

21.2.20: (6 a.m.) No change. (9 a.m.) Animal is lifted, but is unable to support itself. (11 a.m.) 80 g. sodium bicarbonate dissolved in 1,000 c.c. normal saline is injected at various places subcutaneously.

22.2.20: (6 a.m.) No change.

24.2.20 (6 a.m.) Much worse in condition. Animal lies quite flat on one side and groans. Tail completely paralysed.

25.2.20: (5 p.m.) Appears to be dying.

26.2.20: (6 a.m.) Still alive, in same condition.

27.2.20: (6 a.m.) Still alive, completely paralysed. (9 a.m.) Heifer is killed. Suffering from lamsiekte.

Cow 2404.

Weight, 294.8 kg.

12.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 78° C. for half an hour. No reaction.

HEIFER 4752.

Weight, 156 kg.

4.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin, heated at 75° C. for three hours.

9.3.20: (6 a.m.) Heifer seems to be salivating rather more than usual.

11.3.20: (6 a.m.) Lying down salivating; when driven, animal gets up and knuckles over in the fetlocks. (11 a.m.) Lying down; refuses to get up.

14.3.20: (6 a.m.) No change. (5 p.m.) Strongly marked salivation. Mouth covered with froth. Muzzle and nostrils dirty and dry.

17.3.20: (9 a.m.) Animal is treated with 0.5 g. sodium arsenite dissolved in 1 litre normal saline solution and injected intrajugularly. (2 p.m.) Dies of lamsiekte and sequel of infusion.

Cow 2388.

Weight, 267.6 kg.

12.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 75° C. for six hours. No reaction.

TOLLIE 266.

Weight, 147 kg.

1.4.20 (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

24.4.20: (10 a.m.) Injected 5,000 × minimum lethal dose filtered toxin, heated at 70° C. for twelve hours.

3.5.20: (7 a.m.) Found lying down in sterno-costal position. When forced, it tries to rise, but drops down in the act of rising. Feeding, no salivation.

4.5.20: (7 a.m.) Found in same position. When approached, tries to get up, but unable to do so. It is lifted and remains in standing position, with head bent downwards and back arched. It wants to run away, but breaks down at once. It is again lifted, and walks with a peculiar stiff gait. It appears to be aggressive.

5.5.20: (7 a.m.) Same symptoms. Masticates with marked salivation. (9 a.m.) Treated with 600 c.c. Lugol solution, plus 600 c.c. normal saline solution. No reaction. (5 p.m.) No change.

6.5.20 (7 a.m.) Unchanged.

7.5.20: (7 a.m.) Worse in condition. Stretched out on one side. Unable to lie in sterno-costal position or to support the head. Not feeding.

8.5.20: (7 a.m.) No change. (10.30 a.m.) Dies of lamsiekte.

Cow 229.

Weight, 359 kg.

1.4.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

19.5.20: (4 p.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

5.6.20: (12 noon) Injected 10,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

5.7.20: Bled 2 litres.

Ox 203.

Weight, 239 kg.

2.4.20: (8 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

15.4.20: (11.30 a.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

12.5.20: (11 a.m.) Injected 10,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours.

20.5.20: (12 noon) Found lying down; when approached it tries to get up. It can lift the hindquarters a little, but then drops down again. No other symptoms. Animal has lost condition very noticeably. (5 p.m.) Found standing and feeding.

21.5.20: (7 a.m.) Found lying down, unable to rise. Unable to stand when lifted. Not feeding. (3 p.m.) Treated with 5 grams apomorphin dissolved in 1 litre normal saline solution intravenously. Marked reaction with symptoms of intense excitement. (5 p.m.) Entirely exhausted.

22.5.20: (7 a.m.) No change. (9 a.m.) Treated with 50 c.c. pure glycerine mixed with 1 litre normal saline intravenously. No reaction.

23.5.20: (7 a.m.) Found dead. (Lamsiekte.)

 HELFER 4664.

Weight, 236 kg.

9.4.20: (10.30 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours, injected intravenously. During and after the injection animal shows signs of shock. Struggling, deep and very rapid breathing (about 120 per minute), tumultuous beating of the heart (about 170 per minute), defaecation. After ten minutes normal again.

21.5.20: (10 a.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours, injected intravenously. Same symptoms of shock as at previous injection, but in a less marked degree.

 SECTION D (a) (2).

 GUINEA-PIG 44.

Weight, 520 g.

9.2.20: (5 p.m.) Injected 40 × minimum lethal dose filtered toxin heated at 65° C. for ten minutes on each of three successive days (7th, 8th, and 9th February).

12.2.20: (5 p.m.) Animal appears to be ill.

13.2.20: (6 a.m.) Found dead.

 SECTION D (b).

 GUINEA-PIG 27.

Weight, 600 g.

28.1.20: (4.30 p.m.) Injected 10 × minimum lethal dose filtered toxin frozen by means of solid carbon dioxide for three hours and then allowed to thaw slowly at room-temperature.

31.1.20: (6 a.m.) Found dead.

 SECTION D (c).

 RABBIT 9.

Weight, 1,560 g.

11.3.20: (3 p.m.) Injected 10 × minimum lethal dose filtered toxin exposed to direct sunlight in a test-tube for five and a half hours.

14.3.20: (11.30 a.m.) Looks ill, remains sitting on same spot.

15.3.20: (6 a.m.) Not feeding.

16.3.20: (6 a.m.) Looks better.

18.3.20: (5 p.m.) Worse in condition.

21.3.20: (6 a.m.) Dead.

SECTION D (d).

RABBIT 8.

Weight, 940 g.

11.3.20: (3 p.m.) Injected 5.8 c.c. diluted toxin that had been dried on blotting-paper in the sun. 2 c.c. toxin were poured on a piece of blotting-paper and exposed to the sun for two and a half hours, by which time the paper was completely dry. Then 20 c.c. normal saline were poured on the paper and the liquid squeezed out. In this way 5.8 c.c. liquid was obtained, which was injected into the rabbit.

13.3.20: (6 a.m.) Found dead.

SECTION D (e).

HEIFER 309.

Weight, 331 kg.

18.8.20: (10 a.m.) Injected 50 × minimum lethal dose of filtered toxin kept at room-temperature since 26.6.20.

21.8.20: (7 a.m.) Dead. (Lamsiekte.)

Ox 3904.

Weight, 335 kg.

18.8.20: (10 a.m.) Injected 50 × minimum lethal dose of filtered toxin kept at room-temperature since 26.6.20.

20.8.20: (11 a.m.) Lying down, unable to rise. Salivation. Tries to get up but unable to do so. When lifted it stands for a few minutes and then lies down again.

21.8.20: (7 a.m.) Dead. (Lamsiekte.)

Ox 4623.

Weight, 450 kg.

3.12.20: (2 p.m.) Injected 50 × minimum lethal dose of filtered toxin kept at room-temperature since 26.6.20.

8.12.20: (4 p.m.) Standing. Looks dull. From time to time saliva drips from mouth.

9.12.20: (6.30 a.m.) Found lying down. When driven it rises with considerable difficulty. Masticating and salivating. (2 p.m.) Paralysed.

10.12.20: (7 a.m.) Stretched out on one side. Unable to lift head.

11.12.20: (9 a.m.) No change. (12.30 p.m.) Dies of lamsiekte.

SECTION D (f) (1) (ii).*

GOAT 4.

Weight, 40.8 kg.

11.2.20: (12 noon) Injected 200 × minimum lethal dose filtered toxin, 0.8 c.c. toxin mixed with 40 c.c. Lugol solution (i.e. fifty times the amount of toxin) and injected after ten minutes. No reaction.

