ture is about 37 or 38, and as far as we have been able to learn, there is no difference in the development of this flavor.

THE CHEESE MAKER AND THE PATRON.

C. H. EVERETT, RACINE, WIS.

I believe in you and your organization, else I would not be a member of your association, and would not be here to address you. I believe in Wisconsin and Wisconsin farmers, of whom no state in the Union can boast of better, more intelligent, or progressive citizens. I know of the superior conditions that exist in our state for the manufacture of fine cheese and other dairy products, and I am also conversant with some of the reasons why Wisconsin cheese has not always, and is not now, as good as it might be, or as good as it should be. I am not a cheesemaker and know but little about the manipulation of milk in the factory for the production of good cheese, but I have been a milk producer for a good many years and from a knowledge of the dairy business gleaned from the hard school of experience I came to the conclusion years ago that Wisconsin dairymen were not making the most of the splendid opportunities at their command, and so, as my good friend Governor Hoard says, "I began to preach the Gospel according to the cow," and am still at it.

No state has more favored conditions of climate, water, and feed, for the manufacture of high class cheese than Wisconsin. No state has so good a dairy school wherein to teach young men the science of cheese making, no state has such a strong and useful Dairymen's Association, or one that does more to lift dairymen out of unprofitable methods into the brighter light of intelligent dairying. No state dairymen's association does so much or spends so much money to help the milk producer and the cheesemaker, as does ours. There is not a more active, vigorous dairy commission in existence, than the present one in this state. It is striving to the limit of human ability to cor-
rectly interpret and execute the laws, to protect humanity from fraud and to punish violators of the statutes. The recent appointment of one of your number to a position on the commission must be gratifying to you as it is to me. The people of the state, and the dairy interests especially, should congratulate Commissioner Emery upon the wisdom shown in making the selection. It is a dairy commission of dairymen and factorymen and adequately equipped so far as quality is concerned for the strenuous work that lies before it. The farmers' institutes, dairy and agricultural papers, our experiment station, cheese makers and butter makers' conventions, dairy boards of trade, etc., are of the very best, and all are striving to the utmost to improve the quality of Wisconsin cheese, and all other products of the farm and factory, trying to make Wisconsin farmers more prosperous, trying to induce them to study more diligently that they may more clearly see how to help themselves.

With all of the above splendid equipment what is the matter? Why is there poor cheese? Frequently some one asks me where good cheese can be obtained, and recently a gentleman remarked that he hoped that I would tell the cheesemakers how to make good cheese, for he could not get any and did not believe any was made in Wisconsin. He further said, "If there is any good cheese on exhibition at the convention buy one for me." Wisconsin cheese is no doubt as good as any, ranks equally with New York and Canadian cheese, but it is not all good and the best not good enough. There are many fine cheese makers in this state, but some are less skilled than others and are not as efficient as conditions demand. There are many milk producers who know what good milk is, and who produce and deliver it to cheese factories. There are by far too many others who are careless of their own interests and that of the community and state when they send bad milk to the factory. Fine cheese is the result of good milk, manipulated by a skillful cheesemaker in a factory properly equipped to manufacture and cure the product. Deficiency in any one of the above, or in them all combined will militate against quality and accordingly lessen the profit of all interested. We are progressing, great improvement has been made in quality and quantity of Wisconsin cheese, and during the past few years you all remember the filled and skim milk cheese epoch and the resultant de-
generacy of the whole cheese industry in this state. That experience cost Wisconsin dairymen thousands of dollars and years of valuable time, but we have partially re-gained the lost ground and lost reputation abroad, as well as at home, and are again under full sail toward conditions that promise favorably. Let us hope that they will be permanent and that the laws, state and national, governing the manufacture and traffic in cheese will evermore keep us from dishonest, degrading and unpatriotic practices.

Whatever good results may have been achieved in the past few years, will not now stand as an excuse for any lack of enterprise or push on your part, but more than ever before must you exercise skill, intelligence and perseverance in the pursuit of your calling. Not only must you become more proficient in the science of cheese making but you must be leaders of men, broad, truthful, forceful and convincing, for upon you, more perhaps than upon any other single force, devolves the duty of leading the patron from wrong to right methods. You must become better versed in the problems that confront your patrons, in the feed and care of the cow and her product, in stable construction and ventilation and in the thousand and one other things that go to make good milk and profitable dairying. You must labor with patrons and factorymen for larger, better equipped factories. You must be courageous and stand firmly on your dignity and honor against the pound for ten system or any other system that you know to be wrong and hostile to the best interests of patrons and the community. You occupy a very big field and fill a very important position. You must reason with and educate men, make them see the importance and necessity of good cows, good feed and water, bright, clean cans and good, wholesome milk.

