

the consistence was firm. The rumen and reticulum contained coarse ingesta, and pieces of crushed bones were present in the latter. The contents of the omasum were soft; also those of the abomasum. The mucosa of the fundus was dirty brown; that of the pylorus showed no changes. The mucosa of the small intestines was diffusely reddened in some parts, and in others red cross stripes were present. The large intestines showed no changes. The mesentery showed a fair amount of fat. Some of the mesenteric lymph-nodes were enlarged, reddened, and on section clear liquid escaped. The bladder contained clear urine; the mucosa showed no changes. The brain showed no abnormalities.

*Pathological Anatomical Diagnosis:* Enteritis catarrhalis. Slight hydrothorax. Hyperaemia of the liver and kidneys. Ecchymoses in the heart.

*Diagnosis of Disease:* Lamsiekte.

3. POST-MORTEM REPORT OF TOLLIE 4050.—A dun-coloured 15-month-old tollie in good condition. The autopsy was made one hour after death. Rigor mortis was absent. The abdomen was relaxed. The mouth was open and the tongue was between the lips; the anus was closed. The visible mucous membranes showed no peculiarities. The blood was not completely coagulated, staining well. The flesh had a healthy colour. Fat was present in the adipose deposits of the subcutaneous tissue. The right superficial cervical lymph-node was somewhat moist and enlarged. The lymphatic nodes of the trunk were of usual size, but somewhat reddened. In the peritoneal cavity were no foreign contents; the situs viscerum was normal. The serosa was smooth and glistening, the diaphragm was convex forward. The pleural cavities showed no abnormalities. In the oral cavity was a bolus of grass. The tongue and pharynx showed no changes; some mucous deposit was present in the cervical portion of the oesophagus; the thoracic portion contained a small stone. The salivary glands showed no changes. The mucous membranes of the septum and turbinated bones was blue in colour.

The larynx showed no changes. The cervical trachea contained some froth. The thyroid showed no changes. The lungs were contracted. Their colour was pink and their consistence elastic. The pleura was smooth, glistening, and transparent. The left lobe was richer in blood than the right one. Froth was present in the bronchi and in the thoracic trachea. The pericardium was empty. The parietal serosa was smooth and glistening. The right ventricle and atrium were distended; the left ventricle was contracted. On the left ventricle were some petechiae in septum and papillary muscles. In the epicardium were a few ecchymoses. The myocardium was red-brown and of glossy appearance on section. The periportal glands showed no changes. The liver appeared enlarged; the borders of the left lobe were somewhat blunt. The capsule of the parietal surface of the right lobe showed some fibrous adhesions and a cicatrix; on the same surface of the left lobe were some depressions, otherwise the capsule was smooth and glistening. The gall bladder was distended with thick greenish bile. A bile-stone in size of a nut was present. The mucosa showed ramified injection. The ductus choledochus was open. The bile-ducts were yellowish discoloured. The parenchyma was red-brown; on section, granular and of firm consistence. The pancreas was yellowish-grey. The dimensions of the spleen were  $33 \times 9$  cm. The capsule was somewhat shrivelled and contained some fat. Trabeculae and follicles were distinct. The pulpa was dry and pale brown; the consistence was firm.

The cortex of the left suprarenal gland was light brown; that of the right, yellow. The adipose capsule of the kidney was rich in fat. The fibrosa stripped easily. The surface of the kidney was smooth and finely reticulated. The parenchyma was red-brown; the consistence was firm. The rumen contained the usual ingesta. Numerous stones (about a hundred pieces), coal, china, and bones were found in the ventral portion of the rumen. The papillae and the mucosa were slightly reddened. The ingesta in the reticulum were dry, the mucosa was slightly red, and bones and stones were also present. The omasum had dry contents. The abomasum contained liquid ingesta, as well as a piece of china; another piece was found in the omaso-abomasal orifice. The mucosa of the fundus was of pink colour and some ecchymoses were present. The mucosa of the small intestines was reddened practically throughout its whole length. Marked cross stripes and patches were present in several places. The mucosa of the large intestines was slightly reddened in some parts and covered with mucus. The mesentery, as well as the lymph-nodes, which were somewhat enlarged, were rich in blood. The bladder was distended with clear urine. The mucosa showed no changes. The brain showed no peculiarities.

*Pathological Anatomical Diagnosis:* Gastro-enteritis catarrhalis. Hyperaemia of liver. Perihepatitis fibrosa. Ecchymoses in heart. Foreign bodies in rumen, reticulum, and omasum.

*Diagnosis of Disease:* Lamsiekte.

4. POST-MORTEM REPORT OF TOLLIE 4099.—A 1-year-old tollie in good condition. The autopsy was commenced two and a half hours after death. Rigor mortis was not complete. The integument was intact. The abdomen was relaxed. Mouth and anus were closed. The visible mucous membranes showed no changes. The blood was coagulated. The flesh and subcutaneous tissue showed no changes. The lymph-nodes of trunk and head appeared enlarged, their cortex was white, the medulla varying in colour from red to dark red.

The peritoneal cavity showed no foreign contents; the intestines were slightly reddened; the serosa was smooth and glistening. The diaphragm was convexed forwards. The pleural cavities were free of foreign contents; the pleura was smooth and glistening. The tongue, pharynx, oesophagus, and salivary glands showed no changes. The lungs were inflated; the colour was pale pink. The pleura was transparent, smooth and glistening, and scattered all over were numerous small ecchymoses. The tissue was full of air, of elastic consistence, and blood was absent. In the bronchi and trachea was some blood-coloured froth. In the pericardium were a few drops of a clear liquid. The right ventricle was distended with partially coagulated blood, the left one was contracted and contained a small quantity of blood. In the endocardium of the septum and of the papillary muscles were numerous ecchymoses. The myocardium was pale brown and somewhat opaque. The periportal lymph-nodes were somewhat enlarged. The liver appeared slightly enlarged, the border of the left lobe was slightly blunt. The capsule was smooth and glistening. The parenchyma was dark red-brown; on section, it was smooth and glossy and rich in blood. The gall bladder was distended with yellow-green liquid bile. The mucosa was yellow stained. The ductus choledochus was open. In the bile-ducts of both lobes *Stilesia hepatica* was present. The pancreas was rich in blood. The spleen dimensions were 36 × 12 cm. The capsule of the apex was somewhat shrivelled. The parenchyma was light brown; the follicles were visible; the trabeculae were less distinct; the consistence was fairly firm. The cortex of the suprarenal glands appeared striated. The adipose capsule of the kidney was rich in fat; the fibrosa stripped easily; the surface of the organ was smooth. The parenchyma was dark red-brown. The intermediary zone and the medulla were of very dark colour. The rumen contained coarse ingesta. The reticulum did not contain any food; two nails were piercing the reticular meshes. The omasum had moist contents. The abomasum contained some liquid ingesta mixed with blood; its mucosa was diffusely pink. The mucosa of the small intestines throughout the whole length was slightly swollen and all along showed haemorrhagic cross stripes, interrupted in some parts by haemorrhagic patches. The mucosa of the caecum was slightly pink; some red blotches were present in the mucosa of the colon. The rectum was diffusely pink. The mesentery was rich in fat. The mesenteric lymph-nodes were enlarged. The bladder contained some clear urine; the mucosa showed no alterations. The brain showed no changes.

*Pathological Anatomical Diagnosis:* Gastro-enteritis haemorrhagica. Foreign bodies in reticulum. Hyperaemia of liver and kidney. Ecchymoses in left endocardium. Petechiae in pleura pulmonum.

*Diagnosis of Disease:* Lamsiekte.

5. POST-MORTEM REPORT OF TOLLIE 4330.—A 1-year-old dun tollie in poor condition. The autopsy was commenced one and a half hour after death. Rigor mortis was not complete. The integument was intact. The abdomen was relaxed. The mouth was open, the tongue was inside. The anus was closed. The blood was partly coagulated. The flesh was pale; the subcutaneous tissue was devoid of fat. The lymph-nodes of the trunk were of usual size; some were embedded in a watery connective tissue. The peritoneal cavity showed no foreign contents; the situs viscerum appeared normal. The serosa was smooth and glistening. The diaphragm was convex forward. A small quantity of clear liquid was present in the pleural cavity. The pleura was smooth and glistening. The tongue, pharynx, oesophagus, and the salivary glands showed no changes. In the larynx and trachea some froth was found. The lungs were contracted, the left one appeared bluish and was rich in blood. The consistence was elastic. The bronchi and trachea were filled with froth; the parenchyma was somewhat moist. The pericardial cavity

contained a small quantity of clear liquid. The parietal serosa was smooth and glistening. The right ventricle was slightly distended, but empty; the left was contracted. The endocardium showed no changes. The epicardium contained a fair amount of fat at the base. The myocardium was pale and opaque and contained a few cysticerci bovis.

The periportal glands showed no changes. The left borders of the liver were somewhat sharp. The capsule was smooth and glistening. The parenchyma was red-brown, finely granular on section and of firm consistence. The gall bladder contained green-yellow liquid. The ductus choledochus was open. The mucosa of the bile-ducts appeared slightly thickened. *Stilesia hepatica* was present. The pancreas was pale and soft. The dimensions of the spleen were  $30 \times 11$  cm.; its volume was slightly increased. The parenchyma was dark reddish-brown. The follicles were visible. The consistence was fairly firm. The cortex of the suprarenal glands appeared narrow and was yellow in colour.

