

have been told that it is necessary for the corn to be heated up enough to kill the germs. This is a mistake, the heat is not necessary for the preservation of the fodder; warmth is an accompaniment of fermentation; the beneficial effect of the germs is, that they use up the air in the ensilage and thus prevent further decay. If it were possible to exclude the air, heat would be unnecessary, and the ensilage would be sweeter, for heat and fermentation produce acid and cause a loss of value in corn fodder. That heat is unnecessary was shown by a very fair sample of corn silage produced, which had been sealed up in a glass vessel three years ago, and had never been allowed to heat. At the close he made the following suggestions, which would tend to keep out air, thus reducing heat and fermentation, and therefore causing less loss of feed:—"Allow the corn to come nearer to maturity, cut up finer, so that it will pack closer, have silos as nearly air-tight as possible."

Several other speakers addressed the meeting. We hope to be able to publish these papers later on.

#### The Requirements of Our Home Trade.

[Read by Mr. Moyer at Creameries Convention, Harriston.]

In dealing with this subject I scarcely know where to begin, for it includes almost everything in connection with dairying. What is wanted for our home trade is a well-made, sweet, rich flavored butter, and the one who succeeds in making a butter to suit the home demand is all right to make butter for any part of the world. It is like the good old advice, "Take care of the cents and the dollars will take care of themselves." Take care of the home trade and the foreign trade will take care of itself. Year after year we hold this Convention, Farmers' Institutes are held all over the country, the Traveling Dairy is in operation, all to proclaim the old story—that our butter is bad. While we admit this, we should not lose sight of the fact, that our work is done in other lines of labor as well as in butter-making.

It may look very discouraging when I say that I do not believe that one farmer out of every ten makes good butter; but how does that compare with men in mercantile life, where only one in every twenty succeeds? It is only a very small proportion in all trades and professions that are up to the highest standard attainable, and why should we expect better things from the butter-makers? It has been said by one who knew what he was talking about, "that a man must learn a great deal before he finds out how little he knows."

The cry all over the world now is quality—better quality in everything, and improvement in all things is necessary. The time was when quantity, more quantity was demanded, and quantity was what swelled the pocket. This great demand for quantity has brought forth machinery, through which one man produces as much in quantity as ten did years ago, and the consequence is, that we have supplied that demand to excess, and now the demand is for better quality.

Now, if this is the case, and I believe you all agree with me that it is, what machinery can we bring into operation, or what system can we adopt, that will enable the farmer to produce the quality demanded? I think there are some in this audience who heard me say ten or twelve years ago, that the time will come when the churn will be as little used in a farm house as the spinning-wheel, and with them will be honored, for valuable services rendered, by giving them a corner in the garret for spiders to operate on. This prophecy has not yet been fulfilled, but it is sure to be.

To produce a better quality, this is essentially necessary. As I said before, improvement is the watchword in all things, and to do better work we must expect to do less. Where the most perfect work is done is where one man does only a small part of the whole. For instance, what sort of a reaping machine would you expect when one man made the whole? Take the tailoring business for instance—where the best clothes are made, the cutter may not know how to thread a needle, but he gives his whole time and attention to that particular part of the work, and success follows. Much has been said by dairymen about the general purpose cow. The idea of farmers a few years ago was to combine a milk and beef cow in one animal. It has, however, been proven that a cow must either be one or the other, or she is nothing. Now, I believe that the same rule holds good with men and women. A general purpose man or woman is not a success. He or she has only time to do certain parts of a whole, if he or she expects to do it as well as the requirements demand.

The time was when a farmer boasted of the number of acres he had under cultivation; now it is more how many bushels he can raise to the acre. Time was when the farmer talked about the quantity of butter he made, but the time is at hand when he will talk of the quantity of butter fat he produced, and of its high quality. His great aim and study will be to get cows that will pay to feed, and how to feed them to the best possible advantage, and how to handle the milk so as to attain to the highest possible standard as material to produce the finest kind of butter. Without having to give attention to all the details of dairying, he can learn to understand this part to perfection, and the creamery will shoulder what comes after this. By cutting up in parts and systematizing the whole work, we can expect to accomplish the highest possible results, and obtain the highest place in the world as a butter-producing country.

