four thousand pounds that is equipped on a basis of seven or eight thousand pounds, and in a majority of cases the factory man will throw up the sponge and say, "I am going to quit."

I will cite one instance in Manitowoc county where a factory man was crippled in that way, and after he had lost half of his patrons he told the others that the probabilities were he would have to close. They insisted that he call a meeting of the patrons, including the ones that had left, but very few of the latter showed up; they were either ashamed to come or they didn't want to come for other reasons. Those that came were very enthusiastic about the cheese factory and they didn't want it to close by any means, and the cheese maker said, "If you can get some of the other patrons to come back I will be glad to stay. I have to be able to make a living out of this business otherwise I have to quit." A committee was appointed to see the former patrons

and try to persuade them to take their milk to the cheese factory again. They started out, but they weren't successful. Some of the patrons were ashamed to come back, others were too mean to come back and the result was that the cheese maker decided to stop work on a certain day. The closing day was like a funeral. Some of the old faithful farmers came there and wept when they said they never dreamed the day would come when their good little cheese factory would be forced to discontinue.

Those are the conditions in a condensery territory. Cheese makers can pay more money than the condensery and yet they are going to lose out. The competitor pays a little more for a starter and by the other methods they are going to cripple the factories to a point where they will have to close. Mr. Marty made a statement this afternoon that the cheese factories handled the creameries with condensery tactics in the past. I can't agree with him. It is true that a good many creameries had to give way to cheese factories but as a general rule the creamery was converted into a cheese factory and the loss was practically nothing. I know a number of creamery men that are now cheese makers and they have never regretted it.

I am going to give you a little history of the organization I have spoken of. It was a case of "necessity being the mother of invention." This organization was started in a little town that isn't even on the railroad, because it was the hot bed of condensery competition. A committee called a meeting of the factorymen in that territory and asked their banker to be present which is more or less natural. They complained to the banker of the methods used by the new competitor and he decided to interest himself in their case and made a tour of the state, visited over a dozen condensery sections and came back with considerable information on condenseries. He then called a meeting of the cheese makers in that locality and laid before them what he found, and it was decided at that time that something ought to be done in the way of protecting the cheese industry, by forming an organization. This organization, up to the present time, is not in a position to guarantee protection, but it proposes to make an attempt at it.

You all know that practically all milk prices, outside of butter, are based on cheese. You take your condensery, they figure their price on the basis of cheese, regardless of what they get for milk. This includes the milk dealers of the cities in this state in cheese producing territories. Cheese is practically recognized as the standard of value of milk. We ought to try and raise the standard, and we feel it can be done. You will probably recall in my paper the erroneous ideas about cheese. I discovered a little article in our local paper a short time ago which brings out that point pretty well. As a matter of fact I know of a concrete case at Campbellsport. A couple of weeks ago we had an organization meeting in that city. We had dinner at the hotel, we were served great big steaks. Pie was brought in for dessert. I asked the lady waitress if they had American cheese. She

answered "we can't afford to serve cheese, it is too high priced." They had a cheese factory right in town and this hotel no doubt could have purchased their cheese at a wholesale price, around 26 or 27 cents, and she is of the opinion that cheese is too high priced to serve. The steaks cost her considerable more than cheese but she didn't realize it. We have those mistaken ideas at home and we try to market cheese in distant territories where the cost of cheese is much greater. It is evident that it behooves us to do something in the way of enlightening the American public about cheese values as a staple. My idea of paying for advertizing of cheese is in this way. The producer ought to pay this expense in a large measure because he is going to reap the benefits through increased demand which would ultimately result in much higher prices. The cheese makers interest is to get all he possibly can for the patrons. The cheese maker gets wages and it reminds me of the paper read here today "Over the Hill to the Poorhouse." The solution of the problem is to put the business on a basis where the patrons are better satisfied, he can then demand increased wages. If the farmer is not satisfied with cheese prices there is not much chance at getting increased pay.

Our scheme of advertising cheese is in this way. The factory patron is to be taxed a certain amount, and I suggested at several meetings that the amount be dollar. The factory man would probably agree to contribute five dollars, the cheese dealer should contribute twenty-five and fifty dollars. We have over 2200 cheese factories and each factory has 25 or 30 patrons, that makes approximately 66000 patrons hauling milk to cheese factories, and if each patron pays \$1.00 we have \$66,000, and you have about \$10,000 from the cheese makers and another \$5,000 from the dealers, giving approximately \$75,000. If this amount was expended in advertising in national magazines and the like, I am satisfied that great good would result. At any rate it is worth trying. I have spoken to cheese factory patrons about this scheme and found a good many in favor of something on that order.

MR. SCOTT: Mr. Linzmeyer called on me awhile ago in regard to the association. Three years ago we organized in Sheboygan county, we came down here to Milwaukee with little bells on wanting to organize such an association as this. I asked Mr. Linzmeyer to come in with us or we will come in with them. The Sheboygan county boys are ready to come in. We must all go in together, but the cheese makers don't come in. They were invited at Fond du Lac last year to come in. We will combine with them in any way they see fit.

CHAIRMAN: The Sheboygan organization was the Wisconsin Cheese makers Advancement and Protective Association.

MR. SCOTT: There is no reason for having two organizations.

MR. ADERHOLD: The new organization takes in the butter industry as well as the cheese industry. Marathon county has the same, Clark, Wood, Chippewa and Eau Claire counties are organized under Central Wisconsin Cheese Makers, Butter Makers, and Dairymen's Advance-

ment Association. The way to get them together is to meet with the directors or delegation meetings of these different organizations that are already organized throughout the state, that are in thriving order and have by-laws and either have the clause that you are most deeply interested in inserted in their by-laws or you adopt all of theirs and then you will be all alike throughout the state. It is easier than soliciting individuals. Mr. Lowe, and Mr. Charles Steffen and I had some experience in starting one up in Clark county.

MR. SCOTT: They have a large organization up there, which they call the Central.

CHAIRMAN: This is Wisconsin Cheese makers' Protective and Advancement Association that was started in Sheboygan county.

MR. ADERHOLD: This new organization takes in dairymen.

MR. STEFFEN: I want to say in regard to the matter of organization, within the last two weeks I was in the city of Chicago on this very proposition you men are facing now. In the month of August I went to Madison and appeared before the State Council of Defense. I pointed out that the cheese industry is going to face prices unless the supreme authority does something and does it quick. We are paying more in Milwaukee for milk than the cheese factories or the condenseries can afford to pay.

I want to just put in a word of caution. We are in war. The National Food Administration under Mr. Hoover has supreme jurisdiction over all products. For the time being our hands are tied, and for the time being we must work hand in hand with the Food Administrator.

There is another item there that has been gathering some force, and that is that some insidious hand will step in there and fix the price for the other fellows. Who fixes the price that the Food Commission takes? It is the packer. I want to say to you men all roads lead to the packer. Mr. Heney has been in Chicago examining into that very problem. Today I am going to send a telegram asking Mr. Heney to transfer his investigation into Wisconsin and turn some light into this dairy business. We have got to have some information, gentlemen. You are all working along the same lines for the same purpose, and you are running up against the most gigantic forces you have ever worked against.

The attorney-general refused to prosecute the milk trust in Milwaukee. Why? They told me the power is too big, they dare not take hold of it. But Mr. Heney will take hold of it. It requires a gigantic force, and I said to Mr. Linzmeyer yesterday, your ideals are right, your purposes are right, but you have got to get bigger forces. The other forces have a million dollars to spend where we have a dollar and you will strike your heads against a stone wall. We have got to get the power from Washington. Why is there such an effort now to get this cheese consumed? Because the packers own the cheese and they don't want it known. There is the trust, gentlemen. You have got to break the control of the cheese

business and put the business in the hands of the cheese men. Your prices are fixed in New York and Chicago and you poor devils are working here in Wisconsin.

I ask for cooperation today that you men will join with me in sending a telegram to ask Mr. Heney to transfer his investigation into Wisconsin. It is a swindling proposition, I call it.

MEMBER: The statement of Mr. Steffen brings out one fact of our association, and that is that we have got to have money if we are going to do anything. I understand all those other associations are organized along a good deal the same lines. They haven't got money enough to do things. The fees of this association are \$10 and it takes in every man interested in the dairy industry.

MR. LEE: I would like to ask Mr. Steffen if he meant the statement he made a few moments ago. Did they make the statement these fellows were too big to fight?

MR. STEFFEN: A man's statement was made to me. When they had a prima facie case against the man, the man said to me—whether this is true or not—it would not be advisable to prosecute them at the present time. At the same time no prosecution has developed under that law and they were never able to give a satisfactory reply.

MR. LEE: Your statements are based on hearsay?

MR. STEFFEN: Yes.

MR. LEE: You don't want to make a statement of that kind on hearsay.

MR. STEFFEN: I made inquiries in reference to the milk situation and the attorney-general, in general. Prof. Russell openly stated that they were preventing any prosecution under the anti-trust law. This was a statement made in a public meeting, so I presume if it is done in one instance it is done in another.

MR. LEE: You refer to an investigation covering a week on the patron's test against the condensery?

MR. STEFFEN: I was in the attorney-general's office in August and the attorney-general said to me that the tests had been overread, and Mr. Becker made the statement to me personally, he said they had considerable complaints and I have heard of nothing being done.

MR. LEE: There are always two sides to a story. Mr. Linzmeyer came to me yesterday and wanted my side of the story. The Dairy and Food Commissioner isn't here today, and he is not afraid to prosecute when he has evidence. I personally, with one of our other men, carried on the investigation. The complaint came to our office that the condensery was overreading the Babcock test. To get evidence on the overreading of the Babcock test is not an easy matter because you are dealing with farmers and you are dealing with cheese makers and everybody.

MR. STEFFEN: This statement said somebody from the Dairy and Food Commission did check up, took a test at the farm and at the condensery and found that the test had been overread.

MR. LEE: We went to a cheese factory in the vicinity. We asked the cheese maker to furnish us with two farmers that were willing to send their milk to the condensery. We went to the two farmers Sunday afternoon in a rain storm. These two farmers let us come in and sample the milk every morning until we got the result from the condensery, Monday morning. The farmer was standing in the road watching for me because he thought he was a schoolmate of mine. He knew we were there. He got the information from a farmer. We thought the whole thing was up. We got a sample of those two farmers' milk every morning for five consecutive days. Naturally we were anxious to get the report from the condensery. The report is in writing filed in the Dairy and Food Department's office and also the Deputy Attorney-General's office. My average test on one farm was 3.55. The test by our chemist on the same milk for the same period was 3.6. The condensery paid that farmer for that milk on a 3.9 test. That is a difference between my test and the condensery's test. On the other farmer's milk his test was 1/10th lower than mine. In one case he was underreading and the other case was overreading. This one farmer's milk which you claim was overread from hearsay, was overread how much?

MR. STEFFEN: They tell me 4/10th.

MR. LEE: The farmer's milk for the five days varied from 3.5 to 3.8. The variation on different days 3.5, 3.4 and 3.8.

MR. STEFFEN: The point I make is this. It requires organization and power more than is in the state to bring those things to justice.

MR. LEE: The condensery don't take a positive test, they take a sample on one day every week. They made a mistake of one-tenth, if they made a mistake. Who here would want to be prosecuted because they overread one-tenth?

MEMBER: I would like to have Mr. Lee state how many cheese makers you have prosecuted?

MR. LEE: I only know of three, and that I got from Mr. Aderhold. Do you want the cheese makers prosecuted the first time?.

MEMBER: We certainly do.

MEMBER: I wrote a letter to the Commissioner asking him to prosecute a bunch of our cheese makers in Bear Creek and I never got a reply.

MR. LEE: I can't understand a man making a statement of that kind because the records are on file in the Commissioner's office.

MEMBER: I know this, we didn't get replies.

MR. LEE: We have received several complaints in the vicinity of Appleton and Mr. Cannon has investigated several of them. So many complaints come in based on suspicion and you don't have evidence.

MR. PAULY: There is no question but what the State Department is short-handed. I think the cheese makers ought to make an effort to increase the department.

MR. MARTY: Either increase it or out with it. This everlasting throwing weights and measures and everything thinkable in the name

of an institution on the Dairy and Food Department has reached the limit. Either increase it or out with it.

CHAIRMAN: Prof. Lee has a few announcements that he thinks are almost a necessity to come before this convention.

MR. LEE: There are not as many of the factory operators as I wish were here.

The licensing law has been in operation two years. Since that time there has been a large number of men who have applied for licenses to make cheese, and up to the close of last year they haven't been found by the inspectors. Just before the close of the year we did receive letters from a few of these men that have a permit to make cheese but never received a license. If you hold a permit as a cheese maker and you haven't your license, or if a new man should come into the creamery this year and he had applied for a permit to make cheese this year or if you change your address, tell us where you can be found. I called on a young man this morning who didn't understand why he hadn't received his license. He is connected with a Milwaukee plant and naturally hasn't been found by the inspectors. The permit has the full force and effect of a license until a license is issued. If it is issued in 1917 it holds good until 1918. If the Commissioner recommends a license the Commissioner will issue such a license.

The year 1917 is the year for which we are going to tabulate the different products made in the state, the number of pounds of product. These blanks have been sent out as far as we can tell to every cheese maker in the state. I wish the cheese makers would assist the Department. It is to your interest as well as anybody else that we get the total number of pounds of cheese that was made in Wisconsin for the year 1917, and the value of that product. Your cooperation in this matter will assist the Department very much in getting the report out on time. The law requires that these figures shall be in sixty days after the first of the year, so each factory operator has sixty days in which to fill out this report and return it to our office. I thank you.

TESTING CHEESE FOR MOISTURE

By PROF. J. L. SAMMIS, Madison, Wis.

Those boys who just gave you a "skyrocket" wanted you to know they were here, so I might as well say they are here looking for jobs, and if you are looking for helpers or cheese makers, go over and talk to them. Every year we bring down a party of boys, and some of them usually get employment. I recommend them heartily, they are all good hard workers.

The subject that has been assigned to me is testing cheese for moisture. There are four or five different ways to talk about almost any subject. A year or so ago you would have to present a lot of

reasons why a moisture test is a good thing. Whenever anything new comes up the first thing about it is to determine it is a good thing, then to explain it to everybody interested and teach them why it is a good thing. The records indicate that a good many years ago the milk you had for cheese making was too sweet, and some of you men remember when you began using starters. Now-a-days we would say a cheese maker who didn't know how to make a good starter is not up-to-date. When we first began using starters there wasn't so much danger about having overripe milk or acid cheese. Just as soon as there began to be difficulty about overripe milk, we had the rennet test and the hot iron test, and finally the acidimeter, and now-a-days a cheese maker who doesn't know how to make an acid test isn't up-to-date. Up in Canada probably all the factories use the acidimeter every day, and so believing it to be a good thing we teach all of these things at the University. So you will find if you get one of these Dairy School boys to work in your factory that they know how to make a rennet test, a hot iron test, and they know how to use an acidimeter, if you have one. It is a good thing because you can use it all the way throughout the process, clear through to the time you salt the cheese and put it to press, on milk, whey and the drippings from the curd. I think in the course of years that test will come to be more widely used.

