

The Dairy.

Starting Creameries in New Districts.

At some of the Dairy Association meetings we have attended, several farmers have enquired of us for information as to the cost and the best method to adopt to start a creamery on a small scale in some of the newer sections of the country.

The first step to take is for a few of the leading farmers in the district to talk the matter over with their neighbors. The day is now past when the advantage of the creamery over the private dairy need be discussed. It is now admitted by all parties that the creamery is the best system of butter-making, both for making a more uniform quality, which sells at a higher price, and far more economical in saving labor, thus giving more profit to the producer; the experience of those who have practised under both systems are all in favor of the creamery.

The second step, call a meeting of farmers at some central place and have the subject freely discussed from various standpoints, and the various methods of carrying out the details whether it would be advisable to start on the old principle of gathering the cream from the farmers, or whether sufficient quantity of milk can be got within a reasonable distance as to warrant going to the expense of larger buildings, more expensive machinery, and adopting the centrifugal machine for separating the cream and returning the milk to the patrons. These and other matters should be carefully discussed in each district, as what would be most convenient and profitable in one district might not be the best system in another.

To start a small creamery in a new district where neither money nor cows are very plenty, we would advise to begin as economically as possible; and as cows and money multiplied the buildings and machinery could be enlarged, or, if thought needful, the system could be changed.

To start a creamery of say 40 to 50 cows, on the system of gathering the cream from the farmers, a very small building would serve the purpose—say 20 feet long by 12 feet wide, divided into two rooms, one room for keeping the cream to ripen and the other for churning and working. Some accommodation would need to be provided, either by a cellar or some other underground arrangement for storage, but if a supply of ice is laid in we would advise marketing butter as it is manufactured.

The building must be well built, the studding covered on the inside with felt paper, this recovered with matched and dressed lumber inside, and so much better if the outside of the studding can be done the same way. The building will resist either cold or heat, so that the inside temperature can be regulated as desired, without which it will be impossible to manufacture a uniformly fine quality of butter that will bring the highest price. Two vats, tin-lined, to hold sixty gallons each, a good revolving box-churn, to work by hand, to churn thirty gallons of cream, a common hand butter-worker, and a good enclosed kettle and fire-box, to furnish hot water, with a set of good weighing scales and a small set to weigh salt, as there must be no guess work; two tin pails and two strong pails, for water, with two dippers and a gallon and quart measures, with broom and brushes, etc., for cleaning. The whole cost would be about \$500. Packages for butter should be made to suit the way in which the butter is to be marketed.

The location should be carefully chosen. A clean, dry place, where good drainage can be easily obtained, and where there is plenty of good pure water, either from a living spring or a good well, as it is sometimes necessary to use either cold or warm water to mix in the cream; the water must be free from any taint or smell,

or it would spoil the butter. If the prospects of success were good, a horse-power could be put down to do the churning instead of by hand. Beginning on this small scale there is not much risk nor expense, and if all the patrons strive to make it a success, it will be a success and a profitable one for themselves. Sometimes one or two individuals put up the buildings and furnish it, and charge so much per lb. for manufacturing the butter, and as part payment or consideration they get the butter-milk. A very common way is to form a small joint stock company, and appoint a committee to look after the business, and see that everything is done justly and well.

In this way the cream is gathered from the farmers by some one engaged to do it; the cream is measured at the farm and the skim milk left there; the person who gathers the cream carries a book with him, and enters the quantity of cream he receives at each farm in the book on the spot, and the farmer keeps another of the same, as a check on the other one. Whether the measuring is done by inches on a scale on the side of the can in which the milk is set, or whether it is measured by the gallon, it matters not. Either one or the other must be adopted for all in the same creamery. This is called pooling the cream, and the amount of butter is divided pro rata in proportion to the quantity of cream each has sent to the creamery. It is perfectly fair if the quality of the cream is about uniform. In larger creameries the system of testing the cream as to the amount of butter it contains, and paying according to value, is now generally adopted, but in a small creamery to start with, till a little experience is gained, a few small samples could be churned separately and tested in this way to prevent any serious fraud by anyone. If a small business of this kind can be started near a railway station, where the produce can be shipped by express to a regular market, it would soon establish a market for itself at a good price if customers could rely on having a supply of fine, fresh, sweet butter twice a week, or even once a week, they would gladly take it at a good price, and the demand would increase more rapidly than the supply.

Dairy Tests.

