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PARASITIC GASTRITIS OF SHEEP

(PRINCIPALLY LAMBS AND HOGGETS).

By C. J. REAKES, M.R.C.V.S., Director, Live-stock and Meat Division.

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PARASITIC GASTRITIS OF SHEEP

(PRINCIPALLY LAMBS AND HOGGETS).

[By C. J. Reakes, M.R.C.V.S., Director, Live-stock and Meat Division.]

This disease has caused loss to sheepowners in New Zealand for some years past. It exists to a greater extent in the North Island than in the South, though in certain years, notably 1909, it has been the cause of considerable trouble in Canterbury. It is caused by the presence in the fourth stomach of a very small worm known as *Strongylus ostertagi*, or *Strongylus cervicornis* (McFadyean), which in most cases is found associated with another larger worm, *Strongylus contortus*. Probably by far the most mischievous of these two parasites is the first-named, *Strongylus ostertagi* or *cervicornis*. This worm is so small that its presence, even in bad cases, may be quite easily overlooked by any but the most careful observer. The females are about $\frac{3}{5}$ in. in length, and the males about $\frac{3}{10}$ in. They are very slender—in fact, hairlike, and pale in colour. The *Strongylus contortus* is both thicker and longer, being about 1 in. in length. It is possible that when present alone it does not cause much serious harm, but this is by no means certain and it is anything but a desirable habitant of the stomach.

Symptoms.

Indications of parasitic gastritis are easily observable, diarrhœa, accompanied by general lassitude, wasting and progressive anæmia being the most prominent symptom. Affected animals often display a marked propensity to lick at the soil, especially at hillsides; and it is a common occurrence, on making a *post-mortem* examination, to find a quantity of sandy material in the stomach and intestines. Whenever young sheep are found to be scouring—except in a natural manner, on spring grass for instance, when they will be bright and otherwise healthy—parasitic gastritis may be suspected as being the cause. One point to be borne in mind is that parasitic bronchitis (lungworm) is often found associated with parasitic gastritis in the same animal, and, in much of the trouble occurring some years since and ascribed to lungworm alone, the stomach-worm was probably an important factor.

