

## The Dairy.

### Manufacture of Whey Butter.

A recent number of the *Utica Weekly Herald* contains an account from the pen of Mr. X. A. Willard of a visit paid by that gentleman to a cheese factory in Lewis County, N. Y., where butter is made from whey by a method known as the "Riggs and Markham process." The factory in question is carried on by Mr. Homer C. Markham; works up the milk of 250 cows, (about 5,000 lbs daily,) turns out some 560 lbs. of cheese per day, and manufactures from the whey sixteen pounds of butter daily. Of this butter, Mr. Willard, no mean judge, says, that it is a decidedly good article, not equal indeed to first-class Orange County butter, but a marketable article, better in flavour than half the cream butter found on hotel tables, so excellent indeed that nobody would suspect it of being made from whey. In reference to the quantity obtained, Mr. W. remarks that the cheese-making at Mr. Markham's factory is most careful and thorough, so that it is only fair to conclude that the whey is of poorer quality than what is usually obtained at factories. The following is a detail of the method by which the butter is made at this factory:

"The whey is drawn directly from the cheese vat into the heating vat, which stands in an adjoining apartment and below the cheese vat, so as to allow the whey to be readily run from one vat to the other. The heating vat has a copper bottom, and is placed over a brick arch. It is preferred that the whey be drawn sweet. Then, for every fifty gallons of the sweet whey, one gallon of sour whey is added. If the acid is not sharp, one pound of salt is incorporated with it. Heat is then immediately applied to the mass until it indicates a temperature of 175° to 180°. When the cream rises, it is skimmed off and set in a cool place and left to stand till next day. It is then churned at a temperature of from 56° to 68°, according to the temperature of the weather, and is then worked and salted in the ordinary manner of butter making. Usually, under this process, five hundred gallons of whey will make twenty pounds of butter. On the day of our visit to the Markham factory, no acid was added to the whey, but a little salt added to the mass when the temperature had reached 160°. When the thermometer indicated 170°, the cream commenced rising, and was soon thrown up, and Mr. Markham commenced skimming off soon after the cream commenced rising, or before it became thick and hard. He dipped with a broad, square tin shovel with a short handle, dipping down into the whey and removing a portion of it with the cream. He dipped into a large pail, and when full emptied into a large milk can having a faucet at the bottom, and which stood in one corner of the room. This can was nearly or quite filled with the cream and whey. Mr. M. lets it remain in the can to cool off, and the next morning, just before churning, the faucet is opened at the bottom, and the whey which has separated from the cream drawn off. The cream is then taken out and put into the churn, and churned by dog-power. Mr. Markham's factory is a model of neatness, and both the whey and cream are kept clean and free from specks. The butter, therefore, contains no more impurities than the cheese."

The manufacturer claims that his butter, if properly stored in a good, sweet cellar, will keep for a long time. Mr. Willard, while doubtful as to its keeping qualities, justly observes that if it will keep long enough for present use and for this purpose is equal to the great bulk of butter made for the table, it would be a vast saving of money to dairymen if this process could be generally introduced.

"On the assumption that the whey from 250 cows gives fifteen pounds of butter per day, a factory of 1,000 cows would turn off sixty-four pounds of butter, while the cost of apparatus and making for the large number of cows would be but a trifle more than the smaller number. Sixty-four pounds of butter, say at an average of thirty cents, per pound, would amount to \$19.20 per day, and if only four months be taken, say from the 20th of May to the 20th of September, or 120 days, we have \$2,304 for a single factory."

As to the value of the whey for feeding purposes, after being deprived of its oil, the cooked state of the whey is thought to go far toward counterbalancing the loss of the oil. Mr. Markham believes it does

more, and says that his experiments in feeding hogs on each kind of whey prove this. Be this as it may, it certainly will not pay to feed hogs with butter at the present market price of the article. An equal weight of bran substituted for the butter, would certainly make the whey more nutritive than with the butter left in it. As to the labour and cost of manufacturing butter from whey, Mr. Willard says:

"The apparatus is very simple and inexpensive—a vat with copper bottom over a brick arch would be the main outlay. For a large number of cows we presume some extra labor would be needed, but such additional labor, with proper conveniences, can not be much. At Mr. Markham's factory, Mr. M. has but one assistant—a girl. They two do all the work about the factory, manufacturing both the cheese and butter. Fuel, too, is required. Of the amount some estimate may be made from the quantity used by Mr. M., a cord of 18 inch wood (hemlock slab) lasting eight days. We could not see that the labor of extracting the cream was of much account. The whey runs from the cheese vat to the heating vat simply by arranging the pipes; a little fuel is thrown under the heating vat and the cream skimmed off. It can all be done by those attending the cheese vats. How much additional labor will be required to churn and pack the butter, dairymen generally can estimate. The cream, we were informed, readily churned into butter. Occasionally, if gathering the butter is delayed, it is readily obviated by using warm water in the churn, say at a temperature of blood heat."