24.2.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin, 4.08 c.c. toxin mixed with 8.16 c.c. Lugol solution (i.e. twice the amount of toxin).

26.2.20: (6 a.m.) Dead of lamsiekte.

GOAT 5.

Weight, 38.5 kg.

11.2.20: (12 noon) Injected 200 × minimum lethal dose filtered toxin, 0.77 c.c. toxin mixed with 7.7 c.c. Lugol solution (i.e. ten times the amount of toxin).

24.2.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin, 3.85 c.c. toxin mixed with 5.77 c.c. Lugol solution (i.e. one and a half times the amount of toxin).

26.2.20: (6 a.m.) First signs of illness. Goat gets up with some difficulty. (5 p.m.) Almost completely paralysed.

27.2.20: (6 a.m.) Dead of lamsiekte.

* See also Section E (a) (3) (i).

GOAT 6.

Weight, 40 kg.
 11.2.20: (12 noon) Injected 200 × minimum lethal dose filtered toxin, 0.8 c.c. toxin mixed with 0.8 c.c. Lugol solution (i.e. the same amount).
 12.2.20: (12 noon) Goat is half paralysed. It can just barely stand when lifted. When the tongue is pulled out the animal has great difficulty in withdrawing it. (5 p.m.) Practically dying. It is completely paralysed and has brought up a large quantity of rumen contents.
 13.2.20: (6 a.m.) Dead of lamsiekte.

GOAT 14.

Weight, 42.2 kg.
 26.2.20: (4 p.m.) Injected 1,000 × minimum lethal dose filtered toxin, 4.22 c.c. toxin mixed with 12.66 c.c. Lugol solution (i.e. three times the amount of toxin).
 28.2.20: (12 noon) Lying down, can still stand when lifted. (4.30 p.m.) Dies of lamsiekte.

GOAT 15.

Weight, 37.5 kg.
 26.2.20: (4 p.m.) Injected 1,000 × minimum lethal dose toxin filtered through muslin. 3.75 c.c. toxin mixed with 17.75 c.c. Lugol solution (i.e. five times the amount of toxin).
 28.2.20: (6 a.m.) Lying down, unable to stand when lifted. (12 a.m.) Appears to be dying. (2 p.m.) Dead of lamsiekte.

GOAT 16.

Weight, 31.3 kg.
 26.2.20: (4 p.m.) Injected 31.3 c.c. normal saline solution mixed with 15.6 c.c. Lugol solution (iodine control). No reaction.

GOAT 26.

Weight, 47 kg.
 29.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with two and a half times the amount of Lugol solution.
 1.4.20: (9 a.m.) Lying down in physiological position, unable to get up. When lifted it walks about with arched back and stiff gait. (4.30 p.m.) Unable to rise. It can stand when lifted, but soon lies down again.
 2.4.20: (6 a.m.) No change. (5 p.m.) Unable to rise.
 4.4.20: (6.30 a.m.) No change.
 14.4.20: (7 a.m.) No change.
 27.4.20: (7 a.m.) Still paralysed, atrophy of muscles and contraction of the flexor muscles.
 29.4.20: (11 a.m.) Treated with 2 g. ferrous sulphate dissolved in 250 c.c. normal saline at body temperature and infused intravenously. Dyspnoea and restlessness.
 2.5.20: (10 a.m.) Dies of lamsiekte and sequel of infusion.

GOAT 27.

Weight, 47 kg.
 29.3.20: (5 p.m.) Injected 4,000 × minimum lethal dose filtered toxin mixed with two and a half times the amount of Lugol solution.
 1.4.20: (4.30 p.m.) Shows difficulty in rising. It is weak and stiff and lies most of the time.
 2.4.20: (6 a.m.) Unable to rise.
 4.4.20: (6 a.m.) Worse in condition. (10 a.m.) Dies of lamsiekte.

GOAT 28.

Weight, 47 kg.
 29.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with two and a half times the amount of Lugol solution.
 2.4.20: (6 a.m.) Unable to rise.
 3.4.20: (5 p.m.) Dies of lamsiekte.

GOAT 29.

Weight, 49 kg.
 29.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with two and a half times the amount of Lugol solution.
 2.4.20: (6 a.m.) Unable to rise.
 3.4.20: (12 noon) Dies of lamsiekte.

GOAT 30.

Weight, 36 kg.
 29.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with two and a half times the amount of Lugol solution.
 3.4.20: (6.30 a.m.) Unable to rise.
 4.4.20: (6.30 a.m.) Unable to rise, but can stand when lifted.
 6.4.20: (6.30 a.m.) Paralysed.
 14.4.20: (7 a.m.) No change.
 17.4.20: (7 a.m.) Found standing.
 18.4.20: (7 a.m.) Entirely recovered. Walking about and feeding.
 18.5.20: (5 p.m.) Injected 5,000 × minimum lethal dose filtered toxin mixed with three times the amount of Lugol solution.
 23.5.20: (7 a.m.) Found dead of lamsiekte.

GOAT 31.

Weight, 47 kg.
 29.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with two and a half times the amount of Lugol solution.
 2.4.20: (6 a.m.) Lying down, unable to rise.
 4.4.20: (6.30 a.m.) No change.
 5.4.20: (6.30 a.m.) Dead of lamsiekte.

GOAT 32.

Weight, 42 kg.
 29.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with two and a half times the amount of Lugol solution.
 1.4.20: (4.30 p.m.) Unable to stand even when lifted.
 2.4.20: (6 a.m.) No change.
 3.4.20: (6 a.m.) Dead of lamsiekte.

GOAT 33.

Weight, 36 kg.
 29.3.20 (5 p.m.) Injected 4,000 × minimum lethal dose filtered toxin mixed with two and a half times the amount of Lugol solution.
 1.4.20: (9 a.m.) First signs of illness. Lying on sternum and belly like a dog. Unable to rise. Unable to stand when lifted. (12 noon) Dies of lamsiekte.

GOAT 47.

Weight, 30 kg.
 6.4.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution. No reaction.
 18.5.20: (5 p.m.) Injected 5,000 × minimum lethal dose filtered toxin mixed with three times the amount of Lugol solution. No reaction.
 3.6.20: (4 p.m.) Injected 10,000 × minimum lethal dose filtered toxin mixed with three times the amount of Lugol solution. No reaction.

GOAT 50.

Weight, 57 kg.
 6.4.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution. No reaction.
 18.5.20: (5 p.m.) Injected 5,000 × minimum lethal dose filtered toxin mixed with three times the amount of Lugol solution. No reaction.
 5.6.20: (11 a.m.) Injected 10,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

GOAT 52.

- Weight, 38 kg.
 6.4.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution. No reaction.
 18.5.20: (5 p.m.) Injected 5,000 × minimum lethal dose filtered toxin mixed with three times the amount of Lugol solution. No reaction.
 5.6.20: (11 a.m.) Injected 10,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

SECTION D (f) (2).

RABBIT 21.

- Weight, 1,230 g.
 23.3.20: (11 a.m.) Injected 10 × minimum lethal dose filtered toxin. 1.23 c.c. toxin in a dilution 1 : 100 mixed with 1.23 c.c. 1 per cent, *carbolic acid*, making a concentration of 0.5 c.c. carbolic acid.
 25.3.20: (6 a.m.) Dead.

RABBIT 25.

- Weight, 1,490 g.
 23.3.20: (11 a.m.) Injected 10 × minimum lethal dose filtered toxin. 1.49 c.c. toxin in a dilution 1 : 100 mixed with 0.074 c.c. *absolute alcohol* (i.e. five times as much alcohol as toxin).
 25.3.20: (6 a.m.) Dead.

RABBIT 24.

