

financial work to be carried on in agriculture, and the commercial interests can render to agriculture service but it is not in the way of farming or attempting what some call "service," but it is in rendering to a efficient, honest, and economic service. When the Associations and unions in our towns and cities place "service" to the people whom they serve, then will more have been about prosperous conditions and in our cities and towns than any schemes that are from time to time. The Board of trade in Lethbridge is leading in a sensible business

getting down to bed rock by the cities in acknowledging that the revenue lie on the farm is not one city is indicated in a financial conditions at Moose Jaw. It is that a tax sale will be held in which some 21,000 parcels of land, lots, sold by subdivision artists says, will be offered to the public. That, having presented this condition, that there is a more from figures submitted by the Board to show that in 1912 there were carloads of poultry, six cars of eggs, thirty cars of bacon and potatoes, but there has this year from the city eight cars of butter, eggs, sixty cars of potatoes and quantities of bacon and lard and other with millions of bushels of are looking to the farms. Three Boards of Trade in this city and were attempting to establish other factories that could not live and were talking in terms dollars. To-day they are working through the cities of agriculture and are evidently taking common sense is not going to hurt Moose Jaw any other city if it cleans up a subdivisions, helps to establish within municipality affairs, people's thoughts towards their real revenue and shows them their degradation.—"The Farmer's Advocate," Winnipeg, Man.

Natures Diary.

A. B. Klugh, M.A.

groups of animals which are com- ponds and rivers and yet about the is generally known is the only termed "blood-suckers."

are allied to the Earthworms, which from them and from all the possession of a sucker at body.

Leeches live in fresh water, under wood, on water-plants, in the bottom of ponds, lakes and attached to other animals. They can swim rapidly by flattening their suckers when thus moving in a series of undulations. They feed on the blood of aquatic animals as fish and turtles. Some of the species remain attached to their hosts enough to become gorged with blood. Many other species of leeches are scavengers or are carnivorous, the former feeding on dead matter on snails, worms, insect Leeches, etc.

a Leech is situated in the middle of the head end, and in those black blood there are salivary glands secretion that prevents the clotting which is sucked from the host. tract (a name applied to the intestine, etc., of animals when they are quite different in those which are on blood and in those which are on the body of the host. former it has numerous side- ingated sacs, which act as reservoirs, while in the latter it is a Because of the sacs mentioned sucking Leeches are able to take at a meal to last them for some several months.

have no organs of respiration. being performed entirely by the

are hermaphrodite, that is each has the organs of both sexes, self-fertilizing, as sperms are ex- different individuals, and the d by the sperm received from the

Some species lay their eggs in stones, which they attach either to stones or to water-plants, while eggs and young attached to the

under side of the body until the young are able to shift for themselves. In the case of these latter species the eggs are laid in small, round clusters, each mass surrounded by a delicate membrane of a mucous-like substance secreted by the skin glands. A number of such clusters are somewhat loosely held together and are attached to the under surface of the body of the parent by a mucous-like membrane. When carrying eggs the parent does not move about much, but stays in some protected place and by gently moving the body keeps the eggs or young well aerated. If



Fig. 1.—Under side of Horse Leech.

the egg masses are dislodged the parent will make efforts to collect them and attach them again to its body.

A Leech which is very common in Canada is the so-called Horse Leech, shown in Fig. 1. It feeds on worms, various aquatic insects, snails and clams, and also on dead animals. It also sometimes sucks blood.

Another common species is shown in Fig. 2. This is the Snail Leech, a species which is remarkable for its great muscular strength, which enables it to overcome its prey and adhere to the under side of stones with great tenacity. It does little swimming and if disturbed is apt to roll itself into a ball. It feeds on snails and worms, and does not suck blood.



Fig. 2.—Under side of Snail Leech.—Life size.

Another species which is very common is the one which is parasitic on the Snapping Turtle and other Turtles. It feeds almost entirely on the blood of its host. It is olive-green marked with yellow, and in outline much resembles the Snail Leech though it is much larger, being from two to four inches in length. When carrying eggs it leads a free existence and feeds mainly on worms.

THE HORSE.

Feeding Horses Feeds of Poor Quality.

