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SUPPLEMENT

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Colonial Secretary's Office,

Sydney, 19*th June*, 1851.

EPIDEMIC IN STOCK.

REFERRING to the Notices of the 11th February and 13th March last, containing Reports from the Commission appointed to enquire into the nature of the prevailing Epidemic in Stock, His Excellency the Governor-General is pleased to direct the publication of the following further Report from the Commission.

By His Excellency's Command,

E. DEAS THOMSON.

Sydney, May 12, 1851.

To the Honorable the Colonial Secretary.

Sir,

We, the undersigned Members of the Commission appointed by His Excellency the Governor to enquire into the prevailing epidemic amongst stock, beg to state, for the information of His Excellency, the result of our latest investigations on this subject.

At the commencement of our enquiries, our first object was to ascertain the nature of the disease. After numerous examinations of cattle and sheep that had died of the malady, and of others that were slaughtered while labouring under it, we found it similar in nature to a disease long known in France under various names, of which the most common is the *maladie du sang*, which has not, to our knowledge, been hitherto noticed by English authors.

In our last Report, published March 13th, as a Supplement to the *Government Gazette* of March 11th, we stated that we had invariably found the spleen enlarged, gorged with dark purple blood, to such an extent as sometimes to increase its weight from one and a half or two pounds, which is the natural average, up to twelve and even to twenty pounds. We also invariably found marks of inflammation, in the shape of specks, spots, and patches, and ulcers prevailing more or less throughout the inner or mucous coat of the stomach and intestines. In all cases the blood presented a diseased appearance, being dark purple colored, thick, and not coagulating in any part of the body. Other appearances of disease were observed, but they were not invariable, except that in sheep we always found some bloody urine in the bladder, and evidence of inflammation in the kidneys.

Our next enquiry was as to the origin or cause of the disease. We ascertained that it had first made its appearance amongst cattle and horses not far from Liverpool, and that it had spread thence, as from a nucleus, to other parts of the county of Cumberland, to which district it seemed until very lately to be almost entirely confined; that wherever one died others died shortly afterwards; and that till within the last year and a half sheep seemed to be exempt from its attack.

From the first appearance of the disease, up to the present time, it has been attributed to various causes:—to over-driving—to hot weather—to bad feed—to bad water—to want of salt—to want of cultivated grasses; and it is a very general opinion that some poisonous plant is the sole cause of it.

But all our enquiries have failed to trace the disease to any of these causes; and it is our opinion, that whatever tendency any of them may have to predispose to disease, they have no power to produce it in this particular form.

To one source, and to one only, have we been able to trace it, and that is, to contagion. We hold it to be established beyond doubt, that the sound get the disease from the unsound, either alive or dead; but whether it is communicated by the breath, or by contact with the secretions or excretions, we have not been able to discover. But the instances of disease appearing amongst the sound soon after contact with the unsound are very numerous and well authenticated. Some of them have been the result of direct experiments to try the fact; others have been the result of accident; but all have tended to prove the fact. In three instances we have produced the disease in sheep by inoculation with blood taken from subjects that had died of it. Even the ground on which the dead body of a diseased animal has lain seems to be capable of producing the disease, and this is probably the reason why some paddocks seem to be so very dangerous to travelling cattle.

Many cases, and, of course, the earliest, cannot be traced to contagion, so that there must be some other cause or combination of causes. To discover these would be of the highest importance, since it would in all probability enable us to suggest some means of prevention. But we have not discovered them; and we must add this to the list of diseases, such as influenza, cholera, the plague, &c., which seem to be caused by some atmospheric influence originally.

In regard to the proper treatment of the disease, we can offer no useful suggestions, and we are even less sanguine than we were of being able to discover any. For as it is next to impossible to say whether any animal has the

disease or not till it is almost dead, so the treatment of animals which are only suspected of being diseased can lead to no useful result. In several instances, we employed skilful persons to pick out from a flock in which some were unsound a diseased animal, but in no instance did we discover after death that a diseased one had been pitched upon. Now if we had put these animals under treatment, guided by the opinion of men who were really well qualified to judge, we should have attributed their recovery to treatment, and not, as in fact it would have been, to their original freedom from disease. And the duration of the disease is so short, and the attack so sudden and fatal, that after the disease has shewn itself, there is no time for curative means. We have constantly found that deaths occur within four days after exposure to contagion, and as there is always some longer or shorter latent period, this proves the extreme rapidity of its progress. In the case of the horse, given in the Appendix, it seemed well and was at work at nine o'clock, and was dead at half-past eleven.

As cure seems almost beyond hope it is the more desirable to limit the spread of the disease as much as possible, and for this purpose we recommend—

1. That sheep, cattle, or horses which have travelled through or rested in places where others have died of this disease, be kept separate from all others for a few days, say fourteen, in order to discover whether any have caught the contagion.

2. That when any one dies its body should be consumed by fire on the spot on which it is found.

3. That if moved for the purpose of being more conveniently burnt, the body should not be dragged along the ground, and the spot on which it has lain should be chopped up and scorched by making a fire on it.

