Sheep 9125. 10.2.25. Few cocci.
6.3.25. v. S.A.; few anapl.
16.3.25. „

Sheep 8465. 10.2.25. v. S.A.
24.2.25. Anapl. few; S.A.
26.2.25. Anapl. few.
28.2.25. „
6.3.25. „
16.3.25. Negative.

Also Sheep 8459 from Sheep 8428.
„ 9106 „ 8428.
Result, negative.

B. Bovines.

(1) *Non-splenectomized Susceptible Bovines.*
C. 844, 893, 894, 1002.

(2) *Splenectomized Bovines.*
C. 711.

For observations see Appendix 3.

C. Goats.

(1) *Non-splenectomized Goats.*
G. 5602, 8285.

Goat 5602. Inj. intraj. 20 c.c. bld. Sheep 8458.
7.6.24. Few cells show P.D.
11.6.24. „ „ sl. inequality of erythrocytes.
21.7.24. Discontinued; negative.

Goat 8235. 27.5.24. Inj intraj. 20 c.c. bld. Sheep 8458.
21.7.24. Discontinued; negative.

(2) *Splenectomized Goats.*
G. 8280, 8304.

Goat 8280. 30. 5.24. Splenectomized; sl. inequality of erythrocytes; nothing unusual in blood.
30. 9.24. Inj. intraj. 20 c.c. bld. Sheep 8430.
6.11.24. Nothing unusual in blood.
2.12.24. Anapl. v. rare.
6.12.24. „
8.12.24. „
15.12.24. „
7. 1.25. „
9. 1.25. „
27. 2.25. Few anapl.

Goat 8304. 30. 5.24. Splenectomized.
30. 9.24. Inj. intraj. 20 c.c. bld. Sheep 8430.
6.11.24. Nothing unusual.
24.11.24. Anapl. rare.
27.11.24. „ „
5.12.24. „ not infreq.
6.12.24. „ present.
8.12.24. „ not infreq.
10.12.24. „ „
12.12.24. Few anapl.; S.A.; P.
17.12.24. „ „ S.P.
27. 2.24. „

Conclusions.

1. By means of blood inoculation it was possible to infect with ovine anaplasmosis a series of susceptible sheep for eleven generations.

2. In case of six local sheep, five were infected with ovine anaplasmosis by blood inoculation, whereas one remained immune, and was shown to be a carrier of anaplasma by subsequent inoculations.

3. Three splenectomized susceptible sheep were infected with ovine anaplasmosis.

4. Non-splenectomized and splenectomized bovines could not be infected with ovine anaplasmosis, although three of these animals subsequently injected with bovine anaplasmosis reacted.

5. Non-splenectomized goats could not be infected, whereas splenectomized goats were infected with ovine anaplasmosis and showed very slight symptoms of oligocythaemia.

6. No direct reaction of anaplasmosis could be associated with a re-infection of sheep already the carriers of anaplasma.

III.—Experiment S. 1613.—To ascertain whether the Anaplasma observed in Goats can be Transmitted to :—

(1) Local Goats.
(2) Susceptible Sheep.

(1) *Local Goats.*

Goat 10267. 12.12.24. Inj. intraj. 20 c.c. bld. Goat 8280.
4. 3.25. Discontinued; negative.

Goat 10268. 12.12.24. Inj. intraj. 20 c.c. bld. Goat 8304.
4. 3.25. Discontinued; negative.

(2) *Susceptible Sheep.*

No. 10936. No. 10943.

Sheep 10936. 23.1.25. Inj. intraj. 40 c.c. bld. G. 8280, 8304.
16.2.25. Anapl rare, but distinct; v. S.A.
20.2.25. Anapl. not freq.; S.A.; S.P.
23.2.25. „ freq.; S.A.
25.2.25. „ „ S.A.; S.P.
27.2.25. „ few; A.; S.P.

Sheep 10943. 23.1.25. Inj. intraj. 40 c.c. bld. G. 8280, 8304.
9.2.25. *Few anaplasma* (?); S.A.
13.2.25. Few anapl.; v. S.A.
16.2.25. Anapl. rare; A.; S.P.
20.2.25. S.A.; S.P.; S.P.D.
23.2.25. S.A.
25.2.25. S.A.
27.2.25. Few anapl; S.A.

Conclusion.

1. Local goats could not be infected with ovine anaplasmosis observed in goats, whereas susceptible sheep were successfully infected from such goats.

IV.—Experiment S. 1665.—To Ascertain whether Bovine Anaplasmosis can Infect:—

(1) *Non-splenectomized Susceptible Sheep.*

Nos. 8453, 8454, 9108, 9110, 8473, 8467, 10931, 10938, 9111, 9130, 10944, 10946.

Sheep 8453. 19. 5.24. Inj. intraj. 20 c.c. bld. C. 711.
5. 8.24. Discharged; negative.

Sheep 8454. 19. 5.24. Inj. intraj. 20 c.c. bld. C. 711.
26. 5.24. Erythrocytes peculiar-shaped structures.
30. 5.24. „ „ „
5. 8.24. Discharged; negative.

Sheep 9108 and 9110. Injected with bld. of Bovines 917, 828; both sheep died of heartwater; blood examined from 9.9.24 until 22.9.24; negative.

Sheep 8473. 10.10.24. Inj. bld. of Bovine 928.
7.11.24. Negative.
27.11.24. „

Sheep 8467. 10.10.24. Inj. bld. of Bovine 928.
31.10.24. Killed; acute heartwater until this date; bld. negative.

Sheep 9111.	26. 6.24.	Inj. intraj. 20 c.c. bld. C. 758.
	25. 8.24.	Discharged; negative.
Sheep 9130.	„	„
Sheep 10944.	26. 3.25.	Inj. intraj. bld. Bovine 1066.
	11. 5.25.	Splenectomized; negative.
Sheep 10946.	26. 3.25.	Inj. intraj. bld Bovine 1066.
	11. 5.25.	Splenectomized.
	13. 5.25.	Died as result of splenectomy.

(2) *Splenectomized Susceptible Sheep.*
Sheep 8430, 8464, 10944.
(See Appendix 3 for observations.)

Conclusion.

1. Twelve susceptible and three splenectomized susceptible sheep could not be infected with bovine anaplasmosis.

V.—Experiments 1693.—To Ascertain whether Sheep 8453 and 8473, which failed to React to Bovine Anaplasmosis, have become Carriers of Bovine Anaplasma.

C. 844, 893, 998, 1002.

Cattle 844.	19. 6.24.	Inj. intraj. 20 c.c. bld. Sheep 8453.
	11. 8.24.	Discontinued; negative.
Cattle 893.	19. 6.24.	Inj. intraj. 20 c.c. bld. sheep 8453.
	11. 8.24.	Discontinued; negative.
Cattle 998.	20.11.24.	Inj. intraj. bld. Sheep 8473.
	8.12.24.	Died heartwater.
Cattle 1002.	11.12.24.	Inj. intraj. bld. Sheep 8473.
	11. 2.25.	S.A.
	16. 2.25.	S.A.
	6. 3.25.	S.A.

Conclusion.

1. Sheep injected with bovine anaplasmosis and which failed to react, were found not to be carriers of bovine anaplasmosis.

VI.—Experiment S. 1775, S. 1842, S. 1851, etc.—To Ascertain whether some of the Sheep, viz., 8453, 8454, 9125, 9126, 8473, 9111, 9130, which failed to React to Bovine Anaplasmosis, are Susceptible to Ovine Anaplasmosis.

Sheep 8473.	11.2.25.	Inj. intraj. bld. Sheep 8451.
	9.2.25.	Negative.
	21.2.25.	Anapl. rare.
	24.2.25.	„ freq.; S.A.
	26.2.25.	„ not infreq.; S.A.
Sheep 9111.	11.2.25.	Inj. intraj. bld. Sheep 8451.
	9.2.25.	Negative.
	21.2.25.	Anapl. not freq.
	24.2.25.	„ „ rare; P.; A; J.B.
	26.2.25.	A.; P.; J.B. (various stages).
Sheep 8453.	11.2.25.	Inj. intraj. bld. Sheep 8451.
	9.2.25.	Negative.
	20.2.25.	Anapl. v. rare; v. S.A.
	24.2.25.	„ not rare; S.A.
	26.2.25.	„ „ freq.; S.A.; S.P.
	28.2.25.	„ rare; A.; P.; P.D.
	4.3.25.	„ „
	6.3.25.	„ „ A.; S.P.
	16.3.25.	„ „ A.; S.P.

Conclusion.

1. Sheep, which failed to react to bovine anaplasmosis, were found to be susceptible to ovine anaplasmosis.

VII.—Experiment S. 1739.—To Ascertain whether Bovines Injected with Ovine Anaplasmosis and failed to React, become Carriers of Ovine Anaplasma.

Sheep 9125, 9126, 10931, 10938.

Sheep 10931.	16.3.25.	Inj. intraj. 30 c.c. bld. C. 1002.
	28.4.25.	Negative.
Sheep 10938.	16.3.25.	Inj. intraj. 30 c.c. bld. C. 1002.
	28.4.25.	Negative.
Sheep 9125.	8.7.24.	Inj. intraj. 20 c.c. bld. C. 893.
	25.8.24.	Negative; discontinued.
Sheep 9126.	8.7.24.	Inj. intraj. bld. C. 893.
	25.8.24.	Negative; discontinued.

Conclusion.

1. Bovines injected with ovine anaplasmosis and which failed to react, were found not to be carriers of ovine anaplasmosis.

VIII.—Experiment S. 2027.—To Ascertain whether C. 1002, 893, 844, which failed to React to Ovine Anaplasmosis, are Susceptible to Bovine Anaplasmosis.

Cattle 1002.	6.3.25.	Inj. intraj. 50 c.c. bld. C. 1066.
	11.3.25.	P. bigem. freq; A.
	12.3.25.	P. bigem. rare; few anapl.; S.A.
	13.3.25.	P. bigem; few anapl.; S.A.
	15.3.25.	Few anapl.; S.A.
	16.3.25.	Anapl. not infreq.; A;
Cattle 844.	20.4.25.	Inj. intraj. 5 c.c. bld. C. 840.
	4.5.25.	Anapl. cent. freq.
Cattle 893.	(See Appendix.)	(Reacted to bovine anaplasmosis.)

Conclusion.

1. Bovines which failed to react to ovine anaplasmosis were found still to be susceptible to bovine anaplasmosis.

IX.—Experiment S. 1775.—To Study the Nature of the Anaplasma-like Bodies observed in Sheep by Injecting Susceptible Sheep with:—

(1) *Blood of an Infected Sheep (controls).*
Sheep 9099,9100.

Sheep 9909.	2.8.24.	Inj. intraj. bld. Sheep 8427.
	11.8.24.	Anapl. rare.
	14.8.24.	„ freq.; S.A.; P.; N.
	18.8.24.	„ few; E.; N.; J.B. (all stages).
	19.8.24.	S.A.; P.; J.B.; count 2·5 millions.
	26.8.24.	A.; J.B.
	10.9.24.	Anapl. rare, S.A.
	24.9.24.	„ not rare; few J.B.
Sheep 9100.	2.8.24.	Inj. intraj. bld. Sheep 8427.
	11.8.24.	Anapl. rare.
	13.8.24.	„ „ S.A.; S.P.; S.P.D.
	18.8.24.	„ „ A.; S.P.; P.D.; J.B.
	30.8.24.	„ few; A.
	24.9.24.	„ „ S.P.D.