By reason of the long continued very wet season lasting practically from July first until well into September, a good deal of stock feed of all kinds is of poor quality. With the exception of hay that was saved in June it is practically impossible to get any that is of first-class quality. Hay of even fair quality is hard to obtain. On account of the weather a great deal of grass was allowed to stand until it became too ripe, and after being cut, being subjected to bad weather, it must, of necessity, be of poor quality. Straw is generally also of poor quality this season, and as a consequence of climatic conditions does not contain the usual amount of nutrition. On account of the high price of hay, even that of fair quality, there will be a great tendency on the part of the farmer to feed his idle or partly idle horses on that of poor quality and straw in order to market the hay that will sell. Hence it may not be considered out of place to give a word of warning and make a few suggestions re the feeding problems that confront the horse owner. The feeding of large quantities of roughage of poor quality to horses is dangerous. Feed that can be consumed in large quantities with practical impunity by cattle may cause serious trouble if given, even in limited quantities to horses. This, no doubt, is largely due to the comparatively small size of the stomach of the horse. The feeding of hay that is over ripe, dusty or musty in considerable quantities is very liable to cause digestive or respiratory diseases, or both. Some may ask "How can the quality of the feed affect the respiratory organs." This may be a reasonable question to ask, but when we understand that the stomach and lungs receive their nerve supply largely from the same pair of nerves, we can more easily appreciate the fact that when, from any cause, there is an often repeated or continuous irritation to the one, there is a strong liability of derangement of the other, through nervous sympathy. Most horsemen know that the continued feeding of dusty hay to horses, or an unlimited amount of hay of better quality to a greedy horse, is often followed by heaves.

No doubt we all remember that the summer of 1912 was very wet. And as a consequence feeding problems were almost as bad as they are now. Many of us will no doubt be able to call to mind the fact that during the fall and winter following the practicing veterinarians were kept more than ordinarily busy. We have on many occasions warned readers against making sudden changes in feed, especially to horses, and we wish to repeat the warning. From the reasons already mentioned there will soon be a tendency to change the feed of horses that will have a few months of idleness to straw or hay of poor quality. Where this change is made suddenly a considerable percentage of the horses usually show signs of digestive trouble in from one to two weeks. Where the change is made gradually by feeding a little less hay and a little straw at first and then gradually increasing the amount of straw and decreasing the amount of hay at each feed until in eight or ten days a full ration of

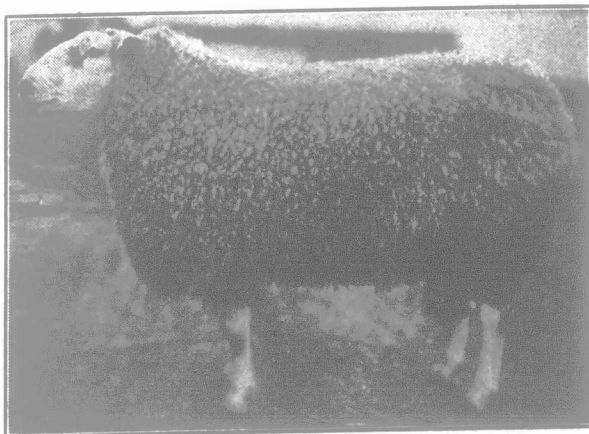


Preparing for the Parade.

A scene in the horse ring at Central Canada Exhibition, Ottawa, 1915.

straw may be given, we find that sickness seldom occurs. Where either the hay or straw that is being fed is either dusty or musty means should be taken to, as far as possible, avoid evil results. This can be done to a great extent by thoroughly shaking with a fork in order to remove all loose dust and then dampening with lime water before feeding. Where large numbers of horses are being fed this may appear to be too much trouble, but we must remember that the loss of a horse or the more or less serious impairment of one or more horses is more expensive than the necessary trouble in order to avoid such would have been.

Lime water is made by slacking a chunk of quick lime in a vessel, then pouring water into the vessel and stirring the fluid thoroughly, then allowing it to stand, when the undissolved lime will settle at the bottom of the vessel. The clear water on top is "lime water." It is simply a saturated solution of lime in water, i. e., all the lime that the water will hold in solution. It cannot be made too strong as the undissolved lime precipitates. A chunk of lime twice the



A Winning Leicester.

