

that horses are light sleepers and awaken several times during the night, when it is better that they have in the mangers a plentiful supply of good hay to keep them quiet, for a horse, unless sleeping, resting or eating, gets restless. We would say then feed most of the hay at night.

Regarding oats, there is a difference of opinion as to what quantity a good, big, (say 1,500 or 1,600-lb.) work horse should get. Some hold that four quarts at a feed three times a day is sufficient. For some horses it may be, but we are inclined to believe that where horses are at continuous hard work, as they are at this season of the year, and where they get a smaller ration of hay morning and noon, that from five to six quarts at a feed three times daily is none too heavy feeding. We believe with an increase of oats and a decrease of hay the horses will do the work more easily and will hold their own better than where very heavy feeding of hay is resorted to and a lighter ration of oats given. The concentrate is the most easily digested, and the horse hard at work requires easily-digested food. This is why it is not good practice to work a horse when gorged with feed, or to feed an overtired horse as soon as brought into the stable. By the increased grain method of feeding with little hay morning and noon, the horse is not too full on going to the field and has an opportunity to rest at noon, instead of taking his entire hour to gorge his stomach and unfit him for his afternoon task. Does the system not seem reasonable?

One caution we would give, however, is to be careful of the quality of the oats fed. New oats are often dangerous. Old oats are always preferable, but not always obtainable. The change from old to new should be made very gradually, and even for a time after the horses are on a full feed of new oats the ration should not be too heavy. A little old corn might be used to help out in such circumstances. Farmers should make it a point, where at all possible, to save enough old oats to tide them over the fall work, and never should the horses be expected to do the heavy work upon rough feed alone.

Some give no dry feed whatever, compelling their horses to pick their living through cold nights, and then wonder why their horses fail in flesh, get sore shoulders, and sometimes become unequal to the tasks set before them. Such treatment is folly. If a horse works he must eat good food, else he will fail in flesh.

Sometimes the cool weather leads the driver to the belief that his team does not require water more than two or three times daily. This is erroneous. For best results it is good practice to lead the horses to the trough before they are fed in the morning, when they should be allowed to drink all they require. After feeding, and upon going to the field, the horses should be tried with water again. It is not good practice to allow them to drink greedily after a heavy feed of grain, but if they have been watered before breakfast a few swallows will do them afterwards, and they go to the field fresh and ready to do a forenoon's work. Coming in at noon, whether they are warm or not, they should have a little water which has been left pumped in the trough so that the chill will be off it. If they are very warm little should be given; if not too warm give all they will drink. Then after dinner, as after breakfast, water again. The same proceeding should be followed at night. With six waterings a day the horses do not drink to excess at any one time, become accustomed to smaller drinks and often, and do much better than if watered only two or three times daily.

Another important item in fall care is bedding. Very often straw is scarce before threshing, and the horses are obliged to make the floor of their stalls their bed. It would often pay to thresh earlier if for no other reason than to have plenty of bedding for tired horses. Bedding should be carefully shook down each night—the last thing in leaving the stable.

At no other season of the year are the curry-comb and brush of more value than in the fall. The thickening coat of the horse causes him to sweat easily and freely, and soon becomes hardly matted over his body. This should be carefully combed out each night, even though the coat is still moist with the day's perspiration. Comb it out well at night, and clean all mud and clods from the hair on the legs to prevent scratches and more troublesome complications. The following morning when the horse's coat becomes dry and just before harnessing it should be given a thorough cleaning with comb and brush, and a final wipe off with a dry cloth. Thorough cleaning means much in keeping horses in condition at any season, and is doubly needed fall and spring.

Where horses are accustomed to it and where they receive a plentiful supply of hay and grain in addition, it is all right to let them out nights up until such time as the weather becomes raw and bleak, and cold rains become frequent. No work horse should be exposed to bad weather, but when the weather is warm and grass plentiful there is little objection to letting the workers out nights. They must, however, be fed in addition,

as grass is not enough for hard-worked horses. Take care of the horse in the fall, and he will do better on a smaller quantity of feed this winter.

Feeding Horses Heaves.

Feeding horses ill-cured or musty hay is only inviting trouble in the form of heaves. Hay of this kind should not be given to horses of any value, for if heaves are not the immediate outcome the trouble may arise in the form of colic or other symptoms of indigestion. Clean, bright straw with a little more grain is better than musty or dusty hay, and any step possible should be taken rather than feed the ill-cured product. However, in cases where it is necessary to feed ill-conditioned hay the dust should be shaken from it, and it should then be sprinkled with lime water made by slacking burnt lime in water. Salt sprinkled on the impaired hay would be of little value, but the lime water has a beneficial effect upon the hay and the digestive apparatus of the animal.



