SECOND DAY'S SESSION.

Thursday Morning, 9 A. M., Jan. 24, 1901.

The President in the chair.

SWISS CHEESE MAKING.

Jacob Marty, Browntown, Wis.

Having the honor to be placed upon your program to express some ideas on the manufacture of Swiss cheese, I will express my thoughts on the subject and at the same time take the opportunity to say something in general on the condition of that industry and to suggest wherein there is room for improvement.

While attending your convention a year ago, I pursued with great interest the course of the discussions upon the making of cheese, not only those relating to Swiss Cheese, but more especially those relating to Cheddar Cheese.

I did not take part in the discussions for the reason that some of the ideas advanced were new to me and I desired, first of all, to be sure that the principles set forth could be applied with advantage to the manufacture of the cheese we are interested in.

I am now convinced that in the main those ideas are to the advantage to the makers of all kinds of cheese. I confess that when I followed the course of debate on Cheddar Cheese, I was deeply impressed with the intelligent wisdom displayed by those representing that branch of cheese making in their discussions. I was also surprised to find so much in common with our branch in the so-called first principles of that business.

My previous wrong impression that prime Cheddar cheese could be made from inferior or sour milk, was entirely removed. I know better now.

The general treatment of the milk, applying the rennet and the first treatment of the curd, are in all kinds of cheese very similar, as are also the processes of fermenting and ripening. Add
the procurement of good milk in good condition and the supply of suitable buildings and utensils and we have a common ground of mutual interest.

When the milk supplied is good and the buildings (including the ripening cellar) are suitable, then there is no good reason why a competent Swiss cheeser should not succeed in making a good article. On the other hand every deviation from these requisites, no matter how trivial it may seem, is sure to make success difficult. More than that, it is sure to be followed by certain loss.

Some cheese makers, however, might not agree to such a rigid rule. They may assert that they are able by some superior skill to make an average good article, even though the milk be somewhat off and the arrangements defective.

I am convinced, however, that a close investigation will invariably determine that in such cases quality or quantity or both are deficient. Being convinced of this fact, I have, during many years worked on those lines and I now find that a constant use of the curd test has brought such a reliability of results that I would on no account make cheese in the future without its aid.

There are many cheesers who in recent years have greatly improved their methods. The patrons and the dealers, however, have hardly kept pace in improvement. Shortly after your meeting of 1900, a call was made to Swiss cheese makers to organize for mutual benefit and improvement. It resulted in an association being formed at Monroe with 55 active members. As one of the representatives of that association to this convention I tender their thanks to the Wisconsin cheese makers and to the state for the kind efforts made by both to assist us in the intelligent advancement of our branch of Wisconsin’s greatest industry, adding the hope that in the near future we will as a whole aid each other in attaining the greatest improvement possible in the cheese industry of Wisconsin.

There were some questions raised at your last meeting by remarks made by Mr. Monrad. In answer I will say here that I never have had the pleasure of converting too rich milk into Swiss cheese. I further say respecting Mr. Monrad’s remarks
that more loss and damage is caused by unclean and careless milking than by unclean cheesers. It is a very rare thing to find an unclean cheeser. Experience has taught us long ago that only the utmost cleanliness can be tolerated in any factory worthy of the name. Of course there may be exceptions, but such is now the demand for only the best that such exceptions must either reform or quit the business.

In respect to the alleged injurious effects of too rich milk, I will add, such milk is only injurious when it is unclean. The more fat the milk contains the more necessity exists for its being clean. For a fine quality of Swiss cheese the milk should contain not less than 3 1/4 fat, and the more the better.

I produce the formation of holes, a tender, white curd and a fine flavor by two processes, a sweet and an acid process. The acid process seems to be nearly the same as that used in making Cheddars. My main effort is to develop both of these fermenting processes at the same time, varying the details according to conditions.

The proper formation of right-sized holes and the production of a fine, tender, rich, white cheese of fine flavor are, of course, the vital essentials of number one Swiss cheese. Every process or condition that impairs any or all of these essentials is fatal to success.

