

for milk that have at different times been recommended, we have found nothing better than those previously referred to.* It is true we have omitted any allusion to the "Irish moss," which calves seem to relish well, though it does not prove of a fattening nature. For the lot of calves named, a couple hundredweight of this article is found a desirable addition, and lasts throughout the season.

CONDITIONS OF SUCCESS.

In rearing calves after this fashion, success greatly depends on attention to a few minute details. Not that a list of rations should be given for different sizes, ages, &c., but the attention, care, skill, and labour needed thus to make good calves, are far greater than when either suckling from the cow or feeding with a liberal supply of new milk from the pail, is the system adopted. For instance, even in the matter of giving their food, a wide difference will be seen in the appearance of two calves, the one fed by a careful, pains-taking hand, the other allowed to gulp down its milk without time for admixture with straw. This is a very important matter, and one on which success or failure very frequently depends. The nearer the process of feeding is approximated to the slow but beneficial act of sucking the better. Those calves which are in the habit of drinking much too fast are generally detected by a glance at their "paunchy" condition. We have treated such customers successfully by putting on a small leather nose-bag at meal times, the bottom being perforated with a couple of holes, each 3-16th of an inch in diameter. Again, care must be taken to have the calf well bedded at least twice daily, wheat straw shortened being the best litter for the purpose; attention to this point will tend as much as anything to keep the animal in good health. No vermin must be allowed to obtain a lodgment; how often is it the case that the entire well-doing of a calf is retarded from the presence of lice on the head or neck, the top of the shoulder, or towards the rump! In a continual state of irritation, its thriving can scarcely be looked for. We are not aware that the appearance of these parasites is attributed to any peculiarity in management; calves in good condition, calves in the highest condition, as well as those of contrary character, are alike subject to them. A dressing of sour buttermilk, well brushed into the skin, is called for without delay, or the usual application of *stavesacre*, soda, and soft soap, if the former is ineffectual. Castration is generally performed when the calf is from three to six weeks old. The former of these ages we consider preferable; it is at all times a safe practice to fast them at the time for the preceding meal.

TURNING OUT TO GRASS.

As Spring advances, the supply of roots to the calves will necessarily be greater, according to their increasing age and ability to masticate. But it is noways desirable or economical to send them out to grass very early in the season. Last year we saw on many farms along the line of the Central and North Eastern Railways in Scotland, lots of puny half-starved calves crouching on the lee-side of the fences while the Grampians yet retained a full share of their wintry mantle, and the streams running seawards were flooded with the melting snow. This was in the early part of May, and we cannot profess to have fallen in love with the practice, though probably the unexampled scarcity of food in the North had something to do with it. Better far to spend a few pounds in artificial food, than to push the young stock out into the fields prematurely. And you will do well to begin by giving them only a few hours a-field during the day, bringing them in again at night to their pound of cake, with a bit of (hay) chaff for the older ones, and the mess of skim-milk and linseed gruel for the young stock. If arrangements can be made for summer grazing the calves in a park, such as is usually found about a nobleman's place, they will do far better there than anywhere else. What with shelter, food, and water,—the former alike from the biting blast, the scorching sun, and the tormenting flies; the latter not only to drink of, but to splash about in the running stream,—we say there is more in these old-fashioned matters, than you may care to recognize. As Mr. Bowie, of Forfarshire, a noted breeder of polled cattle, remarked when he happened to see his young stock last summer, "That," said he, "is the life of them," pointing at the same time to the burn or brook which ran along the bottom of the field, and in which the calves were standing, and swishing their tails, under a broiling sunshine. Among

