

1860-1.

VICTORIA.

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PLEURO-PNEUMONIA IN CATTLE.

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REPORT

OF THE

COMMISSIONERS FOR PREVENTING THE SPREAD OF PLEURO-  
PNEUMONIA DISEASE AMONG CATTLE IN THE COLONY  
OF VICTORIA.

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*Ordered by the Legislative Assembly to be printed, 30th April, 1861.*

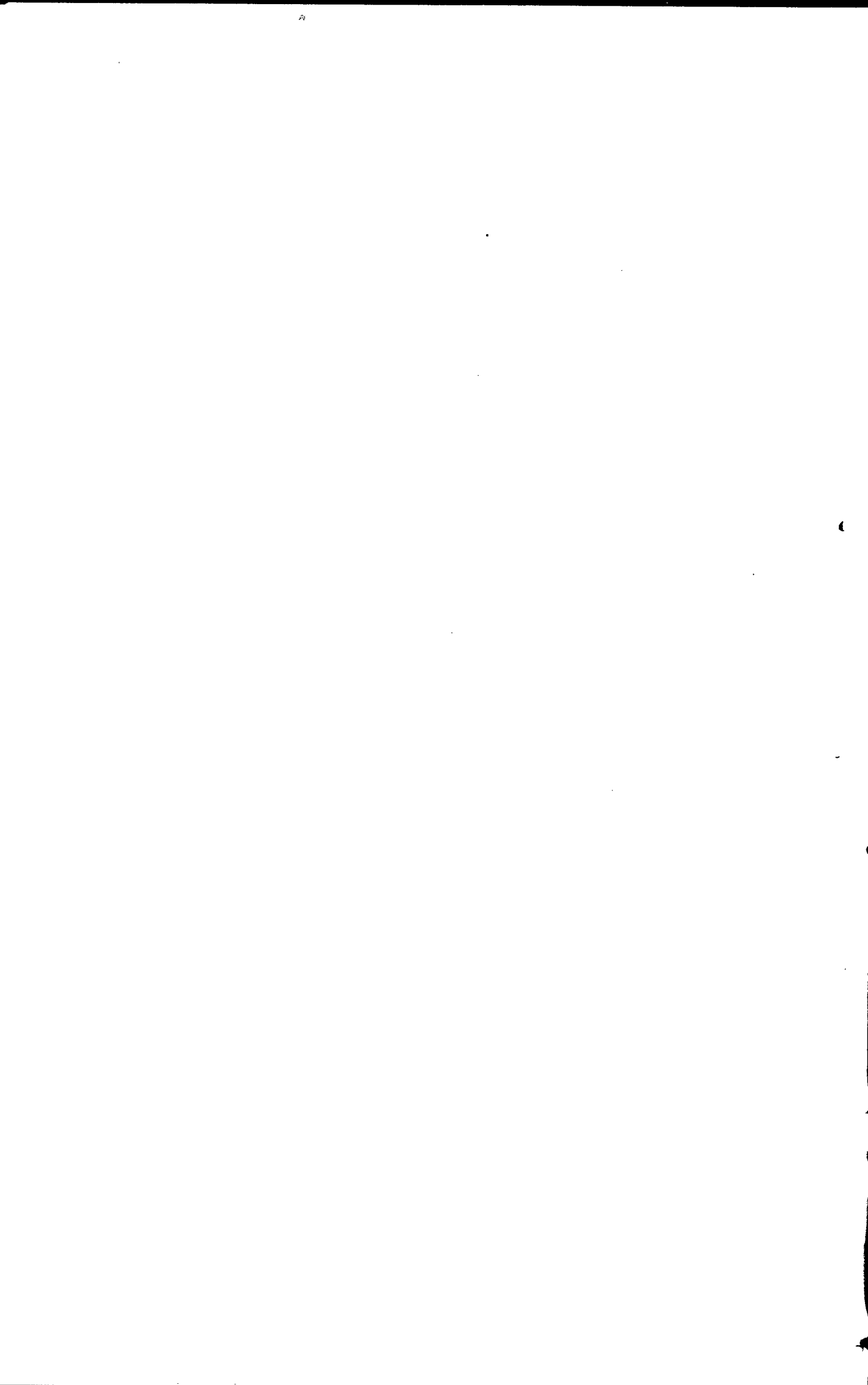
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A.--No. 39.



# REPORT.

TO THE HONORABLE THE CHIEF SECRETARY.

SIR,

In our capacity of Commissioners for preventing the spread of Pleuro-pneumonia Disease among Cattle in the Colony of Victoria, we have the honor to submit for your information a report of our proceedings during our term of office, embracing the period between the 21st August, 1860, and the 22nd April, 1861.

On the assumption of our duties our immediate attention was required to reported cases of the disease in the vicinities of Wallan-wallan, South Yarra, and Preston. The reports with reference to the neighborhoods of Wallan-wallan and South Yarra proved groundless; but in the instance of Hooper's herd, on the Darebin Creek, near Preston, the matter assumed so serious an aspect that we deemed it advisable to procure the best available professional advice, in order to elicit reliable information with reference to the cause, nature, and identity of the disease, and the best means of arresting its progress.

Messrs. Smith, Miscamble, and Wragge were employed accordingly. Their inspections, conducted separately, and on separate occasions, embodied in the subjoined reports, confirmed the reality of the malady and the necessity for the destruction of the cattle.

*From Anthony A. Smith, V.S., to the Commissioners for Inspection of Cattle affected with Pleuro-pneumonia.*

GENTLEMEN,

At your request, I now send you my opinion as to the state of Mr. Hooper's cattle and as to the infectious nature of Pleuro-pneumonia. I have no hesitation in affirming that this is a case of Pleuro-pneumonia, the same as I have very frequently seen in the United Kingdom.

As to the infectious nature of the disease, I believe that any healthy animal being allowed to breathe the air contaminated by this disease will very soon become affected, and that such animal having once been affected, even though apparently recovered, a portion of the lungs will be disorganized. So long as the disorganized portion continues dormant, the animal is perfectly harmless as far as regards infection, and may be put amongst healthy stock with impunity; but as soon as the disease becomes active again, which it is sure to do, it will as surely become infectious, as described above. One proof of this I may mention, amongst many others, which have come under my observation. I happened to buy two cows from a gentleman, a near neighbor, who never had the misfortune to have the disease amongst his stock. These two cows had been purchased by him from a dealer some considerable time previous to my purchase, and both were in good condition and thriving. I however found that one of them had the right lung disorganized; but, as this was no uncommon matter, I risked her. In about three months after the animal calved and did well; got served by the bull at the proper season, and proved in calf. She continued to thrive, and she calved a second time perfectly well. Soon after, however, she took ill, and the lungs became affected, which carried her off in a short time. The consequence was, that although I had a perfectly healthy stock previously, and had made no other changes than the above two, in the course of a week or two the disease was raging through the whole of them, and proved very fatal indeed. I have no doubt that cases similar to the above will occur in the Colony from the importation of cattle, if they are not selected with very great caution at home.