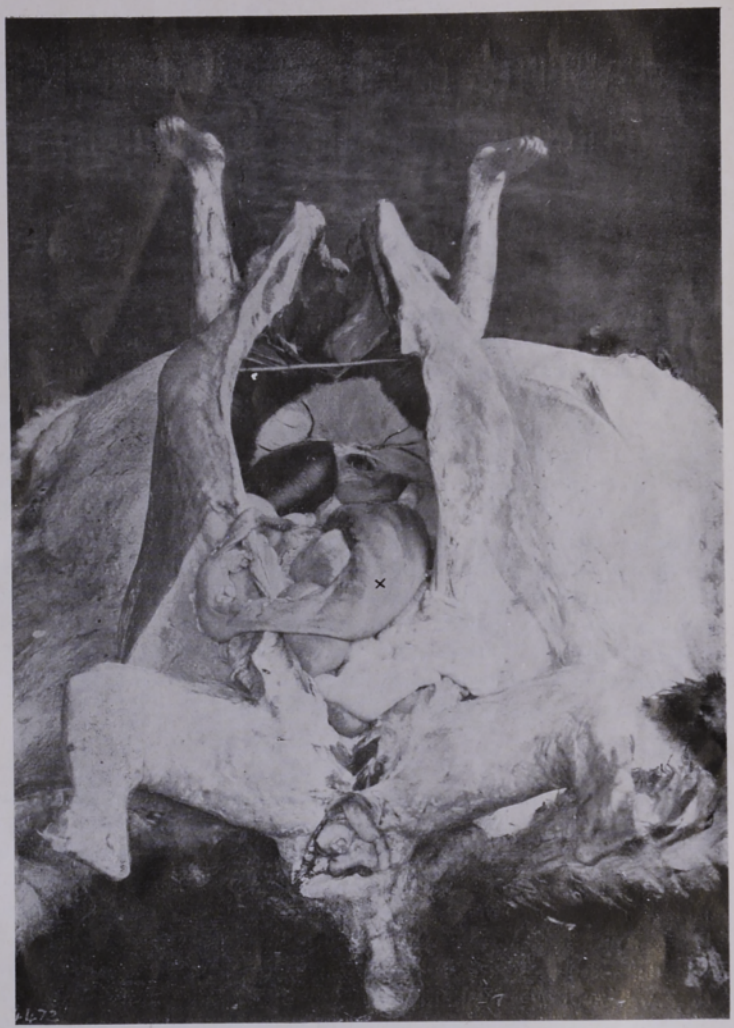

PLATE NO. 15.—PARASITIC GASTRITIS. CARCASE OF A SHEEP OPENED UP, AND THE FOURTH STOMACH (X) READY FOR EXAMINATION.

Treatment.

This must be carried out thoroughly if any reasonably good results are to be hoped for. One essential is a complete change of pasture. If the trouble develops in a flock, it may be assumed that they have been grazing in a pasture contaminated by the presence of the parasites or their ova (eggs). It is of no use attempting to treat them and endeavouring to get rid of the mature worms infesting them if they are continually taking in a fresh supply from the pasture. The animals should be at once removed to the driest and best-drained land available, where, if possible, the only water-supply obtainable is artesian or pure running water. One or two feeds daily of good, nutritious, easily digested food (crushed oats, oaten chaff, pollard, good hay, &c.) must be given. This is the most important feature of the treatment of this disease. Often the dry feed is not eaten readily when good grass is plentiful, but every effort should be made to induce the animals to take it. Sprinkling with salt and water will assist in this, and the salt in itself will prove beneficial. Medical treatment alone is of little value; but, if combined with a proper dietary, it assists to a considerable extent in bringing about recovery in cases where the animal is not too badly affected. Many drugs have been used in the past, but the majority were more or less useless. For a long period turpentine, combined with olive or linseed oil, was almost a standard remedy; but it has altogether failed to prove its efficacy, after a much longer trial than was warranted by its actual merits. Of the drugs which have given good results in varying degree, thymol and various coal-tar derivatives, particularly creosote and lysol, have been the most successful. Of these I consider lysol the most efficacious, provided it be used with care and judgment. The dose for lambs over six months old is half a drachm; for hoggets, three-quarters of a drachm; for two-tooths, one drachm. (A drachm is equal to a teaspoonful.) Unless well diluted, lysol, while being swallowed, causes considerable irritation to the membrane of the throat, and it should therefore never be given in too strong solution. The best material with which to mix it is milk or very thin gruel—about a third of a pint with each dose. As should always be the rule when administering liquid medicine to animals, care must be taken not to pour it too quickly into the mouth, and to leave the jaws, and particularly the tongue, as free as possible under the circumstances, in order that no undue restraint is exercised upon the animal's natural efforts to swallow. Neglect of care in this respect will probably mean the entrance of a portion of the dose into the windpipe, acute illness, and death. One dose should be given daily for four days, then an interval of from eight to ten days allowed to elapse, after which a further series of four doses may be given. The allowance of sound, dry food must be continued. This important feature in the treatment of the disease should never be lost sight of.

