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Press
Mis.Dated 27-1-1876 -196 .*Not to be folded or roughly handled*

Proceedings of the Madras Government, Revenue Department,
27th January 1876.

No. 223. Read the following letter from C. J. L. Y. A. Esq., Under-Secretary to the Government of India, Department of Revenue, Agriculture, and Commerce, (Studs, &c.) to the Secretary to the Government of Madras, Revenue Department, dated Calcutta, 6th January 1876, No. 1/1:—

I am directed to forward, for the information of His Excellency the Governor in Council, copy of memorandum by Mr. R. Sartin, Veterinary Surgeon in British Burmah, together with a copy of the memorandum by Colonel R. N. Davies therein referred to, on the subject of the treatment of foot-and-mouth disease in cattle.

Enclosure No. 1.

From E. DARLINGTON, Esq., Assistant Secretary to the Chief Commissioner of British Burmah, to the Secretary to the Government of India, dated Rangoon, 24th December 1875, No. 2,322-412.

With reference to your letter, No. 55, dated 30th October last, I am directed to forward a copy of a letter, dated the 6th ultimo, from Mr. Sartin, the Veterinary Surgeon, British Burmah, submitting observations on the foot-and-mouth disease amongst cattle in British Burmah, and on the treatment recommended by Lieutenant-Colonel Davies; and to say that Lieutenant-Colonel Davies's remedy will have a trial.

From Mr. R. SARTIN, Veterinary Surgeon, British Burmah, to the Officiating Secretary to the Chief Commissioner, Burmah, dated 8th November 1875.

In reply to your letter, Revenue Department, No. 1,800-442, dated 26th October 1875, I have the honor to forward, for the information of the Chief Commissioner, a few observations on foot-and-mouth disease and on the treatment recommended by Colonel Davies.

Foot-and-mouth disease.

Foot-and-mouth disease is an inflammatory disease, evidenced by the appearance of vesicles or small bladders containing a colorless fluid, on the inside of the mouth, tongue, and throat, parts uncovered by hair.

The cause of foot-and-mouth disease is simply contagious; it can easily be conveyed from one animal to another by attendants, or by the animals passing over the ground trodden by an infected herd. It is on account of its highly contagious nature that so large a number of animals become affected.

The fatality of the disease depends entirely on the surroundings of the animals. With good dry standing places and plenty of bedding, the disease seldom proves fatal. Speaking from my own personal experience in Burmah, I have not met with any outbreaks of this disease amongst the Commissioned cattle in the country—about 250—since they were introduced in Rangoon, 1874, about 250—in neither outbreak did the disease prove fatal in any case. This I attribute mainly to the excellent accommodation and attendance available. Under favorable circumstances, the mortality should never exceed two per cent.

The treatment to be pursued is of the simplest nature. First separate the diseased animals from the healthy ones, and administer the following:

Opium pills	12 ounces
Powdered sugar	1 pound
Warm water	1 gallon

In the best if practicable; if not, for the Opium pills substitute one and a half ounces of aloes.

Proceedings of the Madras Government, Revenue Department,
27th January 1876.

The treatment will be well looked to, and if the vesicles are broken and ulcers formed, a weak lotion of—

Alum 1 ounce,
Water 1 quart

is useful, applied three times a day. If the hoofs have a dry standing phlegm, any raw, ulcerated places should be dressed with the following—

Calomel and alum 1 part,
Hops (and for any event tar) 4 parts

But if the patient is standing in wet ground, it is better to use an application consisting of—

Powdered alum 1 part,
Stockholm tar 4 parts

the tar being more adhesive and better adapted to resist the wet. Should the ulceration be deep-seated, separating the hoof from the sensitive parts of the foot, and having a tendency to spread, a stronger application is necessary—

Sulphate of copper 1 part,
Stockholm tar 4 parts

is the best. All violent remedies, such as cauterizing the tongue or applying caustics, are to be avoided, as they greatly increase the suffering without doing a proportionate amount of good. Any disease and ulcerated hoofs should be removed with a sharp knife.

With regard to the remedies recommended by Colonel Davies, I consider the prescription for the feet to be a very good one, provided the animals have the two essentials—dry shade and plenty of clean bedding; otherwise I consider the tar applications superior. I think the prescription for the mouth is altogether too strong, and the mode of applying it, i.e., "rubbing," impracticable; a weak solution of alum will be found to answer every purpose.

