

without difficulty or danger to the smith. A horse that makes it necessary to be placed in stocks or to be thrown each time shoes are placed, is a very great annoyance.

Nothing should be left untried, in purchasing a horse, to determine whether this vicious habit be present or not. An animal with such a habit is always dangerous, either in approaching a strange animal or to the owner. He may be tested by leading close to another animal, noticing his behavior, whether he lays back his ears, dilates the nostrils, curls the upper lip, straightens out the head and shows the teeth. Some horses will plunge viciously upon their victim.

Approves a Stallion License Law.

Editor "The Farmer's Advocate":

You are desirous of getting the views of horse-men with regard to Government inspection and licensing of stallions. The move is in the right direction, and the steps taken so far are all proper. I feel satisfied that when the Commissioners report to the Government the kind of stallions they found in their travels throughout the Province, the Government will not hesitate in passing the desired act.

The question naturally arises, "What kind of horses are best suited to improve our common stock?" Are we prepared to discard all stallions that have not a registered pedigree? I think not, especially in Eastern Ontario. I think individuality is far ahead of pedigree where you cannot get both in the one animal. A good large horse of any breed, provided he is a good specimen of his breed, even though he may not be eligible for registry, should not be discarded. The class of horses most detrimental are the small, general-purpose sort, of no particular breeding, but generally called French; and the small, light trotter or pacer, of some American family. Next in the same list comes the broken-down race-horse, of Thoroughbred extraction. To get rid of the last three classes is what is wanted, which the proposed legislation will certainly do. After the scrubs are removed, in a few years we would be prepared for further restrictions making it compulsory that all stallions must have a registered pedigree and good conformation before being granted a license. With regard to the proposed lien act, I think it uncalled for; at least we don't need it in the good old County of Dundas. S. SMYTH.

About Feeding Horses.

Since the establishment of agricultural experiment stations, the feeding of live stock has resulted in the compounding of balanced rations for all classes of animals. The dependence of the prosperity of many of the great industries is based on the use of horses, and the maintenance of these animals in good working condition has resulted in widely-extended feeding operations.

As will be discovered, different quantities of the same kind of grain and hay enter the balanced ration of the different experiment stations. The fact that one particular ration is not universally adopted as the standard feed for horses at work, or in the pens undergoing the grand finishing preparation for market, demonstrated a wide difference in the individual temperament and assimilating ability of horses. There is a personality in each horse that must be understood and catered to in the maintenance of high condition when at work or during the fattening process.

Great corporations that employ a multitude of horses in conducting their business reduce their feeding operations to a system of so much grain and so many pounds of hay per hundredweight of the animal. But there is no uniformity even among the large feeding stables. The Virginia Express Company feeds 4.67 pounds of corn, 5.33 pounds of oats, .8 pounds of bran, 4.16 pounds of corn meal and 15 pounds of hay per thousand pounds of weight per day. The Jersey City Express Company feeds its horses 21.25 pounds of alfalfa, 3.2 pounds of corn, 19 pounds of oats, 1.15 pounds of bran, and 9.5 pounds of hay per thousand weight per day. The Boston Express Company feeds its horses 12 pounds of corn, 5.25 pounds of oats, and 20 pounds of hay. The United States Army feeds per thousand pounds of live weight its cavalry and artillery horses 12 pounds of oats and fourteen pounds of hay, and its mules 9 pounds of oats and 14 pounds of hay. The Utah Experiment Station feeds its farm horses 25 pounds of alfalfa and 10 pounds of bran, or 22.8 pounds of timothy and 10 pounds of bran. The Wyoming Station feeds 13.75 pounds of alfalfa and 2.25 pounds straw per day. In Omaha, Neb., 15 pounds of oats and 12 pounds of hay is the standard ration for a draft horse. At Chicago, the large companies feed 7.5 pounds of oats and 20 pounds of hay for a draft-horse ration. At the Iowa Experiment Station, a balanced ration is compounded in the proportion of 1 pound of hay and 1 pound of grain per hundred pounds of live weight of the horses used in the experiment work.

The ration of maintenance in the above cases

varies from the Wyoming combination of 13.75 pounds of alfalfa and 2.25 pounds of straw per day, to the Iowa Experiment Station ration of 15 pounds of grain and 15 pounds of hay for a 1,500-pound draft animal. If horses can be maintained in good condition at work on such a widely different ration, it demonstrates a wide difference in the nutrition necessary to maintain horses in different localities. The wide variation in the ration of maintenance practically compels every owner of horses to conduct his feeding operations according to the individuality and assimilating ability of each horse in his stable. Some animals require more grain than others, and an actual test will soon determine the proper amount of both grain and roughage requisite for each animal to maintain it in good condition or to fatten it for the market.—[Drover's Journal.]

Sand-crack in Horse's Feet.

The disease in question is called sand-crack, and is a cleft or fissure in the hoof, beginning at the coronet and extending downwards, frequently the whole length of the wall. This condition must, however, be differentiated from the cracks in the horn which have their beginning at the ground surface and extend upward, but do not involve the coronary band.

The causes of the condition are several. Probably the principal one is the dry condition of the horn. This renders the structure more brittle and liable to crack on violent concussion. Another common cause is an injury to the coronet. With a brittle hoof, such injury will cause a sand-crack, while where the horn is naturally elastic it will not crack so readily. The sudden evaporation of water from the horn which takes place when a horse is brought in from a moist pasture to a hot stable with a hard, dry floor, renders the horn extremely brittle and very liable to crack.

