

be affected would extend to the ligament itself; the former cause operating in conjunction with this, would sufficiently account for the pain in the groin of the affected side; and the application of this reasoning in the above instance, together with the other facts contained in the history, might enable us, without much difficulty, to form a pretty sure diagnosis of the disease.

XI. *An Account of the Horn Distemper in Cattle, with Observations on that Disease. By the Hon. Cotton Tufts, M. D. F. A. A. and M. S. In a Letter to the Rev. Joseph Willard, Cor. Sec. A. A.*—From the *Memoirs of the American Academy of Arts and Sciences*, Vol. I. 4to. Boston, 1785.

BEASTS of the forest, guided by the dictates of nature, and uncontrolled by man in their food, air, exercise, and rest, are seldom affected with any disease; whilst, in almost all countries, the domestic kind, that are more immediately under the government of man, are subject to a variety.

Scarcely an instance in this country of reigning sickness among tame or wild beasts has

been noted by its historians; and it is within thirty years that we have heard much of epidemic diseases among either.

About twenty-five years past an epidemic distemper prevailed among dogs, and occasioned a great mortality. In 1768, horses were generally affected with a disorder of the head and throat, which proved fatal to many, and much injured the serviceableness of those that survived. About the year 1770, there were some instances of the *rabies canina*; happily but few dogs were affected, and but few persons were bit; their rage principally fell upon swine. In 1771, a mortal distemper prevailed among foxes, and greatly reduced their numbers. About this time, or not long after, a distemper appeared among neat cattle, which destroyed many, and has continued to this day. The distempers that befel these several kinds of animals were said not to have been known in the country before, more especially that which has affected neat cattle, and which has generally been considered as a new disease: some, however, have supposed it to be the same which, from time to time, has made ravages in Europe, and more especially in England. Whether it was ever known there is uncertain. It

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evidently differs from those which English writers have mentioned as proving fatal to their cattle. The compilers of the Complete Body of Husbandry, re-published in 1768, make no mention of this disorder, though they have treated largely of the disorders of horn cattle; those that have been more especially prevalent, and have proved mortal, they have described under the names of *gargil*, *garget*, and *murrain*, and as attended with external swellings, inflammations, eruptions, and contagion, and add, that “the murrain is the distemper now, and of many late years, so fatal among the horn-cattle.” In 1757, Daniel Peter Lazard, M. D. F. R. S. published a particular account of the nature, causes, and cure of the distemper then among the horn-cattle in England. He considers it as an eruptive disease, in the several stages, progress, and effects of it, exactly the same with the small-pox, and earnestly recommends inoculation. None of the external swellings, eruptions, or contagion, characteristic of these disorders, and to which swine and sheep, as well as neat cattle, of all ages and kinds, are incident, are peculiar to this disorder. It is commonly called the horn distemper. Cows are more especially subject to

it; oxen but seldom: bulls are said to be exempt from it; also steers and heifers, under three years of age. It is a disease that affects the internal substance of the horn, commonly called the pith, insensibly wastes it, and leaves the horn hollow. The pith is a spongy bone, whose cells are filled with an unctuous matter: it is furnished with a great number of small blood vessels; is overspread with a thin membrane, and appears to be united by suture to the bones of the head, and is projected to a point. In a healthy beast it fills up the cavity of the horn; the horn itself being a sheath or case giving firmness, and the whole serving as a weapon of defence.

This spongy bone, in the horn distemper, is sometimes partly, and sometimes entirely, wasted. The horn loses its natural heat, and a degree of coldness is evident upon handling it: when it is only in one horn, (which is often the case) a manifest difference between the one and the other will be perceived, and in all cases a want of natural heat will be apparent: wherever this is found, there is no room to doubt of the disorder's being present; yet it is seldom suspected without a particular acquaintance with other symptoms that commonly attend

tend this distemper; and, for want of knowing these, the farmer has often lost his cattle, not even suspecting the evil.

These symptoms are a dulness in the countenance of the beast, a sluggishness in moving, a heaviness of the eyes, a failure of appetite, an inclination to lay down, an aversion to rise, and, when accompanied with an inflammation of the brain, a giddiness and frequent tossing of the head; besides these, the limbs are sometimes affected with stiffness, like a rheumatism, and in cows the milk often fails, the udder is hard, and in almost all cases there is a sudden wasting of the flesh.

As soon as the disorder is discovered, an opening into the diseased horn should be immediately made, which may be done with a twenty-penny-nail gimblet, in a part of the horn which might be supposed to be most favourable for a discharge: it is most prudent to bore, at first, two or three inches above the head; if it is found hollow, and the gimblet passes through to the opposite side without resistance, and no blood discharges from the aperture, it may be best to bore still lower, and as near the head as it shall be judged that the hollowness extends. This opening is a necessary measure, and often gives

gives immediate relief. Care must be taken to keep it clear, as it is apt to be clogged by a thin fluid that gradually oozes out and fills up the passage. Some have practised sawing off the horn; but, from the best observations, it does not succeed better than boring.

