

Veterinary Department.

Tetanus or Lockjaw in Horses.

TETANUS is a disease of the nervous system, showing itself in spasmodic contraction of the voluntary muscles of the whole body, involving as well, some of the involuntary muscular fibre. Although essentially a nervous disease, it is the muscular system that is principally implicated. The muscles of the body are rigidly contracted, more particularly those of the head and neck. When the masseter muscles are thus attacked the mouth cannot be opened, owing to the fixity of the jaws, hence the name lockjaw.

In horses that have died of tetanus, the brain and spinal cord have shown symptoms of congestion, and in other cases the roots of the nerves only. The muscles after death become soft and flabby, shewing that in life the process of nutrition had been impaired or entirely arrested, caused no doubt by the continued contraction of the muscular fibre. In describing tetanus, it is divided into two kinds, *traumatic* and *idiopathic*, by the former is understood that kind which is caused by some visible injury; while the latter is supposed to be due to some atmospheric influence, or some other invisible cause. The two kinds are of the same nature, but experience teaches that the idiopathic form is the most fatal. The causes of traumatic tetanus are injuries of any kind, in which a nerve has been implicated. The most common cause is from picking up a nail, or from a prick in shoeing. It often follows the operation of castration, and it has also been known to occur as a sequel of docking or necking the tail. In fact it may occur from an injury to any part of the body, but it is most likely to follow injuries of the extremities. It is most liable to occur in high bred horses, and especially those of an irritable nervous temperament. When the nerve is injured, the irritation is carried by the sensitive nerves to the spinal axis, and then reflected to the nerves of motion, causing rigid contraction of the muscular fibre. In some seasons tetanus appears as a sort of epidemic, great numbers of horses becoming affected with the idiopathic form. At such times it is also exceedingly liable to supervene on injuries. "Mr. Percival" mentions that of twenty-four horses castrated on the same day, and afterwards four times a day made to take a bath in water derived from a very cold spring, the consequences were that sixteen out of the twenty-four died of tetanus, between the tenth and fourteenth days.

Tetanus in the horse is a disease which presents a number of well marked symptoms, and among the first noticeable symptoms is a peculiar stiffness of the body most prominently exhibited when the animal is made to move. As the disease advances, the muscles become hard and firmly contracted, the head is kept poked out, and the muscles of the neck are prominent, shewing the outlines and form of the various muscles. The horse has a peculiar anxious look, and is sensitive in a remarkable degree, being easily excited by the least noise. If taken hold of by the bridle and the head jerked up, the membrana nictitans or law of the eye, will be observed to push forwards over the eye, the nostrils are dilated, and the ears erect. If moved in the least the tail is upraised, and has a tremulous motion. These symptoms may exist and the jaws may not be completely closed. As the disease goes on the masseter muscles are violently contracted, and the jaw becomes locked. The pulse varies considerably, and is easily quickened by excitement. The bowels are almost invariably constipated, and the urine is also scanty. The respiration in some cases is but little altered: in others it is very much disturbed, and the breathing becomes laboured. The duration of tetanus varies, in some instances death will take place on the fourth or fifth day, while in others it will last for three weeks or a month, and then terminate fatally; the

more alarming the symptoms the sooner it ends fatally.

As tetanus is a disease of the system, in treating it we recommend the animal to be kept perfectly quiet. Place him in a darkened loose box, and if possible away from any noise; give him a large dose of purgative medicine, from eight to ten drachms of aloes, combined with a drachm of calomel, as the bowels are inactive, and if got to move freely it is a favourable symptom. Encourage the patient to take soft sloppy food, as linseed tea, oatmeal gruel, &c. If the medicine can be easily administered, give every three or four hours two drachms of the extract of belladonna. If the jaws are firmly closed, place the belladonna into his mouth, between the incisor and the molar teeth. A newly flared sheepskin applied over the loins in some cases is of decided benefit. Blistering the spine is also spoken of by some practitioners, but we object to any treatment which is likely to set up irritation, as this disease is a nervous fever, we think soothing remedies are the most successful. When caused by a wound, it should be fomented and poulticed, and carefully attended to. Some eminent practitioners recommend hydrocyanic acid, in doses of thirty drops, to be given five or six times a day.

DEATH FROM GLANDERS.—The papers report that a negro in Maryland lately died of glanders, the disease being contracted from a glandered mule.

The Apiary.

"Miller Traps," "Comb Guides," and "Condensers."

