

- 15.2.20: (9 a.m.) Animal salivating; chewing without food in the mouth.  
 16.2.20: (6 a.m.) Somewhat worse. Lying down. Animal has difficulty in getting up. (5 p.m.) Worse. Very poor in condition. Salivates profusely.  
 17.2.20: (6 a.m.) No change. Salivating. Not ruminating.  
 18.2.20: (6 a.m.) Attempts to get up, but fails. (5 p.m.) Very weak, completely paralysed. Treatment with 1 kg. sodium chloride dissolved in 5 litres water subcutaneously. No ill effects.  
 19.2.20: (6 a.m.) Still alive, but very weak. (9 a.m.) Dies of lamsiekte.

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 SECTION C (b).
 

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## HORSE 11996.

- Gelding. Age, eight years. Weight, 885 lb.=401.4 kg.  
 23.2.20: (5 p.m.) Injected 20 c.c. toxin diluted with 180 c.c normal saline and filtered through a Berkefeld candle, subcutaneously.  
 24.2.20: (6 a.m.) Animal looks dull, but feeds. (5 p.m.) Animal is ill, sweats profusely, and shows signs of colic. (7 p.m.) Lying down, tries to rise, but breaks down in front legs.  
 The mucous membranes are highly injected. Pulse, 72; respiration, 24.  
 25.2.20: (7 a.m.) Lying down, unable to rise. Tongue is paralyzed; when drawn out of the mouth it remains hanging out. The animal presents a typical picture of lamsiekte. (12 noon) Dies.

## POST-MORTEM.

DOB No. 11996. Gelding. Eight years. Dark bay.  
 P.M. No. 14659. Date of death, 25.2.20.  
 Condition fair. Abdomen somewhat distended. Interim, about three hours. Rigor mortis present in hind, absent in fore. Integument, abrasions. Natural openings, mouth open; visible mucous membranes, nothing unusual. Blood, nothing unusual; flesh, nothing unusual; subcutaneous tissue, fat well developed. Salivary glands, nothing unusual. Thyroid, nothing unusual. Lymphatic glands, nothing unusual. Tongue shows abrasions. Oesophagus, nothing unusual. Pharynx shows traces of ingesta. Peritoneal cavity, nothing unusual. Diaphragm, convexity forwards. Pleural cavities, nothing unusual. Respiratory organs: lungs in state of expiration. Pleura pulmonales shows petechiae and small, short thickenings, otherwise smooth and glistening. Larynx, some froth present and small point-formed petechiae. Bronchi and trachea (thoracic portion), traces of froth present; parenchyma of lungs pink-red coloured, very moist, blood drops off; consistency elastic. Pericard. some fat present; pericardial sac contains 100 c.c. brandy-coloured clear liquid. Circulatory organs: vena cava-caudalis, hepatica, and porta, nothing unusual; heart 24 by 18 cm., enormously dilated; right ventricle blood not coagulated, some froth present, endocardium nothing unusual; left ventricle empty, some petechiae present; vasa-cordis, nothing unusual; epicardium shows numerous petechiae and hæmorrhagic patches, especially along grooves which contain fat; parenchyma greyish-red coloured; thoracic aorta, nothing unusual. Pulmonary veins and arteries, nothing unusual. Abdominal aorta, nothing unusual. Arteria mesenterica anterior enlarged, thickened. Intima rough, contains a coagulum. Liver: capsule shows small, white-coloured thickenings; shape and size, nothing unusual; parenchyma very moist, blood drops off; in parenchyma and capsule, small round white nodules, size of pin's head, consistence friable. Bile-ducts, nothing unusual. Pancreas hyperæmic. Spleen: 37 by 20 by 2 cm.; shape and size, nothing unusual; capsula smooth and glistening, shows some small petechiae; parenchyma moist, greyish-red; on pressure blood escapes. Suprarenal glands, nothing unusual. Kidneys: capsula adiposa, fat well developed; capsula fibrosa strips easily; parenchyma moist, very friable; cortex like boiled meat. Small intestines: Duodenum reddish-coloured, highly injected; small intestines partly injected, partly deep red colour; species of ascaris megalocéphala. Large intestines same as small intestines; rectum filled; mucosa, nothing unusual; colon descendens shows dirty greyish mucus, and mucosa some petechiae. Caecum: ingesta present in small quantities. Stomach: in pylorus portion adhering to mucosa, numerous gastrophilus larvae; the same near the entrance of the oesophagus; fundus portion highly injected in patches and streaks. Contents of stomach normal, and contains some species of ascaris megalocéphala. Bladder filled; urethra open, nothing unusual; urine normal. Sexual organs, nothing unusual. Nervous system: Brain—pia-mater highly injected. Blood-smear, negative.

*Pathological Anatomical Diagnosis:* Petechiac on epicardium, pleura and capsula of spleen; dilatation of heart. Oedema and hyperaemia of lungs; pleuritis fibrosa; peri-hepatitis fibrosa; hepatitis calcaria. Hyperaemia of liver and kidneys; gastrophilus larvae, ascaris megaloccephala.

*Etiological Diagnosis (disease):* Lamsiekte.

#### HORSE 12963.

Gelding. Weight, 782 lb.=354 kg.

26.2.20: (4 p.m.) Injected 5 c.c. toxin, diluted 1 in 20, subcutaneously, i.e. .01 c.c. per kg.

28.2.20: (5 p.m.) Animal is ill. Its tongue hangs out and cannot be withdrawn. Eyes half closed (ptosis). Conjunctiva highly injected. Petechiae present. Pulse, 72.

29.2.20: (7 a.m.) No change. (5 p.m.) Same condition; eyelids half closed and swollen.

1.3.20: (6 a.m.) Same condition, purulent discharge from nose. Tongue swollen, oedematous, cold. (5 p.m.) Tongue washed with alum solution.

2.3.20: (6 a.m.) No change. (5 p.m.) Much improved. Tongue only hangs out about 1 inch. The tongue is washed with alum, the mouth is rinsed out with a 2 per cent. potassium permanganate solution. The mucous membrane of the tongue seems to be necrotic; it comes off in patches.

3.3.20: (6 a.m.) Further improvement. Tongue is now completely withdrawn. There is only some foam at the mouth. (5 p.m.) Animal in very weak condition. The tongue is again slightly protruded. Body temperature, 95.4° F. Legs very weak; can hardly support the body.

4.3.20: (7 a.m.) Animal lying down stretched out flat. The tongue is slightly protruded. Pulse imperceptible. Body temperature, 87.3° F. (9 a.m.) Killed.

#### POST-MORTEM.

DOB No. 12963. Gelding. Fifteen years. Grey.

P.M. No. 14672. Date of death, 4.3.20.

Condition poor. Abdomen relaxed. Interim, killed about one hour ago. Rigor mortis not present. Integument intact. Natural openings: anus slightly open, mouth slightly open, tongue protruding. Visible mucous membranes, nothing unusual. Blood, liquid; flesh rich in blood, dark red in colour; blood-vessels of subcutaneous tissue well filled. Salivary glands, nothing unusual. Lymphatic glands, nothing unusual. Peribronchial glands very moist. Tongue, lesions on tip (teeth marks); mucous membranes on whole tongue, necrotic (consistence of cheese). Oesophagus and pharynx, nothing unusual. Peritoneal cavity—situs viscerum, nothing unusual. Diaphragm, convexity forwards. Pleural cavities, nothing unusual. Pleura smooth and glistening. Respiratory organs: larynx and trachea mucous membranes distinctly yellow; pulmonary arteries and veins, nothing unusual. Lungs—pleura smooth and glistening; left lung appears gelatinous, right one spongy; bronchi of left lung filled with froth and mucus, on pressure, yellow purulent matter escapes from broncheoli: on section parenchyma of left lung shows dark red patches, with blood and froth oozing out; in heart-lobe parenchyma has the consistency of liver; right lung slightly emphysematous, otherwise nothing unusual. Pericardium, some gelatinous fat present and about 30 c.c. golden-yellow liquid in sac. Circulatory organs: heart enormously distended, 27 by 21 cm.; epicardium smooth and glistening; right ventricle distended, filled with coagulated blood; endocardium, nothing unusual; valves show fibrous thickenings; left ventricle almost empty; endocardium shows thickenings, especially on valves; myocardium very thick and rather friable; thoracic aorta, nothing unusual; abdominal aorta, nothing unusual. Periportal glands, nothing unusual. Liver: shape and size nothing unusual; capsula shows some fibrous filaments in patches: a few calcified parasitic nodules, colour bluish-grey; parenchyma, nothing unusual, rich in blood. Pancreas, nothing unusual. Spleen, swollen, 50 by 25 by 5 cm; capsula smooth, edges blunt, colour bluish-grey; on section, parenchyma almost black, pulpa flows, the structure of spleen indistinguishable. Suprarenal glands, nothing unusual. Kidneys: capsula contain some gelatinous fat, and strips fairly easily; parenchyma, nothing unusual. Stomach: pyloric portion contains a large quantity of liquid and ingesta; numerous gastrophilus larvae present; fundus, mucous membranes swollen and injected, gastrophilus larvae present; cardiac portion; mucous membranes, nothing unusual, also gastrophilus larvae present. Small intestines: mucous membranes slightly swollen and injected. Large

intestines: rectum filled with dry, hard faeces covered with mucus; mucous membranes, nothing unusual; large intestines contain a small quantity of liquid ingesta; mucous membranes of caecum injected; in colon, a few specimens of sclerostomum; mucous membranes, nothing unusual. Mesenteric glands, small and moist; mesentery, no fat present. Sexual organs, nothing unusual. Nervous system, brain-vessels of pia-mater very strongly marked, otherwise nothing unusual. Blood-smear, negative.