In autumn, 1774, on a farm not far from my house, I had four cows seized with this distemper in the space of a fortnight: the first, an old cow, was affected with stiffness in her hind parts; her milk failed, her udder was hard and swelled, her eyes heavy, and her flesh suddenly wasted. My tenant requested me to view her, upon an apprehension that she had met with some hurt. At this time the disorder was not much known among us. Fortunately a person fell in my way who had seen a similar instance; and, upon relating the case, he suggested that it was the horn distemper, and upon examining her horns, one of them was found to be cold, and was immediately bored with a gimblet, which passed through to the opposite side without resistance, and no discharge followed. Finding the horn hollow, I was led to think that the bones below were carious, and immediately made a mixture of rum and honey, with the addition of some tincture of myrrh and
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aloes, and syringed the horn; the injected liquor was soon discharged at her nose, tinged with blood: this was repeated several times, daily, and the injected liquor continued to run off through the nose for two or three days; at length it ceased to pass that way. Emollient fomentations were applied to her bag. These were the only applications. The cow, in a few days, shewed signs of recovery, but did not regain her flesh for several months. A second and third cow were taken ill; the disorder being early discovered, their horns bored, and syringed several times, they soon recovered. A fourth cow, about four years old, was observed in the morning to have the disorder: her horns were bored and syringed, her tail* cut for the purpose of bleeding, and from suspicion of defect in it: by nine o'clock she was scarce able to stand; at noon she was unable to rise, her head was very hot, her eyes dull, and she groaned as if in great pain; towards night she appeared as if near expiring, her eyes were

* Neat cattle are subject to a disorder, commonly called the tail sickness, which is a wasting of the bony substance of the tail; and if not cut off or dilated as far as the defect reaches, often proves fatal. It frequently accompanies the horn distemper.

unmoved on being touched, and the lustre of them entirely gone; some degree of coldness, and a universal convulsion attended her. Under these circumstances, I directed my tenant to take one ounce of powdered mustard seed, to simmer it in a quart of milk, and add thereto one gill of molasses; the whole to be given immediately; afterwards to cover her over thick with straw. This was soon done. In this state she was left in the evening. Before morning she had escaped from her straw, and was feeding in the field. She recovered without any farther application.

In the spring of 1779, another cow, of four years old, was seized. She was observed in the morning to refuse her food; her eyes were heavy, she hung down her head, and manifested an unhealthy countenance. The disorder was suspected; her horns examined; one of them felt cold, was bored, found hollow, and syringed: through the day she was giddy, tossing her head backward and forward; frequently groaned as if in great pain; and, upon rubbing her forehead, shewed signs of ease; her strength was not much diminished; her natural evacuations by stool and urine were free; however, she died the next morning; and, according to
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the information of my tenant, upon opening the body, the viscera were all found; no mark of disorder was seen there; but upon opening her head, the brain appeared of an unnatural colour, and, by his account, tending to a mortification.

From the number of cows seized with this distemper in the space of a fortnight, as before mentioned; a suspicion arose that the distemper was infectious; time, however, has shewn that it is not so, at least in any great degree; for it frequently happens that, among many cattle herding together, one of them shall have the distemper, and the others remain in perfect health.

It appears from the first-recited case, that the injected liquor had a free passage from the horn to the nose; yet, previous to the boring of the horn, there was no visible discharge at the nose of the wasted substance, or of any other matter, nor has there been in any other instance that I have heard of. As there appears no external discharge of the wasted bone, it must probably lodge in the cavities of the head, and, in process of time, affect the brain; or the matter may be subtilized to a great degree, and be drawn into the circulation. It seems

surprising that so large a portion of bone as that which fills up the horn should be destroyed, and the beast manifest no more complaints than are commonly observed; for the whole substance is generally lost before the complaints rise so high as to excite the notice of the farmer. To account for this, may it not be supposed that the mortification or dissolution of the pith is attended with a degree of insensibility, and that the distress discovered does not exist in any great degree until the brain is in some measure affected, or the matter is absorbed, and injures the habit in general?

Air bubbles are continually forming at the orifice through which the thin fluid oozes after the horn is bored. This indicates an internal fermentation, and it is not improbable that putrid matter of some kind or other may have given rise to it. The matter may at first be formed on the periosteum, and, entering into the interstices of the bone, may dissolve the oily substance, and form a fluid so putrid and corrosive as to dissolve even the bone itself: upon this supposition, the air within becoming putrid and confined by the heat of the parts, will be largely expanded, from whence a great degree of compression upon the surrounding parts

parts must ensue: its effects at first may be small — after a while great; at first producing no great distress — after a while some pain, but not sufficient to produce such uneasy sensations as to be noticed; but when the bone is entirely wasted, and the putrid air much increased, and the compression become great, the tender vessels of the head must feel the force of it: the humours also may be highly acrimonious, and produce a general irritation. But from that sensible relief that an opening into the horn gives the beast, it is more than probable that the distress discovered arises from compression, rather than from an effect produced on the blood and juices; for, in some instances, the beast is almost instantly relieved by making an opening in the horn.

The passing of liquors from the horn to the nose, as in the case first mentioned, may perhaps be considered as an objection against the compression supposed; but it is to be noted, that though there was a communication between the horn and the nose in this case, yet it does not appear that there was any in divers other instances, or even in this after a few days.

From late observations I am led to conclude, that injections are in general unnecessary; that when the distemper is early discovered, no more is required than a proper opening into the horn, keeping it sufficiently clear for the admission of fresh air, the removal of the compression, and the discharge of floating matter. But when the distemper has communicated its effects to the brain, so as to produce a high degree of inflammation, it is much to be doubted whether any method will succeed.

XII. *Observations on the Longevity of the Inhabitants of Ipswich and Hingham, and Proposals for ascertaining the Value of Estates held for Life, and the Reversion of them.* In a Letter from the Rev. Edward Wigglesworth, F. A. A. and Hollisian Professor of Divinity in the University of Cambridge, to the Honourable James Bowdoin, Esq. Pres. A. A. — From the *Memoirs of the American Academy of Arts and Sciences*, Vol. I. 4to. Boston, 1785.

AFTER the last meeting of the Academy, the Rev. Mr. Cutler, of Ipswich Hamlet, put into my hands a bill of the births and
 deaths