(2) *Serum of Infected Sheep.*

Sheep 9101, 9103.

Sheep 9101.	2.8.24.	Inj. intraj. serum Sheep 8427.
	26.8.24.	Anapl. few; S.A.; S.P.
	30.8.24.	S.A.; S.P.D.
	10.9.24.	Anapl. few; A.; S.P.
	24.9.24.	Anopl. few.
Sheep 9103.	2.8.24.	Inj. intraj. serum Sheep 8427.
	17.8.24.	Anapl. few.
	18.8.24.	S.A.; P.; P.D.; N.
	21.8.24.	Anapl. few; A.; P.; J.B.
	26.8.24.	„ „ S.A., P.; P.D.
	10.9.24.	„ rare.
	24.9.24.	S.A.; S.P.

(3) *Washed Corpuscles from an Infected Sheep.*

Sheep 9104.	2.8.24.	Inj. intraj. 20 c.c. washed corps. Sheep 8427.
	12.8.24.	Anapl. rare.
	14.8.24.	„ freq.
	17.8.24.	„ „ P.; S.A.
	23.8.24.	„ rare; A.; P.; P.D.; N.; J.B.
	28.8.24.	„ few; P.; P.D.; J.B.
	30.8.24.	„ „ J.B.
	24.9.24.	„ „ S.A.
Sheep 9105.	2.8.24.	Inj. intraj. 20 c.c. washed corps. Sheep 8427.
	14.8.24.	Anapl. rare.
	18.8.24.	„ not rare; A.; P.; P.D.; J.B.
	24.8.24.	„ few; A.P.
	30.8.24.	„ not rare; S.A.; P.
	10.9.24.	„ few; A.; P.; P.D.
	24.9.24.	S.A.

(4) *Haemolyzed-washed Blood Corpuscles from an Infected Sheep.* (Haemolyzed with distilled water and then saline added to bring back to 0.8 per cent. solution.)

Sheep 9106.	2.8.24.	Inj. intraj. 20 c.c. haemolyzed blood corps. Sheep 8427.
	2.8.24.	Negative.
	23.8.24.	S.P.
	26.8.24.	S.A.; S.P.; S.P.D.; N.; J.B.
	28.8.24.	S.A.; S.P.; S.P.D.
	5.9.24.	S.A.; S.P.
	10.9.24.	S.A., S.P., S.P.D.
	12.9.24.	S.A.
	19.9.24.	S.A.
	24.9.24.	S.A.
Sheep 9107.	2.8.24.	Inj. intraj. 20 c.c. haemolysed blood corps. Sheep 8427.
	21.8.24.	Neutrophilia.
		Died; some intercurrent disease.

(5) *Filtrate (E. K. Schichtern Filter) of Haemolyzed Blood Corpuscles of an Infected Sheep.*

Sheep 9114.	2.8.24.	Inj. intraj. 60 c.c. Filtrate Sheep 8427.
	24.8.24.	Negative.
		Died; some intercurrent disease.
Sheep 9119.	2.8.24.	Inj. intraj. 60 c.c. filtrate bld. Sheep 8427.
	1.9.24.	S.A.
	3.9.24.	S.A.; S.P.D.; S.P.
	10.9.24.	S.A.; count 6·9 millions.
	12.9.24.	Count 6·9 millions.
	15.9.24.	S.A.; 7·3 millions.
	24.9.24.	J.B.
	30.9.24.	Negative.

(6) *Filtrate (Berkefield Filter) of Haemolyzed Blood Corpuscles of an Infected Sheep.*

Sheep 9122.	2.8.24.	Inj. intraj. 60 c.c. filtrate bld. Sheep 8427.
	24.9.24.	Negative; discontinued.
		Tested as regards immunity on 7.10.24. Positive, i.e. Reaction (*vide* Expt. Sheep 1775).
Sheep 9123.	2.8.24.	Inj. intraj. 60 c.c. filtrate bld. Sheep 8427.
	24.9.24.	Negative; discontinued.
		Tested as regards immunity on 7.10.24. Positive. i.e. Reaction (*vide* Expt. Sheep 1844).

Addendum: EXPERIMENT 1775.—TO ASCERTAIN WHETHER SHEEP 9106 HAD BECOME INFECTED WITH ANAPLASMA AND WHETHER SHEEP 9119 WAS STILL SUSCEPTIBLE.

Sheep 9122.	7.10.24.	Inj. intraj. bld. Sheep 9106.
	22.10.24.	Anapl. few; S.A.
	25.10.24.	„ not infreq; S.A.; S.P.
	31.10.24.	A.; S.P.
	6.11.24.	Anapl. few; S.A.
Sheep 8454.	7.10.24.	Inj. intraj. bld. Sheep 9106.
	25.10.24.	Anapl. rare; A; P.N.; J.B.
	29.10.24.	A.; P.; few J.B.
	31.10.24.	S.A.; P.; P.D.; J.B. (all stages).
	6.11.24.	O.
Sheep 9119.	30. 9.24.	Inj. intraj. bld. Sheep 8430.
	30. 9.24.	Bld. negative.
	7.10.24.	Anapl. few; S.A.
	11.10.24.	„ not infrequent.

Conclusions.

Deferred to end of filter experiments.

X.—REPETITION OF EXPERIMENT 1775 ON 10.2.25.

(1) *Haemolyzed Blood of Infected Sheep.*

Sheep 10932.	10.2.25.	Inj. intraj. 20 c.c. haemolyzed bld. Sheep 8451.
	2.3.25.	A.
	5.3.25.	v. S.A.
	7.3.25.	„
	12.3.25.	„
	13.3.25.	„
	15.3.25.	„
	16.3.25.	Anapl. rare; S.A.
	20.3.25.	„ freq.; S.A.
	23.3.25.	„ „ S.A.; P.
Sheep 10940.	10.2.25.	Inj. intraj. 20 c.c. haemolyzed bld. Sheep 8451.
	5.3.25.	S.A.
	6.3.25.	„
	7.3.25.	„
	10.3.25.	„
	12.3.25.	Anapl. few; S.P.; A.
	13.3.25.	Anapl. few; A.; S.P.; J.B.
	15.3.25.	S.A.; S.P.
	16.3.25.	S.A.; P.
	23.3.25.	Anapl. freq.; S.A.; P.

(2) *Filtration of Haemolyzed Blood of Infected Sheep* (E. K. Schichten No. 14 Filter).

Sheep 10937.	10.2.25.	Inj. intraj. 45 c.c. filtrate of haemolyzed bld. Sheep 8451.
	23.2.25.	v. S.A.
	25.2.25.	„
	5.3.25.	S.A.
	7.3.25.	v.; S.A.

Sheep 10937 (*contd.*).	10.3.25.	v.; S.A.
	12.3.25.	S.A.
	13.3.25.	v. S.A.
	15.3.25.	Negative.
	16.3.25.	v. S.A.
	23.3.25.	Anapl. freq.; S.A.
Sheep 10928.	10.2.25.	Inj. intraj. 45 c.c. filtrate of haemolyzed bld. Sheep 8451.
	12.3.25.	S.A.; S.P.; S.P.D.
	16.3.25.	S.A.; S.P.; S.P.D.; J.B.
	27.3.25.	Anapl. rare; S.A.; J.B.

(3) *Blood of Infected Sheep (controls).*

Sheep 10929.	10.2.25.	Inj. intraj. 10 c.c. bld. Sheep 8451.
	18.2.25.	Anapl. not infreq.
	20.2.25.	„ freq.; S.A.; S.P.
	23.2.25.	„ rare; A.; P.; J.B. freq. (various stages).
	25.2.25.	„ v. rare; A.; P.; J.B. freq. (various stages).
Sheep 10921.	10.2.25.	Inj. intraj. 10 c.c. bld. Sheep 8451.
	20.2.25.	Anapl. not freq.
	23.2.25.	A.; P.
	26.2.25.	Anapl. not infreq.; A.; P.
Sheep 8467.	10.2.25.	S.A.
	20.2.25.	Anapl. rare; A.; S.P.; S.P.D.
	24.2.25.	„ few; A.; P.

XI.—Experiment.—Filtrate Experiments, S. 1775 and S. 1998, Repeated.

(1) Sheep 10922.	26.3.25.	Inj. intraj. 17 c.c. washed corps. Sheep 10937.
	6.4.25.	Anapl. not infreq.
	11.4.25.	„ „ A.; P.
	16.4.25.	„ rare; A.; P.; J.B.
Sheep 10924.	26.3.25.	Inj. intraj. 15 c.c. washed corps. Sheep 10937.
	6.4.25.	Anapl. rare; S.A.
	11.4.25.	„ not infreq.; A.
	16.4.25.	„ rare; J.B.; A.; P.
(2) Sheep 10930.	26.3.25.	Inj. intraj. 100 cc. *filtrate haemolyzed washed bld. corps.* Sheep 10937 (Berkefeld).
	26.3.25.	Smear negative.
	28.4.25.	Negative.
Sheep 10934.	26.3.25.	Inj. intraj. 100 c.c. *filtrate haemolyzed washed bld. corps.* Sheep 10937 (Berkefeld).
	26.3.25.	Smear negative.
	28.4.25.	Negative.
(3) Sheep 10935.	26.3.25.	Inj. intraj. 100 c.c. *filtrate haemolyzed washed corps.* Sheep 10937 (E.K. Schichten filter).
	26.3.25.	Smear negative.
	28.4.25.	Negative.
Sheep 10939.	26.3.25.	Inj. intraj. 100 c.c. *filtrate haemolyzed washed corps.* Sheep 10937 (E.K. Schichten filter).
	26.3.25.	Smear negative.
	28.4.25.	Negative.

Conclusions Filtration Experiments.

1. Susceptible sheep reacted when injected with defibrinated blood, washed corpuscles, and haemolyzed washed corpuscles of infected sheep.
2. In case of defibrinated blood and washed corpuscles the usual reaction of anaplasmosis followed.

3. Those sheep, e.g. 9106, 10932, 10940, injected with haemolyzed blood or haemolyzed washed corpuscles of infected sheep, it was found that slight symptoms of oligocythaemia appeared about three weeks after injection, whereas the appearance of anaplasma occurred much later, followed by a typical reaction of anaplasmosis.

4. Susceptible sheep treated with the filtrate through an E. K. Schichten filter gave a doubtful reaction in one case, and a positive reaction of anaplasmosis in two other cases. Repetition of this experiment exercising the utmost care in the filtration, proved to be negative.

5. Susceptible sheep treated with the filtrate through a Berkefield porcelain filter, failed to show any reaction, whereas these sheep reacted to anaplasmosis when subsequently injected with virulent blood.

XII.—Experiment S. 1844.—To Ascertain how long Anaplasma can be kept in Citrate Solution and retain its Infective Properties.

