

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No. 826

Press
Mis.

Dated

11-4

1866.

Not to be folded or roughly handled

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*Proceedings of the Madras Government, Revenue Department,
11th April 1866.*

No. 105. Read the following Proceedings of the Board of Revenue, dated 16th March 1866, No. 1,845.

Read the following letter from the Collector of Coimbatore, to the Secretary to the Board of Revenue, dated Matoopollum, 9th March 1866, No. 63:—

1. I beg to forward, for the information of the Board of Revenue, Mr. Thacker's Report on the outbreak of Cattle Disease or Rinderpest on the Neilgherries, and of the measures and treatment adopted by him to arrest it.
2. The Report is so full and exhaustive that any remarks on my part are unnecessary.

From personal inquiries amongst the people in different parts of the District, I learn that the cattle disease has been well known for many years. In some parts of the District it is called the "Great or deadly disease," and in others "Small-pox."

3. Outbreaks of the disease during the hot months are said to be far more deadly than in the wet season. Cooling drinks and mashes if given in its early stages prove at times beneficial; but if it has been allowed to gain head, they are perfectly useless, and no remedies to arrest its progress are known.

REPORT.

INTRODUCTION.

1. In accordance with Orders of Government, dated 14th September 1865, No. 2,214, I proceeded to Ootacamund to investigate the nature of the Cattle Disease, which the Collector of Coimbatore reported to be existing on the Neilgherry Hills.
2. On my arrival I ascertained that the Epizootic had for the time ceased, the Apothecary at the Lawrence Aylum site having treated successfully, on the plan I recommended, the cattle that were attacked there; details of which, with the general result of my inquiries into its nature, and virulence, were forwarded to Government, through the Collector of Coimbatore, and afterwards published in Miscellaneous Circular, No. CLXXI., of 18th December 1865.
3. At the request of Mr. Grant, I remained at Ootacamund until a reply had been received from Government, to a reference made for my farther services in inquiring into the nature of a disease that was reported to have broken out among the sheep of this District.
4. Before, however, an answer was obtained, the cattle disease again appeared on the Hills, and with the concurrence of the Collector, I proceeded at once to adopt such measures as I deemed necessary to endeavour to subdue it, and to prevent its spread.
5. The attack, which was short and virulent, and confined chiefly to the cattle in and around Ootacamund, and to villages within a radius of five or six miles from it, subsided finally about the middle of January 1866. Full particulars, with the successful method of treatment, by which nearly fifty per cent. of those attacked were saved, are hereafter given. (See Appendix B.)
6. At the end of January I proceeded to the Bowany Talook where the disease was reported to prevail; but on arrival there, finding my services were happily not required, either for this, or for the disease among the sheep, I returned to Coimbatore, after giving such general directions and advice, in case of a further outbreak, as I thought would be intelligible.

within one week of the introduction of the strange cow, the bull of the herd, who had first noticed her, died; and within a fortnight or so of that time, seventy had been attacked out of the 120, of which twenty-two cases terminated fatally.

15. The disease in this case was probably communicated to the herd by the strange cow, carrying in some manner the infection in her hide, but which having no influence on herself, caused such destruction to others.

16. The excreta are also I believe a potent agent in the spread of the Epizootic. Healthy animals being driven along roads or over pasture grounds previously visited by those diseased, smell the faeces, and thus become infected: besides the dung of the sick may be used by the natives to smear the floor and walls of cow-sheds inhabited by healthy cattle; in which way may be explained many isolated outbreaks of the disease.

SYMPTOMS.

17. The first marked sign is a peculiar spasm of the muscles of the front of the chest and neck, sometimes also of the hind-quarters. This is apt to be mistaken for shivering, which not unfrequently accompanies or succeeds it. Rumination ceases, and in cows the secretion of milk is stopped; the coat stares, the ears droop, the back is arched, the hind legs standing under the body. In the early stage the temperature rises to 105° falling to 88° as debility becomes marked. The pulse is, at first, but little disturbed, but with the development of the disease it rises to a hundred or more, becoming smaller and weaker in tone. Respiration is somewhat quickened, and when the respiratory muscles become involved in the spasm already noted, is labored, but is not otherwise affected.