Having already shown that we, with our common failings, are all on the same level, and as such we need the help of each other, sympathy and confi-

dence in the universal brotherhood are essential features to success in all lines of industry, and particularly so in dairying. I have no room for a man that tries to be a farmer, dairyman, merchant, exporter, importer and a railroad. With the speed we are moving in now, the farmer cannot afford to drive forty or fifty miles with his wheat to market, but he takes it to the nearest mill, or station, where the railway takes it off his hands. This convenience is now acknowledged and admired by the farmer, but the speed is constantly increasing; instead of steam we have now electricity, and the farmer has to still cut his trips shorter, so that he can more properly attend to the duties which lie nearest his door, and in which his pocket is most interested.

I know that a great deal is said of middlemen, how they take a profit to which the farmer is entitled, and how the farmer is robbed through them. I believe that there is reason for this kind of talk, but if my idea of doing only a part of any work in order to produce the best results is correct, then they are a class of men as necessary to the system as every link in a chain, and if necessary, then they deserve your confidence and generous treatment.

I have no interest in saying a word in favor of middlemen, but when I am asked to give a paper before a meeting of this kind on this much-out-of-shape butter question, I must state where in my long experience I found the greatest difficulty. Want of confidence in each other, and want of co-operation for the general as well as individual good, are the greatest hindrances to success. This obstacle was so monstrous that it was beyond the strength and power of man to remove it, and so a little machine steps in as judge and says, "Your milk or cream contains so much butter fat and no more." This stern ruler would not admit of any argument, and all submitted, and the greatest obstacle is removed. I hope some one would invent a machine that would show the exact value of each parcel of butter as it is offered for sale.

And as long as butter is made by farmers, and bought without this needful machine, it will be as unsatisfactory as buying cream without the tester; and as this is not likely to be invented, I have no hopes to offer for the butter industry, except it is carried on in the co-operative creamery system. But as this may still take years, and the principal part the farmer has then to take is in the care of milk, and as that part is also an important factor in making butter for the home market, I will now confine myself to that part of dairy work. I am more than ever convinced that the principal reason that so much of your winter butter is not good is the want of proper care of the milk and cream before it reaches the churn. If this part is neglected, the best maker cannot make good butter. Very few farmers have the facilities necessary to produce cream to make good butter. I think I have already said that the time is past for a general purpose cow, and a general purpose man or woman, and I will now venture to say that the general purpose stove and kitchen must be dispensed with. No milk or cream can be brought to the necessary temperature for ripening by the same stove and in the same kitchen where the cooking, baking, washing, etc., is done. I will give you an instance. We have a patron who for a long time sent us very good butter. One week it came far below its usual quality. The flavor was wretched. On inquiry we found that one in the family was ill, which necessitated a sort of herbs to be constantly kept on the stove to be applied to the patient. The smell of this was absorbed by the butter. This is an extreme case, but we have more or less of this all the time. We scarcely ever find the same flavor in butter made by the same person at different times, and this in most cases is due to what has been done by this general purpose stove and kitchen, and perhaps the old man and his tobacco pipe. What can be done? Will it pay the farmer to have a special room and keep it warm for his cream? For the small quantity that is made by a great many this would not pay.

Years ago, when I introduced the Cooley milk cans, I strongly urged the importance of setting milk under water—that is, completely covered over with water. At that time, having had an interest in the patent, I was suspected of selfishness, and even such men as Prof. Brown and others took strong grounds against me. To-day, sirs, I have no interest in the said patent, but I believe if we had continued to practise that system our butter would be 50 per cent. better than it is to-day. Knowing that a great many, in fact nearly all the farmers, were not supplied with a proper place to keep their milk and cream, I saw the great importance of this being done. If the farmers would now keep their milk and cream submerged in water, and in that way exclude the impure and offensive odors, I believe that they could make a butter of a natural and pleasant flavor, instead of it being loaded with the odors from cooking, smoking, etc.

One other matter I wish to speak about, and then I have done. I think scarcely enough has been said and is said about the importance of cleanliness in milking. Through the long years when the cow was looked upon as a necessary evil, and a bill of expense, farmers grew into the habit of shamefully neglecting her. A man would be considered almost a criminal if he did not clean his horses; but the same man expects his wife to milk the cows literally covered with filth. It is impossible to get the milk from such a cow in a fit condition for human food of any kind. Cows should be cleaned every day, or, better still, every time before they are milked, and if the farmer has not time to clean both horses and cows, let the horses go and clean the cows.