The manufacture of Swiss, Brick and Limburg cheese in a number of counties in this state brings an annual income of millions of dollars. Very many who have devoted themselves to this industry have become wealthy and well to do. Yet on the whole there has been little or no advance or improvement in the methods of manufacture. While other branches of our great dairy industry have employed machinery and tools of modern construction to their great advantage, we have stood still. We now occupy a critical position unless we advance in our method, we incur the danger of losing ground in spite of the present brisk demand for our goods. The annual loss because of the defective methods and from causes not understood, causing the production of inferior quality of cheese, is unreasonably great.

As in Cheddar cheese making, we also need well proven prin-
ciples based upon science and experience in order to produce a uniformly good cheese. For lack of these we are subject to great loss in price because of the want of uniformity of product. Cheese not prime quality must always be sold at a great reduction in price. Our kinds of cheese, however, have become a staple in the market. The demand for a good article is steady and remunerative, but we incur the danger of impairing, if not losing, our prestige when we put inferior qualities in large amounts on the market.

Other states and countries who may be more progressive and careful in their methods, may capture the market which of right is ours. It may be difficult to put our industry upon as sure and as perfect a basis as has been attained for the Cheddar cheese industry, but much can be done by intelligent effort.

There was a time when indifference and carelessness had almost brought to ruin the cheese industry in Switzerland. The competition of other more progressive countries had nearly captured the markets, which she had established. But before it was too late, the state and all who were interested awoke to their danger and by united intelligent efforts in erecting dairy schools and teaching therein correct methods based upon science and experiment, this industry was brought to its present unexcelled position in that country where it is the chief source of wealth and employment.

I sincerely hope and expect that when a crisis comes, as in time it is almost sure to come, that we will be found as well prepared to meet it as those who are engaged in Cheddar cheese making, who by reason of the power of co-operation and combination have had the aid of the best talent the state can command, and have in return placed Wisconsin in the front rank of cheese producing states.
DISCUSSION.

Mr. Monrad: Did I understand Mr. Marty to say that he was not afraid of rich milk for Swiss cheese making?

Mr. Marty: Well, I haven’t had the pleasure yet of having too rich milk. I wouldn’t say that it might not be possible if I should get hold of six or seven per cent. milk. I never had such milk and of course I don’t know what it would make when it goes above five, but I never had any trouble with any milk that I had.

Mr. Monrad: We agree with you there. Now, as I understand you the cause of the trouble last year was this: in Swiss cheese making a certain amount of ripening or acidity could be developed with advantage before setting as well as after, and I think you said last year that the richness of the milk made a difference in doing that work. I am against making Swiss cheese of skim milk, just as well as I am against making Cheddar cheese of skim milk, but it was a question of acidity. When I used to sell rennet tablets for Hansen’s laboratory I couldn’t get Mr. Karlin to buy them, because he told me they wouldn’t make any holes. I then found out how the Swiss cheese makers prepared the rennet; at that time they soaked it in sour whey. Then that gave me this idea, and I suggested to several Swiss cheese makers that when they used the rennet extract or tablets they add a little sour milk and make a starter to see if that wouldn’t develop the holes. I think this gentleman will agree with me that there is such a possibility of getting the milk too sweet for setting; rather, I should say, you can not get it too sweet because you can always develop the acid, but you can set it and work it too sweet.

Mr. Marty: Leave it too sweet, that is right.

A Member: Mr. Marty, do you think there is any improvement in regard to factory equipment for Swiss cheese making; do you think there is room for such improvement?

Mr. Marty: Oh, yes, there is room, and really in our line it is a necessity; it ought to be arranged different all around. When business is running fair it might do, but you take it when it
comes off again, and what passes as No. 1 now, will go down to No. 2 cheese, and a great deal of that same cheese is No. 2 cheese because of the lack of improvements, the poor factories. At the present time No. 2 cheese sells for No. 1, but it is bound to be closer again sometime, and the standard will be higher, makers will have to keep up to the business and there are a good many factories that may have to quit and it will be the establishments that have the better methods of making a good article right through that will be able to take them to market and get the best price. There ought to be some way by which the high standards shall be kept up and the same method be carried right through; with good service in good factories you would have no trouble to find good cheese makers to attend to the business and the product would be good right through.

