

THE HORSE.

Administering Medicines to Animals.

The art of administering medicines to animals without endangering the life of the patient is not as simple a matter as many think. This is especially the case when the medicine is in fluid state and given by the mouth. A very common reason why better results are not obtained from the attempted administration of medicine by those who are careless, or do not understand the art, is the fact that a large percentage of the medicines is wasted. There are many methods of administering medicines, some of which require special instruments, and are or should be practiced only by veterinarians, or others who have had special instructions. The *hypodermic injection* of medicines, which consists in injecting a solution of the active principal of the drug or drugs just under the skin; the *intravenous injection* consists in injecting the solution directly into the circulation by inserting the hypodermic needle into a vein and forcing the solution through it; the *intra-tracheal injection* consists in injecting the solution into the windpipe. The actions of medicines administered as above are more reliable, and are more quickly established than when given by the mouth. However, special instruments are required, and in order to avoid complications great care must be exercised in keeping the instruments thoroughly sterilized, diluting the drug with distilled water or absolutely pure water, and also sterilizing the seat of injection. Hence these methods should be practiced only by those who understand the necessity of sterilization, and are also conversant with the actions of the drugs they are administering, as the dose given this way is only about one-sixth of that given by the mouth, and an over dose would produce serious results, while an under dose would have little effect. Other methods of administering medicines to horses are in powders, balls or boluses, drenches, and the introduction of fluids into the mouth by the use of a syringe.

Powders are given in either damp food, in drinking water, placed well back on the tongue out of a spoon, or mixed with water and given as a drench. The most convenient method of giving powders is by mixing them with damp food, but, when the patient's appetite is not good, or the drugs have a disagreeable taste, other methods must be employed. When the drug is to be given in small quantities, and dissolves readily, a very safe and convenient method is to place it in a dry spoon, catch the patient's tongue with the left hand, get an assistant to hold the animal's head steady and with the right hand pass the spoon well back into the mouth and upset it. The drug falls on the roof of the tongue, is quickly dissolved and readily swallowed. Of course, when the quantity is large, or the drug does not readily dissolve, this plan is not satisfactory, as the patient will often drop more or less of it out of his mouth. In such cases the powder must be placed in a capsule or wrapped in tissue paper and administered as a ball, or mixed with water and given as a drench. The administration of medicine in the form of a bolus or ball is much practiced, but requires some skill on the part of the operator.

The drug or drugs to be given thus are first reduced to powder, then either placed in a gelatin capsule, or moistened with water, treacle, glycerine, or other moistening substance, rolled into a bolus about three-quarters of an inch in diameter and two to three inches long, and wrapped in tissue paper. When about to administer a ball it is well to get an assistant to hold the patient's head steady and prevent him holding it too high. The ball should be moistened with oil or other lubricant. The operator catches the patient's tongue with his left hand and holds it out of his mouth at the right side; he grasps the ball with the points of the fingers and thumb of the right hand, passes the hand back in the centre of the mouth (being careful that the working of the tongue does not carry it between the molar teeth,) and drops it beyond the root of the tongue into the pharynx. The horse will now swallow it, or, in rare cases, give a short, quick cough and expel it, in which case another attempt is made to administer it. It requires some practice to enable a man to administer a ball without danger of it getting between the molar teeth, in which case it will be chewed and most of it wasted. There is also danger of the hand being forced between the molars, when the patient usually closes the teeth upon it; but, if the tongue be held firmly with the left hand, he will not be able to grasp very firmly, as his own tongue is between the molars on that side. In such a case, should the operator draw his hand forcibly from the mouth he will receive painful wounds, but if he holds his hand steady, and with the left hand still holding the tongue, endeavors to get the horse to relax pressure, he will succeed in liberating the right hand with no injury except some temporary indentations made by the teeth. There are small and inexpensive instruments called balling guns made for the purpose

and it would probably be wise for an amateur to use one.