In the last few years we ran across a new source of trouble, and that is too much moisture in cheese. The cheese makers and dealers urged the passage of a moisture law, and that is being enforced now. Just as it was a good thing for the cheese makers to know about the acid test, so it is a good thing at the present time to learn about the moisture test, and I know a good many of you are interested in learning about it, because you told me so in the last day or two. I am not going to talk about why we need a moisture test, we will take that for granted, and I am going to furnish a few precautions to use.

The general process in making a moisture test is described in a little circular from the Experiment Station. After reading about the process, if you will sit down to the table in there you can do the work in a little while and get accustomed to it. That is one thing we have tried to bring down here from the Dairy School this year for you to look at. The other thing, as I said, is this class of Dairy School boys for you to look at and make use of.

In making the moisture test the important thing is to weigh out carefully a little piece of cheese, and then dry this cheese and then weigh it again and see how much it has lost. You determine the weight of the moisture by the loss in weight of the cheese sample. That is the general process.

I have been asked repeatedly what kind of scales you must have to weigh a moisture test sample on. You ought to have some scales that weigh out to hundredths of a gram, out in the second decimal place. Some scales have been offered in the past for as little as \$5.00 and you were not getting \$5.00 worth when you bought them. They are not

sensitive enough. The smallest weight you put on those scales won't affect them. I know of two firms at least that are making good scales for this purpose for cheese makers.

When you have got good scales it is important every day you go to make a moisture test to see that your scales are in balance. You will understand right away that if you set your scales up and weigh out a sample of cheese with those scales and then some fellow comes along and leaves the window open and some dirt blows in there that is going to make a difference with your test, or if you had some sort of a bug or cockroach or fly get in the scales you will have to take it apart and take it out. Take care of the scales and every day you go to weigh see that they are in balance. If only one man uses a scale, and it is kept in one place, it is not so apt to get out of order.

Now, when you know the scales are in balance, see that your cheese sample is a good representative sample. If there is an old trier hole in a cheese, don't take your sample from there because the sample that is taken near an old trier hole or too close to the rind is not representative of the whole cheese.

Don't lay the plug on the table and go out to the boiler or bring in a bucket of coal or get some cheese for somebody, because all of the time you do that, this trier plug is drying out. Just as soon as you get this trier plug drop it into a bottle with a stopper. You can then leave it for half a day or more or you can ship it by mail. I have had many samples sent to me that way. I have seen a man go into a curing room with his trier and his plate and lay those plugs down and carry that plate out into the other room and stop and talk to a customer, and pretty soon when he got ready he would weigh out his samples. This is not the proper way.

How much cheese to weigh out? If you can weigh out ten gram samples, there is little or no figuring to be done. If you don't have ten grams you can use five grams very well, if you are at all skillful about the thing. I ought to say whenever I test the cheese for moisture myself I always do it in duplicate. If I should make a mistake in reading, then the result would be that my duplicates would not agree. If I only made one test there would be no way to tell if I had made a mistake. For the last six months I have been using ten grams in one sample and five grams in the other sample, and the results agree well. The scales you buy are arranged for a ten gram sample, and that is the best thing to use. I would recommend that the beginner use a ten gram sample.

The next thing after you have got this sample weighed out is to get it thoroughly dry. Some of the cheese makers come in here about one o'clock and say, "We want to weigh this out and finish it before the meeting." I wish you could, but I don't believe those samples will dry. Give them about four hours at least to get dry in. Be sure your samples are fully dry before you weigh them back. How can you tell if a cheese sample is properly dried? That is not hard. First of all give them a reasonable amount of time to get dry. Leave them in the

oven three or four hours. When you get up steam in the morning put in your sample. Sometime after dinner they will be dry. If you want to prove they are dry after you have weighed them just put those dishes back in the oven for a little while and take them out again and weigh them again, and if they were thoroughly dried in the first place then they won't have lost any more. You will get the same weight on the second weighing as you did on the first weighing. That will prove your cheese samples were thoroughly dried.

Sometimes people want to know if it is safe to test just one vat of cheese. No, it is not. You might as well guess at all of them if you are going to guess at all, and that is what we are trying to get away from. If you have got a moisture test and are doing testing, I recommend you take a sample out of each vat of cheese.

How can we get a test on today's cheese so as to make use of those results tomorrow? You can do that all right. If you will take a sample out of the cheese after it has been pressed one hour thoroughly, it will give you a correct moisture test. I say if you will press your cheese an hour in the evening, press them well for an hour or more, then you can take out a plug and that sample will give you the same test as if you take the sample the next morning. If anything, the sample you take the next morning will be a little dryer. Weigh that out right away and put it in the oven to dry, and if you can, leave steam pressure on it all night or half the night you can get it dry, and the first thing in the morning you can weigh it. Of course you can modify your method if you have to.

These are all suggestions about what you can do in your factory. If you don't thoroughly understand how to make a moisture test and just want one or two tests made occasionally, we at the Dairy School will be glad to help you out on that. If you write to the Dairy School we will send a little bottle for you to send your sample to us in. We can test it two or three times a month for you to get started. You can put your moisture sample plug into a dry bottle, but don't wrap up the plug in a piece of paper or a cloth because the paper will absorb moisture from the cheese. If you have a moisture test at the time in your factory and want to compare your work with somebody's else, mail some samples up to the Dairy School and we can compare your work with ours.

These are the principal things about the moisture test. There are other things we might talk about. There are some different ways of operating the scales, but I don't believe it is worth while to talk about those things here, and I will be very glad to show you that in the other room. Some of you have asked me if it is necessary to have a steam oven to dry your samples in. That is the best way. You can't dry your 10 gram cheese moisture sample quickly over a flame as you can butter. You can get a big steam oven like ours and that will cost you ten or fifteen dollars. You can get a small oven that will hold two or three dishes for something like five dollars. You can't get out of buying scales, but if you haven't got any oven at all you can dry your

sample on the outside of the boiler. Put some kind of a cover over the top of the moisture dish, a little tin cup or any little tin plate. You can do this on top of the boiler. There is even an easier way than that. If you haven't got a boiler, take an ordinary kerosene lamp. In the back of that bulletin is a picture of a little tin dipper which you can set on top of the lamp chimney. There is a shelf in the dipper and you set your moisture tests on that shelf. It will only dry three or four samples at a time, but it will do the work satisfactorily.

Possibly you have some questions you want to ask about a moisture test that I have not already answered.

MEMBER: I would like to ask Mr. Sammis if you can make the test in an ordinary bake oven on the stove?

PROF. SAMMIS: You could do it, but you probably would have to watch it so much you would get tired of it. In a steam oven you have 40 to 50 pounds of steam pressure. That means a definite temperature. The point is that with steam at from 40 to 60 pounds you have the right temperature to dry that sample. If you put your moisture test in the cook stove in the kitchen and somebody else ran the stove it might be so hot it would run out of the dish. If I was going to dry it on the cook stove I would lay a piece of asbestos paper on top of the stove and lay the moisture test on top of the paper and put a little dish over it. If the cheese melts it is liable to boil over. It could be done, with care.

MR. ADERHOLD: I want to caution the beginners of users of moisture tests if you are going to use them with steam from their boiler, that steam will be high pressure and low pressure and will vary on different days. Of course the lower the temperature the longer it will take to dry the samples. I would advise you to do as Mr. Sammis says, weigh the sample and dry for about four hours and put it back in and reweigh it at intervals of about an hour. Experiment. You are very liable to not leave it in long enough if your steam is low, unless you leave it in long enough to thoroughly dry it.

PROF. SAMMIS: I made some moisture determinations at different steam pressures and it is a fact if you get down much below 40 pounds it is going to delay your drying quite a little. 35 pounds is as low as you want to get; if you get down to 25 pounds it will probably take 8 hours. So you ought to aim to keep your pressure up to about 40 pounds.

CHAIRMAN: Has anyone else anything on this moisture test?

MR. ADERHOLD: While we are on the subject of moisture testing, there has been a great deal of anxiety on the part of a great many makers of American cheese since we have been in certain sections enforcing this moisture law, as to what would happen to them if they happened to wobble over the line occasionally, and I have had a number of inquiries of that kind while I was here. You realize, of course, we can't absolutely control the moisture in cheese and that we have quick working curd some days, some pieces of machinery get out of kilter, get dislocated or something that will interfere with the regular

process of operation. I don't think you ought to have any anxiety about anything of that kind. We can tell whether a man is trying to live up to that law or not. It is very easy to tell that, and we have other laws we can't live up to the letter. We have a law that it is wrong to sell or manufacture cheese made from milk that contains any unclean or foreign substance. So the legislature took the sensible ground and said that the milk shall be clean, and we have to use common sense in enforcing those laws. If a man tries and does as a rule make cheese that is within the moisture limit and something happens and one day's cheese goes a little over the limit, there is nothing dangerous about that and nothing will be done; that is liable to happen to anybody, so I think you ought not to have any anxiety about anything like that. Of course I don't mean for a man to wobble over the line three or four times a week. That could not be called an accident.

I find some cheese makers with high moisture test who heat their curd 2 1/2 to 3 hours after they set their milk. That is not the way to set their cheese to make a firm body cheese. Some of these younger fellows see it made only in that way. That method is not conducive to getting the moisture out of the curd.

There is another thing I want to speak about, that is a moisture standard for brick cheese. We are getting a lot of splendid results from this moisture law for American cheese, but there is another thing, and that is the brick cheese. I was talking with a number of manufacturers of brick cheese and dealers in brick cheese and they realize the necessity of a moisture standard for that cheese. I have tested brick cheese that had 52% of moisture. You fellows that are making brick cheese are a little bit over ripe. I can see a man now sitting not far from me who has several factories. Just recently he switched over to brick cheese because there is no moisture standard there. You see what that is liable to do to some of you fellows that are making American cheese.

I have got a little resolution drawn up along that line that I will offer.

"Resolved that it is the same sense of this convention that a maximum legal standard be created for brick cheese."

I offer that as a resolution.

MEMBER: I would like to ask Mr. Aderhold a question. About what per cent of cheese, before this law was enacted, contained anywhere near the 40% moisture limit?

MR. ADERHOLD: I have an idea that less than 25% of the cheese we have been making contains over 40% of moisture.

MEMBER: Has that always been that way, or is it within the last few years?

MR. ADERHOLD: It used to be higher than that.

MR. ROCH: I am from Minnesota and a year ago last summer I tested all samples sent into the state for moisture. In that whole

year there was only one sample that got up to the limit of moisture and that was a brick cheese sample. I knew the agitation that was going on throughout this state. You wanted to set the moisture limit. It didn't appear to me at that time that there was any call for that in Minnesota. But since you people were talking here I was wondering.

MR. ADERHOLD: The cheese that made Wisconsin famous had in the neighborhood of 36 and 37 per cent of moisture, and I think I am very conservative when I say that 75% of our cheese has been below 40%, but some of it was going rapidly, some of it was rind rotten before it left the factory and this moisture standard is very timely.

MEMBER: I move the adoption of Mr. Aderhold's resolution.

Which motion was duly seconded and carried.

MR. O. A. DAMROW: At our last legislature there was a law passed on the branding of whey butter and I believe that law is unjust. Therefore, Mr. Chairman, I have a resolution to offer:

"Whereas there is a law on the statute books of the State of Wisconsin which requires the branding as such of whey butter,

"And whereas there is nothing in the manufacture of whey butter which in any way conflicts with the standard for butter as defined under Section 4601-4a paragraph 8, and

Further—believing that the branding of whey butter is of no value to the consumer and inimical to the best interests of the cheese industry,

Therefore be it Resolved, that we, the members of the Wisconsin Cheese Makers' Association, in convention assembled this 10th day of January, 1918, do hereby respectfully request the legislature of the State to repeal said law."

MR. KALT: I move that the resolution be adopted as read.

Which motion was duly seconded and carried.

MR. NOYES: Mr. Chairman, Ladies and Gentlemen of the convention: I am glad these special points along the cheese maker's line have been brought up, and I tell you it is time the cheese makers got alive to their interests. There is another thing coming up this year, and that is the skim cheese business. It was up last year and we killed that. We find the creamery men are getting together and are going to bring that same thing up again, gentlemen, and we ought to fight that and not let it pass. Every man wants to get next to his assemblyman and senator.

CHAIRMAN: I have another suggestion to make. There is the foreign cheese maker. Why is it that they can make this Italian cheese that takes skim milk if they have a law? It will tend to destroy the foreign cheese industry.

MEMBER: Mr. Chairman, that is made in a certain form and it is understood it is made of skim milk.

MR. ADERHOLD: I think that question needs a little clearing up. There are certain types of cheese that are skim cheese and you couldn't make it of whole milk. We have the Parmesan Italian cheese, that is typically a skim milk cheese. It has to be graded as such and it is

not put up as our state law requires. Everybody understands what it is and it would simply shut out the sale of it, and it would be manufactured somewhere else. Some people think it could just as well be manufactured in Wisconsin as anywhere else. It is typically a skim milk cheese; and the same with cottage cheese, that is a skim milk cheese. It would seem our skim cheese law isn't perfect in that it doesn't specify to what types of cheese it applies.

CHAIRMAN: I have here in my hands something that was sent to the members and it should have been the first number on the program this afternoon. Mr. Cook, not being able to be present, has sent his greetings in the form of a letter to the secretary, and I will read it to you.

LETTER FROM HON. S. A. COOK

MR. GUS. SCHIERECK, Sec.,
Wisconsin Cheese Makers' Assoc.,
Plymouth, Wis.

Dec. 31, 1917.

My dear Sir: Referring to the Twenty-sixth Annual Convention, I note with a good deal of pride, the honor you have extended to me in allotting space in your programme for me to be heard.

I wish to assure you and your co-workers that your action is much appreciated by me and I regret that, owing to my physical condition, I am barred the great benefits to me by meeting with you in person, but I want you all to feel that I am with you in spirit and best wishes, and while I should, perhaps, hesitate to attempt to occupy any portion of the time you have honored me with, I trust you will accept a few words from me, and though it may be more in the nature of a greeting than on lines that are instructive, you will consider it in the same kindly spirit for good in which it is intended.

I can only say a few words in a general way, bearing in mind that the ways of success in all legitimate industries have a close similarity.

A man in the cheese manufacturing industry, as in any other legitimate business, must have good common sense with a will to do and a desire to know how to do it, and then be on the job until he has reached the top, and when he has reached that position he must add determination to hold that position in the same manner so long as he remains in the business, and it is wise to meet in convention, talk matters over with your co-workers and profit by the better part of such ideas as you may get from others, but for lasting success each must depend largely on themselves, as the neighbor or co-worker has his own burdens to carry, and that none forget that knowledge is power, if backed up by will to do.

