

The Disposal of Whey.

SIR,—In your last number Mr. A. J. Meldrum, Dundas County, takes issue with Instructor Millar regarding the proper disposal of whey at cheese factories. The sour whey question has been discussed in all its bearings at our dairymen's conventions, and in your valuable paper in former issues, and the consensus of opinion of all those who have made an unbiased study of the subject, is that whey should be disposed of by some other means than returning it in the milk-cans to the patrons. It is, therefore, a matter of some surprise to read the old stock argument advanced by our friend in opposition to the practice adopted by our best factories.

He speaks of keeping the whey sweet by having an elevated tank, and scalding it. The elevated whey tank is indeed something that every cheese factory should have, being a decided improvement upon the low, underground tank. It is almost impossible, however, even with these favorable conditions, to prevent the whey from souring. If a factory would go to the trouble and expense of connecting a steam pipe with the whey tank, and heat the whey up to the boiling point every day, there might be a possibility of keeping the whey pure during the cooler weather. But it is the usual plan to elevate the whey by means of an "ejector." The best that is claimed for this method is that it will heat the whey to about 140° Fahr., and experience teaches that the much larger number of ejectors will not raise the temperature to much more than 110°. Everyone who has made a study of germ life, and especially of those "micro-organisms" which cause the souring of milk or whey, knows that they will thrive best at a temperature of from 95° to 100°; consequently, if the whey is only heated to about 115° or 120°, it will quickly cool to a point at which the germ life will begin to grow very quickly, and cause the whey to become sour. Even if a high enough temperature were reached in the process of elevation to kill the germ life, before the whey could be taken home to the patrons it would have cooled sufficiently to allow the germ life, which is in the atmosphere, and more especially around whey tanks, to develop again. Therefore, of necessity, if the whey is taken home to the patrons in the milk cans, it will be sour and contain bad flavors that will not only injure the can, but be communicated to the milk if the cans are not thoroughly scalded and cleansed as soon as the milk wagon has returned from the factory.

Mr. Meldrum takes strong exception to Mr. Millar's remark that all whey should be fed at the factory, and states that the surroundings of a great many factories are foul enough already, without having swine stalled and fed there. He must surely have reference to the condition of the factories in his own district. It is a noticeable fact that, in Western Ontario at least, the best-equipped factories, both as regards buildings and furnishings, and the factories where there is the least foul smell around, and where the finest-flavored cheese are made, are invariably those where the sour whey is not returned to the patrons in the milk-cans. Feeding whey at the factory does not mean that it is necessary to have the hog-yard around the building, or to have the hogs coming to the door "squealing for a drink." The very fact that the whey can be elevated to a considerable distance above ground, makes it quite feasible to have the hog-yard half a mile from the factory, if need be, and to carry the whey any distance to be fed. If this plan is adopted, there will be no risk run from having the milk contaminated by the sour whey flavor so injurious to the quality of the cheese.

What our friend says in reference to factories being in an unfit condition for a cheesemaker to turn out A1 cheese, is well taken. It is undoubtedly true that a great many of the factories in Ontario are not in a suitable condition for making first-class cheese, and too much cannot be done towards inducing factorymen to put up better buildings, and to put in better equipment. There seems to be, however, a decided improvement in Western Ontario in regard to better buildings. A number of factories have changed hands this spring, and have been refitted, while many new buildings have been erected. Whatever may be the failings of instructors in other districts, I think that both factorymen and patrons will bear me out in the statement that the instructors, and those who supervise dairying in the Western part of the Province, never miss an opportunity of pointing out to factorymen the necessity of good buildings and equipment.

J. W. WHEATON,

Secretary Western Dairymen's Association.

Frozen Milk Trade.

According to a statement published in the Berlingske Tidende, on Jan. 28th last, a company at Copenhagen, Denmark, has completed arrangements for the regular export of frozen milk to England. The necessary freezing plant has been erected at a cost of £2,500, and a contract has been made with the proprietors of a large dairy at Skanderburg for the delivery of 110,000 lbs. of milk weekly.

The Argentine Republic is still the most spirited importer of Lincolns from Great Britain. One of our Old Country exchanges reports Hampshire rams going to Spain, Dorset rams and ewes to Australia, Border Leicesters and Cotswolds to Argentina, with Southdowns to follow.