The adipose capsule of the kidneys was poor in fat. The fibrosa stripped easily. The surface of the kidney was smooth. The parenchyma was of pale brown colour; the zones were well marked; the consistence was firm. The rumen was filled with normal ingesta. The reticulum contained a small quantity of soft ingesta, and pieces of lead were present. The omasum and abomasum contained soft ingesta; the mucosa of the latter was patchy red. Parts of the small intestines showed red cross stripes. Caecum and colon showed no alterations. In the rectum were some faeces covered with mucus. A little fat was present in the mesentery. The lymph-nodes were of usual size and colour. The bladder was almost empty, the mucosa showed no changes. The brain showed no peculiarities.

*Pathological Anatomical Diagnosis:* Slight enteritis catarrhalis. Slight cirrhosis of liver. Parasitic infection of heart and liver.

*Diagnosis of Disease:* Lamsiekte.

6. POST-MORTEM REPORT OF OX 3448.—An aged ox in poor condition. It had died the previous night. Rigor mortis was present. The integument was intact. Mouth and anus were closed. The visible mucous membranes showed no abnormalities. The blood was well coagulated, and there was no fat in the subcutaneous tissue. The flesh had a somewhat pale colour. The superficial lymph-nodes showed no changes. The peritoneal cavity showed no foreign contents. The omentum was connected to the diaphragm by a fibrous string. The reticulum was attached to the diaphragm. The serosa was smooth and glistening. The diaphragm was convex forward. On peritoneal surface were some fibrous adhesions; also on the thoracic side. The eighth rib showed a callus near its dorsal, and the seventh one near its ventral extremity. The pleura was smooth and glistening, and no foreign contents were present in the cavity. The tongue, pharynx, and oesophagus showed no changes. Both parotid and submaxillary glands were of usual consistence and appearance. The larynx and the cervical trachea contained a little froth. The thyroids showed no changes. The lungs were partly contracted; the right lung appeared somewhat purple. The pleura of dorsal border of both lobes showed fibrous thickening. The consistence of the lungs was elastic; the right one was fairly rich in blood; and both were moist on section. Bronchi and thoracic trachea contained froth. The intima of the pulmonary veins and arteries was smooth.

The parietal serosa of the pericardium was partly attached to the epicardium, which could easily be broken, leaving fibrous adhesions on both portions of the serosa. No liquid was present. The right ventricle contained a well-formed clot, the left a smaller one. The epicardium was partly enveloped by a fibrous membrane. Ecchymoses and small hæmorrhages were present. A fair amount of fat was present at the base. In the endocardium were some streaky hæmorrhages. The myocardium was light brown in colour and shiny on section. Near the apex were some cicatricial thickenings. The aorta was elastic and the intima smooth. The periportal lymph glands showed no changes. The liver was of normal size; the left borders were rather sharp; the colour was dark blue. The capsule was smooth and glistening. The parenchyma was dark brown in colour; the section appeared smooth and glossy; the consistence was firm. The gall bladder contained green liquid bile. The ductus choledochus was open. The mucosa was greenish discoloured. The bile-ducts were filled with bile. The vessels of the liver showed no changes, and their intima was smooth. The pancreas was brown, rich in blood, and was sprinkled with numerous punctate ecchymoses. The dimensions of the spleen were  $41 \times 12$  cm. The capsule was tense. The pulpa was soft, dark brownish-red, slightly protruding above the cut surface. The trabeculae and follicles were

not distinct. The cortex of the left suprarenal gland was brown and pigmented. The adipose capsule of the kidney was rich in fat; the fibrosa stripped easily. The kidney was dark brown; the intermediary zone was markedly dark; the consistence was firm. The left kidney was somewhat lighter in colour. The rumen contained rather coarse, somewhat dry ingesta. A few amphistomas were present behind the rumeno-reticular fold. The reticulum was empty. The contents of the omasum were fairly soft. The abomasum contained liquid ingesta. The mucosa of the fundus was pink and the folds were slightly swollen.

The small intestines were distended with gas. The mucosa of the jejunum in parts showed red cross striations and red patches were present in other parts. The commencing portion of the colon mucosa was reddish. Some dry faeces were present in the rectum. The mesentery possessed a fair amount of fat; the lymph-nodes showed no changes. The urinary bladder was almost empty; the urine was clear; the mucosa showed no alterations. The pia mater was somewhat injected. The brain showed no changes.

*Pathological Anatomical Diagnoses:* Gastro-enteritis catarrhalis. Pericarditis fibrosa. Peritonitis fibrosa. Pleuritis fibrosa.

*Diagnosis of Disease:* Lamsiekte.

7. **POST-MORTEM REPORT OF TOLLIE 4108.**—An 18-month-old tollie in fair condition. It had died during the previous night. Rigor mortis was absent in fore and present in hind quarters. The abdomen was slightly distended. The integument was intact. Mouth and anus were closed. The visible mucous membranes showed no abnormalities. The blood was coagulated; the clots were of firm consistence. The flesh showed no changes in colour. The panniculus adiposus showed some fat. The subcutaneous tissue on off side of the neck showed oedematous infiltration. The superficial lymph-nodes were of usual size and aspect, with the exception of the right superficial cervical, which was much enlarged, haemorrhagic, and embedded in gelatinous connective tissue.

The peritoneal cavity contained a small quantity of clear liquid with a few flocculi. The situs viscerum was normal. The serosa was smooth and glistening. The diaphragm was convex forward. The pleural cavity showed no foreign contents; the pleura was smooth and glistening. The tongue, pharynx, and oesophagus showed no changes. The salivary glands were of usual consistence and aspect. The larynx and the cervical trachea contained traces of ingesta; the mucosa showed no changes. The lungs were contracted. The pleura was smooth and glistening, except at the dorsal border of the main lobe, where it was white and fibrous. The consistence of the lung was elastic. On section, the tissue appeared moist, some moisture being also present in the bronchi and trachea. The pericardium contained a few drops of clear liquid. The parietal serosa was smooth and glistening. The right ventricle was slightly distended with well-coagulated blood; the atrium was fully distended with a large clot. Left ventricle and atrium were empty. Much fat was present at the base of the heart. Petechiae were found in epicardium of both ventricles; they were more numerous in that of the right ventricle. The endocardium showed no changes. The myocardium was light brown and of firm consistence. The liver appeared of normal size and shape; there were some fibrous adhesions, otherwise the capsule was smooth and glistening. The parenchyma was pale brown, and on section appeared smooth; the consistence was somewhat soft. The gall bladder contained yellowish-green bile; the mucosa was yellow stained; the ductus choledochus was open. The capsule of the spleen was somewhat shrivelled on the parietal side. The parenchyma was moist and soft. The trabeculae were visible and the follicles fairly distinct. The dimensions were 37 × 11 cm. The cortex of the suprarenal glands was brown. The adipose capsule of the kidney was rich in blood; the fibrosa stripped easily; the surface was smooth and the colour was red-brown; the three zones were distinct; the consistence was firm. The rumen contained coarse ingesta. The reticulum contained no ingesta, only a bone and some sand being present. The contents of the omasum were hard; those of the abomasum were liquid. The mucosa was pinkish, near the pylorus it was injected. The small intestines contained gas and some reddish-brown liquid. The mucosa of the duodenum and of the commencing portion of the jejunum showed red cross stripes; the greater portion of the mucosa of jejunum and ileum was diffusely reddened and slightly swollen. The mesentery contained a fair amount of fat; the lymph-nodes were somewhat enlarged and moist. In the bladder some clear urine was found. The mucosa showed no changes. The brain showed no abnormalities.

*Pathological Anatomical Diagnoses:* Gastro-enteritis catarrhalis. Petechiae in epicardium. Perihepatitis fibrosa. Pleuritis fibrosa.

*Diagnosis of Disease:* Lamsiekte.

8. **POST-MORTEM REPORT OF HEIFER 3805.**—A 2-year-old heifer in poor condition. The autopsy was commenced soon after death. Rigor mortis was absent. The integument on legs and shoulder of near side showed some excoriations. The abdomen was relaxed. The mouth and anus were closed. The visible mucous membranes showed no peculiarities. The blood was not coagulated and stained badly. The flesh was pale. The subcutaneous tissue was devoid of fat, and jelly-like infiltrations were present in several places under the skin and also between the muscles. The lymphatic nodes were small and embedded in jelly-like connective tissue. The peritoneal cavity contained a small quantity of clear liquid. The serosa was smooth and glistening. The situs viscerum was normal. The diaphragm was convex forward. The pleural cavities showed no foreign contents. The parietal serosa was smooth and glistening. The tongue, the pharynx, and the oesophagus showed no changes. The parotid and sub-maxillary glands were of usual consistence and embedded in somewhat watery connective tissue. The larynx and trachea showed no changes. The lungs were somewhat contracted. The visceral pleura was smooth and glistening. The consistence of the lungs was elastic throughout. Some froth was present in the bronchi and trachea. The lung tissue on section appeared slightly moist. The pericardium contained a little liquid. The parietal serosa was smooth and glistening. Some blood was present in the ventricles and the atria, more in those of the right than of the left side. Ecchymoses were noted on the left endocardium and in the epicardium. The fat at the base of the heart was replaced by a jelly-like substance. The myocardium was dark brown. The periportal lymph-nodes showed no changes. The liver appeared to be of usual size and shape. The capsule was smooth, glistening, and transparent. The parenchyma was red-brown in colour; on section, it had a smooth appearance; the consistence was firm. The gall bladder contained green liquid bile. The ductus choledochus was open. The pancreas showed no changes. The dimensions of the spleen were  $36 \times 12$  cm. The capsule was slightly shrivelled. The parenchyma appeared to be dry and was brown in colour; the trabeculae were distinct. The cortex of the suprarenal glands was bright yellow. The adipose capsule of the kidney was watery; the fibrosa stripped easily. The surface of the kidney was smooth. The parenchyma was dark brown; the intermediary zone was of a deeper shade; the consistence was firm. The rumen and reticulum contained normal ingesta. The ingesta of the omasum were of soft consistence, and those of the abomasum were liquid. The mucosa of the fundus was somewhat pink, while that of the duodenum, jejunum, and ileum throughout the whole length was slightly swollen and reddened; the red discoloration was diffuse and uniform. The reddening of the caecum was less marked, and still less that of the colon. The mesentery was watery and had a jelly-like consistence; the mesenteric lymph-nodes were rather small. The bladder contained clear urine. The mucosa showed no changes. The brain showed no peculiarities.