I am,

Gentlemen,

Your most obedient Servant,

ANTHONY A. SMITH. M.R.C.V.S.E.,

And late V.S. to the Royal Northern Agricultural Society, Scotland.

*From Mr. Henry Wragge, V.S., to the Members of the Pleuro-pneumonia Commission.*

GENTLEMEN,

In accordance with your request, I yesterday visited the farm of Mr. Hooper, Preston, whose cattle it appears are dying off from a reported attack of Pleuro-pneumonia.

I first examined several cattle suffering from the disease in different stages, all and each of which are unmistakeable cases of Pleuro-pneumonia.

The recent fatal cases having been burned, recommended that one suffering since Monday last should be slaughtered for inspection, being satisfied a few days more would have carried her off. Upon opening the body I found all the usual morbid appearances as exhibited by cattle dying from the disease at home, where I had every opportunity of becoming conversant with the disease, having practised eight years (previous to joining the army) in the counties of Nottingham and Derby.

I would recommend, as the best course, to destroy the whole of the cattle, being convinced medical aid is of very little avail, and further, it being the most effectual method of putting a stop to the spread of the disease; for I am of opinion it is capable of being conveyed either in the shape of contagion or infection. More positive proof of its contagious character could not be adduced than upon Mr. Boadle's farm, where I claim the first correct diagnosis of the disease in the Colony,

I am,

Gentlemen,

Your obedient servant,

HENRY WRAGGE, V.S.

*From J. Miscamble, V.S., to W. Lyall, Esq., M.L.A., and Alexander Brock, Esq., Commissioners and Inspectors of Stock affected with Pleuro-pneumonia.*

GENTLEMEN,

In compliance with your request to me to proceed to Mr. Hooper's farm, near Darebin Creek, to examine and report on the nature of the malady affecting the cattle there, I beg to send you the following, viz. :—

That of several milch cattle which I found to-day on examination to be diseased with Pleuro-pneumonia, one was slaughtered for my inspection, and found as had diagnosed, the right lung completely hepatized and solid as liver; effusions of lymph on the serous membrane, covering the lung and chest, forming strong adhesions; the left lung evinced the early stage of the complaint. The heart and contents of the abdomen shewed abnormal symptoms of suffering, chiefly from sympathy.

I have no doubt that this cow had contagious Pleuro-pneumonia.

I have the honor to be,

Gentlemen,

Your obedient Servant,

JOHN MISCAMBLE, M.R.C.V.S.

On personal investigation, we ascertained that the number of cattle on Mr. Hooper's farm was 124, nine of which exhibited the disease in various stages, and there had been nine deaths previously. The herd consisted principally of quiet dairy cows and their produce, and, with the sanction of the Chief Secretary, an arrangement for the slaughter and burning of the whole was entered into—compensation to be awarded the owner to the amount of £620 sterling. Mr. Hooper was furthermore bound to keep his farm clear of neat cattle during the three months following date of slaughter. In accordance with this agreement, the slaughter was effected on the 29th, 30th, and 31st August, 1860, under proper supervision; and we furthermore engaged the services of Mr. A. Smith, V.S. (whose detailed report is appended below), to make a *post mortem* examination of each animal.

In our endeavors to trace the origin of the disease in this herd to its source, considerable difficulties were experienced; indeed, there was a general disinclination to afford such information as would enable us to pronounce satisfactorily in the matter.

We were aware that a person named McKinnon, occupying the farm next to that on which the disease first appeared in the Colony, had allowed his cattle to trespass over Mr. Boadle's land about the period of the destruction of the latter gentleman's stock, and this notwithstanding every remonstrance. We ascertained that two of McKinnon's cattle died under suspicious circumstances, and that immediately afterwards the remainder were sold and dispersed. Of these, one of two, sold to a Mr. Devine, died a few weeks after purchase. Mr. Cady, a neighbor of Hooper's, also purchased from McKinnon, and previous

to any disease appearing among Hooper's cattle, two bullocks died on a portion of the Merri Creek open to both Cady's and Hooper's cattle—in fact, the watering place. The manner in which the remainder of McKinnon's bullocks were disposed of we could not ascertain; but, as they were working bullocks, must either have been sold or sent to work on the roads.

We may here remark, that the greatest indifference seemed to pervade owners (with a few exceptions) of cattle in the vicinity; no care had been taken, either by preservation of fences or otherwise, to prevent the mingling of cattle, and one animal was removed by the owner from Hooper's, where it had been depastured, although the mortality was notorious at the time. This cow, as will be noticed hereafter, also fell a victim.

POST MORTEM APPEARANCES OF MR. HOOPER'S HERD.