Some Suggestive Observations on the British Market.

The British consumer is willing to pay a good price for fine cheese or butter. In March of the present year, when the public cable was at fifty-one shillings, the writer saw a lot of Scotch dairy June cheese sold for over sixty shillings, or about two cents per pound more than the average price, and they had not been kept in cold-storage, either. They certainly were a very fancy lot; yet, the fact that such prices were obtainable, even in a dull market ought to make us more vigilant in all departments of our dairy work, if we wish to excel.

Never has competition for first place in the dairy markets of the world been so keen as at present. English merchants have told us that we have no chance to succeed in the butter trade against Australia, but the sales of some recent shipments from Canada has modified this assertion, as it was found that even our winter-made creamery sold for as high a figure as full-grass from Australia. Denmark is probably our keenest competitor for supremacy in the butter markets of Britain, and most of their herds are stabled for ten months of the year, so that with the likelihood of refrigerator space on a weekly service of steamers from Montreal, there is no reason why we should not in a few years be able to secure a fair share of the British trade for our butter.

New Zealand is developing the cheese industry at a marvellous rate, and, with their Government doing all possible to have their goods placed in the British market in good condition, they will soon push us close for honors. The Old Country producers realize that we are encroaching on their grounds, and that in a marked degree the demand for their goods is diminishing. As a result, they are using every energy to retain the supremacy which they have so long held for finest goods. Will they be successful, or is it not possible for us to supplant them?

When buying cheese on this side, there is not enough discrimination made in price for quality. The maker who can produce fancy goods does not receive enough encouragement for his work, and when he sees neighboring factories, whose goods are inferior, selling for as high a price as his own, we need not be surprised to hear of even our best men sometimes becoming careless in their work. A case in point: two lots of cheese were shipped from one of our best cheese sections, one lot costing an eighth of a cent per pound more than the other, still the lot costing the least money on this side, sold for five shillings per hundred weight (or over one cent per pound) more in England. What an outcry there would have been had the difference in price been made here! And, yet, why should not the maker and the factory have had the benefit of that extra price? Makers who can turn out fancy goods will have to be paid more money for wages, as well as for their cheese, so that there will be some encouragement for men of ability to go in for and remain in the business.

It was pleasing to learn from some of the largest importers of Western cheese, that our efforts to please them had borne fruit: cheese from Western Ontario now have the record of holding out in weight better than any received in the British market. We may not be able to compute the value of this to us in dollars and cents, but the factorymen will certainly receive a benefit from it by more orders being sent to this district, and, consequently, keener competition for the goods.

Most of us in the dairy business know how to do better, but few of us have energy enough to escape from the routine of custom and habit. As Hoard used to say, we know *how* a great deal better than we *do*. We have a good trade established now with England in cheese, but let us not rest satisfied with that; others are anxious to gain the prestige which we have secured, and it will require the united energy of every one engaged in the dairy business to retain even the position we at present hold. Let us resolve that any knowledge we may have that will help either anyone else or ourselves, in the dairy business, will be put into practice. As a result, we will not only have performed our duty, but added to our bank account as well.

London, Ont.

ROBT. ROBERTSON.

A Dairy Superintendent for Manitoba.

We have pleasure in announcing the appointment to the position of Dairy Superintendent of Manitoba, Mr. C. C. Macdonald. No doubt many will remember Mr. Macdonald, as two years ago he spent several months inspecting the cheese and butter factories of the Province and Territories. At that time he was connected with the Dominion Dairy Commissioner's staff, on which he served several years, and is highly recommended by Prof. Robertson. During the past year Mr. Macdonald has been engaged buying cheese and butter for one of the large Montreal firms, and so is conversant with the requirements of the export trade. His thorough knowledge of the French language will be an additional recommendation to him, as some of the leading dairy sections of the Province are in the French settlements. With so competent a man in charge, the dairy interests of the Province should make rapid strides, and we have no doubt Manitoba cheese and butter will soon rank on a par with her world-renowned No. 1 hard wheat.

Whey Butter—A Trial at Guelph.

BY PROF. H. H. DEAN, O. A. C., GUELPH.