- Weight, 1,190 g.
 23.3.20: (11 a.m.) Injected 10 × minimum lethal dose filtered toxin. 1.19 c.c. toxin in a dilution 1 : 100 mixed with 0.059 c.c. *ether* (i.e. five times as much ether as toxin).
 25.3.20 (6 a.m.) Very ill. (3 p.m.) Dies.

RABBIT 23.

- Weight, 1,890 g.
 23.3.20: (11 a.m.) Injected 10 × minimum lethal dose filtered toxin. 1.89 c.c. toxin in a dilution 1 : 100 mixed with 0.095 c.c. *chloroform* (i.e. five times as much chloroform as toxin).
 25.3.20 (6 a.m.) Very ill. (11 a.m.) Dies.

RABBIT 22.

- Weight, 1,190 g.
 23.3.20: (11 a.m.) Injected 10 × minimum lethal dose filtered toxin. 1.19 c.c. toxin in a dilution 1 : 100 mixed with 1.19 c.c. saline plus 0.07 g. *boracic acid*, making a concentration of 3 per cent. boracic acid.
 25.3.20: (6 a.m.) Very ill. (8 a.m.) Dies.

SECTION D (g).

RABBIT 301.

- Weight, 2,000 g.
 16.6.20: (10 a.m.) Injected 2 c.c. filtered toxin mixed with 5 c.c. bouillon and 5 c.c. melted agar (2 per cent.) are allowed to cool to body temperature and then injected subcutaneously.
 17.6.20: (8 a.m.) Dead.

RABBIT 302.

- Weight, 1,600 g.
 17.6.20: (10 a.m.) Injected 2 × minimum lethal dose filtered toxin (control).
 20.6.20: (8 a.m.) Dead.

RABBIT 303.

- Weight, 1,700 g.
 17.6.20: (10 a.m.) Injected 2 × minimum lethal dose filtered toxin mixed with 5 c.c. agar (1 per cent.) and injected subcutaneously.
 20.6.20: (2 p.m.) Dies.

RABBIT 304.

Weight, 1,870 g.
 21.6.20: (2 p.m.) Injected 100 × minimum lethal dose filtered toxin mixed with 5 c.c. agar (2 per cent.).
 22.6.20: (8 a.m.) Dead.

RABBIT 305.

Weight, 2,000 g.
 21.6.20: (2 p.m.) Injected 2 × minimum lethal dose filtered toxin mixed with 10 c.c. agar (2 per cent.).
 24.6.20: (8 a.m.) Looks dull.
 25.6.20: (8 a.m.) Dead.

SECTION E (a) (1) (i).

TOLLIE 218.

Weight, 231 kg.
 2.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 75° C. for one hour. No reaction.
 22.3.20: (3 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 4.4.20: (8 a.m.) Animal seems to have some difficulty in rising; this has been noticed for the past few days. (5 p.m.) Distinct symptoms of lamsiekte.
 5.4.20: (6 a.m.) Lying down; has some difficulty in getting up.
 6.4.20: (6 a.m.) Symptoms less marked. Seems to be recovering. Lost in condition.
 7.4.20: (6 a.m.) Recovered.
 13.4.20: (4 p.m.) Injected 50 × minimum lethal dose filtered toxin (second immunity test).
 15.4.20: (7 a.m.) Salivating strongly. It has no difficulty in getting up and feeds well. (11 a.m.) Unable to get up even when assisted.
 16.4.20: (7 a.m.) Dead of lamsiekte.

TOLLIE 249.

Weight, 156 kg.
 6.3.20: (12 noon) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twenty-four hours. No reaction.
 29.3.20: (5 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 4.4.20: (8 a.m.) Animal seems to be rather slow in rising. Increased salivation. (5 p.m.) Distinct symptoms of lamsiekte.
 5.4.20: (6 a.m.) Salivating profusely. It seems to have no difficulty in rising.
 6.4.20: (6 a.m.) Symptoms less marked. Seems to be recovering. Loss in condition.
 7.4.20: (6 a.m.) Apparently recovered.
 9.4.20: (6.30 a.m.) Lying down, stretched out. Unable to stand when lifted. (10.30 a.m.) Treated with ammonium carbonate; 100 grams dissolved in 1 litre normal saline solution and brought to blood-heat, injected subcutaneously. Respiration immediately became rapid and deep, but no other symptoms appeared. The animal was lifted, but could not stand. (5 p.m.) Very low in condition. Lying down, stretched out, extreme mydriasis, superficial breathing.
 10.4.20: (6.30 a.m.) No change. (4 p.m.) Killed, suffering from lamsiekte.

TOLLIE 267.

Weight, 252 kg.
 1.4.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.
 26.4.20: (2 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 30.4.20: (12 noon) Looks dull. (2 p.m.) Marked salivation. Feeds slowly.
 1.5.20: (7 a.m.) No change.
 2.5.20: (6 p.m.) Found lying down stretched out on one side, unable to rise; very poor condition.
 3.5.20: (7 a.m.) Condition unchanged.
 4.5.20: (7 a.m.) Found dead of lamsiekte.

TOLLIE 4376.

Weight, 163 kg.

1.4.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

13.4.20: (4 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).

21.4.20: (7 a.m.) Dull since yesterday. Has lost in condition. Eats very slowly. Foodstuff remains on muzzle, which is dry. Only rises when forced to do so. Stands with head lowered and back arched. (5 p.m.) Feeding with marked salivation.

22.4.20: (7 a.m.) Found lying down. Condition much worse. Unable to rise.

23.4.20: (7 a.m.) Lying on side, stretched out. When placed in sterno-costal position, it makes attempts to rise. (3 p.m.) Treated with 1,000 c.c. lugol solution intravenously. No reaction. (5 p.m.) Appears much worse. Pulse, 168; strongly marked palpitation of the heart; respiration, 53, deep and laboured.

24.4.20: (7 a.m.) Found dead of lamsiekte.

SECTION E (a) (1) (ii).

GOAT 19.

Weight, 43 kg.

3.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

22.3.20: (3 p.m.) Injected 5 × minimum lethal dose filtered toxin (immunity test). No reaction.

10.4.20: (10 a.m.) Injected 100 × minimum lethal dose filtered toxin (immunity test).

12.4.20: (7 a.m.) Goat has difficulty in rising.

13.4.20: (7 a.m.) Almost completely paralysed.

14.4.20: (11 a.m.) Dies of lamsiekte.

GOAT 20.

Weight, 42 kg.

3.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for six hours. No reaction.

22.3.20: (3 p.m.) Injected 5 × minimum lethal dose filtered toxin (immunity test).

27.3.20: (11 a.m.) Goat has considerable difficulty in rising.

31.3.20: (6.30 a.m.) Improved. Able to rise easily.

10.4.20: (10 a.m.) Injected 100 × minimum lethal dose filtered toxin (immunity test).

12.4.20: (7 a.m.) Goat has difficulty in rising.

13.4.20: (7 a.m.) Almost completely paralysed. Very feeble condition.

14.4.20: (7 a.m.) Dead of lamsiekte.

GOAT 21.

Weight, 36.5 kg.

5.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twenty-four hours. No reaction.

22.3.20: (3 p.m.) Injected 5 × minimum lethal dose filtered toxin (immunity test). No reaction.

10.4.20: (10 a.m.) Injected 100 × minimum lethal dose filtered toxin (immunity test).

12.4.20: (7 a.m.) Goat has difficulty in rising.

13.4.20: (7 a.m.) Almost completely paralysed.

14.4.20: (7 a.m.) Dead of lamsiekte.

GOAT 34.

Weight, 43 kg.