No.		No.	
1. Cow ...	... Right lung completely hepatized, and extensive effusion of lymph into the thorax.	44. Cow ...	... Slightly affected.
2. Cow ...	... Slight adhesions to the right side of the chest, and the substance of the lung dark-coloured and congested in some parts.	45. Aged Cow ...	... Slightly affected.
3. Old Cow ...	... Right lung completely hepatized, and extensive effusion of lymph into the thorax.	46. Aged Cow ...	... Sound.
4. Heifer ...	... Sound.	47. Cow ...	... Slightly affected.
5. Young Cow ...	... Sound.	48. Cow ...	... Extensive disease on the left side of the chest, as No. 1.
6. Heifer ...	... Slight adhesions to the chest; substance of the lung sound.	49. Cow ...	... Sound.
7. Cow ...	... Sound.	50. Calf ...	... Sound.
8. Cow ...	... Had been ill for some time, and in the way of recovery; right lung adhering strongly to the chest, about one-half the posterior lobe disorganized and enveloped in a strong membrane.	51. Cow ...	... Sound.
9. Cow ...	... Sound.	52. Heifer ...	... Sound.
10. Heifer ...	... Sound.	53. Heifer ...	... Right lung, extensive disease commencing.
11. Heifer ...	... Sound.	54. Heifer ...	... Sound.
12. Heifer ...	... Sound.	55. Heifer ...	... Sound.
13. Heifer ...	... Sound.	56. Heifer ...	... Sound.
14. Aged Cow ...	... Right lung hepatized and a quantity of purulent matter in the chest.	57. Heifer ...	... Extensive disease; effusion of lymph.
15. Heifer ...	... Right lung adhering to the chest and a large schist of matter in the substance of the lung; the animal apparently recovering.	58. Cow ...	... Sound.
16. Aged Cow ...	... Sound.	59. Cow ...	... Sound.
17. Young Bull ...	... Same as No. 1.	60. Heifer ...	... Sound.
18. Cow ...	... Sound.	61. Heifer ...	... Slightly affected.
19. Cow ...	... Slightly affected in the right lung.	62. Heifer ...	... Sound.
20. Heifer ...	... Sound.	63. Heifer ...	... Sound.
21. Cow ...	... Sound.	64. Heifer ...	... Slightly affected in right lung.
22. Cow ...	... Dark spot on the right lung.	65. Cow ...	... Sound.
23. Heifer ...	... Sound.	66. Heifer ...	... Sound.
24. Cow ...	... Sound.	67. Cow ...	... Slightly affected in right lung.
25. Cow ...	... Left lung completely hepatized, and effusions of lymph, as in No. 1.	68. Cow ...	... Slightly affected in right lung.
26. Heifer ...	... Adhesions on the right side; substance of the lung sound.	69. Cow ...	... Sound.
27. Heifer ...	... Sound.	70. Cow ...	... Sound.
28. Heifer ...	... Slightly affected.	71. Cow ...	... Sound.
29. Calf ...	... Sound.	72. Cow ...	... Slightly affected in right lung.
30. Calf ...	... Slightly affected.	73. Cow ...	... Slightly affected in right lung.
31. Heifer ...	... Sound.	74. Cow ...	... Slightly affected in right lung.
32. Heifer ...	... Sound.	75. Cow ...	... Slightly affected in right lung.
33. Heifer ...	... Slightly affected; dark spots on right lung.	76. Heifer ...	... Sound.
34. Aged Cow ...	... Sound.	77. Heifer ...	... Slightly affected in right lung.
35. Heifer ...	... Sound.	78. Heifer ...	... Slightly affected in right lung.
36. Cow ...	... Sound.	79. Cow ...	... Effusion of serum into the thorax.
37. Aged Bull ...	... Sound.	80. Cow ...	... Sound.
38. Cow ...	... Sound.	81. Cow ...	... Left lung hepatized and adhering to the chest; the animal apparently recovering.
39. Heifer ...	... Slightly affected.	82. Cow ...	... Sound.
40. Calf ...	... Sound.	83. Cow ...	... Sound.
41. Calf ...	... Sound.	84. Cow ...	... Sound.
42. Heifer ...	... Slightly affected.	85. Cow ...	... Sound.
43. Heifer ...	... Left lung completely hepatized, and extensive effusion of lymph, as in No. 1.	86. Cow ...	... Sound.
		87. Cow ...	... Right lung affected, as in No. 1.
		88. Cow ...	... Slight adhesions to the chest.
		89. Cow ...	... Sound.
		90. Cow ...	... Effusion of lymph on the right side and part of the interior lobe of the lung hepatized.
		91. Cow ...	... Right lung adhering strongly to the chest; completely hepatized, and the animal was recovering.
		92. Heifer ...	... Slightly affected and recovering.
		93. Heifer ...	... Slightly affected and recovering.
		94. Heifer ...	... Effusion of lymph on the right side; substance of the lung diseased.
		95. Heifer ...	... Sound.
		96. Heifer ...	... Sound.
		97. Heifer ...	... Sound.
		98. Heifer ...	... Sound.
		99. Cow ...	... Adhesions to the chest; substance of the lung sound.

No.		No.	
100. Heifer	... Dark spots on the lungs and a quantity of the same appearance on the peritoneum.	110. Heifer	... Sound.
101. Heifer	... Appearances as in No. 100 in the chest; but the peritoneum not affected.	111. Heifer	... Adhesions to the chest; but lungs sound.
102. Calf ...	... Sound.	112. Calf ...	... Sound.
103. Calf ...	... Sound.	113. Heifer	... Sound.
104. Heifer	... Sound.	114. Heifer	... Extensive disease, as in No. 1.
105. Heifer	... Right lung much diseased, as in No. 1.	115. Heifer	... Sound.
106. Yearling Stot	Sound.	116. Calf ...	... Slightly affected.
107. Calf ...	... Sound.	117. Bullock	... Sound.
108. Calf ...	... Sound.	118. Bullock	... Sound.
109. Heifer	... Sound.	119. Bullock	... Sound.
		120. Bullock	... Sound.
		121. Bullock	... Sound.
		122. Bullock	... Sound.
		123. Cow ...	... Right lung slightly diseased.

ANTHONY A. SMITH, V.S.

It appears from the foregoing that, out of 123 head of cattle slaughtered, 51 were in a state of disease; and although only a small proportion of these exhibited it in an advanced stage, an analysis of the report will convince the most sceptical that in the lapse of a very short time the mortality in the herd would have been very great indeed, while three animals only exhibited evidence of recovery.

On the 18th of September, we received reports of disease having appeared at Somerton and Sandridge; these, however, after proper enquiry, proved groundless.

On the 29th September the next decided case occurred in Walker's cattle, on the Deep Creek, numbering seventeen head. Of these, eleven were working bullocks which had been regularly employed teaming on the roads, and amongst which the disease first appeared so far back as the previous May. From the first appearance, until date of inspection, five animals died, and in addition, one belonging to a neighbour whose cattle mixed with Walker's.

The circumstances of this case excited the gravest apprehensions, which were subsequently to a great extent realised. The cattle, in a state of disease during five months, had been depastured on Clarke's Special Survey, mixing with a herd belonging to a person named Scriven, and feeding over grounds crossed almost daily by mobs on their way to market.

The slaughter of Walker's cattle was arranged for, and compensation granted at the rate of £4 sterling per head; the owner undertaking to disburse all expenses of killing and burning, and undertaking, under a penalty, not to put any cattle on the ground depastured over by the infected herd during a term of three months ensuing.

Subjoined is Mr. Smith's report:—

REPORT OF THE *POST MORTEM* APPEARANCES OF JOHN AND JAMES WALKER'S CATTLE, DESTROYED ON THE 16TH OCTOBER, 1860.

No.		No.	
1. Bullock	... Part of the right lung hepatized, and adhering to the wall of the chest.	10. Bullock	... Sound.
2. Bullock	... Slightly affected.	11. Cow ...	... Slightly affected.
3. Calf ...	... Sound.	12. Bullock	... Slightly affected.
4. Cow ...	... Slightly affected.	13. Bullock	... Slightly affected.
5. Bullock	... Part of the right lung hepatized.	14. Bullock	... Part of the right lung hepatized, recovering.
6. Bullock	... Slightly affected.	15. Bullock	... Right lung completely hepatized, only observed ill for two days.
7. Bullock	... Sound.	16. Calf ...	... Effusion of serum, and lung extensively diseased.
8. Cow ..	... Slightly affected.	17. Bullock	... Slightly affected.
9. Calf ...	... Right lung completely hepatized, and left slightly affected.		

ANTHONY A. SMITH, V.S.

From the foregoing, it appears that only three, out of seventeen head of cattle destroyed, were free from disease; and when we state that, previous to inspection, and subsequent to the first appearance of the disease in the herd, five beasts died, the rate of mortality and the insidious nature of the malady may be estimated. From the 16th October to the 12th November, reports of the appearance of the disease were received almost daily; these occasioned a considerable expenditure for professional inspection, but proved without foundation, until the cases of Conallin's and Deagan's, both near Somerton, on the Merri Creek, were reported.