*Pathological Anatomical Diagnosis:* Necrosis of mucous membrane of tongue. Slight icterus. Oedema of left lung. Bronchitis purulenta (left lung). Emphysema of right lung. Hepatization of cranial portion of left diaphragmatic lobe. Dilatatio cordis. Endocarditis verrucosa. Perihepatitis fibrosa. Parasitic nodules in liver. Tumor lienis. Gastrophilus larvae in stomach. Sclerostomum species in colon. Slight gastro-enteritis.

*Etiological Diagnosis (disease):* Lamsiekte. (Killed.)

#### HORSE 13330.

Mare. Weight, 705 lb.=319 kg.

26.2.20: (4 p.m.) Injected 1 c.c. toxin subcutaneously, i.e. 0.003 c.c. per kg.

29.2.20: (5 p.m.) Animal seems to have an attack of colic; it is rolling about.

1.3.20: (6 a.m.) Seems better. (2 p.m.) Tongue protruding a little. Eyelids drooping. Discharge from nostrils. Moving the head about all the time.

2.3.20: (6 a.m.) Condition improved. Tongue has been withdrawn and the eyes are open. (5 p.m.) Apparently recovered.

4.3.20: (6 a.m.) Animal still rather dull. Eyes half closed. Feeding.

5.3.20: (5 p.m.) Injected 1 c.c. filtered toxin subcutaneously.

8.3.20: (6 a.m.) Animal stands in same position, unable to walk. Flanks sunken. Green discharge from nostrils (regurgitation). Groaning.

9.3.20: (6 a.m.) Found dead.

#### POST-MORTEM.

DOB No. 13330. Mare. Ten years.

P.M. No. 14674. Date of death, 9.3.20.

Condition very poor. Abdomen relaxed. Interim, died during night. Rigor mortis present. Integument, some abrasions, especially on head. Natural openings closed, nostrils soiled; visible mucous membranes injected. Blood coagulated, stains well, and somewhat black in colour; flesh somewhat dry; subcutaneous tissue contains no fat, is dry. Salivary glands, somewhat yellow tinged. Lymphatic glands, nothing unusual. Thyroid, nothing unusual. Tongue set with a green-black dirty mass, otherwise nothing unusual. Oesophagus: one gastrophilus larva; mucous membranes decomposed; cervical portion filled with ingesta. Pharynx and aboral side of velum palatini, traces of ingesta. Peritoneal cavity—situs viscerum, nothing unusual. Serosa somewhat injected. Diaphragm rather tense. Pleural cavities, a yellow-red-green liquid, somewhat thick. Costal pleura highly injected, with hæmorrhagic patches. Respiratory organs: lungs in state of inspiration; pleura smooth and glistening, tense; larynx and trachea contain a reddish-tinged turbid liquid and traces of ingesta; mucous membranes show injection and petechiae; small subpleural petechiae present; pulmonary veins and arteries filled by clots of blood; parenchyma of bases of diaphragmatic lobes and along lobi obtusi, elastic, on section dark red, blood drops off and froth escapes; parenchyma of other parts, consistence compact, not elastic; interstitial tissue of lobi enlarged, otherwise shows small and larger grey-greenish foci, of irregular form, from which a dirty mass can be pressed out; air bubbles on edges of cranial lobes; bronchi and trachea (thoracic portion) filled with froth; mucous membranes covered with dirty blue-greenish coloured mucus, and a necrotic mass. Pericard contains a reddish wine-coloured liquid, about 100 c.c., otherwise nothing unusual. Circulatory organs: heart, 20.5 by 19 cm.; epicardial fat present in small quantities, moist; numerous hæmorrhagic patches and petechiae, otherwise grey; right ventricle atrium and its afferent vasa filled with coagulated black blood; left ventricle, ditto; endocardium of both shows small petechiae; vasa-cordis, nothing unusual; in semi-lunar valves, in aorta behind the left coronary artery, two yellow hard thickenings, size of a pea; myocardium has an appearance of cooked meat and is very friable; abdominal aorta, nothing unusual; mesenteric artery thickened, intima roughened. Periportal glands, nothing unusual. Liver: partly attached by fibrous filaments to diaphragm. Vena cava-caudalis,

hepatica, and porta hæmoglobin stained. Liver, normal shape, somewhat thickened. Ductus hepaticus, nothing unusual; parenchyma on section, very moist, blood drops off; acini easily distinguished, consistence rather friable. Pancreas, beginning of decomposition. Spleen: normal shape and size, 55 by 20 by 1½ cm.; capsula smooth and glistening; small point-formed petechiae; parenchyma, consistency firm, red-brown colour, with small irregularly-shaped brick-red spots; trabeculae and folliculi distinct. Suprarenal glands, nothing unusual. Kidneys: capsula fibrosa strips easily; surface of kidney shows small petechiae and injections; on section blood drops off; cortex highly injected, otherwise nothing unusual. Stomach: in serosa, vessels marked; contents are grass, liquid, and numerous gastrophilus larvae; fundus mucosa set with a thick mucus and highly injected, with hæmorrhagic patches. Small intestines and large ditto, injected, partly deep red discoloured, specimen of gastrophilus larvae present. Large intestines: rectum contains well-formed faeces, dry, covered with ochre-yellow mucus. Mucosa highly injected. Mesenteric glands, nothing unusual. Mesentery somewhat injected. Bladder: empty, contracted. Veins very marked. Sexual organs—udder: induration, ovaries enlarged, fibrous degeneration, cysts and corpora lutea present; uterus enlarged, hyperaemic, and covered with grey mucus. Nervous system—brain: pia-mater injected, decomposition started. Blood-smear, negative.

*Pathological Anatomical Diagnosis:* General atrophy; petechiae and hæmorrhagic patches in pleura, pericard and epicardium, and capsula of spleen. Myo-degeneratio cordis. Endocarditis nodularis fibroplastica. Pneumonia gangraenosa (due to aspiration). Emphysema agonale. Oedema pulmonum tracheitis and bronchitis ichorosa. Peri-hepatitis fibroplastica adhaesiva. Hyperaemia of lungs, liver, and kidneys. Aneurysma cranial mesenteric artery. Gastrophilus larvae in oesophagus, stomach, and intestines. Gastro-enteritis catarrhalis.

*Etiological Diagnosis (disease):* Septicaemia, due to pneumonia gangraenosa.

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#### SECTION C (c).

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##### DONKEY 13789.

- 15.7.20: (2 p.m.) Injected 10 c.c. filtered toxin subcutaneously.  
 19.7.20: (2 p.m.) Animal looks dull, does not feed.  
 20.7.20: No change.  
 22.7.20: Condition much worse. Animal is stretched out on one side, unable to rise.  
 23.7.20: (9.30 a.m.) Dies of lamsiekte.

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#### SECTION C (d).

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##### GOAT 1.

- Weight, 48 kg.  
 7.2.20: (11 a.m.) Injected 0.24 c.c. filtered toxin subcutaneously (i.e. 0.0005 c.c. per kg. body-weight).  
 8.2.20: (12 a.m.) Goat is paralysed. It lies down with its head on the ground. When lifted up it falls down again and the head drops against the body. No mydriasis and no salivation. Faeces are passed involuntarily (paralysis of sphincter ani).  
 9.2.20: (6 a.m.) Found dead.

##### POST-MORTEM.

DOB No. 1. Kapater.  
 P.M. No. 14646. Date of death, 9.2.20.  
 Condition fair. Abdomen distended. Interim, died during night. Rigor mortis present. Integument, intact. Natural openings, mouth open, anus protruding; visible mucous membranes, nothing unusual. Blood, nothing unusual; flesh, nothing unusual; subcutaneous tissue, fat well developed, otherwise nothing unusual. Salivary glands; moist, on pressure blood escapes. Lymphatic glands somewhat injected. Tongue, nothing unusual. Pharynx, mucous membranes post-mortem changes. Tonsilla palatini highly injected. Thyroid, nothing unusual. Oesophagus contains ochre-yellow ingesta; mucous membranes decomposed. Peritoneal cavity—situs viscerum, nothing unusual. Serosa of intestines shows hæmorrhagic patches, size varying from

pin's head to penny, irregular shape. Diaphragm, convexity forwards. Pleural cavities, about 100 c.c. wine-red liquid. Respiratory organs: lungs in expiratory state; pleura smooth, pink and blue-red in parts; pulmonary veins and arteries hæmoglobin stained; bronchi and trachea contain froth and wine-red liquid; mucous membranes, hæmoglobin stained; parenchyma bright pink red to dark red, not very elastic, and rather heavy, blood and gas escape on pressure; peribronchial and mediastinal glands somewhat injected; larynx and trachea (cervical) highly injected, some ingesta present. Pericard: fat well developed; sac contains about 50 c.c. wine-red liquid. Circulatory organs: heart: 9.5 by 8 c.c.; dilated in both ventricles, coagula present; epicardial fat well developed, vessels very distinct; right endocardium, post-mortem state; left endocardium, post-mortem state; petechiae; vasa-cordis, nothing unusual; myocardium, grey-brown colour and very friable; intima wine-red tinged. Liver: broken, very soft, and friable (post-mortem changes); colour, light-grey red; on pressure gas escapes. Gall-bladder filled; bile, green colour, clear with flocculi; ductus choledochus, nothing unusual. Pancreas, post-mortem changes. Spleen, greyish-red colour; parenchyma soft. Suprarenal glands, nothing unusual. Kidneys in advanced post-mortem stage; hæmoglobin stained. Stomach: abomasum contains rather dry ingesta; mucous membranes, nothing unusual; omasum filled with green-yellow dry ingesta; mucous membranes, post-mortem state; reticulum: a small quantity of yellow-green ingesta; mucous membranes, post-mortem state; rumen much distended with gas; contents rather soft; mucous membranes, post-mortem state. Small and large intestines show numerous hæmorrhagic patches; shape irregular (*vide* peritoneal cavity). Duodenum, nothing unusual. Large intestines: rectum empty; mucous membranes set with greyish mucus; in rumen some seeds of "Elands' Boontjie." Mesenteric glands, nothing unusual. Mesentery, fat well developed. Bladder, nearly empty. Urine: yellow coloured, turbid. Sexual organs, nothing unusual. Nervous system, post-mortem state. Skeleton, nothing unusual. Blood-smear on examination, putrefactive bacilli.

