

Veterinary.

Laminitis.

[By Prof. Grange, V. S., Michigan Agricultural College.]

A disease of the foot of the horse, frequently occurring in the summer season.

Laminitis is a disease of the foot of the horse, which is often brought directly under the notice of owners of these animals, and which in many instances, from the want of knowledge of the causes of the complaint, unfortunate creatures are subjected to the most excruciating pain, and their owners to much pecuniary loss, as well as other inconvenience.

The disease has from time to time been the subject of much difference of opinion as to its location, consequently it is known under a variety of names, given according to the fancy of the observer, but the one which we oftenest hear applied to it, by laymen, is *chest-founder*, which term, however, is not altogether appropriate, but may perhaps be excused when we take into consideration the origin of it, and this can be traced to two sources. In the first place it may have arisen from the fact that inflammation of the lungs is sometimes thought to fly from the chest to the feet, but this is of exceedingly rare occurrence, as far as my observation has gone. Secondly, it may have arisen from the fact that a large majority of cases brought under our notice have shown that those large round muscles forming the front of the chest or bosom, and situated between the fore legs, have suddenly vanished, as it were, giving the chest a sunken or hollow appearance, which, to the casual observer, might naturally be thought the seat of the disease. This sunken condition of the chest may be explained though by the fact that animals, when suffering, generally stand up, but throw the weight of the body as much as possible upon hind feet (for obvious reasons), and the muscles forming the bosom become relaxed and appear wasted. To prove that removal of the weight of the body from the fore legs will produce this sunken appearance of the chest, we have only to take one fore foot of a healthy horse from the ground, and holding it in the hand, the muscles on the same side of the breast bone will apparently vanish, to however regain their round original form as soon as the foot is allowed to descend to the ground.

The simple term, *founder*, is often applied to this disease, the origin of which might be traced to several sources; a striking one is, in one of the meanings of the word, viz.: to fill, or to be filled with water, and as it has long been conceded that water given at improper times, or allowing an animal to fill itself too full, is liable to cause this disease, may not the term appear appropriate?

The disorder is called "Laminitis," because those delicate little plants surrounding the inside of the hoof, and called laminae, are the parts most affected, although in bad cases other structures of the foot become involved; I have one specimen in my possession which shows that the disease was so deep seated as to attack the main bone of the foot. This complaint is one of the most painful that horse flesh is heir to, but this is little to be wondered at when we recognize the fact that so highly organized a structure as the internal part of the foot of the horse is suddenly thrown into an acute state of inflammation, and being enclosed in an unyielding box of horn, the hoof

the constant pressure upon the nerves occasions much pain—to account for which pressure, I may say that it has been admitted from time immemorial that swelling to a greater or less extent is always present with inflammation. By way of illustrating how painful Laminitis must be, let us compare the parts involved with the parts involved in toothache in man, a disease no doubt familiar to many. Now in toothache we have a highly sensitive structure, the *pulp*, as it is called, and which may be compared to the internal or sensitive structure of the foot of the horse. And this *pulp* is enclosed in an unyielding case of bone, the *root* or *fang* of the tooth, which may be compared to the *hoof* of the horse, as both inclose their respective sensitive structures; well, when swelling occurs from inflammation of the *pulp*, the nerve is pressed upon, but being imprisoned in the *fang* it can not accommodate itself to circumstances, so the familiar throbbing pain of toothache is the result, but in the inflamed foot of the horse there are scores of nerve fibres pressed upon, and when we take into consideration that animals invariably stand while afflicted with this complaint, the weight of the body thus adding "fuel to the fire," we can form some idea what intense agony the unfortunate creature must endure.

NATURE OF THE DISEASE.

It may be defined to be inflammation of the sensitive laminae of the foot, extending and involving neighboring structures in bad cases.

THE CAUSES

of the complaint are widespread and numerous. I have seen more cases of this disease caused by overdriving on a hard road than from any other cause, especially when the weather was hot, and the animal not accustomed to long journeys, or out of condition from a day or two's rest.