When inspected, Conallin's herd numbered 39 head, of which fourteen were working bullocks, and, as in Walker's case, it was amongst these the disease first appeared. Deagan's diseased stock consisted entirely of working bullocks, the rest of his cattle having been kept apart. Conallin's and Deagan's bullocks had been employed teaming on the Beachworth and Goulburn roads for some considerable time previously, travelling and camping in company. So early as May, Conallin lost one bullock from disease on a return trip from the Goulburn; on the following journey another died and two were left behind, and the mortality continued at intervals till date of inspection. Deagan lost one bullock from the disease about three weeks, and a second about two days previous to inspection.

Our investigations elicited the fact that Conallin purchased, in the month of April, some bullocks from Cady—Hooper's neighbour, and referred to as having bought cattle from McKinnon,—and the coincidence of the appearance of the disease in Hooper's and Conallin's stock simultaneously, impressed us forcibly as suggestive of the source and character of the disease, and the probability of its further spread. The two bullocks left on the road were advertised properly, and a reward offered for their recovery, but without avail; although it was reported to us that an animal, answering the description of one of them, had been shot by a cattle owner.

It was with considerable difficulty arrangements were effected for the destruction of these herds, Conallin having sent a team of bullocks on the road, and evincing a strong disposition to preserve them; however, we ultimately secured the entire number, and the rate of compensation was fixed at £4 per head, with the usual conditions as to slaughtering and burning being at the owner's expense, and furthermore that Conallin should keep his farm clear of cattle for six months following the date of agreement. With reference to this condition, although insisted on, we had every reason to regard it as almost futile in this case. For miles on each side of the Merri Creek, cattle could stray and mingle with impunity, indeed had been in the habit of doing so. On all sides fences were in disrepair, and owners of cattle indifferent as to the risks incurred by the mingling of sound and unsound animals, and as an illustration we may mention that stock was daily driven to water through Conallin's land, on which the mortality was matter of public notoriety.

REPORT OF THE *POST MORTEM* APPEARANCES OF MALACHI CONALLIN'S CATTLE AT SOMERTON, DESTROYED NOVEMBER 20TH, 1860.

No.			No.		
1.	Cow	... Right lung nearly hepatized throughout, and adhesion to the chest.	18.	Bullock	... Part of left lung hepatized and adhesions to the chest.
2.	Cow	... Sound.	19.	Bullock	... Slightly affected.
3.	Cow	... Slightly affected.	20.	Bullock	... Part of the right lobe hepatized.
4.	Heifer	... Right lung completely hepatized, and effusion of lymph.	21.	Bullock	... Right lung completely hepatized; pleura in a state of matter completely destroyed.
5.	Heifer	... Sound.	22.	Steer	... Right lung affected.
6.	Steer	... Left lung hepatized.	23.	Bullock	... Sound.
7.	Calf	... Sound.	24.	Steer	... Slightly affected.
8.	Heifer	... Slightly hepatized and adhesions.	25.	Heifer	... Slightly affected.
9.	Cow	... Died previous day.	26.	Heifer	... Half of right lung hepatized.
10.	Bullock	... Right lung hepatized, and extensive effusion of serum and lymph	27.	Steer	... Sound.
11.	Bullock	... Slightly affected.	28.	Steer	... Slightly affected.
12.	Cow	... Right lung hepatized and adhesions to chest.	29.	Calf	... Slightly affected.
13.	Cow	... Left lung partly hepatized and adhesions.	30.	Cow	... Both lungs affected.
14.	Steer	... Left lung slightly hepatized.	31.	Bullock	... Hepatized throughout.
15.	Bullock	... Left lung slightly hepatized and adhesions.	32.	Calf	... Sound.
16.	Bullock	... Right lung slightly hepatized.	33.	Calf	... Sound.
17.	Bullock	... Part of right lobe hepatized and adhesions.	34.	Calf	... Sound.
			35.	Calf	... Sound.
			36.	Bullock	... Left lung hepatized.
			37.	Bullock	... Hepatized throughout.
			38.	Bullock	... Sound.
			39.	Bullock	... Slightly affected.

ANTHONY A. SMITH.

This herd, as may be seen from the above, must in a very short time have been diseased throughout, and it is worthy of note that of the fifteen working bullocks only two proved sound.

The slaughter of Deagan's cattle was effected on the 21st November, 1860, the rate of compensation, £4 per head, with the usual conditions as to expenses and pasturage.

## REPORT.

No.		No.	
1. Bullock	... Posterior portion of left lung almost wholly disorganized, presenting a cheesy appearance enclosed in a dense membrane. This bullock had been ill about 8 weeks previous to date, but not so ill as to lay him off work; he was now in good health, but dangerous in so far as the disease is sure to relapse, and become as contagious as at first.	2. Bullock	... Slightly affected in right lung.
		3. Bullock	... Slightly affected in right lung.
		4. Bullock	... Sound.
		5. Bullock	... Slightly affected.
		6. Bullock	... Presents the same appearance as No. 1, and had been observed ailing about 7 weeks ago, now in good health.
		7. Bullock	... Right lung partly hepatized and left slightly affected.
		8. Bullock	... Right lung partly hepatized, and left slightly affected.

ANTHONY A. SMITH.

It is worthy of note that two of these bullocks, Nos. 1 and 6, had evidently recovered from the disease, and without veterinary treatment.

On the 29th November a communication was received from John Scriven, whose cattle we referred to as having mixed with Walker's, depasturing on Clarke's Special Survey. The disease had exhibited itself, as we anticipated, and the letter contained proposed terms for their destruction. It may be necessary to state that Scriven was present at the inspection and slaughter of Walker's cattle, but stoutly denied that his cattle were affected; stating, however, that he would "get quit of them." This, fortunately, he did not succeed in doing; and, although we regretted that the power entrusted us was insufficient to enable us to deal as stringently with the case as we could have wished, we had the owner sufficiently in our power as to compel the acceptance of less liberal terms than had been granted to others. On our inspection of Walker's cattle, and having ascertained the fact of the commingling of the herds, it was our desire to treat for both lots; but, on Scriven's part, there was no disposition to meet our views—on the contrary, a different course was avowed. Our only remedy, therefore, in the absence of any power to compel co-operation in our endeavors to prevent the spread of the disease, we adopted, viz., to advertise the public of the circumstances and put purchasers of stock on their guard.

The rate of compensation finally agreed on was £3 per head, and the cattle were slaughtered on the 5th and 6th December, at the owner's expense. The conditions as to refraining from depasturing stock on the infected lands being also enforced.

REPORT OF THE *POST MORTEM* APPEARANCES OF MR. SCRIVEN'S CATTLE ON CAPT. GARDNER'S RUN, DESTROYED ON THE 5TH AND 6TH DECEMBER, 1861.

