another ? Why, what is a more natural sequence than that the " Farmer's Advocate," which is beyond all doubt the best and greatest agricultural journal, should open up a column for this very purpose, and make a small charge for a short advertisement that would bring the two parties together, who could then exchange references as to their Christian character and moral worth, which features should always have a first place on the programme.

DAIRY.

Slow-churning Cream.

Would like some information concerning my cream. At times I have to churn for hours, although the cream is previously heated over the stove to 70 or 75 degrees. Cows are fed mangolds and straw. Would the fact that cows are far advanced in lactation make any difference ? The milk is set in pans and kept in the pantry.

Durham Co., Ont. SUBSCRIBER.

Ans.—The difficulty in churning may be due to one or more of the following causes :

1st—The cream may be too thick.
2nd—The feed these cows receive is not the best for rapid separation of cream and milk.
3rd—The cows are far advanced in lactation.
4th—The cream may be kept too long.
5th—The churn may be filled too full.
6th—The cream may not be ripe enough.

In the first place, we would by all means feed the cows some grain with their roots and straw, and, if at all possible, hay also would be given.

Coming to the question of the treatment of the cream : It is quite probable in this case that it is kept too long, and is not sufficiently ripened. When one examines the difference between sweet cream and sour or ripe cream, it is found that the change in the flavor and consistency is due to the growth or development of bacteria, and the particular flavor of any one sample is due to the extent to which any particular species of bacteria have developed, for in cream there may be bacteria of many different varieties. For instance, cream that is kept for some time in a cool place will, in all probability, develop a stale flavor; or cream kept a few days in a cool place, then warmed up to 65° or 70° F., will develop a characteristic ripe or sour flavor, the difference being due to the development of different varieties of bacteria in the two different cases. As the development of the stale flavor hinders the development of the more desirable ripe flavor, it is at once evident that conditions favoring the latter should be secured. To this end the cream should be skimmed when sweet and kept in a large crock. To this cream should be added a little clean-flavored sour milk as a starter, in order to encourage the growth of the ripening bacteria. After three or four days the cream should be warmed up to about 60°F., by setting the crock in a basin of hot water and stirring thoroughly. In some cases it would be well to add a little more of the starter at this point. This warming up encourages the rapid growth of bacteria, thus bringing about ripening. When the right degree of sourness has been reached, which only can be determined by experience, the cream may then be cooled down to churning temperature and churned about twenty-four hours after being first warmed up. Never neglect to stir the cream in the crock each time a fresh supply is added to it, as the stirring will produce a uniformity of flavor. As a general rule, the starter added will thin the cream down enough, and if churned frequently the churn is not so liable to be too full at any one time. It should not make any particular difference whether the milk is kept in the pantry or cellar, provided both are clean and sweet, and free from odors. The length of time the cows have been in milk, no doubt has considerable to do with the difficulty in this case. Along in the fall and early winter the milk becomes more viscous, owing to dry feed and long lactation, and the globules of butter-fat becomes harder, these two conditions making it difficult to separate the fat from the milk. Feeding succulent food will generally remedy this. Ripening the cream in a short time also helps, but in extreme cases it may be necessary to thin the cream with warm water or brine. Care should be taken, however, not to make the cream too thin, or conditions will not be improved.

Clubbing Rate.

In order to greatly increase our subscription list, we make the following liberal club rate : One renewal and one new subscriber, $2.50 ; one renewal and two new subscribers, $3.25. Regular subscription price, $1.50 per year (52 numbers). Show prospective subscribers a copy of the weekly. Every farmer should have it. Address, " Farmer's Advocate," London, Ont.

The Dairy Cow.

By Mrs. Minnie Eshelman at the University Farmers' Institute at Long Beach, Cal.

Scientific dairying, as to the feeding of the cow and the handling of her product, has been the outgrowth of the specialized work of the dairy school experts. While the creamery man, with his manner of paying as little as possible for what the cows produce, has made the dairyman take out his pencil and learn to figure exactly what the cows do earn, so he has by calculating brought the keeping of the cows down to a business basis.

The beef strain is very hard to breed away from ; even in the fifth and sixth generations of cows it often crops out when cows are fed for

Snap-shot of a Bunch of Shropshire Lambs.