Keep up the high grade of your goods and double your product, if that be possible, for there is, and I believe will be for many years to come, a good market for such goods. Study to increase your product and your success will be the greater, feeling that you brought it about by your own skill.

I have been directly interested in the upbuilding of Wisconsin's great industry, cheese and butter. I have seen it when three million pounds were the full extent of the export from the entire United States, due largely to bogus and poor quality of cheese, until it has reached a magnitude that is almost incomprehensible, and the proudest part for me is that Wisconsin stands at the head of any state in this great country of ours, and I desire further to say to you that the man or

woman, who wins one of the chairs I offer and that I pledge to be first class goods for what they are intended, secures them on the high merit or quality of cheese, and I take the position that any man who wins one of these chairs is helping his neighbor, helping every man in the cheese and butter markets in the world, as the two articles draw their material from the same source and can not well be separated, and what little I have done in the past to help the industry has been on lines of duty as a citizen of Wisconsin, and I receive my compensation in full by seeing the great industry improve.

Wisconsin Cheese Makers, my earnest wish for you is that you may continue in the great work you are doing to help feed more than one-hundred millions of people of this great nation, and may God bless every one of you by helping you to good health, strength, and determination to succeed in your every earnest effort for building still higher the industry for the good of our fellowmen. Be loyal to this great nation that is peopled with the best people in all the wide world, and that you will sacredly guard the old flag of our country that we all love so well.

With my kindest wishes to all,

Very sincerely yours,

S. A. Cook.

PASTEURIZATION OF FACTORY BY-PRODUCTS

CHAIRMAN: Dr. O. H. Eliason, State Veterinarian, and Mr. C. P. Norgord, Commissioner of Agriculture, are to address you on this. The subject is "Relation of Pasteurization of By-Products of Butter and Cheese Factories to Tuberculosis"—something to that effect, and they want to use charts and they ask you to remain quiet for a few minutes until they get started because they want to distribute circulars through the audience.

"The Status of Tuberculosis in the Cheese Sections of the State". That subject refers to the pasteurization of creamery and cheese factory by-products. The pamphlets or circulars that Mr. Norgord has will be left on the table and anyone wishing one of them may step up to the table and pick one up.

DR. ELIASON: Mr. President and Members of the Cheese Makers' Association, Gentlemen and Ladies: This is no new subject. This is something that has been thrashed over in this state and in other states for a great number of years. Some years ago there was an experiment made by our College which tended to show the distribution of tuberculosis through a creamery. It was made in the vicinity of Cottage Grove, Wisconsin, and showed the percentage of tuberculosis in the herds owned by contributors to this creamery. It was found that inside of that district there was a greater amount of tuberculosis than there was immediately outside of it. It was in the day when all the cream was separated by a common separator. I think if you will think over the situation a few minutes you can see how that could be done. Supposing there was one tubercular herd in that vicinity. This

was done 300 and some odd days a year, and it would seem it might be successful at the end of the year anyway. This is only one experiment and the same thing has been carried on to a great extent throughout the state.

It is true not only of creameries, but it is true of cheese factories where the whey and products, any of them, are brought back to the farm in a raw stage from a common melting pot. From all the products of the whey you are going to take back to your farm disease, whatever it contains.

We all know, now at least, that milk is one of the greatest disseminators of contagious disease. That being true, we will pass on to some other fact in connection with the travels of tuberculosis and the effect which the distribution of tubercular milk has upon our pocket book. I am not going to talk to you very much upon the health proposition this afternoon, I am coming to you with a straight dollar and cents proposition, although I may call attention to it indirectly, but this is a matter which is a business matter.

We have found in different parts of the state there is considerable tuberculosis among the herds, and it is so much so that the packers of this city and of Chicago are really discriminating against Wisconsin hogs because their losses are too large in proportion to those of the other states. It may be interesting for you to know—and by the way I might tell you that this is not information we have in every newspaper, it is not a very cheerful fact, it shows we are working at any rate so far as tuberculosis among hogs is concerned—we took several points at which Federal inspection is maintained. Fort Worth, Texas, has .8 of 1%, Denver, Colorado, 3.1%, St. Paul 5.4%, St. Louis 2%, Omaha 9.4%, Chicago 14.3%, and last but not least is Milwaukee which comes with 24.3%.

MEMBER: What does that represent, Doctor?

DR. ELIASON: The percentage of hogs that are found infected with tuberculosis at the packing house where Federal inspection is maintained. That does not mean that all of these 24% are thrown out. About 2% are thrown away. Still the whole carcass is condemned. What we mean by original packers is a hog in which tuberculosis is found where the head or the lard or the loins may be thrown away.

MEMBER: What percentage of those hogs were fed on whey or skim milk?

DR. ELIASON: I will bear on that later on. In looking over the general situation, of course, we are looking for a cause. We find that the rest of these hogs are fed more on other products than on whey, skim milk and slops from creameries. They are fed on corn for the most part through the corn belt, but Wisconsin is primarily a dairy state, we have more whey, we have more skim milk to use up and this is used by the hog. And there is no better indicator of tuberculosis than the hog. Where there is a tubercular herd of cattle or wherever there are tubercular slops or any product brought back to the farm, there you are going to have tuberculosis among hogs. Some-

times the hogs are even more searching than the tuberculin test, because if there is tuberculosis present in the milk the hog will show it. Does that answer your question?

MEMBER: The question was what percentage of hogs are coming from the cheese district and what percentage from the creamery district?

DR. ELIASON: Before answering that I will just call your attention to that fact on this chart. When tuberculosis is found in the carcass of a hog, even though the carcass is not condemned, there is a loss on that carcass and the loss on that is estimated at 90 cents per hog. On the carcass as condemned we place the figure of \$20, on the carcass as actually lost. In the years 1915 and 1916 the loss on hogs actually slaughtered was \$7,815,670. You probably appreciate that prices are higher now than then.

Cudahy Bros. of this city wanted to find out where this came from, so they took an individual shipment when it came in, when there was an entire carload from a certain place, they took that shipment of hogs and placed it into a separate yard and they slaughtered that in its entirety so they could find out what percentage of these hogs were affected. Possibly I had better read this.

(Percentages from different towns in the state read from chart)

That extends from Birnamwood on the northwest and Black Earth in the other direction and clear down to the state line. The average per cent which was found in the packing house at that time from those shipments, which were strictly Wisconsin shipments, was 31%. You understand the packer doesn't lose this money, it is simply an overhead charge and he buys those hogs so that he can afford to stand that loss. We, as I said, lose just that much valuable stuff.

We know we can be protected by putting these products through a method of pasteurization or sterilization heating, and that is the only method at the present time other than cleaning up the herds whereby we can go and put a stop to this loss. You know we are in Wisconsin a dairy state. You know that better than I do. In the state of New York you have more milk, but it is not made into butter or cheese as much. The milk is sent to the city and consumed by the children and the hog escapes. The hog gets corn and consequently he doesn't get so much tuberculosis. Here in Wisconsin we feed him these products and there is no way he can escape. These facts were brought to our attention.

I will just call attention to the law passed last legislature asking that the Department of Agriculture draw up some rules and regulations, and that is now contained in this article which is ready for mailing, and every cheese factory will be supplied with these regulations and suggestions which are furnished by the Dairy and Food Commission and the College of Agriculture for the performance of this work.

I don't want to take up too much time on this subject. Unless there are any important questions you would like to ask me right now I will turn over the rest of the time to Mr. Norgard.

MEMBER: Which loss would be the biggest, the loss of hogs or the loss of coal by pasteurizing?

DR. ELIASON: There are certain benefits that come from the heating of whey, you are no doubt familiar with that as well as I am. You all know that whey is one of the most indigestible feeds when it is in a cold state. When it is thawed out the warm, heated whey is much more valuable as a feed than it is when it is cold. Not only that, but if this whey is heated and then taken home in the cans to the farmers, your milk cans are not going to be treated with all kinds of bum germs. The heating of buttermilk doesn't do it much good, but this is a cheese convention so the creamery men can have their own troubles. So far as the heating of the whey is concerned, every authority I have come across so far has admitted that the feed is far superior in its heated state.

CHAIRMAN: The Doctor is putting up to you some reasons for this pasteurization, then we will put the question up to the Agricultural Department and then the Dairy and Food Commissioners.

PROF. SAMMIS: I suspect that a number of people didn't understand the first time going over the subject that 31%, the average figure at the bottom of the chart. Does that refer to the number of hogs lost by tuberculosis?

DR. ELIASON: The 31% represents the total number of animals which were found affected with tuberculosis, both the animals which are tanked and those which only show minor affections in which only part of the carcass may be tanked.

MR. LEE: That is one out of every three hogs.

DR. ELIASON: Practically one to three.

MR. BRUHN: Would it not be more feasible to go to the root and get the cows that have the tuberculosis? For instance in a factory having four or five hundred cows contributing milk there is perhaps only a dozen of them that show tuberculosis. It seems to me a good deal cheaper to do away with those cows.

DR. ELIASON: It is my humble opinion that the eradication of tuberculosis ought to be done little by little, more economically than it has been up to the last year, and that the only way we can do that is by the assistance of the creamery and cheese factory element, that they will assist us in using those cows for a time or until they can be eliminated. If we took all of the cows that are affected it would seriously cripple the farmers with herds.

MR. E. C. DAMROW: I believe as Mr. Bruhn does, that we should get at the root of the evil. We have got the Dairy and Food Commission coming around to tell us what to do, why not have the State Veterinarian have an army in the field and go out to the farmer and tell him to clean up his herd and not put the burden onto us factorymen?

MEMBER: Is the law enacted, Doctor?

DR. ELIASON: Yes, sir.

MEMBER: I would like to hear the sense of the law in a few words. I think but very few of us here know about it.

DR. ELIASON: Chapter 592 Laws of 1917, sub section 1 of section 5. "All by-products of creameries, skimming stations, cheese factories or condenseries shall, before being returned to any farm or feeding station, be heated to at least 145° F. and held at this temperature for at least twenty-five minutes or when not held at the above temperature for at least twenty-five minutes, shall be heated to a temperature of at least 180° F."

I call your attention to the fact that tuberculosis was not the only disease which was spread by this process.

MR. E. C. DAMROW: I don't doubt but the pasteurization of whey or milk will help a whole lot, but of course we are not striking at the root of the evil as has been brought up by some of the cheese makers. This milk comes into the creamery or cheese factory and is all mixed up. The intention of the law is this, to take care of this by-product we feed our four legged animals. How about the food we feed our two legged ones, your and my babies? (Applause) When we catch a bull by the horns we usual go to the front, not get him by the tail.

I heartily agree with this law, but the loved ones are left at the mercy of the germ and the disease that is in our food product. We are spending about a half a million dollars to wipe out the disease of our stock. Who takes care of my children and your children and you and me, is there anything provided for that? I am willing to pay the tax, don't cut down on the tax. Our Dairy and Food Commission say they haven't got the funds to work with. I am willing to pay the price, but give me my money's worth, and every man here feels the same way.

And another thing at this stage of the time. I am not a cheese maker, and we have other things to consider just now. The price it costs to save these hogs! I think it is a cheap proposition to save the hogs. Can you get the coal? I think we are all in favor, if it is good, to take care of the diseased product. It would be a good thing to take care of the disease germ that comes back in the butter and the milk.

MR. MARTY: I would like to ask the Doctor the origin of tuberculosis in the hog and the contributory causes outside of the by-product of the dairy.

DR. ELIASON: Do you mean entirely away from cattle of any kind or any other method connected with the factory?

MR. MARTY: The origin of the disease in the hogs on this continuation of the disease.

DR. ELIASON: The continuation of the disease in the hog kingdom is not very great if the hog is left alone, because he doesn't live here on earth long enough to get very seriously infected. He acquires that principally from other agencies, by following the steer or the feeder or through any other products from the dairies, the only one we concede as a factor in hog tuberculosis.

I thoroughly agree with the sentiments of the gentleman to the

right on some of those ideas. The subject of tuberculosis is one we could discuss all night.

MR. MARTY: What is the nature of tuberculosis in the hog?

DR. ELIASON: The principal glands found infected are what we call the cervical glands, the glands up near the tongue. Then the next the bronchial glands, those glands which are in a sense immediately below the trachea, immediately below the two lobes of the larynx. You all know of the colon as it hangs in the peritoneum. About three inches from the colon is a chain of lymphatic glands and in those glands you will find the infection frequently.

MR. MARTY: Is it inherited?

DR. ELIASON: I don't say but what it could be. A sow that is kept several years could be a factor in disseminating this, but it doesn't last even in a herd of cows where a number would be slaughtered.

MR. MARTY: Isn't it a fact, then, that the disease could continue without the assistance of the foreign feeds, could be right within the feeding or the nursing of the young pig?

DR. ELIASON: Yes it could be in animals that are kept long enough to be infected to that extent.

MEMBER: In Minnesota we have had that law in effect as long as I can remember. We have been compelled to pasteurize the whey. I have been in the game fifteen years. We pasteurize all skim milk before it is returned to the farmer. I notice our rate is only 5%. We are a dairy state, you will all have to admit that. Do you think that may be some cause of that?

DR. ELIASON: Of course Wisconsin hates to concede that Minnesota is a factor in the dairy industry, but for practical purposes we will admit that. I don't see any other reason why that low percentage could be. I don't doubt in the ordinary cow you have tuberculosis there as well as here.

MR. UBBELOHDE: I would like to ask the Doctor if it is safe to eat raw pork at all. We use summer sausage, for instance. Is that safe?

DR. ELIASON: Well no. Any uncooked pork is unsafe you may say as a general rule, not only for tuberculosis, but from other causes. Trichina is also found in spite of the fact that in inspected meat they look for it as well as they can. I think there would be more danger from trichina in raw meat than from tuberculosis. As a rule tuberculosis does not prevail in a carcass very much outside of the lymphatic glands unless it is very far advanced.

MEMBER: Will the surroundings on the farm have anything to do with the spread of tuberculosis?

DR. ELIASON: Even if the whey is pasteurized that will not prevent the spread of the disease among the herd, but it will prevent the spread from that particular farm to the other farms in the community.

MR. E. C. DAMROW: I would like to ask the Doctor if it would not be possible to get such a law enacted to get at the root of the evil? I honestly believe, especially with tuberculosis, if we can take that stock that is now affected I believe that disease can be weeded out of that

stock the same as in man. I am not sure on that whether it could be done or not, but if it would be possible or if it would not be possible to slaughter such stock. I think if the Doctor or his Department would work up some sort of resolution at this convention, every member at this convention would be in favor of that. It would be an awful expense on the state to do that, but it is worth the price, in order to get the disease weeded out. I would like to know if there is anything possible to work out in your opinion?

DR. ELIASON: I will leave the answering of that question to Mr. Norgord because he will bring that out.

MR. C. A. DAMROW: As I understand it we have 29 farmer members in the state assembly. Here was a thing to roll off from the shoulders of the farmers and onto the cheese makers and the creamery men and make them work as cheap as possible in order to do their work. I honestly believe the only way for you to do is for your office to have a bunch of workers to go out from county to county, from farm to farm in order to get at the root of the evil. We try to pasteurize. There are a good many milk dealers peddling milk in the cities who are not pasteurizing their milk. Make the man who reaps the benefit pay for it instead of putting it onto the cheese makers.