*Pathological Anatomical Diagnosis*: Advanced post-mortem state of all organs. Tympanitis, dilatation of heart, oedema pulmonum. Hyperaemia of lungs (partly hypostasia) and kidneys. Petechiae in endocardium and intestines (gastritis hæmorrhagica). Strongly marked hyperaemia of larynx and trachea (sequel to aspiration).

*Etiological Diagnosis (disease)*: Lamsiekte.

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#### GOAT 2.

Weight, 54 kg.

7.2.20: (11 a.m.) Injected 0.027 c.c. filtered toxin subcutaneously (i.e. 0.0005 c.c. per kg. body-weight).

9.2.20: (7 a.m.) Goat appears ill. It lies down and can only be induced with difficulty to get up. In getting up it stumbles and seems to be weak in the joints. It walks for a couple of yards and lies down again. (3.30 p.m.) Unable to get up at all. When lifted it drops down again. The head is turned back on the body. Animal bleats with a feeble voice.

10.2.20: (6 a.m.) Found dead. Mouth is slightly open and about 2 oz. of greenish ingesta are lying at the mouth. A large quantity of faeces has been passed.

#### POST-MORTEM.

DOB No. 2. Kapater. White.

P.M. No. 14647. Date of death, 10.2.20.

Condition fair. Abdomen somewhat distended. Interim, died during night. Rigor mortis present in hindquarters, strongly marked in muscles of mouth. Natural openings: mouth closed, tongue hanging out, mucosa of anus protruding; visible mucous membranes nothing unusual. Blood, nothing unusual; flesh, nothing unusual; subcutaneous tissue, fat well developed. Salivary glands, nothing unusual. Lymphatic glands, nothing unusual. Thymus somewhat moist. Thyroid, nothing unusual. Some ingesta on tongue. Pharynx contains some ingesta. Oesophagus, some yellow ingesta. Peritoneal cavity—situs viscerum, nothing unusual. Intestines somewhat distended with gas. Diaphragm, convexity forwards. Pleural cavities, some blood-coloured liquid present. Respiratory organs: lungs in intermediate state; pleura smooth and glistening, transparent, with a few small petechiae; pulmonary veins and arteries contain liquid blood; bronchi and trachea (thoracica) contain froth mixed with a large quantity of green ingesta; mucous membranes somewhat

injected; parenchyma of left lung of flesh-like consistency, dark red in colour, blood cozes off, also froth and some ingesta on pressure, very heavy; right lung pink in colour, rather elastic, otherwise as left; larynx and trachea (cervical), some ingesta; mucous membranes, nothing unusual. Pericard, fat well developed; normal consistence. Circulatory organs: heart, 9 by 5 by 8 cm., dilated; epicardium, vessels distinct, small point-formed petechiae visible, especially in fat; right ventricle endocardium, nothing unusual; left ventricle endocardium, petechiae on the papillary muscles; vasa-cordis, nothing unusual; myocardium of grey-red colour, on pressure blood escapes; consistence somewhat friable; aorta thoracica, nothing unusual. Periportal glands moist. Liver: capsula shows some greyish thickenings in patches and filamentous; shape of liver normal, but somewhat thickened. Gall-bladder filled; bile dirty, green colour; mucous membranes rough. Ductus choledochus and cysticus open, stilesia hepatica present. Vena porta, cava-caudalis, and hepatica, nothing unusual; liver, parenchyma moist, blood drops off: bile-ducts appear thickened; consistence firm. Pancreas, vessels distinct. Spleen, normal size and shape; capsula, nothing unusual; parenchyma, wine-red-pink. Trabeculae and follicles distinct; consistency soft. Suprarenal glands, nothing unusual. Kidneys: capsula fibrosa strips off easily; parenchyma on section blood escapes; zones not very distinct; consistency friable. Stomach: abomasum contains liquid ochre-yellow ingesta; mucous membranes of fundus greyish-black, thickened, and set with mucus; vessels very distinct; petechiae and hæmorrhagic patches, especially on folds; omasum contents soft; mucous membranes, nothing unusual; rumen, contents semi-liquid, some seeds of "Elands' Boontje" present; mucous membranes, nothing unusual; reticulum nearly empty, seeds of "Elands' Boontje" present; mucous membranes, nothing unusual. Small intestines: mucous membranes somewhat thickened, reddish-coloured, and injected; duodenum empty, highly injected: large intestines: rectum, a small amount of pellet-like faeces present, covered with mucus; mucosa partly injected; large intestines show red patches; mucosa set with mucus. Mesenteric glands injected; mesentery, fat well developed. Bladder empty, contracted; mucosa, nothing unusual. Sexual organs, nothing unusual.

*Pathological Anatomical Diagnosis:* Slight tympanitis. Petechiae on pleura pulmonum, epicardium, and endocardium. Hyperaemia of lungs (hypostasis). Oedema pulmonum. Hyperaemia of liver and kidneys. Perihepatitis fibrosa, hepatitis interstitialis, due to stilesia hepatica. Gastroenteritis catarrhalis.

*Etiological Diagnosis (disease):* Lamsiekte.

### GOAT 3.

Weight, 41 kg.

7.2.20: (11 a.m.) Injected 0.004 c.c. filtered toxin subcutaneously (i.e. 0.0001 c.c. per kg. body-weight).

12.2.20: (12 a.m.) Goat is noticed to be unwell. It lies most of the time and walks with a peculiar gait. (5 p.m.) Weakness in hind legs. Animal has difficulty in getting up.

13.2.20: (6 a.m.) Paralytic symptoms were pronounced. Animal lies down, and when helped up it can walk for a few yards and then drops down again.

14.2.20: (6 a.m.) Goat can still walk a few steps when held in position. It then falls down.

15.2.20: (6 a.m.) Condition unchanged.

16.2.20: (6 a.m.) When lifted, it drops down almost immediately.

18.2.20: (6 a.m.) No change.

20.2.20: (6 a.m.) Condition unchanged. When lifted, it can stand for a few seconds and then falls down again.

21.2.20: (6 a.m.) Slight improvement. When lifted, the goat will stand for a few minutes, and will even move the legs before it drops down rather abruptly. Animal has lost condition.

22.2.20: (6 a.m.) Further improvement. The goat will stand for several minutes when lifted, during which time it passes a large quantity of urine. It even walks a few steps and then lies down.

23.2.20: (6 a.m.) No change.

24.2.20: (6 a.m.) Great improvement. With some assistance the animal can get up now and walk a few steps; it then lies down in an almost normal way.

25.2.20: (5 p.m.) Goat can now get up by itself and walk some distance.

27.2.20: (6 a.m.) Animal is still rather weak, otherwise normal.

28.2.20: (6 a.m.) Goat is running about in the stable. It has quite recovered.

- 1.3.20: (11 a.m.) Bled 350 c.c.  
 4.3.20: (5 p.m.) Weight, 27 kg. Injected 1 × minimum lethal dose filtered toxin subcutaneously. No reaction.  
 15.3.20: (4 p.m.) Injected 5 × 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: (11 a.m.) Goat has considerable difficulty in rising.  
 29.3.20: (6.30 a.m.) Unable to rise. Able to stand and walk when lifted.  
 31.3.20: (6.30 a.m.) Improved. Able to rise.  
 2.4.20: (6.30 a.m.) Recovered.  
 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.) Completely paralysed.  
 15.4.20: (11 a.m.) Dies of lamsiekte.

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SECTION C (e).

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SHEEP 1.

- Weight, 52 kg.  
 9.2.20: (3.30 p.m.) Injected 0.026 c.c. filtered toxin subcutaneously (i.e. 0.0005 c.c. per kg. body-weight).  
 11.2.20: (9 a.m.) Sheep seems slightly indisposed. It breathes rather heavily and stands with its head lowered. (4 p.m.) Sheep almost completely paralysed. When lifted and held in position it can just stand, but falls as soon as it moves. The head is turned back on the body. (5 p.m.) Stretched out, completely paralysed.  
 12.2.20: (6 a.m.) Found dead.

POST-MORTEM.

DOB No. 1. Hamel. Six-tooth.  
 P.M. No. 14649. Date of death, 12.2.20.  
 Condition, very fat. Abdomen distended. Interim, died during night. Rigor mortis present. Integument, bare patches on hind legs (inside). Natural openings: mouth open; tongue hanging out; in nostrils, turbid yellow mucus. Visible mucous membranes, nothing unusual. Blood, nothing unusual; flesh, nothing unusual; subcutaneous tissue: fat well developed; red tinge on right side with few sugilations. Salivary glands, nothing unusual. Thyroid and thymus, hyperaemic. Lymphatic glands, injected. Mediastinal and peribronchial glands, injected. Tongue: set with mucus, otherwise nothing unusual. Pharynx, nothing unusual. Oesophagus (thoracic part) clear yellow-coloured ingesta present; (cervical part) traces of yellow-coloured ingesta. Peritoneal cavity—situs viscerum, nothing unusual. Rumen and abomasum much distended by gas. Serosa of duodenum ochre yellow. Diaphragm, convexity forwards. Pleural cavities, some red-stained liquid present. Small reddish fibrous filaments in costal-pleura. Respiratory organs: lungs in state of expiration; pleura smooth and glistening; colour greyish pink, transparent; few petechiae; pulmonary veins and arteries, wine-red haemoglobin stained; thoracic trachea and bronchi contain froth with wine-red tinge; mucous membranes show petechiae, otherwise wine-red discoloration; parenchyma, rather compact; blood drops off, especially from right lung; on pressure blood and gas escape; larynx and trachea (cervical), froth present; mucosa haemoglobin stained; vessels well marked; few petechiae. Pericard: fat well developed; contains 10 c.c. wine-red coloured liquid, otherwise nothing unusual. Circulatory organs: heart, 10.5 by 9 cm., dilated, flabby; epicardium fat well developed; vessels filled; numerous petechiae present and haemorrhagic patches; endocardium, right ventricle, haemoglobin stained; vasa-cordis, haemoglobin stained; left ventricle haemoglobin stained; some petechiae; myocardium very friable, grey-red colour; thoracic aorta haemoglobin stained; aorta abdominalis slightly haemoglobin stained. Liver: smooth and glistening; some petechiae; ductus choledochus and cysticus open; gall-bladder half filled with a dirty brown turbid bile; in ductus choledochus and cysticus some stilesia hepatica, also in bile-ducts; wall of latter thickened. Vena cava-caudalis, hepatica, and porta haemoglobin stained; parenchyma very moist