18. Differing from what I observed in Kurnool there was, in most cases, very little mucous discharge from the eyes and nose. The bowels at first constipated, afterwards became relaxed, followed by a most foetid watery purging, and as the disease approaches a fatal termination small evacuations of green mucus mixed with blood are passed. The disease proved fatal in from twenty-four hours to eight days.

19. When an animal began to progress towards recovery, the first sign indicative of improvement was an increased quantity of faeculent matter in the evacuations, which gradually assumed a more consistent character, the pulse became softer and fuller, then the appetite began to return, the warmth of skin became natural, and lastly rumination began, and in the cow, the secretion of milk returned.

PATHOLOGICAL APPEARANCES.

20. The pathological appearances are principally confined to the digestive mucous membrane.

21. The back part of the mouth, fauces, and pharynx present a dark red congested appearance with occasional "echymosed" effusion of blood under the skin spots, and small superficial ulcers; the mucous membrane of the larynx has a similar appearance, and the trachea is slightly heightened in color.

22. The esophagus, rumen, and reticulum are healthy. The rumen is remarkably full of food of a natural appearance, the omasum is full of hard dry food, but its structure is generally healthy, sometimes the mucous membrane peels off readily.

23. The most striking character is in the abomasum or true stomach, which presents in some places a dark purple appearance, and in others a dirty grey or brown, with small spots of black pigment scattered over its entire surface; here and there are small spots of superficial ulceration rather less than quarter of an inch in diameter.

24. The small intestines have a similar character. The anterior part or duodenum is similarly congested, and in addition has occasional yellow patches of exuded lymph. These patches are attached, by their centre, to the mucous membrane, the circumference being loose; when

removed, the portion of the mucous membrane to which they have been attached, is either highly congested or ulcerated. The middle part or jejunum is less affected.

25. The posterior part or ileum presents less general congestion, but is to a greater extent, even than the duodenum, covered with patches of exuded lymph, concealing ulceration. These increase in number as the caecum is approached. They are quite superficial, in no case penetrating the mucous membrane. There are also at intervals patches of black discoloration surrounded by inflammatory congestion; this seems to be caused by a deposit of pigment.

26. The caecum or commencement of the large intestine shows the ulceration in its greatest extent, almost its entire surface being covered with them. From this point it gradually diminishes, and the rectum is generally healthy.

27. The liver is healthy, the gall-bladder is generally distended, and its mucous surface sometimes shows an appearance similar to that of the caecum.

28. The blood contains less fibrine than usual, being seldom found coagulated, except occasionally in the right ventricle. Its color was natural, and there was no perceptible diminution in the number of the blood corpuscles.

29. Although many specimens of the blood of diseased animals were examined by myself and others, microscopically, both immediately after the death of the animal, and after the blood had been exposed for several days, no trace of animalculæ could be observed. As this was one of the points brought to my notice in Proceedings of the Board of Revenue, No. 3,668, dated 16th June 1864, with enclosure No. 1, letter from Mr. G. McIvor, Superintendent Government Chin-chona Plantations, after we had failed to discover the animalculæ, I requested Mr. McIvor to join me in further investigation: this he did, but also failed to point them out. I had previously been supplied by Mr. McIvor with the glass slides, containing the supposed animalculæ, from which the drawings in his letter were taken. The objects therein shewn do not present any of the ordinary appearances of animalculæ, but more those of vegetable fibre.

30. Occasionally the serous membrane lining the interior of the heart was of a dull red color, with echymosed spots near the origin of the pulmonary artery. The portion of the pericardium lining the heart shewed dark red spots over its entire surface.

31. The lungs were sometimes emphysematous.

TREATMENT.

32. The treatment may be divided into, first, Preventive; and second, Curative.

33. PREVENTIVE. *Vaccination.*—I regret I had no opportunity of trying the effects of this as the probability of its doing good was not brought to my notice till a late period in the Epizootic and from the difficulty of obtaining fresh vaccine matter. I think it desirable that the first opportunity should be taken of instituting experiments in regard to it, especially as the present opinion in England is that the disease is a form of Variola, and in the "Economist" of 13th January, several instances of its successful application have been recorded.

