

Raising Calves on Skim-Milk.

If you are breeding a dairy herd, the first thing now to be done is to knock every calf on the head which does not come from a good milker; in fact, no such calf should ever be dropped.

The popular error made in feeding skim-milk is that the feeder, believing it to be poorer than whole milk, feeds it in larger quantities. This is a mistaken idea, for skim-milk is richer in the essential constituents of animal growth, and should be fed in rather smaller quantities, if any distinction at all is made.

No invariable rule can be laid down for the raising of calves on skim-milk, and each feeder must make a rule for each calf. It is often said that a weakly calf should receive new milk longer than a strong one, but we say, knock the calf on the head, unless the weakness is caused by some temporary ailment from which the calf is likely to rally. The new milk may be withheld when the calf is about two weeks old, and the skim-milk may be commenced more or less gradually, depending upon the vigor of the calf, first giving part new and part skim, feeding the mess at blood heat (98° F.); better use a thermometer. The best substitute for the fat removed from the milk is flaxseed jelly, made by boiling flaxseed in five or six times its bulk of water until a thin gruel is formed. The quantity first used may be one or two pounds of flaxseed to 100 pounds of milk, which is gradually increased to 5 or 6 pounds per hundred of milk, the flaxseed being increased in proportion to the decrease of new milk, the latter quantity (5 to 6 lbs.) being used when the milk is entirely skim. The jelly, of course, is mixed with the milk. It is better both for the calf and the dam if it was not allowed to suck at all.

The next step to be taken is to endeavor to get the calf to eat as soon as possible, and while doing so the process of taming can be advantageously pursued. It is a great blunder to feed gruels and slops; the food should be dry and uncooked, given immediately after the feeding of the milk, the great object now being to get the calf to masticate the food thoroughly, instead of bolting it, as is done with gruels and cooked foods. The best food is whole oats, teaching it to eat from the hand, or, at the very outset, forcing small quantities into its mouth. Bran may be fed in the same way, and when it learns to eat, small rations should be left constantly before it. Above all things, avoid the feeding of sour milk. The feeder should also have on hand some early-cut, juicy hay, which the calf will soon learn to eat, and hay tea made therefrom will make an excellent substitute for milk, for a change. A few pulped roots may also be fed to advantage. Salt should not be given to young calves.

Under improper treatment, now look out for scouring. This misfortune can be remedied by the use of lime-water, made by putting a lump of lime about the size of a hen's egg into a jug of water and shaking briskly, then keeping it corked, when it is always ready for use. A tablespoonful of this liquid may be given with each feed so long as scouring continues, at the same time reducing the quantity of milk fed. The main causes of scouring are over-feeding, irregular feedings, and feeding cold milk. An egg stirred in the milk is also said to be an excellent remedy; so is parched flour. Skim-milk, when fed in proper rations, should bring 25 to 30 cents per 100 pounds, or 2½ to 3 cents per gallon.

When the grass begins to start, don't rush the calves (or the cows) to the pasture too hurriedly; accustom them to their changed conditions by degrees, changing the feed very gradually, and do not expose them to inclement changes of the weather.

Separating Cream from Milk by Hand-power.

Since mentioning this subject in a previous issue, we have received several inquiries relating to the hand separator, of which the accompanying cut is an illustration, and we refer intending purchasers to our advertising columns. The figure explains itself. The milk is merely placed in the upper cylinder, from which it runs through a tap into the lower cylinder, and, when the crank is turned, the skim-milk pours out through one of the small spouts, and the cream through the other. The machine can be turned by any



HAND SEPARATOR.

person of ordinary strength. Forty turns of the crank per minute insures sufficient speed, causing the cylinder to make 6,500 revolutions per minute, and will readily separate 250 lbs. of milk per hour. The gearing and balancing are so exact that the machinery revolves easily, softly and noiselessly.

With the capacity mentioned, a farmer who has 10 cows giving an average of 16 lbs. of milk each per day, will separate the milk in one hour; or half an hour in the morning and half an hour at the evening's milking.

The hand separator is specially adapted to the farmer's own use when he makes his own butter, but there is little objection to his sending his cream to the creamery under this system. The great advantages possessed by the separator are these: 1. The milk can be separated immediately after milking, when the temperature is at its best, thus saving the labor and expense of heating the milk to its proper temperature, as is required by the separator operated by steam power, when the milk usually comes from several farmers before being separated. 2. The skim-milk can be fed to the calves warm from the cows, being then in its very best condition, and possesses feeding qualities equal to whole milk that is allowed to cool before being fed to the calves. 3. The butter-milk can also be fed fresh and sweet, and will have about the same feeding qualities as new milk, whereas, under the souring

system, the butter-milk is almost useless as food for calves. 4. An extra quality of butter can be made from the sweet cream, the farmer having all the conditions under his control, and if he makes his business known to the public, he can command the highest prices for his butter. The quality is still further enhanced by the fact that the separator takes out all the dirt that may happen to get into the milk, thereby preserving the original sweet, creamy flavor, which cannot be imparted to butter from sour cream, and the separating process causes the milk and cream to get such a thorough airing that the animal odors are driven to the winds. In short, it is hardly possible to make bad butter under this system.

The hand separator is the latest invention De Laval, the famous Swedish inventor, and is now in the hands of the investigators, who will be sure to expose any flaws should it possess them. So far as yet known, the machine has given great satisfaction to all who have used it; but it yet remains to be proved whether or not it will separate as much fat from the milk as the steam separator, as the motion by means of the hand crank cannot be made so uniform. This difficulty, however, can be easily obviated, and it may be safely asserted that it will separate more butter from the milk than by the ordinary setting process. When the news of the invention first swept over the United States, an ingenious Uncle Sammy protested against the use of the crank; he would get a dog, or something of that sort, to do the revolving business.

Hand in hand with the separator, is the invention of the lactocrite—an instrument which can be attached to any of the De Laval separators and will accurately analyze twelve samples of milk all at once in a short space of time. The particulars about this valuable instrument will appear in our next issue.

Prof. Arnold, referring to his recent trip to England, said before the N. Y. Dairymen's Association: In Liverpool he visited some of the leading wholesale houses where cheese was handled, and found the warehouses nearly empty in June. The same fact was observed in London. Where it was formerly the custom to buy largely in advance, they now buy only as they need the goods. This compels the producers and small dealers to carry the stocks. The case may be different, however, in the fall months. Canadian cheese was preferred over that of the States. He saw it sell at 59s when lower grade English Cheddar was only 44s, and State cheese only 40s. The objection made to States cheese was that when it began to get off-flavored it went from bad to worse very rapidly, whereas the Canadian held its quality longer and better. It requires less skill to make cheese in England than in this country. The temperature of the air is more even, and the grass is much better. We are obliged to cook our curds too high to make fine cheese, on account of our high temperature in summer. The lower temperature in England helps the cheese maker wonderfully. But the greater part of the cheese is made in private dairies, and is, therefore, very uneven in quality, while our factory cheese has the great advantage of uniformity.

In the United States last season the general average price of Shorthorns at auction sales was \$101.50; Herefords, \$209.80; Polled Angus, \$305.30; Galloways, \$248.