Champion Leicester ram at Toronto, 1915, for A. & W. Whitelaw, Guelph, Ont.

size of a man's fist is sufficient to make a barrel of lime water. It will keep pure a long time, hence may be made in large quantities and kept ready for use in a place where it will not freeze. Lime water should be used on all roughage, hay or straw that is of the nature under discussion. Grain of poor quality can also be rendered less dangerous if treated with lime water, but it would be still safer to boil it or get it rolled or chopped and treat with boiling water a few hours before feeding.

In order to winter idle horses cheaply there will be a great tendency on the part of many to feed silage. Silage of good quality fed in reasonable quantities, mixed with cut hay or straw or chaff gives excellent results, but we want to emphasize the fact, that in order that it may be safe for horse feed it must be of first-class quality. Silage that has not been properly made or has been subjected to frost or the surface of which has been exposed for considerable time tends to mould quickly.

Any feed that contains mould, and feed or

water that contains decaying animal or vegetable matter, mouldy silage, mouldy straw or hay, mouldy corn stalks, partially decayed roots, etc., if fed to horses in even small quantities, for any considerable length of time will very probably cause a disease known as "Cerebro Spinal Meningitis." Dusty or dirty feed will not cause this. It is no doubt due to a germ or some microscopic object present in feed of the quality mentioned. It is a disease peculiar to equines. No successful treatment has been discovered for a case that is well established. Some cases evidently yield to treatment if given in the early stages, but a very large percentage of cases end fatally. In rare cases the symptoms appear suddenly and death occurs in a short time, but in most cases the symptoms develop slowly and the patient lives for a few days. The first symptom usually shown is an inability to swallow. When attempting to drink the animal apparently performs the normal acts: he keeps his lips in the

water, makes the normal sounds of a horse drinking but is not able to quench his thirst. If the water be in a pail or other small vessel, it will be noticed that the quantity is not becoming less, though he is apparently drinking heartily. He will masticate his hay or other food in a normal manner and make the ordinary noise of swallowing, but the masticated food will be either quid- ded or impacted between the molar teeth and cheeks. He cannot swallow. In a variable time, from one to several days, symptoms of paralysis will appear, he will lie or fall down and probably be unable to rise; delirium ensues and in from 1 to 3 days after the alarming symptoms appear he will die.

When a case of this nature is observed the cause must be sought for and removed. If due to the water, and pure water cannot be provided, that used must be thoroughly boiled. If due to food its consumption must be ceased. All horses that have been kept under the same conditions should be given brisk purgatives followed by 4 to 6 drams of hyposulphate of soda, or 40 to 60 drops of carbolic acid well diluted three times daily, and, of course, given feed and water of good quality. WHIP.

LIVE STOCK.

A Bright Outlook for Wool Growers.

The demand for wool seems to be increasing and sheepbreeders seem assured of good returns on this branch of their business. The following from a trade paper will interest sheepmen.

"Sales of wool are progressing in all parts of the world which are producing centres of this material. There is one thing in common with all of them. This is that prices are everywhere high, in obedience to a very great demand. Accounts to this effect from South America, Great Britain, Australia and New Zealand, as well as from the various points in this country. Domestic wools have in general moved up 5 per cent. in price within a fortnight. Testimony as to the good condition of the industry in the extreme West is afforded in the call just issued for the eighteenth annual meeting of the Oregon Wool Growers' Association. The Secretary prefaces the notice with the statement that "the wool growers of Oregon have experienced the best year in the history of the organization." The high price of wool, combined with the scarcity and added cost of dyestuffs, has brought advances in price in woollen and worsted cloths. These advances concern the buyers less than does the question of their ability to obtain the needed goods. Clothing manufacturers are beginning to put in their orders for next fall, even before the formal openings, in order to make sure that they will be able to obtain needed supplies. Dress goods for the spring have been increasing in price as much as 10 or 15 cents a yard."

Someone prophesied that it would be six weeks from the first snow until winter sets in. We had the first snow in London, Ont., Nov. 15. If this prophecy holds true it will surely be an open fall, but it is well to be all ready for winter before it comes.