No.		No.	
1. Cow ...	... Slightly affected	28. Cow ...	... Part of lung hepatized, and adhesions to the chest.
2. Cow ...	... Sound.	29. Cow ...	... Slightly affected.
3. Cow ...	... Slightly affected.	30. Cow ...	... Slightly affected.
4. Cow ...	... Slightly affected.	31. Heifer	... Slightly affected.
5. Cow ...	... Sound.	32. Bullock	... Slightly affected, part of the lung hepatized.
6. Yearling bull...	Slightly affected.	33. Old cow	... Very slightly affected.
7. Cow ...	... Slightly affected, right lung full of tubercles	34. Cow ...	... Very slightly affected.
8. Cow ...	... Slightly affected.	35. Bullock	... Very slightly affected.
9. Cow ...	... Slightly affected.	36. Yearling heifer	Very slightly affected.
10. Cow ...	... Slightly affected	37. Bullock	... Part of the lung hepatized, and enclosed in a membrane.
11. Cow ...	... Slightly affected.	38. Bullock	... Pleuro cortales much inflamed, and left lung hepatized nearly throughout.
12. Bullock	... Slightly affected.	39. Cow ...	... Slightly affected.
13. Heifer	... Slightly affected.	40. Heifer	... Sound.
14. Heifer	... Slightly affected.	41. Cow ...	... Lung full of tubercles
15. Bullock	... Slightly affected.	42. Heifer	... Slightly affected.
16. Heifer	... Slightly affected.	43. Cow ...	... Slightly affected.
17. Heifer	... Slightly affected.	44. Young bull	... Sound.
18. Heifer	... Slightly affected.	45. Cow ...	... Very slightly affected.
19. Bull ...	... Slightly affected.	46. Heifer	... Very slightly affected.
20. Heifer	... Sound.	47. Heifer	... Very slightly affected.
21. Cow ...	... Slightly affected.	48. Heifer	... Very slightly affected.
22. Bullock	... Slightly affected.	49. Cow ...	... Sound.
23. Bullock	... Slightly affected.	50. Calf ...	... Sound
24. Cow ...	... Slightly affected.		
25. Heifer	... Slightly affected.		
26. Cow ...	... Slightly affected.		
27. Steer ...	... Very slightly affected.		



No.	
51. Bullock	... Right lung hepatized, and adhering to the chest.
52. Cow	... Slightly affected.
53. Bullock	... Sound.
54. Bullock	... Slightly affected.
55. Bullock	... Slightly affected.
56. Cow	... Slightly affected.
57. Bullock	... Fine specimen of a case recovered; right lung adhering strongly to the chest, and two cavities filled with cheesy-looking matter, the membrane surrounding which in some places half an inch thick.
58. Bullock	... Ditto, but only one cavity.
59. Bullock	... Sound.
60. Bullock	... Slightly affected.
61. Cow	... Cavity in the posterior part of the right lung same as No. 58; never observed ill; small portion of lung lost.
62. Cow	... Slightly affected.
63. Bullock	... Same as No. 57.
64. Cow	... Sound.
65. Cow	... Slightly affected.
66. Cow	... Slightly affected.
67. Bullock	... Slightly affected.
68. Cow	... Slightly affected.
69. Cow	... Slightly affected.
70. Bullock	... Slightly affected.
71. Heifer	... Sound.
72. Steer	... Sound.
73. Steer	... Slightly affected.
74. Old bull	... Sound.
75. Calf	... Sound.
76. Calf	... Sound.

No.	
77. Calf	... Slightly affected.
78. Calf	... Sound.
79. Calf	... Sound.
80. Bullock	... Slightly affected.
81. Calf	... Sound.
82. Calf	... Slightly affected.
83. Heifer	... Sound.
84. Cow	... Sound.
85. Bullock	... Right lung adhering to the chest, and a large sack of cheesy matter.
86. Heifer	... Sound.
87. Cow	... Sound.
88. Heifer	... Slightly affected.
89. Steer	... Slightly affected.
90. Steer	... Slightly affected.
91. Calf	... Slightly affected.
92. Calf	... Sound.
93. Young bull	... Slightly affected.
94. Heifer	... Sound.
95. Heifer	... Sound.
96. Heifer	... Slightly affected.
97. Heifer	... Sound.
98. Heifer	... Slightly affected.
99. Cow	... Slightly affected.
100. Bullock	... Same as No. 58.
101. Cow	... Slightly affected.
102. Heifer	... Slightly affected.
103. Cow	... Slightly affected.
104. Cow	... Sound.
105. Bullock	... Left lung completely disorganised, and adhering to the chest.
106. Bullock	... Sound, very fat, dressed to be used as food; not taken into account by me.

ANTHONY A. SMITH.

The above report shows 78, out of 106 head, deceased; five were recovering, or had recovered,—of these, No. 57 was a particularly interesting case.

Compensation was allowed only for 103 animals.

On the 18th December, Mr. L. Maltzahn's cattle were reported to be infected, and were examined by Mr. Smith. The owner was averse to the slaughter of the entire herd, and we deemed it a favorable opportunity of carefully noting the progress of the disease. Mr. Maltzahn consented to assist us in the investigation. A paddock was set apart, into which the diseased animals were removed, and for the reception of fresh cases as they occurred; and Mr. Smith was instructed to make two inspections per week. When first examined, on the 18th, there were 4 cases; on the 24th there were 32; on the 27th, 37; on the 2nd January there were 49; and on the 10th Mr. Smith considered there were few sound animals in the whole herd.

It is necessary to point out that the bulls were first attacked; and this is not to be wondered at when the state of the fences and the contiguity of this herd to Conallin's stock, previously destroyed, are considered. Seeing the marked progress of the malady, seven animals having died between the 18th December and 10th January, and the disease otherwise making rapid strides, Maltzahn came to terms for the destruction of his cattle. His brother, C. Maltzahn, whose stock were grazing on the same land, however reserved his.

The terms of compensation were, £250 for 95 head, Maltzahn to have hides and fat; these, however, to be preserved under proper supervision. The usual conditions as to restocking for a term were enforced.

REPORT OF THE *POST MORTEM* APPEARANCES OF MR. LUDWIG MALTZAHN'S CATTLE AT THOMASTOWN, DESTROYED ON THE 17TH AND 18TH JANUARY, 1861.

No.	
1. Cow	... Left posterior lobe hepatized.
2. Cow	... Left lung adhering strongly to the chest and diaphragm; substance of lung hepatized.
3. Cow	... Left lung adhering strongly to the chest and diaphragm; hepatized throughout.
4. Cow	... Left lung adhering strongly to the chest and hepatized.
5. Cow	... Slightly diseased.

