

Stock.

Selection and Care of a Bull.

The dairyman may make it a part of his business creed to believe that dairy cows must be bred and reared especially for the dairy. He cannot afford to pay a breeder to do this work for him. The mere milk-producer may do passably well by buying cows in the market and using them as long as they are milking freely, and then fattening and disposing of them to the butcher and replacing them with fresh cows. To do this with profit, however, requires a concurrence of favorable circumstances, good judgment in buying and selling, and a market for the fat cows in which they can be disposed of without loss. It is even a question for the milk dairyman to consider if the expense of feeding a good cow during the period when she is falling off in her milk and approaching parturition again, may not really be less than the inevitable losses arising from the frequent sales of dry cows and the enforced purchase of fresh ones. In general, and without exceptional facilities, with the advantage of considerable capital, and sometimes the profit to be derived from supplying neighboring dairymen with cows purchased and brought in with his own, the dairyman will find that he can breed and raise his own cows and keep them over their dry period at far less cost than he can buy fresh cows and sell the dry ones. And this will be found true even without taking into account the important advantage accruing from the possession of a herd of extra good cows, which milk well in their flush and continue without unnecessary failure in quantity for a long period. With the butter maker no question of this sort arises. *He must breed and rear his cows*, for they are not to be purchased at such a price as he can afford to pay, and it is a palpable fact that *it costs no more to rear a good cow than a poor one.*

This being the case the selection and care of a bull for dairy purposes becomes an important part of the dairyman's business. This influences the character of the progeny, and to some extent the sex of it; and it goes without saying that it is the dairyman's interest to have as many heifer calves as possible. To secure the first effect, the bull should be taken from a herd of known good character, consideration being given not so much to the fact that the bull's dam was a good milker, or a large producer of butter, as to the certainty that the line from which the bull comes was good. A phenomenon in the dairy is apt to disappoint expectations. The descendants of some of the most noted cows have been very ordinary animals and some have been very poor ones; but if the habits of the family dam and grandam, sisters, nieces, and aunts, have been good, without any one possessing extraordinary capability, the result will be more satisfactory.

To secure a preponderance of heifer calves it is advisable to use a young bull—one not older than five years. For a small herd an animal 18 months old may be used to begin with, and if he is kept until he is five years old he may make two crosses on his own heifers, and be the sire of his own granddaughters, which will be far enough to go in line breeding, even with the most satisfactory materials. The effect of using a young bull on aged females has been conspicuously noted in sheep breeding. An instance out of many may be given as follows: A flock of ewes served by rams under 18 months old, produced from two-year old ewes 14 male and 26 female lambs; from three-year-olds, 16 males and 29 females; from four-year-olds, 5 males and 21 females. There were several twin births. Another flock, served by rams over four years old, produced from two-year-old ewes 7 males and 3 females; from three-year-olds 15 males and 14 females; and from four-year-olds, 32 males and 14 females. There were no twin births in the flock. In the former flock there were in all 35 male and 76 female lambs, and in the latter 55 males and 31 females. This remarkable result has been verified by other instances, and although it may not serve as a basis for a special rule, yet it points very strongly towards the existence of a physiological law of which we have evidence in the highest race of animals, as well as among the lower ones.

It is advisable to keep the bull in active work and only moderately well fed. A luxurious, idle

life is highly objectionable. Work may always be found for a bull on a dairy farm. He may be trained to work in a horse power and do the churning and the fodder cutting. He may be harnessed to a cart and haul feed from the fields, or do considerable light work in many ways. This will keep him docile and add much to the sureness of his services. The bull should be provided with a ring in the nose. This should never be neglected, even with the most docile and well trained animal. Perfect safety is thus cheaply purchased. The ring should be of copper, and is to be inserted in the cartilage between the nostrils. It is easily inserted when the animal is young by means of an instrument known as a trochar and canula. The trochar is provided with a sharp, three-edged point which pierces the cartilage, and the canula, which is a tube fitting over the trochar, passes with it through the hole made by it. As the trochar is drawn out the canula is left in the hole, when one end of the open-jointed ring is inserted, and this is drawn through with the end of the canula. The ring is then closed and fastened with a screw riveted at the end, to prevent it from coming out. A strong staff made of tough hickory, furnished with a spring hook at the end, is used in handling the bull, and the constant use of this keeps the bull perfectly docile and quiet. The animal should never be led out without it. It is also advisable to provide a separate pen and yard adjoining the cow yard, for the bull. A high and tight board fence, nailed on the inside of the posts, should be built around the yard, and a convenient door made in it. The pen is furnished with a feed trough, supplied from a passage in front, and a strong ring-bolt is fixed near the feed trough for tying the bull when required. But it is never found necessary, as he is always quiet, secure and easily managed in this safe confinement.—[H. Stewart.

Hogs for Every Month in the Year.