calves reared in the manner we have named, blood-striking or quarter-ill, is hardly known. We have only had one case out of 150 calves so treated, and that was attended by special circumstances, which readily accounted for the illness as exceptional. Not that we should advocate the putting them into a park which is so filled with taken-in stock as to cause a risk of semi-starvation. Better in such a case to keep them at home, and graze them on a piece of old turf, or second year's "seeds," or something of the kind. But there are certainly many parks (or enclosures adjacent to them) where an arrangement of the kind could be readily made; and, even if not pretty close at hand, the facility of railway communication partially nullifies a distance of 20 or 30 miles. Many of the West of Scotland farmers send their young stock, for summer keep, across the Clyde, to the green-topped hills beyond, wisely reckoning that their own grazings pay better in the shape of milk, butter, or cheese, for the teeming population near at hand. But, from a "penny wise and pound foolish" sort of policy, which forbids their bestowing more than the smallest modicum of care, attention, or expense upon their stock until they are of an age to enter the dairy—the summer seems to do but little for them.* Kept thus, calves ought not to cost their owner much trouble or expense during the first summer of their existence; i.e., when they have fairly said good-bye to the pail or the feeding-trough. In October, however, they must not be forgotten, but according to the mildness or severity of the season, either have their range prolonged or be brought to the home-stead. Receiving yard shelter at night, and a dry feed into the bargain, they may roam in any convenient pasture during the day. In another month the horns may be branded with an inch brand, and the number entered in private herd-book. Every farmer who rears stock, of even the most moderate quality, ought to keep such a list. You have then, among other advantages, the opportunity of seeing which cow's calves are, or are not, worth keeping in the ensuing season. You know the exact age, the sire and dam, and other particulars, which are as important to the owner as the entries of Mr. Stafford are to the higher breeders of pure stock.

More about Mules.

Mr. W. HENRY, of Rockton, Ill., sends us the following article on mules, for which he has our thanks. He is largely engaged in mule breeding, and says if the Provincial Agricultural Association will give prizes for jacks, jennys, mule colts of various ages, and matched pairs, he will come over and show his stock:—

"Mules have many advantages over the horse; they cost one-third less for feed and other expenses. They are not subject to many of the diseases of the horse, have much greater power of endurance, live to greater age, without depreciation in value. We now have a mule at our place sixty years of age, and perfectly active.

"The charge of stubbornness so often made against the mule, is entirely due to the fact that he is generally more roughly used than the horse, and has a capacity to know it. When mules are as well cared for as horses, they are equally kind. They will stand greater degrees of heat and cold than the horse, and are more intelligent, that is, capable of being more readily taught. The mule has one fault; if he is left in the stable six weeks without use, he requires to be broken again. His memory is not equal to that of the horse, although his immediate intelligence is greater. He may be sustained on coarser food, with less expense for harness, shoeing, etc. No one ever asks the age of a mule, for they seem to be equally valuable at any age. Dickens tells us, 'that sailors with white top boots, and dead mules, are never seen.'

"The ordinary cost of a fine mule is much greater than that of a good farm horse, but this is soon compensated for in the difference of cost of the keep. It is difficult to understand why mules, so intelligent in comprehending new kinds of service, should be so deficient in some other respects; for if a mule be bedded with the commonest salt hay, and his manger filled with good oats, underlaid with a half peck of thistles, he will probably eat the thistles first, his bedding next, and the oats afterwards, unless immediately he should take a notion to feed on his crib or the side planking of his stall.

"A mule may be taught to drag a carrot-weeder, No. 0. lifting sub-soil plough, or a horse hoe, through rows of every width. At a late visit of a committee of the American Institute to our place, the mule *Kitty*, sixty years old, carried a sub-soil lifter through rows of celery plants, planted twelve inches apart, which, by their growth, had reduced the space to

* The summer grazing (six months) of a two year old heifer is charged 32s. 6d., one year old, 21s. 4d., and calves in proportion.