34. II. *INOCULATION.*—Matter was obtained from an ulcer in a decided case of Rinderpest, and inserted under the skin inside of the arm and thigh of three healthy animals, a buffalo cow, and two heifers; the former had the disease developed on the second day, and succumbed to it on the fifth day.

35. One of the heifers appeared to have a disturbed condition of the system from the second to the twelfth day, after which complicated symptoms set in, and she died on the sixteenth day. The post-mortem examination shewed that the disease had existed, but was not possibly the cause of death.

36. The third animal had the disease on the eighth day, culminating on the ninth, from which date she gradually recovered, and was discharged cured on the twenty-second day.

37. The record of the symptoms with the daily remarks is appended (Appendix A), but it is to be observed that these animals were not medicinally treated, it being thought advisable to allow the disease, as an experiment, to run its course.

38. This, however, was too limited to allow of any data being deduced for general guidance, and it may perhaps be thought advisable that a further trial should be made; I am, however, inclined to the opinion I formerly held, viz., that the danger of dissemination by inoculation is scarcely to be counter-balanced by the possible advantage of producing the disease in a milder form in the animal operated on.

39. III. *SEPARATION.*—The importance of this is so undoubted, and has already been so fully referred to in my previous Report, that I do not consider it necessary to enlarge upon it here. The present Act, founded on such suggestions, if properly carried out, will do much to prevent the future spread of the disease.

40. IV. *CLEANLINESS.*—This is a point of the greatest importance, and could it be fully impressed on the Native mind, an outbreak of the Epizootic might often be prevented, and certainly the primary virulence of the disease might be considerably mitigated. The cattle-sheds should be cleaned out several times a day, and the excrement buried.

41. I would suggest that great care should be taken to prevent the Natives smearing the floors and walls of the cattle-sheds with the dung of diseased animals, indeed, in opposition to my former recommendation, I would suggest that the use of cow-dung should, in seasons of Epizootic, be entirely prohibited, and that mud or lime should be alone used.

42. I. *CURE.*—Camphor, Nitre, Datoora, Cherayta, Arrack, Opium, and Catechu I continued to use, as recommended by me in my previous Report, and my success was such as to confirm my previous opinion of its efficacy; the proportion of cures was not so great as before, yet that can be accounted for by climatic and other influences. Table B of the Appendix shews the result of this treatment.

43. II. *VAPOUR BATH.*—Three cases were subjected to this treatment, of them two recovered, and one died; in one case of recovery, however, I am not certain that the result was altogether due to the vapour bath, as before using it the animal appeared to be improving.

44. My experience has been too slight to enable me to form an opinion, but I would be disposed to give it a further trial, were proper appliances available. I do not think, however, that it will ever be generally adopted by the agricultural population, owing to the difficulty attending its application. A detail of these cases will be found in Appendix C.

45. III. *CHLORATE OF POTASS.*—Having observed that the use of this salt was recommended in an English Journal, on theoretical grounds, I tried it in two cases, but both animals died, the medicine appearing to exert no effect on the progress of the disease.

46. IV. *CONDAY'S DISINFECTING FLUID.*—This was tried in conjunction with other medicines, and, as an adjunct, I believe it to be useful.

CONCLUDING REMARKS.

47. In the foregoing portion of this Report the history of the late Epizootic has been given in detail. It now only remains to state what means should be adopted in any future outbreak.

48. On the receipt of the information, an officer should be despatched to the spot, to see that the terms of the Act relating to quarantine, &c., are properly carried out, the village herd should, if practicable, be broken up into manageable detachments, and the sick carefully separated from the healthy. Cleanliness should be strictly enforced, the excreta buried, and the use of cow-dung in cleaning cattle-sheds for the time prohibited. The bodies of such animals as die of the disease, should be buried, with their hides on, in an enclosed space, so as to prevent the approach of healthy animals. For the animals suffering from the disease, the general line of treatment, recommended in my former Report, and published in the local Gazettes, should be followed.

