

Breeding from Aged Cows.

Some surprise is occasionally caused by experienced breeders giving what seem large sums for old cows whose period of usefulness to all appearance has ended. Light is thrown on the profitability of these transactions by a letter just addressed to the *Live Stock Record* by Mr. Wesley Warnock, one of the best known of living breeders. He gives his experience of purchasing and breeding from aged cows thus:

Easter Day, vol. 7th, p. 315, purchased by T. J. Megibben and myself from Dr. J. J. Taylor, near Lexington, Ky., at nine years old. We gave \$550 for her. She was in calf to Airdrie Duke 5306, and produced red cow calf March 6th, 1869. The names of descendants and purchasers are as follows:

Airdrie Belle, vol. 9th, p. 422, Geo. M. Bedford, \$1,700; Airdrie Belle 2d, W. E. Summs, \$900, Airdrie Belle 3d, \$910. Rosette, vol. 11th, p. 1066, John Nichols, Illinois, \$750; Cambridge Rose, John Nichols, Illinois, \$800; Cambridge Rose 2d, John B. Taylor, Ontario, Canada, \$1,000; Cambridge Rose 4th, Richard Gibson, Ontario, Canada, \$350; Master Maynard, Corbin & Patterson, \$700, Admiral, S. Moore, Ohio, \$370; Prince Alfred, twinned with Cambridge Rose 4th, \$80; Mr. Larkin, Alabama; being \$7,590 over and above first cost, Master Maynard being resold in a short time to Cyrus Jones of San Jose, Cal., for an advance of \$1,000, this included, making \$8,590 in five years and nine months, from the time of the purchase of the old cow Easter Day. She descended from imp. Rose of Sharon through Flora, sister to Thames, from which all Mr. A. Renick's Rose of Sharon descended.

Also, I give another case of a profitable purchase in Miss Stonewall Jackson, vol. 7th, p. 478, A. H. B. We also purchased her and red cow calf Rosa Jackson at \$600, and in about the same length of time, breeding as from Easter Day, we sold the whole family for \$6,458.

Profit on the two cows above cost, \$13,470 for food, interest and care, we were not so successful with any other family, but very nearly so with Hope, by Sir William Wallace 2d, a descendant of imp. Josephine, by Norfolk (2377). See vol. 7th, p. 369.

Oxfordshire Downs.

The face and legs of an Oxfordshire Down sheep should be of a nice dark color; the poll well covered with a top-knot on the forehead, the fleece should be thick on the skin, of moderate length, but not too curly. The average of a well-bred flock in wool should be 7 lbs per fleece, rams of this breed will not unfrequently clip as much as 20 lbs. each. Combined to a round, well-formed barrel there is generally considerable length and immense substance of frame. Tups are sufficiently wealthy in grazing characteristics as often to develop carcasses weighing from 20 to 25 lbs. a quarter ere twelve months old. The mutton partakes of the closeness of texture and good quality of the Down, while in bulk it well nigh equals the immense joints of Cotswold sheep.

That such animals should be in high favour amongst graziers is what naturally might be expected on all soils sufficiently fertile to maintain the affluence of such a productive sort in full development. Oxfordshire Downs answer best for mixed soils, consisting of good heavy, or light loams, but with management and tolerable high feeding, they are well adapted to prove more remunerative than most sheep under other circumstances, and over rather a wide diversity of districts. I fully expect to see them extend, ere long, much further than they have hitherto done, as they answer so very fully the wants of English farmers, in combining large quantities of best quality meat and wool, to be obtained too, without any detracting features involving either loss of time or sacrifice of food.—*London Live Stock Journal*.

Economic Horse Management.

(Continued from last month.)

Green food is a valuable article of provender, but it requires a little discretion in its use to prevent mischief at times. Thus in commencing its use, care should be exercised by the horse-keeper not to allow each horse more than from six to ten pounds for his first feed, which should be at night, and after he has eaten his corn. The next night from 12 lbs. to 16 lbs. may be allowed, and the next a full allowance may be given without fear of colic, as by that time the green food will have passed through the whole length of the digestive organs. When thus commenced with caution, from 15 to 30 lbs. may be given night and morning with advantage and economy. It is true that, when feeding on green food, horses perspire more than when fed on hard, dry food, and I am inclined to think that this increased action of the skin is the principal cause of the beneficial action I have found to arise from a few weeks' use of green food every summer. These facts require more than opinions or assertions to invalidate them; nevertheless, it may be useful to reply to some of the objections occasionally advanced by clever "horsemen." These men say, "No; no green food for my