and friable; on section blood drops off; on pressure blood and gas escape; advanced post-mortem state. Pancreas, post-mortem state. Splenic glands, nothing unusual. Spleen: 15 by 9 by 5 cm.; capsula shrivelled, few petechiae; parenchyma greyish red; folliculi swollen, very soft. Suprarenal glands, nothing unusual. Kidneys: capsula strips easily; on section very moist, blood drops off, especially the right; vessels in cortex distended; parenchyma very friable. Stomach: Abomasum distended with gas, otherwise empty, mucosa swollen, and injected; omasum, dry ingesta present; mucosa post-mortem state; reticulum almost empty; mucosa post-mortem state; rumen distended with gas, soft greenish-coloured ingesta; mucosa post-mortem state. Small intestines: duodenum contains green yellow mucus; mucosa injected and shows few nodules. Small intestines slightly injected; traces of blood distributed along whole length; numerous nodules; size varies from pin's head to bean. Large intestines: rectum empty; thick mucus on mucosa; on serosa a few nodules; size varying from pin's head to bean. Large intestines slightly injected as in small intestines. Mesenteric glands, nothing unusual. Mesentery, fat well developed. Bladder: empty, contracted. Sexual organs, nothing unusual. Nervous system, nothing unusual. Skeleton, nothing unusual. Blood-smear on examination, putrefactive bacteria.

*Pathological Anatomical Diagnosis:* Tympanitis, sequel to advanced post-mortem state. Petechiae and hæmorrhagic patches in subcutaneous tissue, trachea, epicardium, endocardium, and capsula of spleen. Dilatation of heart. Oedema pulmonum. Hypostasis of right lung. Hyperaemia of lungs, liver, and kidneys. Slight gastro-enteritis catarrhalis. Parasitic nodules in intestines. Hepatitis interstitialis (sequel to stilesia hepatica).

*Etiological Diagnosis (disease):* Lamsiekte.

#### SHEEP 2.

Weight, 48 kg.

9.2.20: (3.30 p.m.) Injected 0.0096 c.c. filtered toxin subcutaneously (i.e. 0.0002 c.c per kg. body-weight).

12.2.20: (5 p.m.) Sheep appears slightly indisposed.

13.2.20: (6 a.m.) Animal partly paralysed, unable to rise by itself. (2 p.m.) Stretched out, almost completely paralysed.

14.2.20: (6 a.m.) Unable to stand when lifted.

15.2.20: (6 a.m.) Found dead. Ingesta at oral opening.

#### POST-MORTEM.

DOB No. 2. Hamel. Eight-tooth.

P.M. No. 14652. Date of death, 15.2.20.

Condition fair. Abdomen distended. Interim, died during night. Integument intact. Natural openings, mouth open, soiled with ingesta; visible mucous membranes, nothing unusual. Blood stains well; subcutaneous tissue, fat well developed. Salivary glands, nothing unusual. Thyroid very hyperaemic. Lymphatic glands somewhat injected. Tongue, set with ingesta. Oesophagus, ingesta present; decomposition beginning; pharynx set with ingesta. Peritoneal cavity—situs viscerum, nothing unusual. Rumen and abomasum distended with gas. Intestines also distended with gas. Diaphragm, convexity forwards. Pleural cavities, some petechiae and few thin long fibrous filaments. Respiratory organs: larynx and trachea (cervical part), mucus mixed with ingesta, present; mucosa highly injected; lungs in state of expiration; pleura smooth and glistening, transparent; parenchyma dark red, compact, but elastic; on pressure blood and gas escape; traces of ingesta in bronchi; bronchi and trachea (thoracic part) contain froth and ingesta with red tinge. Pericard, fat well developed; sac contains 30 c.c. dark wine-red coloured liquid, otherwise nothing unusual. Circulatory organs: thoracic aorta hæmoglobin stained; pulmonary veins and arteries strongly hæmoglobin stained; heart flabby, 11 by 8 cm.; epicardium, fat well developed; sponge-like on section; vessels distinct; small petechiae present; right ventricle and left ventricle coagulated blood; endocardium, hæmoglobin stained; vasa-cordis, nothing unusual; myocardium light brown, like boiled meat; very friable; abdominal aorta hæmoglobin stained. Periportal glands, nothing unusual. Liver: advanced post-mortem state; grey-green-red discoloration of capsula and parenchyma; gall-bladder almost empty; some ochre-yellow, thick bile; ductus choledochus and cysticus species of stilesia hepatica present; parenchyma on section very moist, blood drops off; on section bile-ducts marked; consistency like dough. Vena porta, cava-caudalis, and hepatica hæmoglobin stained.



Pancreas, post-mortal state. Splenic glands somewhat enlarged. Spleen, 17 by 10 by 3 cm.; enlarged and thickened; capsula smooth and glistening; parenchyma very soft, not compact; red-grey coloured; trabeculae not distinct; malpighian bodies enlarged. Suprarenal glands, nothing unusual. Kidneys: capsula adiposa, fat well developed; fibrosa strips easily; parenchyma on section very moist; blood escapes, especially from left organ, in which vessels are very marked, otherwise post-mortal changes advanced; very friable. Stomach: abomasum, small quantity of liquid ingesta present; vessels very marked; a few small petechiae; omasum empty; mucosa, post-mortal state; reticulum, traces of greenish-coloured ingesta; mucosa, nothing unusual. Rumen: small quantity of ingesta present; mucosa, nothing unusual. Small intestines: throughout length injected; set with mucus; ingesta grey-red. Large intestines: rectum, traces of faeces present, covered with mucus; mucosa set with mucus. Large intestines: partly hyperaemic; mucosa set with greyish-white mucus; small hard round nodules in walls, size varies from pin's head to pea. Mesenteric glands, nothing unusual. Mesentery, fat well developed. Bladder, nothing unusual, contracted and empty. Sexual organs, nothing unusual. Nervous system, nothing unusual. Skeleton, nothing unusual.

*Pathological Anatomical Diagnosis:* Tympanitis (post-mortem). Petechiae in costal pleura and epicardium; myo-degeneration of heart. Oedema pulmonum. Hyperaemia of lungs, liver, and kidneys (partly hypostasis). Hepatitis interstitialis, sequel to stilesia hepatica. Gastro-enteritis catarrhalis. Parasitic nodules in large intestines.

*Etiological Diagnosis (disease):* Lamsiekte.

### SHEEP 3.

Weight, 48 kg.

9.2.20: (3.30 p.m.) Injected 0.0048 c.c. filtered toxin subcutaneously (i.e. 0.0001 c.c. per kg. body-weight).

13.2.20: (2 p.m.) Shows first signs of illness.

14.2.20: (6 a.m.) Lies down most of the time. It walks with a stiff gait and seems weak in the hindquarters.

15.2.20: (6 a.m.) Almost completely paralysed. (6 p.m.) Completely paralysed.

16.2.20: (6 a.m.) Found dead.

### POST-MORTEM.

DOB No. 3. Hamel. Full-tooth.

P.M. No. 14653. Date of death, 16.2.20.

Condition good. Abdomen slightly distended. Interim, died during night. Rigor mortis present. Integument intact. Natural openings closed; mucous membranes, nothing unusual. Blood partly coagulated; flesh, nothing unusual; subcutaneous tissue, nothing unusual. Salivary glands, nothing unusual. Lymphatic glands rather swollen and injected. Peri-bronchial and mediastinal glands injected. Thyroid injected, apparently swollen. Thymus, nothing unusual. Tongue, nothing unusual. Oesophagus contains large quantities of ingesta. Peritoneal cavity—situs viscerum, nothing unusual. Fat of omentum well developed. Rumen somewhat distended with gas. Diaphragm, convexity forwards. Pleural cavities, nothing unusual. Respiratory organs; trachea contains froth and some ingesta; mucous membranes somewhat injected; bronchi, ditto; pleura of lungs dark red in patches; on section parenchyma very moist and hyperaemic; portions of left lung do not float on water. Pericard, fat well developed; some clear, pale yellow liquid present. Circulatory organs: heart dilated; epicardium smooth and glistening, a few petechiae present; right ventricle filled with a clot of blood; endocardium, nothing unusual; left ventricle contains a small coagulum; endocardium, nothing unusual; myocardium rather pale and friable; abdominal aorta, nothing unusual. Periportal glands, nothing unusual. Liver: capsule smooth and glistening, yellowish-red-brown markings very distinct; consistence firm. Gall-bladder empty; bile, amber colour, somewhat opaque; bile-ducts open; vena porta and hepatica, nothing unusual; cava-caudalis, nothing unusual; in bile-ducts, stilesia hepatica. Parenchyma: acini appear swollen. Interstitial tissue very distinct. Pancreas, nothing unusual. Spleen, 14 by 9 by 1.5 cm; capsula smooth and glistening; on margin, several petechiae; colour of capsula, steel-grey; parenchyma soft; pulpa moist on section; folliculi distinct. Suprarenal

glands, nothing unusual. Kidneys: capsula well developed; strips easily; surface smooth and glistening, dark red; on section parenchyma very rich in blood; cortex greyish in colour; consistence friable. Stomach: abomasum distended with gas; pylorus empty; fundus contains some liquid ingesta; mucous membranes swollen and injected; omasum almost empty, contents semi-dry; mucous membranes, nothing unusual; reticulum contains only gas; mucous membranes, nothing unusual; rumen, some gas and liquid ingesta; mucous membranes, nothing unusual. Small intestines injected; mucous membranes, somewhat injected; large intestines, ditto; rectum contains small quantities of faeces; mucous membranes, slightly swollen. Mesenteric glands, nothing unusual; mesentery, fat well developed; blood-vessels filled. Bladder empty; mucous membranes, nothing unusual. Sexual organs, nothing unusual. Nervous system, nothing unusual. Skeleton, nothing unusual. Blood-smear, negative.