Since the summer packing season for hogs has become firmly established as a regular formidable branch of business in the trade of the country, it has opened up a new inducement for farmers to adopt not only the best known methods in the matter of raising hogs for market in the different months of the year, but there is also a strong inducement offered for experiments within safe limits in the matter of feeding and treating hogs, so that actual experiment may be made to lay down and fix the best rules that can possibly be made to govern hog raising as a regular business. There is no doubt but that hogs of a given age require very different treatment in the winter season from what would be required in the summer time. We have lately seen a good deal of discussion in some of the leading agricultural papers of the country as to the advantage of using grass freely in the raising of hogs, especially while they are young. Of course, this kind of feed can only be used about seven or eight months in the year, but during the grazing season good clover can be used and made to promote the growth and thrift of young hogs to the best kind of advantage, where all the other conditions are kept right. Hogs in this kind of keeping should have an abundance of pure spring water with plenty of shade to resort to, and they should also have bran and meal slop once each day. Young pigs started in this way about the first of April and intended for market during the following winter can always be got into the best possible condition as stock hogs for feeding with corn during the months of October and November, or later. The writer saw this system followed in a general way among all the farmers in Southern Ohio more than a half century ago; we feel sure there never has been a better way devised for raising hogs for market during the winter season than this old plan. It is true corn has often been so cheap and abundant that it has caused a great many farmers to feel as though nothing could be better for hog feed. But thoroughly well-experienced men seem to have settled down in the belief that a fair mixture of good grass with corn, at all times where grass can be fed, is far preferable to feed corn alone, no matter how cheap and abundant the corn may be. The hogs while growing want free range, so as to promote muscular growth and solid health. Hogs that are being raised through the winter season for the spring market, of course, have to be treated differently.—[Drovers' Journal.

A Mixed Diet.

To illustrate the action of nitrogenous and non-nitrogenous food upon the digestibility of hay, Prof. Atwater cites experiments made in Germany. Sheep were taken and for a time were fed on the clover hay alone. For a second period they were fed on the clover hay and 2 lbs. of potatoes. A decrease in the amount of food digested was apparent. For a third period 4 lbs. of potatoes were added, and for a fourth period 6 lbs. of potatoes were used, and the amount digested was in the inverse ratio to the amount of potatoes fed.

It is a matter of common experience that stock are healthier and cows give more milk with potatoes or roots and hay than with dry hay alone. But at the same time, there is apt to be a real loss of hay, unless some nitrogenous food, like oil-cake, malt sprouts, beans, peas, or bran are mixed with the potatoes or roots. There is loss of hay because less of it is digested and utilized as food. The rest that would be digested in right feeding is passed off as excrement, and is useful only for manure.

If the mixed food contains too little nitrogen, and too much starch, sugar, or other carbohydrates, the animals cannot digest it completely. Only the best qualities of hay furnish as much nitrogen as is needed by working cattle or milch cows. Potatoes contain very little nitrogen and a great deal of starch. So sugar beets are poor in albuminoids and rich in sugar, and sugar, like starch, is entirely a carbohydrate. Mix considerable of these with hay, straw, cornstalks or even clover, and the ration will still lack nitrogen, and there will be loss of valuable food material. But if nitrogenous food be added, at the same time, so that the whole ration may contain the proper proportions of albuminoids and carbohydrates the animal will digest all its digestible material and there will be no loss. Some years ago, a German chemist fed oxen for a time upon straw, giving them what he styled a hunger ration, though in fact it might almost be called a starvation ration, for there was just enough of the straw to keep the animals from starving. He then added in successive trials quite small quantities of sugar, starch and other non-nitrogenous materials, determining in each case just how much was digested. And though with starch or sugar and straw together, the oxen had little more than enough to sustain life, yet they digested less from the straw than when anything was added to it.

Management of Horses.

Horses can be educated to the extent of their understanding like children, and can be easily damaged or ruined by bad management. We believe that the difference found in horses as to vicious habits and reliability comes much more from the different management of men than from the variance of natural disposition in animals. Horses with high mettle are more easily educated than those of less or dull spirits, and are more susceptible to ill training, and consequently may be made good or bad according to the education they receive. Horses with dull spirits are not by any means proof against bad management, for in them may be found the most provoking obstinacy, vicious habits of different characters that render them almost entirely worthless. Could the coming generations of horses in this country be kept from their days of colthood to the age of five years in the hands of good, careful managers, there would be seen a vast difference in the general character of these noble animals. If a colt is never allowed to get an advantage it will never know that it possesses a power that man cannot control, and if made familiar with strange objects it will not be skittish and nervous. If a horse is made accustomed from his early days to have objects hit him on the heel, back or hip, he will pay no attention to the giving way of a harness or a wagon running against him at an unexpected moment. We once saw an aged lady driving a high-spirited horse attached to a carriage down a steep hill with no hold back straps upon the harness, and she assured us that there was no danger, for her son accustomed his horse to all kinds of usage and sights that commonly drive the animal into a frenzy of fear and excitement. A gun can be fired from the back of a horse, an umbrella held over the head, a buffalo robe thrown upon his neck, a railroad engine pass close by, his heels bumped with sticks, and the animal take it all as a natural condition of things, if only taught by careful management that it will not be injured thereby. There is great need of improvement in this noble animal. Less beating wanted and more education.—[The Horse Shoer.