*Pathological Anatomical Diagnosis:* Hydraemia and anaemia. Gastro-enteritis catarrhalis.

*Diagnosis of Disease:* Lamsiekte.

9. **POST-MORTEM REPORT OF COW 3379.**—An aged cow in poor condition. She died during the preceding night. Rigor mortis was present in hind and absent in fore quarters. The integument was intact; the abdomen was slightly distended. Mouth and anus were closed. The visible mucous membranes showed no changes. The blood was well coagulated, and the flesh had a somewhat pale colour. The subcutaneous tissue was poor in fat depots. The left superficial cervical lymph-node was somewhat enlarged and haemorrhagic. The peritoneal cavity showed no changes. The diaphragm was convex forward. The abdominal surface showed some fibrous adhesions; the serosa was slightly thickened. No foreign contents were present in the pleural cavity. The fifth and seventh ribs of the left wall showed the presence of a fairly fresh callus. In cutting into the callus of the seventh rib, a piece of bone could be detached. The seventh rib of the right side showed an old fracture.

The mucous membranes of the mouth were of a bluish colour. A bolus of food was found in the pharynx. The oesophagus showed no changes. The retropharyngeal and the mandibular lymph-nodes were slightly enlarged and full of blood. The salivary glands showed no peculiarities. The larynx showed no changes. In the mucosa of the trachea were a number of ecchymoses. The lungs were partly in the inspiratory stage. The pleura was smooth and glistening. The parenchyma was rich in blood; on section, it appeared moist. The mucosa of the bronchi was diffusely red-stained; also the intima of pulmonary veins and arteries. The mediastinal and bronchial lymph-nodes were slightly enlarged and full of blood.

The pericardium contained a small quantity of red-stained liquid; the parietal serosa was of a reddish colour. The right ventricle and atrium of the heart were distended with a well-formed clot. The left ventricle contained only a small quantity of blood. The left endocardium showed a number of haemorrhagic streaks. The right endocardium was diffusely red-stained. The myocardium was opaque and unusually hard. The epicardium showed ecchymoses along the longitudinal grooves. The liver was of usual size. The colour was that of clay. The cut surface was opaque and reddish. Gas bubbles escaped freely. The gall bladder contained liquid green bile; the ductus choledochus was open. The pancreas was soft in consistence and reddish in colour. The dimensions of the spleen were  $45 \times 12$  cm.; the capsule was somewhat shrivelled. The parenchyma was softened, the trabeculae were distinct, the follicles indistinct. The suprarenal glands were rather small. The adipose capsule was poor in fat; the fibrosa stripped easily. The surface of the right kidney was smooth and dark. The cortex was somewhat striated. The intermediary zone was black. The consistence was somewhat soft. The left kidney was blacker than the right one and very moist. The mucosa of the cranial caecal portion of the rumen was diffusely reddened. The ingesta were coarse. Amphistomas were present. Normal ingesta were found in the reticulum. The omasum was filled with somewhat dry ingesta. The contents of the abomasum were liquid. The mucosa was somewhat reddened. The mucosa of the small intestines was diffusely reddened; red cross stripes were present, and numerous superficial small ulcers, reaching in size that of a pea, were placed in the mucosa. The mucosa of the caecum was diffusely reddened; that of the colon showed no changes. A mucous deposit was found on the mucosa of the rectum. The mucosa of the anus was injected. The mesentery was somewhat poor in fat, the lymph-nodes were rather small. The urinary bladder was empty; the mucosa was slightly injected. The sexual organs showed no changes. The dura and pia mater and the brain showed no abnormalities. Under the pia mater some gas bubbles were present.

*Pathological Anatomical Diagnosis:* Ruminitis haemorrhagica. Gastro-enteritis catarrhalis and necroticans disseminata.

*Diagnosis of Disease:* Lamsiekte.

10. POST-MORTEM REPORT OF HEIFER 183.—A two-tooth heifer in rather poor condition. The autopsy was made about two hours after death. Rigor mortis was not present. The integument was intact. The anus was closed. The tongue was hanging out of the mouth. The visible mucous membranes showed no changes. The blood was not completely coagulated. The flesh appeared pallid. The subcutaneous tissue was poor in fat, and in some places were jelly-like infiltrations, especially in the intermandibular space, and extending into the pharyngeal region. The superficial lymph-nodes of the trunk were somewhat enlarged and moist, as were those of the head. The peritoneal cavity contained about half a litre of straw-coloured fluid. The serosa was smooth and glistening. The convexity of the diaphragm was forward. The pleural cavities showed no foreign contents; the parietal serosa was smooth and glistening. A bolus of food was found in the oral cavity. The mucosa of the tongue presented nothing particular to notice. The pharynx was empty and the mucosa was pale. The oesophagus contained ingesta in both cervical and thoracic portions. The salivary glands showed no abnormal consistency and were pale. The larynx and trachea contained some froth and traces of ingesta. The mucous membrane was pale. The lungs were contracted. The pleura was somewhat shrivelled. The lung tissue was elastic. Some liquid escaped on pressure from a section cut through the tissue. The bronchi contained a fair amount of froth; the mucosa was white. The pulmonary arteries contained coagulated blood; the veins were empty. A small quantity of straw-coloured fluid was present in the pericardium; the parietal serosa was smooth and glistening. The right and left ventricles of the heart were distended, but empty. Small blood coagula were present in the atria. The endocardium showed no changes; neither did the epicardium. Some fat was still present at the base of the heart. The myocardium was pale.

The periportal glands were somewhat enlarged and moist. The liver was of normal size and shape. The capsule was smooth and glistening. The parenchyma was light brown; on section, it appeared smooth; the consistence was firm. The gall bladder was distended with green liquid bile; the ductus choledochus was open. The pancreas was pale grey in colour. The atrial glands were somewhat enlarged and moist. The spleen was slightly thickened; the capsule was tense. The parenchyma was reddish-brown and fairly solid. The follicles were distinct, not so the trabeculae. The suprarenal

glands were small and somewhat brown. The adipose capsule of the kidney was poor in fat, and it was infiltrated with liquid. The fibrosa stripped off easily. The surface of the kidney was smooth; it was dark brown. On section, all three zones were distinct; the intermediary zone was deeply reddened. The rumen and reticulum contained coarse ingesta. The contents of the omasum were dry. The abomasum contained liquid. The mucosa presented nothing of special notice. The mucosa of the small intestines throughout the whole length was pinkish; the contents were mucus. The mucosa of the large intestines was similar to that of the small intestine. The rectum contained some hard faeces. The mesentery showed no fat—it was gelatinous; the lymph-nodes were somewhat enlarged and moist. The urinary bladder was empty and the mucosa was slightly reddened. The vessels of the pia mater were strongly injected.

*Pathological Anatomical Diagnosis:* Anaemia and hydraemia. Enteritis catarrhalis. Oedema of the lymph-nodes. Slight ascites. Oedema pulmonum.

*Diagnosis of Disease:* Lamsiekte.

11. POST-MORTEM REPORT OF HELFER 178.—A two-tooth heifer in fair condition. She died during the preceding night. Rigor mortis was present. The integument was intact; the abdomen was relaxed. The anus was closed. Some wounds were found on the inner side of the lips and on the gums. There was a bolus of food in the oral cavity. The blood was coagulated, the coagula being of a somewhat soft consistence. The flesh was rather pallid. In the subcutaneous tissue some fat was present. The superficial lymph-nodes of the trunk appeared somewhat swollen and moist. The left superficial cervical lymph-nodes showed haemorrhagic infiltration surrounding a caseous focus. The lymph-nodes of the pharynx were conspicuously enlarged and contained much blood. The peritoneal cavity contained a small quantity of clear liquid. The serosa was smooth and glistening. The diaphragm was convex forward. No foreign contents were present in the pleural cavity; the parietal serosa was smooth and glistening, and the tongue presented the usual appearance. The mucosa of the pharynx and oesophagus was somewhat pale; the oesophagus contained some ingesta. The larynx and trachea contained some froth and traces of ingesta. The mucosa was pale. The lungs were in partial inspiratory stage. The left lung was attached to the costal pleura by a fibrous ligament. The lung tissue was elastic. A section through the tissue appeared moist, and froth was present in the bronchi; the mucosa was pale. The lymph-nodes of the mediastinum and of the bronchi were enlarged and moist, and the supporting connective tissue was jelly-like. The pericardium contained a small quantity of straw-coloured clear fluid. The parietal serosa was smooth and glistening. The right ventricle and atrium were distended with a clot of blood; on opening the cavity some gas bubbles escaped. The left ventricle contained a smaller clot. The endocardium presented nothing extraordinary. The epicardium was smooth and glistening. A fair amount of fat was still present at the base of the heart. The myocardium of the outer portion of the wall was somewhat pale and shiny on section. The aorta was elastic and the intima smooth. The periportal lymph-nodes were conspicuously enlarged and moist. The liver was of normal size and shape. The capsule was smooth, glistening, and transparent. The parenchyma was light red-brown, and on section it appeared smooth; the consistence was fairly hard, and the knife caused a harsh noise when cutting. The gall-bladder was distended with brown-greenish bile containing flocculi. The ductus choledochus was open. The bile-ducts were thickened and distended hepaticum was present.

