

are new discoveries and inventions make their way rather slowly, but enough has already been seen and read to convince the most skeptical that the time is not far off when the silo will be as indispensable to the farm as is the barn or stable. There are now over 1,800 silos in the United States, and 650 reported in use in England. In a country like Canada and in some of the Northern States, where the winters are so long, the silo should prove doubly valuable. A Western contemporary in discussing this subject says:—

"The importance of succulent food in the winter is likely to make this method of preserving fodder almost universal in this country, because, when properly conducted, it costs no more than to cure and store our grasses in the form of hay. At first the only crop ensilaged was green corn. This crop should always be used, as it furnishes a very palatable green food in the largest quantity per acre, but it is only a partial food in itself, and should be used with green clover ensilage, which is complementary to corn. In fact, the general grass crop can be profitably ensilaged to the extent that is required to balance the corn. If a variety of grasses are ensilaged and fed with corn, then beef may be made in winter without, or with very little, grain."

CALF-REARING IN ENGLAND.

Before the Kingscote (Gloucestershire) Agricultural Society, Mr. James Macdonald read a lengthy paper entitled "Our resources in live stock," in which he makes the following remarks upon calf-raising:—

I do not say that all farmers should rear their calves. It may suit some better to sell the calves when one, two, or three weeks old. If the calves are of a good class they will sell readily at handsome prices, from 40s. to 70s. While it may suit some to breed calves and sell them young, it will undoubtedly pay others to adapt their arrangements specially for rearing. Instead of keeping large stocks of cows they may buy in young calves, rear them partly on milk and other suitable food. In certain cases these bought in stock may be carried on and fattened when from two to three years old. In others they may be simply reared and sold as lean stock when from 10 to 18 months old.

This system of buying in calves when they are very young and rearing them for sale or slaughter is pursued very extensively, and I am aware that, as a rule, where good management has obtained the results have been satisfactory.

I have been fortunate in obtaining notes from a number of extensive and successful farmers descriptive of their system of management in calf-rearing. The most striking feature in these notes is the remarkable uniformity or sameness in the plan of operations. There is so little variety indeed that it would be quite useless to take up your time in reading in detail these various accounts.

A very brief summary will be sufficient. In some cases, chiefly where dairying is pursued, the calves are dropping all the year round. From the end of October till the end of March is the most general calving time for cows, and some farmers say they aim at having their heifers begin to drop a little earlier.

A few allow the calves to suckle their dams till the youngsters can do without milk. This

plan should be followed with heifers not intended to be kept on as cows, but, as a rule, it is not economical. Many think it advisable to let the calves suckle their dams for a week or ten days, and then feed them by the hand. Perhaps the majority pursue the hand-feeding system from the very outset. At first, the calves get about two quarts of new milk twice a day, and when about a month or six weeks old they are turned on to sweet skimmed milk, this change being made gradually by mixing a little skim milk with the whole milk. Some discontinue the new milk even earlier, others continue it longer than the periods stated.

It is well to have the skim milk scalded as soon as the cream has been taken from it, because it will thus longer remain sweet. A simple way of scalding is to insert a vessel full of the skim milk into a larger vessel containing hot water. Some even boil the skim milk, and are thus able to keep it sweet a whole week.

One large farmer who sells his milk on the six week days, keeps at home his Sunday's milk, has it boiled on Monday, and gives a portion of it to his calves every day. The supply of this milk often lasts the whole week. If the Sunday's milk falls short, the calves get two quarts of new milk, with one quart of water added. Some feed three times a day in the first two or three weeks, others only twice.

Supplementary foods should be begun soon, but at the outset given in very small quantities. Some give extra food before the calf is a month old, others not till it is in its sixth or seventh week. The commodities most largely used are linseed, linseed cake, one or other of the prepared foods already referred to, malt, pea, bean, and barley meal. All are given in the form of gruel, and the gruel can hardly be too well steeped or boiled. The gruel is given along with the milk, the allowance to start with being very small.

As the calves grow up, the allowance of milk is reduced, and that of the other food increased.