*Pathological Anatomical Diagnosis:* Slight tympanitis. Oedema pulmonum. Dilatatio-cordis. Petechiae on epicardium and on capsula of spleen. Myodegeneratio-cordis. Stilesia hepatica. Hepatitis interstitialis et parenchymatosa. Hyperaemia of lungs, liver, kidneys, and spleen. Slight gastro-enteritis catarrhalis.

*Etiological Diagnosis (disease):* Lamsiekte.

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### SECTION C (f).

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#### Dog 1.

Bitch. Weight, 20 kg.  
 14.5.20: (12 noon) Injected 1 c.c. filtered toxin subcutaneously (i.e. 0.05 c.c. per kg. body-weight). No reaction.  
 19.5.20: (12 noon) Injected 5 c.c. filtered toxin subcutaneously (i.e. 0.25 c.c. per kg. body-weight). No reaction.  
 29.5.20: (12 noon) Injected 10 c.c. filtered toxin subcutaneously (i.e. 0.5 c.c. per kg. body-weight). No reaction.  
 3.6.20: (3.30 p.m.) Injected 20 c.c. filtered toxin subcutaneously (i.e. 1 c.c. per kg. body-weight). No reaction.  
 8.6.20: (5 p.m.) Injected 40 c.c. filtered toxin subcutaneously (i.e. 2 c.c. per kg. body-weight). No reaction.

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#### Dog 17.

Male. Weight, 36 kg.  
 24.6.20: (1 p.m.) Injected 108 c.c. filtered toxin subcutaneously (i.e. 3 c.c. per kg. body-weight). No reaction.

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#### Dog 18.

Male. Weight, 25 kg.  
 24.6.20: (1 p.m.) Injected 100 c.c. filtered toxin subcutaneously (i.e. 4 c.c. per kg. body-weight). No reaction.

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#### Dog 19.

Male. Weight, 30 kg.  
 24.6.20: (1 p.m.) Injected 150 c.c. filtered toxin subcutaneously (i.e. 5 c.c. per kg. body-weight). No reaction.  
 15.7.20: Bled 300 c.c.

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### SECTION C (g).

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#### Prg 345.

Weight, 25 kg.  
 5.6.20: (1 p.m.) Injected 2.5 c.c. filtered toxin subcutaneously (i.e. 0.1 c.c. per kg. body-weight). No reaction.  
 15.6.20: (1 p.m.) Injected 25 c.c. filtered toxin subcutaneously (i.e. 1 c.c. per kg. body-weight). No reaction.  
 22.6.20: (10 a.m.) Injected 75 c.c. filtered toxin subcutaneously (i.e. 3 c.c. per kg. body-weight). No reaction.  
 30.6.20: (1 p.m.) Injected 150 c.c. filtered toxin subcutaneously (i.e. 6 c.c. per kg. body-weight). No reaction.  
 15.7.20: Bled 20 c.c. from the jugular vein.

- 26.7.20: (2 p.m.) Bled 500 c.c. from the jugular vein.  
 6.8.20: (1 p.m.) Injected 25 c.c. filtered toxin subcutaneously (i.e. 1 c.c. per kg. body-weight). No reaction.  
 23.8.20: (1 p.m.) Bled to death.

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 FIG 353.

- Weight, 20 kg.  
 5.6.20: (1 p.m.) Injected 4 c.c. filtered toxin subcutaneously (i.e. 0.2 c.c. per kg. body-weight). No reaction.  
 15.6.20: (1 p.m.) Injected 10 c.c. filtered toxin subcutaneously (i.e. 0.5 c.c. per kg. body-weight). No reaction.  
 22.6.20: (10 a.m.) Injected 40 c.c. filtered toxin subcutaneously (i.e. 2 c.c. per kg. body-weight). No reaction.  
 6.8.20: (2 p.m.) Injected 20 c.c. filtered toxin subcutaneously (i.e. 1 c.c. per kg. body-weight). No reaction.  
 2.9.20: (1 p.m.) Injected 20 c.c. filtered toxin subcutaneously (i.e. 1 c.c. per kg. body-weight). No reaction.  
 12.10.20: (11 a.m.) Injected 50 c.c. filtered toxin subcutaneously (i.e. 2.5 c.c. per kg. body-weight). No reaction.  
 15.10.20: (3 p.m.) Injected 100 c.c. filtered toxin subcutaneously (i.e. 5 c.c. per kg. body-weight). No reaction.  
 25.10.20: (12 noon) Injected 100 c.c. filtered toxin subcutaneously (i.e. 5 c.c. per kg. body-weight). No reaction.  
 3.11.20: (12 noon) Injected 150 c.c. filtered toxin subcutaneously (i.e. 7.5 c.c. per kg. body-weight). No reaction.  
 16.11.20: Bled to death.

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 FIG 355.

- Weight, 22 kg.  
 5.6.20: (1 p.m.) Injected 0.02 c.c. filtered toxin subcutaneously (i.e. 0.001 c.c. per kg. body-weight). No reaction.  
 15.6.20: (1 p.m.) Injected 4.4 c.c. filtered toxin subcutaneously (i.e. 0.2 c.c. per kg. body-weight). No reaction.  
 22.6.20: (2 p.m.) Injected 22 c.c. filtered toxin subcutaneously (i.e. 1 c.c. per kg. body-weight). No reaction.  
 30.6.20 (2 p.m.) Injected 88 c.c. filtered toxin subcutaneously (i.e. 4 c.c. per kg. body-weight). No reaction.  
 6.8.20: (2 p.m.) Injected 22 c.c. filtered toxin subcutaneously (i.e. 1 c.c. per kg. body-weight). No reaction.  
 2.9.20: (1 p.m.) Injected 22 c.c. filtered toxin subcutaneously (i.e. 1 c.c. per kg. body-weight). No reaction.  
 12.10.20: (1 p.m.) Injected 44 c.c. filtered toxin subcutaneously (i.e. 2 c.c. per kg. body-weight). No reaction.

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 SECTION C (h).

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 GUINEA-PIG 9.

- Weight, 680 g.  
 22.1.20: (4.45 p.m.) Injected 0.05 c.c. filtered toxin subcutaneously (i.e. about 0.07 c.c. per kg. body-weight).  
 23.1.20: (6 a.m.) Animal looks ill. (8.45 a.m.) Dies—sixteen hours after injection.  
 Post-mortem examination, negative.

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 GUINEA-PIG 10.

- Weight, 580 g.  
 22.1.20: (4.45 p.m.) Injected 0.02 c.c. filtered toxin subcutaneously (i.e. 0.04 c.c. per kg. body-weight).  
 24.1.20: (6 a.m.) Found dead.  
 Post-mortem examination, negative.

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 GUINEA-PIG 11.

- Weight, 480 g.  
 22.1.20: (4.45 p.m.) Injected 0.01 c.c. filtered toxin subcutaneously (i.e. 0.02 per kg. body-weight).  
 24.1.20: (6 a.m.) Found dead.  
 Post-mortem examination, negative.

## GUINEA-PIG 12.

Weight, 480 g.  
 22.1.20: (4.45 p.m.) Injected 0.005 c.c. filtered toxin subcutaneously (i.e. 0.01 c.c. per kg. body-weight).  
 23.1.20: (6 a.m.) Appears to be ill. (12 noon) Signs of paralysis. (5.30 p.m.) *In extremis*. (7 p.m.) Found dead.  
 Post-mortem examination, negative.

## GUINEA-PIG 13.

Weight, 300 g.  
 22.1.20: (4.45 p.m.) Injected 0.001 c.c. filtered toxin subcutaneously (i.e. 0.003 c.c. per kg. body-weight).  
 25.1.20: (6 a.m.) Found dead.  
 Post-mortem examination, negative.

## GUINEA-PIG 14.

Weight, 300 g.  
 22.1.20: (4.45 p.m.) Injected 0.0005 c.c. filtered toxin subcutaneously (i.e. 0.0016 c.c. per kg. body-weight).  
 24.1.20: (6 a.m.) Found dead.  
 Post-mortem examination, negative.

## GUINEA-PIG 15.

Weight, 500 g.  
 24.1.20: (10 a.m.) Injected 0.0005 c.c. filtered toxin subcutaneously (i.e. 0.001 c.c. per kg. body-weight).  
 26.1.20: (9 a.m.) Dies.

## GUINEA-PIG 16.

Weight, 465 g.  
 24.1.20: (10 a.m.) Injected 0.0001 c.c. filtered toxin subcutaneously (i.e. about 0.0002 c.c. per kg. body-weight). No reaction.

## GUINEA-PIG 17.

Weight, 440 g.  
 24.1.20: (10 a.m.) Injected 0.00005 c.c. filtered toxin subcutaneously (i.e. about 0.0001 c.c. per kg. body-weight). No reaction.