DR. ELIASON: These questions are departmental, and I may say we have already outlined a plan such as you have mentioned and Mr. Norgord will explain it. I may say that this measure was held up practically all through the session of the legislature. Pretty nearly everybody in the legislature knew of its import and listened to the discussion. I think I will leave it to Mr. Norgord.

MR. NORGORD: Mr. President, Ladies and Gentlemen and Members of the Cheese Makers' Association: We are proposing this measure to you not because we wish to impose a hardship upon you, because we know a hardship imposed upon you reacts upon us, and so we have thought this out pretty carefully in regard to how much of a hardship it is going to be and whether or not it is worth while, and we have come to the conclusion, as has the state of Minnesota, that the tuberculosis question is so serious we have got to attack it not only from the standpoint of pasteurizing by-products of the cheese factories and creameries, but from every standpoint where we can attack it, and we have made plans, as Dr. Eliason has said, to attack it from all possible angles.

I am glad you are interested in this proposition and are developing something of a spirit in connection with it. I am glad to hear the gentleman speak on the subject he did a while ago. We need to develop some spirit on this problem.

I am reminded of a story about developing spirit. There was a young gentleman who used to reside in this city. He moved to Maine. Shortly before Christmas time he decided he wanted to celebrate Christmas in the good old Milwaukee style, but there was just one thing lacking they manufactured in Milwaukee that he couldn't buy in Maine because Maine was a dry state and the adjoining states. A

friend here in Milwaukee got a jar of brandy and put some peaches in the brandy and labeled it brandied peaches and sent it on to Maine. After receiving it he sent a letter to his friend the next day. "My friend, we greatly appreciated the Christmas gift of the peaches, but more than the gift did I appreciate the spirit in which they were given." (Laughter and applause) We appreciate the spirit that you are putting into this discussion because it shows that you are thinking on it.

The question has been raised as to whether or not we ought to pasteurize the incoming product instead of the outgoing product. Possibly some of you were present at the butter makers convention, I believe it was at Eau Claire, two years ago and we advocated somewhat the pasteurization of the incoming products and some pretty strong arguments were put up as to how the butter fat would be lost particularly in the cooked cream if pasteurization were demanded of the incoming products and it seemed impossible to get a law through that would be accepted by the creamery men and the factory men at that time for the pasteurization of the incoming products. The cheese factory men couldn't get the right flavor into their cheese and they couldn't manufacture the cheese in the good old way, and yet Prof. Sammis makes some pretty good cheese from pasteurized milk and I think it is entirely possible to do so. I have thought possibly the reason why people don't want to take Prof. Sammis' advice and put one single kind of germ into the milk that he knows is a good, clean germ is because we have gotten used to so many kinds of rotten germs that produce quite a dirty flavor in the cheese we can't get along without those flavors. I think perhaps if people really got to thinking about the kinds of flavors they are used to in cheese and that they demand they wouldn't care if we did kill those dirty flavors.

I am very glad to hear you say we ought to pasteurize the incoming product. Last winter Prof. Lee, Dr. Eliason and Mr. Weigle and I thought of suggesting that the incoming product be pasteurized and a wail went up all over the state and Prof. Lee went to the papers and said, "Stop publishing that or they will be down here with clubs." I think it is a good thing to go at this from the tail end, and so we are glad that you are concluding to have the incoming products pasteurized, because we know if the incoming products are pasteurized the outgoing products will be pasteurized. The reason why we have proposed that the by-products be pasteurized as you see is because that is going to cause the least trouble. I am not a cheese maker or butter maker. Dr. Eliason and I are interested in this from the disease side. We want to get at the control of the live stock disease from the source, and the by-products that go out from the cheese factories in the form of whey are the biggest agency for the distribution of tuberculosis in this state and in every state in the union among cattle, and I think that the fact, as this gentleman said here, that Minnesota has had this law in force for so many years is responsible for the fact that

Minnesota today has less tuberculosis than Wisconsin, and so we want to begin now. We ought to have begun fifteen years ago.

This law was passed by the last legislature and it was discussed pretty thoroughly and advertised in the press throughout the state so that farmers and cheese makers and butter makers might know that the legislature was considering this and appear against it. The question was brought up, the statement was made we ought to take this problem from the standpoint of the cattle where the disease resides. We have done that, but if you want to go down to the fundamental proposition, really the disease is first in the milk and whey and then goes to the hogs and the calves. But of course that is like talking about which comes first, the chicken or the egg.

The hogs, where \$2,000,000 worth of loss comes to the state of Wisconsin every year, is one of the great reasons for the pasteurization of by-products, but the calves are also being infected, and that is where the beginning of tuberculosis comes largely, and it develops into the great scourge we have within the state and there is a big loss there. The statement was made that the various packing houses are about to discriminate against the hogs coming from the state of Wisconsin and only the \$2,000,000 loss we have now suffered was considered, but we will have a greater loss because we will suffer a loss in the price of hogs in the state of Wisconsin as against the other states. We know that is being considered today because the packers have been in our office and have told us they are considering that measure, and they come to us and they beg us to proceed to do something to stop the dissemination of tuberculosis among hogs.

There is another phase that occurred to me. I am talking somewhat at random. There is one item that came to me as I was sitting there. Today we have the competition of condenseries. The condenseries are pasteurizing all their products in their process, and the time will soon come when the argument will be used that condenseries pasteurize their products. We want to be ready to stop that not only by the pasteurization of by-products, but also of the incoming products.

I want to say we have started an aggressive campaign which is reaching the cattle. We are endeavoring to have whole herds tested. It is only by the tuberculin test of whole herds that it is possible for us to make progress. In the past the law providing for payment of indemnity on cattle has permitted anyone who has one single cow that was a reactor to receive payment for that cow. If that cow was out of the state the tuberculosis in that cow wasn't going to contaminate any cattle in the state. But so far as the state of Wisconsin was concerned the danger from her was passed. If we could have a whole herd tested, then the whole herd from which that cow came would be tested and we would make some progress. So we changed the law on the payment of indemnity last year and provided that no person can receive a payment for one single animal that reacts unless the whole herd from which that animal came has been tested, and the result

has been we have probably had a much bigger percentage of whole herd tests this year than ever before, and that means progress.

We realized three years ago there were many men who tested their cattle and lost money on their best animals and went to a good deal of expense and got their herd tested. Perhaps such a man was a good delivering milk in some town who had a reputation for a good, clean herd. When his cattle were tested five or six reacted. The chances were the news went all over the city and town that Mr. B has tuberculosis in his herd and the consequences are that he lost money because he was a progressive man and was protecting his patrons. So we think we ought to help protect the farmer to get some money for his reactors and so we have established what is known as the State Accredited System of Herds wherein the state pays special attention to the testing of the herds and guarantees that these herds are well tested and do not have tuberculosis so far as the tuberculin test discovered, and these are tested every year. This system has been adopted by the nation, and these herds, when they have passed two clean yearly tests, or three, without showing reaction, can be admitted to these accredited herds. When that herd gets into that Accredited Herd he can get a certificate, and advertise that certificate, and that helps him. And so we are encouraging the farmers to test their herds by advertising them when they are tested, and advertising them not only in our state, but in other states as well. And the states have agreed that any herd of accredited cattle can be shipped into any other state. That is a big advantage. Some states have agreed they will not accept any animal or permit any animal to come into their boundaries unless she belongs to an accredited herd unless the owner of that animal stands a thirty-day state re-test.

We are also putting forth a plan whereby the various sections of the country will be encouraged to test every herd in a congested area leaving no herds untested which will re-infect the herds that have been tested, and so in various towns and counties when the majority of the owners of cattle in those counties sign a petition asking the Live Stock Sanitary Board of the Department of Agriculture to come in and test their herds, we will come in and test their herds at the expense of the state and free of charge to the owners. That is another way the owners are encouraged to test their herds and we will get rid of this tuberculosis.

The question was brought up here why do you tax the cheese factories for the sin that perhaps the farmers themselves are the cause of. We do tax the farmer. The law paying for the indemnity of cattle today provides that we can only pay the owner one-half of the value of his cattle. Here was a herd down in Green county the other day of 71 animals; 60 of those animals reacted to the tuberculin test. Those animals were easily worth \$125 apiece. Let us say for easy figuring that they were worth \$100 apiece, \$6,000. Did the state pay the \$6,000? No, the state pays \$3,000 and the farmer suffers a loss of the other \$3,000. You asked the question do we place the burden and

responsibility upon the farmer. We placed it upon that farmer to the extent of \$3,000. Does that represent the value of the herd? Can he go out and buy a herd for \$3,000 or \$6,000? He cannot. The 71 cows that man has represents the breeding of a lifetime. It is the producing machine that farmer has to make his living and his money and he lost it because of the tuberculosis. Where does he get it from? Maybe he got it from the skim milk and the whey. If he got it there originally, who is to blame, he or the man that gave him the skim milk or the whey? I am not answering that question. You can see this is a joint responsibility and we are trying to place the responsibility upon all. You can see we have got to eradicate this disease.

We are today developing a trade in the state of Wisconsin in cattle in other states. Last year we sold \$2,000,000 worth of animals out of the state of Wisconsin. New York used to have a big trade in cattle. She no longer has because her cattle were infected with tuberculosis more than any other state in the Union, and the same thing will happen to the state of Wisconsin, and the threat is at our doors. Unless we clean up there will not be many days before this \$2,000,000 will dwindle down to \$1,000,000, and that affects you.

But there is another reason why we must argue this position and the gentleman over there that spoke touched the button that ought to thrill every individual, that is his responsibility for his family. Dr. Koch has done a great deal of damage to this country and its dairy industry and to other countries that have a dairy industry because, perhaps unintentionally, he sowed the seeds that made people believe that there was no relation between bovine tuberculosis and the human tuberculosis. That was a sweet morsel that he inadvertently let pass out from the scientific work door into the dairy world, and we who knew we had tuberculosis in our herd pressed that morsel to our bosom with great avidity because we felt it was going to save our children, but ladies and gentlemen, that was false security. Tuberculosis in cattle is closely and definitely related to tuberculosis in the human being, and is a direct cause. After Dr. Koch of Germany had let this idea go, worthy German authorities became a little leery and so they appointed a committee of the ten best scientists and bacteriologists they had in Germany and they found it was possible to determine by microscopic examination whether the germ causing the disease in any body was a bovine germ or a human germ, and so they went to all the hospitals in Germany and examined the bodies of children and grown people that had died with tuberculosis and at the end of ten years of careful investigation of that kind that committee of ten scientists came back to the government of Germany and they said, among other things, that 25% of all the post mortems they had made on children under sixteen years of age contained the germs of bovine tuberculosis and died as a cause of bovine tuberculosis. If you are not content with that fact let me say that England appointed a similar committee and their report was 24%, and Dr. Parker of New York took up an investigation of all the work of these two commissions and

sanctioned it and he took up a similar investigation in this country and he came to a similar result. I am not mentioning the people above sixteen years of age that have died from bovine tuberculosis, but I am simply mentioning these as a piece of absolute and direct evidence that bovine tuberculosis causes human tuberculosis, and if we are going to get rid of the great white plague we have got to get rid of bovine tuberculosis and we have got to attack it from all standpoints, and the spread of tuberculosis through whey and butter milk is one of them, and therefore we advocated to the legislature that they pass this law as Minnesota has done and place this burden upon you, not because we were anxious to put the burden upon you, but because we felt you in your interest in the whole dairy industry in the state of Wisconsin and as a nation, in your interest in humanity and the eradication of this great white plague, would be willing to bear your part of the burden in protecting the dairy industry and the people who drink the by-products of your factories.

We are not here to tell you in technical terms how to do it. I think there are others, Prof. Lee, Prof. Sammis, Prof. Benkendorf and you yourselves know very well how you can heat your milk up to 145°, you know how to fix the pasteurizing apparatus whereby you can pasteurize the products continuously either as they come into the factory or as they go out of the factory. But to help you along that line we have consulted with Prof. Lee, Prof. Sammis, with Dr. Hastings and Prof. Benkendorf and all the best authorities and we have in here a compilation on that subject, and these bulletins will be here on the table for you to get, or you can send a postal to the State Department and we will send you a bulletin immediately. We want to see that this law is enforced as every law should be. If the law is worth passing it is worth enforcing. We have the responsibility for the enforcement of this law, and therefore we are going to see that it is enforced. We shall see that it is enforced in an intelligent and reasonably lenient way. We do not want to impose any hardships that cannot be borne. The Dairy and Food Commission have men who are inspecting the creameries throughout the state and the cheese factories, and we are going to ask that Prof. Lee and the other men who are in charge of the cheese industry will help us in the inspection and enforcement of this law so that we may not waste any money in seeing that this law is put into effect.

I don't know that there is anything else I ought to bring before you. I think the main facts are before you and we shall be glad to answer any inquiries you may send to us, at Madison, and give you any help we can possibly give. I believe the Dairy and Food Commission and the College of Agriculture are also willing to help you along this line.

The College of Agriculture has been working on these problems with the Live Stock Sanitary Board for many years. There is no one state in the United States that can show one-half as many clean herds as the state of Wisconsin can show. (Applause) Dr. Eliason has said we are not coming here to advertise these bad figures to the world;

those are for ourselves, but we ought to know of them so we can appreciate the problem before us and tackle it with the greatest possible vigor. We are here to let the people know that the state of Wisconsin has a good dairy industry, cheese factories and creameries that ought to be protected and kept alive because they have been the life of the dairy industry in the state of Wisconsin, and that leaven is making up a dairy industry all over the United States. Let us keep them alive, let us help them to stand the competition that is pushing them hard these days. We hope the day will come when the creameries and cheese factories will of their own accord pasteurize the incoming product and put the industry on a higher level. That is what we hope and we want to stand by the creameries and cheese factories so that they will continue to be the leaven of the dairy industry. I thank you.

MR. ADERHOLD: I think many of the cheese makers are interested in the question of when this is going to be put into effect, also as to the temperature of the product and as to the cost of doing it, if anybody knows what that is.

MR. NOBGORD: I would like to have Prof. Lee answer that question.

MR. LEE: I shall not take up much of your time on that. This regulation goes into effect March 1st. March 1st is the date set by the Live Stock Sanitary Board when these rules and regulations shall go into effect. I believe that the Commission are going to cooperate with the Department of Agriculture to see this is carried out. The Dairy School has been conferred with and other state officials and the regulations are not severe. We are encouraging the creamery men of Wisconsin for the year 1918 to make nothing but pasteurized butter, butter from pasteurized cream. That is the easiest way for the creamery men of Wisconsin to take care of this problem, not that of pasteurizing buttermilk, but of pasteurizing the cream.