horses. I want my stud kept like hunters—in hard condition; and who would give them green food? Did you ever hear of a grass-fed horse being in condition?" This argument is founded on a fallacy—that food, because it is physically hard, produces hard muscles; whereas we ought to know that it is exercise, and exercise alone, which gives to muscles this tone. Food is required, not to give any specific character to the system, but simply to supply the waste caused by exercise. The two illustrations chosen to support the argument are equally fallacious. A grass-fed horse is not in condition, it is true; but it is because he is not at work—because his muscles are not exercised; besides, he lives entirely on grass, whereas the pit horse receives, in addition to his green food, a large amount of nitrogenous grain. There is, then, clearly no analogy between the two cases.

Perspiration is not a true indication of weakness; of course it may depend upon an animal not being equal to the work, but it also depends upon the amount of fluid taken into the system. The weaker of two men doing equally hard work will perspire most freely, but this can be reversed by the stronger man drinking the most, and that without affecting his strength. Green food contains a large amount of watery matter, and thus horses consuming it perspire freely. They do so not because they are weak and wanting in tone, but because their systems contain an extra quantity of water. Hunters in hard condition usually sweat but little, because they are fed on dry food or limited in the amount of drinking water allowed; thus their systems contain no more water than can be easily excreted by the kidneys.

Having selected the food or mixture of food we propose to use, we have now to consider the form in which that food may be most advantageously given. It comes to us in the form of hay and grain, and is open to two objections. The long hay is wasted by the animals allowing a portion of it to fall under their feet, and the whole grain is liable to pass undigested through the alimentary canal. To avoid these sources of loss, we advise that the hay be chopped and the grain be crushed. Experience enables us to say positively that these operations are productive of no ill effects. The additional expense they entail is many times repaid by the prevention of waste in hay, and the more complete digestion of all the grain eaten. It has been objected to these operations that they induce a horse to bolt his food only half masticated. We crush grain, not to improve upon mastication, not to save the animal the trouble of chewing his food, but simply to break the envelop, and thus allow easy digestion. We do not grind it to powder, but are quite contented if it be split. No doubt horses with good teeth would give a good account of most of the grain they are allowed, but we are not satisfied to loose any, and therefore we reduce all the corn to a form which, while it might still be well masticated, is most favorable for digestion; to a form in which, even should it escape the teeth, it will not escape the stomach. The cutting of hay is advised for a different reason. We do not suppose that this mechanical operation effects its digestibility. We cut it to prevent its waste in transit from granary to pit, and in the stall, when the horse pulls a mouthful from the manger, but principally to mix with the grain, so as to compel the horse to thoroughly masticate the whole of his provender. With long hay frequent portions fall under foot, are trampled on and spoiled; some horses, from mischief, wilfully throw their hay on the floor, and these little bits form collectively, in a large establishment, a considerable item. By cutting the hay this waste is prevented, as the animal can only remove a mouthful at a time. The length of cut is almost immaterial, being equally effective if cut to two inches, as cut to a half.

Almost of more importance than the form in which food is given, is the frequency and regularity of meals. The horse's digestive organs are not constructed for long fasts. Long intervals without food produce hunger, and hunger begets voracity; food is bolted, and indigestion and colic follow. This is doubly true and doubly dangerous with horses doing hard work. They come to their long-deferred meal not only hungry, but exhausted; not only is the food bolted, but the stomach is in such a state as to be incapable of thoroughly active digestion, and is overpowered by half the amount of food it could otherwise easily digest. The prevention of waste is almost attained when we give a proper amount of food in proper form; but there are two points to which it is right to devote some attention—the form of the mangers, and attention to the wants of individual animals. The mangers should not be less than three feet long, eighteen inches wide, and twelve inches deep. They should have an upper border of wood projecting inwards for two inches, and a transverse bar of half-inch round iron across the middle. A piece of two-inch-wide hoop-iron, screwed on to the top of the manger, protects it from damage by the horses' teeth. This simple arrangement prevents the horse from throwing out his corn, and the provender is not left in so thick a layer as in the ordinary narrow and shallow manger.

VALUE OF FOODS.—It has been found by careful experiments that 100 pounds of turnips, 50 pounds of potatoes or carrots, 25 pounds of sweet milk, 9 pounds of oatmeal, 7 pounds of barley meal, 9½ pounds of bread or flour, 4 pounds of lean meat or 3½ pounds of peas or beans will produce one pound of flesh. These experiments were made upon animals that were in a suitable condition for laying on flesh.