Sheep 8430 was bled on 30.9.24 into a number of bottles containing 7½ per cent. citrate solution. This blood was injected as follows:—

(1) *Blood of Infected Sheep, injected on day of Bleeding Controls.*

Sheep 8447.	30. 9.24.	Inj. intraj. 20 c.c. bld. Sheep 8430.
	11.10.24.	Anapl. not infreq.
	14.10.24.	„ „ S.A.; S.P.
	18.10.24.	„ „ „ „ few J.B.
	23.10.24.	„ rare; A.; P.; J.B.
	29.10.24.	„ few; S.A.; S.P.
	1.11.24.	„ „ „ „
	6.11.24.	S.A.
	14.11.24.	Anapl. few; S.A.; S.P.
	19.11.24.	„ rare; S.P.
Sheep 9119.	30. 9.24.	Inj. intraj. 20 c.c. bld. Sheep 8430.
	7.10.24.	Anapl. few; S.A.
	11.10.24.	„ not infreq.
	14.10.24.	„ few; A.; P.; P.D.; N.; J.B.
	18.10.24.	„ rare; J.B.; A.
	25.10.24.	„ „ S.A.
	6.11.24.	„ not infreq.; S.A.
	13.11.24.	„ few; S.A.

(This animal was in a previous filtrate experiment, and the exact source of infection in this case is somewhat doubtful.)

(2) *After Storing for One Week.*

Sheep 8451.	7.10.24.	Inj. intraj. 20 c.c. bld. Sheep 8430 (30.9.24).
	22.10.24.	Anapl. few.
	24.10.24.	„ not infreq.
	27.10.24.	„ A.; P.; N.; J.B.
	31.10.24.	A.; P.; P.D.; N.; J.B.
	5.11.24.	S.A.; P.D.; few J.B.
	15.11.24.	S.A.; S.P.; S.P.D.
Sheep 9123.	7.10.24.	Inj. intraj. 20 c.c. bld. Sheep 8430 (30.9.24).
	20.10.24.	S.A.
	24.10.24.	Anapl. few; S.A.
	27.10.24.	„ „ few J.B.
	30.10.24.	„ rare; P.; S.A.; few N.
	6.11.24.	v. S.A.

(3) *After Storing for Three Weeks.*

Sheep 8471.	21.10.24.	Inj. intraj. 20 c.c. bld. Sheep 8430 (30.9.24).
Up to	7.11.24.	Negative.
	11.11.24.	Anapl. very rare; R.P.=34; R.C.=8·43.
	17.11.24.	„ not rare; S.A.
	19.11.24.	„ „ v. S.A.
	21.11.24.	„ S.A.; S.P.
	26.11.24.	A.; P.

Sheep 9126.	21.10.24.	Inj. intraj. 20 c.c. bld. Sheep 8430 (30.9.24).
Up to	7.11.24.	Negative.
	10.11.24.	Anapl. few; S.A.
	11.11.24.	„ rare; R.P.=26; R.C.=7·8.
	13.11.24.	„ not rare.
	14.11.24.	„ few; S.A.; S.P.
	15.11.24.	„ not rare; A.; S.P.
	17.11.24.	„ „ infreq.; P.; A.; N.
	24.11.24.	„ rare; A.; P.; N.; J.B.

(4) *After Storing for Five Weeks.*

Sheep 8465.	24.11.24.	Inj. intraj. 20 c.c. bld. Sheep 8430 (30.9.24).
	1.12.24.	S.A.; S.P.D.
	3.12.24.	„
	9.12.24.	„
	18.12.24.	„
	20.12.24.	Anapl.; S.A.
	22.12.24.	„
	24.12.24.	S.A.; Anapl.
	29.12.24.	Anapl.; A.; S.P.
	2. 1.24.	„ rare; A.; S.P.
	5. 1.24.	„ „ S.A.

Sheep 9125.	4.11.24.	Inj. intraj. 20 c.c. bld. Sheep 8430 (30.9.24).
	3.12.24.	S.A.; S.P.D.
	5.12.24.	„ S.P.; S.P.D.
	9.12.24.	Anapl.; A.; S.P.; J.B.
	11.12.24.	„ „
	13.12.24.	Anapl. freq; S.A.
	18.12.24.	„ J.B.
	20.12.24.	„ A.; P.; J.B.
	22.12.24.	„
	24.12.24.	„ S.A.; S.P.
	27.12.24.	„ A.; S.P.
	29.12.24.	„ infreq.; J.B.
	31.12.24.	„
	2. 1.25.	„
	5. 1.25.	„ rare; S.A.
	16. 1.25.	„

(5) *After Storing for Seven Weeks.*

Sheep 9117.	18.11.24.	Inj. intraj. 20 c.c. bld. Sheep 8430 (30.9.24).
	18.11.24.	„ S.A.; few J.B.
	25.11.24.	„ S.P.D.
	28.11.24.	S.A.
	18.12.24.	S.A.
	20.12.24.	A.; S.P.
	22.12.24.	„ „
	24.12.24.	S.A.; S.P.
	27.12.24.	A.; S.P.; J.B.
	29.12.24.	S.A.; S.P. P.D.; J.B. rare.
	31.12.24.	„ „ J.B. rare.
	2.1.25.	„ „ „

Immunity Test.

Sheep 9117.	9. 2.25.	A.; S.P.
	11. 2.25.	Inj. intraj. 20 c.c. bld. Sheep 8451.
	21. 2.25.	Anapl. not freq.; A.; P.; J.B.
	24. 2.25.	„ „ „ „ N.; J.B.
	26. 2.25.	„ „

Sheep 9129.	18.11.24.	Inj. intraj. 20 c.c. bld. Sheep 8430 (30.9.24).
	18.11.24.	A.; P.; P.D.
	25.11.24.	S.A.; S.P.; J.B.
	27.11.24.	„ erythrocytes paler stained.
	29.11.24.	„ „ „
	4.12.24.	„ few J.B.

Sheep 9129. (*contd.*).	9.12.24.	A.; J.B.; numerous very small points in erythrocytes.
	11.12.24.	„ „ „ „ „
	13.12.24.	„ „ S.P.
	18.12.24.	„ P.; J.B.; poikilocytosis.
	20.12.24.	„ S.P.; J.B.; Several small intra-corps. points in erythrocytes.
	22.12.24.	A.; small intra-corps. points.
	24.12.24.	S.A.; P.; „ „ „
	27.12.24.	„ „ erythrocytes paler.
	29.12.24.	A.; intracorpuscular points, J.B.
	2. 1.25.	S.A.; „ „ „ erythrocytes paler.
	5. 1.25.	„ „ „ „ „ „
	14. 1.25.	A; erythrocytes lighter stained; intra.-corps. points. Animal died of verminosis (*Haemonchus contortus*).

(6) *After Storing for Nine Weeks.*

Sheep 10497.	2. 1.25.	Inj. intraj. 20 c.c. bld. Sheep 8430 (30.9.24).
	20. 2.25.	v. S.A.
Sheep 10511.	2. 1.25.	Inj. intraj. 20 c.c. bld. Sheep 8430 (30.9.24).
	21. 1.25.	*Anapl. few.*
	4. 2.25.	„
	9. 2.25.	„
	12. 2.25.	v. S.A.
	16. 2.25.	„
	20. 2.25.	„
	23. 2.25.	„
	3. 3.25.	„ v. S.P.
	5. 3.25	S.A.; S.P.; S.P.D.
	7. 3.25.	„
	10. 3.25.	„

Addenda: Experiment 1844.—(i) To Ascertain whether Sheep 9129, which showed Oligocythaemia, but no Anaplasma, was a Carrier of Anaplasma.

Sheep 10826.	2.1.25.	Infected 20 c.c. bld. Sheep 9129.
	3.3.25.	Discontinued; negative.

(ii) To Ascertain whether Sheep 10511 and 10497, which failed to React to Anaplasmosis, were Carriers of Anaplasma.

Sheep 10511.	Splenectomized on 13.3.25.	
	25.3.25.	Gonderia rare; J.B.; S.A.
	30.3.25.	„ not infreq.; anapl. rare; S.A.
	3.4.25.	Anapl. not infreq.; Gonderia freq.; S.A.
	8.4.25.	„ marg. freq.; Gonderia rare; A.; P.D.; N.
Sheep 10497.	30.3.25.	Inj. intraj. bld. Sheep 10940.
	14.4.25.	S.A.
	18.4.25.	Few anapl.; S.A.
	20.4.25.	Anapl. not infreq.; S.A.
	22.4.25.	„ „ „

Conclusions.

1. It was found possible to infect susceptible sheep with citrated blood stored respectively for one week, three weeks, and five weeks.

2. Although the incubation period became more extended, the reactions set up were not less intense.

3. At seven weeks no reaction was observed, the sheep injected showed symptoms of oligocythaemia from the day of injection, probably due to some intercurrent disease. In case of sheep 9129 verminosis was suspected, of which it subsequently died, whereas sheep 9117 reacted to anaplasmosis when subsequently injected with virulent blood.

4. Citrated blood at nine weeks in case of sheep 10511 showed a doubtful reaction; sheep 10511, when subsequently splenectomized, showed to be a carrier of anaplasma. Sheep 10497 showed no reaction, and when subsequently tested as regards its immunity, proved to be still susceptible to anaplasma.

XIII.—Experiment S. 1841.—To Study the effect of certain Drugs on Susceptible Sheep and to Attempt to Produce Bodies resembling Anaplasma.

Sheep 9116.	7.10.24.	Inj. intraj. 50 c.c. 5 % *nitro-benz. sol.*
	10.10.24.	v. S.A.
	10.10.24.	Inj. intraj. 50 c.c. 5 % *nitro-benz. sol.*; symptoms of shock after injection.
	13.10.24.	Inj. intraj. 50 c.c. 5 % *nitro-benz. sol.*; symptoms of shock after injection.
	15.10.24.	S.A.; S.P.; few J.B.
	20.10.24.	„ „
	23.10.24.	Inj. intraj. 100 c.c. 5 % *nitro-benz. sol.*; symptoms of shock after injection.
	24.10.24.	S.A.
	29.10.24.	v. S.A.
	3.11.24.	Negative.
	7.11.24.	„
Sheep 8461.	7.10.24.	Inj. intraj. 5 c.c. 5 % *phenylhydrozin sol.*
	10.10.24.	Negative.
	10.10.24.	Inj. intraj. 5 c.c. 5 % *Phenylhydrozin sol.*
	13.10.24.	Inj. intraj. 5 c.c. 5 % *phenylhydrozin sol.*
	14.10.24.	A.; P.;
	16.10.24.	„ „
	22.10.24.	„ few J.B.
	23.10.24.	Inj. intraj. 5 c.c. 5 % *phenylhydrozin sol.*
	26.10.24.	S.A.; S.P.
	27.10.24.	A.
	28.10.24.	Inj. intraj. 10 c.c. 5% *phenylhydrozin sol.*
	31.10.24.	A.; P.; N.; J.B.
	3.11.24.	„ „ P.D.; J.B.
	7.11.24.	S.A.
	10.11.24.	„ R.P. = 39; R.C. = 8·8.
	10.11.24.	Inj. intraj. 10 c.c. 5 % *phenylhydrozin sol.*
	12.11.24.	Inj. intraj. 10 c.c. 5 % *phenylhydrozin sol.*
	13.11.24.	S.A.; S.P.; R.P. 24; R.C. 7·37; L. 64; M. 2; N. 26; E. 8.
	15.11.24.	Inj. intraj. 10 c.c. 5 % *phenylhydrozin sol.*
	15.11.24.	A.; S.P.
	17.11.24.	A.; P.; N.; J.B.; R.P. 23; R.C. 5·7; L. 50; M. 5; N. 40; E. 5.
	18.11.24.	Inj. intraj. 10 c.c. 5 % *phenylhydrozin sol.*
	19.11.24.	A.; P.; N.; J.B.; R.P. 17; R.C. 4; L. 56; M. 5; N. 23; E. 6.
	20.11.24.	Inj. intraj. 5 c.c. 5 % *phenylhydrozin sol.*
	21.11.24.	A.; P.; P.D.; N.; J.B.; R.P. 26; R.C. 4·8; L. 55; M. 4; N. 40.
	24.11.24.	S.A.; P.; few J.B.; R.P. 23; R.C. 4·4; L. 69; M. 1; N. 30; E. 3; B. 2.
	26.11.24.	S.A.; S.P.; few J.B.; R.P. 25; R.C. 5·4; L. 68; M. 2; N. 23; E. 7.
	1.12.24.	S.A.; few J.B.; R.P. 29; R.C. 7·8; L. 65; M. 4; N. 15; E. 15; B. 1.
	3.12.24.	S.A.; R.P. 30; R.C. 8.7; L. 60; M. 1; N. 30; E. 9.
	5.12.24.	S.A.; sl. poikilocytosis; R.P. 31; R.C. 9·5; L. 48; M. 5; N. 32; E. 15.
	6.12.24.	S.A.; few J.B.
Sheep 8469.	7.10.24.	Inj. intraj. 6 c.c. 50 % *pyrogallic acid sol.*
	10.10.24.	A.; S.P.D.
	11.10.24.	A.; P.; P.D.; E.; N.; J.B. (various stages); in some corps. double; difference in size.
	12.10.24.	A.; P.; P.D.; J.B.
	13.10.24.	3·2 millions per c.mm.; 10·700 leucocytes per c.mm.; L. 58; M. 6; N. 34; E. 2.
	14.10.24.	A.; P.; J.B. (in all stages).
	16.10.24.	A.; P.; J.B.