The regulation calls for heating to 145° and holding it for a period of twenty-five or thirty minutes or a continuous pasteurization of cream to 180°. It is the heating of the whey to a definite temperature as outlined in this bulletin issued by the Department of Agriculture. I heard Mr. Marty make a statement to this effect, the pasteurization of whey in the Swiss cheese factory is going to be an improvement in the Swiss cheese made in Wisconsin. Am I right in that, Mr. Marty?

MR. MARTY: That is right.

MR. LEE: I believe that the loss that the Swiss makers took in the year 1917 on cheese will pay for the heating of the whey.

MR. MARTY: I will say in that connection that it will hit the Swiss cheese factories the hardest of any for the simple reason that not all of those Swiss factories are equipped with steam, and consequently it will force them to have extra facilities to heat the whey to that temperature after it has gone through their separator.

MR. LEE: The makers of brick cheese in Wisconsin who had trouble with their product will be helped because it will mean better cans and a better grade of milk. The only thing for the cheese makers to do is when

they go back home to their respective communities,—every cheese maker in Wisconsin is a community leader, he should be a leader of his community, if not he is not big enough for his job,—when they go back home tell the farmers what you have heard Commissioner Norgord and Dr. Eliason say here this afternoon. The farmers of Wisconsin will spend the price of getting the whey and the buttermilk pasteurized if you put it up to them in the right way. I know a number of you feel the farmers can't be handled. The farmers of Wisconsin as a class are as reasonable as the cheese makers are. We all came from the farm to begin with. Go back to your communities and tell these fellows what must be done. Each factoryman must work out his own salvation.

MR. ADERHOLD: There have been questions asked me whether it would be necessary to heat that whey with steam or whether it could be heated by any other means. Some of them want to get cleared up on that. Some of them haven't got a boiler and they are mighty high priced now.

MR. LEE: I am quite sure no one cares how you get that product heated. If you want to, build a fire under the tank. Any method of bringing that product up to the desired temperature.

MR. MAETY: I would like to bring out one more proposition, a proposition for one and all. There is no question about there being a certain amount of expense imposed on the cheese industry. What method of registration is going to be employed in the pasteurization of the by-products? Are you simply going to say you did it, or have you something to go by?

MR. NORGORD: Mr. Chairman, I think that question applies to all the things that the cheese makers and butter makers are required to do. The inspector may come around off and on and see for himself how it is being done and drop in upon the cheese maker or butter maker at unexpected times. That is the way of finding out personally whether it is being done or not, and then we have got to depend somewhat on the interest of the butter maker and the cheese maker himself to enforce it. We will have to inspect this in the same way we inspect everything else, and try to see it is done. Usually a man is pretty careful when he knows an inspector may come down on him at any time. That is the way of all business. We are pretty careful when we know somebody is going to come around. The man that is interested, earnestly interested in it will not need inspecting. And the farmer is interested in it when the thermometers are there and can be used by the inspector or can be used by the farmers themselves, in any way they want to, and judge whether the temperature is raised high enough. I think there is every chance to encourage the cheese maker and the butter maker to do the right thing.

MR. ADERHOLD: I want to say to Mr. Norgord he has just as much confidence in human nature as I had when I started out inspecting. Does anybody know how much it is going to cost to pasteurize whey?

PROF. SAMMIS: I figured that out a while back and I wrote some

factories that had figured on it. I recall one factory man who had about 10,000 pounds of milk a day and he said it took about a ton of coal a month to do it, as I recall it. It is something like that. The farmers were so well pleased with the improvement in the cheese that they told the cheese maker they would allow him the price of one ton of coal a month. He was glad to do it and they were glad to have him.

MR. MARTY: We have a gentleman here from Minnesota, from the state Dairy and Food Department. I would like to hear from him in respect to the pasteurization of by-products.

MEMBER: All the equipment we use to pasteurize, we used to lay coils in the whey tank, but we found that was a nuisance in cleaning the whey tank. The only method we use is by running the live steam into the whey. We haven't figured what the cost would be of pasteurizing because we are so used to that, we don't know any better. We think that is part of our expense.

MR. ADERHOLD: What temperature do you heat to?

MEMBER: Our law reads 180. You would be surprised. Lots of people use steam just to run the whey from the separator up and you can take temperatures. The temperatures on that whey will be about 120 to 130. It requires a very little steam to heat that up to 140. I would say a couple of shovels full of coal a day would pasteurize that whey.

MR. VOIGT: We have tanks that will hold a little more than our daily flow. We will have, instead of eight or ten thousand to heat up every day, from fourteen to sixteen to eighteen thousand pounds, it depends on the size of the tank because she is full.

MEMBER: The more milk you have the more money you have to pay expenses. You have to make provision to pasteurize that.

MR. NORGORD: This provides 145° to be held there twenty-five minutes or 185° brought up to that and let it go down.

MR. O. A. DAMROW: That goes into effect the 1st. Will the government let us have coal to do this? You force it upon us and can we get the coal or what are we going to do about it? Is your department going to see to it that the factories are furnished with the necessary fuel to pasteurize?

MR. NORGORD: We shall not require anything that is impossible. If there is no coal and no wood and you can prove it, we won't force you to pasteurize. But probably the war will be over pretty soon and you will have little trouble and the National Fuel Administrator will give you all the fuel you want.

MR. NOYES: I think, according to Prof. Sammis, it will cost about ten cents a thousand to heat the whey.

WISCONSIN BUTTER AND CHEESE PROTECTIVE ASSOCIATION

MR. LINZMEIER: Mr. President, I just want to say a few words as to the Wisconsin Butter and Cheese Industry Protective Association. Those objects, briefly, are to cooperate with one another for the common good of all; that means everybody that is interested in the cheese and butter industry, not only the cheese and butter maker, but the dealer and the farmer as well as the maker, to establish better cooperation between the cheese and butter makers and their patrons. We know that is a good thing. The time is coming, or is here now, that cooperation is the life of trade rather than competition. We see that in all lines of business.

The same with the cheese industry. That is one of the main objects of this Association that it has closer cooperation with one another. Another object is to encourage legislation for the better protection of the industry.

The things we are doing now at the meetings, especially in the condensery territory, is to tell the farmers, the patrons of cheese factories, how necessary it is to keep the little cheese factory and what the results may be if it be allowed to die out and close up.

Another object of this Association is to encourage the consumption of cheese. Mr. Pauly gave that pretty fully yesterday in his talk on this subject. But the idea is to put on a nation wide advertising campaign to increase the consumption of cheese. According to statistics we use now only about $3\frac{1}{2}$ pounds of cheese per capita per year. If we could increase this amount say 1 pound per capita that would mean over 100,000,000 pounds of cheese greater consumption, which would take care of any possible over-production we may have in the near future. When the time comes when we think this should be done, we expect to get every patron of the cheese factory interested in this method and to help along to finance it. We bring this up at the meetings of farmers. We brought this up at Fond du Lac at a farmers' meeting and here at this convention one of those cheese makers came to me and said, "I have had my annual meeting since and this matter of advertising cheese was brought up at my meeting by the 36 farmers and whenever you get around to put on this advertising campaign there are \$36 you can get." It goes to show that the farmer can see the necessity of a thing of that kind.

I also was requested by one of the officers of our Association to ask the members and everybody who is interested to get an opinion from them as to the management of this association. Our plan now is to have one man from each county elected on the board of directors to help to run this association, to decide what action to take.

At this time the work we are doing is this. I as the field man of this association go out to the factories, hold meetings with the patrons and talk this closer cooperation between the patrons and the cheese maker. In the condensery districts we have gotten them to sign up to stay by the factory. If the farmers think there is more money in their milk by taking it to the condensery, let them take it there, because the farmer as well as anybody else is in the business of making as much money as he can. But under the plan we are putting to them they let the milk go to the condensery where they can get more money for it, but let it go through the factory. The farmers bring the milk to the factory and the cheese maker weighs it and samples it and the condensery wagon comes along and takes it. The cheese maker is getting 10 cents a hundred pounds for handling that milk. One of the main objects of this is that they can keep the cheese factory in place so that at any time they want to go back to it it is still there. Another thing it protects the cheese maker who makes a living, and the farmers has that advantage, they can make cheese any time they want to do so. As I said we have gotten the farmers to sign up an agreement to that effect and they can see the reasonableness of the scheme we are proposing.

I want to correct one statement Mr. Filz made yesterday. He says our booth is to the right. I want to say that is not our booth. We were offered, through the courtesy of the Digestive Ferments Company of Detroit, a space and table and a chair in their booth, so it is not our booth, but we are much obliged to them for it.

We want, after this afternoon's program is over, about ten minutes of the members' time and all cheese makers who are interested in this method, to talk over this proposition of electing one member from each county to act on the board of directors. We don't want to take up the time of this convention. We are indeed very grateful for being allowed the time we have been, but we feel our association is primarily a cheese makers' association and the cheese makers should have a voice in the management of the affairs.

CHAIRMAN: It has just been announced to me that we have present a Mr. Fowler of Waterloo, Iowa, who was formerly a cheese maker of our state and Mr. Fowler has asked for a chance to address you for a few minutes.

MR. FOWLER: Mr. Chairman and Gentlemen of the Wisconsin Cheese Makers' Association: I am glad to be with you this morning. I didn't expect to talk as I am not much of a talker, but I have had a good deal of experience along the cheese making line. We have made cheese in Iowa for 42 years in spite of the great dairy opposition we have had. I was glad last year at the meeting here that you made a distinction between the butter and cheese proposition, that it was suggested that a man more interested in butter was suggested as an officer of the Cheese Maker's Association. There is a great difficulty, getting people in office and in permanent positions who are

working against the interests for which you are striving. In Iowa twenty years ago there were 1,000 creameries and there were 110 cheese factories. The advertising people couldn't make anything out of the cheese factories nor out of the creameries, whole milk creameries. They could make a lot of money out of the gathered creameries, and so 500 creameries had to go to the wall and 100 cheese factories. We lost four cheese factories in that movement, and that movement was promoted by the leading farm and dairy papers of this country. There were 100,000,000 pounds of butter made in Iowa twenty years ago. You see the trouble was this, there was no division between the butter and cheese proposition, and the whole deal was to work the gathered cream deal because the farm papers could get \$20,000 from the gathered creameries.

So dairying in our state became an advertising proposition. It is largely so right here. We succeeded in keeping one cheese factory going because we had to have cheese. The principal trouble is that they get money out of advertising their partners with the gathered creameries.

The greatest of all troubles is not knowing or appreciating, understanding fully the value of the whey as a feed and the exaggerating of the value of skim milk as a feed. Prof. Curtis wrote me a couple of letters. He said he heard I had a controversy with him. He is the Dean of our College. I explained to him. I said in pig feeding I have tried experiments. I urged the factory to feed them on pasture, but they couldn't do it because they were so busy with this gathered cream proposition. I told Dean Curtis then during the pasture season I will feed hogs and you can get skim milk at 10 cents a hundred and I will put up \$25 and I will skin you or anybody else. He smiled but he didn't get hep to the game. George McKay worked for me six years, the main man in this centralizing proposition today. I made some experiments last summer in feeding whey. Some men came to our factory, they never had fed whey to a lot of pigs. They had been using corn and skim milk. The whey largely takes the place of corn, and corn is the highest feed in the market, so if you can make pasture take the place of it, pasture and whey, you have accomplished a great saving.

One of the leading men in the country said that 100 pounds of skim milk was worth as much as a half bushel of corn to feed pigs because it saved that amount of corn. Everybody knows you can starve pigs and feed them nothing but corn. I have got something better than corn. I said this to two of the leading dairy farm papers in the United States and they wouldn't print it. I have 380 hogs now on feed.

MEMBER: I wish the gentleman would explain what pasture is more favorable for feed.

MR. FOWLER: Alfalfa and clover.

CO-OPERATION BETWEEN CHEESE MAKER AND PATRONS

By A. C. SCHMIDT, Wausau, Wis.

Five years ago if you met one man out of a hundred and you asked him what is cooperation, he would have admitted he didn't know anything about it, and yet cooperation is not a new term. In the old country it has been known for sixty years. It is what built up Germany, England, France, Sweden and it was introduced into this country and then suddenly the war broke out and the term became a commercial term, and today you can hardly pick up a paper that you don't meet that word.

What is cooperation? If you take the direct analysis of the word it means working together. I don't care whether you take it in that sense or in the sense of making life between yourselves and your neighbors better. The packer has been ahead of you gentlemen for a long time. He organized whether he was in the city of New York or at Plymouth. They all work together. They didn't call it cooperation, they called it Packers' Association. The railroads got together and they regulated their business. Then they formed a big organization or a trust, but it was cooperation for themselves, only.

We are getting to the point where we say we want some of this cooperation, working together, but we don't want it for the packers exclusively. What we want when the thing is operated is that there is a living and a little bit better one in this whole movement for all of us. We don't want a mere existence for nine-tenths of the people and an immense wealth for one-tenth.

I am just going into the history of cooperation. About sixteen years ago, some of the older men probably remember those times when we sold oats for 15 cents a bushel, a bunch of farmers met in Indiana, in Indianapolis, and they organized a farmers association, a cooperative association. That was really the first actual cooperation in the United States. But they did much as you are doing here. They met together and they passed a bunch of dandy resolutions, and they went home. Fine! All papers published a lot of it. Most of them thought the farmers had gone nutty. The farmers worked, and the corn prices remained as they were. The winter went by and they had another session and they picked up those resolutions and they looked pretty good and they passed them over again and they went home. They did that for four or five years. Every year they met they brought out these same resolutions. Finally they woke up to the situation that they were in same position that they were in before. We began to cooperate, to establish our business,

to get together, to buy and sell together and work together on legislation, and we began getting results.

Gentlemen, you people have had all kinds of conventions, and yet when you look at the net results today, how much better off is the average cheese maker than he was twenty years ago? I maintain you are worse off today as a class than in those days. I said to one cheese maker who got up at half past four because the milk began coming in soon after that, the last ones coming at ten o'clock, and he would work along and finally about eight or nine o'clock he would finish up. I said, "Bill, what do you get for this?" He said, "Nothing if I do it, and hell if I don't." You are in the position between two mill stones. You are being ground by your patrons on the one side and you are ground by the buyers on the other side, and between the two they grind you in a pretty fine mill.

It is easy to talk along these lines, but the question is how are you going to remedy it. That is what you are meeting in convention for, and the way to do that is for you people to effect an organization. I want to just tell you this. Gentlemen, with the individual standing alone, if he is the best cheese maker on earth and not a very good organizer, he can accomplish nothing. There is many a territory in which there is a good cheese maker, a man who has learned his business, a man who studies and turns out a fine product, and yet he is not getting the returns because somebody has got a helper who has learned a little of the business and who is willing to jump in any minute, take his factory away from him. There he is for the simple reason he is not organized. Your farmers have succeeded through cooperation, your railroads have succeeded, your steel trust has succeeded and even your school ma'ams have succeeded. You know some years ago we used to pay any kind of a wage to a school ma'am. Some would pay \$55 a month and another one would come in for \$18 a month. Finally these educators got together and they saw by their own agencies they couldn't get far, so they finally passed a law that a teacher cannot accept less than a certain amount. They are all getting it now. They have got a minimum wage established, and you men who two years ago were making 1½ cents a pound, today getting 2½ cents a pound you are not making as much money now as you were then.

