FRIDAY MORNING SESSION.

Meeting called to order at 9 o'clock by President Aderhold and the convention was opened by singing by Messrs. Alder and Streuben, the "Swiss Warblers."

The President: The first topic on our program this morning is the subject "The Up To Date Cheesemaker," by Mr. Robert Johnston, of Ontario. Mr. Johnston is one of the foremost cheesemakers of Ontario and I am sure that what he has to say on this subject will be worth taking home by all of us. I have the pleasure of introducing Mr. Johnston.

THE UP TO DATE CHEESEMAKER.

ROBERT JOHNSTON, Woodstock, Ontario, Canada.

With the A. F. MacLaren Imperial Cheese Company.

Mr. President and Gentlemen: The paper I have prepared on this subject is a very short one, because when I received your program I saw that the papers were all supposed to be short. It is one of vital importance, however, to each and every individual that is in the cheese business in this state. I see before me the faces of young men that will be and now are the cheese and butter makers of your state, and they carry a great responsibility on their shoulders to see that this important industry is carried forward and perfected each and every year. I think my paper per will perhaps give a few suggestions, which if they carry them out will be beneficial to them. The trouble we find with the boys in our country is that they often get good instructions but fail to carry them out afterwards. Our dairy school gives a thorough training to our boys and if they live up to that
training they get there, with the experience that they have in our cheese factories, they ought to make good operators.

The state of Wisconsin, occupying as she does the leading position as the producers of the largest quantity of the finest cheese of any state in the Union, it behooves her to see that the men that have charge of this important industry are men that will be satisfied with nothing short of perfection. I do not know of any other industry where there is so much depending on the skill of the manufacturer where we find so many unskilled workmen. A boy starts in to learn the business and works one or two years at the longest. He then engages to operate a factory posing as a skilled workman, and eight times out of ten he does not know the first principles of making cheese. But competition is keen and the factory owner is always looking for a cheap man and he gets him only to find out that he has engaged a dear man, by the time he has paid for the losses on his poorly manufactured cheese.

The men that should be in charge of your factories should be men of brains, education and industry. I will try to outline what I consider an up-to-date cheesemaker. He should be a man of education, the better to enable him to solve the different problems which confront him in his daily work, as the cheesemaker who does not use his brains as well as his hands will never make a successful man.

He should understand the making of cheese from A to Z. He should have served at least three years' apprenticeship under a first class maker. He should have taken the dairy course in one of your first class dairy schools and practiced every day the principles taught at the school of thoroughness in all the details of his work. He should make himself an expert judge of milk and have backbone enough to refuse milk that will not make finest cheese. He should make a study of all the conditions that would in any way affect the milk supply in the district in which he is located.

He should be cleanly in his habits as well as in his person, be neat and tidy in appearance, of good address, courteous in manner; have plenty of tact, a judge of men. He should be conversant with all the different breeds of dairy cattle, and able to talk intelligently on all subjects pertaining to dairying. He should be able to act quickly; promptness often saves a batch of cheese from becoming culls. He should be a man of sterling integrity that will command the respect of
each of his patrons; should be able to judge cheese so that he will know if there is anything wrong with the output of his factory. He should keep a daily record of the working of every vat of milk, so that he can trace any flavors or defects in the milk and be able to detect their effect on the cheese. He should keep the surroundings of his factory neat and tidy, so that it will be one of the beauty spots of the locality, so that his patrons will feel that a man that makes fine cheese and keeps his factory and surroundings in such condition is the man to operate their factory. Also that he is a good man to advise and talk over matters pertaining to their business, and a man that fills the requirements laid down here will command his own price for manufacturing.

In conclusion would say that every manufacturer of cheese should endeavor to make a finer article of cheese than his neighbor, and at the same time if he is a better man to help his brother cheesemaker with his advice, so that he will be able to place a finer article on the market. For in my experience it is not the finest cheese that rules the market, but the poorer grades that the buyer secured at a reduced price and is able to sell in many cases at a better profit to himself. The cheesemaker that has not the ambition to stand at the head of his profession is not nor ever will be an up-to-date cheesemaker.

I might add I have had experience as a cheesemaker and a cheese buyer, and in your local trade, which you cater to here, only the better grades of cheese made get the market price and therefore it behooves the cheesemakers of this state to make nothing but a fine article so as to get the highest price. When you put a poor article on the market it goes into consumption and if a buyer can buy that cheese for one cent less he can get a half cent profit while with high priced goods he would not get over a quarter cent, so the inferior article is put on the market and takes the place of the finest cheese.

I will say also, in conclusion, I will be leaving today and I have spent a very enjoyable time with you, Mr. President, and I am glad to see such a large audience. I will go home to our boys and tell them what you are doing in this great state of Wisconsin and the great interest taken in the convention by the boys of the state. I can say truthfully that you boys take more interest in your convention than our boys do when it comes to the last day, for generally they do not wait
for that and at the last session we have a small audience, but up to that time we usually have a very full house.

DISCUSSION.