SEVERAL correspondents have recently addressed enquiries to us as to the utility of these contrivances. We have referred the questions to our experienced apiarian contributor, Mr. J. H. Thomas, of Brooklyn. He states his opinions as follows:

"In reply to the questions submitted, I would say that, in the hands of bee-keepers generally, 'miller traps,' 'comb guides,' 'condensers,' and all other like 'fixings' in a hive are not only useless but worse than useless. A miller, or moth-proof, hive would be a very desirable thing: but many an ingenious 'yankee cousin' has racked his brain, striving to invent a miller trap, which, attached to a hive, would make it a *moth-proof* hive, and yet it has never been accomplished. I would not be understood to say that miller traps are of no use; for, if of the right kind, they may be and are of use about the apiary, but not in or attached to the hive. Time will not permit me to speak of all the ingenious contrivances for entrapping the miller; but nearly all are so constructed that, being attached to the hive, they allow the miller to enter and deposit her eggs, secure against attack from the bees, instead of entering the hive to be unceremoniously ejected by its occupants; the intention being to remove the trap occasionally and destroy the miller grubs. But, I may safely say, that not one bee-keeper in fifty will take the trouble to do this, the consequence is that the eggs of the miller are hatched and the larvæ find their way into the combs and commence their work of destruction, or feed upon the chippings of comb that fall into the trap, until the time arrives for their transformation, when they wind themselves up in cocoons, and in a few days are transformed into millers, which in turn deposit more eggs, producing other larvæ; and so on during the season. It will, then, at once be seen that what is intended for a miller trap, for the safety of the stock, becomes a secure retreat for the miller, where she can propagate her species and infest the whole apiary with her numerous progeny. W. M. Lee, of Wisconsin has invented a very ingenious miller trap, but it has the same objection of others, instead of destroying the miller, it allows her to deposit her eggs unmolested by the bees. The same may also be said of

the wire-cloth bottom board, which was invented a few years ago by a Canadian, who obtained a patent for it; but proving worthless, it soon fell into disrepute. It has, however, been revived again, and was on exhibition at the recent Provincial Fair, where it was spoken of as something new and useful: but as W. M. Lee said when questioned as to the utility of his miller trap, 'It is a good thing to talk about,' so I say of the wire-cloth bottom board.

I believe it to be generally acknowledged by all leading apiarians that hives containing miller traps, in the hands of bee-keepers generally, are objectionable. Says Langstroth, 'The careless will obtain a *'moth-proof'* hive only when the sluggard finds a *'weed-proof'* soil.' Although Langstroth uses a simple contrivance for entrapping the miller, yet he says 'all such contrivances instead of helping the careless bee-keeper will but give him greater facility for injuring his bees. Worms will spin undisturbed, and moths lay their eggs; his traps only affording them more effectual aid.' There may be one in a hundred bee-keepers that would attend to a simple contrivance, and destroy many miller grubs. For the benefit of such I have given in the *Canadian Bee-keepers' Guide*, a description of a trap similar to that used by Langstroth, which is applicable to all hives. I have, however, for reasons above stated, connected no miller trap with my hive; but have so constructed it that the miller can find no place to secrete herself from the bees, while depositing her eggs, and grubs can find no place to wind up, where the bees cannot reach them. The bottom board is so constructed that the attentive bee-keeper may drop it at pleasure and destroy any grubs found thereon; and should he fail to do so, the bees having access to them, will be likely to do it themselves. I find it to be a better arrangement than any miller traps, for bee-keepers in general. I have already remarked that a right kind of miller trap was a good thing to have about the apiary. Any contrivance that will trap and destroy the miller before she has time to deposit her eggs, is what is wanted. Dishes containing milk or sweetened water set about the apiary at night answer a very good purpose; with a little care, large numbers may be destroyed.

'Comb-guides' and 'condensers' hardly require notice, as no bee-keeper with a properly constructed hive will use them. 'Comb-guides' are thin boards placed between each comb-frame in a moveable comb-hive, in order to ensure straight combs, and also to prevent the building of drone comb. R. P. Kidder, of Vermont, claims to be the inventor of comb-guides. May he long enjoy the honour! Last year they were introduced into Canada, and will constitute another feature in a hive to 'talk about.' They are of some use, however; for their appearance in a hive is positive evidence that it is not properly constructed. In a hive properly constructed—adapted to the nature and habits of the bees—combs will be built straight without the comb-guides. Hence, they should be rejected alike with all other useless 'fixings.'

A condenser in a hive is nothing more than a lining on the inside of the cover, for condensing the breath and vapour arising from the bees. It may be glass, tin, or zinc. The idea of a condenser was begotten last year in Canada, and delivered in public at the London Provincial Fair. The idea of a condenser being necessary in a bee-hive, is, of all others, the most unphilosophical and unsound, and has only to be considered to be condemned. Would we not say that a person was not *compos mentis*, who, instead of ventilating his sleeping apartment, should provide it with a condenser? It appears to me the same may be said of that bee-keeper, who, instead of properly ventilating his hives—allowing the breath and vapour arising from the bees to escape—add to them condensers, thereby creating a dampness which it is so desirable to avoid. Away with all such useless contrivances, which not only add to the expense of a hive, but interfere with the nature and habits of the bees."