No.	
6. Cow	... Left lung partly hepatized.
7. Cow	... Left lung partly hepatized and recovered.
8. Cow	... A quantity of serum in the chest; the right lung adhering to the chest and hepatized.
9. Cow	... Left lung completely hepatized and adhering strongly to the chest.
10. Cow	... Slightly affected.

A.—No. 39, b.

No.		No.	
11. Cow ...	... Slightly affected.	46. Cow ...	... Slightly affected.
12. Bull ...	... Left lung strongly adhering to the chest, and a large schist, containing fluid and cheesy matter. This was the first one affected, and said to have brought the disease to the herd.	47. Cow ...	... Slightly affected.
13. Bull ...	... Much the same as No. 12.	48. Heifer ...	... Slightly affected.
14. Cow ...	... Slightly affected.	49. Cow ...	... Slightly affected.
15. Calf ...	... Sound.	50. Cow ...	... Slightly affected.
16. Calf ...	... Left lung adhering to the chest : cavity containing cheesy matter.	51. Cow ...	... Slightly affected.
17. Calf ...	... In the first stage of the disease ; the left lung covered with purple spots.	52. Cow ...	... Slightly affected.
18. Calf ...	... Slightly affected.	53. Cow ...	... Slightly affected.
19. Heifer...	... Sound.	54. Cow ...	... Slightly affected.
20. Calf ...	... Left lung partly hepatized.	55. Cow ...	... Strong adhesions to the chest and diaphragm, and a small cavity containing cheesy matter.
21. Calf ...	... Slightly affected.	56. Cow ...	... Sound.
22. Calf ...	... Left lung strongly adhering to the chest ; completely disorganized and enclosed in a dense membrane.	57. Cow ...	... Sound.
23. Calf ...	... Sound.	58. Cow ...	... Slightly affected.
24. Calf ...	... Slightly affected.	59. Calf ...	... Slightly affected.
25. Cow ...	... Left lung completely hepatized ; strong adhesions to the chest.	60. Young Bull ...	... Slightly affected.
26. Calf ...	... Sound.	61. Calf ...	... Sound.
27. Calf ...	... Sound.	62. Cow ...	... Slightly affected.
28. Calf ...	... Sound.	63. Cow ...	... Sound.
29. Calf ...	... Slightly affected.	64. Cow ...	... Adhesions to the diaphragm ; lung slightly affected.
30. Heifer...	... Left lung adhering strongly to the chest.	65. Cow ...	... Sound.
31. Steer ...	... Sound.	66. Cow ...	... Slightly affected.
32. Heifer ...	... Extensive effusion of serum to a great extent, and the left lung completely disorganized.	67. Cow ...	... A small portion of left lung hepatized.
33. Heifer ...	... Slightly affected.	68. Cow ...	... Slightly affected.
34. Heifer ...	... Sound.	69. Cow ...	... Sound.
35. Heifer ...	... Sound.	70. Cow ...	... Slightly affected.
36. Heifer ...	... Left lung adhering to the chest ; the substance of the lung disorganized and enclosed in a membrane.	71. Cow ...	... Slightly affected ; slight adhesion ; a small sack containing cheesy matter.
37. Heifer ...	... Both lungs partly hepatized.	72. Cow ...	... Slightly affected.
38. Heifer ...	... Slightly affected.	73. Cow ...	... Slightly affected.
39. Heifer ...	... Slightly affected.	74. Heifer ...	... Slightly affected.
40. Steer ...	... Effusion of serum to a great extent, and the left lung completely disorganized.	75. Heifer ...	... Slightly affected.
41. Steer ...	... Slightly affected.	76. Heifer ...	... Slightly affected.
42. Cow ...	... Left lung hepatized.	77. Cow ...	... Slightly affected.
43. Calf ...	... Sound.	78. Young Bull ...	... Left lung nearly altogether hepatized.
44. Calf ...	... Slightly affected.	79. Cow ...	... Slightly affected.
45. Calf ...	... Slightly affected.	80. Cow ...	... Sound.
		81. Cow ...	... Slightly affected.
		82. Old Bullock ...	... Sound.
		83. Bullock ...	... Sound.
		84. Cow ...	... Slightly affected.
		85. Cow ...	... Sound.
		86. Bullock ...	... Adhesions to the chest, and part of the lung hepatized. This bullock was good and fat.
		87. Heifer ...	... Sound.
			Two killed for inspection, highly diseased.
			Seven died after first inspection.

ANTHONY A. SMITH.

Those cases slightly affected were in the first stage of the disease, and out of a herd originally numbering 96 only 21 head were sound.

On the 20th December we received information that two bullocks had been left on the Goulburn, one of which died and the other had been shot on a run near Murchison. The description given of these bullocks coincided with that of Conallin's, for which we had advertised ; but we were unable to ascertain the brands.

On the 1st January the inspector forwarded notes of a *post mortem* examination of Mr. Ray's cow, grazed near Pentridge. This animal exhibited the disease in its first stage ; had been bought out of the pound a few weeks previously, and had originally belonged to Hooper's herd, which was slaughtered in the latter end of August. A period therefore of over four months had elapsed ere the disease developed itself in this case. On the 8th of January another decided case occurred at Pentridge ; this animal also having been purchased out of pound.

On the 19th January, in compliance with Mr. C. Maltzahn's request, we instructed Mr. Smith to inspect his stock which were found infected. The owner had entertained hopes of preserving his cattle, having endeavored to keep them as much as possible apart from L. Matzahn's ; but on the occasions of inspection and slaughter of the latter's stock we

had evidence of the disease having extended to the other herd, and endeavored, without success, to arrange for their destruction at the same time. In the lapse of a few days, however, the number of ailing beasts increased daily, and the owner consented to the slaughter on the usual conditions—compensation for 31 head to be £86 16s., and the skins and fat to be saved under supervision.

REPORT OF THE *POST-MORTEM* APPEARANCES OF MR. CHRISTIAN MALTZAHN'S  
CATTLE AT THOMASTOWN, DESTROYED ON THE 30TH JANUARY, 1861.

No.		No.	
1. Cow ...	... Sound.	16. Cow ...	... Right lung completely disorganized, and adhering to the walls of the chest.
2. Cow ...	... Slightly affected.	17. Cow ...	... Sound.
3. Cow ...	... Sound.	18. Cow ...	... Sound.
4. Cow ...	... Slightly affected.	19. Cow ...	... Slightly affected.
5. Cow ...	... Sound.	20. Cow ...	... Slightly affected.
6. Cow ...	... Slightly affected.	21. Calf ...	... Sound.
7. Cow ...	... Strong adhesions on the left side of the chest and diaphragm; a small portion of lung hepaticized.	22. Cow ...	... Sound.
8. Cow ...	... Sound.	23. Cow ...	... Sound.
9. Cow ...	... Sound.	24. Cow ...	... Slightly affected.
10. Heifer ...	... Slightly affected.	25. Calf ...	... Slightly affected.
11. Heifer ...	... Sound.	26. Calf ...	... Sound.
12. Heifer ...	... Slightly affected.	27. Cow ...	... Slightly affected.
13. Heifer ...	... Sound.	28. Cow ...	... Slightly affected.
14. Cow ...	... Left lung slightly affected.	29. Calf ...	... Slightly affected.
15. Cow ...	... Sound.	30. Cow ...	... Sound.
		31. Cow ...	... Slightly affected.

