



The Dairy.

Science in the Dairy.

If there is one thing more than another from which the public suffer, it is from want of science in the dairy. It is now about the only trade or business into which science does not seem to have penetrated. Where one person makes good butter or cheese, hundreds manufacture the most atrocious stuff which goes to market as those articles. There is not the owner of a breakfast or tea-table in any city in Canada, who might not be called as a witness to this fact, and we are sure the public will agree with us, that where one pound of good butter is offered for disposal, there are a hundred separate pounds of bad, and yet all have the same article to work on. All milk when newly drawn from the udder of the cow is good, provided the cow is in health, and has been only decently fed, and when the cow's health fails the milk ceases, or the quality is so bad that even the most depraved will not pretend to use it for human food. Having, therefore, a good raw material to work upon, all the mischief must occur after its production, and it is in the subsequent process that the want of science is felt.

As the milk leaves the cow it is pure. It may be better adapted for cheese than butter, and vice versa, and here the first step in science is required. We ought to be able to determine its quality as for cheese or butter by some instrument in the nature of a Hydrometer. Who has not seen good butter produced from the most unpromising management, and on the other hand who has not seen the result of the best and most expensive dairy management end in the most lamentable failure? Now, it is the business of science to ascertain why one person makes a good article of manufacture, and another equally well situated makes a bad one,—the first eliminates or carries out some principle unknown to the other, and the object of scientific research is to ascertain the why and the wherefore, and to record the cause of both success and failure, in order that others may attain the one and avoid the other.

A step in the right direction has been made in the neighbouring Republic by the establishment of cheese factories. In these establishments they collect the milk from a whole district, taking it from the best, and worst producers, but making it into a good merchantable article, and which must be above the average quality, or the demand for it would cease. We have in this instance all theories as to food, pasture, breed of cattle, scrupulous cleanliness, &c., &c., set aside,—the milk is collected from hundreds of cows, differently fed, and differently managed, and yet the produce is nearly if not quite alike.

Butter is no doubt a more delicate affair,—the naturally strong flavour of cheese absorbs and overwhelms more delicate flavours, and it is in the delicate flavour of butter that its goodness consists, but nevertheless we know that much of our very best butter is made where the owners of the cows are poor. Where the cows are fed by the roadside, and on any elaps available; where the milk-house often consists of a mere hole in the ground under the floor of a dirty cottage, where the milk pail is the first article that comes to hand, and the pans and churn are make-shifts,—also, where if extreme cleanliness is used in the butter it is the only cleanliness that is used about the premises, and where suspicion is most

strongly against such being the fact. Then, again, even amongst the best makers, they very seldom make it all alike; one week it will be good, the next less so, and sometimes the failure is as palpable amongst these persons as amongst others. There are about as many recipes for making good butter as there are cures for the tooth-ache; every one has his own peculiar ideas and notions, but no one knows for certain, the cause of either success or failure.

The nearest approach to certainty in butter-making is the scalding system, but in this we sacrifice the fine summer flavour for the purpose of avoiding the thousand and one bad flavours which at times horrify us at our breakfast and tea-tables. It is, however, certain, that in winter a first-class article can be attained by this system, and at a very moderate degree of trouble.

If any person, who is a good manufacturing chemist, would take this question in hand, the best results might be hoped for, and success would be indeed a blessing to mankind.

As our readers may not be well acquainted with the scalding system of butter-making, we shall now proceed to describe it,—premising that it cannot be depended upon during our hot Canadian summers, nor with grass fed cows, unless some grain feed is given to the animals with each meal; but for winter, and stall-fed cows, if the directions are faithfully carried out success is certain. Even distillery slop-fed cows yield a most excellent quality of scald-cream butter.

The milk should be set for cream for 24 hours, in a place where the thermometer varies from 55 to 60 degrees. It should not be too deep in the pans. Two inches is quite sufficient to produce the greatest result. The cows must be well fed, no straw feeding will answer. Plenty of roots, good slop, and good hay, or chopped straw and one-third hay must be the feed. Pea meal makes excellent slop and a large quantity of excellent butter, but ground oats, shorts and bran (not bran without shorts), or any other rich fattening food will do, but the better the food the larger the yield of butter will be.

When the pans have stood for 24 hours, remove them to the kitchen stove, heat them slowly until the heat arrives at 180 degrees by the thermometer, (Fahrenheit scale,) or if you have no thermometer, until the peculiar smell of boiled milk appears, then take them off the fire and set them in their original position, there to remain for 24 hours more (twelve hours will, however, often answer the purpose). Then take off the cream with the least possible amount of milk, and set it by for churning—it is ready for churning at once. It will keep for two or three days, but not longer.