I quite agree with Colonel Davies that the wholesale destruction of animals he refers to is unnecessary for the prevention of foot-and-mouth disease, and to the best of my knowledge it is never practised, certainly not in England.

Boiled rice gruel should be poured down an animal's throat if he refuses food.

Note by Colonel E. N. Davies, Deputy Commissioner of Mysore, on foot-and-mouth disease amongst cattle in British India, dated 1st October 1875.

The foot-and-mouth disease among cattle is endemic in British Burma, and one to which I have given a good deal of attention. Not being a professional doctor, I am diffident about giving an opinion as to the origin of the disease. It is supposed to be spontaneously developed in moist, hot climates, when cattle are closely herded together, or it is also liable to be generated in a crowded stable over a long voyage. It also spreads from the early rains set in here, after a prolonged dry season, the cattle eat voraciously the plants that sprout. The origin is probably in the digesting organs, the places nearest to get heated, and eating improper food or not getting sufficient pure air and water. Microscopic entozoa are generated about the corona and clefts of the hoofs, these animals appear to suffer from the disease, and the animal acquires the disease by licking the hoofs; the disease is then communicated to the mouth, and ultimately the tongue becomes so sore that the animal is unable to eat, and death results. I suspect that other symptoms which appear elsewhere are only an exaggerated form of the disease as found here.

It is remarkable that I have discovered a remedy for all the possible animals which cause the disease. The medicine is as follows: If applied at an early stage the animal does not suffer in any way, and in four days being repeated is sufficient to completely root out the seeds of the disease. I believe the above prescription offers an infallible cure if it is applied in time to this description of it. I have treated many cases successfully—even when the hoof was so much ulcerated that it was taken from the foot, but it is not safe to postpone application of the treatment till the disease is too far advanced.

Proceedings of the Madras Government, Revenue Department,
27th January 1876.

I hear in parts of India and in Australia the plan is used to prevent the disease has been wholesale slaughter. In England and on the Continent death seems the only prescription: even if one among a herd is affected all are doomed just as well might every person attacked with cholera or small-pox be knocked on the head. I believe this wholesale destruction is unnecessary, and I do not think the disease is as contagious or as fatal as is supposed. I have often seen a herd of twenty or thirty head of cattle always together with one, two, or three affected, and all the others go free. Segregation is, of course, advisable; but I am confident the disease, as known in Burma, can be brought under control if taken in time.

Purification.

For the feet.

Wash the feet with warm water and carbolic soap—dry with a cloth. Mix one pound of cutch, four ounces of camphor, three drachms of liquid carbolic acid and one gallon of water; stir up well, and apply the lotion with a feather to the corona, and between the clefts of the hoofs and all round where the hoof joins the foot.

For the Mouth.

Wash as clean as possible with warm water and carbolic soap. Take sixteen pounds of ripe tamarind free from stones and stalks, four pounds of salt, mix well into a paste. Draw out the tongue and rub gently with the paste, and also round the interior of the mouth and muzzle. Repeat both the above processes morning and evening, four to six days consecutively.

Note.—It will be well to let the animal eat and drink what it can, and wander or rest at will. It should be allowed to lick its hoofs, as the lotion will do the much good. Some doses of castor may be given, as the mouth is sore, and food and drink must be eaten. The animal must be kept in a cool place. The carbolic acid should be diluted with water. If carbolic soap is not available, work up pieces of cotton wool with four pounds of cutch and seven bar soap. A glove should be used, so that the hands are not blistered in mixing the soap with the soap.

No. 224.

ORDER THEREON, 27th January 1876, No. 111.

Miscellaneous.

COMMUNICATED to the Board of Revenue.

(True Extract.)

(Signed) D. F. CARMICHAEL,
Secretary to Government.

To the Board of Revenue.

End. F. B. Foulerton.

No. 2322-442, dated Rangoon, the 24th December 1875.

From—E. DARTINGTON, Esq., Assistant Secretary to Chief Commr., British Burma,
To—The Secretary to the Government of India.

With reference to your letter No. 58, dated the 14th October last, I am directed to forward a copy of a letter dated the 6th ultimo, from Mr. Sartin, the Veterinary Surgeon, British Burma, submitting observations on the foot-and-mouth disease amongst cattle in British Burma, and on the treatment recommended by Lieutenant-Colonel Davies, and to say that Lieutenant-Colonel Davies' remedy will have a trial.