31.3.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

12.5.20: (11 a.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

- 29.5.20: (11 a.m.) Injected 5 × minimum lethal dose filtered toxin (immunity test).
 2.6.20: (5 p.m.) Appears to be somewhat weak.
 3.6.20: (7 a.m.) No change.
 4.6.20: (7 a.m.) No change.
 5.6.20: (7 a.m.) No change.
 6.6.20: (7 a.m.) Seems to have recovered from lamsiekte.

GOAT 35.

- Weight, 43 kg.
 31.3.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.
 12.5.20: (11 a.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours.
 18.5.20: (7 a.m.) Found lying down unable to rise. It is able to stand and walk when lifted.
 19.5.20: (7 a.m.) No change, feeding.
 20.5.20: (7 a.m.) Same symptoms.
 23.5.20: (7 a.m.) No change.
 25.5.20: (7 a.m.) Improvement. Goat attempts to rise, but without success.
 28.5.20: (7 a.m.) No change.
 30.5.20: (7 a.m.) No change. Contraction of flexor muscles of front legs.
 2.6.20: (7 a.m.) No change.
 6.6.20: (7 a.m.) Great improvement. Is able to rise and walk, but seems to tire very soon.
 13.6.20: (7 a.m.) Completely recovered from lamsiekte.

GOAT 36.

- Weight, 51 kg.
 31.2.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.
 13.4.20: (4 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 18.4.20: (8 a.m.) First signs of paralysis. Goat has difficulty in rising.
 19.4.20: (6.30 a.m.) Completely paralysed.
 20.4.20: (7 a.m.) Found lying down, feeding.
 21.4.20: (7 a.m.) No change.
 24.4.20: (7 a.m.) No change.
 26.4.20: (7 a.m.) Condition unchanged.
 29.4.20: (9 a.m.) Treated with 250 c.c. Lugol solution, plus 250 c.c. normal saline intravenously. No reaction. (2 p.m.) Found dead of lamsiekte.

GOAT 37.

- Weight, 43 kg.
 31.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.
 15.4.20: (11 a.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.
 26.4.20: (2 p.m.) Injected 20 × minimum lethal dose filtered toxin (immunity test).
 29.4.20: (7 a.m.) Paralysed.
 30.4.20: (7 a.m.) Found dead of lamsiekte.

GOAT 38.

- Weight, 37 kg.
 31.3.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.
 13.4.20: (4 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 18.4.20: (8 a.m.) First signs of paralysis. Goat has difficulty in rising.
 19.4.20: (6.30 a.m.) Goat can still stand and walk a little.
 20.4.20: (7 a.m.) Unable to rise.
 21.4.20: (7 a.m.) No change.
 24.4.20: (7 a.m.) No change.
 25.4.20: (7 a.m.) Found dead of lamsiekte.

1191

GOAT 39.

Weight, 51 kg.

31.3.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

12.5.20: (11 a.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

29.5.20: (11 a.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).

1.6.20: (11 a.m.) Shows slight difficulty in rising. (5 p.m.) Condition worse. Unable to rise. Still able to walk when lifted.

2.6.20: (7 a.m.) No change.

3.6.20: (7 a.m.) Paralysed. Unable to rise.

4.6.20: (7 a.m.) No change.

5.6.20: (7 a.m.) No change.

6.6.20: (7 a.m.) No change.

10.6.20: (7 a.m.) Improving.

14.6.20: (7 a.m.) Lying down as usual and feeding very eagerly.

16.6.20: (2 p.m.) Killed, suffering from lamsiękta.

GOAT 40.

Weight, 43 kg.

31.3.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

12.5.20: (11 a.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours.

17.5.20: (12 noon) Found lying down, unable to rise. It is able to stand and walk when lifted. Shows stiffness. (5 p.m.) No change.

18.5.20: (7 a.m.) No change.

19.5.20: (7 a.m.) No change, feeding.

20.5.20: (7 a.m.) Same symptoms.

23.5.20: (7 a.m.) No change.

25.5.20: (7 a.m.) Improvement. Goat makes several attempts to rise.

28.5.20: (7 a.m.) No change.

30.5.20: (7 a.m.) No change. Contraction of flexor muscles of front legs.

2.6.20: (7 a.m.) No change.

3.6.20: (7 a.m.) Recovered from lamsiękta.

GOAT 41.

Weight, 41 kg.

31.3.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

12.5.20: (11 a.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

29.5.20: (11 a.m.) Injected 15 × minimum lethal dose filtered toxin (immunity test).

2.6.20: (5 p.m.) Appears to be somewhat weak.

3.6.20: (7 a.m.) No change.

4.6.20: (7 a.m.) No change. (5 p.m.) Worse in condition. Rising only when forced; has difficulty in rising.

5.6.20: (7 a.m.) Unable to rise. Able to stand and walk when lifted.

6.6.20: (7 a.m.) Able to walk a few steps when lifted.

10.6.20: (7 a.m.) Improving.

14.6.20: (7 a.m.) Lying down and feeding.

16.6.20: (2 p.m.) Killed, suffering from lamsiękta.

GOAT 42.

Weight, 41 kg.

31.3.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

13.4.20: (4 p.m.) Injected 50 × minimum lethal dose filtered toxin (immunity test).

15.4.20: (5 p.m.) Goat is paralysed.

16.4.20: (7 a.m.) Dead of lamsiękta.

GOAT 43.

Weight, 43 kg.

31.3.20: (9 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.

- 15.4.20: (11 a.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.
 26.4.20: (2 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 30.4.20: (7 a.m.) Found lying down, unable to rise. Able to stand for a few minutes when lifted.
 1.5.20: (7 a.m.) Entirely paralysed.
 3.5.20: (6 a.m.) Found dead of lamsiekte.

 GOAT 65.

- Weight, 29 kg
 9.4.20: (10 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.
 24.4.20: (10 a.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours.
 12.5.20: (7 a.m.) Slight reaction. Goat is lying down feeding. It can rise when forced to do so, but shows some difficulty in the forequarters. It remains standing for a few minutes and then lies down again.
 13.5.20: (7 a.m.) Improved in condition.
 30.5.20: (10 a.m.) Injected 10,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.
 20.7.20: (2 p.m.) Injected 40 × minimum lethal dose filtered toxin (immunity test).
 22.7.20: (8 a.m.) Found lying down, unable to rise. Is able to stand when lifted, walks a few steps and then drops down.
 23.7.20: (8 a.m.) Found dead of lamsiekte.

 SECTION E (a) (1) (a).

 HEIFER 4550.

- Weight, 250. kg.
 30.7.20: (1 p.m.) Drenched with 2,000 × minimum lethal doses filtered toxin heated at 70° C. for three hours. No reaction.
 17.8.20: (8 a.m.) Injected 20 × minimum lethal dose filtered toxin (immunity test).
 20.8.20: (8 a.m.) Lying down, unable to rise. Marked salivation. (11 a.m.) Stretched out. (1 p.m.) Dies of lamsiekte.

 SECTION E (a) (2).

 HEIFER 3906

- Weight, 299 kg.
 8.3.20: (2 p.m.) Injected 100 c.c. culture heated at 82° C. for ten minutes. No reaction.
 22.3.20: (3 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 27.3.20: (5 p.m.) Animal lies most of the time and shows weakness in the limbs when rising. Appetite normal.
 28.3.20: (9 a.m.) No change.
 29.3.20: (6.30 a.m.) Same symptoms.
 30.3.20: (6.30 a.m.) Unable to rise.
 31.3.20: (6.30 a.m.) Worse in condition.
 1.4.20: (6 a.m.) Found dead of lamsiekte.

 TOLLIE 4842.