For churning place the cream in a large wooden bowl, and stir with the hand for about ten minutes. The whole of the cream will become almost solid and finally turn into firm and fine-flavoured butter. It can then be worked, washed and salted in the usual manner, and you will find that you have a most excellent article. The butter will be pale in colour, particularly if the cow has not lately calved. To meet this you can put a small quantity of annatto, properly liquified with skim milk, into the cream before churning, or what is much better, and gives a fine grassy flavour, grate an orange carrot fine, put it in muslin or some such fabric, and work and squeeze it about in a very small quantity of skimmed milk until all the colour is extracted, then add the coloured milk to the cream before churning, and proceed as before. This gives not only flavour, but a colour equal to the best grass-fed butter. Butter made in this manner would be certain to realize in our cities, throughout the winter season, from 20 to 25 cents per pound; it always has done so even when the best tub butter could be had at from 12½ to 15 cents per pound.

Bear in mind, however, that the foregoing instructions must be strictly followed. If you do not make the milk hot enough the butter will be strong and

blitter, and will not keep. If you make it too hot you lose in quantity, and the butter will be full of little white particles which injure its appearance.

Now, here we have two facts, first, that cheese factories succeed with mixed milk obtained from a hundred sources; secondly, that certainty of flavour and quality can be obtained in winter butter by scalding, and that end is attained without reference to any special feed. Let all interested in the matter turn their attention to summer butter, and we venture to predict that success will crown their efforts; and if they will report the results of their labour to THE CANADA FARMER, some of our scientific readers will be able to collate the facts and put the matter on a correct basis. It is a business that can never be overdone, and therefore none need hesitate in making their experience known. Good butter will always bear a good price, and the more there is of it the greater the consumption will be. We are assured by persons who have been very successful with scald cream butter that it will keep as fresh butter for many weeks without getting rancid, and in fact very much longer than the best summer made fresh butter will keep. Try it.

Butter-making not a Mystery.

THE New England Farmer has a communication from a correspondent, with the above heading, most of which we transfer to our columns:—

“How do you make such nice sweet butter in winter?” is a question often asked by my customers, as I carry them their usual allowance of fresh butter for the week. Sometimes I answer, ‘I will tell you when you go to farming.’ For me, it seems a very simple thing to make butter that is good and uniform through the whole year. But, were it simple to all, butter would hardly command the present high prices. In reply to the question, ‘How to make good butter in winter?’ I would say, make it just as it should be made in summer. Yet as you may not think that a very definite explanation of the process, I will tell you how good butter can be made in summer. There are about five or six weeks in spring and fall, when, I suppose, every farmer's wife can make a fair article of butter. It will almost ‘make itself,’ with good June or September feed, in a clear, dry, June or September atmosphere, with the mercury indicating an average of 60°. What else causes butter made in June, September, and a part of October, to bring better prices than that made at any other time of the year? But for the dairy to yield a generous profit through the whole year, a fair article must proceed therefrom every week. Everybody can not be supplied through dog-days with June butter; nor can every family have their tubs for winter filled in September. Now, if you can bring the dairy under the same conditions in August or December, that prevail in June and September, why should you not realize the same results? Doubtless you would. But this it seems impossible, at present, fully to do. Yet I think the secret of success in butter-making is to bring about these conditions as nearly as may be. In the first place, you must, of course, have good cows. Some cows will make a large amount of high colored butter, but it is too soft to handle well in any weather, especially when very warm; others yield an article too white to be attractive, though I consider color of much less importance than solidity. As far as my observation has extended, very yellow butter is not as good as that which is lighter colored. It is apt to be oily, caused, I think, first, by being naturally soft, and second, by the consequent over-working it usually receives; the butter-milk being less readily extracted from soft butter. Good cows obtained, the next requisite is good feed. And what can be better than June honeysuckle ‘up to the eyes,’ or clover aftermath in September? Probably nothing. I prefer, however, as a matter of health, to give a feeding of dry hay every day through the season. I can thus keep them more uniformly, and not subject them to sudden changes from green to dry food. But what for feed the remainder of the year? Why, get the next best thing—which is the same, cut and cured, for feeding in the stall. During the third week of last June I cut four or five acres of clover and red-top, the clover just coming into flower, the red-top showing its flower stalk. Sixty days after, I cut the same field again. This winter, the cows, to which both lots are fed, seem to know no difference between the first and second crop. It is all woven to them. I am fully of the opinion that very little of the hay in New England is cut as early as it should be. For