plying the steam, which should be done very slowly at first, increasing the steam as the curd gets firmer till you have reached the required temperature in about thirty minutes, which is generally about 98o in the spring to 100o or even 102o in the fall, according to the richness of the milk and the difficulty you have in firming the curd. In some localities, it is necessary to cook even higher than that. After heating, stir briskly for five minutes with a small hand rake, then run off about half the whey, and keep stirring almost continuously so as to firm the curd well before it takes on acid. At the very first show of acid, run off the whey to the surface of the curd and keep stirring till the curd is firm and dry enough. In three hours time, from putting in the rennet, it should be ready to run off whey with ⅛ inch acid, in May, to ¼ inch in the fall, according to season and richness of milk or even more than that in some localities. Keep constantly stirring curd, as the whey is running off, till it is firm and dry enough, which may be told by chewing it. It should squeak well between the teeth, and, on squeezing in the hand, it should all fall apart on opening the hand. It is very important never to allow the curd to mat or go together from the time of cutting till you are ready to block or pile up, so as to cook and firm evenly, otherwise the cheese will be uneven in color and body, being whiter and softer wherever there was a lump: for once matted, it is impossible to get it to dry evenly.

When firm enough, pile up the curd on both sides of the vat; in about half an hour, or as soon as the curd hangs well together, cut and turn over, then every 15 or 20 minutes turn over, piling higher and higher, each time, till three or four blocks high, then cut in two again and turn all cold ends inside so as to warm and have it all mature and break down evenly, taking care to keep up temperature of curd to not lower than 96o till about half an hour before grinding. Then, allow it to cool to about 92 or 94 at grinding which should be in three or four hours from blocking or longer if necessary to kill gas or till all pin holes have disappeared; grind when the curd has that nice soft silky feeling, and you can split it from end to end without breaking. In about an hour from grinding or as soon as the white whey begins to show at the bottom of the vat, salt at a temperature of about 90o in spring and fall and 88o in summer at the rate of two pounds of salt to 1000 lbs milk, in May, gradually increasing the quantity as the season advances to 3½ lbs in November, stir well to thoroughly mix in the salt, then pile up high in one side of the vat and stir or turn over the curd every five minutes for 20 minutes to thoroughly melt the salt and allow the curd to mellow down and take on that soft and silky feeling again: hoop at a temperature of 88o in the spring and fall and 85o in the summer, pressing very quietly at first and often and tighter and tighter till in an hour to an hour and a half, when the cheeses should be ready to turn in the press being careful to dress them off very neatly with bandaging lapping over about an inch, putting on good new cap cloths. Use plenty of clean hot water to make cloths stick well and to rinse your followers and outside cloths at each time you take them off a cheese. Thus you will always keep them clean and sweet, for a sour follower or cap-cloth will make your cheese crack and get rough at the ends. Press often and as tight as possible before retiring for the night, then again in the morning, and all day, leaving in the press just as late as possible. It would be better to leave in press two days, then put in a good maturing room with temperature as near 70o or 72o as possible. In hot weather, sprinkle the floor often with cold water to keep the room as moist and cool as possible. Turn the cheese over every day, rubbing well to keep from moulding, till shipping, which should never be in less than 10 or 12 days from taking out of the press. Be very careful in weighing, giving good heavy up weight. Use good strong well made boxes, trim boxes level with the cheese, and brand the weights, always in a clean legible manner at the lap of the box. Every factory should have a brand of its own and always use it; then, if you make a good cheese, consumers will like it and know where to look for another of the same make.

"No name attached." (1)

Class Essay Section 1 No. 362.

BUTTER MAKING.

The stable — Cleanliness — Cream — Ripening.

Any dairyman can make butter, but very few can make it of the finest quality. To do so the greatest care must be given to all the details; good, healthy cows must be kept, to whom food that will not taint the butter and pure water must be given.

The stable, in which the milking is done, should be white washed and frequently cleansed by a free sprinkling lime. Great care should be taken in milking that no impurities from the hands or the udder get into the milk. The milk should be strained immediately after milking, and when carried to the creamery strained again. The deep setting system I consider the best. Let the milk stand twelve hours in summer and twenty four in winter. Keep the cream in a large covered can with the cover put on loosely, and every time fresh cream is added stir the whole thoroughly with a stick that will search to the bottom of the can. Be sure to wash the stick every time after stirring, that it may be clean and ready for use. The cream should be kept in a temperature of 60o, in which if there is milk from thirty cows it will take three days to ripen or look like the butter: it is then ready to be churned. In summer the temperature should be 60o in winter 65o. When the butter has come like very small peas it should be rinsed down, the buttermilk drawn off, a pailful of cold water thrown in and drawn off, then several pailfuls of water and a handful of salt should be added. After allowing to stand a few minutes the butter must be taken up, put on a butter board, and the finest dairy salt sprinkled over it. I use "Windsor" from the Toronto Salt Works. Then work the butter till you think the grain is right. At this point practice is the only guide The careful observance of these instructions will always insure the highest price for the butter.

Mrs MARVIN BARK,
Bowmanville,
Ontario.

From the essays sent in. Exhibition 1895.