That is how I became thoroughly interested in the cheese matter. I never made a pound of cheese in my life. I tell you I have worked with all these different games and looked into it and I have been all my life a cooperative man. They got me to do some work about figuring costs. I went and called on about a thousand cheese factories and began figuring costs, and out of that thousand—that was two or three years ago—I found not more than ten that were actually making money. The others were playing even; if they were charging themselves a salary, they weren't making anything on their investment. If they were making anything on their investment

they and their whole family had been working for nothing. Some places I found where the cheese maker and his family had been working all year for nothing and had been paying two or three hundred dollars to his patrons for the privilege of making cheese. Some doctors disagreed and some said that the farmer was a better man and some said that the ordinary city laboring man was a better man. You know how doctors are. They go to the bottom of it, sometimes way through a person. They got in a hundred farmers and a hundred average city working men and they examined them. If anything the farmer was probably a little bit stronger physically than the city man. This is only half the game. You have got to go farther than that. You have got to examine your muscle. Muscle alone doesn't count. So they called them back again and when they got all through with them they reported. They voted the farmers brains were far better than the city man's for the simple reason they were perfectly fresh and had never been used.

Now, then, supposing instead of those doctors calling in farmers they had called a hundred cheese makers what do you suppose the result would have been? I am afraid they would have made up their minds those brains had been in cold storage all their lives. You work too hard and you think too little. The way the business has been you have been forced to work from early to late and you haven't had time to read your own papers, you haven't had time to use your brains. What I am after in the work of the cheese industry is that you fellows save a little of the elbow grease and use a little of the gray matter of your heads. It will be to your benefit and the benefit of your patrons, the farmers whom I represent when I come to you here.

The minute you organize any line of men those men are coming together for mutual protection, for mutual betterment, and as a result they produce a better class of men, they produce a better product at a better price and you get more. Henry Ford says \$5.00 a day is the lowest wage he will pay his men and they are doing two-thirds more work than they were when they were getting \$2.00 a day and working fourteen hours a day. They are using less muscle and more brains.

When you have an organization you, as an organization, can treat with your patrons. You can get together and demand that a man who produces quality cheese can get more for his work. The competitor of yours who produces a poor cheese is getting the same price as the man who is making the finest cheese. Why? For the simple reason that the boys have been working and not organizing or thinking on the game. I know how it used to be with us before we had our shipping association. The man who makes a poor quality cheese is getting the same price as the man who makes the best quality. You are not selling your cheese on quality, not at all.

We can talk about the rotten conditions, we can talk about the troubles we are having, but the thing we want is a remedy. What I am putting up to you is this, form a regular cheese makers organization. Call it a union, if you please, but put a union label on it, and do not permit the man who cannot make quality cheese to use that label. You will find that all the cheese makers will strive to get that label on their product, because he can't get as much money for it unless it has that label. Everybody is after the money. The trouble is most of the factories have existed up to the present time, have gotten along as best they could, they run a farm on the side.

The state of Wisconsin is founded, resting with all its pillars on the cheese industry of the state. It is therefore of the utmost importance that the people of this state get together to conserve this industry and make it a paying proposition, and it is necessary that you men who are in the game develop the necessary backbone to stand up for your rights, to form an organization that demands things, that is not afraid of getting kicks and knocks. When you do that thing you are going to be fit. The man who is uniting with five thousand other men has a lot of power if he is willing to use it and stand by his fellow men.

It has taken us three thousand years to get the idea that if we stick together we will have power through our heads, and we are just beginning to realize that in cooperating there is an immense power.

Mr. Filz has been working his best to get an organization. What power has Mr. Filz alone unless you get back of his movement like one great big county, and what affects Manitowoc county at the present time will affect the other counties. Don't wait until the thing comes up to your throat, but help the boys where it is on them, help them prevent it getting at their throats so that it can't get to yours, and you can only do that by organizing and reading the signs of the times and opposing matters in plenty. Why do the doctors elect members to the legislature of the state? Why do the lawyers go down there; why does big business send representatives there? Are there any cheese makers down at Madison? Any cheese makers at Congress? Not so you could notice it. A few farmers are getting there and they are gradually waking up to the fact that they have got to have representation and they are putting a regular lobby there, and they are getting results. It is time you men get a committee that goes after your legislature. It is cheaper to go down in your pocket for five or ten dollars than it is to sell your factory for five or ten thousand dollars loss.

Remember you are cooperating with the farmer and every cheese maker must become the leader in his own community. You must not be afraid to discuss politics. You must not be afraid to be in favor of or opposed to a bill which is up before the legislature. What a power you men might have. You come together with the farmers of the state. But if you took the time to post yourselves, if you

took the time to follow the directions and keep the matter before you all the time with a word here and there, you would be educating your people up to a point, and when you wanted action you could get it immediately, defeating the whey cream bill or the oleomargarine bill. You would have the whole body of farmers right in line with you. I would advocate holding meetings with your patrons. Don't act as though you were a kind of a hired man. Change your ways. Get out and become the leader. It will take a fight in the beginning, but it won't last very long if you keep at it.

One of our people went out to California to visit a relative who had moved out there and the relative took him around and said, "I want to show you this beautiful state. There is nothing like it. Did you ever see such a magnificent climate,—and the sunset. Look how the corn grows," and he went on and on in that way. The other man listened a while and then he said, "I don't see it is any different out here than it is over there in Wisconsin. This soil doesn't compare with ours, the grass isn't any greener and the sun sets in Wisconsin just as it does here and the fleas don't bite me nearly as much in Wisconsin as in California." The relative said, "By golly, I don't know but you are right, but everybody began talking about it and they talked it so much that at last I began to believe it and have been talking it ever since too." It won't take long for you to get the farmer to see that his interests and yours are identical, that any bill that will help you people will help him, if you people believe it yourselves and keep on talking it. No matter if they do call you a crank. Be convinced yourself as to what you want and the whole bunch of you agree on it and then keep driving toward it and it won't be long before you get the whole state organized and you will get your legislature.

What are you men doing about House Bill 7338 that is before the House at the present time? That is the oleomargarine bill as it is introduced, and it is such a little bill and it means so awfully much. It is entitled "A bill to reduce the tax on oleomargarine."

You didn't know that was before the House, and do you know they have got votes. The oleomargarine bill was defeated last year with a majority of six. They have plenty of votes, unless you men succeed in changing some, to pass that bill. What does it mean? That will hurt the butter men. It won't hurt the cheese, will it? Don't you believe it. It is going to permit them to sell it in place of butter. It will force down the prices of butter and you people will be hurt by the passage of that bill the same as the butter men because the vile oleomargarine even at 31 cents is expensive.

Don't you see how we must get together to protect ourselves? Here comes in the point of cooperating with your patrons. Your patron is interested; he will find his butter fat prices dropping, he will have to go and get rid of his dairy herds. He will find his farm running down for lack of fertilizer. Why not take these things in hand and form an active organization,—not one such as this but an

organization that the men will actually organize for their own benefit, where it will be ready to go and watch the passage of laws and defeat them where they are detrimental. You will even go into the market game, and the Lord only knows how far you will go, but you must make a start. The ordinary cheese maker has been just hanging on. He has not been able to have the necessary nerve, and he is now in the position where it takes dynamite to help him get out of the rut.

We could continue along this line for a good long while, but I don't want to do that because I don't want to tire you out. I want you to get to work on some of these real things. Are there any of those cheese makers from near Waukesha present who have organized a union out there? That is the first start that is being made in that line.

MR. NOYES: Have you a copy of the skim milk bill that is going to come up this winter?

MR. SCHMIDT: I have not. There are a number of other bills that are going to come up that are of vital importance to your industry. Appoint a committee and come across with the necessary expense. Compel them to act and every one of you get back of them, because you will find they will need your support.

In closing I just want to ask you to get to the plan of working together and talking to your patrons, explaining to them. Your patron often thinks you are getting rich because he doesn't know. I would enjoy being the cheese maker and calling my patrons together and showing how much money I was making, and you are also going to wake up to the immense surprise to yourself that you aren't making anything. They tell the story that originally the mules didn't know enough to use their heels and they tried to fight a lot of wolves. One old mule said, "Boys, we are keeping our heads apart and we are forgetting our heels. Let's get our heads together and our heels out on the outside," and they kicked the stuffing out of those wolves.

I am going to call on this gentleman now.

MEMBER: In Dodge and Washington counties we have tried to organize a union. Of course we haven't very many members yet, we have just started. We have tried to get all we could. We really think it is necessary, because everything has gone up, so we must have more wages too. That is the way we thought.

PROF. LEE: How long have you been organized?

MEMBER: Just about two months.

PROF. LEE: Why didn't you separately each one go after your people and demand more wages?

MEMBER: Because they wouldn't pay it.

PROF. LEE: How do you find things, is it working?

MEMBER: It is working pretty good as far as we got. One man would say, "I will pay it if the other fellow does," so we thought we must have a union to make them all pay it. There are some paying

good wages now and there are others who get their men a good deal cheaper.

PROF. LEE: Have you any questions to ask the gentleman?

MEMBER: What price?

MEMBER: We have been getting at present 70 cents for brick, 75 for brick, and 85 for Swiss block.

MR. SCHMIDT: You see what this man can do. We have got to do those things. All other industries have been compelled to. Those farmers in Manitowoc county who are fighting the condenseries at the present time aren't doing it because they want to.

MEMBER: At 80 cents a hundred can a man make a living? How many hundred pounds of cheese would a man have to make to make a living?

PROF. LEE: How many do you estimate? What do you say Mr. Aderhold?

MR. ADERHOLD: Of course there are a great many different conditions. Of course in some factories they make a cheese of a small type which requires a great deal more work. In some factories they skim the whey and in some factories they don't. The gentleman over there pays the rent of the factory probably and there is the supplies and the labor. In this case they furnish only the labor.

MEMBER: A man can go out and get \$60 a month on a farm and his board, and I can hire out ten men tomorrow if I had them at that price. Cheese makers must be good men, else they are not wanted. The man at 80 cents a hundred, paying his own board, isn't making half that.

MR. SCHMIDT: I will tell you this. There were many cheese makers that were getting \$30 a month, and not even that, but how much they are making today I don't know, but the idea of this gentleman is all right. They are getting together, and if that stimulates conditions you are getting started. I want to see you men work to the point where you can use your brains and make better Wisconsin cheese and people pay the price for it, and the men will make money and as a result the farmers also.

INCREASED EXPENSE OF MANUFACTURING CHEESE

By T. A. UBBELOHDE, Glenbeulah, Wis.

You know under the present conditions the labor will be higher this coming summer and the prospects of cheese supplies will be higher by April than they are now. I suggest to the cheese factory owners to bargain for their cheese factory supplies now.

I am not going to take up your time more than just to state the actual expense. These are figures I gathered up myself. I have gone over them carefully and I think you will find them very accurate.

In talking about making at 80 cents and so on, I don't know anything about how much a man can work on. In the winter time the milk is short and they need a little more in the summer time to balance this off. It doesn't seem to me a man can make a small cheese for less than 85 cents for a hundred pounds of cheese and have his house furnished for him. I am a farmer at the present time and milking cows and it may seem a little out of place for me to say to the cheese makers to ask more.

The cost of making cheese has increased so rapidly the past year that it has been almost impossible to keep up with the expense. Our president thought it doubtful if any dairymen knew what it cost the factory to make a hundred pounds of cheese, and it is quite likely that there are not many cheese makers that could give an itemized statement of the actual expense, that is why he insisted on my preparing a paper on this subject. He probably didn't know that I am a dairyman as well as a cheese man, but this being the case makes me a little timid about telling you cheese makers to charge more for making cheese.

Not only has the cost of some of the factory supplies doubled, it has trebled. Take a 7,000 pound cheese vat that cost \$95 three years ago, costs \$195 now. A good self-heating vat will cost you \$230. Daisy hoops \$3.00; longhorn hoops \$2.50 each. After using these hoops two years they need to be retinned, which will cost you as much as new hoops did three years ago. About five years is the life of a cheese vat. All the tinware used at the factory wears out in a short time and must be replaced to keep on the right side of the Dairy and Food Inspectors. A few years ago we could use them as long as there was a scrap of the implement to use, but now we are not allowed to wear out any more than just the tin. When all the tin is worn off from the utensils we must fire them on to the scrap pile, dive into our pocket for a handful of coin and go to the supply man for a new one. To keep up with the expense we must figure a higher per cent for depreciation, ten cents a hundred pounds of cheese is hardly enough, but when we come to compare prices on the everyday supplies there

is much larger increase in the expense than there has been on the apparatus.

Daisy bandages	\$19.00 per thousand
Longhorns	24.50
Extract	5.55 per gal.
Color	1.85

Coal can't be laid down at the average factory for less than \$10 a ton.

Now this is the way it actually figures for making 100 pounds of cheese:

Boxes	\$ 44
Rennet .....	.17
Bandages .....	.20
Color .....	.03
Salt .....	.03
Scale-board .....	.03
Fuel .....	.22
Incidentals .....	.10
Interest .....	.15
Taxes .....	.08
Insurance .....	.03
Repairs .....	.10
Depreciation .....	.10
Management .....	.05
Clerk hire .....	.05
Total	\$1.78

Now if we can hire a man for 75 cents a hundred, then the factory owner will be out \$2.53 a hundred or he must receive \$2.53 a hundred to pay his actual running expenses. This is not allowing any profit to the factory owner, only 5 per cent interest on the investment.

So in order to make any profit the factory should charge at least \$2.60 per hundred for making cheese this coming season. It is very doubtful if the factory owners can get help for 75 cents a hundred. This during the full year will not allow the cheese maker any more than common labor is receiving, and that is not enough. A man that is qualified to take charge of a factory, who has learned to care for a boiler, who can handle a whey separator, who can make a passable cheese from milk received at the factory is entitled to more wage than common labor; if not why should the cheese maker spend his time solving complicated problems at the factory? He must be of a higher intelligence or he cannot accomplish what is required of him. If I was looking for a job as cheese maker I would not consider anything less than 85 cents per hundred, with house rent, free milk and butter and a garden.

MR. MOERSH: I would like to state that the management or secretary should see that this paper should be inserted in the leading dairy papers of the state so that the cheese makers who are not here

this morning could see that report, because it is going to help them. Some of us fellows got together and we made up our minds to call a meeting after this convention, a week from next Saturday, and have the secretary and president of each factory and also the cheese maker get together and see if something can't be done on a uniform basis down there. That paper is very well gotten up and ought to be before the different cheese makers of the state.