4. That consuming the body by fire is better than burying it.

5. That travelling stock should, if possible, avoid every resting place where any animal has died of this disease.

6. That some means should be devised to keep the highways clear of dead bodies, as—

First.—That it should be compulsory on the tenant of lands fronting the road to burn dead bodies.

Second.—That persons who permit any dead carcase to remain on or near a highway through their lands, without at once proceeding to burn it, should be liable to a penalty.

7. That a place should be provided in the suburbs of Sydney, to which animals dying in the city of disease or accident, could be taken and burnt.

We regret to have to report that the disease is no longer confined to the district within the ranges which we mentioned in our last. It has spread about twenty-five miles south of the Razorback to Bargo, and has also appeared near Dapto, in the district of Illawarra, where there is excellent water, where cultivated grasses abound, and where the vicinity of the sea supplies the air and the herbage with saline particles.

We have great pleasure in stating that we have met with every assistance from parties to whom we applied for information, and that in particular very valuable information has been given us by Messrs. Cleeve, Argent, Bloomfield, &c.

Mr. Moore, of the Botanic Garden, has favoured us with a report of his examination of the herbage of various places and districts where the disease has been fatal. This report, we beg leave to subjoin as a valuable document; it shews the innoxious nature of the herbage, and may act as a guide to future botanists.

We cannot conclude this report, without stating, that by the kindness of the Honorable the Attorney General, we have been furnished with the reports of two inquests, in each of which death is reported to have been attributable to the absorption of animal matter, and in each case the appearances were those of malignant pustule.

These fatal cases are confirmatory of opinions we have advanced and with others which have been made known, lead us again more particularly to recommend the greatest caution in handling diseased animals.

R. GREENUP.
CHARLES NATHAN.
JOHN STEWART, V. S.
JNO. INCHES.
B. O'BRIEN.

Thirteenth Observation—made the 26th February, 1851.

A bay horse belonging to Mr. Raper, came in about 10¼ o'clock, a. m., very dull, purging a little, sweating a little; his eye and mouth dark red, nearly livid, pulse 98 small, weak, breathing noisy, head hanging low; he was bled, but before losing three pints of blood he appeared to become faint, and the bleeding was stopped; he backed against a wall for support, and as he would not move forwards he was backed a few yards among some litter, where he fell and continued lying with little struggling until he died, at 11·20, a.m.

At 3½, p.m., he was opened by Mr. Stewart before the Committee.

Appearances.—On cutting through and laying back the skin it was found full of blood, as also the cellular membrane beneath; on opening the cavity of the abdomen several gallons of serum poured out, and there was much appearance of recent peritoneal inflammation, but only a few shreds of flocculent lymph were found on the upper surface of the liver and corresponding lower face of the diaphragm.

The mucous membrane of the stomach was intensely inflamed, and more than three times its usual thickness. The pylorus was inflamed, the duodenum reddened and spotted. The colon was very much inflamed generally; one patch covered with a black pigment measured an inch and a half in diameter, with serum diffused between the mucous coat and the muscular. The cœcum was intensely inflamed, especially towards the blind end; indeed the mucous coat was throughout more or less inflamed, in many places intensely so. In the small intestines, where the inflammation was most intense, the gut was distended with fluid, food and gas, as if the contractile power of the muscle was destroyed; the pale contracted part in many places joining suddenly and abruptly to the distended and red part. A short intus-susception was noticed in the contracted pale intestine, but it had evidently nothing to do with the death of the animal.

The liver was full of blood and had a few ecchymosed spots on its surface, besides the flocculent lymph already noticed.

The spleen was congested and spotted, weighing 5lbs. 10oz.; the spots and one large streak seemed to be produced by extravasation of blood under the peritoneal covering. In these spots it had the appearance the whole spleen has had in some of our dissections.

The bladder was full of urine—its inner surface inflamed; kidneys natural.

The thorax was generally injected and had a considerable quantity, much more than natural, of serum in the cavity. The lungs were red, the bronchial tubes full of froth, and the lining membrane a little inflamed.

The pericardium contained a good deal of serum, and there was ecchymosis in the right ventricle of the heart.

The brain was firm and healthy, not shewing any sign of disease.

The pharynx was inflamed.

The blood was throughout very dark in colour, thick and syrupy, without any sign of coagulation.

A sound sheep was inoculated about 5½ p.m., same day with a seton dipped in the blood of the spleen of the horse.

Fourteenth Observation:—

The sheep showed no sign of illness next day, but on Saturday, March 1st., about 64 hours after the operation it was found lying down more than usual, and when stirred up its movements were dilatory, languid, and stiff. It passed a good deal of urine like blood; about 4 o'clock, *i.e.*, about 70 hours after inoculation it was dead. In the same house, its companion, another sheep, was left with the body for 17 hours. (This remained quite healthy for a week or ten days, when it was killed). Seventeen hours after death the body was examined. It was swelled all over, partly from decomposition in the tissues, partly from air in the stomach and bowels. The nostrils discharged blood.