Sheep 8469 (*contd.*).	20.10.24.	S.A.; S.P.; J.B. freq. (all stages).
	23.10.24.	Inj. intraj. 6 c.c. 50 % *pyrogallic acid sol.*
	25.10.24.	A.; few J.B.
	26.10.24.	A.; S.P.; few J.B.
	27.10.24.	A.; P.; P.D.; few J.B.
	28.10.24.	Inj. intraj. 12 c.c. 50 % *pyrogallic acid*; died of shock.

Conclusions.

1. Pyrogalic acid, when injected intravenously into susceptible sheep in suitable doses, caused a pronounced oligycythaemia with numerous bodies, which were not of the nature of anaplasma, but jolly-bodies.

2. That the nature and course of that anaemia was more or less identical with that produced by anaplasma, especially of anisocytosis, polychromasia, punctate degeneration, erythroblasts, normoblasts, and various stages of jolly-bodies.

XIV.—Experiment 1841.—To Ascertain whether an Acute Oligocythaemia Produced by the Injection of Pyrogallic Acid into Sheep Infected with Anaplasma can bring about a Relapse of Anaplasmosis.

Sheep 8433, 8458, 8455.
(For observations, see Appendix.)

Conclusions.

Sheep which were the carriers of anaplasma did not show a relapse of anaplasmosis after a pronounced oligocythaemia produced by the injection of pyrogallic acid.

APPENDIX 2.

CLINICAL NOTES.

(*a*) Equines.
(*b*) Bovines.
(*c*) Sheep and Goats.

Case No. A. 427.

Equine No. 15186. Weight 500 lb.
Bay gelding, 13.2 h.h. 2½ years old.
Purchased 13.3.22, from Mr. R. Thomson.

Previous History.

3.11.22. Experiment 1319.—Immunization of D.O.B. horses with Tz. Vs. Mules 14896 and 14897.

Present Experiment S. 1602.—"Splenectomy in the Lower Animals."

25.10.23. Splenectomized under general anaesthesia.
Chloral hydrate, 15 grams, intravenously.
Chloroform 15 c.c. as inhalation.
Duration of anaesthesia, 1¾ hour.
Weight of spleen, 2.7 k.g.

26.10.23. Bright. Feeding. M.M. pale. Conjunctiva slightly ecchymosed. Pulse, 55 per minute, normal tension. Wound doing well.

27.10.23. Condition same as yesterday. Temperature increased to 104.4° F. in the afternoon. Pulse, 56 per minute, good. Wound doing well.

28.10.23. Feeding. Pulse, 52 per minute, slightly irregular. M.M. pale pink. Wound doing well. Smears show Nuttallia equi not frequent.

29.10.23. Dull. Not feeding. Pulse, 60 per minute, irregular. M.M. pale, conjunctiva slightly ecchymosed. Wound doing well. Nuttallia equi frequent in blood smears.

30.10.23. Feeding. Pulse, 80 per minute, irregular. Temperature, 104° F. M.M. pale. Urine passed in small quantities, very dark in colour. The wound is discharging a thin blood-stained secretion from its lower angle. Nuttallia equi very frequent in smears.

31.10.23. Lying down in box at 8.30 a.m. Feeds a little. Dull. M.M. pale, slight icterus. Pulse, 80 per minute, weak. Respirations, 22 per minute, somewhat blowing. Smears show Nuttallia equi frequent.
10 a.m. Destroyed for pathological examination.
Photograph: Plate A, Appendix 4.
Chart 1, Appendix 4.

CASE No. A. 457.
Equine No. 15420. Weight 620 lb.
Brown mare, 14.1 h.h. 5 years old.
Purchased 23.8.22. from Mr. R. Thomson.

Previous History.

6. 9.22. Mallein test: Negative.
3.10.22. Experiment 1271.—To see whether H 15124 contains (besides Nutt. equi) another virus in its blood. Staggers experiment.
11.12.22. Experiment 1176.—Attenuation of Tz. Vs. by passing through donkeys and mules.
7. 6.23. Experiment 1428.—Testing severity of reactions in horses under natural condition to the single Anthrax spore vaccine.
15.11.23. Experiment 1523.—Effect of spleen extract on blood and histology.

Present Experiment S. 1602.—"Splenectomy in the Lower Animals."

21.11.23. Splenectomized under general anaesthesia.
Chloral Hydrate, 18 grams, intravenously.
Chloroform, 45 c.c., as inhalation.
Duration of anaesthesia, 1¼ hours.
Weight of spleen, 3.4 k.g.
20.11.23. Feeding. Bright and attentive. M.M. pale pink. Faeces normal. Slight swaying in the hind quarters.
21.11.23. Feeding. Bright. M.M. pale pink. Pulse weak and slightly irregular. Urine normal, passed with difficulty owing to the pain in obtaining normal position for passing urine.
22.11.23. Bright. Feeding. M.M. pale. Few ecchymoses on conjuctiva. Pulse weak and somewhat irregular. Wound doing well. Blood smears taken from jugular blood show Nuttalia equi fairly frequent.
23.11.23. Dull, but feeds. Pulse weak and irregular. Respirations slightly blowing. M.M. pale, few ecchymoses on conjunctiva. Urine passed frequently, is blood-stained. Wound doing well. Nuttalia equi very frequent in blood smears.
24.11.23. Dull. Listless. Heart throbbing. Pulse weak and irregular. Respirations blowing. M.M. pale with slight icterus. Feeds a little. Wound discharging slightly. Nuttalia equi seen in 75 per cent. of the erythrocytes.
Died during the afternoon.
Photograph: Plate B, Appendix 4.
Chart 2, Appendix 4.

CASE No. A. 599.
Equine No. 16072. Weight 320 lb.
Brown stallion, 13 h.h. Born at Bestersput, Free State, 11.12.23.
Previous History.
6. 2.24. Experiment S 1531.—(Testing Anthrax spore vaccine batch 32). This foal was free from Nuttallii equi infection.

Present Experiment S. 1602.—"Splenectomy in the Lower Animals."

7. 3.24. Splenectomized under general anaesthesia.
Chloral hydrate, 6 grams, intravenously.
Chloroform, 60 c.c., as inhalation.
Duration of anaesthesia, 4 hours.
Weight of spleen, 2 k.g.
8. 3.24. Bright and feeding. M.M. pink.
9. 3.24. Bright and feeding. Two superficial skin sutures at the lower angle of the wound ruptured during the night. Wound discharging freely. Discharge yellowish, transparent and liquid.

This colt, except for the fact that the lower portion of the laparotomy wound, including skin and m. abd. obliq. ext., was ruptured and healed under granulation, made an uneventful recovery. He was kept under observation until 11th June. During this time the colt grew well and put on condition rapidly. He was clinically normal in every way.

11. 6.24. Experiment S 1675. To test the effect of Haemolytic serum on a splenectomized animal.
Injected with 40 c.c Haemolytic serum. Colt showed immediate symptoms of acute shock, but recovered rapidly and was normal in 30 minutes.

12. 6.24. Feeds a little. Dull. M.M. pale. Pulse, 60 per minute. Respirations, 20 per minute. Slight haemoglobinuria.

13. 6.24. Feeds a little. Dull. M.M. pale, somewhat icteric. Urine dark brown in colour. Colt is weak, and falls when the head is raised to obtain jugular blood for examination.

14. 6.24. Condition not much changed. Not feeding well. Somewhat weaker. M.M. icteric. Urine passed frequently, dark brown in colour. Faeces normal. Pulse, 84 per minute, weak. Respirations, 26 per minute.

15. 6.24. Symptoms much more exaggerated. Icterus marked. Pulse, 88 per minute, weak. Respirations, 28 per minute. Urine very dark in colour. Colt very weak and falls when being handled to make blood smears.
Colt died during the forenoon.
Photograph: Plates C and D, Appendix 4.
Chart 3, Appendix 4.

CASE No. B. 287.

Equine No. 16032. Weight 310 lb.
Cream stallion, 12.2 h.h. Foaled at Bestersput, Free State, 22.11.23.

Previous History.

6. 2.24. S 1531. (Testing Anthrax spore vaccine batch 32).
8. 4.24. S 1627. (To ascertain the effect of injecting blood of splenectomized horse into a normal horse).
11. 6.24. S 1675. (To test the effect of haemolytic serum on a normal horse). This colt became infected naturally with Nuttallii equi while at Onderstepoort.

Present Experiment S. 1602.—"Splenectomy in the Lower Animals."

23.10.24. Splenectomized under general anaesthesia.
Chloral hydrate, 10 grams, intravenously.
Chloroform, 45 c.c., as inhalation.
Duration of anaesthesia, 2½ hours.
Weight of spleen, 2.1 k.g.

24.10.24. Colt bright. Feeds well. M.M. pink.

25.10.24. Feeding well. M.M. pink. Pulse regular and normal in tone. Slight opaque serous discharge from lower angle of the wound.

26.10.24. Feeding well. M.M. pink. Discharge from wound still persists and is slightly more profuse.

27.10.24. Hair erect. Bright. Feeding well. M.M. pink. Slight mucous discharge from nostrils. Opaque serous discharge from the lower angle of the wound.