This association should stand as a unit against the acceptance of filthy milk and against any kind of trickery or questionable methods on the part of patrons or factorymen. There are many things connected with cheese making that are a curse to the industry. True it is that they are hard to overcome, but by standing firmly together as men of principle you will lend a powerful influence towards a brighter and better condition of things and eventually a more adequate compensation for your services.
Every cheesemaker should be a graduate of the Wisconsin dairy school. I am not ready to say that this should be made compulsory and that no cheesemaker should be allowed to operate a factory without a certificate from the school, as it might work hardship at the present time. But I know that the dairy school graduate is much better qualified for the important work he has to do. He is broader, he learns many things at school other than cheese making that are helpful to him. He has got the science, he knows and does not guess, he becomes an authority in his community and his influence is strong.

Life is what we make it, each one is responsible for his own success or failure in business, or as a cheesemaker. True, we gather much valuable information and are very helpful to each other by counseling together frequently, but each one must stand out clearly upon his own individuality; to be successful he must be a student, diligent, painstaking, methodical and persevering, and above all else, he must be a man, honest with himself and with the world. He will do pretty nearly right when he does by others as he would that others should do unto him.

I am anxious to see the cheese industry of Wisconsin grow, assume broad proportions and command the respect and attention of the cheese consuming world. I want to see Wisconsin farmers and dairymen more prosperous and Wisconsin cheese makers second to those of no other state or country in intelligence, skill and character. Your duties and requirements are manifold, but I trust you to meet and execute them with the promptness and courage characteristic of men with a purpose in life.

DISCUSSION.

Mr. Dewhirst: To whom do you ascribe the enormous quantity of poor cheese that we have in Wisconsin?

Mr. Everett: Oh, it is the fault of the patron, unquestionably. There is no cheesemaker, no matter how skilled he may be, who can make good cheese from poor milk. But I intended
in my paper to urge upon the cheese maker the importance of educating the patron. That duty devolves very largely upon the cheesemaker. He must be bright and intelligent, capable of getting hold of the patron as much as possible, leading him into better methods. I know very well how hard the milk producer is to contend with, to educate, to tell anything to, but there are many forces at work upon the patron for better milk, and among all of them none is greater than the cheesemaker, or has more influence.

A Member: Perhaps this gentleman can tell us how he advocates his patrons caring for the milk from the time it comes from the cow till it reaches the factory.

Mr. Everett: I think, Mr. President, there are those in this audience more competent to answer the question than myself, although I have been a dairyman a good many years,—not a cheese factory dairyman, but a butter producer. I think that milk, to make good cheese, should be cared for about the same as that for the manufacture of butter. In the first place, to produce good milk requires healthy cows good stable sanitation and condition, healthy, wholesome pure food, and above all else for cheese, good water. After the milk is drawn in a cleanly manner it requires, of course, good care or it is easily ruined. Pure milk drawn from a cow will not remain pure a great while in a filthy stable, or under any kind of conditions wherein it is liable to the influences of bacteria. I believe in the aeration of milk, and I believe cheesemakers in general are advocating milk aeration of some kind immediately after the milk is drawn. Just how much the milk should be cooled down before it is delivered to the cheese factory, I don’t know, but for butter purposes it should be cooled quickly and effectually. The object in cooling milk is to retard the multiplication of bacteria. I believe the subject of clean cans, etc., has been discussed here already.

Mr. Dewhirst: In connection with what the cheesemaker can do in regard to instructing his patrons, I know that some of the dairy students, who are making cheese, are putting what they learn at Madison into the form of circulars; they have them typewritten, putting the matter into simple language, and they send this out among their patrons. Then there is a circular issued by the Agricultural Department at Washington, which
you can get free, and is called "Fifty Dairy Rules." They are printed on a card, which can be tacked up in the stable where the patron can see it every day. I think you can get a reasonable supply of these from Washington by simply writing to the Secretary of Agriculture and asking for them.