ANTHONY A SMITH

The report exhibits 15 animals sound and 16 diseased; of the latter only two cases were in an advanced stage.

We regard the circumstances connected with the cases of Ludwig and Christian Maltzahn's herds as peculiarly illustrative of the character of this disease, and we therefore desire to direct attention to them. Ludwig Maltzahn's bulls were first attacked, and almost simultaneously. The owner attributed the introduction of the disease among his herd to these animals, and we think justly, for he admits they had been in the habit of roving over the country and must have mixed with one or more of the diseased herds in the vicinity. In the course of a few weeks others of L. Maltzahn's cattle were ailing, and there were several deaths. Eventually the disease prevailed to such an extent among the herd, and the mortality was so great, the owner consented to the slaughter. On the other hand Christian Maltzahn's herd, though occasionally depasturing with his brother's stock, shewed no symptoms of disease, and during a short time previous to the destruction of L. Maltzahn's cattle the herds had been as much as possible kept apart. This precaution proved unavailing, the cattle had mixed, and although the disease was not developed so early in Christian Maltzahn's herd as in that of his brother, it is evident from the reports of the *post mortem* examinations in the lapse of a short time its course would have been equally marked and fatal.

In both Ludwig and Christian Maltzahn's cases we endeavored to prevent the depasturing of the lands for three months after the slaughter of the cattle, by the insertion of clauses in the agreements binding these parties under a penalty to keep the holdings clear of cattle. We hoped the examples of these cases would have acted as a warning to the adjoining occupiers, nevertheless information was forwarded us that cattle were in the habit of trespassing on the Maltzahn's farm, and we consequently notified them of the risk incurred, although our powers were insufficient to enforce any penalty, or to make regulations preventing a repetition of the offence. This while exemplifying the general indifference to consequences on the part of those most interested in staying the progress of the disease, will also serve to show the inadequacy of our powers and the anomalous position we were placed in. Called upon only when the ravages of the disease rendered compensation a desideratum, and in return for which we could neither secure information, co-operation, or precaution.

Nearly six weeks elapsed before any further case was reported. One on the 5th of March, Mr. Smith inspected, reporting, however, that it was simple tuberculous disease

On the 14th, communications were received from the inspector of police at Benalla and the police magistrate at Wangaratta, that the disease had broken out in these neighborhoods. As we anticipated, the appearance of the disease along the Beechworth route, from our knowledge of circumstances connected with the history of Conallin's and other teams, despatched Mr. Smith, our inspector, to enquire into the reports.

On the 16th, the Inspector of police at Beechworth reported a case in that neighborhood, and instructions were forwarded Mr. Smith, directing him to enquire into the identity of the disease, the circumstances connected with its appearance, and, if existing, to ascertain, as far as possible, the localities. In the course of his enquiries, Mr. Smith acknowledges the valuable assistance rendered him by Mr. Shadforth, P.M., Wangaratta, and Inspectors Mountfort, Bookey, and Cobham, of Benalla, Beechworth, and Wangaratta.

The number of cases reported in the above-mentioned districts were so numerous that three weeks were occupied by the inspector in his investigations, and these showed the ramifications of the disease to be so extensive that we determined to depart from our usual course of directing the slaughter of the herds, and instructed Mr. Smith to have only the animals which exhibited the disease destroyed. Our principal reason for this, however, was the probability of the proposed legislative enactment speedily becoming law, when proceedings could be undertaken for the destruction of cattle on more favorable terms to the State, and regulations to prevent the further spread of the disease be made imperative. In order, however, to put proprietors of stock on their guard, we had the particulars and reports published at the time. We subjoin Mr. Smith's report of *post mortem* appearance of the cattle destroyed under his supervision and for inspection.

*POST MORTEM* APPEARANCE OF FENTON WHALEN'S COW AT BENALLA, DESTROYED,  
28TH MARCH, 1861.

No.

1. Cow ... Left lung completely hepatized; the pleura covered with lymph; and two or three gallons of serum in the chest.

ANTHONY A. SMITH.

Compensation allowed, £3.

*POST MORTEM* APPEARANCES OF JAMES KELLY'S BULLOCKS, AT BEECHWORTH,  
DESTROYED 23RD MARCH, 1861.

No.

1. Bullock ... Left lung adhering strongly to the wall of the chest and the entire posterior lobe forming a sack containing partly thin viscid matter and brown cheesy-looking substance.  
2. Bullock ... Left lung slightly affected in the first stage of the disease.  
3. Bullock ... Same as No. 2.

Compensation allowed £24.

*POST MORTEM* APPEARANCES OF K. W. JOHNSTONE'S COW, AT LITTLE RIVER, NEAR  
YACKANDANDAH, DESTROYED 27TH MARCH, 1861.

Cow ... In the first stage of the disease.

Compensation, £2 10s.

*POST MORTEM* APPEARANCES OF COW, THE PROPERTY OF MR. CONNOR, LITTLE  
RIVER, NEAR YACKANDANDAH, DESTROYED 27TH MARCH, 1861.

Cow ... Left posterior lobe adhering strongly to the chest and its substance hepatized and enclosed in an adventitious membrane.

*POST MORTEM* APPEARANCE OF COW, THE PROPERTY OF MR. CLARKE, LITTLE RIVER  
YACKANDANDAH.

Cow ... Left lung hepatized and very much enlarged.

A. A. SMITH.

With reference to the case at Benalla in F. Whalen's stock, Mr. Smith's investigations elicited that a bullock driver, some time previously, left two bullocks ill on the lands pastured by Whalen's cattle—the name of this party, his residence, or destination, strange to say, could not be ascertained. Mr. Smith is of opinion that the circumstances observed by him justify anticipations of the spread of the disease in this neighborhood.

At the date of Inspector Bookey's report of the disease having broken out in James Kelly's team of bullocks, at Beechworth, one beast had died, and there were five

alive, and which were, as a matter of precaution, placed in the police paddock. Two additional deaths occurred before Mr. Smith reached Beechworth, and, on his arrival, the remaining three were slaughtered, presenting the appearance described in the report.

James Kelly had travelled from Melbourne in company with one Alfred Richards, starting about November with loading. Richards delivered his loading at Wangaratta and Kelly at the Sailor's Home, three miles from Beechworth. A short time afterwards Kelly started with loading for the Snowy Creek in company with one John Donnelly. On their return trip, Donnelly left one bullock of his team sick in Bowler's Ranges, one in Strickey's paddock, and five at Connor's, of the Little River. Three of the latter have since died. Kelly, at Donnelly's request, brought the surviving two from Connor's to work them with his own; but they strayed away, and were last seen beyond Yackandandah. Shortly after this the first case appeared in Kelly's bullocks, and the animal died. The matter was reported on a second appearing ill. Compensation to the amount of £24 was awarded Kelly, as the circumstances of the case were somewhat peculiar and deserving consideration.