28.10.24. Coat erect. Bright. Feeding. M.M. pink. Pulse, 60 per minute, normal tension. Respirations, 14 per minute. Lower portion of wound shows healthy granulations. There is an opaque discharge. Two stitches in lower third of the wound removed to provide for drainage. Gauze drain placed in the lower angle of wound.

29.10.24. Dull. Feeds fairly well. M.M. pink. Wound exudes a fairly profuse purulent secretion. It shows healthy granulations at its lower extremity. Smears show Nuttalia equie frequent.

30.10.24. 8.30 a.m. Has fed. Lying in normal position. Bright, attentive. M.M. slightly "muddy." Pulse, 80 per minute, soft. Respirations, 20 per minute, slightly blowing. Wound shows healthy granulations. Discharge less profuse, thick and purulent. Nuttalia equi frequent in blood smears.

31.10.24. 8.30 a.m. Standing. Anxious expression. Not feeding. M.M. pale, slight icterus. Few ecchymoses on conjunctiva. Pulse, 84 per minute, full and bounding. Heart throbbing. Respirations, 44 per minute, blowing. Faeces normal in appearance. Urine very dark brown in colour, frequently passed in small quantities. Nuttalia equi very frequent in blood smears.
11 a.m. Destroyed for pathological examination.
Chart 4, Appendix 4.

CASE No. A. 637

Bovine No. 711. Weight 380 lb.
Black heifer, born at Onderstepoort, 15.4.23.

Previous History.

July, 1923. Experiment 1393.—" To keep a pure strain of anaplasma centrale in calves." Reaction of A. centrale, no P. bigeminum.

March, 1924. Experiment 1602.—" Splenectomy in Lower Animals."

27. 3.24. Splenectomized under general anaesthesia.
Chloral hydrate, 10 grams, intravenously.
Chloroform, 120 c.c., as inhalation.
Duration of anaesthesia, 3 hours.
Weight of spleen, 1.65 k.g.
The calf made an uninterrupted recovery from the operation.

19. 5.24. Anaplasma centrale present in blood smears. M.M. normal.

23. 5.24. M.M. pale.

27. 5.24. M.M. pale, very slight icterus.
Anaemic symptoms continued until 24/6/24, after which date the heifer was again normal, and continued to put on condition rapidly.

Experiment 1613.—" To ascertain the nature of anaplasma bodies appearing in the blood of splenectomized sheep."

30. 9.24.—Injected intravenously with 20 c.c. fresh blood from sheep 8430.
The heifer did not react clinically.

Experiment S. 1983.—" To ascertain whether Bovine 711 is still susceptible to bovine piroplasmosis, as it failed to show a relapse after splenectomy."

26. 1.25. Injected intrajugularly 10 c.c. blood from Bovine 839.
The heifer did not react to this inoculation.

6. 3.25. Injected intrajugularly 50 c.c. blood from Bovine 1066 (showing P. bigeminum).

10. 3.25. P. bigeminum frequent. G. mutans fairly frequent. Temperature 104.8° F. Animal feeding.

11. 3.25. Not feeding. Dull. M.M. slightly injected. Lies most of the day. Pulse full, 75 per minute. Respirations somewhat laboured. P. bigeminum fairly frequent.
150 c.c. 1 per cent. trypan blue intrajugularly.

12. 3.25. Down. Not feeding. Dull. Listless. M.M. marked blue colour. Respirations somewhat laboured, 54 per minute. Pulse full. Heart throbbing. Temperature 97° F.

13. 3.25. Not feeding. Condition appears to be about the same as yesterday. Temperature 97.6° F. Pulse full and bounding. Heart throbbing. M.M. markedly blue.

14. 3.25. P. bigeminum present, but rare. Down. Not feeding. M.M. blue. Heart throbbing. Pulse weak, 60 per minute. Temperature 100.4° F. Injected intrajugularly 100 c.c. 1 per cent. trypan blue.
Animal collapsed immediately and died.
Photograph: Plate E, F, G, Appendix 4.
Chart 5 (2), Appendix 4.

Temperature Record of Bovine 711.

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.	Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.
1924.					1924.				
30 Sept...	101·4	102·4			1 Dec...	101	101·6		
1 Oct...	101·2	102·6			2 „ ...	102·4	101·8		
2 „ ...	101·6	101·6			3 „ ...	101·4	101·8		
3 „ ...	101·8	101·2			4 „ ...	100·8	101		
4 „ ...	102·4	102·6			5 „ ...	101	101·6		
5 „ ...	102·2				6 „ ...	101	101·2		
6 „ ...	101·8	102·6			7 „ ...	100·2			
7 „ ...	101·4	101·8			8 „ ...	100·8	101·6		
8 „ ...	101·6	102·4			9 „ ...	100·4	101·2		
9 „ ...	101·8	102·6			10 „ ...	101	101		
10 „ ...	101·8				11 „ ...	100·2	101·4		
11 „ ...	101·8	102·2			12 „ ...	101	101·2		
12 „ ...	102	101·8			13 „ ...	100	101·2		
13 „ ...	101·8				14 „ ...	100·6			
14 „ ...	101·2	101·8			15 „ ...	101·4	104·4		
15 „ ...	101·4	102			16 „ ...	101·2			
16 „ ...	102	102			17 „ ...	101	101·6		
17 „ ...	102	101·6			18 „ ...	101·6	101·6		
18 „ ...	102	101·6			19 „ ...	101·4	101		
19 „ ...	101				20 „ ...	101	101·6		
20 „ ...	102	101·6			21 „ ...	100	101·2		
21 „ ...	101·6	102			22 „ ...	101·2	101·2		
22 „ ...	101·6	101·8			23 „ ...	101·4	101·2		
23 „ ...	101·8				24 „ ...	101·4	100		
24 „ ...	101·6	101·8			25 „ ...	101·2			
25 „ ...	102·2	102·4			26 „ ...	101·2			
26 „ ...	101·8				27 „ ...	101·4			
27 „ ...	102·2	102·2			28 „ ...	101·4			
28 „ ...	101·6	102			29 „ ...	100·6	102·2		
29 „ ...	101·8	100·8			30 „ ...	101	101·2		
30 „ ...	101·4	104			31 „ ...	101·2	102		
31 „ ...	101·6	103							
1 Nov...	101·8	101·6							
2 „ ..	103·8				1925.				
3 „ ..	101·8	102							
4 „ ..	101·6	101·4			1 Jan...	101			
5 „ ..	101·2	102			2 „ ..	101·6	101·2		
6 „ ..	101	102			3 „ ..	101·2	102		
7 „ ..	101·6	101·2			4 „ ..	102·6			
8 „ ..	100·6	101·2			5 „ ..	101·6	101·6		
9 „ ..	101·6				6 „ ..	100·6	102		
10 „ ..	101·4	100·6			7 „ ..	101	102		
11 „ ..	101	101·2			8 „ ..	101·6	101·6		
12 „ ..	100·8	101·4			9 „ ..	101·4	101·6		
13 „ ..	101·2	101·4			10 „ ..	101·6	101·8		
14 „ ..	101·6	101·6			11 „ ..	102			
15 „ ..	102				12 „ ..	101	101·2		
16 „ ..	101				13 „ ..	101·2	102		
17 „ ..	102	100·4			14 „ ..	101·4	101		
18 „ ..	100·2	101			15 „ ..	101	101·6		
19 „ ..	101·8	101·6			16 „ ..	101	101·4		
20 „ ..	101·4	101·8			17 „ ..	101·2	100·6		
21 „ ..	100·6	102			18 „ ..	100·6			
22 „ ..	101·4	101·4			19 „ ..	101·6	101·6		
23 „ ..	101·6				20 „ ..	101·4	101		
24 „ ..	101·6	102·6			21 „ ..	101	102		
25 „ ..	101·2	102			22 „ ..	101·4	101·6		
26 „ ..	101·6	102·6			23 „ ..	101·6	101·2		
27 „ ..	100·8	101·6			24 „ ..	101	101·8		
28 „ ..	101·6	100·8			25 „ ..	101·4			
29 „ ..	99·8	101·8			26 „ ..	102	101·6		
30 „ ..	101·8				27 „ ..	101·4			

CASE No. B. 100.

Bovine No. 758. Weight 325 lb.
Black bull. Born at Onderstepoort, 3.9.23.

Previous History.

16.10.23. Experiment No. 1393.—(Injected with blood showing A. centrale and P. bigeminum.) Reaction of A. centrale due to infected blood. No P. bigeminum reaction. Became infected subsequently with P. bigeminum naturally.
Experiment No. 1602.—" Splenectomy in Lower Animals."

6. 6.24. Splenectomized under general anaesthesia.
Chloral hydrate, 8 grams, intravenously.
Chloroform-drops as inhalation.
Duration of anaesthesia, 1½ hour.
Weight of spleen, 1.7 k.g.
The calf made an uneventful recovery from the operation and was normal in every way until 23.6.24, when the temperature rose to 104° F.

24. 6.24. Dull. Listless. The temperature in the afternoon was 106.4° F. The calf does not feed well. Pulse, 108 per minute. M.M. pink.

25. 6.24. Hair erect. Dull. Tail stained with faeces. Not feeding. Flanks sunken. Marked muscular tremors. Pulse weak, 128 per minute. Respirations, 36 per minute. M.M. pink.

26. 6.24. Feeding a little. Hair erect. Pulse weak, 116 per minute.
8.30 a.m. Respirations, 27 per minute. Marked muscular tremors. Weakness in hind quarters. The head is raised and held slightly towards the right side. The membrana nictitans is occasionally jerked over the cornea.
2 p.m. Calf lying. Pulse weak, 128 per minute. Shows frequent spasmodic muscular contractions in limbs, head, and neck. M.M. pale, slight icterus.
Chloroformed, and quick laparotomy performed. Blood taken from the Vena porta., V. cava caudalis, and A. abdominalis for haematological examination.
Died under anaesthesia.
Post-mortem showed the presence of an inter-current disease, namely, multiple miliary necrotic foci (paratyphoid).
Photograph: Plate H, Appendix 4.

Temperature Record of Bovine 758.

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.
1924.				
6 June		100·8		
7 ,,	100·6	102·6	110	24
8 ,,	101·6	100·6	98	22
9 ,,	101	102·6	98	22
10 ,,	101·2	102·2	94	22
11 ,,	101·8	103·8	94	22
12 ,,	100·6	103		
13 ,,	102·4	102		
14 ,,	101·2	102		
15 ,,	101·4			
16 ,,	100·6	102·2		
17 ,,	101	102·6		
18 ,,	101·4	102·6		
19 ,,	101·6	103·2		
20 ,,	101·2	103·6		
21 ,,	100·6	103		
22 ,,	101·8			
23 ,,	102·6	104	100	24
24 ,,	104·8	106·4	108	24
25 ,,	108·4	108	128	36
26 ,,	108	±	116	27

CASE No. B. 324.

Bovine No. 828. Weight 410 lb.
Black heifer. Born at Onderstepoort, 5.1.24.

Previous History.

4. 2.24. S 1507.—[To ascertain the dose and antibody production in calf paratyphoid (paracolon) vaccination.]

1. 7.24. S 1709.—(Has gram-neg. streptococcus any etiological relation to granular vaginitis?)

14. 8.24. S 1763.—(To produce Snotziekte for further investigation.) Through this inoculation the animal became infected with anaplasmosis and piroplasmosis.