## GUINEA-PIG 18.

Weight, 430 g.  
 24.1.20: (10 a.m.) Injected 0.000025 c.c. filtered toxin subcutaneously (i.e. 0.0006 c.c. per kg. body-weight). No reaction.

## GUINEA-PIG 19.

Weight, 340 g.  
 24.1.20: (10 a.m.) Injected 0.00001 c.c. filtered toxin subcutaneously (i.e. 0.00003 c.c. per kg. body-weight). No reaction.

## GUINEA-PIG 20.

Weight, 620 g.  
 28.1.20: (4.30 p.m.) Injected 0.00056 c.c. filtered toxin subcutaneously (i.e. 0.0009 c.c. per kg. body-weight).  
 4.2.20: (2 p.m.) Appears to be ill. Does not move voluntarily. From time to time convulsions. (5 p.m.) *In extremis*.  
 5.2.20: (6 a.m.) Found dead.

## GUINEA-PIG 21.

Weight, 510 g.  
 28.1.20: (4.30 p.m.) Injected 0.00038 c.c. filtered toxin subcutaneously (i.e. 0.00075 c.c. per kg. body-weight). No reaction.

## GUINEA-PIG 22.

Weight, 500 g.  
 28.1.20: (4.30 p.m.) Injected 0.0003 c.c. filtered toxin subcutaneously (i.e. 0.0006 c.c. per kg. body-weight). No reaction.

## SECTION C (i).

## RABBIT 10.

Weight, 1,600 g.

13.3.20: (11 a.m.) Injected 0.008 c.c. filtered toxin subcutaneously (i.e. 0.005 c.c. per kg. body-weight).

15.3.20: (6.30 a.m.) Looks ill. Does not feed. Sits huddled up in a corner. (5 p.m.) Condition improved.

16.3.20: (6.30 a.m.) Recovered.

## RABBIT 11.

Weight, 1,800 g.

13.3.20: (11 a.m.) Injected 0.0054 c.c. filtered toxin subcutaneously (i.e. 0.003 c.c. per kg. body-weight). No reaction.

## RABBIT 12.

Weight, 1,560 g.

13.3.20: (11 a.m.) Injected 0.00156 c.c. filtered toxin subcutaneously (i.e. 0.001 c.c. per kg. body-weight).

15.3.20: (6.30 a.m.) Appears to be ill. Does not feed. Sits huddled up in a corner. (5 p.m.) Condition improving.

16.3.20: (6.30 a.m.) Recovered.

## RABBIT 13.

Weight, 1,660 g.

13.3.20: (11 a.m.) Injected 0.0013 c.c. filtered toxin subcutaneously (i.e. 0.0009 c.c. per kg. body-weight). No reaction.

## RABBIT 14.

Weight, 1,440 g.

13.3.20: (11 a.m.) Injected 0.001 c.c. filtered toxin subcutaneously (i.e. 0.0007 c.c. per kg. body-weight). No reaction.

## SECTION C (j).

## RAT 3.

15.7.20: (2 p.m.) Injected 0.01 c.c. filtered toxin subcutaneously. No reaction.

## RAT 4.

15.7.20: (2 p.m.) Injected 0.1 c.c. filtered toxin subcutaneously. No reaction.

## RAT 5.

15.7.20: (2 p.m.) Injected 1 c.c. filtered toxin subcutaneously. (4 p.m.) Looks very dull. Lies on one side. Respiration increased and superficial. (8 p.m.) Looks much better and seems to recover.

18.7.20: (8 a.m.) Found dead.

## RAT 6.

15.7.20: (2 p.m.) Injected 5 c.c. filtered toxin subcutaneously. (2.30 p.m.) Dead.

## RAT 7.

20.7.20: (3 p.m.) Injected 1 c.c. filtered toxin subcutaneously. (3.15 p.m.) Signs of paralysis, falls down after having shown symptoms of excitation (squealing, jumping about). (3.25 p.m.) Dead.

## RAT 8.

20.7.20: (3 p.m.) Injected 2 c.c. filtered toxin subcutaneously. (3.15 p.m.) Great excitement. Stands on its hind legs, jumps about. Rotary movements. (3.30) Falls down. Paralysed. (4.15) Dead.

SECTION C (*k*).

## MOUSE 3.

15.7.20: (2 p.m.) Injected 0.001 c.c. filtered toxin subcutaneously.  
 19.7.20: (8 a.m.) Found dead.

## MOUSE 4.

15.7.20: (2 p.m.) Injected 0.01 c.c. filtered toxin subcutaneously.  
 16.7.20: (8 a.m.) Found dead.

## MOUSE 5.

15.7.20: (2 p.m.) Injected 0.1 c.c. filtered toxin subcutaneously.  
 16.7.20: (8 a.m.) Found dead.

## MOUSE 6.

15.7.20: (2 p.m.) Injected 1 c.c. filtered toxin subcutaneously. (2.30 p.m.)  
 Died—without having shown any symptoms.

SECTION C (*l*).

## OSTRICH 2.

26.2.20: (4.30 p.m.) Given 1 lb. crushed rotten bones.

1.3.20: (2 p.m.) Appears to be rather weak in the limbs. It lies down most of the time and when driven it seems to have difficulty in rising. It moves the body from one leg to the other.

2.3.20: (6 a.m.) Standing up. It seems to be stronger on its legs. (5 p.m.) Distinctly ill now. It lies down with its eyes half closed.

3.3.20: (6 a.m.) Found dead.

## POST-MORTEM.

DOB No. 2. Female. Aged.

P.M. No. 14670. Date of death, 3.3.20.

Condition fair. Abdomen relaxed. Interim, died during night. Rigor mortis not present. Integument intact. Natural openings closed. Blood partly coagulated; flesh, nothing unusual; subcutaneous tissue contains no fat. Tongue, nothing unusual. Oesophagus, nothing unusual. Mucous membranes, post-mortem changes. Peritoneal cavity, nothing unusual. On right side of body cavity, between gizzard and costal wall, a large abscess with dry pus. Respiratory organs: larynx and trachea mucosa slightly injected; bronchi contain froth; in right lung an abscess about the size of a hen's egg, with fairly dry pus and a few pieces of bones (aspiration); on section through right lung, more pieces of bones and hard pus are found; parenchyma very moist and dark; left lung, nothing unusual. Pericard, nothing unusual. Circulatory organs: heart, epicardium smooth and glistening; sub-epicardial tissue very gelatinous and watery; right ventricle contains a small quantity of liquid blood; endocardium, nothing unusual; left ventricle empty; endocardium, nothing unusual; myocardium watery and friable; thoracic aorta, nothing unusual. Liver: surface smooth and glistening, dark bluish grey, consistence firm; parenchyma very hyperaemic and moist. Pancreas, nothing unusual. Spleen, nothing unusual. Kidneys, nothing unusual, signs of decomposition. Stomach: pro-ventriculus contains grass (dubbeltjies), mucus, and stones; mucous membranes swollen and decomposed. Gizzard contains stones and some ingesta; mucous membranes, post-mortem stage; muscles of gizzard, nothing unusual. Small intestines contain ingesta; mucous membranes swollen and injected. Large intestines empty, filled with gas; mucous membranes injected; rectum contains some well-formed faeces; cloaca contains a fairly large quantity of uric acid. Sexual organs, ovaries and oviduct, nothing unusual. Nervous system, nothing unusual. Blood-smear, negative.

*Pathological Anatomical Diagnosis:* Enclosed abscess in body cavity. Abscesses in right lung. Oedema of right lung. Myo-degeneratio cordis. Hyperaemia of liver. Enteritis catarrhalis.

*Etiological Diagnosis (disease):* Lamsiekte.

## OSTRICH 3.

- 26.2.20: (4.30 p.m.) Given 1 lb. rotten meat and larvae.  
 27.2.20: (12 noon) First signs of illness. Breathes heavily; wings drooping, head and neck moving about. Body-weight shifted from one leg to the other. (2 p.m.) Bird is lying down and refuses to get up. It is lifted and remains standing, although it seems to be very weak in the legs.  
 28.2.20: (7 a.m.) Lying down with head resting on the ground. Afterwards it lifts the head a few inches, but never into the normal position. (9 a.m.) Bird is lifted. After a while it remains standing with some difficulty. It moves about from one leg on to the other. The head is held low. It stands for about two or three minutes and then flops down. 29.2.20: (7 a.m.) Found dead.

## POST-MORTEM.

DOB No. 3. Hen.

P.M. No. 14666. Date of death, 29.2.20. Ostrich.

Condition poor. Abdomen relaxed. Interim, died during night. Rigor mortis not present. Integument, abrasions on neck. Natural openings closed; visible mucous membranes, nothing unusual. Blood not coagulated, staining well; flesh, nothing unusual; subcutaneous tissue, nothing unusual. Oesophagus (cervical) empty; (thoracic) traces of ingesta. Peritoneal cavity, nothing unusual. Pleural cavities, nothing unusual. Respiratory organs; lungs, on section very moist, blood drops off; on pressure blood and gas escape; bronchi and trachea contain reddish-coloured froth; mucosa, nothing unusual; larynx, nothing unusual. Pericard contains yellow-coloured, slightly watery fat. Circulatory organs: heart in state of dilatation; right ventricle empty; endocardium shows some petechiae; left ventricle, nothing unusual; vasa-cordis, nothing unusual; myocardium, on section, blood drops off; consistency friable. Vena porta, cava-caudalis, and hepatica, nothing unusual. Liver: capsula smooth and glistening; parenchyma moist, blood drops off, otherwise nothing unusual. Spleen, nothing unusual. Suprarenal glands, nothing unusual. Kidneys moist on section, on pressure blood escapes. Stomach: pro-ventriculus contains green-coloured ingesta, mixed with horsehair, stones, and blow-fly larvae; gizzard, ditto. Small intestines: throughout highly injected; mucosa swollen. Large intestines: cloaca contains rather big quantity of greyish-yellow-coloured uric acid; large intestines as small intestines. Sexual organs: ovaries well developed, nothing unusual. Blood-smear, negative.