(1) But one of the best written of the 32 essays sent in for competition.—Ed.

CO-OPERATIVE BUTTER MAKING.

Cleanliness—Care of cows—Water and ice—The Babcock—Milk—Sterilising—Ripening cream—Churning—Making up—Colour.

From the essays sent in: Exhibition 1895.

Very little change has been made in the actual process of butter-making since the days of our great grandmothers. The great and wonderful change has been in the invention of instruments and machinery which reduce the process to almost an exact science; instead of groping in the dark and ascribing every want of success to witchcraft or to an evil eye, the dairy industry of the Dominion has been wonderfully stimulated and advanced by the enlightened policy of the Government, through the influence of dairy schools, model farms, dairy conventions, etc., while the volumes written by experts on scientific dairying and dairying for profit have all helped to advance the good work, in leading as they do to the only way (as a rule) that dairying can be made successful and profitable viz: by combination and co-operation

This principle is past questioning so far as the making of cheese is concerned, and if butter is to be an article of export, the sooner we make up our minds to adopt the same principle, the better.

Good butter can be, and is made in private dairies, as is also good cheese, but, it is impossible to get the uniformity necessary to sustain a reputation in a foreign market, otherwise than on the above mentioned lines. In so short a paper it will only be possible to give the merest outline of the essentials in successful co-operative butter-making. Were I to name a single word in the English language, which would express the most important factors I should say: cleanliness.

The first requisite for the making of fine butter is good clean sweet milk. To obtain this, the cows must be clean and healthy, fed on clean sweet herbage, with abundance of clean cold water to drink, housed in clean stables, with clean sweet bedding in their stalls, milked with clean hands into bright clean tin pails, aerated and strained into clean cans that have been thoroughly scalded, moved as soon as possible into a clean milk house away from any offensive odours, and, where practicable, set in clean cold running water. When all this has been well done, the patron is in a position to furnish one of nature's finest products in its best form to make into fine butter in a clean creamery.

One great essential in a creamery is a bountiful supply of pure cold water, at about 45o Fahr. In summer, preferably by gravitation another is thorough drainage to enable the butter-maker to keep his premises clean and sweet.

Every facility must be furnished to hold and care for all the bye-products, having them used or removed as soon as possible, so as to cause no bad odours around the premises. A liberal supply of ice of the best quality obtainable, is an indispensable requisite. Given, then, good clean sweet milk, a clean creamery, with all the necessary plant, instruments and utensils, the next requirement is a good butter-maker; presumably one who understands the running and care of machinery and the ordinary routine of a good factory; but, unless he is scrupulously clean in his person and habits, and has a natural horror of dirt, he will fail in producing that delicate delicious article, which every one likes and is willing to pay for viz: fine butter. The routine of butter-making in well equipped factories, differs very little; the experience of several years leads me to offer the following on some of the points, which not only secures the making of fine butter, but the satisfaction of the patrons and also the success of all who co-operate in the enterprise.

On receiving milk, care should be taken to see that the scales are properly adjusted to the weigh can; justice requires that every patron should get credit for every pound of milk he brings; no temptation to make a big record should lead a man to take what is sometimes called "good weight."

On no account should a butter-maker receive milk which is not in a condition to do justice to the rest of the the patrons, or which will endanger the quality of the product, or his own good name; farmers with tact and prudence will soon lead to improvement which is really the best interest of all. No creamery should try to run on the "pooling plan"; every patron should get what belongs to him, no more, no less. The Babcock test, fairly used, will give even handed justice, and in course of time perfect satisfaction. Three years experience in the constant use of the Babcock test, summer and winter, has proved that fresh samples and composite samples do not materially differ in general results; whether fresh or composite, the samples ought to be taken in a uniform manner and so as to secure a fair sample of the milk.

It is well to court the fullest publicity in the testing of patrons' milk, no better educator can be found, and as its justice and correctness is realized there will be a marked improvement in the quantity per cow, and in the care of the milk. Every drop of sulphuric acid used in testing should be carefully saved in a glass or stone jar with closed cover; when the fat is skimmed from it, a teacup-full in a pail of water applied with a brush on the wood-work and floors will be found one of the best disinfectants and will banish the flies.

In creameries, where there are no facilities for sterilizing the skim milk, the separating should be done in summer at the lowest possible temperature consistent with clean skimming, say from 72o to 80o Fahr., so as to return the skimmed milk in the best possible condition for calves and pigs.

It would be found that, in skimming milk which contains from three and a half to four per cent of butter fat, at a low temperature, a smooth cream of about 15 p. c., will give the best results; besides, it is much easier to temper and ripen than if taken thinner at a higher temperature.

Every care must be taken in handling the cream that it shall be just right within twenty-four hours. General rules can not be definitely applied here, judgment and experience are necessary, but, with plenty of cold water and ice, careful attention and manipulation, getting the cream down to about 62o Fahr, holding it there until it gets that fine velvety condition with just the tartness of ripe, delicious fruit so relished by all who have a keen sense of taste. It will then be easy to cool down during the night to the desired temperature for churning.

Never use ice in the cream when it can possibly be avoided, the best of it contains impurities.