Drenches are medicines in fluid form, poured into the horse's mouth, out of a bottle or drenching horn. In order that any animal may be given a drench, it is necessary to keep his head elevated to such a degree that the mouth is on a considerably higher level than the throat, in order that the fluid may gravitate backwards and downwards into the pharynx (a cavity just behind the root of the tongue.) This is a very common method of administering medicines and a very satisfactory method when intelligently performed; but in order to avoid too great waste and danger of the animal's health, or possibly his life, it must be carefully and intelligently performed. As stated, there is a cavity or box called the pharynx behind the root of the tongue. On the posterior wall of this box are two openings; the lower one leads to the trachea or windpipe, and is guarded by a cartilaginous valve called the epiglottis; above this is the opening into the gullet. During the passage of fluids or solids from the pharynx to the gullet, this valve closes and prevents the entrance of anything into the trachea, but when air enters the trachea or is expelled from it the valve must open. When a patient's head is elevated for the purpose of administering a drench, and large quantities of fluid are poured into the mouth, it is not uncommon for a greater or less quantity to pass down the trachea to the bronchial tubes, and cause more or less serious trouble, according to the nature of the fluid and the quantity thereof. This unfortunate occurrence results from different causes. If from any cause the fluid is not swallowed promptly, the pharynx becomes filled, hence the epiglottis becomes covered, the patient is forced to expire, and the expulsion of air from the lungs forces the valve open, and a greater or less quantity of fluid passes into the trachea. Then again, there may be a soreness of the throat or paralysis of the muscles of the throat, or mere stubbornness on the part of the patient, or the fluid may be introduced in such large quantities that the animal cannot swallow it fast enough. From whatever cause the results are the same. If sufficient quantities pass down the windpipe to fill the bronchial tubes, the horse will suffer and persevere for a few minutes and die of suffocation. If a smaller quantity pass, it will set up mechanical bronchitis, which usually proves fatal, notwithstanding treatment. If a very small quantity pass, it will cause some distress, but become absorbed and no serious results will follow. While drenching an animal the operator must be careful to observe whether the patient is swallowing readily, and if not he must introduce into the mouth very little fluid and wait until that is swallowed before introducing more. If he refuses to swallow, the roof of the mouth should be rubbed with the neck

of the right side of the mouth and worked against its roof until the patient commences to work his jaws, when the fluid can usually be allowed to run freely; but if the patient holds his jaws quietly, fluid must not be allowed to run, else the trouble already described will follow. When from any reason the patient cannot or will not swallow a gag should be placed in the mouth, a rubber hose five or six feet long passed down the gullet to the stomach, a funnel inserted into the exposed end and the liquid poured into it.

To sheep, medicines are given the same as to cattle, but greater care must be taken to avoid suffocation, as they do not usually swallow readily. They are more easily controlled than the larger animals, hence it is not so hard to observe precautions. When a rubber tube is used it must of course be a small one.

Pigs are the hardest of any domestic animals to drench. It is necessary to introduce a rope with a slip-knot into the mouth behind the tusks, to enable the operator to elevate the head. It is almost impossible to prevent squealing, and, of course, when the patient squeals the epiglottis must open, and if there be fluid in the pharynx some will pass into the trachea and cause the disastrous results noted. The most successful method of drenching pigs is to force one end of a rubber tube five or six inches long over the neck of a bottle, hold the patient's head at the required height, and introduce the tube into the side of the mouth. This attracts his attention and usually checks squealing, and he will chew and suck the hose, draw the liquid from the bottle and swallow it. When a rubber hose is not at hand, leather or canvas can be used instead, but it requires great patience and care to administer a drench safely by using a bottle without some attachment to serve the purpose noted. WHIP.

LIVE STOCK.

Preparing to Handle the 1918 Clip.

Visitors to the Winter Fair, Guelph, would scarcely recognize the interior of the building at the present time as it is considerably changed to facilitate the handling of the co-operative shipments of wool and the grading of the same. R. W. Wade, Secretary of the Ontario Sheep Breeders' Association, who is looking after the wool grading for the province, is getting everything in readiness to receive and handle the three-quarters of a million or more pounds of wool which it is expected will be received this year.