*Pathological Anatomical Diagnosis:* Petechiae in endocardium, oedema pulmonum. Hyperaemia of lungs, liver, and kidneys. Enteritis hæmorrhagica.

*Etiological Diagnosis (disease):* Lamsiekte.

## OSTRICH 1.

- 26.2.20: (4.30 p.m.) Given 20 c.c. culture per os.  
 4.3.20: (6 a.m.) Animal has some difficulty in rising. It seems to be somewhat unsteady on its legs  
 5.3.20: (6 a.m.) Seems to have difficulty in getting up. (5 p.m.) Bird has to be assisted before it attempts to rise. When up, it dances about from one leg on to the other.  
 6.3.20: (6 a.m.) Has some difficulty in rising, but seems to have improved.  
 8.3.20: (6 a.m.) Appears to be normal again.  
 16.3.20: (5 p.m.) Injected 16 c.c. toxin subcutaneously. No reaction.

## OSTRICH 5.

- 26.3.20: (4 p.m.) Given 100 c.c. culture per os.  
 28.3.20: (9 a.m.) Shows some difficulty in rising. Gait unsteady.  
 29.3.20: (6.30 a.m.) Gets up when driven, but shows weakness in legs.  
 30.3.20: (6.30 a.m.) Found lying down with head and neck on ground and eyes closed. When driven, it lifts its head a little, but it drops down again. When lifted, the bird is unable to stand, its legs being completely paralysed. (2 p.m.) Seems better. It carries its head and neck and seems to have eaten its food, but is unable to rise.  
 31.3.30: (6.30 a.m.) Found dead.

## POST-MORTEM.

DOB No. 5. Female.

P.M. No. 14685. Date of death, 31.3.20. Ostrich.

Condition good. Abdomen relaxed. Interim, died during night. Rigor mortis present. Integument intact. Natural openings closed; visible mucous membranes, nothing unusual. Blood stains well; flesh, nothing unusual; subcutaneous tissue shows no peculiarities. Lymphatic glands, nothing unusual. Tongue, nothing unusual. Oesophagus empty, traces of shiny ingesta. Peritoneal cavity—situs viscerum, nothing unusual. Pleural cavities, nothing unusual. Respiratory organs—lung: dark, deep red on section, blood drops off, gas escapes on pressure; parenchyma is compact; in bronchi and trachea, white froth; in cervical portion, traces of ingesta. Pericard contains a few drops of yellow, clear liquid. Circulatory organs: heart, state of dilatation; a few petechiae in epicardium; endocardia of both ventricles show point-formed petechiae; myocardium vessels marked a reddish tinge; vasa-cordis, nothing unusual; thoracic aorta shows ochre-yellow-coloured, streaky, and irregular thickenings; surface of intima rough. Liver somewhat increased in size; capsula smooth and glistening; parenchyma very moist, blood oozes off; consistency very friable. Pancreas hyperaemic. Spleen, nothing unusual. Suprarenal glands hyperaemic. Kidneys: exceedingly marked hyperaemia, blood drops freely. Stomach: pro-ventriculus filled with normal ingesta; ventriculus, ditto. Small intestines: black-coloured; injected; small petechiae and haemorrhagic patches. Large intestines: colon and rectum contain normal faeces. Mesentery vessels marked. Cloaca filled with uric acid. Sexual organs: ovaries small; oviduct, nothing unusual. Blood-smear, negative.

*Pathological Anatomical Diagnosis:* Petechiae in epicardium and endocardium. Hyperaemia and oedema of lungs. Hyperaemia of liver, kidneys, pancreas, and myocardium. Enteritis catarrhalis. Media necrosis of thoracic aorta (?).

*Etiological Diagnosis (disease):* Lamsiekte.

#### OSTRICH 6.

- 26.3.20: (4 p.m.) Given 200 c.c. culture per os.  
 28.3.20: (9 a.m.) Lying down; shows some difficulty in rising. Unsteady gait.  
 29.3.20: (6.30 a.m.) Rises when driven, but shows weakness in legs.  
 30.3.20: (6.30 a.m.) Lies down, but can rise with some difficulty.  
 1.4.20: (6.30 a.m.) Lies down. Gets up when approached, but seems very weak. (5 p.m.) Found lying down. It gets up when driven, but shows a marked weakness and uncertainty in doing so. When walking, it wobbles about from one side to the other as if intoxicated. It seems to have great difficulty in keeping its balance. The head and neck are bent downwards when the animal walks. When standing, it is very restless and rocks backwards and forwards, moving its legs all the time.  
 2.4.20: (6.30 a.m.) Found standing.  
 3.4.20: (6.30 a.m.) Standing, but unsteady on its legs. Eyes are very dull.  
 4.4.20: (9 a.m.) Condition improved. Bird rises when approached and walks somewhat steadier than on previous day. It still carries its neck and head rather low, and sometimes rocks backwards and forwards or from side to side.  
 5.4.20: (6.30 a.m.) Lies down most of the time. When approached it gets up rather reluctantly and walks unsteadily. After standing for a few minutes, it becomes more and more unsteady, and soon lies down again.  
 6.4.20: (6.30 a.m.) Found standing, but shows same signs of weakness as on previous days.  
 7.4.20: (6.30 a.m.) Found lying down. When approached it gets up and walks to the food with the same unsteady gait already noted. On getting to the food (maize), it seems to want to eat and lowers its head, but then it appears to get giddy and quickly raises its head again. This process is repeated several times. The animal then walks away and lies down.  
 8.4.20: (6.30 a.m.) No change.  
 11.4.20: (6.30 a.m.) Condition unchanged.  
 15.4.20: (5 p.m.) In a dying condition.  
 16.4.20: (6.30 a.m.) Found dead of lamsiekte.

#### OSTRICH 7

- 7.5.20: (10 a.m.) Given 200 c.c. culture per os.  
 9.5.20: (7 a.m.) Bird noticed sick. It lies down with its eyes half-closed. It only rises when threatened. When standing, the legs show signs of weakness; the animal sways sideways and backwards and forwards. It walks with an



unsteady gait with head lowered. It lies down soon after rising. (4 p.m.) Lying down, head and neck resting on ground. Several attempts are made before the bird succeeds in rising.

10.5.20: (7 a.m.) Found lying down. Cannot rise. When assisted, it gets up and shows same symptoms as on previous day. When standing, bird crosses legs and even places one foot on other (inco-ordination of movements).

11.5.20: (7 a.m.) Symptoms more severe. Not feeding.

12.5.20: (7 a.m.) Condition worse. Bird found lying behind the bushes, head and neck stretched out on ground. Eyes closed. It rises when threatened and kicked, and shows the previous symptoms in an aggravated degree. It remains standing for a few moments, then drops.

13.5.20: (7 a.m.) Found lying down. When forced, it makes attempts to rise, but is unable to do so, and falls on its side. When lifted, it is unable to stand, being entirely paralysed. (12 noon) Dies of lamsiekte.

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#### OSTRICH 8

7.5.20: (10 a.m.) Given 250 c.c. culture per os.

9.5.20: (7 a.m.) First signs of illness. Weakness and unsteadiness of legs.

10.5.20: (7 a.m.) Appears slightly better.

11.5.20: (7 a.m.) Found lying down. Not feeding. When approached it rises, but seems to be very weak. It lies down again.

12.5.20: (7 a.m.) No change.

13.5.20: (7 a.m.) Found standing and feeding. Much improved in condition.

26.5.20: (7 a.m.) After an apparent complete recovery, bird shows signs of weakness and dullness again. Appetite unimpaired. It is found lying down, but rises when approached. When walking, it sways and appears to be uncertain on its legs. It can hardly keep its balance. It soon lies down again. (5 p.m.) Not feeding.

27.5.20: (7 a.m.) Found dying. (9 a.m.) Dead of lamsiekte.

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#### OSTRICH 4.

9.3.20 (4 p.m.) 8.5 c.c. filtered toxin subcutaneously. No reaction.

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#### SECTION C (m).

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##### TURKEY 1.

6.2.20 (4 p.m.) Given 40 g. rotten meat and fly larvae.

8.2.20: (5 p.m.) Seems to be somewhat ill. It stands in a corner with its eyes shut.

9.2.20: (6 a.m.) Standing huddled together and sinks in its joints now and then. When walking it sways about.

10.2.20: (6 a.m.) Apparently recovered.

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##### TURKEY 3.

18.2.20: (12 noon) Given 5 c.c. culture per os. No reaction.

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##### TURKEY 4.

18.2.20: (12 noon) Injected 5 c.c. toxin subcutaneously. No reaction.

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##### TURKEY 5.

21.2.20: (11.30 a.m.) Given 10 c.c. culture per os. No reaction.

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##### TURKEY 6.

21.2.20: (11.30 a.m.) Injected 8 c.c. filtered toxin subcutaneously. No reaction.

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##### TURKEY 7.

27.2.20: (4 p.m.) Given 70 c.c. culture per os. No reaction.

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##### TURKEY 8.

8.3.20: (4 p.m.) Given 100 g. rotten meat and larvae per os. No reaction.

## SECTION C (n).

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DUCK 1.

- 6.2.20: (4 p.m.) Given 40 c.c. rotten meat and fly larvae  
 7.2.20: (9 a.m.) Almost completely paralysed in the legs. It merely flops along with the aid of its wings. The bill also seems partly paralysed. The lower jaw hangs down. (2 p.m.) Paralytic symptoms of bill have disappeared. The duck can eat moist bran with perfect ease. (5 p.m.) No further change.  
 8.2.20: (6 a.m.) Condition unchanged. (5 p.m.) Paralysis of legs still present.  
 9.2.20: (7 a.m.) The duck has recovered completely. It can now run about normally.

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DUCK 2.