COIMBATORE,
2nd March 1866.

(Signed) J. THACKER,
Veterinary Surgeon.

APPENDIX A.

INOCULATION.

CASE I.—BUFFALO COW.

- Dec. 9th.—Having the animal thrown down and properly secured, made an incision with a lancet through the skin, on the inside of the arm and thigh, in the neighbourhood of the large absorbent vessels; a portion of lymph from an ulcer of a decided case of Rinderpest was inserted, and the incisions closed by thread sutures.
- „ 10th.—Slight constitutional disturbance, animal feeding.
- „ 11th.—Pulse 76 and hard in character, temperature of body 101°, considerable swelling around the wound on the arm, and very great pain in the hind leg, the animal holding it in the air, anxious countenance, evacuations normal.
- „ 12th.—Evidently suffering very great pain in the hind leg, pulse 83, small and wiry, temp. 101½°, nose dry and hot, fever present, bowels purging, but not of a diagnostic character. Remove sutures.
- „ 13th.—Died. Post-mortem appearances. The anterior portion of color highly congested, the abomasum, small intestine, cæcum, and lymph spots covering either inflammation or distinct ulceration. The exterior of right ventricle of the heart echymosed, and internal lining much congested. The inoculated wounds of a dark dirty color, fetid odour, almost gangrenous in character.

CASE II.—BLACK AND WHITE HEIFER.

- Dec. 9th.—Inoculated inside arm and thigh with lymph taken from an ulcer of a case of Rinderpest.
- „ 10th.—Pulse 60 with good tone, appetite good, evacuations healthy.
- „ 11th.—Pulse 80, temperature 101°, no diagnostic symptoms, appetite good.
- „ 12th.—Do. do. do.
- „ 13th.—Pulse 76, temperature 102°, do. do. do.
- „ 14th.—Pulse 88, temperature 103½°, do. do. do.
- „ 15th.—Pulse 100, temperature 105°, feeding, evacuations normal, no diagnostic symptoms.
- „ 16th.—Pulse 78, temperature 97°, no other change.
- „ 17th.—„ 72, „ 97°, do. do. do.
- „ 18th.—„ 71, „ 99°, do. do. do.
- „ 19th.—„ 96, „ 100°, do. do. do.
- „ 20th.—„ 84, „ 100°, do. do. do.
- „ 21st.—„ 92, „ 100°, do. do. do.
- „ 22nd.—Pulse 86, temperature 100°, observe slight foaming at the mouth, but cannot see any cause on examination.
- „ 23rd.—Pulse 92, and only to be felt at the heart, throat much swollen, tongue pendulous, and excoriated on its under surface; partakes of no food, incapable of drinking on account of the swelling. Tongue freely lanced, and hot fomentations used.
- „ 24th.—Pulse 115 and weak, countenance anxious, great prostration, labored respiration, swelling of throat extending downwards, can neither eat or drink; continue hot fomentations.
- „ 25th.—Died. Post-mortem appearances. Acute inflammation of the pharynx and larynx, extending a little down the trachea, surrounding tissue filled with infiltrated serum, sufficient to have caused suffocation. The abomasum and cæcum have faint traces as of healed ulcers, there is no pigmentary deposit.

CASE III.—RED HEIFER.

- Dec. 9th.—Inoculated from Rinderpest lymph, under the skin, on inside of arm and thigh.
- „ 10th.—Pulse 70, temperature 29°, feeding.
- „ 11th.—„ 88, „ 101½°, do.
- „ 12th.—„ 76, „ 102°, do. remove sutures.
- „ 13th.—„ 78, „ 102°, do.
- „ 14th.—„ 80, „ 103°, do.
- „ 15th.—„ 87, „ 103°, appetite moderate.
- „ 16th.—„ 100, „ 102½°, do. better.
- „ 17th.—Pulse 110, small, temperature 97°, nose dry, tremor, appetite indifferent, bowels purged mixed with the characteristic mucus of Rinderpest; support well with gruel and keep warm.
- „ 18th.—Pulse 111, with better tone, temperature 98°, appetite slight, evacuations fluid slightly streaked with blood.
- „ 19th.—Pulse 98, good tone, temperature 98°, bowels passing more healthy fecula.
- „ 20th.—Pulse 84, temperature 100°, bowels normal, appetite returning.
- „ 21st.—„ 80, „ 99°, feeding, bowels healthy.
- „ 22nd.—„ 74, „ 98°, do.
- „ 23rd.—„ 68, „ 99°, do.
- „ 24th.—„ 64, „ 100°, do.
- „ 31st.—Discharged.