11.10.24. S 1814.—(To infect ticks with A. marginale by feeding on animals suffering from the disease.)

Present Experiment. S. 1602.—" Splenectomy in Lower Animals."

20.11.24. Splenectomized under general anaesthesia.
Chloral hydrate, 12 grams, intravenously.
Chloroform, 60 c.c., as inhalation.
Duration of anaesthesia, 2 hours.
Weight of spleen, 2.1 k.g.

21.11.24. Doing well. Bright. Feeding well. Temperature, 102.6° F. Pulse, 100.

22.11.24. Dull. Listless. Lying throughout the day. Rises only when urged. Slightly tympanitic. Peristalsis weak. Temperature, 102.4° F. Pulse weak, 100 per minute. M.M. pink. Slight grunt at each expiration. Wound doing well, no swelling, healing *per primam intentionem.*

23.11.24. Calf died during the early morning. The cause of death is unknown. Photograph: Plate I, Appendix 4.

Temperature Record of Bovine 828.

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.
1924.				
24 Oct.		102·4		
25 ,,	102·6	102·4		
26 ,,	101·8			
27 ,,	102·2	102·4		
28 ,,	101·6	102·6		
29 ,,	102	102		
30 ,,	101·6	102		
31 ,,	101	102·6		
1 Nov.	102	102·6		
2 ,,	103			
3 ,,	101·6	101·6		
4 ,,	101·8	102		
5 ,,	101·4	102		
6 ,,	101	102		
7 ,,	101	101·4		
8 ,,	101	102·4		
9 ,,	101	101		
10 ,,	101	100·8		
11 ,,	102	103		
12 ,,	102	101·4		
13 ,,	101·4	103·4		
14 ,,	102	102		
15 ,,	102·6	102·6		
16 ,,	102·2			
17 ,,	101·8	102·6		
18 ,,	102	102·6		
19 ,,	101·8	102·8		
20 ,,	101·2	101·6		
21 ,,	101·4	102·6	100	36
22 ,,	99·8	102·4	100	36
23 ,,				

CASE No. B. 357.

Bovine No. 893. Weight 350 lb.
Black heifer. Born at Onderstepoort, 2.3.24.

Previous History.

Experiment S 1613. 20. 3.24.—(To ascertain the nature of anaplasma bodies appearing in the blood of splenectomized sheep).

Experiment S 1693. 19. 6.24.—(Can "anaplasma centrale" of cattle in blood of S 8453 be propagated although not reacting?).

Experiment S 1793. 12. 8.24.—(To ascertain whether type G. mutans of sheep can be transmitted to bovines).

Experiment S 1849. 9.10.24.—[To test the immunity of Bovine No. 893 (negative in ovine anaplasmosis) with bovine anaplasmosis.]

Experiment S 1602.—"Splenectomy in the Lower Animals."

15.12.24. Splenectomized under general anaesthesia.
Chloral hydrate, 15 grams, intravenously.
Chloroform, 30 c.c., as inhalation.
Duration of anaesthesia, 1½ hour.
Weight of spleen, 3.1 k.g.

15.12.24. Gonderia mutans very infrequent.

16.12.24. Not feeding well.

18.12.24. Not feeding well. Faeces soft and bile-stained. P. bigeminum frequent. P. mutans frequent.

19.12.24. Not feeding well. Tucked up. Faeces bile-stained and soft. Temperature, 103.6° F. P. bigeminum frequent. G. mutans frequent. Injected intra-jugularly 150 c.c. 1 per cent. trypan blue.

20.12.24. Not feeding well. Tucked up. Temperature 103° F. M.M. bluish. G. mutans frequent. Contracted forms of P. bigeminum.

21.12.24. Not feeding well. Temperature 100.4° F. M.M. bluish. P. mutans present.

22.12.24. Not feeding well. Tucked up. Stitches removed. M.M. bluish.

23.12.24. Feeding well.

24.12.24. Animal, except for bluish tinge in mucous membrane, appears normal. This bluish tinge continued up to 16.2.24.
The animal is still under observation and is quite normal in appearance.
Photograph: Plates J and K, Appendix 4.
Chart 6, Appendix 4.

CASE No. B. 374.

Bovine No. 1027. Weight 425 lb.
Black ox, 1½ year old.
Received from W. C. Edwards, Cape Province, 22.10.24.

Previous History.

Experiment S 1869.—[(1) To transmit Anapl. from recently recovered cattle. (2) To observe whether the cattle that have at the time of Anapl. passed through H.W. act as Vs. reservoirs].

Experiment No. 1602.

24.12.24. Splenectomized under general anaesthesia.
Chloral hydrate, 15 grams, intravenously.
Chloroform, 60 c.c., as inhalation.
Duration of operation, 1½ hour.
Weight of spleen, 1.85 k.g.
The ox completely recovered from the anaesthetic at the end of 2 hours.
Recovery from the operation was uneventful. The wound healed *per primam intentionem.*

27.12.24. Gonderia mutans frequent in blood. P. bigeminum fairly frequent. primam intentionem.
100 c.c. 1 per cent. trypan blue given intravenously.

28.12.24. Few contracted forms of P. bigeminum present in blood. G. mutans very frequent. The mucous membrane bluish in colour. The animal continues to feed well, and appears clinically normal.

29.12.24—8.1.25. G. mutans very frequent in the blood.
9. 1.25. G. mutans frequent. M.M. bluish. P. bigeminum again present, but infrequent.
12. 1.25. G. mutans frequent. M.M. bluish. P. bigeminum frequent. Injected intra-jugularly 150 c.c. 1 per cent. trypan blue. Does not feed. Flanks sunken. Temperature 104° F. Pulse, 160 per minute, weak. Heart throbbing. Respirations, 40 per minute, somewhat laboured.
13. 1.25. P. bigeminum in contracted forms. G. mutans. M.M. pale blue. Flanks sunken. Feeding a little. Temperature 103.4° F. Pulse, 140 per minute. Respirations, 36 per minute.
14. 1.25. G. mutans frequent. M.M. pale blue. Temperature 102.6° F. Respirations, 30 per minute. Pulse, 138 per minute. Flanks sunken. Feeding slightly.
15. 1.25. G. mutans frequent. M.M. pale blue. Temperature 102° F. Pulse, 116 per minute. Respirations, 24 per minute. Feeding better.
16. 1.25. G. mutans frequent. M.M. pale blue. Temperature 103.6° F. Pulse, 110 per minute. Respirations, 22 per minute.
The animal continued to make rapid improvement, and beyond showing bluish mucous membranes and being somewhat poor in condition, was clinically normal on the 20.1.25. The animal is still under observation and is apparently normal.
Photograph: Plate L, Appendix 4.

Temperature Record of Bovine 1027.

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.
1924.				
22 Dec.		100	56	16
23 „	99·6	100	56	16
24 „	100	101·8	58	18
25 „	102·2		60	30
26 „	102		56	18
27 „	102	104·4	54	16
28 „	102·2		64	24
29 „	102·4	102·2	64	20
30 „	102	102·2	64	18
31 „	102	103	64	18
1925.				
1 Jan.	103	103	64	20
2 „	103	104·2	64	20
3 „	102·2	103·6	68	20
4 „	103			
5 „	101·8	103		
6 „	102	101		
7 „	101·8	102·6		
8 „	102	104		
9 „	103·4	105		
10 „	101·6	105		
11 „	104		140	28
12 „	104	102·4	160	40
13 „	102·2	103	140	36
14 „	101·6	102·6	128	30
15 „	99	102	116	24
16 „	101	103·6	110	22
17 „	103·2	102·6		
18 „	100·6			
19 „	101	101·4		
20 „	101·6	102·4		
21 „	102	102·4		

CASE No. 397.

Bovine No. 1034. Weight 397 lb.
Black ox, 1¼ year old.
Received from W. C. Edwards, Cape Province, 22.10.24.
Previous History. Experiment S 1869.

31.10.24. Anaplasmosis (1) "To transmit anaplasmosis from recently recovered cattle.

(2) "To observe whether the cattle that have at the time of anaplasmosis passed through H.W. act as virus reservoirs."

Experiment S 1602.—"Splenectomy in the Lower Animals."

20. 1.25. Splenectomized under general anaesthesia.
Chloral hydrate, 15 grams, intravenously.
Chloroform, 30 c.c., as inhalation.
Duration of anaesthesia, 1½ hour.
Weight of spleen, 1.75 k.g.
The animal made an uninterrupted recovery from the operation.
The wound healed *per primam intentionem.*

23. 1.25. P. bigeminum infrequent. G. mutans infrequent. Temperature 104° F. Animal feeding well.

24. 1.25. P. bigeminum infrequent. G. mutans infrequent. Temperature 105° F. Feeding well.

25. 1.25. Animal's condition is unchanged. P. bigeminum, G. mutans anaplasma marginale present. Temperature 104° F.

26. 1.25. Condition unchanged. Temperature 102.6° F.
This animal continued to improve, and recovered without an injection of trypan blue. The ox showed P. bigeminum in blood smears up to 26.3.25. He is still under observation and continues to do well.
Photograph: Plate M, Appendix 4
Chart 7, Appendix 4.

CASE No. B. 93.

Goat No. 8280. Weight 66 lb.
White female, 18 months old.
Arrived at Onderstepoort from Modder River, Cape Province, 6.12.23.
Previous History.
Had not been in experiment.

Present Experiment S. 1602.—"To ascertain the effect of splenectomy in the Lower Animals."

30. 5.24. Splenectomized under general anaesthesia.
Chloral hydrate, 8 grams, per. os.
Chloroform, 2 c.c., as inhalation.
Duration of anaesthesia, 1½ hour.
Weight of spleen, 190 grams.
This goat made an uninterrupted recovery from the operation. It was kept under observation until 30.9.24. During this period the goat was quite normal. It was transferred to Experiment S 1613, 30.9.24.

Experiment S. 1613.—"To ascertain whether goats are susceptible to ovine anaplasmosis—

(*a*) non-splenectomized goats,
(*b*) splenectomized goats."

30. 9.25. Injected with 20 c.c. fresh blood from sheep 8430.
The goat has been under observation since this date and has been normal in every way.
Photograph: Plates N, P, and Q, Appendix 4.

CASE No. B. 92.

Goat No. 8304. Weight 76 lb.
Brown and white female, 18 months old.
Arrived at Onderstepoort from Modder River, Cape Province, 6.12.23.

Previous History.

29. 2.24. Experiment 1599.—"Testing Anthrax spore vaccine, batch 39."

Present Experiment. S. 1602.—"To ascertain the Effect of Splenectomy in the Lower Animals."

30. 5.24. This goat was treated similarly to goat 8280, with the same result.
30. 9.24. The goat was transferred to Experiment S. 1613. It is still under observation and is normal in every way.
Photograph: Plates O, P, and Q, Appendix 4.

CASE No. A. 576.

Sheep No. 7443. Weight 74 lb.
Merino wether. Full mouth.
Arrived at Onderstepoort from Beaufort West, Cape Province, 20.7.23.

Previous History.

17. 8.23. Experiment 1422.—[Testing blue tongue vaccine, S. 5162 and 5163 (Aug., '22) and vaccine, Nos. 343-347].
27.11.23. Experiment 1529.—(Testing how long black quarter filtrate is virulent).
4. 1.24. Experiment 1530.—(Testing Anthrax spore vaccine, batch 31).