Dated the 6th November 1875.

From—MR. SARTIN, Veterinary Surgeon, British Burma,
To—The Officiating Secretary to the Chief Commissioner, British Burma.

In reply to your letter, Revenue Department No. 1800-442, dated 26th October 1875, I have the honour to forward, for the information of the Chief Commissioner, a few observations on foot-and-mouth disease, and on the treatment recommended by Colonel Davies.

Foot-and-Mouth Disease.

Foot-and-mouth disease is an inflammatory eruptive fever, evidenced by the appearance of vesicles or small bladders containing a colourless fluid on the inside of the mouth, tongue, and those parts uncovered by hair.

The cause of foot-and-mouth disease is almost invariably contagion; it can easily be conveyed from one herd to another by attendants or by healthy animals passing over the ground trodden by an infected herd. It is on account of its highly contagious nature that so large a number of animals become affected.

The fatality of the disease depends entirely upon the surroundings of the animals. With good, dry standing-places and plenty of bedding, the disease seldom proves fatal. Speaking from my own personal experience in Burma, I attended two outbreaks of this disease amongst the Commissariat cattle in Thayetmye—about 200 animals were attacked; in Rangoon, 1874, about 250—in neither outbreak did the disease prove fatal in any case. This I attribute mainly to the excellent accommodation and attendance available. Under favourable circumstances, the mortality should never exceed two per cent.

The treatment to be pursued is of the simplest nature. First segregate the diseased animals, then administer a purgative:

Epsom salts	12 ounces,
Powdered ginger	1 ounce,
Warm water	1 quart

is the best, if procurable; if not, for the Epsom salts substitute one and a half ounce of aloes. The mouth should be well looked to, and, if the vesicles are broken and ulcers formed, a weak lotion of—

Alum	1 ounce,
Water	1 quart

is useful, applied three times a day. If the animals have a dry standing-place, any raw ulcerated places should be dressed with alum ointment:

Powdered alum	1 part,
Hogs' lard (or any sweet fat)	8 parts

but if the patient is standing in wet ground, it is better to use an application consisting of—

Powdered alum	1 part,
Stockholm tar	8 parts

the tar being more adhesive, and better calculated to resist the wet. Should the ulceration be deep-seated, separating the hoof from the sensitive parts of the foot and having a tendency to spread, a stronger application is necessary:

Sulphate of copper	1 part,
Stockholm tar	1 parts

is the best. All violent remedies—such as rubbing salt on the tongue, or applying caustics—are to be avoided, as they greatly increase the febrile symptoms, without doing a proportionate amount of good. Any diseased and exfoliated horn should be at once removed with a sharp knife.

With regard to the remedies recommended by Colonel Davies, I consider the prescription for the feet to be a very good one, provided the animals have the two essentials—dry sheds and plenty of clean bedding; otherwise I consider the tar applications superior. I think the

prescription for the mouth is altogether too strong, and the mode of applying it, i.e., "rubbing" objectionable; a weak solution of alum will be found to answer every purpose.

I quite agree with Colonel Davies that the wholesale destruction of animals he refers to is unnecessary for the prevention of foot-and-mouth disease, and to the best of my knowledge it is never practised, certainly not in England.

Boiled rice *congee* should be poured down an animal's throat if he refuses food.

Note by Colonel H. N. DAVIES, Deputy Commissioner of Akyah, on Foot-and-Mouth Disease amongst Cattle in British Burma, dated the 1st October 1875.

The foot-and-mouth disease among cattle is endemic in British Burma, and one to which I have given a good deal of attention. Not being a professional doctor, I am diffident about giving an opinion as to the origin of the disease. It becomes spontaneously developed in moist, hot climates, when cattle are closely banded together; it is also liable to be generated in a crowded ship, or on a long voyage. It also appears when the early rainset in here; after a prolonged hot season, the cattle eat voraciously the young rank grass. The origin is probably in the digestive organs, the blood appears to get heated from eating improper food, or not getting sufficient pure air and water. Microscopic entozoa become generated about the corona and clefts of the hoofs, these at first appear to cause irritation, like the itch, or mange, and the animal seeks relief in licking its hoofs, the disease is thus communicated to the mouth, and ultimately the tongue becomes so sore that the animal cannot eat any food; the disease, meanwhile, makes rapid progress in the feet, so that the hoofs come completely off, and death results. I suspect that other symptoms, which appear elsewhere, are only an exaggerated form of the disease as known here.

