flapping of the nostrils and depressed ears. The appetite is always interfered with to such an extent as to require great attention. Give light gruel, hay tea, and all the domestic remedies as before detailed. In the early stages, one to five drop doses of the aconite mixture, given every four hours, will very often cut short the complaint. It is questionable whether any description of live stock have so little care bestowed on them as sheep, as owing to the weakness of their nervous system the animals, if neglected in the earliest stages of the attack, frequently fall victims to a disease which a little care and proper treatment on the first appearance of the trouble would enable them to have thrown off. The old-fashioned method of slaughtering a sheep showing signs of illness, if in good condition, or of simply letting it take its chance, as is too often done, when a poor one, cannot be considered satisfactory. There is one thing necessary to say in the administration of medicine to sheep. Let an assistant throw the animal on its haunches and hold it between his legs, back towards him, with the loerw jaw seized in his left hand from the left side; he can seize the upper jaw, or, what is preferable, pull out the cheek, to make a pocket or pouch with his right; then pour out steadily from a small bottle, or tin can, the exact quantity for each animal.

When we come to consider this disease in swine, some very formidable obstacles present themselves. Who is there that has attempted to drench an old sow will venture on the experiment again? Yet by a little judicious management they can be cheated into taking medicine when they don't want to. It will save a lot of trouble if it can always be done, but there are many exceptions. The method that has always proved successful in our hands is the following:—

First catch your animal; if of a large size, back into a corner; have your fluid medicine in a bottle; take an old boot and cut a portion of the front toe off; offer to Mr. Pig, and, in nine cases out of ten, he will seize it in his teeth and hold fast; then pour your medicine into the boot, and let it flow into the mouth. If anyone knows a better way, we shall be glad to hear of it.

Swine, like all gross feeders fattened in confinement, make bad patients, but we have to record a most docile case, the property of Mr. Fearman, of Hamilton, and as a guide for all cases will relate his symptoms and give the treatment. A red Tamworth hog, about six months old, was noticed to have refused his food for two or three meals. Being a valuable animal, our attention was called. Found little Mr. Pig separated from the others in corner of sty; nasal disc hot and dry, and breathing hurried, shallow and oppressed; temperature, 104° Fahrenheit, taken at the anus; bowels constipated, urine diminished—his removal to a box that we could better observe him pointed out all these symptoms; also an absence of the characteristic piggy smell. For medicine we give jalap, one ounce; quinine, one ounce; ginger and black pepper, equal quantities, about half an ounce. This we mixed with some treacle, and made just thick enough to stick together. An assistant held the jaws open by two pieces of strap, and with a stick covered with tow, we rubbed a quantity of the electuary, as this may be called, on the teeth, taking advantage of the fact that no animal other than the human subject can expectorate. This treatment combined with a little stimulating liniment to the sides, brought about recovery in a few days, and he had the distinguished honor of winning a prize at the last local agricultural show.

The Bots

IN HORSES NOT NEARLY SO DANGEROUS AS GENERALLY SUPPOSED.

The common gad-fly *(Gastrophilus equi)* attacks the animal while grazing late in the summer, its object being, not to derive sustenance, but to deposit its eggs. This is accomplished by means of a glutinous excretion, causing the ova (eggs) to adhere to the hairs. The parts selected are chiefly those of the shoulder, base of the neck, and inner parts of the fore legs, especially about the knees, for in these situations the horse will have no difficulty in reaching the ova with its tongue. When the animal licks those parts of the coat where the eggs have been placed, the moisture of the tongue, aided by warmth, hatches the ova, and in something less than three weeks from the time of the deposition of the eggs the larvæ have made their escape. As maggots, they are next transferred to the mouth and ultimately to the stomach along with food and drink. A great many larvæ perish during this passive mode of immigration, some being dropped from the mouth and others being crushed in the fodder during mastication. It has been calculated that out of the many hundreds of eggs deposited on a single horse scarcely one out of fifty of the larvæ arrive within the stomach. Notwithstanding this waste the interior of the stomach may become completely covered (cuticular portion) with bots. Whether there be few or many they are anchored in this situation chiefly by means of two large cephalic hooks. After the bots have attained perfect growth they voluntarily loosen their hold and allow themselves to be carried along the alimentary canal until they escape with the feces. In all cases they sooner or later fall to the ground, and when transferred to the soil they bury themselves beneath the surfaces in order to undergo transformation into the pupa condition. Having remained in the earth for a period of six or seven weeks, they finally emerge from their pupal cocoons as perfect dipterous (winged) insects—the gad-fly. It thus appears that bots ordinarily pass about eight months of their lifetime in the digestive organs of the horse.