The President: This question is open for discussion.

Mr. Kasper: I would like to ask you, Mr. Johnston, how much acid you run in the whey in your curd with the hot iron test—

Mr. Johnston: From one eighth to a quarter of an inch with the hot iron test, but it depends on the man that is drawing the curd from the iron a good deal on what he calls \( \frac{1}{8} \) or \( \frac{1}{4} \). Some men take a bit of curd and spin it out \( \frac{1}{8} \) or \( \frac{1}{4} \), and another man that same curd and spin it out \( \frac{1}{2} \), so there is no regular point to go by. A man wants to know he gets his curd out of the whey in time. When I first started to make cheese, a good many years ago, we used to get a good deal of acid, from one half to three quarters of an inch. Even up to late years the boys thought they could not get along without getting lots of acid in the curd. In one district where we used to get the poorest cheese made in Canada, when we put inspectors on the road they said he had all kinds of trouble and claimed he could not make cheese in that district without lots of acid in the whey. After three years they found they could, and now we get as fine cheese from that district as anywhere, but it is an exploded idea that you cannot make fine cheese unless you get lots of acid. I find if you cook the curd thoroughly (that is the main thing, cooking the curd you can get along with very little acid in the whey.

Mr. Zumkehr: I would like to ask what is the difference in wages between an up to date, first class cheesemaker and an ordinary one in Canada.

Mr. Johnston: The difference in our country is from nothing up to $1500.00. Our best cheesemakers get $1500 over there. Of course we operate large factories, where 40,000 lbs. of milk a day are taken in. Then I have seen our poorest cheesemakers come from a factory in the fall worse off than nothing. We have to be responsible for our goods over there, when a man takes a factory he is responsible for everything. We have no mercy on him either, both the cheese buyers and
inspectors put him out of business if he does not understand his business; but our average wages for our boys that know the business have increased a good deal. Our boys while learning get from $30 to $40 a month. Those are second hands and they are pretty hard to get; you offer good wages and they come to this country, and I do not blame them. You are getting some of our best makers here. One of our best makers, a young man, came over and got a fair salary. I asked him if he was sorry he had left and he said, "No, I am making more money here than I would at home." It is hard for a man over there to climb up; he has to have a national reputation to get into one of our large factories over there, but when they do get in they do not "kick" about the price.

Mr. Schwingel: I want to ask Mr. Johnston if he uses an acidimeter and what per cent of acidity he develops in the milk before setting?

Mr. Johnston: The acidimeter is used and they do in some cases run as high as .2 of 1% but in that case the fellow gets into trouble; but from .16 to .19% is the amount of acidity they use when they set their milk. It does not increase very much at the time of drawing the whey.

Prof. Farrington: Who makes the standard alkali solution?

Mr. Johnston: We do not allow anybody to make our alkali solution. One druggist in each district supplies that district with solution, and we all know it is right.

Prof. Farrington: I think one cheesemaker came over and told us any cheesemaker could make it.

Mr. Luchsingler: Is there any difference in the price of American and Canadian cheese in the English market, and if so, how much?

Mr. Johnston: There is. In quoting American cheese we have to quote it lower. I sent a consignment of 550 boxes there last year. I could not get a price on them and knew they were fancy cheese. They sold for 67 shillings while the finest Canadian cheese was not bringing over 68 shillings. I shipped 3500 boxes of cheese out of this state this year to the old country and they are very satisfactory. The trouble is when your prices went up your freight rates are so high I could not handle them. I shipped 500 boxes of Twins to Belfast and Dublin and they no sooner arrived than they sold at a handsome profit, but your freight rates are a quarter of a
cent a pound and one quarter of a cent is generally our profit.

Mr. Kasper: Do you use the same temperature for setting the milk throughout the year? We use the same temperature all the time for setting.

Mr. Johnston: No, I did not say we did. 86 is the regular temperature during the hot weather. In the fall it is 88 and 90 sometimes, depending on the makers' judgment. A man has to use a good deal of judgment in making cheese. He is working under different conditions every day. Each locality has its different conditions and you cannot put down any hard and fast rules for making cheese. A man that works by rule is out of business before long, but we never cook our curd over 102.

The President: Are there any more questions on this subject. Prof. Turneaure is here and is anxious to get away on an early train, so we will put him on at this time. Prof. Turneaure of Madison, will address you on Sewage Disposal.

SEWAGE DISPOSAL.

PROFESSOR F. E. TURNEAURE Madison, Wis.

Dean of College of Mechanics and Engineering.

Mr. President and Gentlemen of the Wisconsin Cheese Makers' Association.

I am not very much of a cheesemaker but have had a little to do with the disposal of sewage as it relates to cities and towns and the problem is not so greatly different in the case of cheese factories and butter factories, so perhaps I can say a little that may be of assistance to you.

A good many have doubtless found that after a factory has been in operation some years the waste waters are apt to cause trouble unless the factory is located near a stream of considerable size and the waste can be thoroughly dissolved and run off with the waters in the spring. The subject of proper dis-