Driving an animal through cold water when it (the horse) is hot, will produce it at times.

Allowing an animal to drink immoderately of cold water while in a state of perspiration, is liable to bring on an attack. Overloading the stomach with certain kinds of grain, is a fertile source of this complaint. Some of the worst cases I have seen have been the result of animals getting loose at night, and getting to the corn or oat bin, as the case might be. I have seen it follow spontaneous diarrhoea; the injudicious use of purgative medicine will also cause it.

Keeping animals tied in the stall for too great a length of time, as is sometimes done during the winter, or the constrained position necessitated during a long sea voyage, occasionally provoke the disease.

That condition called metatasis, which is the flying of inflammation from one part to another, is thought to occur with, and produce this disease.

I have seen cases occur with metritis (inflammation of the womb), when the symptoms of the first disease and those of laminitis were plainly exhibited. The disease is sometimes produced in one foot by the careless driving of a nail in shoeing.

THE SYMPTOMS

of the disorder are peculiar and characteristic. In the first place, it may be said that in ninety-five cases out of a hundred the disease attacks the two front feet, though it sometimes invades the hind ones, when the symptoms will be very different in certain particulars.

When both front feet are affected, the animal will be generally found standing with its back arched, and hind feet carried forward towards

the centre of the body, in order that the weight of it may be borne as much as possible by them, and removed from the fore feet. This peculiar attitude often leads the casual observer to think that the animal is strained across the loins.

If the animal is required to move, it will do so with more or less reluctance, stumbling as it goes ahead, or dragging its front feet in an awkward manner if required to back up. The pulse has a very plain throbbing feeling to the finger, is full and bounding, and somewhat quickened. Another peculiarity about the pulse is that it can be plainly felt upon the side of the leg near the fetlock, and I do not know of another disease where this peculiar condition of the circulation is so plainly exhibited. The breathing will be accelerated, often to such a degree as to lead one not familiar with the malady to suppose that some derangement of the organs of respiration is at work. The muscles in front of the breast appear wasted, from the attitude of the animal, though. The pain of the disease is sometimes so great as to cause tetanic convulsions, or twitching of many of the muscles beneath the skin. I have seen cases where animals were lying down when first visited, and pawing and groaning to such an extent as might easily lead one to suppose that they were suffering from colic, or some other enteric disease, hence the necessity for getting an animal upon its feet before forming an opinion as to the disease it is suffering from. I might add that the standing posture is the best one to examine a horse either in health or disease.

When the hind feet are the seat of the disease, the symptoms will be somewhat different; the horse will, to use a common expression, "stand all in a heap," the fore feet being extended backwards, and the hind feet carried forwards. If the animal is required to walk, it will do so in a peculiar, string-halty, automatic sort of a way. When the hind feet are affected animals often lie down, which attitude must afford them great relief. I have noticed that when animals assume the recumbent position while suffering from this disease, they invariably make a more rapid and thorough recovery, so of course this attitude should always be encouraged.

THE TREATMENT

of this disease materially depends upon the cause, and if it has been produced by spontaneous diarrhoea or the abuse of purgative medicine, anything which will tend to unduly increase the action of the bowels should be carefully avoided, and those remedies which are used to allay pain and reduce fever may be given with advantage. For these purposes I found great benefit from the use of tincture of aconite, given in doses of about ten to fifteen drops in a few ounces of water every two hours, until four or five doses have been given. The aconite may be followed by nitrate of potash in two drachm doses, dissolved in half a pint of water every four hours, for from two to four days. On the other hand, if the disease is the result of an overloaded condition of the bowels, the superfluous food may be gotten rid of by the aid of laxatives, say twenty-five fluid ounces of raw linseed oil will generally answer. The animal should not have anything in the shape of solid food, such as hay or straw, for at least twenty-four hours after the oil is given, but the diet ought to be of a laxative nature; warm bran mashes and the like have a good effect. When the laxative has done acting, the nitrate of potash may be given as above.

During the last two summers I have had occa-