According to Prof. Michener, bots seldom—not more than once in ten thousand times—cause colic. They may, when present in large numbers, slightly interfere with digestion, but beyond this they are, with these few exceptions, entirely harmless. It is entirely useless to attempt to dislodge them from the stomach, and they will go at their appointed time, which is mostly during the months of May and June.

Veterinary Questions.

ANSWERED BY W. A. DUNBAR, V. S.

I have a cow that got her teats frozen last winter. She is about to calve again. What treatment will I give her to get the milk through her teats.

THOS. COUGHLIN, Virden, Man.

If the obstruction is at the lower extremity of the teat, and the canal is completely closed, it will be necessary to make a small crucial incision in the end of the teat with a sharp knife or lancet, and then pass a steel knitting needle, which had just been dipped in boiling water, and afterwards in a solution of boiling carbolic acid (one pint of the acid to twenty-five of water) through the obstruction until the milk begins to flow. To prevent closure of the opening just made, insert for a few days a teat syphon or milking tube, which should be kept corked except at milking time; or, instead of the syphon, a rubber or wooden bougie may be used. If wood is used, it should be of good quality, and not larger in diameter than a coarse knitting needle, The surface should be made as smooth as possible, and the end to be inserted should be well rounded and a little enlarged. Whether syphon or bougie is used, it should be disinfected, and again replaced until the part is healed. In extracting the milk while the teat is sore, the milking tube should be used.

POULTRY.

Poultry on the Farm.

BY IDA E. TILSON, WEST SALEM, WIS.

If poultry quarters are overcrowded, little exercise ground remains, and a mob of idle, discontented creatures results. Nature indicates small flocks are best, because wild fowls live in families or groups. More than 50 hens can hardly be kept profitably in one enclosure, and three square feet of floor space is a standard allowance none too generous. It is not best to mix different kinds of poultry. I have tried turkeys, guineas and peafowls in combination with hens, and though these noisy birds may scare away hawks, they frighten and domineer my hens quite as much. In a house where there are no guineas, peace and happiness prevail. Every biddy descends from her perch early and scratches all day in the leaves and straw below. My other house has a few guineas, which monopolize every privilege, and unless they go out and off, the hens can hardly be induced to stir, and certainly will have less opportunity and fitness for laying. I would not so much mind guineas and peafowls taking the best, but they chase my hens from place to place, and, like the dog in the manger, prevent them from eating that not needed by these prosecutors themselves. It is only justice to say guineas are great insect-catchers, but no scratchers. They are better eating than turkeys, and their eggs, though few, are rich. Incubation lasts four weeks, a hen being better than one of themselves. The little things are as easily raised as chicks, and become very fond of their foster mother.