Present Experiment. S. 1602.—"Splenectomy in the Lower Animals."

29. 2.24. Splenectomized under general anaesthesia.
Chloral hydrate, 12 grams, peros.
Chloroform, 2 c.c., as inhalation.
Duration of anaesthesia, 2½ hours.
Weight of spleen, 315 grams.
This sheep made an uneventful recovery from the operation. The wound healed *per primam intentionem.*
13. 3.24. The sheep appears quite normal clinically. Anaplasma frequent in blood smears.
17. 3.24. Feeding well. Bright. Pulse, 120 per minute. Respirations, 44 per minute. The sheep shows a pale conjunctival mucosa. No icterus. Anaplasma frequent.
18. 3.24. Feeding. Bright. M.M. pale. Skin whitish. Anaplasma frequent in blood smears.
19. 3.24. Feeding well. Slightly dull. Pulse, 128 per minute, irregular. Heart throbbing. Respirations, 60 per minute. M.M. white. Faeces normal. Anaplasma frequent in blood smears.
10 c.c. blood injected into Sheep 8428. 8434.
20. 3.24. Condition unchanged, except that the sheep is very weak. Lies during the day, but rises quickly when urged. Anaemia of the mucous membrane very marked. Anaplasma frequent in smears.
21. 3.24. Not feeding. Sheep much weaker and anaemia of the mucous membranes more marked. Pulse, 156 per minute, weak. Heart throbbing and irregular. Respirations, 40 per minute, shallow. Anaplasma frequent.
Died during the night.
Chart 10, Appendix 4.

CASE No. A. 577.

Sheep No. 7369. Weight 70 lb.
Merino wether. Full mouth.
Arrived at Onderstepoort from Beaufort West, Cape Province, 20.7.23.

Previous History.

17. 8.23 Experiment 1422.—[Testing blue-tongue vaccine, S. 5162 and 5163 Aug., '22) and vaccine, batch 343-347.]
16.10.23. Experiment 1506.—(Testing black quarter filtrate, batch 35.)
29.11.23. Experiment 1531.—(Testing Anthrax spore vaccine, batch 32.)

Present Experiment. S. 1602.—"Splenectomy in the Lower Animals."

29. 2.24. Splenectomized under general anaesthesia.
Chloral hydrate, 12 grams, per. os.
Chloroform, 2 c.c., as inhalation.
Duration of anaesthesia, 3 hours.
Weight of spleen, 188 grams.
The sheep made an uneventful recovery from the operation.
13. 3.24. Anaplasma present in smears.
14. 3.24. M.M. pale. Otherwise nothing abnormal. Anaplasma fairly frequent in blood smears.
15. 3.24. M.M. pale. Anaplasma frequent.
16. 3.24. M.M. pale, almost white. Anaplasma frequent.
17. 3.24. Feeding. M.M. pale. Temperature 104.8° F. Pulse, 148 per minute, weak and irregular. Respirations, 56 per minute. Anaplasma frequent.
18. 3.24. Not feeding well. M.M. very pale. Temperature 105° F. Pulse, 148 per minute, weak and irregular. Heart throbbing. Respirations, 44 per minute, shallow. Skin pale. Faeces soft. Sheep getting weak. Lies all day. Rises quickly when urged. Anaplasma frequent in blood smears.
19. 3.24. Lying down. Not feeding. Sheep very weak. Can scarcely stand when placed on its feet. M.M. white, very slight yellowish tinge. Skin white. Pulse, 156 per minute, weak and irregular. Heart throbbing. Respiration, 44 per minute. Anaplasma frequent in blood smears. Destroyed during the afternoon for pathological examination.
Chart 11, Appendix 4.

Case No. B. 31.

Sheep No. 8430. Weight 65 lb.
Merino lamb. Born at Bestersput, Orange Free State.
Received at Onderstepoort, 19.3.24.

Previous History.

Non-infected sheep.

Present Experiment S. 1602.—"Splenectomy in the Lower Animals."

8. 4.24. Splenectomized under general anaesthesia.
Chloral hydrate, 8 grams, per. os.
Chloroform, 10 c.c., as inhalation.
Duration of anaesthesia, 1 hour.
The sheep made an uninterrupted recovery from the operation.
It was kept under observation until 18.5.24, when it was transferred to Experiment S. 1655.

Experiment S. 1655.—"To ascertain whether the anaplasmosis of cattle is transmissable to sheep.
(*a*) Splenectomized sheep.
(*b*) Normal sheep."

19. 5.24. Injected intra-jugularly 10 c.c. blood of Bovine 711 (carrier of anaplasma central).
Result: no reaction.
Animal kept under observation until 14.9.24, when it was transferred to Experiment S. 1825.

Experiment S. 1825.—"To study the nature of type Gonderia observed in Sheep 8428. (Sheep 8428 also showed anaplasma.)"

15. 9.25. Injected intra-jugularly 20 c.c. blood from sheep 8428.
20. 9.24. No symptoms were observed until 20.9.24, when Gonderia appeared, in the blood.
22. 9.24. Anaplasma appears in addition to Gonderia.
24. 9.24. M.M. pale. Feeding.
The anaemia became more marked from day to day, and dullness was progressively increased.
28. 9.24. M.M. white. Very dull. Listless.
29. 9.24. Not feeding well. M.M. white. Dull. Listless. Lying down.
30. 9.24. Condition about the same. Anaplasma frequent. The animal was bled 400 c.c. blood for investigation purposes. It died of shock during the night.
Photograph: Plate R, Appendix 4.
Chart 12 (2), Appendix 4.

CASE No. B. 32.

Sheep No. 8431. Weight 65 lb.
Merino lamb. Born at Bestersput, Free State.
Received at Onderstepoort, 19.3.24.

Previous History.

Non-infected sheep.

Experiment S. 1602.—"Splenectomy in the Lower Animals."

8. 4.24. Splenectomized under general anaesthesia.
Chloral hydrate, 8 grams per os.
Chloroform, 15 c.c., as inhalation.
Duration of anaesthesia, 1 hour.

9. 4.24. Bright and feeding. Coughing. Respirations, 72 per minute, vesicular murmur harsh, grating. Pulse, 148 per minute.

10. 4.24. Bright. Feeding a little. M.M. pink. Respirations, 72 per minute. Vesicular murmur harsh, grating. Nostrils dilated. Pulse, 144 per minute. Faeces soft.

11. 4.24. Feeding a little. M.M. slightly congested. Respirations, 72 per minute, dyspnoea. Discharge from nose. Coughing. Areas of consolidation present in both lungs. Faeces soft.

12. 4.24. Not feeding. Coughing. M.M. dirty reddish. Discharge from nose. Respirations rapid, 80 per minute, dyspnoea. Rales and areas of consolidation over both lungs. Symptoms became much exaggerated during the afternoon, and the animal died of pneumonia during the night.

Temperature Record: Sheep 8431.

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.
1925.				
3 April		102		
4 „	100·2	102·4		
6 „	101·2	102·6		
6 „	101·4	101·4		
7 „	100·4	102·2		
8 „	100·8	101·8		
9 „	102·6	104	148	72
10 „	102	103	144	72
11 „	103	103	140	72
12 „	103	104	140	80
13 „	Died.			

CASE No. B. 64.

Sheep No. 8456. Weight 56 lb.
Merino lamb. Born at Bestersput, Free State.
Received at Onderstepoort, 19.3.24.

Previous History.

Non-infected sheep.

Experiment S. 1602.—"Splenectomy in the Lower Animals."

15. 5.24. Splenectomized under general anaesthesia.
Chloral hydrate, 8 grams, per. os.
Chloroform, none.
Duration of anaesthesia, 1¼ hour.
Weight of spleen, 210 grams.
The animal made an uninterrupted recovery from the operation. It was kept under observation until 26.6.24, and was then transferred to Experiment S. 1705.

Experiment S. 1705.—(To ascertain the effect of injecting blood containing sheep anaplasma into splenectomized sheep).

26. 6.24. Injected intra-jugularly 20 c.c. blood from sheep 8459 (showing anaplasma).
30. 6.24. Anaplasma appear in the blood.
1. 7.24. Feeding. M.M. injected. Temperature 104° F.
5. 7.24. Bright. Feeding. M.M. pale. This condition remained unchanged until 10.7.24.
10. 7.24. Dull. Lying down. Muzzle resting on the ground. Respirations, 36 per minute, shallow. M.M. white. Pulse, 140 per minute, weak, irregular. Heart throbbing. Flanks sunken. Not feeding. Sheep rises only when urged.
11. 7.24 Very weak. M.M. and skin white. Respirations 42 per minute, shallow. Pulse, 148 per minute, weak and irregular. Faeces soft. Animal cannot stand when placed on its feet, but immediately collapses and lies stretched out on the ground.
Animal destroyed for pathological examination.
Chart 13 (2), Appendix 4.

Case No. B. 65.
Sheep No. 8457. Weight 63 lb.
Merino lamb. Born at Bestersput, Free State.
Received at Onderstepoort, 19.3.24.

Previous History.

Non-infected sheep.
Experiment S. 1602.—"Splenectomy in the Lower Animals."
15. 5.24. Splenectomized under general anaesthesia.
Chloral hydrate, 8 grams, per. os.
Chloroform, few drops, as inhalation.
Duration of anaesthesia, 1½ hour.
Weight of spleen, 194 grams.
The sheep made an uninterrupted recovery from the operation, and was kept under observation until 26.6.24, when it was transferred to Experiment S. 1705.

Experiment S. 1705.—(To ascertain the effect of injecting blood containing sheep anaplasma into splenectomized sheep).

26. 6.24. Injected intra-jugularly 20 c.c. blood from sheep 8459 (showing anaplasma). The sheep remained normal until 4.7.24, when the temperature went up to 107° F.
5. 6.24. M.M. pale. Feeding well.
6. 6.24. M.M. pale. Feeding well.
7. 7.24. Anaplasma appear in the blood. M.M. pale. The anaemia of the mucous membranes and the skin continued to become more marked until 26.7.24., after which date they gradually returned to their normal pink colour.
During the period of anaemia there was dullness, but the animal continued to feed well.
The animal was kept under observation until 16.9.24, when it was destroyed for pathological examination.

Temperature Record: Sheep 8457.

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.	Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.
1924.					1924.				
15 May	102·6				24 May	102	100·6		
16 ,,	103·4				25 ,,	102			
17 ,,	103·4				26 ,,	101·8	101·4		
18 ,,	103·6				27 ,,	102·6	102·6		
19 ,,	103·2				28 ,,	102·6	102·6		
20 ,,	103·8	102·6			29 ,,	100·2	102·6		
21 ,,	102·8	103·2			30 ,,	101·4	102·6		
22 ,,	102·4	104			31 ,,	101·8	103		
23 ,,	103	102·6							

Temperature Record: Sheep 8457 (continued).