Mr. Monrad: What do you think of steam jacketed kettles?

Mr. Marty: I am using them myself. They are used pretty near right through in Switzerland now. A man can temper the heat just exactly to what he wants it, and there is no other way that he can do it except by steam. There is a good deal of skill right there. It is almost impossible to regulate it with an open fire.

A Member: What is the difference in the cost?

Mr. Marty: Actually, the way I have got it, there is no difference. Of course the first steam methods were expensive; it might have cost three times as much as the old way, but now it is about equal to the other expense, so it is in the hands of every cheese maker to take it.

Mr. Michaels: Don't you believe that a scientific education, such as is offered by our dairy schools, would be a help to the Swiss cheese maker as well as the American cheese maker?

Mr. Marty: Oh, yes, it would be a great help. Of course, its full benefit would be only to them when they got together; the best cheese makers should get together and find out which one is in favor of going ahead, working together, I think it would be a great help. At the present time we are in an awful condition. The cheese maker, in the first place, is very crowded with work, too much work is put on the Swiss cheese maker, and then many
can not get hands; there is no way for a young man to learn the trade with success and get a good job, and there is cutting in wages all around, and it is very often the cheese maker that wants to be particular and has strict rules who is the one that is left and the one that offers to do the cheapest work, he gets the job. If all the good cheese makers in the country would come together and have an understanding, it would be a very short time that they would be selected and there would not be this cutting under. There should be a record kept. There seems to be an idea right in the industry that cheese making is an easy matter; that anybody can learn it and that it is more a knowledge of some tricks than anything else, and if they have got those tricks, it is no trick to make that cheese,—all they have to do is to find out a few tricks, and then, of course, they can make good cheese. Then, if it doesn’t happen to be good cheese, they say it is like the woman baking bread, if it doesn’t turn out right, it is the flour. But that isn’t right. We must remember the woman has a good many other things to attend to; the baker is a better comparison. If he fails even once to make good bread he might as well quit business right there. The cheese maker ought to understand his trade; he ought to have knowledge so as to make good cheese from one day to another; he has got to be up to the times; got to understand his business and make good cheese every time, as well as the baker has got to make good bread every time.

A Member: I believe if you cheese makers would go to work and educate up, you could soon crowd out the poor sticks all right.

Mr. Marty: We tried in Switzerland to get things to work on a better standing, and it took about ten years, and we had the best professors out through the country to try to educate the people, the farmers and cheese makers to bring reform. At that time Germany was away ahead of them, had dairy schools already when Switzerland did not have, and they made enough Swiss cheese to supply their own country. Then they put it down to five cents a pound and that shut the Swiss cheese out from Germany, and that was about the main market they had
at that time, and that gave the industry an awful knock, so they had to make arrangements and find out other territory for their trade, but in this they had to start a reform in order to satisfy new markets, and I remember what a time they had before they had three Swiss factories that went according to the rules. Everything was inspected, everything kept control of, and the record showed up at the end of the year and the premium given to the best one, and while it started in a small way, it increased right along, and even after the first year it showed what a difference it would make, and it kept increasing, and in about ten years, all of those factories that would not step in, were crowded out, even quite good establishments that would not go into the new reformation, they had to quit. I think we will have to have something on the same lines here; of course, it will be a hard thing to start it, but if ever it is started, though we would not get the full benefit of it right at first, we will surely get it finally.

A Member: How much milk can one man handle in a Swiss cheese factory?