GOOD CONDITION MOST PROFITABLE.—It is cheaper to keep animals in constantly good condition than to allow them to become lean, and then again fatten them; so land that is kept in good heart from the start, always returns a greater profit to the owner during a series of years, than if allowed to become exhausted through want of system in farming, or the waste of manure; for among the economic values of straw, not the least is its value as manure.

RETAINING THE OLD COAT.—A sharp attack of disease, chronic indigestion, want of condition, with frequent exposure to cold, retard, and sometimes actually prevent the change of the coat which, in horses, naturally occurs in spring and autumn. Good food, regular grooming, and a comfortable stable usually hasten the natural process. Well-bred horses, and those foaled early in the season, change their coats earlier than their fellows. In dealers' and other stables, where at spring and fall it is desirable to hasten the growth of the new hair and get the horse to look as smart as possible, a pint of boiled linseed oil or steeped barley is daily given to hasten the slipping of the coat.—*N. B. Agriculturist*.

STRAW AND HAY.—Good clean straw, carefully stacked, is supposed to represent a value in comparison with the best meadow hay, of three to one. That is, an animal must eat three pounds of straw to get the same subsistence as would be afforded by one pound of hay. Now, since it is required that cattle must consume all the hay they can eat, to bring them through the winter in the same condition they were in at its commencement, it is evident that if wintered largely on straw, they must subsist largely upon the fat and flesh previously stored up; but if fed with corn or other concentrated food, the case becomes widely different, since it acts as a divisor to the other food, and at the same time furnishes whatever nutriment it may possess to the animal.

THE HORSE-BARN.—The horse-barn is of vital consequence to the breeder in protecting his stock from the cold storms and bleak winds of a northern climate. The stable should be well drained and perfectly ventilated. Damp stables, surrounded by stagnant pools of water, affect the atmosphere around them. Filthy, ill-ventilated stables corrupt the atmosphere, that engenders disease in the stable and destroys its inmates. The effect of confined air diluted in foul stables, breathed over and over, is to create diseases, such as blindness, glanders, farcy, and contagious disorders, from which the subjects seldom recover. Apertures should be provided in the horse-barn for the egress of foul air and the ingress of pure air. Nature has provided means to purify the stable and preserve from premature decay its valuable inmates. Foul air becomes lighter than pure air, and rises to the upper regions, where windows are provided for its escape, and the pure air rushes in to supply its place.

GRINDING CORN-COBS.—Geo. Geddes writes thus to the *New York Tribune*.—"It costs but little to shell corn, and when we have shelled 100 bushels and have the cobs piled up by themselves, and take Prof. Johnson's statement of their composition, and inquire: Will it pay to grind these cobs and feed the meal to cows? we have a fair question for the chemist and the miller to talk over, and to them I wish to leave the discussion, merely saying that having fed and seen fed to the ox kind much meal made by grinding corn and cobs together, I have come to the opinion that cobs are not worth grinding any more than wheat straw, and that if cobs are to be ground, it would be much the best way to shell the corn and grind separately, for by so doing the grain might be well ground, and the cob ground to suit the means and fancy of whoever may desire to spend his time in such experiments. I wish to add that I entirely agree with Prof. Johnson in his closing remarks, that only careful experiments 'can fix the value of cob meal for practical purposes,' and having for myself made sufficient experiments to make up a very decided opinion, I have given it—subject to abandonment only when more accurate and more scientifically conducted trials shall show me to be in error. Why cannot Agricultural Colleges make such experiments?"

THE INORGANIC CONSTITUENTS OF FOOD.—The bodies of animals, though chiefly composed of organic substances, contain also certain inorganic salts, either in combination or solution. The soft parts of the bodies are here intended, and not the bones, which are, of course, largely composed of inorganic matter. Mr. J. Foster has recently described some interesting experiments on the effect of gradually reducing the quantity of these salts in the system, by feeding animals with food of an entirely nutritious description, but completely deprived of such salts. The food employed consisted of albumen, starch and fat, with entirely pure water. Animals thus treated suffer gradual derangements of the functions of various important organs, which derangements go on until the power of assimilation of the food taken is so far reduced as to prevent the proper repair of the ordinary waste of the system. The natural consequence of this would be to produce decline or death. But death usually ensues before it could be brought about by a cause so slowly acting, since the deficiency of salts, by arresting some of the processes necessary to life, precipitates the destruction of the organism before it could perish by exhaustion. The quantity of salts necessary in the food is less than has heretofore been supposed, but further experiments are necessary to determine its exact amount.