APPENDIX B.

SUMMARY OF GENERAL TREATMENT.

Number.	Period of treatment.	Result.	Number.	Period of treatment.	Result.
1	8 days.	Died.	34	6 days.	Cured.
2	1 do.	Do.	35	1 do.	Died.
3	3 do.	Do.	36	6 do.	Cured.
4	2 do.	Do.	37	3 do.	Died.
5	1 do.	Do.	38	4 do.	Do.
6	7 do.	Cured.	39	4 do.	Do.
7	8 do.	Died.	40	5 do.	Do.
8	5 do.	Cured.	41	5 do.	Cured.
9	4 do.	Do.	42	9 do.	Do.
10	4 do.	Died.	43	2 do.	Died.
11	5 do.	Cured.	44	8 do.	Cured.
12	4 do.	Died.	45	3 do.	Died.
13	3 do.	Do.	46	7 do.	Cured.
14	3 do.	Do.	47	7 do.	Do.
15	6 do.	Cured.	48	8 do.	Do.
16	5 do.	Do.	49	7 do.	Died.
17	7 do.	Died.	50	7 do.	Do.
18	6 do.	Do.	51	3 do.	Do.
19	3 do.	Do.	52	8 do.	Cured.
20	7 do.	Cured.	53	2 do.	Died.
21	12 do.	Do.	54	8 do.	Cured.
22	7 do.	Do.	55	4 do.	Do.
23	1 do.	Died.	56	18 do.	Do.
24	6 do.	Do.	57	2 do.	Died.
25	1 do.	Do.	58	9 do.	Cured.
26	3 do.	Cured.	59	4 do.	Do.
27	5 do.	Do.	60	14 do.	Do.
28	4 do.	Died.	61	3 do.	Died.
29	4 do.	Cured.	62	5 do.	Cured.
30	4 do.	Died.	63	2 do.	Died.
31	3 do.	Cured.	64	7 do.	Cured.
32	2 do.	Do.	65	3 do.	Died.
33	1 do.	Died.			

Mode of treatment.	Number of cases.	Died.	Cured.
Total of usual treatment ...	65	34	31
„ inoculated ...	3	2	1
„ by Chlorate of Potass ...	2	2	0
„ by vapour bath ...	3	1	2
Per-centage ...	73	39	34
		53.42	46.58

APPENDIX C.

VAPOUR BATH.

CASE I.—BUFFALO COW.

- Dec. 8th.—Reported to have eaten only portion of morning feed, cessation of milk, pulse natural, evacuations healthy. Place in vapour bath temperature 106° for a half hour.
- „ 9th.—No further development of disease, pulse natural, nose dewy, appetite moderate; repeat vapour bath, temperature 120°.
- „ 10th.—Appetite good, increased secretion of milk, repeat vapour bath 120°.
- „ 11th.—Vapour bath 120°.
- „ 12th.— „ „ 110°.
- „ 13th.—Milk freely secreted, no symptoms of ailment. Discontinue bath and keep under observation.
- „ 20th.—Discharged.

CASE II.—RED HEIFER.

