

the cough seems to decrease because the strength fails; this is the reason why some French writers, as well as the great Haller, in a letter which he lately wrote to me, have given to this disease the name of Pneumonia.

With others the matter is thrown upwards upon the intestines of the stomach. The paunch, as I have already said, placed in the left cavity, is inflated with air, and considerably distended, so that the animal seems ready to burst; and when one strikes it with the hand it resounds as a drum.

Some physicians claim to have observed that the skin of the animal seems to adhere to the back and to the loins during the height of this disease; that is what I have never perceived very distinctly; I rather think that the considerable swelling of the belly has given occasion for this conjecture.

With others the skin of the back cracks when we press there with the finger; which arises perhaps from the air which the corruption has introduced below the skin.

The fourth, fifth or sixth day, many of these poor animals begin to be tormented with a considerable diarrhoea, so that the ejections escape with violence from the body, as if they were driven from a syringe, and they then overspread all the stable. These excrements diffuse an insupportable smell; and nothing appears to me more fatal for the other cattle than the bad quality of this mephitic air. Sometimes these matters are mixed with blood and ichor.

Others do not pass their excrements, which are checked in the long gut; the rectum, which is the outlet from their bodies, remains open and yields an ichorous and sanguineous matter. Among the cows the sexual parts are also swollen and remain open; the animal being so feeble that the sphincters can no longer exercise their functions.

The bladder loses also among the greater part, its strength; they then rarely pass their urine, as much because the water which they drink during this time, or the liquid medicines which one administers to them remain lodged in the stomach without being absorbed, as because the animal gives out a great deal of humour through the nostrils, the eyes and the mouth.

I have not yet said anything of the milk, because the distemper attacks in the same manner horned beasts of both sexes, of whatever age they may be; I must then speak only of a final analysis of it, because this concerns only the milch cows. The milk diminishes, becomes thick, and is corrupt in the udder.

It is impossible, so to speak, to determine the time of the duration of the dis-

ease and the symptoms with which it is accompanied. Among some individuals the corruption is so violent and so sudden that it kills the animal in twenty-four hours; sometimes they die the third, fourth or fifth day; at other times only the seventh or the eleventh day; but this last case is very rare.

They sometimes die with the legs extended far from the body, and sometimes with the feet drawn in below the body. During the disease they do not always lie upon the same side, although the belly may be very much distended with air. I have given great attention to this point, and I have found that the beasts were lying sometimes upon one side and sometimes upon the other: so that the stomach does not appear to occasion any inconvenience in this.

With some the body is covered with spots, particularly near the groin, a symptom to which the peasants have given the name of "scab" (*rappigheid*), and which some consider a good sign. I have, however, seen some die whose bodies were covered with similar spots.

I cannot assert anything very positively with reference to the blood; there are some who think that it coagulates; others that it is attenuated; but the greater part agree in saying that it does not coagulate, but becomes mucous; as we often see among persons attacked with putrid fevers. In dead beasts, I have invariably found the blood attenuated and never coagulated.

These are the symptoms which are common to the bulls, heifers, cows, oxen and to calves of every age, without distinction. We can easily understand that the cows with calf, all things otherwise equal, ought to suffer more from this terrible disease, and that, so much the more as they are nearer calving. The distemper is nevertheless sometimes quite mild among those which get through it without abortion; but this is very rare, and the greater part lose their fruit also in the end, after they are themselves cured of the disease.

THE INTERNAL SYMPTOMS OF THE DISTEMPER.

I would never finish if I wished to relate all that has been observed upon the internal parts of the cattle which have died of the distemper by the principal doctors of Italy, England, France, Germany and Holland. It will suffice to confine myself here to the peculiarities which, being common to the present contagion, may serve to determine its nature, and to find the means for procuring a remedy for it, if we are ever fortunate enough to attain to this end. I will speak only of the symptoms I have myself noticed in the cattle I have opened,

at least of those which I think worthy of taking up your attention.

The epiploon (to begin with the stomach) the epiploon, I say, is inflamed and gangrened with many, in such a manner that it is covered here and there with red, purple and black spots.

The paunch is likewise more or less so; sometimes it is extraordinarily swollen by the air which is found confined in it, and gives a very precise idea of intestinal tympanite. When one makes there an orifice through the skin and the muscles as I have done to some, the air comes out with violence and noise. But I cannot say that there ever was a true tympanite, that is to say, if there ever was air in the cavity of the stomach, between the intestines in the interior of the peritoneum: the putrefaction of the intestines is sometimes so great that I do not regard this as impossible.

The small intestines, together with the large intestines, were sometimes entirely unnatural, purple and black: one part more, the other less, according as they were affected with the pestilential virus.

Among old cows the spleen was generally livid, of an ashy gray charged with an ichorous matter, and almost putrefied in the interior by the vitiated blood which remained there.

The liver of the animals which I have myself opened were generally gangrened in some, full of flukes which filled a great number of the biliary ducts. But this was not the cause of their death. I have found also this year and last autumn many of these worms in healthy cattle killed by the butcher, as well as in sheep. The hare also is not exempt from them. This disease has been very general during the last summer, and carries off even now a great number of sheep*.

The gall bladder among all was unusually large, and filled with fetid bile. The parenchyma of the liver was gorged with air or affected with emphysema, all these parts become quickly corrupt in the distemper. The first stomach contained the food and the drink which the animal had taken before the violence of the disease prevented it from satisfying its appetite, and this food was very corrupt; so that I found the smell of it unbearable, although in other cases my zeal enabled me to overcome quite easily like disagreeable things. The interior membrane was almost sphacelated by the putrefaction of its material, and could be lifted in scraps; which never happens with cattle, except when the putrefaction which follows

* In the hepatic duct of a stag, which M. de Lewo d'Adnard presented me the 13th April for dissection, I have found, although the animal was otherwise healthy, three flukes of the same form as those of the sheep and horned cattle.