

Management of Large Bulls.

All stock breeders know that large bulls have a perfect disregard for fences, and therefore have to be kept in the stable, sometimes for years. Experience has shown in most cases where bulls are kept so confined, without air or exercise, that they become either impotent, or very precarious stock getters, also headstrong and dangerous to handle. I kept a Short-Horn bull six years. When he was a year old I began handling him with a rope similar to one ordinarily used to cast a horse. He would make great resistance, and after a hard struggle would have to come down. I repeated this every six months as long as I had him, and he never knew that he had any strength. His lofty head was leveled to the ground in a manner very humiliating to him; he was always as kind as an ox, and any child could lead him to water. Throwing him took the conceit entirely out of him.

I then invented a plan to exercise him. I set a post in the ground about three feet high, with a cart wheel on top, then lashed a 16 foot ash pole across it, made a frame for his neck at the end, so that the pole would be against his breast, with a rod running out in front to tie his strap to. He very soon learned to go round, describing a circle 32 feet in diameter, with a good track. He was put in this every day, and would walk two hours. After a few days he needed no attention, as he seemed to enjoy it, and was so impatient to start that we could hardly hold him still long enough to tie him.

The result of this was that he was the most active and vigorous bull I ever saw; and out of 87 cows served the summer he was four years old, only four missed. Some of my stock breeding friends have tried these experiments, and say that they have been the means of prolonging the usefulness of their valuable bulls for years. We all know that far too many of our high priced and choice bulls go prematurely to the shambles in consequence of the above troubles. —*Country Gentleman.*

Feeding Corn Stalks.

Economy in the feeding of farm stock is one of the best criterions of a successful farmer, and no one who is either wasteful or extravagant in this particular needs feel at all surprised, if in making up his accounts at the end of the year, he discovers that any balance existing is to be found on the wrong side of the sheet. The principle holds good whether we waste peas at a dollar per bushel or pea-straw at a dollar per ton. Let the *habit* only become fully formed, and there is no telling what the result may be. The following method of preparing corn-stalks will commend itself to the good sense of everybody, and furnishes a good example of the numberless, simple and effective means of coaxing the appetites of our domestic animals, and thus utilizing a variety of substances that would otherwise be either lost altogether, or go direct to the manure heap. We quote from the *Farm Journal*:—

Corn-stalks enter largely into the fall feed of dairy cows, and how to feed them is the important question. The common practice is to feed them in the bundle, as but few farmers feel able or willing to use a cutting machine. This feeding in a bundle without any preparation, I am fully satisfied, is very wasteful, as not only are the butts left, but frequently near the whole stock. I have learned by experience that a little brine sprinkled upon stalks once every day just before feeding, is of material advantage in many respects. The weak brine will cause the cows to consume nearly all, even when fed whole; the flow of milk increases, the condition of the cows improves, and they show greater contentment, especially in this last remark true on cold, windy and rainy days. I find it much better as a general rule, when it can be done, to feed salt on the food, instead of feeding it alone. In no case should more than one day be permitted to pass without brining the morning's feed. The brine should not be strong, only enough to furnish sufficient salt to the cows. Of course the cows should have access to plenty of water; this brine food will cause them to drink more, and thus increase the flow of milk. Let farmers try this, and they will hereafter place a greater value upon corn-stalks.

Economio Horse Management.

(Continued from last month.)

No better illustration of the truth of these statements [viz., that some foods produce fat, some muscle, some heat, etc.] can be found than the practical success of the Banting system. That system, founded upon the above data, clearly proves that foods rich in starch, sugar, or fat, will increase the fat of the body, but not add to the muscular strength, that lean meat does not add to the fat of the body, but does supply the waste of muscle; and we know that lean meat is simply equivalent to the albuminous or nitrogenous principles found in vegetables. We

know, too, that the demand for these different constituents of food differs according to the state of the animal. In very cold climates the rapid loss of animal heat demands an excessive supply of the heat-producing foods; thus the Esquimaux consume enormous quantities of fat.