The pancreas was somewhat pale. The atrial lymph-nodes were enlarged and reached the size of small potatoes; they were moist on section. The dimensions of the spleen were  $52 \times 15 \times 5$  cm. The capsule was tense and smooth. The pulpa on section resembled raspberry jam in colour and consistence. It was protruding over the section and obscuring the structure, hiding follicles and trabeculae. It could easily be scraped off. The suprarenal glands appeared rather small, the cortex was dark brown pigmented. The adipose capsule was poor in fat and of jelly-like consistence. The fibrosa stripped easily. The surface of the kidney was smooth. The organ was unusually moist, particularly pronounced in a jelly-like consistence of the hylus. The colour was brown, the cortex was striated; the three zones could be distinguished. The rumen contained normal ingesta. Numerous amphistomas were present in the mucosa of both sides of the rumeno-reticular fold. The reticulum contained soft ingesta. The contents of the omasum were rather dry. Those of the abomasum were liquid. The mucosa of the fundus was reddened, particularly the folds, and black streaks and patches were found on the folds. The small

intestines were contracted. The mucosa throughout the whole length was diffusely reddened and cross-striped; parts of it were bile-stained. The mucosa of the large intestines showed no changes; dry faeces were present in the rectum. The mesentery was somewhat gelatinous; the lymph-nodes were slightly enlarged. The bladder contained clear urine. The mucosa showed no changes. The brain presented nothing extraordinary.

*Pathological Anatomical Diagnosis:* Anaemia. Oedema of lymph-nodes. Tumor splenis. Gastro-enteritis catarrhalis. Cirrhosis of liver. Distomatosis. Pleuritis fibrosa.

*Diagnosis of Disease:* Lamsiekte.

12. POST-MORTEM REPORT OF HEIFER 4527.—A red and white heifer in moderate condition. Death had occurred during the preceding night. Rigor mortis was not complete. The abdomen was not distended. The integument was intact. Mouth and anus were closed. The visible mucous membranes showed no peculiarities. Some fat was present in the depots of the subcutaneous tissue. The superficial lymph-nodes presented nothing unusual. The peritoneal cavity showed no foreign contents. The serosa was smooth and glistening. The convexity of the diaphragm was forward. No foreign contents were present in the pleural cavity. The parietal serosa was smooth and glistening. The tongue, pharynx, and oesophagus showed no changes. The sub-maxillary and retropharyngeal lymph-nodes were somewhat enlarged and moist. The salivary glands were of usual appearance. The larynx and trachea contained some froth, and in the latter some mucus was present as well. The mucosa was smooth and white. The bronchial lymph-nodes were enlarged and contained much blood. The apical lobe and right cardiac lobe of the lungs were consolidated; a section through the tissue presented a red, somewhat granular surface and contained numerous white foci, in size that of a bean. The mucosa of the bronchi belonging to these parts was injected, otherwise the lung tissue was elastic and somewhat moist. Froth was present in the bronchi. The pleura with the exception of the consolidated portions was smooth and glistening; on the portions mentioned it was somewhat opaque. The pericardium contained about 10 c.c. clear liquid. The parietal serosa was smooth and glistening. The right ventricle was distended with well-coagulated blood. The endocardium presented nothing particular for notice. In the epicardium along the longitudinal grooves were some ecchymoses. Some fat was present at the base of the heart. The periportal lymph-nodes showed no changes. The liver appeared of usual size and shape. The capsule was smooth and glistening. The parenchyma was red-brown, and small yellow points were present within; the consistency was firm. The gall bladder contained some liquid green-yellow bile. The ductus choledochus was open. The dimensions of the spleen were 24 × 14 cm. The pulpa was slightly softened; both trabeculae and follicles were visible. Rumen, reticulum, and omasum contained normal ingesta. The abomasum contained soft ingesta. The mucosa of the fundus was blackish pigmented. The mucosa of the duodenum was reddened; also the mucosa of the jejunum and cross stripes and diffuse haemorrhagic patches were present. The mucosa of the caecum was deeply reddened; that of the colon was less so. The rectum contained soft faeces. The mesentery contained some fat; the glands showed nothing of particular interest.

The cortex of the suprarenal glands was yellow-brown with red streaks. The adipose capsule contained some fat. The fibrosa stripped easily. The surface of the kidney was moist. The colour was dark brown; the intermediary zone appeared deeply reddened. The bladder contained some clear urine, the mucosa showed no changes. The pia mater was somewhat injected. The brain presented no peculiarities.

*Pathological Anatomical Diagnosis:* Broncho-pneumonia mortificans. Enteritis-haemorrhagica. Ecchymoses of the epicardium.

*Diagnosis of Disease:* Lamsiekte.

13. POST-MORTEM REPORT OF HEIFER 4547.—A black heifer in fair condition. The autopsy was made about three hours after death. Rigor mortis was absent in fore but present in hind quarters. The integument was intact. The anus was closed. The tongue was protruding. The flesh was somewhat pale. There were traces of fat in the subcutaneous depots. There was a jelly-like infiltration of the subcutaneous tissue on shoulder and on side of thorax, on which the heifer had been lying. The superficial lymph-nodes showed no peculiarities. The peritoneal cavity showed no foreign contents. The serosa was smooth and glistening. The diaphragm was convex forward. The pleural cavities



contained a little clear liquid. The parietal serosa was smooth and glistening. The tongue, pharynx, and salivary glands showed no changes. The thoracic portion of the oesophagus contained ingesta; the mucosa showed no changes.

The larynx and trachea contained some froth. The lungs were retracted. The pleura of the left lung was bluish in colour; the consistence of the lung tissue was elastic; on section, it appeared somewhat moist. Froth was present in the bronchi. The pericardium contained 50 c.c. of clear fluid. The parietal serosa was smooth and glistening. The right ventricle and atrium were distended with a well-formed blood-clot; the left ventricle and atrium contained a small clot and some not coagulated blood was also present. The endocardium on both sides was smooth and glistening. A fair amount of fat was present in the sulci. On the epicardium of right ventricle were a number of petechiae. The myocardium was somewhat opaque. The intima of the vasa cordis was smooth. The periportal lymph-nodes were somewhat moist. The liver was of usual size; the capsule was smooth and glistening; the colour was dark brown; the consistence firm. Numerous discrete yellow points, in size that of a pin-head, were scattered throughout the parenchyma. The gall bladder contained a fair amount of yellow thick bile; the ductus choledochus was open; the mucosa was yellow discoloured. The pancreas showed no abnormal condition. The spleen dimensions were 40 × 12 cm. The pulpa was softened and could easily be scraped off. The trabeculae were not visible in all places.

The cortex of the suprarenal glands was brownish. The adipose capsule contained some fat; the fibrosa stripped very easily. The surface of the kidney was smooth and the colour was dark red-brown; on section, the three zones were distinct; the consistence was firm. The rumen was slightly distended and contained ingesta of normal appearance; a few amphistomas were present. The reticulum contained ingesta and some sand; small pieces of wire were also present. The contents of the omasum were moist. The abomasum contained liquid ingesta. The mucosa of the fundus showed some haemorrhages on the edges of the folds. The duodenum and the whole length of the jejunum and ileum showed the mucosa diffusely but slightly reddened and covered with mucus; the mucosa of the large intestines was also reddened; that of the colon in addition was pigmented and swollen, forming longitudinal folds and wrinkles. The rectum was empty and the mucosa was pale. The mesentery showed some fat; the lymph-nodes were of usual size and on section somewhat moist. The urinary bladder was distended with clear urine; the mucosa presented nothing abnormal. The pia mater was somewhat injected. The brain showed no changes.

*Pathological Anatomical Diagnosis:* Enteritis catarrhalis. Ecchymoses in fundus. Petechiae in epicardium.

*Diagnosis of Disease:* Lamsiekte.

14. **POST-MORTEM REPORT OF COW 3868.**—A full-mouth black cow in fair condition. Death had occurred during the previous night. Rigor mortis was present. The integument was intact; the abdomen was distended. The anus was closed. The tongue was hanging between the lips. The visible mucous membranes showed no peculiarities. The blood was coagulated, the clot being fairly solid. The flesh had a somewhat dark colour in some parts of the body. In the subcutaneous tissue some fat was present. The superficial cervical lymph-nodes of both sides were much enlarged and full of blood. The supporting connective tissue was oedematously infiltrated and injected. The lymph-nodes of the pharyngeal region were also enlarged and rich in blood. The peritoneal cavity showed no foreign contents. The serosa was smooth and glistening in some parts and slightly injected in others. The intestines were distended with gas. The serosa of the rumen in its caudal portion showed some ecchymoses reaching in size that of a sixpence. The diaphragm was convex forward; some fibrous adhesions were present. The pleural cavity showed no foreign contents. The pleura of the left side was diffusely wine-red. In the intercostal spaces small patches and streaks of a granulation tissue were found. The tongue showed no changes. The dorsal aspect of the pharyngeal mucosa was diffusely red; the cervical portion of the oesophagus was also discoloured. The mucosa of the larynx was wine-red and some ecchymoses were present; these were also found in the dorsal portion of the trachea. The thyroidea was of rather dark colour. The lungs were not completely retracted. The surface of the left lung appeared bluish in its oral portion. The parenchyma was elastic and on section somewhat moist. The bronchial mucosa was wine-red and ecchymoses were present; some froth was found in the lumen. The mediastinal and bronchial lymph-nodes were somewhat enlarged and moist.