There was inflammation spreading down both sides of the neck, and all round the seton.

There was bloody serum in the thorax, the pericardium, and abdominal cavity.

The mucous membrane of the fourth stomach, of the duodenum, and of the intestines was here and there though not generally, inflamed. In places the inflammation was very decided, with a few minute spots of ulceration.

The liver was very flabby.

The spleen of a dark purple colour, soft almost like a jelly, staining all the contiguous part, and weighing 5½ ounces.

The Mesentery was inflamed in several places.

The kidneys soft and purple coloured.

The bladder contained bloody urine, very dark in colour, and more like blood than urine; inner coat red, vessels injected.

The mucous coats of the air tubes were inflamed throughout, and the lungs full of blood.

The blood was every where of a dark colour, nearly purple, thick and fluid.

Fifteenth Observation:—

A sheep inoculated on Tuesday morning, February 25, by Mr. Inches, at Johnston's Bay, died Thursday morning, February 27.

Examined at the Horse Bazaar, by Mr. Stewart, before the Committee:—

External appearances, body not swollen, skin quite natural except where pierced by the seton on the right side of the neck, there the skin and tissues under it were much inflamed.

No disease in the first stomach—its contents were hay well moistened; second and third stomachs healthy but empty; mucous coat of the fourth stomach generally inflamed; the inflammation deepening towards the pylorus with patches of ecchymosis running into the duodenum.

Mucous coat of the intestines slightly inflamed.

Pancreas or sweet bread inflamed.

Liver soft and dark coloured.

Spleen considerably enlarged, weighing 5¼ oz. not much discoloured, but having red papillæ extending all along its convex edge, texture soft, breaking down between the fingers.

One kidney healthy, the other redder and softer than natural; urine healthy, inner coat of the bladder slightly pink.

The thorax contained some bloody serum, the right lung was full of dark coloured blood; the pleura costalis was ecchymosed along both sides of the spine.

The pericardium contained thick and very dark red serum like blood; the surface of the head was covered with small ecchymosed spots.

The mucous membrane of the wind pipe shewed signs of inflammation a little below the larynx, deepening towards and beyond the bifurcation of the bronchi, which contained a good deal of froth.

The mouth was pale but the pharynx was inflamed.

The blood in all parts of the body was fluid, but very thick and dark coloured.

APPENDIX B.

Botanic Gardens, Sydney,
10th March, 1851.

Dear Sir,

In accordance with your request on behalf of the Board appointed to enquire into the cause of the prevailing cattle disease, I have examined the vegetation of the following paddocks in which cattle have died, viz: Ryan's and Cleeve's paddocks, on Grose Farm; Hearn's paddock, part of Petersham Race Course; and Fullager's paddock, on the Penrith Road, and the plants observed growing in each paddock are as follows :—

CLEEVE'S AND RYAN'S PADDOCKS.

(*The vegetation in both being similar.*)

Cynodon Dactylon; Poa plebia; Poa annua; Hypoxis pratensis; Plantago varia; Oxalis corniculata; Trifolium repens; Carex cæspitosa; Malva sylvestris; Lavatera species; Kennedya parviflora?; Erythræa australis; Wahlenbergia gracilis; Lobelia alata; Anagallis arvensis; Isolepis prolifer; Potamogeton natans. The two last named in water holes.

HEARN'S PADDOCK.

Cynodon Dactylon; Billardiera scandens; Clematis coriacea; Goodenia ovata; Lobelia alata; Erythræa australis; Kennedya parviflora?; Ranunculus acris; Hypoxis pratensis; Hypericum pusillum; Plantago varia; Anagallis arvensis.

FULLAGER'S PADDOCK.

Cynodon Dactylon; Agrostis decipiens; Anthistiria australis; Poa plebia; Goodenia ovata; Hypericum pusillum; Wahlenbergia gracilis; Oxalis corniculata; Gnaphalium cephaloideum; Hypoxis pratensis; Billardiera scandens; Kennedya parviflora?; Anagallis arvensis; Trifolium repens; Lobelia alata; Jacksonia spinosa; Viminaria denudata; Bursaria spinosa; Acacia decurrens; Callistemon viminalis; Eucalyptus, several species.

It will be observed, that only certain plants are common to the whole of the paddocks, viz: Cynodon Dactylon (*Couch*); Trifolium repens (*Clover*); Lobelia alata; Anagallis arvensis (*Pimpernel*); Hypoxis pratensis; Erythræa australis (*Centaury*); Kennedya parviflora?; Oxalis corniculata (*Sorrel*); Plantago varia.

As the whole of these are of very common occurrence, and with the exception of the "*Couch*" observed to grow most sparingly, I trust I shall not be considered presumptuous in expressing my firm conviction, *that no disease of a fatal nature* could result to cattle from grazing in any one of the localities referred to.

Believe me,
Dear Sir,
Very faithfully yours,
CHARLES MOORE.

B. O'Brien, Esq., M. D.
&c., &c., &c.

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