- 6.2.20: (4 p.m.) Given 40 g. rotten meat and fly larvae. No reaction.  
 27.2.20: (4 p.m.) 30 c.c. culture per os. No reaction.

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DUCK 3.

- 6.2.20: (4 p.m.) Given 40 g. rotten meat and fly larvae. No reaction.

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DUCK 4.

- 6.2.20: (4 p.m.) Given 40 g. rotten meat and fly larvae. No reaction.

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DUCK 5.

- 9.2.20: (4.30 p.m.) Given 0.5 c.c. filtered toxin per os.  
 10.2.20: (2 p.m.) Duck half paralysed in the legs. It can walk a few steps and then flops down. The larynx too seems to be partly paralysed; the voice is husky and feeble.  
 11.2.20: (7 a.m.) Almost completely recovered. It can walk about. The voice too is stronger.  
 19.2.20: (6 a.m.) Shows signs of weakness. It generally lies down behind a bush. Recovered.

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DUCK 6.

- 9.2.20: (4.30 p.m.) Given 0.05 c.c. filtered toxin per os. No reaction.  
 8.3.20: (4 p.m.) Given 50 c.c. rotten meat and larvae. No reaction.

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DUCK 7.

- 9.3.20: (4.30 p.m.) Given 0.005 c.c. filtered toxin per os. No reaction.

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DUCK 8.

- 11.3.20: (4 p.m.) Given 1 c.c. filtered toxin per os. No reaction.

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DUCK 9.

- 11.3.20: (4 p.m.) Injected 0.05 c.c. filtered toxin intramuscularly. No reaction.

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DUCK 10.

- 11.3.20: (4 p.m.) Injected 0.005 c.c. filtered toxin intramuscularly. No reaction.

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DUCK 11.

- 13.2.20: (4 p.m.) Injected 0.1 c.c. filtered toxin intramuscularly. No reaction.

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DUCK 12.

- 13.2.20: (4 p.m.) Injected 1 c.c. filtered toxin intramuscularly. No reaction.

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DUCKS 13 AND 14.

- 16.2.20: (5 p.m.) Two litres fly larvae are put in an old tank and duck 13, together with duck 14, placed in the tank.

17.2.20: (9 a.m.) All the larvae eaten. (3 p.m.) Three litres larvae given to ducks.

18.2.20: (9 a.m.) All the larvae eaten. (5 p.m.) Another 2 litres larvae given to ducks. No reaction.

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DUCK 16.

18.2.20: (12 noon) Given 5 c.c. culture per os. No reaction.

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DUCK 17.

18.2.20: (12 noon) Injected 5 c.c. filtered toxin subcutaneously. No reaction.

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DUCK 18.

21.2.20: (11.30 a.m.) Given 10 c.c. culture per os. No reaction.

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DUCK 19.

21.2.20: (11.30 a.m.) Given 8 c.c. culture per os. No reaction.

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SECTION C (o).

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PIGEON 1.

8.3.20: (4 p.m.) Given 10 g. rotten meat and larvae. No reaction.

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PIGEON 2.

8.3.20: (4 p.m.) Injected 0.1 c.c. filtered toxin subcutaneously. No reaction.

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PIGEON 3.

8.3.20: (4 p.m.) Injected 0.01 c.c. filtered toxin subcutaneously. No reaction.

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PIGEON 4.

8.3.20: (4 p.m.) Injected 0.001 c.c. filtered toxin subcutaneously. No reaction.

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PIGEON 5.

9.3.20: (4 p.m.) Given 1 c.c. filtered toxin per os. No reaction.

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PIGEON 6.

13.3.20: (11.30 a.m.) Injected 0.5 c.c. filtered toxin subcutaneously. No reaction.

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PIGEON 7.

13.3.20: (11.30 a.m.) Injected 1 c.c. filtered toxin subcutaneously. No reaction.

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PIGEON 8.

13.3.20: (11.30 a.m.) Injected 2 c.c. filtered toxin subcutaneously.

14.3.20: (9 a.m.) Looks ill, huddled up, shivering. (11.30 a.m.) Found dead.

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PIGEON 9.

15.7.20: (2 p.m.) Injected 1 c.c. filtered toxin subcutaneously. No reaction.

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PIGEON 10.

15.7.20: (2 p.m.) Injected 3 c.c. filtered toxin subcutaneously. No reaction.

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PIGEON 11.

20.7.20: (2 p.m.) Injected 4 c.c. filtered toxin subcutaneously. No reaction.

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PIGEON 12.

20.7.20: (2 p.m.) Injected 5 c.c. filtered toxin subcutaneously. No reaction.

## SECTION D (a) (1) (ii).\*

## GOAT 7.

Weight, 36 kg.  
 14.2.20: (3 p.m.) Injected 1,000 × minimum lethal dose (0.1 c.c. per kg.) filtered toxin heated at 65° C. for one hour.  
 16.2.20: (6 a.m.) Completely paralysed; it cannot even support its head when lifted. (11 a.m.) Dies of lamsiekte.

## GOAT 8.

Weight, 33 kg.  
 14.2.20: (3 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 65° C. for two hours.  
 16.2.20: (6 a.m.) Completely paralysed. Unable to support its head. (9 a.m.) Dies of lamsiekte.

## GOAT 9.

Weight, 32 kg.  
 14.2.20: (3 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 65° C. for three hours.  
 16.2.20: (6 a.m.) Appears ill. It lies down frequently. (5 p.m.) In a dying condition.  
 17.2.20: (6 a.m.) Found dead (lamsiekte).

## GOAT 10.

Weight, 41 kg.  
 25.2.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for two hours.  
 28.2.20: (6 a.m.) Found dead (lamsiekte).

## GOAT 11.

Weight, 39 kg.  
 25.2.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for three hours.  
 29.2.20: (6 a.m.) Goat is paralysed. (4 p.m.) Dies of lamsiekte.

## GOAT 12.

Weight, 36 kg.  
 25.2.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 75° C. for one hour.  
 3.3.20: (5 p.m.) First signs of illness. The goat lies down most of the time.  
 4.3.20: (6 a.m.) Goat is distinctly ill now. It lies down and refuses to rise. When lifted it can walk, but lies down again after a few minutes. (5 p.m.) Condition unchanged.  
 5.3.20: (6 a.m.) Ditto. (5 p.m.) Condition worse.  
 6.3.20: (6 a.m.) Lies down. When lifted it can stand for about half a minute.  
 7.3.20: (6 a.m.) Unable to stand.  
 9.3.20: (6 a.m.) Same condition. (5 p.m.) Slight improvement. Goat can stand for a few seconds.  
 10.3.20: (6 a.m.) Distinct improvement.  
 12.3.20: (6 a.m.) No change.  
 19.3.20: (6 a.m.) Lying in physiological position, ruminating.  
 27.3.20: (6 a.m.) No change.  
 3.4.20: (6 a.m.) Still completely paralysed, feeding normally.  
 6.4.20: (6 a.m.) No change.  
 10.4.20: (6 a.m.) No change.  
 16.4.20: (6 a.m.) No change.  
 17.4.20: (6 a.m.) Feeding normally. Muscles of legs atrophied; legs cannot be straightened out.  
 23.4.20: (4 p.m.) Treated with 3 g. ferrous sulphate dissolved in 500 c.c. normal saline intravenously. Dies instantaneously of shock.

\* See also Section E (a) (1) (ii).

## GOAT 13.

- Weight, 33 kg.  
 25.2.20: (5 p.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 75° C. for two hours.  
 3.3.20: (5 p.m.) Goat lies down rather more often than usual.  
 4.3.20: (6 a.m.) Distinctly ill. It lies down and refuses to rise. When lifted it can walk, but lies down again after a few minutes. (5 p.m.) No change.  
 5.3.20: (6 a.m.) Condition unchanged. (5 p.m.) Condition worse.  
 6.3.20: (6 a.m.) Lies on its side stretched out and kicking. When lifted it can only stand for about half a minute.  
 7.3.20: (6 a.m.) Unable to stand.  
 9.3.20: (6 a.m.) Condition unchanged. (5 p.m.) Slight improvement. Goat can now stand for a few seconds.  
 10.3.20: (6 a.m.) Distinct improvement.  
 12.3.20: (6 a.m.) No change.  
 19.3.20: (6 a.m.) Lying in physiological position ruminating.  
 27.3.20: (6 a.m.) Much worse. Goat lies down in a very weak state with mouth slightly open and tongue protruding. (10 a.m.) Dies of lamsiekte.

## GOAT 60.

- Weight, 26 kg.  
 9.4.20: (10 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: (5 p.m.) Found lying down, bleating, 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.) Improving in condition. Makes 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.  
 4.6.20: (7 a.m.) Is able to rise and to walk. Front legs bent in carpal joints.  
 5.6.20: (7 a.m.) Entirely recovered.

## SECTION D (a) (1) (iii).

## HORSE 13340.

- Weight, 352 kg.  
 2.4.20: (8 a.m.) Injected 1,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.  
 16.4.20: (10 a.m.) Injected 5,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.  
 19.5.20: (4 p.m.) Injected 10,000 × minimum lethal dose filtered toxin heated at 70° C. for twelve hours. No reaction.  
 5.7.20: Bled 2 litres.

## SECTION D (a) (1) (iv).\*

## HEIFER 4843.

- Weight, 165 kg.  
 9.2.20: (4 p.m.) Injected 150 × minimum lethal dose filtered toxin heated at 75° C. for ten minutes.  
 17.2.20: (6 a.m.) Lying down, unable to rise. No symptoms observed on previous day.  
 18.2.20: (6 a.m.) Looks somewhat better. It lies in a physiological position, but cannot get up.  
 20.2.20: (6 a.m.) Condition unchanged. (9 a.m.) Animal is lifted and can stand for a few minutes, then lies down again.

\* See also Section E (a) (1) (iii).