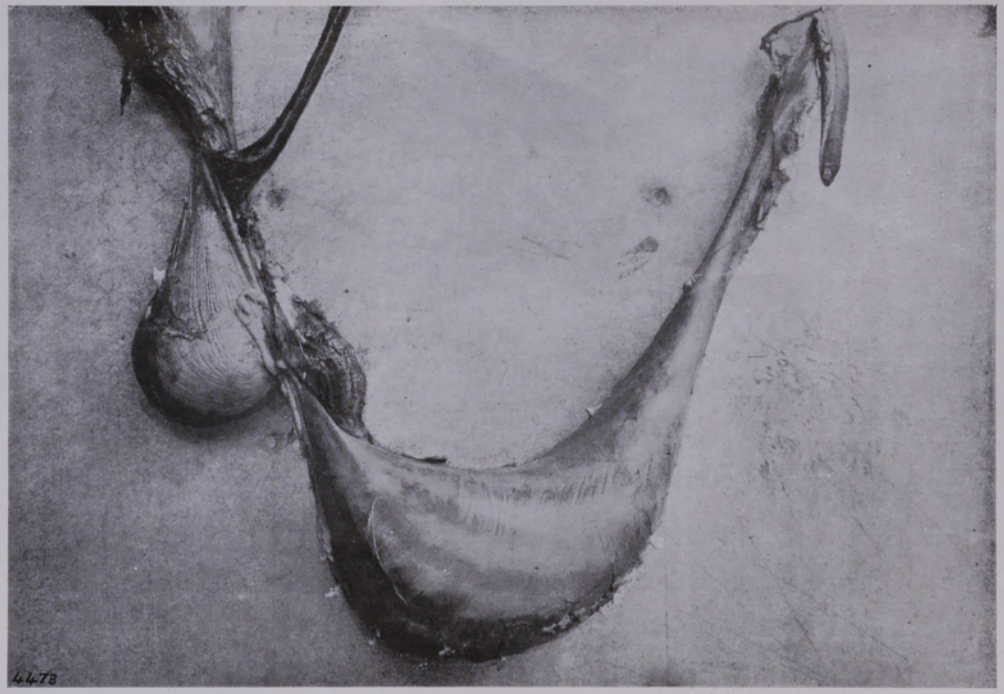

PLATE No. 16.—PARASITIC GASTRITIS. FOURTH STOMACH EXTENDED IN THE MANNER REQUIRED FOR EXAMINATION FOR THE PRESENCE OF PARASITES.

The stomach wall should be opened up from end to end at its uppermost aspect, in order that none of the contents may escape.

Prevention.

To realise fully the value of preventive measures, the life-history of the parasites, so far as known at the present time, must be understood. Each animal suffering from the disease daily passes innumerable ova, and, possibly, also newly hatched worms, or mature female worms, loaded with eggs, who, having fulfilled their function, die, leaving the eggs virile (a single female may produce thousands of eggs). The eggs deposited on the pasture are ready to be taken up by sheep feeding upon it, who thus continually renew their trouble. In low-lying, wet pastures these worm-" eggs " and, possibly, also immature worms developed from them after deposition upon the ground-surface, or voided by the infected animals, are able to retain their animal vitality outside the animal body for a much longer period than on dry and sunny land. Therefore, removal from contaminated land to dry, well-drained, not-heavily-grassed paddocks is not only essential as a matter of treatment, but the depasturing of young sheep upon such paddocks is one of the best preventive measures. It is a notable fact that a few parasites may be found in the fourth stomach of a very great proportion of healthy and vigorous young sheep—it is only when present in large number that they do noticeable harm—and, seeing that they do not multiply within the body, it is obvious that suitable outside conditions are necessary to enable them to infest sheep badly. These conditions, as already stated, are to be found in low-lying, wet, badly drained pastures, in heavily grassed land where surface-water does not get away freely, and also, during wet seasons, on good, well-grassed, otherwise sound paddocks. Whenever such conditions, favourable to the propagation of the parasite, exist, a close watch should be kept, and, at the first clear indication of parasitic gastritis, the flock should be transferred to another paddock—the best-drained and driest available. If this does not quickly stop the trouble, treatment should be adopted as recommended.

How to detect the Presence of the Parasites.

This may be done if care be observed. First, the body of a newly slaughtered, badly affected animal must be opened up, and the fourth stomach loosened from its attachments (see Plate No. 15). It should not, however, be entirely cut away from the remainder of the viscera, as the whole of its contents must be retained. Then, with the aid of an assistant, the stomach must be held at its full length, and a clean cut made in its wall from end to end on the uppermost surface (see Plate No. 16), thus, while exposing its more or less liquid contents to view, retaining the whole in the cavity. If then held perfectly still for a few minutes, careful observation will show, if the case be one of parasitic gastritis, a quite easily noticeable disturbance of the fluid caused by the rapid movements of the innumerable parasites present in it. It is necessary that this examination be made

immediately after death, while the body is warm; for the movements of the worms decrease as the animal heat subsides. If any doubt as to the presence of the parasites exists, a knife-blade should be lightly scraped over the surface of the mucous membrane of the stomach, and the material removed from the membrane by the knife placed upon a piece of clean glass, which should be held over a dark background. A careful search through this will reveal the presence of the tiny, hairlike worms, should they be present.

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