Considerable notice has been given recently in the press to the subject of extracting butter from whey. The Dairy Department of the Guelph Station made an experiment on May 6th and 7th, with the following results:—780 pounds of whey were run through a No. 2 Alexandra separator directly after "dipping." The time required for separating was 25 minutes for the first, and 10 for the second run. The first cream had to be run through again in order to concentrate it. The per cent. of fat in the whey was 0.2. The separating temperature was 91° to 92° Fahr. The first skim-milk whey tested a "trace" of fat with the Babcock, and the first whey cream 2.0 per cent. fat. The second run of skim-milk whey contained no fat, and the second cream, 20.1 per cent. The 780 pounds of whey produced 6 pounds of cream, which was cooled and churned the following day, at a temperature of 59° Fahr., in 12 minutes. The butter made was 14 pounds. It lacked aroma, and was somewhat soft in grain and texture. It would pass for good "dairy" butter. A lower churning temperature would have improved the quality. The quality was much better than the quality of the cream would lead us to expect, as the latter was oily, and a little of it had to be thrown away, as it would not go through the strainer into the churn. A peculiarity was the appearance of the skim-milk whey, which resembled skim-milk so much that I thought when the whey first appeared at the skim-milk spout that the bowl had not been properly cleaned; it had such a milky, frothy appearance, due to the admixture of air. To see how much it "frothed" on coming from the separator, we weighed a can of the original whey, which balanced at 95 pounds. A can of the separated whey weighed 54 pounds—a difference of 41 pounds. At the present price of butter, my judgment is that it would not pay for the expense of extracting. Should butter become scarce and dear it may pay to cream and churn the whey. Then the man who invents a machine to knock the butter-fat out of whey as fast as it is dipped from a vat, may count himself a millionaire, and a benefactor of the age. In the meantime it will pay cheesemakers to retain all the fat possible in the cheese, as it is worth more in cheese than in a whey tank, or fed to a hog.

GARDEN AND ORCHARD.

Transplanting Trees.

Young trees can be safely set out as late as May 24th; in fact, we know of farmers who yearly devote "Queen's Birthday" for that purpose, until several of them now have as many planted as they desire. There are a few general precautions necessary in setting out trees. The earth should be thoroughly worked in and tramped down about the roots, which should not be crowded or doubled up in the hole. After a tree is set, the ground around it should be thoroughly soaked, and a good, deep mulch of straw manure applied to retain the moisture and keep weeds and grass from growing. Pruning the newly-planted trees is as important as any of the other duties. While a tree is growing in its natural state, it has plenty of roots to pump up sap to sustain all the branches, but there are always more or less fibrous roots—the essential feeders—torn off, the effect of which is evident. Now, unless something like a corresponding amount of top is removed, there will be an overtax on the roots, and the tree either becomes a stunted thing or dies. This explains why trees die after getting in leaf, and in fact sometimes after actual growth has started. Just how much pruning a transplanted tree requires depends a good deal on the variety. A maple, poplar, birch, or elm, will do with comparatively little pruning, although maples especially are the better of a good deal, so that they will grow thick, bushy tops, not too far from the ground. Oak, beach, chestnut, walnut, or ash, require severe cutting for the sake of vitality. Of course, the amount of roots a tree has must also be taken into consideration. If it is well furnished with roots and fibres, it will require less pruning than if it has but a few stout roots devoid of fibres. If there is little else left than a few thick roots, that tree had better be used for firewood. In a general way it may be said that hardwood trees require severe pruning, while those of a soft sappy wood need but little.

For suggestions as to the pruning of young orchard trees, we would refer our readers to the articles by A. C. Attwood in January 1st, and by Ellis F. Augustine, in April 15th issues of the ADVOCATE.

When one has tomato or cabbage plants to set out, there is no better time than in the evening following a shower. Should the ground be dry, the holes should be made with a pointed stick or dibble, and filled two or three times with water, allowing it to soak away before setting the plant. If this is done in the evening, and the ground firmly pressed about the plant, there is not much danger of injury by wilting. It is not a good plan to commence surface watering, unless there is every convenience for continuing it, as it only tends to develop roots near the surface, which must have water in order to live. Shallow surface cultivation is the great counteractive for drouth.