The pericardium contained a small quantity of reddish fluid. The parietal serosa was discoloured, smooth, and glistening. The right ventricle and atrium were filled with coagulated blood, and some gas was present. The left ventricle was contracted. The right endocardium was diffusely reddened, the left one less so. The epicardium was reddish. The myocardium was somewhat opaque and moist and slightly softened in its consistence. The intima of arteries and veins showed no changes. The liver appeared of normal size. The capsule was smooth and glistening. The parenchyma was brown-muddy with yellow patches; it was opaque and the consistence was somewhat soft; gas bubbles escaped from the cut surface. The gall bladder contained some yellow bile. The ductus choledochus was open. The pancreas was wine-red, moist, and soft. The dimensions of the spleen were  $50 \times 12$  cm.; it was somewhat thickened. The parenchyma was black and soft; the trabeculae and follicles were visible; gas was also present. The suprarenal glands were somewhat discoloured. The adipose capsule of the kidney was fairly rich in fat. The fibrosa stripped easily. The parenchyma of the kidney was brown-red and moist; the zones were distinct; the consistence was somewhat softened. The rumen was filled with fairly coarse ingesta; the mucosa peeled off on removal of the ingesta. The sub-mucosa of the rumeno-reticular fold was reddened, haemorrhagic in patches, and injected. The reticulum was attached by fibrous adhesions to the diaphragm, but was easily detachable. The omasum contents were soft; those of the abomasum were pultaceous. The mucosa of the fundus was diffusely reddened; the folds were slightly swollen. The small intestines were reddish in parts; the mucosa of the caecum was brownish and that of the colon blackish. The mesentery contained a fair amount of fat; the lymph-nodes were somewhat soft, rather small, and on section appeared reddened. The bladder contained clear urine. The mucosa showed no changes. The brain was soft and moist.

*Pathological Anatomical Diagnosis:* Pleuris fibrosa. Ruminitis acuta. Gastro-enteritis catarrhalis.

*Diagnosis of Disease:* Lamsiekte.

15. **POST-MORTEM REPORT OF HEIFER 127.**—A six-tooth red and white heifer. Rigor mortis was present. The condition was poor. The abdomen was slightly distended. The integument was intact. The tongue was between the lips. The anus was open and faeces were escaping. The visible mucous membranes were pale. The blood stained well. The flesh showed no changes. In the subcutaneous tissue were traces of fat. The salivary glands were normal. The superficial cervical lymph-nodes were slightly enlarged, reddened and embedded in a watery connective tissue. The tongue showed no changes; on the left side of its base a cicatrix about one inch in diameter was noted. The cervical oesophagus showed no changes. The peritoneal cavity contained a small quantity of liquid. The mucosa of the pharynx was purple; the pharynx contained some ingesta. The small intestines were distended with gas. The diaphragm was convex forward. The pleural cavities contained a small quantity of blood-stained liquid. The lungs were slightly inflated. The pleura was smooth and transparent everywhere. The pleura of the basal lobe was somewhat whitish. The consistence of the lungs was elastic throughout. The mediastinum was gelatinous. The intima of the pulmonary veins was slightly reddened. The mucosa of the trachea was reddish in colour, and a little froth was present. The intima of the pulmonary arteries was wine-red, and some blood coagula were present. The intima of the thoracic aorta was diffusely red-stained. The left lung contained some mucous froth. The thyroid was dark brown. The pericardium was filled with red-stained liquid. It was attached to the costal pleura by a fibrous adhesion. The right ventricle was distended with well-coagulated blood and gas, the left ventricle with a small quantity of coagulated blood. The epicardium was slightly red in colour; fat was present in the coronary grooves. The right endocardium was diffusely red, the left showed no changes. The myocardium was greyish. The abdominal aorta showed no changes. The liver was of normal shape and size. The ductus choledochus was open. The gall bladder was distended with yellow bile and the mucosa was bright yellow; no changes were observed in the bile-ducts. The intima of the vessels was red. The parenchyma of the liver was reddish-brown, and grey foci of firm consistence were present. The pancreas was moist, grey, with wine-red patches. The dimensions of the spleen were  $37 \times 12$  cm.; The pulpa was dark brown and of somewhat liquid consistence. The follicles were distinct, the trabeculae not; on section the pulpa appeared soft. The cortex of the left suprarenal glands was somewhat brownish. The medulla was reddish.

The adipose capsule of the kidneys was gelatinous. The fibrosa stripped easily. The surface of the kidney was smooth and dark brown in colour; on section the zones were distinct. The intermediary zone was injected. The fundus of the stomach showed liquid contents; they were inspissated in the pyloric region; in parts the mucous membrane of the fundus showed black patches. The reticulum contained soft ingesta and small pieces of bones were present. The contents of the omasum were soft. Amphistomas were seen on the folds of the reticulum. The rumen was filled with normal ingesta. The mucosa showed no changes. The small intestines were slate-coloured in some parts. The large intestines showed no changes. The mesenteric lymph-nodes were rather small. The mesentery was poor in fat and of watery consistence. The bladder was empty. The mucosa showed no changes. The udder and lymph-nodes were somewhat moist. The uterus and ovaries showed no changes. The brain was somewhat moist. The blood showed slight anisocytosis on microscopic examination.

*Pathological Anatomical Diagnosis:* Gastro-enteritis catarrhalis. Foreign bodies in reticulum.

*Etiological Diagnosis:* Lamsiekte.

16. HEIFER 3507.—A black and white heifer in poor condition. The post-mortem was made two hours after death. Rigor mortis was absent. The integument was intact. The mouth was open, the tongue was hanging out; some masticated food was present in the oral cavity. The anus was closed. Some urine escaped from the vulva. The blood was not completely coagulated. The flesh showed no changes. The subcutaneous tissue was in places injected, and gelatinous infiltrations were present. On the right side of the neck a large abscess was noted containing pus and necrotic material. The salivary glands showed no changes. The lymphatic nodes were rather small and somewhat pale. The tongue showed no changes. The oesophagus was empty, the mucosa appeared normal. The pharynx contained a considerable amount of masticated food. The peritoneal cavity showed no foreign contents. The rumen and reticulum were attached to the peritoneal serosa by means of fibrous bands. The diaphragm was convex forward. The pleural serosa was smooth and glistening. The larynx contained some mucous deposits. The trachea and bronchi showed no changes. The lungs were slightly inflated and elastic throughout. The pleura was smooth, transparent, and pink in colour. The left lobe contained more blood than the right one, and was of a darker shade. The pulmonary arteries contained blood-clots, the veins were empty. The thoracic aorta showed no changes. The pericardium contained about 50 c.c. clear fluid and a fibrinous coagulum. A fair amount of fat was present at the base of the heart. Both ventricles of the heart contained blood, more being present in the right than in the left one; ecchymoses were noted on the left ventricle. Both endocardiums and the vessels were normal. The myocardium was light reddish-brown and transparent. The periportal lymph-nodes showed no changes. The gall bladder contained yellow-green bile. The ductus choledochus and bile-ducts were open. The intima of the vessels was normal. The liver was of usual size and shape. The capsula was glistening and transparent. A fibrous thickening was noted on the parietal surface; the left margin was partly attached to the diaphragm. The parenchyma was brown and smooth on section, and transparent. The pancreas was moist and greyish. Spleen: 45 × 14 cm.; the capsule was somewhat shrivelled. The parenchyma was reddish-brown. The trabeculae were distinct, the follicles not. The pulpa was slightly soft. The cortex of the suprarenal glands was somewhat reddish with the exception of a portion, which was yellow. The adipose capsule of the kidney was poor in fat and somewhat moist. The fibrosa of the left kidney stripped with difficulty; the surface of the organ was uneven; the organ itself was small in size; on section the colour was reddish and the zones were marked. The right kidney was larger and of darker colour. The rumen contained normal ingesta. The reticulum showed no foreign contents. The omasum was small and hard; the contents were dry. The abomasum contained muddy liquid. The mucosa of the fundus adjoining the pylorus was covered with a yellow deposit, which when removed, left a partly red surface.

A large portion of the small intestines was uniformly reddened and the mucosa was slightly swollen; in other parts it showed red cross stripes; a portion was yellowish discoloured. The mucosa of caecum and colon showed patches of black and red discoloration, in parts it was streaky. The rectum contained soft faeces. The mesenteric glands showed no changes. The

mesentery was slightly watery. The bladder was filled with a clear urine. The mucosa was normal. The sexual organs showed no changes. On examination, blood-smears were negative.

*Pathological Anatomical Diagnosis:* Gastro-enteritis catarrhalis, partly hæmorrhagic. Peritonitis fibrosa.

*Etiological Diagnosis:* Lamsiekte.