We have transferred to our columns the leading points in reference to the process of making butter from whey, and we commend the matter to the attention of Canadian dairymen. Further particulars may doubtless be had by addressing Messrs. Riggs and Markham, Turin, N. Y.

### Hunting for the Cows.

MANY of our farmers have wasted years of valuable time just because they did not teach their cows to come home at night. Any one who has ever lived or travelled in the country will remember the familiar "Co-bos," "Co-bos," of the farmer's son, or hired man, as they endeavour to coax the cow from the woods or the tall grass in the great pasture. We have had a little experience in these matters, and well remember how many times we have waded through the brush and bogs looking for the cows, and boylike, we thought them dreadful contrary animals. But we have lived long enough to learn better, and now think that the biped was the more contrary animal of the two. Boys, we will tell you a secret that will save you a great deal of trouble, and it is this: Just sow a few rows of corn in drills, where it will be handy to the milking place, and every time the cows are driven up at night, or in the morning, give each one a good armful of the fresh cut cornstalks, and our word for it the cows will always be on hand at milking time. Besides this, they will give more milk, and forget to kick over the milk pail, even if you do whistle a little too loud.—*Weekly Sun.*

MILK FROM A CALF.—I have an Alderney heifer, eleven months old, that I accidentally discovered, a week ago, had milk. I have drawn it daily since, and the quantity increases. Can any of your subscribers inform me if there is anything very strange about this, or whether it will be any injury to continue to milk her?—*S. A. J. in Co. Gent.*

HONESTY.—A boy, whose honesty is more to be commended than his ingenuity, once carried some butter to a merchant in a country village to exchange for goods. The butter had a very beautiful appearance, and the merchant, desirous of procuring such for his own use, invited the boy to bring him all the butter his mother had to spare. "I think," said the boy, "she can't spare any more, for she said she would not have spared this only a rat fell into the cream, and she did not like to use it herself."

COLLETT'S ANTISEPTIC.—The attention of cheese-makers and others is directed to Mr. Collett's advertisement in the present issue. We believe that the rennets which he supplies are of first-class quality. We have also a high opinion of the antiseptic preparation that he advertises. Practical experience and chemical testimony concur in commending its use for a variety of purposes besides that mentioned in the advertisement. It has been successfully used in preserving meat fesh, both in this country and in England.

## The Apiary.

### Management of Frame Hives.

Now that movable-comb or frame hives are being extensively introduced, it may be well to give a few hints respecting the management of bees in such hives. Frames are put in hives in order that the bees may build their combs in them, so that the combs may be removed at pleasure. Now, it is thought by some that all that is necessary to do is to put the bees in the hive, and pay no further attention to them until they wish to remove the combs, when they expect to find them nicely filled in the frames, touching each other at no point, and as easily removed as the frames would be if empty. Such persons are sure to be disappointed. On opening the hive they not only find the combs attached to each other by bars, often appearing like a solid mass, but even some of the combs built across from one frame to another. Now, it should be remembered that no hive, can be constructed that in every case will ensure combs built exactly straight in the frames without any attention on the part of the bee-keeper. But with a well-constructed frame hive and proper management, straight combs may always be secured. In the first place, before the bees are put into a frame hive, the hive should be examined, and all the frames properly adjusted on their bearings: the bees may then be put in and the hive placed on its stand, which should be level, so that the hive will not lean to either side; but the hive may lean to the front or rear, as that will not cause the bees to build crooked. In four or five days after a swarm has been put into the hive it should be examined, and if there is then any inclination to build crooked, it can then be remedied by simply raising the frame and pushing the comb back to its place. In this way straight combs may be had in every hive. When it is found necessary to examine a stock and remove the frames, the bees should first be smoked a little, driving them down from the top to the centre of the hive. Then all bars that connect the combs should be cut away. There is no amount of honey in the bars, they being put there simply to strengthen the combs. When these are once removed, there is no longer any difficulty in removing the frames, which should at first be raised gently from their bearings and moved close together until sufficient room is given to remove a card of comb without crushing the bees. Too much should not be expected from the bees, but we should be more than satisfied if, with a little attention on our part, and the use of a frame hive, they may be caused to construct their combs in such a manner that they may be lifted out with so little difficulty. That the cards of comb may be separated, and removed from the hive at all, is a wonder, but by attending to the above hints every card from any number of hives may be removed, examined, and replaced at pleasure, giving perfect control over the bees and their combs.

SURPLUS HONEY.—A subscriber sends the following queries:—

"Will you or some of your correspondents, experienced in the matter, please answer through the CANADA FARMER the following questions:

"How long, after putting a young swarm of bees into a hive, should it be before I put in the surplus boxes; or should they be put in when the bees are?"

"When is the best time to remove bees from one hive to another, taking care that they shall have time to gather honey sufficient for their winter's use?"

ANS.—The surplus boxes may be put in a hive three or four days after the swarm has been put in; but never immediately after the transfer unless there are already combs in the body of the hive, in which case they may be put in at once.

Bees may be removed from one hive to another at any time after fruit blossoms appear, either before or after swarming. Generally the earlier it is done the better after the honey harvest commences.