A large number of applications for sacks and twine have been received which is an indication of the popularity of this method of handling wool. Last year the first grading was done in Ontario, and selling on grade netted the producer the maximum price for his wool. True, there were slight drawbacks as the work was new to those managing it. However, last year's discrepancies are being guarded against and almost a perfect system in being put into operation this year.

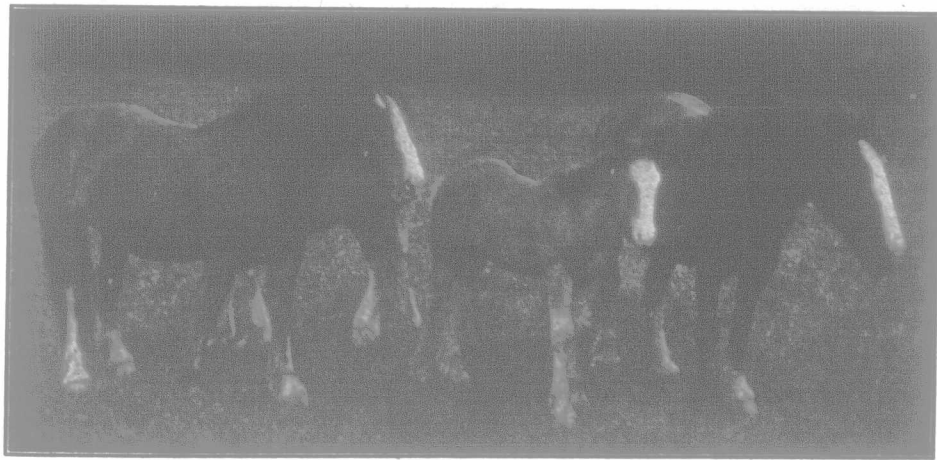
The wool grower has a part to play in aiding this co-operative handling of his products which enables him to get top prices. Instructions regarding shipping should be carefully followed. The shippers name, address, county, date of shipment, number of fleeces and number of sacks should be plainly written on the shipping tag. Last year a number failed to even put their name on their shipment and then complained at what they considered delay in receiving returns. If the name is not on the sack the secretary has no way of identifying the shipment, and failure to state the county complicates the system of bookkeeping followed. By stating the number of sacks shipped it makes it possible to trace up short deliveries at the most opportune time. The sacks should be protected from rain and the wool should reach Guelph between June 1 and July 15.

Arrangements are being made to keep a complete record of each shipper's wool from the time it enters the building until it is placed in the various grades. The men receiving the wool take the name of shipper, his address, county, number of sacks, charges, gross weight, etc., in triplicate. One of these sheets is passed on to the men in charge of opening the sacks and placing the fleeces on the grading table. Under the system contemplated there is no possible danger of two different lots of wool becoming mixed.

Large baskets are mounted on wheels and into these the different grades of wool are placed and run on to scales where the weights of the various grades are taken and checked with the weighing in sheets. The building is divided off into rooms so that the different grades may be kept separate. In these rooms the packing for shipment to market takes place. From two-hundred and fifty pounds of fine wool to four hundred pounds of coarse wool are put into a single sack. The sacks are sewed up and stamped with the grade.

The grades include fine medium combing, medium combing, medium clothing, low medium clothing, low combing, coarse, rejects, gray and black and tags. It is the intention of the secretary to let the shippers know the number of pounds of each grade in their lot and also the price received for each. Every sheep breeder should endeavor to care for his sheep and wool so that a large percentage of the clip will go into the highest priced grade. Care should also be exercised in tying the fleece and preparing it for market. The use of paper twine is advised and the same may be secured from the Secretary, R. W. Wade.

Practically every province in the Dominion have adopted the wool grading system, and the marketing of the clip through a central association. While each province marketed the wool separately last year, it is the intention to sell the entire clip through the Dominion Organization which was effected last winter with headquarters in Toronto. It is but reasonable to expect



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