A Member: I do not quite agree with Mr. Everett in regard to aerating milk. I have never received better milk than I did when I ordered my patrons not to aerate the milk, but to cool it and keep it covered up.

Mr. Mason: I think that aeration is a good thing, providing you go further and tell your patrons where to and where not to aerate their milk. I think that the aeration of milk, under proper conditions, will remove the heat of the milk quicker than in any other way, but it must not be aerated in the barnyard or near the pigstye or anywhere, except where good, pure, wholesome air will help the process.

Mr. Alvis: In the summer time, when we have real close air, I don’t know that we can find any place in the neighborhood of our buildings where the air is pure enough to aerate our milk in.

Mr. Wallace: I want to ask Mr. Mason if his patrons do not have trouble keeping the cream down where they do not aerate?

Mr. Mason: I advocate cooling the milk as soon as it is drawn from the cow, and I never heard of any trouble about the cream not dissolving. I believe that the milk as it comes from the cow is just as it should be for making cheese, unless the cow is diseased, so I don’t see what you want to aerate out of it. If you cool it off, you get the heat out, and then cover it up right away.

The Chairman: Can you make a first class cheddar cheese from milk direct from the cow?

Mr. Mason: I don’t see why you can’t.

The Chairman: Have you ever tried it?

Mr. Mason: That is what I am asking, what do you want to aerate out, what is in that milk that you want to get out?

Mr. Clark: When your milk is drawn, say, you get 100 pounds of milk and put it into a can, and that can is set into a tub of water, then you instruct your patrons to stir that until it is cooled down. It is merely the heat that you want to exclude from the milk. Now, does the water draw the heat out
through the can from the center, or does the heat come from
the center to the sides of the can into the water and then out,
or does the water send the heat to the side of the can and then
out? Anyway, what are you doing but exposing the contents of
that can to the air at the time?

Mr. Mason: The air surrounding the buildings on the farm
is not fit to aerate milk in. I don't mean to say if the milk is
perfectly pure that it is damaged by it, but I say that the con-
ditions on the farm are not such that you can advise your patrons
to aerate the milk. Therefore, I always advocate keeping the
milk from the air around the buildings. I believe it makes bet-
ter flavored cheese by not aerating the milk.

Mr. Dewhirst: I do not believe but that outside of the im-
mediate vicinity of the manure piles, the air upon the farms is
pure. Milk comes from the cow practically sterile, if the cow's
udder is clean, but it is contaminated by noxious gases and
odors which are taken into the milk in the barn. If this milk
is taken outside the barn anywhere, where the wind does not
blow from the manure piles, I think there is no question but
that the air going through the milk will expel the odors that
come into the milk in the barn, and thus increase the keeping
qualities of the milk, and so there would be less acidity when it
reached the cheesemaker and he would have better control
over it.

Mr. McKinnon: Would you hold to that old idea that the
milk should be taken direct from the cow and separated as soon
as it could be, or would you advise aerating that milk even for
butter? I am doubtful about its being a good plan to aerate
even for butter. Last year one of our Canadian friends said
on this question of pure air that they had tried it in the barn-
yard, and then they tried it in places remote from the barnyard;
they got off twenty-five or thirty rods from the barn, and they
aerated the milk, and the result of the aeration was that it de-
teriorated it, according to his way of thinking. With us who
have taken care of milk on our plan for the last three or four
years, there is no question in our minds but what that is the
way to take care of it; that is, to cool it just as soon as you can
after it is drawn from the cow, and we cool it for the purpose
of stopping the work of the bacteria, and we hold to the idea
that it is perfectly useless to aerate that milk and mix in more
bacteria. We have been told today by a number of speakers that bacteria are floating in our barns and in the air all around it by the million. Now, should we pour our milk through any kind of an aerator and take up into it thousands more additional germs? If we set it into water and cool it as soon as we can, the bacteria will not work. However, I would emphasize this idea still more, that it is the cooling of the milk that stops the action of the bacteria, and when the milk goes to the factory, if the growth of the bacteria has been retarded, the cheese maker has absolute control over that milk, which he cannot have if the milk has been aerated and not been properly cooled, because the bacteria have got so far started in the milk that when he commences to work in the vat the next morning the bacteria develop altogether too fast for his uses.