Two Show-ring Veterans.

These two gentlemen on the right have been seen in the show-ring at the Canadian National for half a century, and are familiar to all stockmen.

LIVE STOCK.

Clean the Stables for Winter.

It is no uncommon sight in going through the country to find cattle stables, sheep pens, pig pens, and even horse stables in very bad condition during the late summer and early fall months. The busy summer season on the farm, with the stables not in constant use causes the owner to neglect very often to keep them clean and neat. In fact many do not pay the attention they should to the stables, even in winter when the stock is all housed. Now is the time to make preparations for the winter of 1914-15. Get through all the stables and give them a thorough sweeping down. Cob-webs over windows obstruct light; clean them off, and wash the windows clean to let in all the sunlight possible. Few, indeed, are the stables with so much glass that half of their effectiveness can be profitably lost through cob-webs or dirt obstructing their usefulness. Go over the joists or sleepers and get into all the corners and crevices and clean up. After a careful sweeping or brushing most stables would be the more sanitary for a thorough whitewashing. This makes them lighter and more cheery, and by making the whitewash a 5 per cent. carbolic acid solution vermin, if any, may be destroyed.

While straightening up it is well to see that all ties and mangers are in good order, and ready to receive the stock. Winter generally comes with a rush, or at least the bulk of the stock is not stabled until a sudden dip of the mercury accompanied by a fall of snow makes it imperative that the stock be kept under cover away from the biting blast. Much loss is often sustained by animals being forced to remain out exposed to inclement weather when they really should be inside, the delay being due to stables not ready for occupation. Cattle or other stock so exposed require more feed to bring them up to their former condition, and the whole means a loss to their owner. Rainy days now or spare time should be utilized to place the stable on its winter footing. Be ready when the storms come.

Grade Herds.

There are two sources of revenue derived from live stock. One is the sale of pure-bred animals to maintain or build up the milk-producing or beef-making propensities of the herd into which they may be introduced, and the other is the actual production of the get of this stock. One might purchase a prize winner abroad for a sum requiring four figures to represent it. He in turn would sire champions in the Canadian show-ring from which other winners of a less calibre might come. These less famous bulls would probably get a line of stock that would be used throughout the country in a general way to maintain the herd, and produce males and females for beef or milking purposes. Here is where the earnestness of the case appears, and here is where the head of the herd must prove himself. Up to this stage there has been no value upon which all breeders would agree. The venture is speculative to a certain extent, and one buyer will take greater chances than another.

King Segis Pontiac, Chicago, which sold for \$20,000 as a calf, might be worth only \$200, or he may be worth double what was actually paid for him. That will be determined when his daughters begin to produce or when his sons become sires of heavy-producing stock. The cow in the dairy must prove the worth or worthlessness of her high-priced progenitor.

So it is in the beef world. A bull brought from England a few years ago and now in the West is the sire of some show-ring winners this year, and they are valuable because they won, but to mean most they must produce bullocks that will mature early and fatten easily, or give rise to females that will throw this kind of a bullock. Right down in the

steer pen or in the dairy stable is where values are determined, and there a cow is valued according to the pounds of milk and fat she will give, or the steer by the pounds of beef he will put on at a nominal cost.

The value placed upon pure-bred stock is one detriment to the furtherance of better breeding, but the good ones are worth all that is being asked for them. It is not necessary for the mass of people to strive for pure-breds, but we must have some breeders to import, improve and build up the blood. Then if stockmen generally will pay a fair price get the good bulls, and improve the grade herd, they are going a long way towards better live stock husbandry. We do not imply that grades are as good as pure-breds for they haven't the intensity of blood, yet in many cases they are equal to the pedigreed animal.

One of the most outstanding features and lessons of this season's showing was the exhibit of grade dairy cattle at the Ottawa Exhibition. True to dairy type, and displaying every mark of being workers, they gave evidence of the wisdom of the system of improving through pure-bred sires. There they were without name or pedigree yet good enough, many of them, to put some pure-breds to shame. Later on when brought out as a herd with a pure-bred sire at their head they demonstrated what more of our general stock should be like, and how it should be mated to improve rather than retrograde. What we require most is an extension and growth of the pure-bred stock industry, and a keener appreciation of the value of a sire by the average stockman. Herds of the beef breed came into the ring this year that showed plainly the great necessity of a smooth, well-fleshed bull at their head. Many defects in these herds could be bred out in one generation through proper mating, and the same possibilities lie within the reach of the grade herd stockman. Let a man consider whether he wants cows that will give 7,000 or 10,000 pounds of milk per year. This means a difference of approximately \$30.00 on each animal in a season or a difference of \$300 on a herd of ten for the same length of time. It would be economy and a good investment to add that \$300 to the purchase price of the bull to