Again, whenever the muscular system of the animal is greatly taxed, we find a demand for the nitrogenous foods. Hunters cannot do their work on hay alone, they require oats and beans to supply the flesh-forming matter. The British soldier and workman has hitherto excelled in physical endurance and muscular power as much on account of his meat diet as his national qualities. The late Mr. Brasseley found that when he fed his foreign workmen on the same diet as his British navvies, the work done by the two approached an equality. Previously they had no chance with the Englishmen. Flesh, of course, supplies a heavy percentage of nitrogenous matter, but beans and peas supply even a much larger proportion, and their feeding value was well tested in the late Franco-German war, the German soldiers being largely dependent upon peas as an ingredient of their food to meet the waste of muscular tissue. The wonderful endurance of these men is conclusive evidence of the nutritive value of such food.

But we need not multiply illustrations. We wish simply to impress the truth of the chemistry of feeding upon our minds, that we may afterwards fully appreciate the different values of feeding materials. The value of the above table is enhanced when qualified by physiological knowledge, which informs us that woody fibre is indigestible, and, therefore, an excess of it in any food is evidence of at least one disadvantage. It also tells us that a certain bulk of food is necessary to healthy digestion, and that, therefore, we cannot successfully feed entirely on those foods which contain the elements of the body in the most compact form. Further, we are warned against the action of different foods upon the digestive organs; thus linseed, bran, and maize, all cause laxness, whilst beans and peas tend to produce constipation. Some of these articles of provender then possess very different properties, some are laxative, others constipative, but by judiciously mixing them we are able to remove both these objections, and produce a most valuable food.

To keep horses in health when not hard worked we need no mixtures; we have one grain in which the nutritive elements are so proportionately arranged that it cannot be improved upon; practice has long adopted it. I refer to oats. But to keep hard working horses in condition is a very different thing. Oats alone are not equal to it, nor can any other single grain preserve both health and condition. The fact is, either their chemical constitution or their physiological action is defective, and we must, by mixing different articles, so alter the nutritive value, and so balance the physiological actions as to produce a food which will not derange the functions of the animal, but which will supply all the requirements of the body.

Both chemistry and physiology, then, suggest that more than one kind of grain is advisable, if we aim at economy and high condition. But the full economy of mixed feeding is only seen when we consider the money value of the different articles of provender in relation to their nutritive constituents; that is, when we compare the feeding value with the cost of the article. When then, we understand the chemical, physiological, and monetary value of foods, we are in a position to select the cheapest and best food; or rather, I should say, we are able to select those articles of food which, when mixed in proper proportions, afford the largest amount of feeding material at the smallest possible cost. Thus, and thus only, is the highest feeding compatible with the strictest economy. If in the feeding of horses cost were of no importance, so long as health and condition were obtained, a large proportion of the advantages of using mixed food would be lost, as unquestionably oats and hay alone are a very good diet for horses not excessively hard worked. Such materials are, however, 30 per cent., sometimes even 50 per cent dearer than other provender equally valuable for feeding.

Not unrequently when I have been advising the use of a larger quantity of peas, barley, or maize, to the exclusion of a proportionate quantity of oats, I have been met with the remark, "Well, granted they are cheaper, are they as good food? Look at the Scotch; see what strong, healthy, muscular men they are, and many of them subsist almost entirely on oatmeal." This argument is easily refuted. In the first place, oats are not all oatmeal. They contain from 30 to 40 per cent. of husk—indigestible material, equal in feeding value to chopped straw. For this husk we have to pay at the rate of 500 per cent. more than it is worth as food. In every ton of oats are 7 or 8 cwt. of husk, which cost at the rate of from £8 to £12, whereas they are only worth 20s. per ton—the price given at the manufactories. Secondly, although the Scotch laborers, as a class, are fine, big men, they are decidedly inferior in muscle and "condition" to the pitmen of Durham and Northumberland, who eat daily from 12oz. to 14oz. of flesh food. I believe that in no part of the world is there a class of men equal in muscular tone and condition to the coal hewers of Northumberland. The "pit heap" of a large colliery, when the men are assembled to go down, is a sight worth seeing, for many reasons; but none is more striking than the enormous development of limbs, chest, and shoulders displayed by the majority. Change their diet, substituting oatmeal for

meat, and we should at once have a diminished output of coal, and a reduction in the size and tone of their muscles.

To hard-worked men oatmeal is no efficient substitute for beef and mutton, and for hard-working horses oats are inefficient as compared with beans and peas. Experience tells us this most plainly, and science explains it by showing that beans, peas, and tares are almost identical with beef and mutton in the amount of muscle-forming material contained by each, whereas oats contain nearly 60 per cent less than either of the latter.

