

and ensures a healthy and vigorous calf. If the calf is weak and puny it is better to knock it in the head at once. For the first few days of its life the calf should get nothing except its own mother's milk. The colostrum or first



A Typical Danish Creamery.

milk is rich in all the food ingredients needed for a vigorous start in life, and provides besides the stimulating and lubricating qualities needed to start into operation the complicated and delicate digestive machinery of the youngster. I usually prefer to teach the calf to drink as early in life as possible; the longer this is postponed the greater the difficulty and injury in rupturing the bond of affection between cow and calf and supplanting the mother in the regards of the calf. For whatever purpose the calf is designed, it should be fed on warm, whole milk during the first week or ten days of its life. After this time the butter-fat of the milk, being too valuable, should be replaced by some cheaper heat and energy-producing nutrient, and the fact should never be lost sight of that the calf is being raised for the dairy, and is to prove superior to some cow the place of which it will eventually take. Early in life its energies must be directed in the dairy channel, avoiding the fattening tendencies of a whole milk diet.

THE CHEESE FACTORY CALF.

Among the patrons of cheese factories the custom has been to have the cows "come in" early in the spring so as to allow of some butter being accumulated and the calves to get some milk before the factories open. Where the winter creameries have been established the calves have a better chance, as this plan encourages the production of milk in winter. Where some of the best cows are bred so as to "come in" in the fall and early winter not the least of the advantages of winter dairying is having a supply of skim milk for the calves. These calves will be ready to meet the grass in the spring time, and the result of the first year's growth will be far more satisfactory than where the calves come late in the spring.

At the best whey is an unsatisfactory substitute for milk for feeding calves, young one's especially. Before giving them the whey in the condition in which it is fed on many farms, I should advise some quicker acting poison as a more humane method of killing the calf.

THE PRIVATE DAIRY CALF.

In the private dairy, or cream gathering creamery, where any gravity system of creaming is followed, the skim milk contains a considerable proportion of the original butter fat. If fed sweet and warm the result will be a better calf from

the dairy standpoint than if the calf had followed the cow. By throwing a little cornmeal, oatmeal or fine wheat middlings into the feed pail just as soon as the calf has finished drinking, it will soon acquire a liking for other foods besides milk, and the thriftiness of the calf will afford pleasure to the eye and the promise of profit to the owner.

Where for economic reasons the separator has been introduced the skim-milk is deprived of all except the merest trace of fat. For satisfactory results in feeding the fat abstracted must be replaced by some cheaper form of heat and force producing food. Theoretically the addition of some of the cheaper animal fats or vegetable oils would appear to supply the deficiency caused by the removal of the butter fat in the cream. In practice, however, it has been found impossible to add these to the milk so as to form a satisfactory ration. Linseed meal especially the O. P. meal has given satisfactory results in combination with skim-milk. Flax-seed, whole or ground, a feed which can be grown on any Canadian farm as easily as oats, is one of the best adjuncts to skim-milk in feeding. It should be cooked to a jelly and added to the milk. Cornmeal mush is an excellent feed in combination with skim-milk.

OVER FEEDING INJURIOUS.

Over-feeding is injurious, and a common mistake is to suppose that because the fat has been taken out of the milk it is a poor food, and the lack in quality may be made up by an increased quantity. Another trouble with skim milk is that it is too often filled with germ life and its products and sets up disorders of the digestive tract, precisely what often happens the bottle-fed baby the first summer of its existence. To avoid these troubles care should be taken not to over-feed, and the most scrupulous cleanliness should be practised. As much pains should be taken in washing the pails from which the calves are fed as any other dairy apparatus. Until the calf is two months old the temperature of the milk should not vary more than five degrees either way, from the body temperature, about 100 degrees. To find out the temperature of the milk the thermometer should always be used. Calves will thrive better if fed three times a day, but owing to the pressure of other work on the farm they are usually fed twice, and if fed at regular hours soon become accustomed to receiving only two meals.

To teach the calf to drink let it fast twelve hours, then take about two quarts of warm milk directly from its mother. Hold it in front of the calf. Put the first two fingers of the disengaged hand, palm uppermost, in the



Interior View of a Danish Creamery.

calf's mouth, allowing it to suck. Now quietly lower its head until the knuckles are below the surface. Spread the fingers a little so that the calf can suck the milk through