

## THE DAIRY.

## ESTABLISHING A BUTTER FACTORY.

A correspondent from Milford, N.H., writes as follows: "Will you please give the probable cost of a factory capable of manufacturing the product of 1,000 cows into butter by improved machinery, and as high as you can approximate to the value of a quart of milk from the average cow for that purpose in your vicinity the past year?"

A butter factory fitted up with all the latest and most approved machinery for taking the milk of 1,000 cows and making butter only, will cost from \$3,000 to \$4,000. No exact sum can be given, as the price will vary according to the plans and style of building and its location. The cost of material and the price for labour will vary in different localities. If the skimmed milk is to be worked up at the factory into cheese, the cost will be somewhat increased. Before erecting a factory it would be advisable to consult some of the dairy supply houses, and get lowest price on a complete outfit of machinery and appliances.

As to the value of a quart of milk for butter making in this vicinity during the past year, exclusive of the skimmed milk, I find that good butter brought in the Little Falls market the following prices: From April 4 to June 6, 1881, on an average at weekly sales, per pound, 25¢.; June 6 to Oct. 8, 1881, 26¢.; Oct. 8 to Dec. 19, 1881, 31¢.; Dec. 19, 1881, to April 3, 1882, 34¢. This would give an average of about 29¢. per pound, providing the quantity made here in summer bore a reasonable proportion to that made during fall and spring. As this section is largely engaged in cheese dairying, very little butter comparatively is made from May to October, the great bulk of the butter product here being produced in spring and fall. If the quantity therefore be taken into account which was sold at this season it would raise the average price probably to 32¢. per pound, but in our estimate we will take the lowest figures, 29¢.

Now, the average quantity of milk required at the butter factories (the milk of common cows) will range from 21½ to 24 pounds of milk for one of butter. A quart of milk weighs 2 pounds and 2½ ounces; or if we take the standard adopted at the creameries of the West, where the standard value of milk is put at 8½ pounds, the butter value of a quart of milk may be readily calculated.

According to this last standard, two and one-half gallons or 10 quarts of milk will weigh 21 9-16 pounds, or 21 pounds 9 ounces, and 11 quarts of milk may be then assumed as a good fair average of the quantity required to make a pound of butter worth say 29¢. This would give the butter value of a quart of milk at a fraction over 2.68 cents, or not quite two and three-quarter cents at last year's prices.

We have also in addition to the above sum the skimmed milk, the value of which will depend upon the use made of it, whether as a food for domestic animals, or as a product to be termed "skim cheese." The value of this last will also depend upon the variety and quality of the goods manufactured.—X. A. Willard, in Country Gentleman.

## CANON BAGOT ON THE SETTING OF MILK.

"All milk," says the Canon, "coming into the dairy should be strained through a fine wire strainer. The object of setting milk is to get all the cream from it. Undoubtedly the Swedish plan is the best, because the cream is obtained in twelve hours, leaving the milk perfectly sweet. The American Cooley system is much the same, using cold water instead of ice. But in the old-fashioned way, there is a rule in setting milk which it is

well always to bear in mind, namely, the lower the temperature of a dairy, the deeper ought the setting to be, and the higher the temperature, the shallower the setting; so that, following out this rule, milk may be set from eight inches deep in winter to one and a half inches in summer. The careful following out of this rule will do much to counteract the inconvenience often felt from the want of a stove or heating apparatus in a dairy. Milk should always be skimmed before it has turned the least sour. The separator—a machine which mechanically separates cream from milk—is fast coming to the front, and in a year or two, in its improved form, will probably be used in all large dairies. The principle of all separators is that milk revolving at a high speed throws up the cream to the top. Already great improvements have been made, and it has been conclusively proved that the whole of the cream has been separated, leaving none in the milk."

## THE KIND OF COWS FOR THE DAIRY.

Hon. Wm. Fowler, of Washington county, Minnesota, says:—

"My dairy is composed of a few natives, which I bought to fill out with; the rest are high grades and thoroughbred Shorthorns of milking strain. Some of my grades have given sixty-five pounds of milk per day; others have made two and a quarter pounds of butter per day! Cows of my own raising are decidedly the most profitable. Out of twenty heifers, I expect to get from sixteen to eighteen No. 1 cows. I don't sell or kill my calves. When our dairymen learn to use a thoroughbred bull and raise the heifer calves, then we shall begin to have cows that will not only be a source of profit to their owners, but will be a great benefit to the State at large."