Now, in horses or other animals excessively worked, the consumption of muscle is far in excess of the waste of other tissue, and the blood must be supplied by a correspondingly large amount of flesh-forming material. To fulfil this requirement we must give food containing a heavy percentage of nitrogenous material, otherwise the digestive organs will not be able to supply the requisite pabulum to the blood. Beans or beef will supply it, oats or potatoes will not, even if we give an extra amount of them, because this entails the consumption of such an immense bulk of material, a large proportion of which is indigestible and non-nitrogenous, that the digestive organs are overpowered and unable to reduce the mass to a state in which all its value may be absorbed. For these reasons, then, we say that the use of oats as a principal article of diet for excessively hard-worked horses is very expensive, if not injurious.

WALKING HORSES.—We hope that those societies who have not yet settled their prize-lists will consider the propriety of giving premiums for the best walking horses. Walking is the gait that is of most use to farmers, and it is this pace which should be encouraged. A horse that can walk three-and-a-half or four miles an hour will not eat much more than one which crawls along at half the pace.

BREEDING FROM FAT ANIMALS.—Dr. Horne, of Wisconsin, a well-known veterinarian, gives his testimony in favor of breeding from animals in moderately low condition. He says that he has had ample opportunity for judging of the best condition of animals at the time of parturition. He could bring innumerable proofs that while animals in high condition suffer much and often at the time of bringing forth, animals so poor as to be a disgrace to their owners, enjoy immunity from more than ordinary suffering, and as a rule do well. Cases of puerperal or milk fever are comparatively unknown in moderately low-conditioned animals.

CASTRATING RAMS.—My experience runs through fifty years. I have seen rams castrated at all seasons of the year, with success in proportion to the heat or cold of the weather at the time of operation. The colder the day the better. I once castrated an old ram when the thermometer was at 40° below zero; and an hour after, and until healed, he paid no attention to it. In the operation I press the testes down, and cut the slit near the lower end, so that no blood can find lodgment; and just large enough to get the testes out; I then cut away the ligaments as usually done, and then draw the main cord out carefully, so as to pull it as far out as possible; the longer the cord is drawn out, the less bleeding. As I pull I wind it around my fingers and draw till it breaks. I never cut or tie the cord, and there is seldom more bleeding than just from the cutting of the skin; I never lost one in my life. —*Cor. Country Gentleman.*

THE "TOUCH" OF SHORT-HORNS.—The "touch," or mellowness of handling, which indicates aptness to fatten, is the most difficult of all points to obtain in a breed of cattle. It is one of the distinguishing marks of Short-horns, and which has never been equalled in any other breed of cattle. To imprint this special quality on a herd, years must elapse, at any rate before you can depend on it with any degree of certainty. It is a very much the fashion now to deride the high prices given for Short-horn cattle, but I would venture to say that if the high prices had never existed, the Short-horn would have been a greatly inferior animal to what it is at present. The money value has assisted in keeping up their notability, and consequently attracting attention, and but for this particular attention being paid to them they could not have retained that quality and form for which they are so famed. —*Cheviot in N. B. Agriculturist.*

BARLEY AS A FEEDING GRAIN.—A *Country Gentleman* correspondent writes:—An acre of meadow that will produce two tons of hay will produce at least thirty bushels of barley. Were this thirty bushels of barley ground and fed with the straw, cut and steamed, the produce of an acre of land would go farther and keep stock better—enough better, I think, more than to pay for the extra labor involved. I would not say a word in behalf of barley straw for fodder, saved as it usually is. Its reputation is just as good as it should be. The farmer starts with the impression that barley straw is almost worthless for anything except bedding for stock. If the straw is short it is cut with the mowing machine after standing perhaps a week longer than it should. It lies in the swath nearly a week, getting wet perhaps once or twice, and then it is raked up with the horse-rake, with the teeth of the rake forced as close to the ground as possible, for the purpose of gathering all the barley, and, in addition, gathering a large amount of gravel. The straw as thus saved is a gritty, dusty and indigestible substance. How much worse it must be when, after threshing, it is piled up in a large, flat-topped heap, by courtesy called a "stack!"—