CLINICAL ARTICLES.

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CONTAGIOUS INFLAMMATION OF THE LUNGS AND
PLEURA OF YOUNG CATTLE.

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UNDER the head of Septic Pleuro-pneumonia, several continental writers have described a fatal disease affecting calves during the first three months of their lives. Poels¹ gives the results of his observations on the affection in Holland, and refers to its existence in the province of Antwerp. Perroncito² has written a full description of an infectious pneumonia of the calf which caused great losses in Italy. In British text-books I find no mention of the occurrence in this country, though Youatt,³ writing before the scheduled pleuro-pneumonia of cattle is believed to have been introduced, has a chapter in his book on "Cattle" headed, Acute and Epidemic pneumonia, which is in some points suggestive. Crookshank⁴ refers to a septic pleuro-pneumonia affecting calves up to two months old, the course being rapid, and death occurring on the second or third day. This writer does not mention its existence in this country, but, like Poels, states that it is communicable and fatal to rabbits, guinea-pigs, and mice.

I have within the past few years met with an affection which bears some resemblance to the descriptions alluded to above, one of the most remarkable differences being that the age of its subjects in the outbreaks investigated by me ranged from six months to two years.

In one instance a farmer purchased three calves about nine months old, of which one was noticed ailing on its arrival home, and died on the following evening. The other two were now placed in a byre, and on the next day one became very ill, and it succumbed on the fourth day after its arrival. The third showed symptoms of the affection on the same day as the last named, became extremely debilitated, and on the fifth day was destroyed as hopeless. Only the viscera of these animals were seen *post-mortem* by a veterinary surgeon. In the course of two months after this, the young stock reared on the farm, whose ages ranged from six to eighteen months, were turned into the same byre. On the seventh day following four animals were noticed to be very ill, and one died during the night. A veterinary surgeon was sent for, who found three calves giving evidence of pleurisy and pneumonia of an acute character. He then took the temperature of the remaining eleven, and finding in three that it was elevated (104°-105°), removed those whose temperature was normal to another situation. On the following morning pulmonary symptoms were manifest, and of the six, four died within four days. The other two survived, but continued to do badly for a considerable time. *Post-mortem* revealed pleurisy and pneumonia of the character about to be described.

In the second instance a veterinary surgeon was called in to see

¹ "Fortschritte der Med." 1886.

² "Il Med. Vet." 1885.

³ "Cattle" 1837.

⁴ "Bacteriology and Infective Diseases," p. 227.

nine calves from six to ten months old, which were supposed to be suffering from "husk," being informed on his arrival that three had died on the day previous. The nine calves were coughing, some having a more or less profuse discharge from the nostrils and eyes, while auscultation and percussion revealed the existence of pleurisy and pneumonia, and there was the grunting which so commonly accompanies these affections in cattle. Depression was well marked and increased rapidly. The patients sometimes, though not invariably, remained standing until the later stages, when they persistently lay down. The temperatures ranged from 104° to 106°. In two of these cases diarrhoea existed. Of the nine, four died, and five made a slow recovery, making a total loss of seven out of twelve attacked. In each of the fatal cases, which occurred in the younger calves, death took place within the third day after the first symptoms were manifest. These calves had never been turned to grass, but were fed on a patent calf food, hay, crushed oats, and chaff. On the same farm were twenty-nine other young cattle above twelve months old, which had the run of an adjoining byre separated by railings. Of these, several became affected in a milder form, but all recovered, though a cough remained for many weeks; and notwithstanding a generous diet they continued in poor condition for a long time. *Post-mortem* examination revealed conditions almost identical with those of the former outbreak.

In another instance twenty animals were affected, the majority dying within ten days, and showing similar appearances *post-mortem*, but with more broken down gangrenous tissue.

Under the head of "Septic Pneumonia in Calves," Mr James Smith of Huntingdon read a paper to the Lincolnshire Veterinary Medical Association in June 1892. At the time Mr Smith consulted me and submitted some specimens of lung. This was a very severe outbreak, and many of the lesions were in a state of gangrene. On this farm, at the time of Mr Smith's first visit, six animals were found by him dead, and ten very ill. This was the third outbreak which had occurred on the place within three years. From the writer's statements and those of other members who joined in the discussion, it was evident that losses from this disease had been attributed to "husk," scheduled pleuropneumonia, and tuberculosis. The disease was most successfully arrested by means then suggested on the lines to be found at the end of this paper. It is worthy of remark here, that in all cases, including the above, which have come under my notice, the proprietor had been in the habit of purchasing young stock.

In some of the instances referred to, the after-death appearances have so simulated those of the scheduled pleuro-pneumonia of cattle, that lungs have been submitted to my examination under some suspicion of the existence of that disease; and though in most of the descriptions of so-called septic pleuro-pneumonia of calves, gastrointestinal lesions are spoken of, I have met with such once only in the affection now referred to. In this case diarrhoea existed, and probably depended on parasites in the gastro-intestinal tract. The constancy of the morbid changes appears to prove the disease to be essentially one of the lungs and pleura, though the pericardium is not infrequently involved. In one case only have I observed the whole of both lungs implicated. Usually there has been what is sometimes

known as patchy pneumonia of one or both lungs, the pleura corresponding being generally involved. The anterior lobes have generally been affected in the cases examined by me. The affected lobules, usually darker in colour, are well marked out by the septa infiltrated with lymph, giving a marbled appearance resembling that so familiar in the contagious pleuro-pneumonia of cattle. The altered lung tissue, however, was less firm; and the interlobular bands were narrower, contained much less liquid, and were more easily broken down. The affected pleura was less thickened and darker in colour. The foci of disease were more numerous, and manifested a greater tendency to break down and become gangrenous than in the scheduled affection. The bronchi in some cases contained a considerable amount.

My experience leads me to the conclusion that this affection is contagious, that the virus remains effective for a considerable time outside the animal body, and contaminates the places in which affected calves are kept, thus accounting for the recurrence of the affection as an enzootic. There is evidence of a short period of incubation, and the course in fatal cases is rarely more than three days. Calves under twelve months old become more readily and seriously affected than those above this age.

Though in advanced acute cases curative treatment is not hopeful, a large measure of success has followed the means suggested. Separation of diseased from the healthy by aid of the thermometer, removal of both lots to a fresh situation after all have been washed about the eyes, nostrils, chest, and feet with a solution of some suitable disinfectant, such as carbolic acid, are among the first procedures. The diseased have been then subjected to inhalation of burning tar, carbolic acid, sulphur, or eucalyptus, strict attention being paid to the hygiene of the animals, nursing, etc.

Intratracheal injection of carbolic acid was tried on four animals, which died shortly afterwards.

The place inhabited by the affected should be thoroughly disinfected.

CONTAGIOUS OPHTHALMIA IN CATTLE.

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IN the summer of 1892, I was consulted in the matter of several calves, about six months old, which had suddenly become affected with inflammation of the eyes, leading to temporary blindness. Of thirteen animals kept in a shippen, ten had, without appreciable cause, developed acute inflammation of the cornea and conjunctiva. At first three were noticed to move about strangely, and on examination the cornea was found to be opaque. In the course of a week seven others had become similarly affected. The three remaining unaffected were then removed to a paddock, and showed no signs of the disease. Up to this time, there being no evidence of contagion, the mischief was attributed to mechanical or chemical irritation connected with food stuffs. It happened, however, that a cow which was in a yard into which the ten calves were turned for treatment developed the affection. This naturally excited some suspicion of contagion.