He says that one of his grade heifers gave fifty pounds of milk per day the second year she had a calf, which made two and a quarter pounds of butter each day. He expects to do better than that this year with some of his young heifers. He thinks that the cows of his own raising are worth double those that he buys. He adds:—

"We are all of us keeping more or less cows at a loss. It does not pay to keep a poor cow, for she will eat up the profits of a good one. Now, when our Minnesota farmers and dairymen learn that in order to build up a herd of dairy cows that shall excel as milkers (and that means being more profitable to the owner), they must begin at the foundation, which, in my judgment, is a thoroughbred bull from an unquestionable milking strain of whatever breed, and raise all the females, and when they come to maturity weed out for beef all that do not come to their standard of what a good cow should be. I hope that all of our dairymen will keep an account of dairy receipts, and be able to show a better herd of twenty-seven cows than I have."

## MILK FEVER.

In consequence of the greatly increased introduction and breeding of the Jersey cow, milk fever has become alarmingly prevalent, and much more fatal than formerly. This arises from two causes: first, the extra richness of her milk; and second, forcing her by the consumption of an extra quantity of rich food to an unusual production of milk, besides foolishly vying with each other to see which could obtain the greatest weight of butter per cow during a single week, month, or year, as the case might be. Frequent losses of highly valuable animals from milk fever have been the result of this unpardonable ambition. If taken in time, except in the worst cases, milk fever is easily and simply cured; but the best thing is prevention. This is accomplished

by putting the cow several weeks before calving on upland hay alone of medium quality; or, when there is much danger of sickness, this may be mixed with a greater or less quantity of straw; or if fresh or salt water meadow hay can be had, feed that alone, or at least only add one or two quarts of coarse wheat bran morning and night, for the purpose of keeping the bowels more open. Put a lump of Liverpool rock salt where the cow can lick it at pleasure. If this is not at hand, then give a level tablespoonful of fine salt daily in the bran. Let her drink all the water she desires, morning, noon, and night. If the weather be cold, take the chill off this before given to the cow. Pursue the same course for a week or two after calving. If the bag be very full before calving, partially milk it, and after calving milk her perfectly clean three times a day.—A. B. Allen, in New York Tribune.

## ADVANTAGES OF TETHERING COWS.

A breeder living in the Island of Jersey writes to the London Live Stock Journal:—

The advantages we claim for tethering are:—

(a) Economy of food. Some good judges have put this as high as 50 per cent. They assert that three tethered cows may be kept where otherwise you could only keep two. But no one in Jersey is willing to put it lower than one-third; where three only could find pasture loose, you may increase your stock one-third, and keep your cows if you tether them. The grass is eaten up clean fine and coarse alike; none is left and none spoiled.

(b) The feed is regular and equal; the cow is not pampered one day and starved the next; her appetite is not spoiled, nor her digestion deranged.

(c) It gives perfect command of the food supply. A cow can have much or little, a long tether or a short one; she can be confined to a poor corner or favoured with the fat of the land, as may be necessary or desirable.

(d) It saves fences and economises food that would otherwise be wasted from the impossibility of letting a loose cow in to graze it.

(e) The cow is more gentle; her keeper is her good genius, on whom she is constantly dependent for all her wants. Her docility (and affection even) follows as a matter of course.

(f) It is doubtless to the tether that our Jersey cows are indebted for their exquisite fineness of limb, their airy grace, and general elegance of proportions and appearance.

(g) More butter is obtained. Nothing is so destructive to animal fat—whether on the flesh or in the udder—as motion and exercise. This is so well known as to be proverbial, yet how often is it overlooked. The same farmer who fats his bullocks quietly in a stall may give his cows the run of a large pasture, as if they were in training for a race.

I AM convinced by an experience of near fifty years that it is well to tie the legs of every heifer, no matter how gentle, for a short time, say a week or ten days, as a part of her discipline and training when being learned to milk. She will never forget it when a large, strong cow, and then if her teats get scratched or chapped, so that she must be tied to be milked, she will submit with a very good grace, otherwise she may object as strongly as one of ours did awhile ago. We attempted to tie her legs, she reared up behind, both feet, like a mule, causing one or two of us to make elevated as well as rapid transit.—R. H. Richardson, Erie Co., Penn.

THE area of the Dominion, according to a return recently issued by the Department of the Interior, is 3,406,542 square miles.