The remedy which I have discovered is simply to kill the parasitic animalcules which cause the disease; the medicine acts so rapidly that, if applied at an early stage, the animal does not lose much in condition, three or four days being generally sufficient to completely root out the seeds of the disease. I believe the accompanying prescription offers an infallible cure, if only applied in time, to this destruction of murrain. I have treated many cases successfully—even when the hoof was apparently becoming detached from the foot; but it is not safe to postpone application of the medicine till the disease is too far advanced.

I hear, in parts of India and in Australia, the plan adopted to root out the disease has been wholesale slaughter. In England and on this Continent, death seems the only prescription; even if one among a herd is affected all are doomed; just as well might every person attacked with cholera or small-pox be knocked on the head. I believe this wholesale destruction is unnecessary, and I do not think the disease is as contagious or as fatal as is supposed. I have often seen a herd of twenty or thirty head of cattle, always together, with one, two or three affected, and all the others go free. Segregation is of course advisable; but I am confident the disease, as known in Burma, can be brought under control if taken in time.

PRESCRIPTION.

For the feet.

Wash the feet with warm water and carbolic soap—dry with a cloth. Mix one pound of camphor, four ounces of camphor, three drachms of liquid carbolic acid and one gallon of water; stir up well, and apply the lotion with a brush to the corona, and between the clefts of the hoofs and all round where the hoof joins the foot.

For the mouth.

Wash as clean as possible with warm water and carbolic soap. Take sixteen pounds of ripe tamarind free from stones and stalks, four pounds of salt, mix well into a paste. Draw out the tongue and rub gently with the paste, and also round the interior of the mouth and nostrils. Repeat both the above processes morning and evening, four to six days consecutively.

Notes.—It will be well to let the animal eat and drink what it can, and render it easy as well. It should be allowed to have its mouth washed with the mouth wash. Some milk or mash may be given, as the mouth is sore, and that may cause no harm. Mashed rapeseed or white turnip is not objectionable. Gum would probably answer instead of starch. If carbolic soap is not available, weak ammoniac or a drachm of liquid carbolic acid with four pounds of camphor may serve, and glycer should be used, so that the hoofs are not blistered in making the wash with the soap.

1875.

GOVERNMENT OF INDIA.
DEPARTMENT OF REVENUE,
AGRICULTURE AND COMMERCE.

STUDS AND CATTLE-BREEDING. CATTLE DISEASE.

FROM

THE CHIEF COMMISSIONER OF
BRITISH BURMA.

Dated 24th } No. 2232-442.
Decd. 31st } December 1875. Enclosure 1.
5. Spare copies.

D. No. 31 }
L. No. 79 } Progs. { No.

Rev 148/76

SUBJECT.

With reference to letter No. 53, dated 14th October last, forwards a copy of letter dated 9th ultimo, from Mr. Sartin, submitting his observations on the foot-and-mouth disease among the cattle in British Burma, and on the treatment recommended by Colonel Davies.

FROM

C. J. LYALL, Esq.,

Under Secretary to the Government of India.

TO

*The Secretary to the Government
of Madras*

Department of Revenue,
Agriculture, and Commerce,
Stamps, &c.

Dated Calcutta, the 30th January 1876.

SIR,

I am directed to forward for the information of His Excellency the Governor a copy of memorandum by Mr. R. Sartin, Veterinary Surgeon in British Burma, together with a copy of the memorandum by Colonel H. N. Davies therein referred to, on the subject of the treatment of foot and mouth disease in cattle.

I have the honour to be,

SIR,

Your most obedient servant,

Chas. J. Lyall

Under Secretary to the Government of India.

10/148
Revenue 1876. Repts

GOVERNMENT OF INDIA.
DEPARTMENT OF REVENUE,
AGRICULTURE AND COMMERCE

STUDS and CATTLE-BREEDING. CATTLE DISEASE

To

No.

Dated Calcutta, the 6th January 1878.

Revenue 17-00
81

10/148

Communicated to

Board of Revenue

W. P. M. D. S. S.

SUBJECT

FORWARDS copies of two memoranda on the
subject of the treatment of foot and mouth disease
amongst cattle.