BY GEO. RICE, GURRIE, ONT.

In my article of a recent issue to which Prof. Robertson refers, I understood the ratio as between "points allowed," instead of which the ratio was between the profit from each breed, which, of course, materially alters the conclusions arrived at. The question of feed is very important, but hard to settle. The skill of the feeder may prove of great importance; and as the item of feed was so carefully estimated, I suppose the cows in the tests were watched night and day by the parties who had this test in charge. This is necessary, or was the feeding to which so much importance is attached "private," and the testing of milk "public."

Much has been said about the unreliability of private records. But I think many "private" records are supported by as strong proof as "public" ones. The greatest yearly record yet made was by a Holstein cow, Pietertje 2nd, and we give a few of the many affidavits that support the claims made for her:—

Affidavit of Geo. H. Brooks, merchant, Cuba, N. Y.:—Testifies that on the evening of May 17th he saw Pietertje 2nd milked clean, and in just twenty-four hours thereafter closed the twenty-four test, and in the meantime he had seen her milk 112 lbs. 7 ozs. in three milkings.

Affidavit of Rev. W. W. Rafter, Rector of Christ Church, Cuba, N. Y.:—Testifies that within twenty-four hours after seeing Pietertje 2nd milked clean she had milked 107 lbs. 8 ozs. in three milkings, May 21st, 1887.

Prof. J. E. Dewey, of Limestone Academy,

Limestone, N. Y.:—Testifies that on June 19th, after seeing Pietertje 2nd milked clean, he saw her milk 94 lbs. 1 oz. within the following twenty-four hours, just five months from the date of her calving.

Affidavit of Samuel C. Drew, Cuba, N. Y., Jersey breeder:—Testifies that he saw Pietertje 2nd milked dry the evening of Feb. 22nd, 1888, and morning, noon and night milking of Feb. 23rd, 1888, making just twenty-four hours production, in which time she gave 60 lbs. 13 ozs., this being the last milking of the year's record.

The question raised is, Is not some milk more valuable for cheese than other?

In this respect the following test, made by a competent committee appointed by the Nebraska State Board of Agriculture, is instructive. The test was carefully conducted, and furnishes an array of facts perfectly reliable:—

The committee desired to ascertain:

1st. The amount of butter each cow would give (as shown by Short's system of computing butter-fat).

2nd. The amount of full cream cheese a cow would make (as a total solid in chemical analysis).

3rd. The amount of milk each cow gave by weight.

4th. The amount of feed consumed to produce the above results.

Average live weight—Jerseys, 740 lbs.; Holsteins, 1,190.

Average days since calving—Jerseys, 65 days; Holsteins, 110 days.

Average daily butter yield—Jerseys, .85 lbs. per cow; Holsteins, 1.85 lbs. per cow.

Average daily milk yield—Jerseys, 19.75 lbs. per cow; Holsteins, 54.50 lbs. per cow.

Average daily yield of cream cheese—Jerseys, 2.57 lbs. per cow; Holsteins, 6.52 lbs. per cow.

Now, if we increase the average yield of each Jersey by 60 per cent. to correspond with the average difference in live weight between the Jerseys and Holsteins, then we find that pound for pound of live weight a Holstein cow, 110 days from calving, will produce 40 per cent. more butter, 70 per cent. more cheese and 75 per cent. more milk than a Jersey cow, 65 days after calving. That is, a Holstein man owning six cows, weighing 7,140 lbs. in all, could sell about 70 per cent. more butter, cheese and milk than a Jersey man owning ten cows, weighing 7,400 lbs. in all.

As to food consumed the test shows nothing beyond statements of the owners. It was utterly impossible for the committee to stand guard over the various cows for three days to see what they consumed, and one Jersey man making no report a comparison is not possible.

I think this test shows that whilst a cow can make a good showing as a butter producer, it does not show her whole capabilities as a cheese producer, unless due regard is given in that respect. Now, a test that does not show the capabilities of a cow as a cheese producer, and milk as well as butter, does not show the most "profitable cow for the majority of dairymen at the present time in Ontario." The question is does the rules of this test give value for the different properties required in making first-class cheese. If so, I think it would be in place for a "public instructor" to remove, by courteous explanations, the wrong impressions held by breeders. I do not think that quoting "sour grapes" is likely to bring the Ayrshire men to view these tests with more favor; and if they say they will not contest again, and other breeders say ditto, these tests as a comparative test between breeds