MR. UBBELOHDE: I am a cheese man and have been all my life. I am a farmer also, but I am on the farm just now and we are milking cows. I have taken some pains to see what it costs to produce milk and I have found this. A few herds are producing milk at \$1.72 and \$1.78 a hundred pounds of milk in November. I found some other herds in the same neighborhood that it cost \$2.50, \$2.60, \$2.68 to produce a hundred pounds of milk. Here is where the cheese maker should cooperate with the farmer. We can't get any more for cheese than the market will allow. The farmer isn't making anything on his milk, but by organizing cow testing associations the cheese maker could get the farmers interested. The farmer pays \$1.00 per cow to have his cows tested. These men that go around and do the testing, it is their duty to tell the farmer how to balance his feed, and in that way they can weed out these cows that don't pay. Some of these cows pay a big profit and others don't pay at all. Some of the herds producing the highest testing milk pay the lowest price to the farmer. The butter fat was higher, but the net results were lower because the cow produced so very little milk. The cheese maker can take this up with the farmers and then the farmer can weed out his cows. He had better send them to the slaughterhouse, then the farmer can start to pay the cheese maker more.

MR. ADERHOLD: The statement Mr. Moersh made was very good, only he didn't go far enough. It may be a much better idea to get it before their patrons. When that is published in the dairy press and the cheese makers get it there, I suggest they have it published in their local paper.

CHAIRMAN: As for publishing that paper, the Dairy Market Reporter will have word for word the proceedings of this convention, and he is in exchange with every little local weekly paper all over Wisconsin, and you will find in every community where there is a little paper that little fellow has most of his subscribers in his own county.

MEMBER: I would suggest that we ask Mr. Thomas to place his paper at an early date before the meetings of the different factories.

MR. ROCH, Minnesota: This cheese by the pound has always appeared to me to be a poor business proposition from my standpoint. We have different ways up in our state. It don't appear right to me that this man and I were competitors and he was so posted on the market and had the charge of the buying and the selling end of it that he could only get the same price I did. It appears to me that the man who knows his business, if he can sell his cheese for a half a

cent or a cent a pound more than I can, why he shouldn't have the benefit and not the farmers. I presume you are organized in such a way here that it probably would take a long while to make that change, but we haven't one factory in the state of Minnesota that is paying that way. All cheese makers are hired on a straight salary monthly.

CHAIRMAN: Whether he is working for a cooperative concern or working in his own place?

MR. ROCH: If he is working in his own place he has to look out for he has to compete with the farmers' factories. The butter makers don't work on that basis either over there.

MEMBER: How many cheese factories in your state?

MR. ROCH: 80.

MR. FOWLER: I don't see how you are going to get at this correctly with the right idea for every person. Some factories get two or three times as much milk as others. And therefore the man getting more milk is to a great extent at a disadvantage.

CHAIRMAN: You will find those conditions existing in Wisconsin too, partially.

MEMBER: I think making by the hundred is all right.

MEMBER: In working by the hundred there are cheese makers who will turn out more than if they are working by the month. They are working for themselves and they make money for the man they are working for.

MEMBER: Don't you think 80 cents is pretty small for the winter months?

MEMBER: We thought it enough to start with. We have been getting 60 cents.

MEMBER: You are making brick cheese?

MEMBERS: We are making brick and American.

CHAIRMAN: I see a great many trying to get away. The balance of our program won't be very long this afternoon, but we are going to change the program as it is lined up. We are going to take that prize cheese and have it ready here promptly at ten minutes after one. It scored 99¼.

RESOLUTIONS ADOPTED

"WHEREAS, The Wisconsin Cheese Makers' Association, assembled in annual convention at Milwaukee, recalls the many years of faithful and effective service given by the Hon. S. A. Cook of Neenah to the dairy industry of the state and nation, and in particular his never-failing interest in the work of this Association, be it

Resolved, That this Association send its hearty greetings and best wishes on this occasion to Mr. Cook, its regret for his absence from

our midst, the sincere sympathy of its members for him in his present illness, and earnest hopes for his speedy return to health."

I wish to state in connection with that we took it upon ourselves to purchase a bouquet of nice flowers and we sent them to Mr. Cook the second day of the convention.

"Resolved, That our thanks are due the Merchants and Manufacturers Association of Milwaukee for substantial aid given towards the success of this convention.

"Resolved, That the thanks of this Association are hereby tendered to all those who have contributed premiums towards our cheese exhibit.

"Resolved, That our thanks are extended to the Superintendent of the Cheese exhibit and the judges, to the officers of the Association and to those who took part in the program.

"Resolved, That it is the sense of this convention that a maximum legal moisture standard be created for Brick cheese.

WHEREAS, There is a law on the statute books of the state of Wisconsin which requires the branding as such of whey butter; and

WHEREAS, There is nothing in the manufacture of whey butter which in any way conflicts with the standard for butter as defined under Section 4601—4a paragraph 8; and

Further—believing that the branding of whey butter is of no value to the consumer and inimical to the best interests of the cheese industry,

Therefore be it resolved, That we, the members of the Wisconsin Cheese Makers' Association in convention assembled this 10th day of January, 1918, do hereby respectfully request the legislature of the state to repeal said law.

WHEREAS, Mr. H. J. Noyes and Mr. E. L. Aderhold are charter members of this Association and have retained active membership continuously from its organization twenty-five years ago to the present time,

Be it resolved, That we extend to these gentlemen our hearty congratulations upon their long period of active service and hereby declare them life members of this Association.

WHEREAS a large majority of factory men are making cheese that complies with the legal moisture standard, and

WHEREAS said factory men are menaced by those who make high moisture cheese,

Therefore be it resolved, That the moisture law be more generally enforced especially during the winter months, and

Be it further resolved, That a copy of this resolution be sent to Hon. George J. Weigle, Dairy and Food Commissioner, Madison, Wisconsin.

Resolved, That our thanks be tendered Mr. J. J. Roch, Cheese Factory Inspector of Minnesota, for his presence at this convention.

Resolved, That the following be ratified:

Resolved, by the Central Wisconsin Cheese, Butter Makers' and Dairymen's Association, That they heartily agree with the work being done by the National Dairy Union in its fight for the butter and cheese industry against the unjust methods employed by the Oleo-margarine Manufacturers in their endeavor to repeal the present law which compels them to pay a 10c tax on all colored Oleo made in imitation of butter,

Be it further Resolved, That we give the National Dairy Union our financial support as far as possible, that the Secretary of this Association send a copy of these resolutions to the Secretary of the National Dairy Union, that our Secretary send a list of names of our members so that the members may keep in closer contact with the activities of the National Dairy Union and assist in financing the same to the best of their ability?"

"HON. H. S. HOOVER,
U. S. Food Administrator,
Washington, D. C.

In view of the fact that it is necessary to not only conserve food-stuffs but also to increase their production wherever possible, and whereas those foodstuffs produced from milk, viz.: butter, cheese and milk are of the most vital necessity to our nation as well as to our allies, it is therefore of the greatest importance that everything possible be done to obtain a greater production of milk, but due to the high cost of hay and feedstuffs as borne out by state and federal investigations the prices obtained for butter and cheese do not permit a sufficiently high return to the producer of milk to enable him to produce milk at a profit, resulting at present, in a reduction of dairy herds and consequently forcing cheese and butter factories out of business to the damage of farm industry as well as the consumers of the entire world,

Now, Therefore, be it Resolved, That we, the cheese and butter makers of the state of Wisconsin petition you to institute a careful investigation with the object of setting a fixed price on milk, according to an established test, offered for the purpose of manufacturing food products and establish a definite selling price according to quality, for the finished products of the same, and we pledge you our united support to assist in increasing the production of dairy food products."

"Milwaukee, Wis., Jan. 11, 1918.

HON. JOSEPH E. DAVIES,
Federal Trade Commission,
Washington, D. C.

We, the undersigned citizens of Wisconsin, closely identified with the Cheese and Dairy industry of this state, beg leave to submit a few brief facts which we believe should be brought to your attention and rectified.

(1) The marketing of milk from the farm or producer is being

rapidly concentrated in a few hands, namely: condenseries, and Packer-owned or controlled cheese factories and creameries.

(2) Small and independent investments have been and are sacrificed daily in this transition from the small to the monopoly owned factories and condenseries.

(3) This monopoly has grown to such an extent that it has become a menace to the safety and future welfare of Wisconsin's greatest industry, and we are firmly of the belief that unless energetic action is taken by your commission and cured or remedies applied, disaster and ruination to the producer and small factory owner is what the future has in store for this great industry.

We promise the fullest cooperation and support in whatever measures your commission may undertake to remedy the abuses herein mentioned. We are

Respectfully yours,

WISCONSIN CHEESE & BUTTER PROTECTIVE ASSOCIATION,
Nic Filz,
President."

HISTORY OF THE ASSOCIATION

MR. ADERHOLD: I want to thank the members for the recognition tendered me, and I am sure I am speaking for Mr. Noyes too, he is not here so I will include him, for voting me a life membership, and I thought it would not be out of place to say a few words regarding the history of this Association, especially the first part of it.

We organized this association in the winter of 1893. We had two or three Dairy School terms. Our first Dairy School that amounted to anything was in 1891. I was a member of that class. There were 71 students. We had a National Butter Makers' Association already, rather Butter and Cheese Makers Association, and in the winter of 1893 this Association met at Dubuque, Iowa, and a few of us went from Wisconsin, a few of the cheese makers of whom Mr. Noyes and I were two. Governor Hoard was one, and we had a four days program, the butter makers had three and a half days and we cheese makers had half a day, and when they pulled off their little stunt the butter makers all left the hall, and it occurred to me here is enough cheese makers and enough enthusiasm to have a cheese makers association all our own in Wisconsin, and at that meeting I suggested this and the plans were laid to organize. The Wisconsin Dairymen's Association was to have a meeting, their annual meeting, at Waupaca shortly after that, and we agreed to meet at that convention and prepare a program, which we did. We dug down into our pockets and dug up the money to pay for the printing and advertising and a few other things that were necessary to spend money for, and we held our first convention shortly after that in the old Agricultural Hall at the University at Madison and it was a very enthusiastic convention. We had no money, excepting what we raised my memberships and what we dug out of our pockets, and for a long time we had no support

from the state whatever. We had very considerable support from several of the public spirited cheese dealers and from the supply men, and if it had not been for them we would have had mighty hard sledding. I remember one cheese dealer, who died some years ago, Mr. C. A. White of Fond du Lac, several times dug down and donated \$50 when we were in need of it. Later we went before the Legislature and asked for a little assistance. We were too modest to ask what we were entitled to, for which reason we didn't get any more than we are getting now, \$600 a year, and for a number of years they published our proceedings in book form free of charge to us.

That is in brief the history of the Association. We had hard sledding, but we always had enthusiasm. I think it has been a factor in not only building up the industry, but in giving the cheese makers an opportunity to get acquainted which they didn't otherwise have. It has been a mighty fine thing. I know it has for me and I think it has for all of them.

PRIZE WINNERS

American Cheese

First Prize.

H. A. KALK, Sheboygan Falls,

Leather Rocker by Hon. S. A. Cook, Neenah,

Silver loving cup by Dairy Market Reporter, Sheboygan Falls,

Gold watch by Marschall Dairy Laboratory, Madison,

500 cheese bandages by Sheboygan Bandage Factory, Sheboygan,

Vacuum bottle by J. B. Ford Co., Wyandotte, Mich.,

\$10.00 in gold by Chr. Hansen's Laboratory, Little Falls, N Y.

Second Prize.

P. H. KASPER, Bear Creek,

Silver loving cup by Dairy Market Reporter, Sheboygan Falls,

Gold watch by Marschall Dairy Laboratory, Madison.

Third Prize.

J. F. KALK, Haven.

Silver loving cup by Dairy Market Reporter, Sheboygan Falls.

Fourth Prize.

A. GRIMM, Richland Center, Wis.,

\$10.00 in gold by Stoelting Bros. Co., Kiel, Wis.

Fifth Prize.

EMIL BOEING, Woodstock, Wis.

\$5.00 in gold by Stoelting Bros. Co., Kiel, Wis.

3 cheese hoops, any style, Damrow Bros. Company, Fond du Lac.

Sixth Prize.

H. C. SCHULTZ, Underhill, Wis.

One gallon Rensin by Frederick Stearns & Company, Detroit, Mich.

Swiss Cheese

WILLY ERNST, Darlington, Wis.,

Rocker by Hon. S. A. Cook, Neenah,

Vacuum bottle by J. B. Ford Co., Wyandotte, Mich.

Limburger Cheese

FRED LANGACHER, Monroe, Wis.,

Rocker by Hon. S. A. Cook, Neenah,

Gold watch by Marschall Dairy Laboratory, Madison,

Vacuum bottle by J. B. Ford Co., Wyandotte, Mich.

Brick Cheese

FRED SCHALLER, Barneveld, Wis.,

Gold watch by Marschall Dairy Laboratory, Madison,

Vacuum bottle by J. B. Ford Co., Wyandotte, Mich.

Miscellaneous

MATH MEYER, Stanley, Wis.,

Choice of 6 followers by L. H. Pieper, Plymouth.

MINARD G. SCHMEIDE, Lena, Wis.,

Case of Renzyme Liquid Difco, by Digestive Ferments Co., Plymouth.

LOUIS C. WAGNER, Oconto Falls, Wis.,

Case of Cheese Color Difco, by Digestive Ferments Co., Plymouth.

EMIL H. PETERS, Boyd, Wis.,

5 gallon jug Liquid Chloride Difco, Digestive Ferments Co.

J. L. GIBBS, Muscoda, Wis.,

\$20.00 by Parke, Davis & Co.

MATH. MEYER, Stanley, Wis.,

\$10.00 in gold by Parke, Davis & Co.

ALBERT GRUENSTEIN, Tigerton, Wis.,

\$5.00 in gold by Parke, Davis & Co.