Sand-crack usually makes its appearance by way of a very slight crack in the hoof. Lameness is present in severe cases which have been produced suddenly, or when the crack has slowly advanced and has been in existence for some time. This lameness is caused by the pinching of the sensitive laminae by the crack as it opens and closes as the foot is in action.

The treatment of the case consists in arresting all movement of the edges of the crack. If the crack is well open, and any dirt or other foreign substance has got in, this must be removed before anything else is done, and the whole crack washed out with an antiseptic. The edges of the crack must then be brought together and fixed immovably. There are many methods adopted for effecting this, but probably the one most easily applied by the smith is to attach a brass plate on the hoof directly over the crack, attaching it with small screws. The edges of the crack must, of course, be forced as near together as possible before attaching the plate. A blister is also usually applied on the edges of the crack before putting on the plate.

Special attention is required in shoeing a foot affected with sand-crack. The shoe should be light, and in case of toe-crack should have two clips, one on either side of the crack, and at a slight distance from it. The horn directly under the crack should be cut out in a semi-circular fashion so as to remove all weight bearing at this point, and the entire foot must have a good solid bearing on the shoe. It is essential that the affected hoof be kept moist and elastic, and any good hoof ointment which has this end in view is recommended. As the horn tubes of the foot are open on the under surface of the hoof, it will be found possible to apply the hoof ointment on a piece of waste or oakum, and to keep this in place of the hoof by means of a leather pad or any other method with which most smiths are more or less acquainted.—[The American Blacksmith.]

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LIVE STOCK.

How to Exercise Stock.

While there may be honest difference of opinion as to the necessity of allowing outdoor exercise to feeding cattle in the final months while in preparation for the block, there is no question whatever about the importance of seeing that breeding cattle are abundantly supplied with exercise and fresh air. Even in the case of feeders there are strong champions of the system of feeding loose in boxes rather than tied, the principal advantage claimed being that the exercise promotes digestion, thus insuring health and greater gains than possible in stall-feeding. Experimenters have claimed that feeding steers would make about one-sixth better gains loose than tied, and Thos. McMillan, of Huron Co., has torn out nearly all his stalls and become a strong advocate of loose feeding. Others, we are aware, have tried the plan of turning out their stall-fed cattle for a short time daily into the barnyard, though not with very striking results. Possibly some who have tried this plan may discover their mistake by perusing the succeeding paragraphs.

There is a lack of judgment used by most farmers in this matter of exercise. Usually we go to extremes, either keeping the cattle shut up altogether, or else turning them out to shiver in a bleak barnyard. Both practices are wrong. What would be the effect on boys turned out of a warm house to get fresh air on a frigid street? Unless they could find some mischief, they would stand around cold and utterly miserable. But give those boys a chance for skating or tobogganing and they will enjoy themselves to the full, strengthening their muscles and breathing in copious quantities of Nature's pure air to expand their lungs and vitalize their blood.

The same principle will apply to domestic live stock. To turn animals out into a bleak barnyard, expecting them to promenade back and forth for the good of their health, is absurd. Nature's method of exercising animals is to compel them to move about in search of food and drink. This is rational and wholesome. When man takes Nature's charges under his protecting care, he finds it advisable, for convenience and economy, to house and feed them at one place. This is all right, provided he does not forget exercise, but to make the exercise acceptable and beneficial he must take his cue from Mother Nature.

Animals, like boys, must be given a pleasurable incentive to exercise. Boys find this in games. Animals lack the means and inclination to organize foot-races, wrestling matches and fights (though the latter are sometimes attempted, with unfortunate results). They don't know enough to go for a walk, and if they did, the familiar scenery of barnyard and lane would not be found very interesting. Stock must be induced to take exercise getting feed and drink. One way of insuring this is the straw stack, round which the animals may rub, romp and eat. Another way is to provide a noonday feed of hay in a rack in a shed or other sheltered spot. Still another way—and not a bad one, either, when practicable—is to have the stock travel some distance to water, provided they can drink temperate water in a comfortable spot.

But perhaps the best idea of all, except for milch cows, is to have a piece of rape, whither the cattle or sheep may go daily after their morning feed. Of course, care must be observed not to turn them on it while hungry.

Mr. James Bowman, Aberdeen-Angus breeder, and probably one of the best herdsmen in Canada, is a strong advocate of the above system, and his ideas on the subject of exercise tally precisely with ours. Several years ago he found some of his calves troubled with colds and not doing so well as they should. He decided to try exercise and fresh air, and found it met the case exactly. For years now his practice has been to have a piece of rape at a distance from the buildings. In the morning, all through the winter, his cattle are turned out after a full feed to go to the rape feed if they will, except in wet weather when the trampling would injure the field. On rare days when they do not, they are put back into the stable, but Mr. Bowman says there is scarcely a day, even in February, when they will not go to the field; but he lets them be the judges. Neighbors say their cattle would not stand it, but, while something is due to good care and feed, the principal secret is that his cattle have been accustomed to it, and, having something to occupy them, they enjoy themselves immensely outdoors. When he has not enough rape, or when the ground is too soft to admit of pasturing, some other means is taken to give the cattle something to do outdoors. As a result, he has as hardy and thrifty a herd as one would wish to see.

We believe this is the rational way of exercising stock, and if more breeders would follow this sensible example, it would make for thriftier stock and less disease, especially tuberculosis. We be-