- Weight, 183 kg.
 9.2.20: (4 p.m.) Injected 5 c.c. culture heated at 85° C. for ten minutes in order to destroy the toxin. The original culture was diluted 1:10, then filtered through muslin and heated to 85° C. for ten minutes. 50 c.c. of the dilution were injected. No reaction.
 27.2.20: (11 a.m.) Injected 30 c.c. culture heated at 85° C. for fifteen minutes. No reaction.
 15.3.20: (4.30 p.m.) Injected 2 × minimum lethal dose filtered toxin (immunity test). No reaction.

22.3.20: (3 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).

27.3.20: (2 p.m.) Lying down, unable to rise. When lifted, the animal can stand and walk.

28.3.20: (9 a.m.) Unable to stand when lifted.

29.3.20: (6.30 a.m.) No change.

31.3.20: (2 p.m.) Lying down stretched out, abdomen distended, signs of dyspnoea, breathing through open mouth. Animal is treated intravenously with 2 g. lithium carbonate dissolved in 1 litre normal saline and filtered. The clear solution is infused into the jugular vein. The enterocentesis is also carried out; the abdomen relaxes rapidly. After injection the condition of the animal seems to have improved. It is lifted into the sterno-costal position and remains in it, taking more notice of its surroundings and sniffing at the hay. Soon the animal starts yawning and continues to do so for quite a time.

1.4.20: (6.30 a.m.) Animal is stretched out. When lifted, it is unable to carry its head. (2 p.m.) Treated again with 4 g. lithium carbonate dissolved in 1 litre saline filtered and injected into the jugular vein. During injection the pulse gets stronger (about 80 per minute). After injection, the animal is put in the sterno-costal position and remains in it. It looks decidedly better. Again it starts yawning.

2.4.20: (6.30 a.m.) Lying as left on previous night, but with head on ground. Froth at the mouth. Nostrils and muzzle dirty. Unable to carry its head. Respiration normal.

3.4.20: (6.30 a.m.) Found dead of lamsiekte.

SECTION E (a) (3) (i).

GOAT 17.

Weight, 36.3 kg.

1.3.20: (4 p.m.) Injected 1,000 × minimum lethal dose filtered toxin; 3.63 c.c. toxin mixed with 10.9 c.c. Lugol solution (i.e. three times the amount of toxin). No reaction.

15.3.20: (4 p.m.) Injected 3 × minimum lethal dose filtered toxin (immunity test). No reaction.

22.3.20: (3 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test). No reaction.

10.4.20: (10 a.m.) Injected 100 × minimum lethal dose filtered toxin (immunity test).

13.4.20: (7 a.m.) Unable to rise.

15.4.20: (7 a.m.) Dead of lamsiekte.

GOAT 18.

Weight, 31.7 kg.

1.3.20: (4 p.m.) Injected 1,000 × minimum lethal dose filtered toxin; 3.17 c.c. toxin mixed with 15.9 c.c. Lugol solution (five times the amount of toxin). No reaction.

15.3.20: (4 p.m.) Injected 3 × minimum lethal dose filtered toxin (immunity test). No reaction.

22.3.20: (3 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test). No reaction.

10.4.20: (10 a.m.) Injected 100 × minimum lethal dose filtered toxin (immunity test).

12.4.20: (7 a.m.) Goat has difficulty in rising.

13.4.20: (7 a.m.) Unable to rise.

14.4.20: (7 a.m.) Dead of lamsiekte.

GOAT 22.

Weight, 22 kg.

9.3.20: (4 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with twice the amount of Lugol solution. No reaction.

22.3.20: (3 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test). No reaction.

10.4.20: (10 a.m.) Injected 100 × minimum lethal dose filtered toxin (immunity test).

12.4.20: (7 a.m.) Goat has difficulty in rising.

13.4.20: (7 a.m.) Unable to rise.

16.4.20: (7 a.m.) Dead of lamsiekte.

GOAT 23.

- Weight, 36 kg.
 9.3.20: (4 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with 2½ times the amount of Lugol solution. No reaction.
 22.3.20: (3 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test). No reaction.
 10.4.20: (10 a.m.) Injected 100 × minimum lethal dose filtered toxin (immunity test).
 14.4.20: (7 a.m.) Unable to rise.
 16.4.20: (7 a.m.) Dead of lamsiekte.

GOAT 25.

- Weight, 43 kg.
 29.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with two and a half times the amount of Lugol solution.
 2.4.20: (5 p.m.) Shows difficulty in rising.
 4.4.20: (6.30 a.m.) Unable to rise.
 14.4.20: (7 a.m.) Improving in condition.
 23.4.20: (7 a.m.) Seems to have recovered completely.
 29.4.20: (4 p.m.) Bled ¼ litre.
 15.5.20: (11 a.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 18.5.20: (5 p.m.) Appears to be weak; it has difficulty in rising.
 19.5.20: (7 a.m.) Lying down, unable to rise. Can stand when lifted.
 20.5.20: (7 a.m.) No change.
 23.5.20: (7 a.m.) Entirely paralysed.
 24.5.20: (7 a.m.) No change.
 25.5.20: (7 a.m.) Dead of lamsiekte.

GOAT 24.

- Weight, 34 kg.
 29.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with two and a half times the amount of Lugol solution.
 3.4.20: (6.30 a.m.) Shows some difficulty in rising.
 4.4.20: (6.30 a.m.) Improved. It can rise without difficulty.
 5.4.20: (6.30 a.m.) Completely recovered.
 18.5.20: (5 p.m.) Injected 5,000 × minimum lethal dose filtered toxin mixed with three times the amount of Lugol solution. No reaction.
 3.6.20: (4 p.m.) Injected 10,000 × minimum lethal dose filtered toxin mixed with three times the amount of Lugol solution. No reaction.
 20.7.20: (10 a.m.) Injected 30 × minimum lethal dose filtered toxin (immunity test).
 23.7.20: (8 a.m.) Lying down, unable to rise. Cannot stand when lifted.
 24.7.20: (8 a.m.) Found dead of lamsiekte.

GOAT 44.

- Weight, 40 kg.
 6.4.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution and left in contact for three-quarters of an hour before injection. No reaction.
 15.5.20: (11 a.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 20.5.20: (7 a.m.) Appears to be weak and rises with difficulty. Lies often during the day. (5 p.m.) Unable to rise or stand.
 21.5.20: (7 a.m.) No change.
 23.5.20: (7 a.m.) Worse in condition. Entirely paralysed.
 24.5.20: (7 a.m.) Dies of lamsiekte.

GOAT 48.

- Weight, 39 kg.
 6.4.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution. No reaction.
 17.4.20: (10 a.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 22.4.20: (7 a.m.) Unable to rise; still able to stand for a few seconds. (5 p.m.) Entirely paralysed.

- 23.4.20: (7 a.m.) No change.
 25.4.20: (7 a.m.) Looks better. Feeds normally.
 27.4.20: (7 a.m.) Able to stand when lifted.
 29.4.20: (11 a.m.) Treated with 1 g. ferrous sulphate dissolved in 125 c.c. normal saline heated to body-temperature and infused intrajugularly. Signs of dyspnoea.
 3.5.20: (7 a.m.) No change.
 5.5.20: (10 a.m.) Treated with 3 g. ferrous sulphate dissolved in 300 c.c. normal saline warmed to body-temperature infused intravenously. Same symptoms as on 29.4.20.
 10.5.20: (7 a.m.) Improving in condition. Appetite good.
 18.5.20: (7 a.m.) No change. Lying, feeding eagerly.
 25.5.20: (7 a.m.) Improving. Tries to get up when approached; can rise in the forequarters, not in the hindquarters. Muscles of all four legs atrophied and contracted.
 28.5.20: (7 a.m.) Goat is now able to stand when lifted. All four legs bent.
 3.6.20: (7 a.m.) Able to rise. Both front legs are bent, so that the carpal joints touch the ground.
 7.6.20: (7 a.m.) Legs are getting straight again. Goat can walk better, but often knuckles under in carpal joints.
 13.6.20: (7 a.m.) Completely recovered from lamsiekte.