Mr. Dewhirst: The gentleman seems to assume that when we aerate we do not need to cool. I had no idea that aeration would take the place of cooling, but that aeration combined with cooling will certainly help the keeping qualities of the milk and enable it to come to the cheese factory in better condition. In regard to the gentleman’s question as to separating, he must remember that the centrifugal separator is a process of aeration in itself. It is subjected to the centrifugal force, and if you will put your hand to the spout of the separator, you will find a very perceptible air coming out,—a strong wind,—so that the centrifugal separating of milk is an aerating as well as a separating process.

Mr. Everett: There is a vast difference in the kind of aerator that you use and the difficulty, no doubt, is to induce a patron to use an aerator that is a good one. The one which I use not only aerates, but it cools at the same time, so that the milk gets the aeration, it runs over a nice cold surface, and leaves the aerator close to 50 degrees, and is then submerged in ice water. That kind of aeration in my judgment is good.

Mr. Mason: That milk would naturally have to be near the well, and the well near the barn, and I don’t care what anybody says, I believe that the farmer who aerates milk around the barnyard will do it more harm than good. You must remember we have from thirty to thirty-five patrons hauling milk to the factory. You might get one who would properly carry out the principles advocated here, but you must take into considera-
tion that people are busy in the summer and they are not going to spend a whole lot of time doing something they believe is nonsense. For that reason, we must take a method that is quick and practical.

Mr. Aderhold: In regard to food flavors in milk, will aeration help that kind of flavor or not?

Mr. Alvis: Aeration will not help any food flavor, or anything of that kind.

Mr. Aderhold: I mean the food that the cows eat, not bacteria.

Mr. Mason: Don't cows eat bacteria?

Mr. Aderhold: Did you ever see them eat one?

Mr. Mason: Well, my friend Aderhold has the best of me. For the last two years, and especially this last year, I have instructed my patrons not to aerate, but to cool instantly after the milk is drawn, and I have had first rate milk. Our patrons have work enough anyway, and we have to get the best milk we can with the least work, and I find that this idea of cooling quickly is about the best way we can get our milk.

Mr. Aderhold: How low do they cool it?

Mr. Mason: I never put a thermometer into anybody's milk, but it seems to me it is about 75.

Mr. Aderhold: I think 75 would be pretty high. Do they mix it any?

Mr. Mason: Yes, they mix it.

Mr. Aderhold: Would it do to cool it without mixing, without any stirring?

Mr. Mason: I prefer to have it stirred a little, because there is danger of the cream rising.

Mr. Dewhirst: And the more you stir it, the better it is for the milk—it is simply more aeration.

Mr. Mason: It isn't so much aeration as when you are running it through an aerator, then the milk is all exposed to the air.

A Member: I have a farmer that brings about two hundred gallons of milk. He puts the can in a big tank of water and puts the cover on as soon as he pours in a pail of milk, and he never opens that can again, he just shakes the can so as to mix up his milk, and that is the best milk we have.

The Chairman: Try it for yourselves, each of you.
Mr. Clark: I am a farmer, and I don’t like to hear anybody say the farmers have not time enough, but must neglect their cows. There is where they should put most of their time. When I hear cheesemakers say that the farmer hasn’t time to attend to his cows, I want that cheesemaker to stop right then and there to convince that farmer that that is where he wants to put his work.

ADDRESS.

E. J. PIGGOTT, CHICAGO, ILL.

Mr. President and Members of the Cheese Makers’ Association:

Your honorable, able and energetic Secretary, Mr. U. S. Baer, has invited me on several occasions to address your meeting and I refused him, and to refuse him further would be unfair and lack the proper encouragement in furtherance of so good a cause for which your association stands.

I speak from a buyer’s standpoint and individually. As intelligent discussions of subjects for which this convention is drawn together by experienced and instructive members, not only as applied to affairs of cheese making, as well as matters pertaining to commercial affairs that must produce good and permanent results; one to grope alone in darkness, as was the case before this association existed, without improving methods, will certainly bring despair and loss to its best friends and bring unsatisfactory results.

Therefore, you are to be congratulated on having so good a set of officers and so good an association, and you must support it loyally, support and encourage its officers to the fullest, and your reward will bring a broad and comprehensive sense of duties and action in your own business affairs. You must move forward and upward; to stand still means to retrograde.

The subjects as set forth in your program invite discussion technically, experimentally and practically.

From a technical standpoint you decide how to perform and