

it the next morning. In summer the milk is allowed to stand, at most, two feet high in the tub; in the winter about 2 1-2 feet. In very hot weather the morning milk is cooled down to 16° to 20° F. before it is added to the evening milk. Under these circumstances the milk is nearly always ripe for churning when the evening milk has stood 36 and the morning 24 hours. The temperature of the milk when being churned should be from 1-2° to 1° R. warmer than when the cream is churned. The churning itself should be hurried as little as possible, since the butter globules being more widely separated in milk than cream, rather more time is needed for them to collect.

In churning whole milk there is an increase in labor, owing to the necessity for more frequent churnings, but this is far outweighed by the other advantages resulting from it.

### Winter Dairy.

Fresh butter of prime quality, made through the months of December, January, February and March, will always command a price high enough above the summer-made article to pay for the extra cost of the food required. By having the cows bring forth their young in November, the calves can be raised by hand better than in summer, because the milk will not go sour, and the cows will continue to give a large flow when grass comes, right on to August. The food best adapted for forcing milk and giving the butter a delicious flavor has been repeatedly tried; consequently there is no mistake, no supposition, and no over-estimate.

The hay should be made from grass cut early in June, and the grass should be from seeds sown when it was laid down, somewhere about the following proportions:—Ryegrass 1 peck, white clover 6 lbs., red do. 4 lbs., timothy 2 quarts. Other kinds can be substituted according to the land, and a greater variety introduced, for the thicker the herbage is, the finer and more tender the stems, which causes the cattle to relish it better, and a nice sweet fibery forkful of hay must not only be more nourishing to an animal, but will certainly produce more and sweeter milk than the same quantity of coarser, dead, brown-looking stuff, such as is cut in July and August, when it is nearly or quite ripe, and be preferable, too, to any very large rough hay, even should it be mowed in good season.

The best roots are carrots and mangolds, and if meal is given, a few turnips can be mixed without imparting any unpleasant flavor. The meal will be better, if corn and grain are ground together, and if good fresh bran is mixed with the meal, it will be a still greater improvement.

The following was the way in which a winter dairy of cows was managed and fed with very satisfactory results:—In November and December the cows were turned out during the day on grass which had been growing from the preceding July and Aug-

ust, in small fields, which they grazed in succession. They had then put ready for them every day about half a bushel of sliced roots, being about equal proportions of carrots, mangold wurzel and turnips, with two quarts of meal on the roots, which was the allowance for each cow. They then had hay for the night—just as much as they could eat up clean. In the morning each cow received her half bushel of roots and the meal similar to the evening feed. Thus they prospered till the snow interfered, when they had hay just the same for the night, but first in the morning they had corn stalks, which had been put in a tight box, and about a quart of meal per cow mixed up, and boiling water poured on, and the chaff, which was cut fine, soaked and steamed from night till morning, when it was given to them. After they were milked, they received cut roots, as previously described, and ranged about the yard till noon, when they came into the stable again, and had a feed of hay chaff, and also a feed of roots, going into the yard, if not very cold, till evening, when they were fed the same as in the morning, corn-stalk chaff having been steamed all day for them. Every fair day all winter, when they could get at the ground they went into one or the other of the fields according to the wind, and which lay the best sheltered, and when out in the field the noon feeding was omitted, without any diminution of the milk, though there was a slight depreciation in the quality, but which was very trifling; however, while they could go out, they ate so much of the grass that less hay was used in the night.

The quantity of butter made from these cows varied very much, because they differed so in the quality. Their milk, every now and then, was kept separate and set in pans; when skimmed, some cows' milk of equal measure produced double the cream others did—and this is a point demanding much more attention than it generally receives, for a cow giving very rich milk will influence her offspring in this respect, and any dairyman who not only looks into these distinctions in his cows, but investigates the milking qualities of the dam of a bull before purchasing him, may soon have all his cows good for quantity and quality, for the cows above alluded to were treated alike, and yet there were some making as little as 7 lbs per week, while others produced upwards of 12 lbs.

Before I came to this country, I kept a lactometer, which, having many glass tubes, was very convenient to prove the milk of different cows. By and having charge of a large herd the calves were all reared with a view to their milking qualities, and in three generations the same number of cows made more than double the quantity their predecessors did. Those cows, or at least the portion of them used for the dairy in the winter, had several acres of cabbages grown for them, and when grain was cheap, I had barley boiled for them, which swells and jel-

lies similar to flaxseed, and is one of the best feeds in every respect I ever gave to milch cattle at that time. Barley, weighing 52 lbs per bushel, would sell under a dollar, and as it increases in bulk three-fold by being boiled, and prevents cabbage or roots giving an unpleasant taste to the butter, it is excellent for that purpose.

Previous to the war, while in the South, I had cows lying out all winter, which I gave boiled corn to with satisfactory results. Morning and evening, at milking time, they had a bundle of fodder and a gallon of boiled corn each, and they increased their milk twofold and the butter nearly threefold, making five pounds of butter each per week, which was considered great for the diminutive grades which prevailed in that locality, especially as the family was very large, and new milk and cream was used freely, which made a difference of a third, so that it was equal to seven and a half pounds per week each cow.

If cows have meal, roots, and hay, or cornstalks instead of hay, they will do well without a change from that food, because there is sufficient variety to make them healthy. It requires care in changing the feed of milch cows, for if the milk is checked by doing so, they will not thoroughly get over it, for it is the same as if checked by bad milking; either failing to drain the last half-pint, or going two hours beyond the usual time, will soon ruin any cow.

Some people say if roots are given after milking the fact of their being eaten then will prevent the butter tasting. What can that have to do with it? The flavor is not conveyed instantaneously; the turnips, &c., have to be digested first—therefore the way to allay this evil is to give an antidote in the shape of good meal, &c. Where they are given in a preponderating proportion to other food, the only remedy I know of is to scald the milk, which is always done in Devonshire, England.—*Cor. Albany Cultivator.*

### Our Exports of Dairy Produce.

The increase which has taken place in our exports of dairy produce during the last few years has been marked and striking. In no other department of agriculture has there been such a rapid expansion—a fact for which we are largely indebted to the numerous cheese factories, and the result flowing therefrom, which have been established in almost every part of the country. Up to as late a period as 1864-5, we were large importers of cheese. In 1861 we imported 2,165,000 lbs, and in the year 1864-5, just alluded to, our importations were 2,530,950 lbs. The great change which has since taken place will at once be seen by placing side by side our exports and imports of cheese during the last two years:

| YEAR.         | IMPORTS.    | EXPORTS.       |
|---------------|-------------|----------------|
| 1869-70 ..... | 53,491 lbs. | 3,827,784 lbs. |
| 1870-71 ..... | 68,475 lbs. | 3,271,439 lbs. |

These figures indicate a complete revolution in this branch of our trade, and we are