 GOAT 49.

- Weight, 57 kg.
 6.4.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution. No reaction.
 17.4.20: (10 a.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 22.4.20: (5 p.m.) Lying down, unable to rise. Can stand when lifted.
 23.4.20: (7 a.m.) No change.
 25.4.20: (7 a.m.) Appears to be better.
 27.4.20: (7 a.m.) Able to stand when lifted.
 3.5.20: (7 a.m.) No change.
 5.5.20: (9 a.m.) Treated with 3 g. barium chloride dissolved in 300 c.c. normal saline warmed to body-temperature and infused intravenously. As soon as the liquid ran into the vein, the goat started bleating, struggled, and showed signs of dyspnoea. Almost immediately after injection the animal was dead of shock, suffering from lamsiekte.

 GOAT 51.

- Weight, 45 kg.
 6.4.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution. No reaction.
 17.4.20: (10 a.m.) Injected 50 × minimum lethal dose filtered toxin (immunity test).
 19.4.20: (2 p.m.) Paralysed. Unable to rise or to stand.
 20.4.20: (7 a.m.) Dead of lamsiekte.

 GOAT 45.

- Weight, 34 kg.
 6.4.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution. No reaction.
 14.4.20: (11 a.m.) Injected 5,000 × minimum lethal dose filtered toxin mixed with three times the amount of Lugol solution. No reaction.
 26.4.20: (2 p.m.) Injected 25 × minimum lethal dose filtered toxin (immunity test).
 28.4.20: (7 a.m.) Lying down, unable to rise. Can stand and walk a little when assisted. (5 p.m.) Completely paralysed
 29.4.20: (7 a.m.) Found dead of lamsiekte.

 GOAT 53.

- Weight, 31 kg.
 6.4.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution. No reaction.
 14.4.20: (11 a.m.) Injected 5,000 × minimum lethal dose filtered toxin mixed with three times the amount of Lugol solution. No reaction.

- 26.4.20: (2 p.m.) Injected 15 × minimum lethal dose filtered toxin (immunity test).
 29.4.20: (7 a.m.) Paralysed; unable to rise.
 30.4.20: (7 a.m.) Found dead of lamsiekte.

GOAT 46.

- Weight, 59 kg.
 6.4.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution. No reaction.
 18.5.20: (5 p.m.) Injected 5,000 × minimum lethal dose filtered toxin mixed with three times the amount of Lugol solution. No reaction.
 5.6.20: (11 a.m.) Injected 10,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.
 20.7.20: (10 a.m.) Injected 20 × minimum lethal dose filtered toxin (immunity test).
 24.7.20: (8 a.m.) Lying down in physiological position. Tries to get up, but is unable to do so. Unable to stand when lifted. Feeding.
 25.7.20: (8 a.m.) No change.
 26.7.20: (8 a.m.) Worse in condition. Completely paralysed. (2 p.m.) Dies of lamsiekte.

SECTION E (a) (3) (ii).

TOLLIE 4847.

- Weight, 215 kg.
 30.3.20: (4 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with two and a half times the amount of Lugol solution. No reaction.
 13.4.20: (4 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 19.4.20: (2 p.m.) Shows distinct symptoms of lamsiekte. Unable to rise. Can walk when lifted.
 20.4.20: (7 a.m.) Condition worse. Stretched out flat on one side. (2 p.m.) Dies of lamsiekte.

HEIFER 4737.

- Weight, 250 kg.
 9.3.20: (4 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with twice the amount of Lugol solution (25 c.c. toxin, plus 75 c.c. Lugol solution). No reaction.
 22.3.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with twice the amount of Lugol solution. No reaction.
 29.3.20: (5 p.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 4.4.20: (5 p.m.) First symptoms of lamsiekte.
 5.4.20: (6.30 a.m.) Lying down, stretched out and groaning. From time to time it struggles violently. (10.30 a.m.) Treated with lithium carbonate 10 g. dissolved in 1 litre saline subcutaneously and 6 g. dissolved in 1 litre intravenously. No marked change is noted after injection.
 6.4.20: (6.30 a.m.) Dead of lamsiekte.

Cow 3320.

- Weight, 372 kg.
 6.4.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution, injected intravenously. No reaction.
 19.4.20: (11 a.m.) Injected 10 × minimum lethal dose filtered toxin (immunity test).
 21.4.20: (5 p.m.) Found lying at the manger salivating profusely. Can get up when driven.
 22.4.20: (7 a.m.) Much worse. Stretched out on one side. Unable to rise. (2 p.m.) Dies of lamsiekte.

HEIFER 4663.

- Weight, 273 kg.
 6.4.20: (5 p.m.) Injected 5,000 × minimum lethal dose filtered toxin mixed with four times the amount of Lugol solution. No reaction.
 19.4.20: (11 a.m.) Injected 50 × minimum lethal dose filtered toxin (immunity test).
 21.4.20: (7 a.m.) Found dead of lamsiekte.

SECTION E (a) (4).

HEIFER 4839.

Weight, 139 kg.

18.2.20: (5 p.m.) I minimum lethal dose filtered toxin injected into the tip of the tail. No reaction.

4.3.20: (5 p.m.) 5 × minimum lethal dose filtered toxin injected into tip of tail. No reaction.

15.3.20: (4 p.m.) Injected 2 × minimum lethal dose filtered toxin subcutaneously (immunity test). No reaction.

22.3.20: (3 p.m.) Injected 10 × minimum lethal dose filtered toxin subcutaneously (immunity test). No reaction.

17.4.20: (10 a.m.) Injected 25 × minimum lethal dose filtered toxin into tail (ventral surface).

19.4.20 (11 a.m.) Lying down; attempts to rise, but fails. Marked salivation.

20.4.20: (6 a.m.) Stretched out on one side. Marked salivation. (2 p.m.) Dead of lamsiekte.

Cow 230.

Weight, 295 kg.

16.3.20: (5 p.m.) Injected 10 × minimum lethal dose filtered toxin into tip of tail. No reaction.

7.4.20: (5 p.m.) Injected 5 × minimum lethal dose filtered toxin subcutaneously (immunity test). No reaction.

17.4.20: (10 a.m.) Injected 25 × minimum lethal dose filtered toxin into tail (ventral surface).

19.4.20: (6.30 a.m.) Lying down, stretched out with saliva running from mouth. Entirely paralysed. (11 a.m.) Blown up, marked dyspnoea. Enterocentesis carried out. Slight improvement. (2 p.m.) Dying. (5 p.m.) Dead of lamsiekte.

TOLLIE 4354.

Weight, 218 kg.

23.3.20: (3 p.m.) Injected 20 × minimum lethal dose filtered toxin into tip of tail.

27.3.20: (6.30 a.m.) First signs of lamsiekte. Animal lies down and makes unsuccessful attempts to rise. When lifted, it walks for some distance and then lies down again.

28.3.20: (9 a.m.) Unable to stand even when supported.

29.3.20: (6.30 a.m.) No change.

30.3.20: (6.30 a.m.) Entirely paralysed. Stretched out on one side.