#### Economy in Production of Milk.

[A paper read before the last meeting of the Ontario Creamery Association by John Sprague.]

Economy, the subject of my address, to stand off and look at it, seems to be worn out when we consider the length of time it has been in use, and the large numbers of people that use it. Economy, like many other things, has two sides. That is the reason it wears so well, to use a common expression. We have what we call good economy—that is one side of it, and we also have what is termed poor economy—that is the other side. We all use economy of some kind, poor or good, in our business and farm management. We recommend it to others, and to preach economy to others is as easy as it is to find fault with other people's management, and to ask questions that we ourselves cannot answer. It is much easier for us to recommend economy to others than it is to practise it ourselves. The man that talks economy to his wife and family is not always the man that makes use of this commodity. Webster says economy is internal arrangement, system, disposal, and a judicious management of money concerns. Economy avoids all waste and extravagance, and applies money or worth to the very best advantage. Economy is virtue. I say that if good economy is virtue, poor economy must of necessity be a vice. To illustrate, to compare, to contrast, we will talk along this line. The farmer that is so economical that he can't afford to take a dairy, a county or a city paper, or let me say all three of them, is using poor economy. The dairyman that can't afford to spend time and money to improve the quality and breed of his cows, and in securing the best utensils for his business, is also using poor economy. Again, the dairyman that sells his hay and grain in the city or other markets, is feeding his cows on straw, is using the very poorest kind of economy. Milk produced from straw of any kind is too dear, it costs too much, it's too dear at any price for feeding the dairy cow. I need not speak of the many kinds of straw that we grow on our farms, and I think it is not necessary that we should discuss its value as food for the dairy cow. Straw, I think, has ruined the reputation, and broken the heart of many an honest dairy cow. The man that selects his cows by guess, that feeds and milks by guess, that runs his dairy on the plan of let the tail go with the hide—he is using poor economy, he is sure not to make money. It is not my intention to lay down a cut and dried rule as to what breed or kind of cows a man should select. It is not my purpose to fix a ration for other people's cows. Milk to the dairyman is money, it is money's worth, it costs money, it also brings money, it is an article of value. The difference between cost of production and the amount realized from the sale of it is the farmer's profit or loss. The farmer that is producing milk at the cost of one dollar per hundred pounds, and is only getting eighty cents per hundred pounds, is practising poor economy, he is losing money. Having said this much on poor economy, we will now talk on the line of good economy in the production of milk. The central thought and aim of every dairyman to-day should be how he can produce the largest amount of good milk at the very lowest possible cost. Next, that he produce the milk at seasons in the year when it is worth the most money. To begin with the cost of production of milk. You, as farmers, all know that the cost of milk is caused by the many different surroundings:—The cost of land, the cost of cows, and last but not least, the cost of feed. Let me say here, that I do not know of any fixed rule or law that will apply to all sections of this Province, regarding breed of cows or kinds of feed, alike. Allowing this to be so, I claim that there are certain fixed methods and laws that apply to the good management of all our dairy farms the same.

I do think that it is a fixed fact that corn is our cheapest and best feed; cornmeal, corn fodder and corn ensilage. Corn ensilage for quantity and for cheapness. By the judicious use of ensilage in connection with our other feeds, we can obtain large quantities of milk, and are enabled to continue our dairies the whole year.

You all will, I think, agree with me in one thing, that is, that it is time that the summer dairy was a thing of the past, so to speak, and further agree that the time has come when we should give winter dairying a good share of our attention.

It is possible to produce milk in autumn and winter as cheap as at any other season of the year, and it is also possible to get larger cash returns for it.

Judging by the past, I must be correct. Taking ten years, 1878 to 1887, as a basis of calculation, we find that the price got for milk for the months of May, June, July and August, for the ten years named, was under sixty-four cents per hundred pounds to the farmer. We find that the average price got for milk for the months of September and October for these same years was eighty-seven cents net per hundred pounds to the farmer.

Comment or argument on this matter to me seems out of place and uncalled for.

The dairyman that builds himself a good silo, selects with care good cows, grows his own feed and plenty of it, runs his dairy the whole year round, that uses diligence and good economy in all his labor, I will liken him to the man that built his house upon a rock, and the hard times came and the McKinley Bill got in its work; barley got cheap, and the horse became a burden; the shiftless farmer got poor, but this man, he prospered.