Mr. Marty: Twenty-five hundred pounds, to my experience, that makes a big day's work, if a man wants to do it anywhere near right; that is, taking the milk twice a day, and it takes a good strong man to do that right. I have worked myself five or six thousand pounds, but I wouldn't say I did it right. That was when I was paid wages that I thought it was proper for a man to work that much. I believe I can do as well as any other man, but for myself, and in order to do it correctly, I wouldn't undertake to work more than twenty-five hundred pounds, and I am a strong man.

A Member: How much milk does it take to make a pound of Swiss cheese, say of four per cent. milk?

Mr. Marty: About ten pounds and a half, very little different to a Cheddar.

Mr. Monrad: That depends upon what age we weigh the cheese.

A Member: I get about nine pounds average through the summer with Swiss cheese. It is generally three months old
when sold; that is, nine pounds of cheese to the hundred pounds of milk.

Mr. Monrad:  How long do you have to cure your cheese before you ship it?

Mr. Marty:  About three months is what it ought to be.

Mr. Monrad:  And what temperature do you keep it?

Mr. Marty:  Well, after it is cured, 60 degrees, and even below that. A temperature of fifty degrees is just about what would be right if we could possibly keep it at that temperature after it is cured. Of course, if the temperature runs up to 75 or 80 degrees, it will shrink, and at the same time it will have an influence on its flavor. In the curing room it varies from 70 to 90 degrees, according to the time it takes to go through the process,—a difference of five to twenty days.

A Member:  Have you got a cold cellar to put your cheese in?

Mr. Marty:  I have two cellars. There is a rock wall between the two cellars and I try to keep one as cool as I can. Of course, I won't say that sometimes I wouldn't like to have it cooler in summer. Somebody has spoken of the door between the two. Now, it doesn't matter how close the door is, you have got to go backward and forward, and you can not control the temperature as you really would like, but still, of course, it is an improvement over the old way where we had only one cellar. Of course I would rather have three rooms than two, then I think I could control it.

A Member:  How high does your cooling room go in the hottest weather,—in the cool cellar?

Mr. Marty:  I never had a thermometer there, but I think it never went over 64. It is an extra cool cellar, of course. It would be a great help to have ice in the cheese factory.

Mr. Sweeting:  In your opinion, how does the American Swiss compare with the imported Swiss?

Mr. Marty:  I have found that there can be about as good Swiss cheese made here as the imported Swiss, and I know that a good deal of the Swiss cheese made here is sold for imported Swiss, and that if you put it right up alongside and take an ex-
pert, take Mr. Karlen over there to try it, and he wouldn't know which from which.

Mr. Karlen: Mostly the color gives us away here.

Mr. Monrad: Don't you think there is a little peculiar flavor in the Swiss milk from the Alps? I imagine that there is. I have seen Wisconsin cheese, Swiss cheese, that was so near the average Swiss cheese that most anybody would get fooled on it, and it could easily sell as imported, but it seems to me that there is some little flavor, I can't define it, and I believe that it is due to the milk grown up there under these conditions.

Mr. Marty: I must say Mr. Monrad is right there. There are certain strips of country in Switzerland. When Germany came in with her Swiss cheese they said, "We have just as good cheese as can be made in Switzerland," and for a while really the trade stopped, but by and by that extra fine trade had to come back. There is one district in Switzerland where they make cheese that I do not believe could be equaled just exactly, the flavor, but on the average we can keep up with them. There are a few places in Switzerland that there never has been territory discovered where cheese could be made just like it is there.

Mr. Monrad: I want to close this with one little word to the Cheddar cheese makers. Here we have a Swiss cheese maker who has frankly acknowledged the benefit he received last year from listening to the discussion with reference to making Cheddar cheese. I have for years urged upon the Cheddar cheese makers that they could learn a great deal by studying how the other cheese were made.

The Chairman: The committee on resolutions has placed this document on my desk:

"Resolved, That the president of the Association do invite the governor and other State officials to attend our sessions."

I think it would be agreeable to the members of our Association to have Gov. La Follette and other state officers come up, and I therefore will appoint Mr. J. K. Powell and F. E. Carwell to wait on these gentlemen and invite them to attend one or more of our sessions.