31.3.20: (2 p.m.) Lying down breathing normally. Pulse imperceptible. Heart beats 72 to 80 times per minute. Treatment with ferrous sulphate: 80 grams dissolved in 1 litre normal saline solution, injected very slowly. As soon as the injection starts the animal shows dyspnoea and struggles once or twice. At the end of the injection the animal dies of shock, suffering from lamsiekte.

Cow 1936.

Weight, 367 kg.

6.4.20: (5 p.m.) Injected 5 × minimum lethal dose filtered toxin into tip of tail. No reaction.

17.4.20: (10 a.m.) Injected 25 × minimum lethal dose filtered toxin into tail (ventral surface of tail).

20.4.20: (7 a.m.) Found lying down. Rises fairly easily. Starts feeding. Unable to take food into mouth. Marked salivation. (5 p.m.) Unable to rise. Rises with difficulty when assisted.

21.4.20: (6 a.m.) Dead of lamsiekte.

Cow 2658.

Weight, 401 kg.

6.4.20: (5 p.m.) Injected 10 × minimum lethal dose filtered toxin into tip of tail. No reaction.

17.4.20: (10 a.m.) Injected 25 × minimum lethal dose filtered toxin into tail (ventral surface).

19.4.20: (11 a.m.) Lying down all the time. Able to rise when driven. Does not take water. (5 p.m.) Has difficulty in rising.

20.4.20: (6 a.m.) Dead of lamsiekte.

HEIFER 4686.

- Weight, 241 kg.
 8.4.20: (3 p.m.) Injected 20 × minimum lethal dose filtered toxin heated at 70° C. for five hours into tail (about 30 cm. from tip). No reaction.
 26.4.20: (2 p.m.) Injected 5 × minimum lethal dose filtered toxin (unheated) into the tip of tail.
 1.5.20: (7 a.m.) Feeding, but shows marked salivation. Recovered.
 8.5.20: (10 a.m.) Injected 10 × minimum lethal dose filtered toxin into tip of tail.
 9.5.20: (8 a.m.) Found lying. Tries to get up when approached, but unable to do so. Feeding normally, no signs of salivation. Able to stand when lifted. Walks with stiff gait.
 10.5.20: (7 a.m.) Animal is aggressive. No other change.
 11.5.20: (7 a.m.) No change.
 14.5.20: (7 a.m.) Condition unchanged.
 17.5.20: (7 a.m.) Same condition.
 20.5.20: (7 a.m.) No change.
 21.5.20: (7 a.m.) Worse in condition. Stretched out on one side. Feeds very slowly. (2 p.m.) Treated with 10 g. caffeine dissolved in 1 litre normal saline heated to body-temperature and injected intrajugularly. Slight reaction, muscular twitchings.
 22.5.20: (7 a.m.) Not feeding.
 24.5.20: (7 a.m.) No change.
 28.5.20: (7 a.m.) Animal is very poor.
 29.5.20: (10 a.m.) Treated with 50 grams antipyrin dissolved in 1 litre normal saline heated to body temperature and injected slowly intrajugularly. When about half of the liquid had been injected tetanic spasms of short duration were noticed. Then agony set in, and without any struggle animal died of shock, suffering from lamsiekte.

HEIFER 4740.

- Weight, 197 kg.
 27.3.20: (10 a.m.) Drenched with 4 oz. bleached ostrich bones. No reaction.
 26.4.20: (2 p.m.) Injected 10 × minimum lethal dose filtered toxin into tip of tail.
 30.4.20: (12 noon) Marked salivation. Tongue protruding. Animal still standing.
 1.5.20: (7 a.m.) Found standing; tries to feed, but unable to apprehend.
 2.5.20: (6 p.m.) Found lying; gets up with some difficulty. Animal is losing condition.
 3.5.20: (7 a.m.) Lying down, unable to rise.
 4.5.20: (7 a.m.) Stretched out, entirely paralysed. (3 p.m.) Dies of lamsiekte.

SECTION E (a) (5) (ii).

GOAT 75.

- Weight, 58 kg.
 14.5.20: (11 a.m.) Injected 0.000017 c.c. filtered toxin per kg. body-weight.
 No reaction.
 21.5.20: (11 a.m.) Injected 0.000051 c.c. filtered toxin per kg. body-weight.
 No reaction.
 23.5.20: (12 noon) Injected 0.000088 c.c. filtered toxin per kg. body-weight.
 No reaction.
 4.6.20: (4 p.m.) Injected 0.00017 c.c. filtered toxin per kg. body-weight.
 No reaction.
 11.6.20: (4 p.m.) Injected 0.00034 c.c. filtered toxin per kg. body-weight.
 No reaction.

GOAT 76.

- Weight, 70 kg.
 14.5.20: (11 a.m.) Injected 0.000035 c.c. filtered toxin per kg. body-weight.
 No reaction.
 21.5.20: (11 a.m.) Injected 0.0001 c.c. filtered toxin per kg. body-weight.
 No reaction.

- 28.5.20: (12 noon) Injected 0.0002 c.c. filtered toxin per kg. body-weight.
 No reaction.
 4.6.20: (4 p.m.) Injected 0.00042 c.c. filtered toxin per kg. body-weight.
 No reaction.
 11.6.20: (4 p.m.) Injected 0.00084 c.c. filtered toxin per kg. body-weight.
 No reaction.

 GOAT 77.

- Weight, 63 kg.
 14.5.20: (11 a.m.) Injected 0.000079 c.c. filtered toxin per kg body-weight.
 No reaction.
 21.5.20: (11 a.m.) Injected 0.0002 c.c. filtered toxin per kg. body-weight.
 No reaction.
 28.5.20: (12 noon) Injected 0.00047 c.c. filtered toxin per kg. body-weight.
 No reaction.
 4.6.20: (4 p.m.) Injected 0.00095 c.c. filtered toxin per kg. body-weight.
 11.6.20: (7 a.m.) Goat appears to be weak. It rises with some difficulty and shows a stiff gait.
 12.6.20: (7 a.m.) It turns out with the other goats. It lags behind and shows a stiff gait. It stops from time to time, lies down for a few minutes, then rises again and follows the others.
 15.6.20: (7 a.m.) Completely recovered.

 GOAT 79.

- Weight, 14 kg.
 15.5.20: (11 a.m.) Injected 0.000071 c.c. filtered toxin per kg. body-weight.
 No reaction.
 21.5.20: (11 a.m.) Injected 0.0002 c.c. filtered toxin per kg. body-weight.
 No reaction.
 28.5.20: (12 noon) Injected 0.00045 c.c. filtered toxin per kg. body-weight.
 No reaction.
 4.6.20: (4 p.m.) Injected 0.00085 c.c. filtered toxin per kg. body-weight.
 No reaction.
 11.6.20: (4 p.m.) Injected 0.0016 c.c. filtered toxin per kg. body-weight.
 No reaction.

 GOAT 81.

- Weight, 23 kg.
 15.5.20: (11 a.m.) Injected 0.00021 c.c. filtered toxin per kg. body-weight.
 No reaction.
 21.5.20: (11 a.m.) Injected 0.0004 c.c. filtered toxin per kg. body-weight.
 No reaction.
 28.5.20: (12 noon) Injected 0.0008 c.c. filtered toxin per kg. body-weight.
 No reaction.
 4.6.20: (4 p.m.) Injected 0.0017 c.c. filtered toxin per kg. body-weight.
 No reaction.
 11.6.20: (4 p.m.) Injected 0.0034 c.c. filtered toxin per kg. body-weight.
 18.6.20: (7 a.m.) Found lying down stretched out, completely paralysed.
 (8 a.m.) Killed *in extremis*, suffering from lamsiekte.

 SECTION E (a) (5) (iii).

 HORSE 13331.