17. Cow 121.—Aged red and white cow, died during the night. The condition was poor. The abdomen was relaxed. Rigor mortis was absent. The integument showed alopecia. The visible mucous membranes showed no changes. The blood was coagulated. The subcutaneous tissue was devoid of fat, in parts it was watery. The salivary glands showed no changes. The thyroidea was light brown. The lymphatic glands were enlarged and dark; some were embedded in gelatinous tissue. The tongue showed no changes. The pharynx and oesophagus contained traces of ingesta. In the peritoneal cavity a little fluid was present. The serosa was smooth and glistening. The diaphragm was convex forward. The pleural cavities showed no changes. Streaks of tuft-like granulation tissue were present in the intercostal spaces. The lungs were in slight inspiration. The pleura was smooth and glistening; it was purple in the cardiac portion, emphysema was noted here as well as atelectasis; the right basal margin had a somewhat solid consistence; on section, the tissue was moist and grey. A blood-clot was present in the pulmonary vein. Froth was present in the trachea. The mucosa was somewhat reddened. The bronchi of the apical and cardiac lobes contained some ingesta. The consistence of the lungs was otherwise elastic. The parenchyma contained liquid. A blood-clot was present in the pulmonary artery. In the intima of the thoracic aorta pitted streaks were found. The openings of the tonsilla were very marked and contained mucous plugs. The trachea contained much froth. A little froth was present in the larynx. The pericardium was devoid of fat. The fat was replaced by a gelatinous tissue. The pericardium contained about 50 c.c. liquid. The right ventricle and atrium were fully distended with well-coagulated blood; the left ventricle contained a small coagulum; in the atrium was a well-formed clot of blood. In the epicardium the fat was replaced by a gelatinous substance. The colour was grey-brown. The veins and lymph-vessels were somewhat injected. The right endocardium showed no changes; the endocardium of the left atrium was roughened. The myocardium was pink-brown and of firm consistence. The intima of the vasa cordis showed no changes. The abdominal aorta showed a roughened intima and pitted streaks were conspicuous. The intima of the vena cava was also roughened. The periportal lymph glands showed no changes. The liver was rather small; the margins were sharp. The gall bladder contained liquid bile. The ductus choledochus was open, the mucosa was yellow. The bile-ducts showed no changes. The intima of the vena portae and hepatica showed no changes. The capsule of the right lobe of the liver was whitish, that of the left was bluish. The parenchyma was dark brown and firm. The pancreas was grey and moist; the consistence was hard. The spleen measured 40 × 12 cm.; the capsula was somewhat shrivelled. The parenchyma was dark brown. The trabeculae were distinct, the follicles not. The suprarenal glands were somewhat large; the cortex was light brown; the medulla was whitish. No fat was present in the adipose capsule of the kidneys, and the fibrosa stripped easily; the colour of the organ was grey the surface was smooth; on section, the zones were distinct. The medulla was pink, the intermediary zone was dark. The cortex was grey, the hylus was gelatinous. The right kidney was rich in blood, the cortex was striated. The abomasum contained soft liquid ingesta in the fundus; in the pyloric region the ingesta were more solid. The mucosa of the fundus showed no changes, that of the pylorus was somewhat patchy grey. The contents of the omasum was soft. The mucosa was peeling off. The reticulum contained ingesta and a hair ball, in size that of a cricket ball; the ingesta of the rumen appeared normal. Amphistomas were present in the rumeno-reticular fold and in the dorsal portion. The mucosa of the small intestines was grey throughout. Colon and rectum contained liquid faeces; the mucosa in parts was patchy red. The mesentery was devoid of fat. The mesenteric glands contained conspicuous dark pigment. The bladder contained some clear urine. The mucosa showed no changes. The lymph glands of the udder were normal. The brain showed no changes.

*Pathological Anatomical Diagnosis:* General atrophy, enteritis catarrhalis. Media necrosis of aorta.

*Etiological Diagnosis:* Lamsiekte.

18. HEIFER 144.—A red heifer, died during the night. The condition was poor. The abdomen was slightly distended. Rigor mortis was present. The integument was intact. The tongue was hanging out. Anus and vulva were closed. The visible mucous membranes showed no changes. The blood was coagulated. The flesh was somewhat pale. The subcutaneous tissue was devoid of fat. The thyroidea was dark brown. The parotid was easily cut; the parenchyma was red and moist. The sub-maxillary glands showed no changes. The lymphatic glands of the head were embedded in a somewhat watery tissue; they were of normal size. The medulla was somewhat markedly pigmented; on the left mandible was a tumour about 10 cm. in diameter; on opening it contained a cavity with necrotic substance. The retro-pharyngeal lymph glands were diffusely reddened and swollen. The tongue and oesophagus showed no changes. The mucosa of the pharynx was purple. The peritoneal cavity contained some reddish liquid. The intestines were distended with gas. The serosa of the jejunum was diffusely reddened. The diaphragm was convex forward. The pleural cavities contained some red-stained liquid, and some discoloration of the costal pleura was noted; streaks of granular tissue were present in the intercostal spaces. The lungs were slightly inflated. The pleura of the apex of the left lobe was purple in parts, otherwise pinkish; the consistence was elastic. The pulmonary vein was filled with coagulated blood. The intima was diffusely red. The mucosa of the trachea was slightly red and a little froth was present. The intima of the pulmonary artery was diffusely red and coagulated blood was present. The intima of the thoracic aorta was the same. The mucosa of the larynx was red, that of the trachea also, and the lumen contained some froth. The pericardium showed gelatinous infiltration in place of fat. It contained 260 c.c. red liquid, in which a few white coagula were present. The right ventricle contained a small quantity of well-coagulated blood, more was present in the atrium; similar conditions were noted in the left ventricle. The epicardium was diffusely red and showed some grey patches. The lymphatic-vessels stood out as white streaks. A small fleshy bud, about the size of a millet seed, was found on the wall of the left ventricle. The epicardium was diffusely red. In the parietal wall were distinct hæmorrhagic foci penetrating through the wall. Fat was present, and it contained gas bubbles. The left endocardium was diffusely red, and towards the apex some ecchymoses were noted. The intima of the vasa cordis was red-stained. The myocardium was grey-brown, moist, and somewhat firm. The intima of the abdominal aorta was red-stained. The liver was of normal size and shape. It was clay-coloured. The gall bladder was partly filled with liquid yellow bile containing gas. The ductus choledochus was open. The bile-ducts contained some liver flukes, the mucosa was thickened, and some viscous bile was present. The intima of the vena porta, vena cava, and vena hepatica was diffusely wine-red in colour. The parenchyma of the liver was muddy brown-chocolate; blood escaped on section. The bile-ducts were protruding; they were thickened and of hard consistence. The pancreas was grey-red and moist. The spleen dimensions were  $37 \times 12$  cm.; the capsula was somewhat shrivelled; the pulpa was soft and red-brown. The follicles and trabeculae were not distinct. The suprarenal glands had a patchy grey-brown appearance. The adipose capsule of the kidneys contained some gelatinous fat; the fibrosa stripped easily; the surface of the organ was smooth; the colour was light brown with grey patches; on section the zones were distinct. The hylus was gelatinous. The abomasum contained two soft hair balls and a piece of rag; mealie-grains were still present. The mucous membrane of the fundus was pink. Near the pylorus was a scar about  $5 \times 1$  cm. with a hæmorrhagic infiltration. The mucous membrane of the pylorus was grey with whitish patches in size about that of a sixpence. The omasum showed soft contents. In the reticulum a piece of wire and a small stone were present. The rumen contained numerous amphistomas on and behind the rumeno-reticular fold. The sub-mucosa was diffusely reddened in parts. The mucosa of the jejunum was in parts diffusely red, otherwise greyish. The mucosa of the caecum and colon was grey. The rectum contained soft faeces. The mucosa was patchy red. The mesenteric glands were watery, markedly pigmented, and contained gas. The mesentery was watery. The bladder contained a fair amount of clear urine. The mucosa was normal. The udder showed no changes. The uterus appeared normal.

*Pathological Anatomical Diagnosis:* Gastro-enteritis catarrhalis. Cirrhosis distomatosa. Cachexia. Ecchymoses in heart.

*Etiological Diagnosis:* Lamsiekte.

19. Cow 2756.—Aged red cow. Post-mortem examination made four hours after death. The condition was fair. The abdomen was slightly distended. Rigor mortis was not complete. The integument was intact. The natural openings and mucous membranes showed no changes. The blood was partly coagulated and stained well. The flesh was red-brown. The subcutaneous tissue contained some fat and was discoloured by the escape of blood after skinning. The parotid was of fairly soft consistence and light brown in colour. The sub-maxillary gland showed no changes. The lymphatic glands of the head, neck, and mediastinum were slightly moist and somewhat reddened. The tongue on the right side of the base showed an erosion in the mucosa. The oesophagus contained loose ingesta in the thoracic portion. The peritoneal cavity showed no foreign contents. The peritoneum was smooth and glistening. The diaphragm was convex forward. In the pleural cavities was a small quantity of liquid. The left cardiac lobe was attached by a fibrous filament to the parietal pleura. The lungs were contracted. The pleura was shrivelled; the colour was pink, but that of the main lobe was whitish; the consistence of the tissue was elastic. The parenchyma contained some blood and was reddish and moist. A little froth and liquid ingesta were noted in the bronchi. The mucosa showed no changes. The intima of the veins and arteries showed no changes. The same applied to the intima of aorta thoracica. The pharynx contained some ingesta loosely packed. The mucosa showed no changes. Some ingesta were present in the larynx and trachea. The mucosa was normal. The thyroid was pale brown and moist. A fair amount of fat was present in the walls of the pericardial sac; the latter contained about 40 c.c. clear liquid. The parietal serosa of the pericardium was smooth and glistening. The heart showed a considerable amount of fat at the base and along the coronary grooves. The epicardium was brownish-pink and showed a few ecchymoses on the right ventricle. Both ventricles were empty; the right one was somewhat dilated. The right endocardium was smooth and glistening; the left endocardium showed some ecchymoses along the wall adjacent to the septum. The intima of the vasa cordis showed no changes. The myocardium was pale brown and firm. The periportal glands were somewhat moist and conspicuously pigmented. The liver was slightly enlarged. The left ventral margin was somewhat blunt, the colour bluish-purple; the capsule was smooth and glistening. The intima of the vena cava and vena porta showed no changes. The parenchyma of the liver was dark brown and smooth on section, glossy, and firm. The gall bladder contained a fair amount of yellow liquid bile. The ductus choledochus was open. The mucosa was yellow and the vessels were injected. The pancreas was somewhat reddish-brown. The spleen was slightly enlarged. The capsule was somewhat tense. The parenchyma was reddish-brown and fairly rich in blood; on section, it was smooth; the trabeculae and follicles were hardly visible; the consistence was fairly firm. The suprarenal glands showed a dark brown cortex. The medulla was greyish. The adipose capsules of the kidneys were rich in fat; the fibrosa stripped easily; the surface of the organ was smooth; the colour was dark brown; on section the zones and malpighian bodies were distinct; the intermediary zone was dark-stained; the consistence was firm. The abomasum contained liquid ingesta and some mealie-grains. The mucosa was pink, more so in the fundus than in the pyloric portion. The omasum was filled with soft ingesta. The reticulum contained a small quantity of ingesta. Some amphistomas were present in the rumen; behind the rumeno-reticular fold they were numerous. The small intestines showed some taenias. The mucosa of the duodenum and jejunum was diffusely reddened and partly hæmorrhagic in the form of cross streaks. The mucosa of the colon and caecum was slightly reddened and in parts slightly slate-coloured. The rectum contained pultaceous faeces. The mucosa was slightly reddened in parts. The mesenteric glands were conspicuously dark and not enlarged. The mesentery was rich in fat. The aorta abdominalis showed pitted streaks and patches over which the intima had sunken. The uterus showed no changes. The urinary bladder was empty and contracted. The mucosa was normal. The mammary lymphatic glands showed no changes. The brain showed no changes.