REPORT OF CHEESE JUDGES

American Cheese

George Wright	Loyd, Wis	94.7
Herman Ziebrath	Clyde, Wis	92.7
Albert Ferguson	Hub City, Wis.	93.4
Emil Boeing	Woodstock, Wis.	96.6
Peter Schmitz	Lone Rock, Wis.	95.5
Arthur Zivney	Ringle, Wis.	95.
Herman Kalkofen	Greenwood, Wis.	91.5
C. H. Schneider	Heller, Wis.	96.
John Jenni	Deerfield, Wis.	89.9
Guy J. Strong	Lena, Wis. R. 3	91.5
Mrs. Anna Kalkofen	Greenwood Wis.	93.7
Winaid G. Schmeide	Lena, Wis.	95.5
Earnest A. Tracy	Cascade, Wis.	88.2
Arthur Zivney	Ringle, Wis.	94.7
E. O. Wrinsch	Haven, Wis	92.
Gustave A. Wicke	Two Rivers, Wis.	89.2
Fred Beneschek	Manitowoc, Wis.	95.5
A. A. Matter	Antigo, Wis.	94.7
Joseph Henseler	Marshfield, Wis.	95.7
Otto Rezek	Sobieski, Wis.	94.
George H. Scanell	Eden, Wis., R. 35	91.
All. Gruenstein	Tigerton Wis. R. 3	94.
P. H. Casper	Bear Creek, Wis	99.
Wm. H. Vleiss	Forestville, Wis.	96.
H. J. Kuschel	Pound, Wis.	95.
John Fuhrman	Brillion, R. 3	90.
Felix Suedzinski	Denmark, Wis.	93.
Otto H. Gordi	Granton, Wis.	93.7
Albert Gruenstern	Tigerton, Wis.	93.7
C. K. Schwantes	Clintonville, Wis.	95.9
B. L. Radke	Eland, Wis.	92.
Arnold Grim	Manawa, Wis., R. 3	96.7
Wm. F. Pruiss	Seymour, Wis.	94.2
Albert Róloff	Clintonville, Wis.	94.
Louis Conklin	Seymour, Wis.	95.5
Earl B. Whiting	Lena, Wis.	90.5
Wm. Knolspel	Forest Jct., Wis.	91.2
Wm. Buckley	Greenland, Wis.	94.5
H. A. Kalk	Sheboygan, Wis.	99.2
J. H. Deicher	Glenbeulah, Wis.	96.
D. M. Freidberg	Fredonia, Wis.	90.
J. F. Kalk	Sheboygan, Wis.	97.5
L. B. Kohlman	St. Cloud, Wis.	90.5
C. G. Stromback	Dennison, Wis., R. 1	91.2
Walter L. Wagenknecht	Church, Ia.,	90.
A. J. Mensch	Glenbeulah, Wis.	89.5
R. M. Schmitz	Unity, Wis.	95.9
Henry Loehr	Calvary, Wis.	90.5
J. L. Gibbs	Muscoda, Wis.	95.9
John Fischer	Boaz, Wis.	95.7
Al. C. Drone	Muscoda, Wis.	90.7
Thomas S. Martin	Leeman, Wis.	88.
Otto Meyer	Manitowoc, Wis.	95.9
Louis C. Wagner	Oconto Falls, Wis.	95.4

Elmar H. Maat	Plymouth, Wis.	94.
Andrew Peterson	Lone Rock, Wis.	96.4
Frank Wonn	Avoca, Wis.	85.5
Emil H. Peters	Boyd, Wis., R. 2	95.
Math. C. Berres	Osceola, Wis.	93.
Math. Meyer	Stanley Wis.	95.
A. J. Schulte	Marshfield, Wis.	95.5
C. W. Coatway	Wrightstown, Wis.	90.
A. Koopman	Grafton, Wis.	91.5
Louis Rach	Loyal, Wis.	90.
Frank Wetzling	Allenton, Wis.	92.5
Adolph Dieck	Tigerton, Wis.	94.
Willard J. Mortensen	Birnamwood, Wis.	95.

Swiss

Ernst Willy	Monroe, Wis.	97.
Arnold Schmidt	Barneveld, Wis.	95.25
Nick Engelbert	Blue Mounds, Wis.	94.
Carl Lenhus	Barneveld, Wis.	95.50
Alex Hoerburger	Gratiot, Wis.	95.25

Limburger

Fred Langacher	Monroe, Wis.	97.25
Fred. Bahler	Darlington, Wis.	95.
Robert Salvisberg	Livingston, Wis.	94.
Fred Schuler	Morrisonville, Wis.	93.
August Martini	Monticello, Wis.	95.75
John Weiss	Belleville Wis.	93.75
Jacob Mueller	Rice Lake, Wis.	93.75
Otto Hohl	Monticello, Wis.	94.75
Carl Liecht	Verona, Wis.	93.75

Brick

Fred Schaller	Barneveld, Wis.,	97.
Fred Baertschy	Mayville, Wis.,	94.75
Rudolph Schaller	Barneveld, Wis.	92.
Wm. E. Radtke	Eland, Wis.	92.50
Gottfried Werren	Mt. Horeb, Wis.	93.25
Oswald Schneider	Appleton, Wis., R. 1	95.75
Fred Feut	Rubicon, Wis., R. 1	
Fred Farren	Hartford, Wis.	
Hugo Lautenbach	Pardeeville, Wis.	95.
Fred Indermuehle	Brownsville, Wis.	96.
Gottfried Vogel	Monroe, Wis.	92.
Fred Feutz	Rubicon, Wis.	92.50
Fred Moser	De Forest, Wis.	93.50
Jacob Muller	Rice Lake, Wis.	94.50
Carl Liechti	Verona, Wis.	95.

CHAIRMAN: The next is the "Prize Winning Cheese—How Made" by Mr. H. A. Kalk, Sheboygan Falls.

MR. KALK: Mr. President and Fellow Cheese makers: I was surprised last night when I was told by the President to tell you how I made my cheese. If I don't tell you all you want to know just get after me.

That cheese was made on September 4, 1917. I had five or six thousand pounds of milk and the milk was set with Marschall rennet test, 3 1/2 pounds Marschall rennet. In about twenty or twenty-five minutes I stirred it a little while with my hands, cooked to 102 to 104. It showed acid between 16 and 17. I put that cheese on curd racks and turned it every fifteen to twenty minutes for two hours, and then it was ready to bind. I put a little over three pounds of salt on that cheese.

MR. ADERHOLD: How long a time elapsed from setting until you drew the whey?

MR. KALK: About two hours and ten minutes.

MR. ADERHOLD: That whey was drawn sweeter than most of them draw it, wasn't it?

MR. KALK: I don't know. Don't get it too acid.

MR. ADERHOLD: How much starter did you use for 6,000 pounds of milk?

MR. KALK: About 25 pounds of starter. The starter was made by Hansen's culture.

MEMBER: Do you use racks all the time?

MR. KALK: About nine months in the year. I find it is a good thing. If it don't work on racks the cheese is always scratchy. The moisture test on the cheese by Prof. Sammis was 36.2.

MEMBER: Did you say that the curd lay in the vat 2 hours before making?

MR. KALK: Yes.

MEMBER: And then?

MR. KALK: And then two hours.

MEMBER: That makes fourteen hours?

MR. KALK: Yes.

MEMBER: About how much acid did it contain?

MR. KALK: About two inches.

MEMBER: What per cent?

MR. KALK: That I can't tell you. I tried it on a hot iron.

MR. STEFFEN: Was that cheese due to your process of making, or was it due to the quality of milk?

MR. KALK: The man that made it, he knew what he got.

PROF. SAMMIS: It seems to me that everybody would be interested to know that this first prize cheese didn't contain 38 1/2% of moisture, it contained about 36.

MR. KALK: The same cheese took the highest score in Minnesota in November. I got a complimentary score, but I didn't care. It cost me about \$5.00 to get that.

MEMBER: I want to ask if he hand stirred it any before he put it on the racks?

MR. KALK: No. As soon as it was on the racks I cut it and then turned it over. I had 550 pounds of cheese in the two piles.

MEMBER: After this cheese was made what was done with it, how was it handled?

MR. KALK: Put in cold storage.

MEMBER: How soon?

MR. KALK: Five days old.

MEMBER: It remained there until this time?

MR. KALK: Until a week ago yesterday when it was shipped here.

MR. ROCH, Minnesota: We had our annual Butter and Cheese Makers' convention on the 5th and 6th of November, and I knew when we got the scoring we didn't have any Longhorns in the state of Minnesota, and as much as I hated to have to, the cheese was there, I scored that cheese at that time and it was as near a perfect cheese as you ever could find, one of the best, if it wasn't the best I ever scored. At that time the cheese was a little bit new and I wasn't surprised at all when I came here and Mr. Kalk told me this cheese had scored 99.2.

There is one thing I would like to emphasize, that is our state cheese makers are afraid of losing salt. I don't know whether that is true in this state. I would have been very glad to have had Mr. Kalk state that to our cheese makers that he used over three pounds of salt. Our people seem to think one pound in the summer is enough, and 1 1/2 to 2 pounds in the winter. This helps a little to bring out the good flavor when old.

MR. KALK: I advise not to use too much salt, but I think three pounds or over if you want to keep it for a year and a half or two years, salt keeps the cheese best. If you want to keep the cheese two months use 1 1/2 pounds of salt, but if you want to keep it four months or over, use more.

MR. ADERHOLD: Another thing, you want to make it the good time of the year, make it in the month of June before the hot weather sets in, that is before fly time—I mean the house flies. That is when the weather is agreeable, nights are cool and days are pleasant. We haven't got many weeds at that time of the year and our grass is best. Another good time is before frost in the fall, after the grass is freshened. The milk will have that freshened grass flavor, so will the cheese. You see he didn't wait until after any danger of frost. We had frost on the 10th.

MR. KALK: I had some cheese that I made in July and I had that scored in New York and it scored 97. The weather has nothing to do with the milk if farmers take care of their milk.

MR. ADERHOLD: In July, if you have good pasture and nothing otherwise out of the way of course you can make fine cheese too.

MR. KALK: In June you have too much fresh grass.

MR. STEFFEN: Do you salt as heavy for that fall rack cheese or for exhibition purposes?

MR. KALK: I put in 2 1/2 to 2 3/4, the trade will take it. The more salt you use the longer it will keep.

MR. LINZMEIER: Did you keep your curd on the racks after milling as well as before?

MR. KALK: No, after.

MEMBER: Wouldn't the cheese age too much if it was made in June, wouldn't it get strong if you keep it until January?

MR. KALK: No, I had a cheese a year and a half old and it scored 97.

MEMBER: What is the reason, the amount of acid you give the cheese?

MR. ADERHOLD: The Salt.

MEMBER: The salt and the acid?

MR. KALK: No, the salt will give acid.

MR. ADERHOLD: If it is properly cooked there is no surplus of moisture. The milk was a little overripe and it is not a good keeper. But he had his curd properly formed before the acid did any harm.

MR. UBBELHODE: I have tried Kalk's cheese at different times of the year. He gets the moisture out of it at the start, plenty of salt in it and in a year and a half or two years it is just the same as six months old.

MEMBER: I would like to ask Mr. Kalk if he keeps his cheese?

MR. KALK: Saturday's cheese is shipped out Tuesday.

MEMBER: What size of a curd knife do you use to cut your cheese?

MR. KALK: Not very fine and just three times. I use the curd rack with my hand, stir it.

MEMBER: How fast do you cook your curd?

MR. KALK: From half an hour to an hour. When you have a self-heating vat you can't heat it up so quick.

MEMBER: How long do you stir the curd after you stop putting on the heat?

MR. KALK: Just stir it once in a while so it don't come together. Just feel of the curd; then your thermometer has a good deal to do. I wouldn't take a poor thermometer if you gave it to me. Every thermometer I get I test it up. I find they vary ten degrees.

MR. SAMMIS: I think you said you set that milk at about 2 1/2 on the Marschall test?

MR. KALK: About 2 1/2 cc. I always know how to work it.

PROF. SAMMIS: And put in about a half per cent starter?

MR. KALK: Not quite. I put in the starter as soon as I get a thousand pounds of milk, and in half an hour it is ready to set.

MEMBER: That starter has a little while to work in there?

MR. KALK: I found out the less starter you use and put it in a little bit earlier you can make a better cheese.

MEMBER: How fine do you cut that curd?

MR. KALK: Three-eighths of an inch.

MEMBER: How much acid do you have for dipping?

MR. KALK: About one-eighth of an inch.

MEMBER: Did you add the steam when you had a thousand pounds of milk?

MR. KALK: Yes, I haven't got any steam self-heating vat.

MEMBER: Do you add your starter before you warm up your milk?

MR. KALK: When I have a thousand pounds of milk I add the starter and go ahead.

PROF. SAMMIS: What temperature did you keep this cheese at since you made it?

MR. KALK: I couldn't tell you.

MEMBER: You kept it in your curing room?

MR. KALKS: Five days in my curing room and after that at cold storage.

MEMBER: You don't know if it was kept at 35 or 45?

MR. KALK: That I don't know. I could find out. Sheboygan Cold Storage.

MEMBER: How long a time did it take after heating the curd?

MR. KALK: A little over half an hour. About half an hour, three-quarters to an hour. About an hour before I set it away.

MR. UBBELOHDE: How does your yield compare with the yield of your neighbors?

MR. KALK: My yield is lower. It takes about 10 1/3 pounds for a pound of cheese.

MR. UBBELOHDE: For the year?

MR. KALK: For the year.

MR. UBBELOHDE: At what test?

MR. KALK: About three and 6/10%.

MR. UBBELOHDE: You want to remember Mr. Kalk is in the county where there are Holstein cows and the yield of milk isn't as large as it is in the section where there are Guernseys, but I think his yield averages pretty good with the rest of it throughout the country, that is considering the richness of the milk.

CHAIRMAN: You always want about the same amount of acid every day?

MR. KALK: If the milk is a little bit riper I work it a little faster, but I use the same amount of acid. The cheese is all right if it is two or three weeks old.

CHAIRMAN: Some of the makers that take in the milk, as soon as they have taken it in they never test to see how much acid they have on their test. Just as soon as they have it in they throw the rennet in regardless of what acid they have.

MEMBER: About the point of the milk not being as good sometimes I want to say this. I took charge of a factory some years ago where there was a good deal of trouble. It was always laid to a swamp close by. I made this statement to my patrons, that I tried the milk from the swamp district two years before and I found it no worse than the other milk. I made this statement, if there is anything wrong with it, don't always lay it to the swamp, lay it to the farmer who

doesn't take care of it. This particular factory had the reputation for being the worst in the county. In two years time it was up to the standard in receiving milk. Our milk was no worse than the best in the county. You have got to keep after it all the time.

CHAIRMAN: As our program is now concluded, is there anything more to be brought up by anyone before we adjourn this 1918 convention of the Wisconsin Cheese Makers' Association?

If there is no further business, I wish to thank you for the kind attention you have given us through all our meetings and sessions.

MEMBER: I would like to make one suggestion. Did Prof. Sammis test the first and second prize of American cheese as to moisture?

PROF. SAMMIS: The first was 36 and the second was 34.6.

I would like to make a suggestion, that when next year you offer any premiums or to get in the pro rata it must be understood that the cheese must test below 40, or below what the state law requires.

CHAIRMAN: Did you have any above 40?

PROF. SAMMIS: I think we did.

CHAIRMAN: I think it would be a good suggestion. Another suggestion before we conclude is concerning our sessions. We are going to meet again in this same place, but if you knew what a job it is to get these sessions started in the morning, the same in the afternoon. The supply men want you and we want you, and I would like to get the advice of this convention as to whether this suggestion would be agreeable or not. My idea is to have afternoon sessions of our program and forenoon sessions with the supply men. Close the door at noon and you can't get in there until after this session is over.

MR. KALK: I make that as a motion. It is pretty nearly eleven o'clock before we get started.

The motion was duly seconded.

MEMBER: I think that suggestion is well taken. Of course the supply men come here to show off their goods, but the main object of the cheese makers in coming here is for the educational purpose and we want to get them all in here in this assembly.

The motion was duly carried.

CHAIRMAN: We stand adjourned, the meeting is closed.

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