- Weight, 349 kg.
 2.3.20: (3 p.m.) Injected 0.5 c.c. filtered toxin subcutaneously. No symptoms.
 12.3.20: (3.30 p.m.) Injected 0.5 c.c. filtered toxin subcutaneously. No symptoms.
 20.3.20: (11 a.m.) Injected 1 c.c. filtered toxin subcutaneously. No symptoms.
 27.3.20: (11 a.m.) Injected 2 c.c. filtered toxin subcutaneously. No symptoms.
 3.4.20: (11 a.m.) (Live-weight, 287 kg.) Injected 5 c.c. filtered toxin (unheated), plus 10 c.c. filtered toxin heated to 70° C. for twelve hours, subcutaneously. No symptoms, but animal is gradually losing condition.
 9.4.20: (2 p.m.) Lying down in a very weak and emaciated condition. Unable to stand when lifted.
 10.4.20: (6 a.m.) Found dead of lamsiekte.

HORSE 11440.

- Weight, 389 kg.
 2.3.20: (3 p.m.) Injected 1 c.c. filtered toxin subcutaneously. No symptoms.
 12.3.20: (3.30 p.m.) Injected 1 c.c. filtered toxin subcutaneously. No symptoms.
 20.3.20: (11 a.m.) Injected 2 c.c. filtered toxin subcutaneously. No symptoms.
 27.3.20: (11 a.m.) Injected 4 c.c. filtered toxin subcutaneously. No symptoms.
 3.4.20: (11 a.m.) (Live-weight, 311 kg.) Injected 10 c.c. filtered toxin (unheated), plus 20 c.c. filtered toxin heated to 70° C. for twelve hours, subcutaneously.
 12.4.20: (7 a.m.) Animal stands on same spot. Greenish-coloured discharge from nostrils (regurgitation).
 13.4.20: (7 a.m.) Dead of lamsiekte.

HORSE 12394.

- Weight, 413 kg.
 10.3.20: (4 p.m.) Injected 0.5 c.c. filtered toxin subcutaneously. No symptoms.
 20.3.20: (11 a.m.) Injected 1 c.c. filtered toxin subcutaneously. No symptoms.
 27.3.20: (11 a.m.) Injected 2 c.c. filtered toxin subcutaneously. No symptoms.
 3.4.20: (11 a.m.) (Live-weight, 410 kg.) Injected 5 c.c. filtered toxin (unheated), plus 10 c.c. filtered toxin heated to 70° C. for twelve hours, subcutaneously.
 10.4.20: (7 a.m.) Looks dull and weak.
 12.4.20: (7 a.m.) Very poor in condition; so weak that it can hardly walk.
 13.4.20: (7 a.m.) Worse in condition.
 14.4.20: (11 a.m.) About 2 litres blood withdrawn from jugular vein in order to examine serum (see horse 7862). The blood-smears show a very marked leucocytosis.
 22.4.20: (2 p.m.) Animal has lost condition during the last few weeks. It is exceedingly poor now and unable to get up, even when assisted. It is placed in stable. Appetite still good. (5 p.m.) Found standing and feeding.
 23.4.20: (7 a.m.) Animal stretched out, restless, struggling. Makes several attempts to rise, but cannot even get into sterno-costal position. Faeces of the consistency of cow-dung; of a reddish tinge. (5 p.m.) Animal very restless, lying flat on one side. It is paralysed completely and cannot stand even when lifted.
 24.4.20: (7 a.m.) Found dead.

HORSE 11182.

- Weight, 381 kg.
 10.3.20: (4 p.m.) Injected 0.5 c.c. filtered toxin subcutaneously. No symptoms.
 20.3.20: (11 a.m.) Injected 1 c.c. filtered toxin subcutaneously. No symptoms.
 27.3.20: (11 a.m.) Injected 2 c.c. filtered toxin subcutaneously. No symptoms.
 30.3.20: (7 a.m.) Found dead in veld in an advanced state of decomposition. No post-mortem examination possible.

HORSE 13530.

- Weight, 443 kg.
 29.3.20: (3.30 p.m.) Injected 0.5 c.c. filtered toxin subcutaneously. No symptoms.
 7.4.20: (3.30 p.m.) Injected 1 c.c. filtered toxin subcutaneously.
 10.4.20: (6 a.m.) Looks dull and weak.
 12.4.20: (7 a.m.) Same condition.
 13.4.20: (7 a.m.) No change. Animal has been losing condition steadily.
 14.5.20: (10.30 a.m.) Injected 5 c.c. filtered toxin subcutaneously.
 (12.30 p.m.) Animal noticed to be sick. Eyes half closed with a watery

discharge. Greenish discharge from the nostrils, containing mucus and food-stuffs (lucerne). Floor of stable soiled with this discharge and froth. Pulse strong, 32 per minute; temperature, 97° F. (2 p.m.) Slight improvement. Temperature, 97.8° F. (5 p.m.) Feeding very slowly. Looks dull.

15.5.20: (7 a.m.) Looks much better, feeding normally.

19.5.20: (5.30 p.m.) Injected 15 c.c. filtered toxin subcutaneously. No reaction.

20.5.20: (5 p.m.) Looks dull and feeds very slowly.

21.5.20: (7 a.m.) Looks dull, stands on same spot, feeds slowly. (5 p.m.) Not feeding.

22.5.20: (7 a.m.) Condition unchanged. Pulse very slow (28 per minute), hardly perceptible.

23.5.20: (7 a.m.) No change. (5 p.m.) Feeding a little. Animal is very weak and dull, and lies down most of the time.

24.5.20: (7 a.m.) Found lying on side with head and legs stretched out. The animal is entirely paralysed and is unable to lift its head or to remain in sterno-costal position. Foodstuffs in nostrils (regurgitation). Pulse almost imperceptible and slow (28 to 32 per minute).

25.5.20: (7 a.m.) Animal still alive. Stretched out on side. Dirty green discharge from nostrils. Pulse imperceptible. Breathing accelerated, 54 to 60 times per minute; respiration deep, of abdominal type, the whole body is moved and the anus is protruded at every movement. Urine flows continually. (3.30) Dies of lamsiekte.

SECTION 5.—ISOLATION AND DESCRIPTION OF THE TOXICOGENIC SAPROPHYTE.

THE article on "Cause and Prevention of Lamsiekte" published in the *Journal of the Department of Agriculture*, June, 1920, by Theiler and co-workers contains notes on the toxin producing lamsiekte and upon impure cultures in which three sporulating anaerobes were constantly present (page 9). Spasmodic further work at different dates by Du Toit, Green, Meyer, Andrews, and Fourie, carried the problem of isolation a little further, but it was left to the present writer (E. M. Robinson) to effect the final isolation and identification of the single causal organism as a member of the *parabotulinus* group.

The actual final separation was made from mixed cultures of anaerobes in meat mash media [Robertson (2)], supplied by Fourie, Officer in Charge of the Experiment Station at Vryburg.

These cultures had been obtained from colonies in glucose shake media, and had proved toxic for rabbits. They, however, like previous partially purified cultures, were found on further examination to contain at least three types of bacteria, and the actual isolation of the real toxicogenic saprophyte was only accomplished after several months of uninterrupted painstaking work. The present paper offers a preliminary description of the organism and of the symptoms produced in animals by the toxin in pure cultures in various media; a more detailed study being left over for a separate later article.

From analogy of similar studies in the existing literature, a botulinus group of organism was suspected and innumerable glucose agar shake cultures were, therefore, made from those impure toxic cultures in which any organism of any of the botulinus types appeared to be dominant over the other species. The first colonies did not produce any toxin in meat mash medium. After making a further series of dilution experiments with the toxic cultures, rediluting from the highest dilution in which growth still occurred when sown in