*Pathological Anatomical Diagnosis:* Gastritis and enteritis acuta, partly hæmorrhagica. Hyperaemia of liver, kidney, and pancreas. Ecchymoses in epicardium and left endocardium. Parasites in rumen and small intestines.

*Etiological Diagnosis:* Lamsiekte.

*SUB-SECTION B.—FEEDING OF CATTLE WITH PUTRID BONES.*

OBSERVATIONS CONCERNING CATTLE EATING BONES OF CATTLE CARCASSES THAT HAD BEEN UNDERGOING PUTREFACTION IN THE VELD. (ROTTEN OR PUTRID BONE-FEEDING TESTS.)

(a) *Preliminary Observations.*

The cattle utilized for the observations to be related hereafter were in experiments that had been initiated some time previously with a different object to that under discussion. The earlier history being of some importance, a short review of the experiments and the results obtained up to the 24.2.19 will be of some value, particularly when viewed in the light of subsequent events.

EXPERIMENT NO. 1.—TO STUDY THE INFLUENCE OF THE SUN ON THE INCIDENCE OF LAMSIEKTE.

The object of the experiment was to find out whether the exposure to direct sunlight has an influence on the incidence of lamsiekte. On 25.1.18 two lots of cattle were selected: Lot A was to graze during the night and to be kraaled during the day, exposed to sunlight (sun-kraaled cattle); Lot B was to be kraaled in the shade during the day and to be grazed during the night (shade-kraaled cattle). The latter should act as a control to the former.

A. *Sun-kraaled Lot.*—The herd consisted of 19 head of cattle at the conclusion of the experiment; 26 head were used to keep this number constant by replacing animals that had either died or were transferred to other experiments. During the period 25.1.18 to 24.2.19 three animals had died from acute lamsiekte, viz., one on 30.11.18 (cow 3402), one on 28.12.18 (cow 2621), and one on 15.2.19 (tollie 3847).

B. *Shade-kraaled Lot.*—The herd consisted of 19 head of cattle at the conclusion of the experiment; 28 head were used to keep this number constant by replacing animals that had either died or were transferred to other experiments. During the period 25.1.18 to 24.2.19 four head of cattle had died of lamsiekte, viz., one on 9.9.18 (cow 2626), one on 31.10.18 (cow 2584), one on 25.11.18 (cow 3534), and one on 30.11.18 (cow 3003).

CONCLUSION.—It became evident that the absence of direct sunlight on cattle had no influence on the incidence of the disease. The experiments illustrated the fact that grazing by night alone did not prevent animals from contracting lamsiekte.

EXPERIMENT NO. 2.—TO TEST THE INFLUENCE OF A LICK ON THE INCIDENCE OF THE DISEASE. THE LICK CONSISTED OF LOOGAS, ROOIBRAK, AND SALT, TO WHICH CATTLE HAD FREE ACCESS.

(NOTE.—Loogas is made by the burning of a species of mesembrianthemum; rooibrak is brakish soil. These braks have the reputation of preventing lamsiekte in cattle that have free access to them.)

The experiment was commenced on 24.4.18.

The herd consisted of 28 head of cattle on 24.2.19; 35 head of cattle were used to maintain this number, viz., to replace cattle that

died during this period. There were seven cases of lamsiekte observed, all of which ended fatally, viz. :—

(1) 21.10.18 (heifer 3861); (2) 31.10.18 (heifer 3851); (3) 6.11.18 (heifer 3804); (4) 22.11.18 (cow 2587); (5) 20.12.18 (cow 2327); (6) 23.2.19 (heifer 3855); (7) 25.2.19 (heifer 3908).

CONCLUSION.—The mortality of 20 per cent (7 out of 35 animals) within the time of observation indicates that the lick had not the beneficial influence popularly attributed to it. The observation may even be interpreted to support the view that the lick had an opposite effect to that expected, viz., that a supply of alkaline salts predisposes for the contraction of lamsiekte.

#### EXPERIMENT NO. 3.—GRAZING. (GRASS TOXIN TESTS.)

The experiments were a continuation of those reported in the Fifth and Sixth Reports of the Director of Veterinary Research, page 272, Experiments 10 to 11. The main object was to establish the fact or otherwise whether lamsiekte could be contracted in a paddock that contained (A—Experiment No. 10) nothing but grasses (paddock B, sub-division 1A), all other plants having been removed; (B—Experiment No. 11), grasses and large bushes [rosyntje bush (*Grewia cana*)] (paddock D, sub-division 1).

A.—Experiment No. 10. This experiment was commenced on 6.2.18 and was carried out in paddock B (sub-division 1A), three acres in extent. On 24.2.19 the herd consisted of 12 animals. There were 15 animals required to maintain this number, two having died and one had been removed for other purposes during this period. One cow (2647) died of acute lamsiekte on 6.5.18.

B.—Experiment No. 11 was commenced on 6.2.18 in paddock D (sub-division 1), 10 acres in extent. On 24.2.19 the herd consisted of 18 animals; 22 animals were required to maintain this number. One died and three were removed for other purposes during this period. One heifer died of acute lamsiekte on 2.1.19 (3485).

CONCLUSION.—In each experiment one case of lamsiekte occurred. This fact at the time was considered to support the grass toxin theory. In view of the subsequent results, that putrid bones, etc., contain the cause of the disease, the observations now find a different interpretation, viz., that toxic bones were carried into the paddocks. There is no difficulty to understand this, remembering that in paddock C, sub-division 4, which is situated at not a great distance, carcasses had been deposited (*vide infra*).

#### EXPERIMENT NO. 4.—ALTERNATE FEEDING AND GRAZING LOT B.

The object of this experiment is indicated in the Fifth and Sixth Reports of the Director of Veterinary Research, page 287. By varying the periods of kraaling and grazing it was hoped to arrive at the period of incubation of the disease, the existence of which had to be accepted from the result of previous experience. The experiment in question was commenced on 5.2.18. The intervals of grazing and feeding were to be twenty-one days. On the 24.2.19 the cattle were in the kraals. Their grazing time again ended on the 3.3.19. On 24.2.19 there were 23 head of cattle in this herd; 26 head of cattle were required to maintain this number, as those that had died or were transferred to other experiments had to be replaced. One heifer had died of gallamsiekte on 12.2.18 whilst the herd was grazing (3649).



**CONCLUSION.**—No mortality was observed in this lot when the cattle had been kraaled and fed. The result of this experiment was contrary to that of Experiment No. 23 in the Fifth and Sixth Reports of the Director of Veterinary Research, page 287, in which the interval was one week and six animals had contracted lamsiekte. The conclusion was drawn at that time that a complete change of diet from veld-grazing to kraal-feeding seemed to increase the mortality. Three of the fatal cases showed the symptoms a few days after the change from veld to stable diet. In Experiment No. 24 (l.c.), in which case the intervals were fourteen days, no cases of lamsiekte occurred, which fact was interpreted at the time as being due to the absence of the disease from the farm during the same period. A different explanation can now be given. In another chapter it will be shown that cattle removed from the pasture and fed on ration will lose craving for bones within a period of three weeks. The cattle in Experiment No. 23 had not yet lost their craving, and the cattle in Experiment No. 24 partly. The cattle whilst kraaled had been fed on 3 lb. of crushed mealies, 2 lb. of bran, 7 lb. of lucerne-hay, and 7 lb. veld-hay per day—a ration which will remove craving.

#### EXPERIMENT No. 5.—BONEMEAL FEEDING.

This experiment was of a theoretical nature and had to decide whether a large quantity of bonemeal administered individually to the cattle would prevent the lamsiekte. For this purpose 8 oz. were given daily, except Sundays, the meal being placed into the mouth of each animal. (Compare also experiments Nos. 27, 28, and 29 of the Fifth and Sixth Reports of the Director of Veterinary Research, page 290 and 291. The experiment was commenced on 17.12.17. On 24.2.19, 20 head of cattle were in this experiment; 23 animals were required to maintain the herd. Two had died, and the third was transferred to another experiment. Heifer 2439 died from lamsiekte on 22.12.18. Heifer 2364 died on 23.3.18 from lamsiekte. Both animals were in the experiment since the beginning (17.12.17).