eight inches, without treading on a single plant; she moved her feet parallel with the ground beneath the plants and close to the surface of the ground, placing each in front of the other without difficulty. The mode of drilling a mule to perform this operation, is by placing two joists, twelve feet long and four inches diameter, on the ground at three feet apart, early in spring, driving the mule through these joists, without reins and by the word, twenty or thirty times; then turn over one joist toward the other, thus bringing them four inches nearer to gether, and the mule through again twenty times, practicing the short turning by word; then move the joist four inches again, and so on until they are quite near together. If the animal should tread on one of these joists, it will turn inward and trip it up. When the mule is again on its feet it will tremble with fear; then place the joist one inch wider apart than the width of either of its feet, and the mule should be then walked through between the joist, thirty, forty, or fifty times. This it will do by placing the right and left feet alternately before each other, and occupying but one line of space. If kept actively employed thereafter, it will be found capable of duplicating this action between row crops, carrying either the No. 0. sub-soil lifter, the carrot-weeder, or the horse-hoe, and doing the work of forty or fifty men with hoes, spades, or forks, and in a manner every way superior both as to depth, exactness of action, and quality of result."

Horse-breeding in Ireland.

I HAVE read with much interest the result of the inquiries instituted by the Agricultural Society upon the breeding of horses. The replies are pretty much the same from all quarters: all complaining of the scarcity of weight-carrying horses with good blood and of good sizes. I think the first deficiency arises in a great measure from the fact that every good-looking colt that goes into a fair is immediately snapped up, and generally taken out of the country; and as soon as a weight-carrying hunter is heard of, some of the first-class dealers (who have agents in all districts) come and tempt him away by a long figure; consequently, good ones seem scarce, while the wretched under-bred animals are a drug in the market, and meet our eye everywhere. The poorer class of farmers have to some extent given up breeding, because they have not found it pay; the simple reason being that they have preferred giving mares to the cheapest nondescript animals in the neighbourhood, to paying a little more and going to the best available horses they can get. Naturally, the result is a wretched colt, that they plough at two years, and then sell to a shipper at from £8 to £18. Then they find it does not pay. No wonder! The general run of farmers keep one brood mare, which they work on the farms, and there are plenty of horses bred still, but of the kind I have just described. The ruin of the country is the quantity of quarter-bred stallions, not even fit to produce a respectable animal to draw a bathing machine. These are to be found in all directions, at prices varying from five shillings to fifteen, and are largely patronised by the small farmers, who know as much about a horse as a gorilla! The first step to improve the race of horses would be to establish good sires, and hunt these brutes out of the country. I think any gentleman in a district, or large farmer who went to the expense of establishing a real *first-rate* sire, at from £1 to £2, would find it pay, and it would be the duty of any man who took an interest in the matter to support him as much as possible. "North Countryman's" suggestion of travelling a horse would hardly succeed, unless he had a great name, and stood for some time at different places, so as to let the farmers know of him. Then I think it would be an excellent plan. The best suggestion that I can make in the present state of affairs is, for all gentlemen in the country to use their influence with their tenants and the farmers in their district (and they are generally very willing to listen to advice), to send their good mares to the best available thorough-bred horse; or if they have a bad mare, or cannot afford the expense, to send her to the best heavy cart stallion, and breed a good working horse, which would be far better than the indescribable class of animals now so rife. Levland-lords and resident gentlemen do all in their power to put down the wretched brutes of stallions which are now in every district, without blood, bone, or any recommendation; and by using their efforts to encourage good sires, they will eventually get them into the country. Farmers are now beginning to see the right road, and will soon perceive where their own interests lie. I have endeavoured to point out a practical remedy, and one that is within every one's power, and landlords and tenants will soon reap the benefit, if they use their efforts in this cause, and will discern that good colts will pay well, and that it is the worst economy to employ bad sires.—*Vindex, in Bell's Life.*

* A gentleman on the borders of Leicestershire, who has been in the habit of rearing largely, economically, and well, writes us that "he has tried many substitutes for milk, such as bay tea, oil cake gruel, Irish moss, oatmeal, &c. but has come to the conclusion, after considerable experience, that nothing is so suitable as milk." Another gentleman, who is one of the most successful managers we know of, gives it as his experience, that "the best substitute is linseed and wheat ground to meal, (2 bushels of linseed to 1 bushel of wheat), boiled to gruel of moderate thickness, and then mixed with an equal quantity of skimmed milk."