Winners at the Maritime Winter Fair, Amherst, 1903. Property of Logan Bros., Amherst Point, N. S.

heavy milk production. Many a good grade cow has slipped off into beef when five or six years old, causing a loss—for it does not pay to fatten a beef on dairy rations. When we consider a good cow should produce 350 pounds of butter, worth, say, twenty-five cents a pound, or $87.50 in a year, it is indeed killing the goose that lays the golden egg to sell her for cow beef at $30 to $40. You see, we do not believe in the general-purpose cow, though it may seem presumptuous, for she has prominent advocates, but then, "seeing is believing," and we have never seen one.

Dairy Points.—Now, in selecting a cow for dairy use, one of the principal points is the stomach ; it should be large and somewhat pendant—never set flush with the backbone, but always leaving a ridge. The stomach should suggest that the digestion is ample, and that the consumption of food can be pushed heavily and yet a margin of reserve force remain, for the drain from the heavy milk flow should be urgent, and her appetite constant if she is to continue in profitable milking for the entire year.

Famous Pride (Imp.) (83459).

Winner of second prize in senior yearling Shorthorn class, Toronto, 1903. Calved December 20th, 1901. Property of Goodfellow Bros., Macville, Ont.

Draw an imaginary line directly across the cow's body in front of her udder. First of all, notice if ample breeding power is indicated by the width of her pelvis. The hips should be high, the thighs wide and encurving well ; a strong, rugged backbone, with a distinct rise at the rear, so as to make the animal taller at the rump than at the shoulder. This rise should be gradual, and in improved breeds is rarely a rough, disfiguring hump. The tail should be long and slender, and set high enough to carry out the high line of the pelvic arch. She should be thick through in front of the line to give ample room for heart and lungs, with large and well-developed milk veins, with a skin soft and full of oil. The head and neck should be fine and feminine, the breast without brisket or dewlap ; the eye clear, prominent and full of gentle intelligence, while the under jaw should be strong and rather short.

The Udder.—The teats should be well placed, and of convenient size and shape, neither too large nor too small, and far enough apart to be easily milked dry. The two small rudimentary teats behind the four regular ones are a good indication for milk continuance in a cow. The Swiss say that they indicate a cow will transmit her quality as a milker to her offspring.

The elaboration of the milk by the cow is a physiological mystery, about which little is definitely known. The alliance between blood supply and the milk shows, however, to have a copious supply of milk, there must be a correspondingly generous supply of blood. The blood flows from the heart to the udder, and passes into the milk veins, and back through the milk wells, near the fore legs into the body, returning again to the heart and lungs. The milk veins show by their size and engorged condition the amount of blood they carry. The milk wells should be large enough to admit easily the second finger of a man's hand.

The front part of a cow's udder is often less well developed than the rear portion. Here is a loss in milk greater than is commonly recognized. Some years ago Professor Plumb found in thirteen cows deficient in the fore part of their udders, that the hind teats gave fifty-seven per cent. more milk than the front ones.

Old Cows.—As to how long a cow should be retained in the herd each must decide for himself ; but I am satisfied that many people sacrifice their cows by selling too soon, as they are afraid the cow will become too old for the butcher. I have kept many cows until they were worthless for beef, and thought that it paid rather than to lose a year or two of good milk. The mature cow has outgrown the likelihood of milk fever and garget, and has shown she possesses good lungs and a good digestion, and that her disposition is good. We have had cows eighteen years old that made 350 pounds of butter in a year. By the records of 486 cows kept for seven years, the age of greatest profit in a cow's life is from six and a half to fourteen years old. The Holland Government tested a large number of cows to find at what period of cow's life the milk contained the greatest amount of butter-fat. The period was fixed at from the seventh to the eighth year, and that in a healthy, well-fed cow the milk capacity increased up to the twelfth year, the flow remained stationary until the fifteenth year, when it usually decreased until the cow became farrow.

Sires. — The selection of a pure-bred sire to head a grade herd is wise. This sire should be a good individual, strong in his race type, with a backbone as rugged as the ridge of a continent, without brisket or dewlap ; a distinctly masculine head, with a good mellow skin. He should show rudimentary teats and dairy form in his rear conformation. It is important, though often overlooked, that the dam of this sire should have a perfectly-formed udder—for form of the udder is strongly transmittible, and each breed has a type of its own. The sire should have a lively sense of his own importance, and not be willing to be imposed on by rough handling. He should fight if cornered, for the gentle bull rarely imparts grit to the offspring, and endurance seems to be founded in temper. Listless, flabby people are amiable ; so is a listless, inert bull. The very word bully should indicate his character ; he should be ready to bluster and fuss at any infringements of the rights of his harem. It is better for the head of a grade herd to be a strong, typical in-