**CONCLUSION.**—The result of this experiment is difficult to explain since 8 oz. bonemeal in subsequent experiments proved to be sufficient to remove the craving from an animal. Since at this time the cattle were not tested for craving as subsequently was done, it cannot be stated whether their craving had proved to be refractory to bonemeal.

#### EXPERIMENT No. 6.—BARE PADDOCK (paddock B, sub-division III).

The object of this experiment was put forth in the Fifth and Sixth Reports of the Director of Veterinary Research, page 286, Experiment No. 21, and was to determine whether cattle feeding in a paddock of a lamsiekte area would still contract lamsiekte after all vegetation had been removed.

The experiment was commenced on 25th August, 1916. On the 24.2.19 the experiment was still going, and 18 animals were exposed. In this kraal no mortality from lamsiekte had ever occurred.

**CONCLUSION.**—The results of this experiment were apparently in favour of the grass toxin theory. It now followed that the bare ground was not a suitable place for dogs and jackals to carry the bones to and to eat them on open ground because of lack of cover.

EXPERIMENT No. 7.—SURPLUS CATTLE RUNNING AS CONTROLS IN THE VELD.

On the 24.2.19 this lot contained 43 head of cattle, all grazing. This herd contained all unused cattle or those discharged from experiments.

EXPERIMENT No. 8.—AVAILABLE CATTLE KEPT IN THE KRAALS.

On the 24.2.19 this herd contained 55 head of cattle that were all kept in a kraal free of grass. They were fed on rations. The object was to keep the cattle free of disease by not allowing them to graze, in order to exclude naturally contracted lamsiekte in cattle required for experimental inoculation and drenching purposes. This herd was made up on 14.12.18. In addition to surplus cattle, all the new arrivals were placed into this lot waiting disposal for experiments.

*Result:* No cases of lamsiekte occurred in this lot between the two dates.

**CONCLUSION.**—The result of this observation indicates that lamsiekte is not observed in kraaled cattle fed on rations.

(b) *Circumstances Leading to the Rotten Bone Feeding (Carcass Feeding) Experiments.*

25.2.19: After return from the pasture, three animals of the Experiment No. 1A (cattle kraaled in the sun during the day and grazing at night) were noted to be chewing in a quite excited manner what appeared to be bones. Subsequently, in a different kraal, an ox was noted to do the same, and an attempt was made to secure the bone. The ox was caught after some chasing; it was not seen dropping the bone, but on opening its mouth, nothing could be detected; the ox apparently had swallowed it.

26.2.19: Early in the morning a number of cattle were found around the native homestead adjacent to the stables. The camp gate was broken, and some of the cattle had returned during the night. They were assembled on the rubbish heap, and from a distance it could be noticed that some were busy chewing bones or some other hard bodies. The animals stood with head stretched out and nose raised into the air, and were eagerly masticating; the movements of the mandible being very rapidly carried out, a distinct noise was heard, which was produced by the teeth trying to crack the hard body. Nine animals were counted standing in close proximity to each other and chewing in concert. In a distance, around the homestead, more cattle were seen busy with the same occupation. One heifer (3995) was seen picking up a rag, which she hurriedly chewed up. One calf, about 18 months old, made for a bag hanging on a kaffir hut, but it was chased away by the native. The sight of the chewing cattle was an impressive and a very remarkable one, as well as the roaming about on the rubbish heap, where the animals were apparently looking for bones. Soon afterwards the bulk of the cattle returned from the veld and were counted into the kraals. At the entrance to the kraal a bone was picked up which had been dropped shortly before; it was still moist with saliva, and the kraal manure stuck to it. After the cattle had been placed in the kraals, some more were seen chewing bones; these belonged to the lot that grazed by night and was kraaled by day. The suggestion now occurred that bones eaten voluntarily by cattle might carry the cause of the disease, particularly when

consumed in large quantities, and that the disease so conveyed would be identical to the one which had been produced previously by dosing of fly pupae. It was now decided to give the craving for bones full attention and to carry out experiments systematically by allowing craving cattle free access to a trough containing bones which, by means of a drenching experiment, had been proved to be toxic or which could be expected from the state of putrefaction they were in at the time that they would be toxic. The bone-eaters were to be found amongst the animals in the experiments described in the introduction, and which could now be brought to a conclusion, viz., the lot of grazing cattle receiving a lick of loogas or rooibrak in the kraal; the lot of cattle grazing by night and kraaled in the sun during the day; the lot of cattle grazing by night and kraaled in the shade by day. The cattle to be selected for the experiment had first to be tested for bone-craving. It was proposed to carry out this test by allowing the cattle access to bones and to note which animals would pick and eat bones. In order to obtain an idea as to the quantity of putrid bones required to produce the disease, drenching experiments were planned to determine the minimal toxic quantity when supplied in one single dose. (*Vide* dosing experiments with putrid material.)

27.2.19: This morning a similar spectacle was witnessed as on the previous day. The camp gate had not been repaired, and some of the cattle had again assembled around the native homestead. Ten animals were counted to chew bones most eagerly. Another one stood on the coal heap and was seen to pick coal and chew it. In the afternoon of the same day a heifer (3998), one of the animals in the shade experiment and standing all day in the stable, was seen chewing a bone. She must have brought it into the stable in the morning.

28.2.19: The gate was repaired the previous day, hence no cattle had access to the homestead. When examined at the camp gate, none were found to chew bones. Subsequently, when in the kraal, one tollie (3930) of the loogas and rooibrak lot was noted busy with a bone which must have been left behind in the kraal from the previous day.

1.3.19: After the arrival into the kraals (7 a.m.), six animals were noted chewing bones. At 11 a.m., one was still chewing.

2.3.19: This morning five animals were noted chewing bones after arrival in the kraal.

3.3.19: The cattle were examined at the camp gate, and two were found chewing. A cow (2968) and a heifer (3906) continued chewing after arrival in the kraal; the latter subsequently dropped a folded piece of zinc.

4.3.19: This morning a heifer (3803) was seen to chew a piece of wire.

(c) *The Selection of Bone-eaters amongst Cattle that were Grazing.*

*First Test.—Testing for Craving with Dry Rotten Bones.*

4.3.19: Of the cattle mentioned to be present on 26.2.19 in experiments (viz., the brak experiment and the sun and shade kraaled experiments), a number was first picked out which during the preceding days had by chance been noted to be bone-eaters. These cattle were earmarked for the carcass paddock experiment (*vide infra*). The remaining cattle were then submitted to the craving or bone-eating test, viz., free access to bones placed in troughs. The following cattle were proposed for the test. Of the sun-kraaled lot (experiment

commenced 25.1.18): Heifer 3865, cow 2309, ox 3799, cow 2388, cow 2165, cow 2907, heifer 3880, heifer 4181, cow 3156, heifer 3812, heifer 3902, heifer 3811, cow 2790, cow 3004, heifer 3803. Of the shade-kraaled lot (experiment commenced 25.1.18): Tollie 3710, tollie 3907, heifer 2181, tollie 3850, heifer 2650, heifer 3898, cow 3000, cow 4183, cow 4189, tollie 3821, heifer 3808, cow 2404, heifer 3817. The bones to be supplied had been selected on the previous day from the carcasses exposed in the carcass paddock and were broken into pieces of convenient size. They all had a marked, but by no means offensive, smell. They were placed in two troughs in a kraal whilst the cattle were present. The cattle observed the emptying of the bags and were attracted by the rattling noise, and some approached the troughs. The first animals took a careful sniff and immediately withdrew; some of them were noted to yawn. The smell apparently was too offensive for them. However, before long, five head of cattle were seen picking bones and chewing them. A brown-yellow cow (2790) was the first to pick. She was subsequently seen busy masticating bones for over an hour; she remained at the trough, and as soon as she had finished one bone she dipped the head into the trough, picked another one, and continued masticating. A red heifer (3898) was the next animal to pick. She was noticed to be busy chewing during the time the observation lasted, and was almost as eager as the cow. A black cow (3004) preferred ribs, but she took some time to make up her mind before she settled down chewing continuously. A red cow (2907) was seen in the beginning, and again towards the conclusion of the observation, to be busy with some bones. Blue schimmel heifer (3812) was not seen to be picking a bone, but during the latter period of the observation she was noticed to have a bone in the mouth, which might have been one of the bones dropped by one of the aforementioned animals.

*Result:* It was evident that after removal of the accidentally observed bone-eaters there were still some left that were partial to rotten bones. This number was 5 out of 28, viz., 18 per cent.

*Second Test.—Testing for Craving with Old Bleached Bones.*

5.3.19: (a) 7 a.m. The sun-kraaled and shade-kraaled lot of cattle, totalling 28, were submitted to a bleached-bone test this morning. The bones supplied this time were old bleached bones (sweet bones), and had been collected the previous day from the old-bone heap in the north-west corner of the carcass paddock. In the course of forty-five minutes, ten head of cattle were noted to pick bones; the first to pick were amongst those of yesterday, viz., the brown and yellow cow (2790), the red cow (2807), the black cow (3004), and the red heifer (3898). Amongst the new bone-eaters were a red and white heifer (4181), a red ox (3799), a black and white cow (2309), a red heifer (3811), a dun heifer (3865), and a red and white cow (2388). The first four animals were noted picking and chewing bones throughout the whole time of the observation; the remaining six commenced only at a later time. The bones had been supplied at 7.30 a.m. At 9.30 three animals were still chewing, although the bones had been removed at 8 a.m.

*Result:* Of the 28 head of cattle submitted to a test with (sweet) old bleached bones, 10 were found craving, viz., 35 per cent. It would thus appear that there is a difference in craving for sweet and rotten bones.