The history of the foregoing case accounts sufficiently for the three following, viz., Connor's, Johnston's, and Clarke's, at the Little River. Mr. Smith, however, was of opinion that at the date of his enquiries the disease was confined to a track on each side of the usual teaming routes, and that by energetic measures it could be eradicated. The means at our disposal, as well as the authority with which we were entrusted, were equally inadequate to meet the emergency, and we were therefore compelled to stay proceedings in that locality.

On the 26th March, a letter was received from Bacchus Marsh, stating that the disease had broken out in that district, but without indicating the owner, his whereabouts, or any particulars. This information was, however, supplied in a communication from the police magistrate of the district on the 28th; the cattle were inspected on the 1st April and slaughtered on the 4th.

Thomas Wilson's bullocks, inspected on the 1st April. Originally, 16 bullocks: four dead, seven on the islands, and five in Paxton's paddock. Purchased one at Wangaratta pound, and one at Sugar Loaf Creek. Camped near Conallin's several times whilst Conallin's bullocks were ill; Mansfield was there also. Nine weeks prior to appearance of disease, camped for five days near Broadmeadows.

POST MORTEM APPEARANCES OF THOMAS WILSON'S CATTLE AT THE PENTLAND HILLS, DESTROYED ON THE 4TH APRIL, 1861.

No.		No.	
1. Bullock	... Slightly affected; inflammation on surface of left lung.	7. Bullock	... Inflammation on surface of left lung.
2. Bullock	... Posterior of left lung hepatized, and pleura adhering to the ribs.	8. Bullock	... Both lungs hepatized extensively.
3. Bullock	... Left lung hepatized.	9. Bullock	... Left lung hepatized, and adhesion to ribs.
4. Bullock	... Both lungs hepatized nearly throughout.	10. Bullock	... Left lung much inflamed and partly hepatized.
5. Bullock	... Both lungs diseased, and hepatized extensively.	11. Bullock	... Right lung completely hepatized. One killed on first inspection:—Left lung hepatized, and chest full of serum.
6. Bullock	... Sound.		

Compensation was allowed for these cattle at the rate of £3 10s. per head, because of the danger to be apprehended of their disseminating the disease in the neighborhood.

As to the origin of the disease in this herd, the owner's statement as to their travelling along the Beechworth route for several months, coupled with the admission of their having been in close proximity to Conallin's and Deagan's teams at a time when these were affected, added to a faint denial of the bullocks having ever mixed, although he admitted Conallin's bullocks passed through the paddock in which his teams were camped and spelled in the one adjoining—these circumstances, considered in connection, are fully sufficient to account for the appearance of the malady. Were any further evidence required, it would be found in the case following:—Mansfield's, who travelled in company with Wilson's and other teams, and whose working bullocks—and they only of his stock—were attacked almost simultaneously with Wilson's. The preliminary inspection of Mansfield's stock was made on the day Wilson's was slaughtered. Four animals out of fifteen were in an advanced stage of the disease, and two others exhibited premonitory symptoms.

The owner, justly alarmed at the rapid progress the disease had made in a few days, agreed to accept £2 per head as compensation for his cattle, and they were accordingly destroyed on the 11th and 12th April.

Subjoined is Mr. Smith's report :—

REPORT OF THE *POST MORTEM* APPEARANCES OF MR. JOHN MANSFIELD'S CATTLE AT THE PENTLAND HILLS, DESTROYED ON THE 11TH AND 12TH APRIL, 1861.

<p>No. 1. Bullock ... Left lung adhering to the chest, small sack containing cheesy matter. 2. Bullock ... Left lung adhering extensively to the chest, and posterior lobe completely hepatized 3. Bullock ... Left lung adhering to the chest. 4. Bullock ... Right lung adhering to the chest, and diaphragm partly hepatized and partly cheesy matter (a bad case). 5. Bullock ... Left lung completely hepatized, and a mass of disorganised matter. 6. Bullock ... Slightly affected, in the first stage.</p>	<p>No. 7. Bullock ... Left lung adhering to the chest, and a sack containing matter and a cheesy substance (an old case). 8. Bullock ... Slightly affected 9. Bullock ... Left lung partly hepatized. 10. Calf ... Slightly affected. 11. Bullock ... Left lung adhering extensively to the chest, and completely hepatized. 12. Bullock ... Slightly affected. 13. Bullock ... Sound. 14. Bullock ... A case of tuberculous disease. 15. Bullock ... A case of tuberculous disease.</p>
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ANTHONY A. SMITH.

It will be observed from the foregoing, that of fourteen working bullocks only one proved sound, and with reference to No. 10, a calf, which the proprietor had allowed to mix with the bullocks, and was desirous of preserving, it also had become affected.

Since our determination to stay proceedings pending action under the legislative enactment, we have received notice from the following districts of the appearance of the disease :—Wallan Wallan, Black Springs, Buckland Road, neighborhood of Buninyong, Ballaarat district ; Back Creek, Carisbrook ; Black Dog Creek, Chiltern ; Bacchus Marsh, St. Kilda, and Benalla.

It now remains for us to state, that in the course of our proceedings four hundred and fifty-five head of cattle were destroyed, the compensation for which amounted to £1,631 6s. ; the expenditure for professional inspection, supervision, &c., &c., has been £311 10s. With regard to these items it is to be observed, that in every case of arrangement for the destruction of cattle, we were, in a manner, constrained to comply with the demands of the owners, who were not forced by any alternative we could present to them to accept conditions proposed by us. As regards the items for professional inspection, &c., we have to observe that a considerable portion was incurred in the investigation of reports sent in which afterwards proved groundless.

In conclusion, we have to record our regret that our labors have been insufficient to prevent the spread of this scourge. We have however to state, that we accepted and regarded the duties imposed upon us as only temporary ; that they have extended over a more lengthened period than we anticipated, and during which we were placed in a very anomalous position—without powers to dictate terms or enforce precautionary regulations, we have been compelled to observe the steady progress of the disease—only applied to at the last moment, and, as a last resource, to award moneys for diseased animals.

We have carefully noted reliable facts in the foregoing details of cases, which we conceive will afford valuable data and basis of procedure for the authorities under the proposed law ; but which in the absence of adequate powers were to us unavailable. On the other hand, had the authority entrusted to us justified the taking evidence on oath, the isolation of farms, and, in some instances, districts, and the enforcement of sanitary regulations, we feel confident we could have stayed the progress of the disease, traced its course, and elicited more complete and valuable information on the subject.

WILLIAM LYALL,  
ALEX. BROCK.