A little fresh sweet hay should be put within the reach of the calves as soon as they can eat it with safety. The boxes or stalls in which the calves are kept should be cleaned regularly and carefully; let the youngsters have a dry, comfortable bed, give plenty of exercise and fresh air, but keep them perfectly clear from draughts.

At six months old, or earlier, the calves are wholly weaned from milk. They are then fed on hay (which should be cut), pollard, linseed cake, or some kind of meal or prepared food, with, in some cases, a moderate allowance of either turnips or mangolds. The roots should be cut up finely. It is well to avoid putting calves too early to grass. When they are put out it is usual, where a liberal system of feeding prevails, to give them a little cake for a few weeks—from 1 or 1½ to 2 lbs.—until they take well to the grass, and have a sufficient nourishment in it.

It is considered unwise to let very young calves out to grass. Calves under six months old, or any that are not thriving well, should, if convenient, be kept in the house, where they will, as a rule, make better progress than if they were out at grass. And, if young or weakly calves are put out to grass, they should be taken in for an hour or two in the height of the day, and in some cool place have put before them some rich food, such as cut hay and linseed cake, with perhaps a little meal or coarse pollard. This allowance need not be large—little will do much good, and will be well repaid by the youngsters, that is if they are of the right sort. Judicious and liberal treatment will enable a farmer to make the most of good ani-

mals, but no sort of treatment ever can make bad animals good.

One very successful stock-owner thus briefly describes his plan of calf-feeding:—"New milk for the first fortnight, skimmed milk and a little boiled linseed until three months old; a little hay, bran, and linseed cake as soon as they can eat it. Discontinue milk at four months old, and give them oil-cake porridge up to the age of six months, with hay, linseed cake, and barley meal. No extra food at grass."

Another successful calf-rearer says he gives at the first a little sugar in the milk, the sugar being first dissolved in water. As soon as the calf takes to the food, a little oatmeal and boiled linseed are mixed with the milk. He never gives more than a gallon of rich food. In their after treatment the calves get the best of food in small quantities. He finds it advisable to keep them in the yards the first season. All kinds of grain ground into flour are given to the calves, as well as roots, linseed cake, and hay, while the youngsters have a good clean bed of either oat or wheat straw, which they greatly appreciate.

DR. JOHN VOELCKER ON ENSILAGE.

At the recent meeting of the Maidstone Farmers' Club Dr. John Voelcker delivered a lecture on Ensilage.

After treating the subject very exhaustively in its various aspects, the lecturer continued:—"By way of a brief summary I would say that ensilage is a very good food, but that fodder is improved in quality or value by the process I hold is not and cannot be the case; and whether it will pay or otherwise to make silage in place of hay will depend, not upon the value of the changes produced in the fodder, but upon external circumstances, such as the prevalence of bad weather, which prevents good hay being made, or the absence of sufficient food, such as roots, for winter feeding. In some parts of England, for instance, the weather is so uncertain that it is quite impossible to make aftermath into hay, and in other parts again, on heavy clay lands, roots cannot be got to grow well, and there is in consequence no food for winter keep. In such cases ensilage will prove a valuable substitute and way out of the difficulty, and in the case of continued bad weather good ensilage will always prove better than bad hay. When, however, good hay can be made, I believe the farmer will always make it, and rightly so, for it does not undergo the loss consequent upon ensilaging, nor involve the cost of erection of special constructions to hold it. Lastly, it must be remembered that, even if coarse grass may be rendered softer and more digestible by ensilage, this can never put into it valuable feeding constituents which it did not originally possess. On the relative cost of harvesting hay and making silage experience is very varied, for while the former involves the expense of making the hay, it must be remembered that in ensilage the cost of carting the immensely larger bulk of wet grass, etc., and of subsequently storing it is very greatly increased, much time is occupied, and a larger staff of hands required for the work. Where the number of laborers is limited, the simple carrying and filling would be such as to necessitate for the time the stoppage of all other farm work, and if, as Mr. Henry Woods tells us, we should readily grow from 35 to 50 tons of maize to the acre, the mere work of cutting, carrying, and storing this would be enough to strain the utmost resources of the average farmer. The difference cannot be too strongly borne in mind, that in hay, a crop is being carried which is practically all dry and useful