Mr. Monrad: Is not the round vat more important on account of the advantage in enabling you to keep up that stir?

Mr. Marty: Yes.

Mr. Monrad: Keeping it stirred while it is being heated, and after it is heated, keep that up for nearly an hour on an average.

Mr. Marty: Yes.

Mr. Monrad: Well, now, then and there is the trouble, that it is pretty hard to keep it moving in a square vat, to keep it stirred as well as in a round kettle. I always thought that was why the Swiss people stuck to the round kettle so persistently.

The Chairman: Mr. McKinnon, do you think there is any way of keeping that in motion in a square vat?

Mr. McKinnon: We who are interested in agitators believe that an agitator can assist in any make of cheese, that is about all the information I can give you today. It is not a question that we have taken under consideration, but we have found this, and I believe there are many men right in this hall that will bear me out in asserting that an agitator can stir the curd far better than two or three men can stir the curd in a vat. It stirs every particle of the vat. If the fans are not rightly constructed at the present time for stirring the curd that you want to make into a Swiss cheese, why, that undoubtedly can be altered. I apprehend that there will be no difficulty in that direction, that it can be overcome by mechanical power just as well as many other difficulties are being overcome by mechanical power at the present day.

BRICK CHEESE MAKING.

CHRIST S CHENK, Stitzer, Wis.

Brick cheese making is a subject which has perhaps never been discussed very much, but I really believe that the manufacturing of brick cheese requires attention at several particular points and very often it is manufactured with altogether too much moisture remaining in the cheese.

For the manufacturing of brick cheese it is necessary to have sweet milk perfectly free from all bad odors. The making of this cheese is very similar to the manufacturing of limburger.
After the milk is all received it is warmed up to 88-90 degrees F., a quantity of rennet usually from 4-5 ounces per 1,000 pounds of milk is then added. I am very sorry to state that the rennet tests are not applied to determine the ripeness of the milk and this is largely responsible for the uneven quality of cheese put on the market.

The time of curdling varies between 20 and 25 minutes. The proper time when the curd is ready to cut can be compared with the curd of the American cheese, it is then cut with a perpendicular curd knife first lengthwise and then crosswise, half laping, then loosing all the curd from the sides of the vat. I usually let the curd remain in this condition for about 5 minutes depending much upon the condition of the curd.

This mass is then slowly put into motion by means of a curd scoop and is kept up for about three minutes. The same knife is used to cut it lengthwise again, this is usually sufficient cutting to place the curd in proper shape. A rake is then used to stir the curd evenly and slowly for about 5 or 10 minutes depending somewhat upon the time of the season.

Steam is now applied under continued stirring until it has reached the required temperature which is from 105 to 115 degrees F. This temperature should be reached within a period of about 35 minutes. The curd is still held in motion until the maker finds it firm enough to dip. The firmness of the curd is tested by taking a hand full of curd, pressing same lightly, then releasing it and if the curd is ready to be dipped the granules will readily fall apart again.

A suction pipe made out of tin and strainer of the same material is used to draw off the whey, leaving sufficient whey to mix the curd thoroughly before transferring it over into the molds which is done best and easiest by means of a flat sided curd pail. After dipping, each cheese is covered with a board, known as a follower, and is pressed by the weight of a common building brick.

This cheese is to be turned in about 30 minutes after it is dipped and so on every 2 or 3 hours thereafter. The time required for pressing is 24 hours; it is taken out of the molds and carried into the cellar and placed on a table where the salting takes place.

Each cheese is handled separately. Dry salt is applied. Much precaution must be observed in the work of salting. The practical cheesemaker has a certain way of telling whether the cheese has enough salt or not. This however, cannot be ex-
plained in a few words and can be learned only by experience. After lying in the salt for about 3 days, the first days make the cheese should be taken out and put on the curing shelf. This cheese is washed every day with clean pure water by means of a brush or sponge and more salt can be added if necessary.

In a period of some 3 or 4 weeks the cheese is generally ready for market. Each cheese is then neatly wrapped into parchment and heavy manilla cheese paper with a finish of tin foil giving the cheese a very neat appearance.

This will briefly describe to you the ordinary methods which are applied in practical brick cheese work. The many different details connected with this branch of cheese manufacturing, I am unable to describe at length to you at this time.

I am at present a student at the Wisconsin Dairy School and have observed many new and good points in the making of the brick cheese, which I know will be of great aid to me in my work upon my return to my own factory.

DISCUSSION.

Mr. Marty: I would, like to ask Mr. Schenk why he holds his curd fifteen minutes after setting, depending upon the time of the year, what is the reason?

Mr. Schenk: Well, in the spring the milk is good, the milk is not overripe and the curd can be worked more slowly than in the summer time when the milk is ripe enough or overripe, the maker has to overcome the gasses. He has to work the curd as fast as he possibly can.

Mr. Marty: You mean that this is the only thing that will indicate to you the ripeness of the milk that you work?

Mr. Schenk: Yes, it will.

Mr. Michels: I would like to ask the gentleman what he means by "overripe" milk.

Mr. Schenk: Overripe milk is milk that is held too long after it is drawn from the cows, and has too high a percentage of lactic acid.

Mr. Michels: What degree of acidity does it contain?

Mr. Schenk: Well, milk should not contain over two tenths of one per cent of acidity for the purpose of cheesemaking.

Mr. Michels: You consider it all right at two tenths of one per cent?

Mr. Schenk: Yes.
Mr. Marty: I would like to say that I do not agree that milk should contain two tenths of one per cent acidity, or .20 for the manufacture of brick cheese, I think it is an excess when milk contains 1.8 for the manufacture of brick cheese, and I think there is a certain method that must be applied to overcome the developing acid upon a curd when milk has that content of acidity. Do you work the curd any differently, Mr. Schenk, when you have such milk on hand?

Mr. Schenk: Yes, I would, I would cook the curd longer, and make it firmer in case of overripe milk.

Mr. Jones: About what per cent of cheese do you lose by having overripe milk?

Mr. Schenk: This point I would like to refer to Mr. Marty, I am not posted on it.

Mr. Marty: I do not know as I am quite able to answer this question. Have you reference to the percentage of fat?

Mr. Jones: Yes, the weight of the wasted cheese.

Mr. Marty: That is, the per cent of fat which would perhaps be lost, if we may call it a loss, but as a rule in our district the method of manufacturing butter is applied to the manufacture of brick cheese, and the loss may come to about .8 of one per cent, if the milk is very sour.

The Chairman: I think we would better take up the next subject and then we can discuss them both together.

Mr. Schaller: I want to ask what is the reason Dodge county can make better brick cheese once a day than we in Dane county can in making twice a day?

Mr. Schenk: I would like to know myself. Last summer I made cheese but once a day all summer. I have made brick cheese, and I think I have had better cheese than I had the summer before making twice a day. I live in Grant county.

The Chairman: Could it be that your milk was too sweet when you made it twice a day?

Mr. Schaller: I guess that is what is the matter,

Mr. Marty: This is a question I have touched upon in my subject, that milk for limburger cheese could contain a higher per cent of acidity than in the manufacture of Swiss cheese. but it cannot come to an excess of .2 of one per cent or over; but I think if you can keep the milk for brick cheese in good condition, free from all bad odors, it will form a higher per cent of acidity, that will make a very nice texture in a brick cheese and it seems as though it has the peculiar quality that we want in the manufacture of brick cheese.