- Dec. 3rd.—Pulse 80, bowels slightly colic, rigors, and spasm of neck, give Sulphur 4 ozs. with Datoora mixture and Condry's fluid.
- „ 4th.—Pulse 96, fetid watery evacuations, no appetite; repeat Datoora mixture with Condry's fluid. Support with gruel.
- „ 5th.—Pulse 88, softer and fuller, has passed a portion of intestinal mucous membrane on the surface of which are the characteristic specks of congestion approaching to ulceration. Medicine repeated. Place in vapour bath.
- „ 6th.—Has eaten a little food, pulse 80, soft and full, bowels passing more faecal matter. Discontinue medicine. Repeat vapour bath 121°.
- „ 7th.—Appetite steadily improving, pulse 66, nose dewy, bowels less purged; repeat vapour bath temperature 112°.
- „ 8th.—Convalescent. Repeat bath daily.
- „ 11th.—Discontinue bath.
- „ 20th.—Discharged.

CASE III.—BRINDLE BULL.

- Dec. 5th.—Reported eating indifferently pulse 58 full and soft, bowels natural, spasm of neck; place in vapour bath 95°, for half an hour. No medicine.
- „ 6th.—Pulse 66, soft and full, appetite slight, commenced watery purging; vapour bath 121°.
- „ 7th.—Pulse 102, small and weak, purging watery, eats nothing; vapour bath 112°, support with gruel.

Dec. 8th.—Pulse indistinct, breathing labored, purging violent, partial insensibility; vapour bath 106°.

„ 9th.—Died. Post-mortem appearances. General congestion of mucous membranes, glands on sides and base of tongue ulcerated; fauces, larynx, pharynx, and upper half of trachea congested; lungs emphysematous; slight ecchymosis at base of pulmonary artery; blood coagulated in right ventricle only; thrombus duodenum, caecum, anterior of colon and mucous lining of gall-bladder highly congested, and covered with innumerable ulcers.

COIMBATORE,
2nd March 1866.

(Signed) J. THACKER,
Veterinary Surgeon.

1. Ordered to be submitted for the information of Government, and that copies be furnished as follows:—

To all Collectors.

„ the Inspector General of Hospitals.

„ the Commissary General.

„ the Sydapet Farm Committee.

„ the Superintendent Government Stud, Coosoor.

2. The Board recommend that Mr. Thacker be requested to watch the experiment now making on the Hills as to the efficacy of vaccination as a prophylactic in these cases, and to report the result.

3. It is highly desirable that this suggested remedy should be thoroughly tested.

4. The Collectors should endeavour to impress on the Ryots the primary importance of segregation when the disease shows itself, of special cleanliness and the use of disinfectants as lime, charcoal, &c., in the byres, and that all diseased carcasses be effectively buried with the hides.

No. 106. ORDER THEREON, 11th April 1866, No. 826.

Miscellaneous.

Mr. Thacker's report will be laid on the Editor's Table, and published in the Fort Saint George and District Gazettes in English and the Vernaculars. Orders will shortly be passed, with reference to G.O. 19th ultimo, No. 675, regarding his future proceedings.

(True Extract.)

(Signed) J. D. SIM,

Secretary to Government.

To the Board of Revenue.

„ the Editor's Table.

Exd. S. T. Augustin.

Mr Thacker's reports might have been
 promptly
 in the afternoon might be called to the
 main in morning. He is true and it seems
 to be in accord with at home -
 Mr Thacker's report
 will be laid on the
 Editor's Table and
 published in the Fort
 St. George & District
 gazettes in English & the Vernacular
 orders will shortly
 be passed - with
 reference to J.O. 19 inst. No 675
 regarding his future
 proceedings
 I.D.J.

I will be well to order
 the good translation to be made
 this of publish it in the book
 subject - as soon as practicable
 11th. Apr. 1868
 W.D.

14. To the Board of Stover and Son, 100 Spruce
St. E. 1st. N. H.

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22-105-106.

с 22 March / 08 12:00

Derpohl

P. Rev. 1866. Department

Dis. of Genl. for April
No. 793.

PROCEEDINGS OF THE BOARD OF REVENUE

Dated 10th March 1860.

Despatched 17

Received 19th.

No. 1,845.

Submitting for information of Government, and communicating to certain Officers, Mr. Thacker's Report on the outbreak of Cattle Disease on Neilgherries, and of measures and treatment adopted to arrest it.

10826. n. 4/2
With order