While warm shelter and entire safety engross our thoughts at night, the main daytime requirements of poultry are sufficient freedom, contentment and proper food. An article lately read objected to the general prominence given food. Well, hatching and moulting come on by at certain times, while feeding knows no seasons or fashions, but is a living question 365 days of a year, I always regretted that my flock utterly refused rye, which is nearly as valuable as wheat; but to my delight, this last fall, they accepted rye fresh from the threshing machine and relished it awhile, till somewhat old and dry, which illustrates, what many may have noticed, how fond hens are of new grain. As this is somewhat laxative, enough old grain should be saved to mix in for some time. Dry, clean wheat possesses the distinction of never causing bowel complaint. Corn ranks next in safety. Musty grain is dangerous, and dear at any price. Should one have such a product on hand, which must be utilized, a thorough heating in an oven will destroy all germs. This can be done day by day, with small quantities as fed, because winter rations should be warm anyhow. Screenings contain so many wild seeds and so much waste, and are no cheaper in proportion to weight than is clean, solid wheat. I have anticipated the general introduction here of peas and beans, long cultivated in Canada for stock, by successfully feeding these nourishing legumes, green, cooked whole or ground, to my fowls. Rye and oats have also obtained a wider use by being ground and then combined in my puddings. Another writer has complained that vegetables are refused by his fowls and left lying around mussed. What is new to a hen she fears, and must learn to eat. Have a little patience. Feed such things in moderation at first, and when biddy is particularly hungry; use stratagem if necessary. It is said "all things are fair in love and war." Surely this is a case of love for biddy's welfare. I had special difficulty in teaching my flock to eat carrots, which are so valuable. Finally a few onions were boiled with them to give flavor, and my problem was solved. Biddy thinks she is eating her favorite onions, but I know she is eating carrots. I do not cook hay, so often recommended, because it is easier to boil vegetables instead. Dry clover is well enough relished, and unless fed lavishly, does not pack in crop and bowels. A sensible hen will soon learn to eat apples. I saved and used the product of two crab-apple trees last fall. My meat supply consists, as usual, of scraps from a packing house, bought in cakes for a cent and a-half per pound. After beginning its use, the number of eggs soon increased. Grains or seeds, plants or vegetables, meat or some animal product, and grit, are the natural divisions into which poultry allowances fall. There is most danger of overdoing the grain ration. I have been away the second time, and left on this occasion a written programme which provided for more food than needed with my own good care. However, my substitutes, having in the former instance failed to feed at all, now determined to retrieve themselves. I returned from enlightening others about poultry, to find mine sick. Mussed, uneaten grain lay all about, a sight never before seen here, and it seems a regular stuffing had been tried. An over-fat hen will not lay, neither can a hungry, half starved one; that is the business hen which has nearly, though not quite all she wishes to eat, just as he is the healthy person who rises unsurfeited from the table. Grit had been entirely forgotten. A hen has no other teeth than the little pebbles in her crop and gizzard. How shall she digest except they be provided? There are usually waste hills or places from which sharp gravel can be drawn by the load. Make some mortar purposely; that or crumbling, weather-beaten sandstone will be pecked in pieces. I dislike to recommend pounding crockery; it is such dangerous work for the eyes. From pounded glass must surely be taken those long sharp splinters, which are said to kill rats, and could easily pierce any membrane. A coal stove and biddy might, at first glance, appear unconnected, but coal ashes, with their clinkers, form a model pulverizer and digester. Don't forget that biddy needs grit as well as human beings do, only her's is of a different kind. As you supply her, just say,

"When this you see
Remember me,"

and she will remember you with abundance of hard-shelled, solid, perfectly developed eggs.

APIARY.

January Work.

BY ALLEN PRINGLE, SELBY, ONT.

While there is not much to be done to the bees in January, what littlethere is is important. Those in proper winter repositories properly fixed require but very little attention, while those not so conditioned might require a good deal or loss would result. In the former case the entrances should be examined, and the dead obstructing it removed to give a free exit and ample ventilation. Then, if the floor of the repository is strewed with dead bees, as it always will be more or less, these should be removed before they become a nuisance. The floor should be covered liberally with dry saw-dust, and fresh lime placed around here and there. Bees wintered outside should be looked after now and then, especially after heavy snow storms, to see that the entrances are kept clear. It sometimes happens that during a cold spell the entrances will become completely filled with ice from within—the heat of the bees melting the frost which collects on the inside of the hive, when it runs down and out, and is frozen in the entrance. This must be attended to. Many farmers still use the "old box hive" for their bees. These, if being wintered in the cellar, where the temperature ranges from 40° to 50° Fahr., would be all the better inverted—that is, turned "upside down" and "down side up." Don't be frightened. It will not hurt them to "stand on their heads." I remember that about forty years ago, when my father kept some fifty to sixty colonies in the "old box hive," he used to winter them in a little house built for the purpose, filled in with saw-dust four to six inches thick all round, still standing on the whole homestead where I live, and he used to stand them all "on their heads," as the neighbors used to say. They wintered very well, and his losses were comparatively small. The farmer bee-keeper with a few colonies in box hives need not, therefore, fear to turn his hives bottom up when in the cellar, as they will be much more likely to come through all right that way than the other way. They should, however, be placed well up from the cellar floor the nearer the ceiling the better. If turned up put a thickness or two of woolen cloth or cotton and wool quilt over the open top.