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.	Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.
1924.					1924.				
1 June	101·2				25 July	103·6	103		
2 „	100·4	102·2			26 „	103	102		
3 „	101·6	100·4			27 „	101·4			
4 „	100·4	102·8			28 „	102	102·8		
5 „	101·4	102·6			29 „	102·2	102		
6 „	101	102·4			30 „	101·4	101·8		
7 „	102	103			31 „	101·4	102		
8 „	103				1 Aug.	103	102·4		
9 „	103	103·4			2 „	101·2	102·6		
10 „	101·6	101·2			3 „	101·2			
11 „	102	100			4 „	103.4	101·6		
12 „	101·8	101·4			5 „	102	103·6		
13 „	101·8	103			6 „	101·4	102·4		
14 „	100·6	102·8			7 „	102·4	103		
15 „	101				8 „	101·4	102·4		
16 „	99·6	102			9 „	100·8	102·2		
17 „	101·2	103			10 „	102·4			
18 „	101·8	102			11 „	101·6	102·8		
19 „	101·6	101·4			12 „	102	102		
20 „	102·2	103			13 „	102·4	101·8		
21 „	101	101·4			14 „	100·6	104·6		
22 „	101·2				15 „	102·6	104		
23 „	101·2	102			16 „	104	105		
24 „	101·6	102·6			17 „	103·6			
25 „	101·4	102			18 „	104	102·6		
26 „	101·8	102·4			19 „	103·8	103·2		
27 „	102				20 „	102	102·6		
27 „		103			21 „	103·2	102·8		
28 „	102	102·8			22 „	101·8	103		
29 „	102·8				23 „	101·6	102·4		
30 „	102·2	100			24 „	101·6			
1 July	101·6	102·6			25 „	103	102·4		
2 „	101·6	104·6			26 „	101·8	102		
3 „	103·6	103·4			27 „	101·4	101·8		
4 „	101·2	107			28 „	101·6	102		
5 „	102	101			29 „	101	101·4		
6 „	101·4				30 „	102·8	102·6		
7 „	102·2	102			31 „	102·4			
8 „	102·6	105·4			1 Sept.	101·6	102·4		
9 „	102·8	102·6			2 „	102·2	101·6		
10 „	102	103·2			3 „	100·8	101·4		
11 „	102·6	103			4 „	103·2	102·6		
12 „	102	102·2			5 „	102·2	103·8		
13 „	102·4				6 „	102·2	103		
14 „	102·2	103			7 „	102·8			
15 „	102·4	102·4			8 „	102·6	103·4		
16 „	103	102·6			9 „	101·2	103·4		
17 „	102·2	103·6			10 „	101·8	101·6		
18 „	102·4	104			11 „	102	102·6		
19 „	102	104			12 „	102	102·2		
20 „	102				13 „	101·4	103		
21 „	102·6	104·6			14 „	102·2			
22 „	103·6	106			15 „	102·6	103·4		
23 „	104·8	105			16 „	102	—		
24 „	105	105·6							

Case No. B. 66.

Sheep No. 8464. Weight 64 lb.
Merino lamb. Born at Bestersput.
Received at Onderstepoort, 19.3.24.

Previous History.

Non-infected sheep.
Experiment S. 1602.—"Splenectomy in the Lower Animals."
15. 5.24. Splenectomized under general anaesthesia.
Chloral hydrate, 8 grams, per. os.
Chloroform, 6.5 c.c., as inhalation.
Duration of anesthesia, 2 hours.
Weight of spleen, 205 grams.
Animal made an uneventful recovery from the operation. The wound healed *per primam intentionem.*
It was kept under observation until 8.7.24, when it was transferred to Experiment S. 1655.

Experiment S. 1655.—(To ascertain whether bovine anaplasmosis is transmissable to sheep.)

(*a*) Splenectomized sheep.
(*b*) Normal sheep.

8. 7.24. Injected intra-jugularly 20 c.c. blood from bovine 894.
No reaction.
9. 8.24. Injected intra-jugularly 20 c.c. blood from bovine 917 (anaplasma marginale).
11. 9.24. Injected intra-jugularly with 20 c.c. blood from bovine 828.
Bovine 828 had recently recovered from heart water. Its blood was still infected, and the sheep died of heart water, 21.9.24.

Temperature Record: Sheep 8464.

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.	Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.
1924.					1924.				
15 May	103				12 June	103	100·8		
16 „	103·2				13 „	103	103·2		
17 „	104				14 „	101·8	102		
18 „	103·8				15 „	103			
19 „	103				16 „	102	102		
20 „	103·2	102·8			17 „	100·4	103·2		
21 „	100·8	102			18 „	102	102·6		
22 „	101·6	103			19 „	102	101·8		
23 „	102·2	102·4			20 „	101·2	103		
24 „	100·6	103·4			21 „	101·8	102·8		
25 „	101				22 „	102			
26 „	103·4	103			23 „	102·6	102·4		
27 „	102·2	103			24 „	101·8	102·6		
28 „	102·2	102·6			25 „	102	102·4		
29 „	102	102·2			26 „	100·8	102·2		
30 „	103				27 „	102·6	103		
31 „	102	103			28 „	102	103		
1 June	101·8				29 „	102·6			
2 „	103·2	103			30 „	102·6	102·4		
3 „	102	102·4			1 July	100·2	102		
4 „	101·4	102·8			2 „	101·2	103·2		
5 „	102	103			3 „	104·2	103		
6 „	102	102·6			4 „	102·2	104·6		
7 „	101	103			5 „	102·4	103		
8 „	100·4				6 „	102			
9 „	100	102			7 „	102·4	103·6		
10 „	102·4	103			8 „	103	103·2		
11 „	102·4	101·2			9 „	103·2			

Temperature Record: *Sheep* 8464 (continued).

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.	Date.	Morning Temperature.	Evening Temperature.	Pulse.	
1924.					1924.				
8 July		103·2			15 Aug.	102·4	100·4		
9 ,,	103·2	102·6			16 ,,	102·4	103		
10 ,,	101·8	103			17 ,,	102	102		
11 ,,	103·6	100·8			18 ,,	101·8	102		
12 ,,	101	102·8			19 ,,	102	102·4		
13 ,,	102·6				20 ,,	102	100·6		
14 ,,	102	102·2			21 ,,	102·6	106		
15 ,,	102·6	102·2			22 ,,	103	103		
16 ,,	102·6	103·6			23 ,,	103	102·8		
17 ,,	101·4	103			24 ,,	102·2			
18 ,,	102	102·4			25 ,,	101	102·6		
19 ,,	103	103			26 ,,	102·4	103		
20 ,,	102·2				27 ,,	102·6	102·8		
21 ,,	102·4	103			28 ,,	103·4	102·2		
22 ,,	102·6	103			29 ,,	102·2	103		
23 ,,	103·4	102			30 ,,	104	101·6		
24 ,,	101·6	104			31 ,,	102·4			
25 ,,	103·6	102			1 Sept.	102·6	102·2		
26 ,,	101	102			2 ,,	101	102		
27 ,,	101·8				3 ,,	102	103·2		
28 ,,	102·4	102·6			4 ,,	102·4	102·8		
29 ,,	102	103·2			5 ,,	101·2	103		
30 ,,	103	102·4			6 ,,	102	104·2		
31 ,,	102·2	104·6			7 ,,	103			
1 Aug.	102·2	103			8 ,,	102·4	103		
2 ,,	102	102·2			9 ,,	102·4	105·2		
3 ,,	102·2				10 ,,	102	102		
4 ,,	102	102·8			11 ,,	102·6	102		
5 ,,	102·4	102·4			12 ,,	102·6	102·6		
6 ,,	102	102·2			13 ,,	102·2	103·6		
7 ,,	102·2	102			14 ,,	102·6			
8 ,,	102	101			15 ,,	105·6	106		
9 ,,	101·6	102·4			16 ,,	106·2	106·8		
10 ,,	102·8				17 ,,	107	107·2		
11 ,,	102	102			18 ,,	107·2	107·2		
12 ,,	101	101			19 ,,	108	108		
13 ,,	102·4	102·4			20 ,,	107·6	107·8		
14 ,,	102·4	105			21 ,,	107	—		

Case No. B. 123.
Sheep No. 8427. Weight 58 lb.
Merino lamb. Born at Bestersput, Free State.
Received at Onderstepoort, 19.3.24.

Previous History.

Non-infected sheep.

Experiment S. 1613.—(To ascertain the nature of anaplasma bodies appearing in the blood of splenectomized sheep.)

19. 3.24. Injected intra-jugularly 10 c.c. blood of sheep 7443 (showing anaplasma).
No clinical sumptoms were observed until 29.3.24, when the animal began to show a pale conjunctival mucosa.

31. 3.24. M.M. pale. Anaplasma appear in the blood.

1. 4.24. M.M. pale. Slight icterus.
This condition persisted until 5.4.24. The animal showed no other clinical symptoms beyond a slight loss of condition.

23. 4.24. Sheep quite recovered.
This sheep was transferred to Experiment S. 1602, 3.7.24.

Experiment S. 1602.—"Splenectomy in the Lower Animals."

3. 7.24. Splenectomized under general anaesthesia.
Chloral hydrate, 8 grams per os.
Chloroform, 7.5 c.c., as inhalation.
Duration of anaesthesia, 2 hours.
Weight of spleen, 125 grams.
Wound healed *per primam intentionem*.

4. 7.24. Bright and feeding.

5. 7.24. Coughing. Discharge from nose.

6. 7.24. Coughing. Discharge from nose. Laboured respirations. Vesicular murmur harsh. Not feeding. Flanks sunken.

7. 7.24. Condition unchanged. Rales over both lungs. Dullness on percussion over left lung. Sheep has developed pneumonia.

8. 7.24. Symptoms much exaggerated.

9. 7.24. Some improvement. Feeding a little. Coughing. Profuse brownish mucous discharge from nose.

11. 7.24. Condition unchanged. M.M. congested.

12. 7.24. Condition much improved. Feeding. Profuse nasal discharge. Dullness still present on auscultation and percussion.

15. 7.24. Much improved. Feeding. Marked rales over both lungs. Profuse discharge from nose. Coughing.

16. 7.24. Feeds well. Much improved. M.M. congested. Losing condition rapidly.

20. 7.24. Improving. M.M. pink. Lung sounds normal. Discharge from nose disappeared.

21. 7.24. Sheep showed gonderia and anaplasma in smears. It recovered rapidly from pneumonia, but showed anaemia of the mucosae and skin until 29.8.24. The sheep is still under observation and is clinically normal. Photograph: Plates S, T, and U, Appendix 4.

Temperature Record: Sheep 8427.

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.	Date.	Morning Temperature.	Evening Temperature.	Pulse.
1924.					1924.			
20 Mar.		106·4			10 April	101·6	103	
21 „	102·6	101·8			11 „	101·2	102·8	
22 „	102	103·4			12 „	101·2	104·6	
23 „	102	103·6			13 „	101·8	103	
24 „	101·4	103·2			14 „	100·2	102	
25 „	101·6	103·2			15 „	100	102·6	
26 „	102	103·8			16 „	100·4	102·6	
27 „	103	103			17 „	101·6	102·6	
28 „	101·6	103			18 „	101·6	103	
29 „	101	103			19 „	102	102·4	
30 „	104·4	103			20 „	101·6	102·6	
31 „	101·6	103·8			21 „	101·6	104	
1 April	100·6	102·4			22 „	100·8	102	
2 „	100	103·2			23 „	100·6	101·8	
3 „	101	102·2			24 „	99	101·4	
4 „	101·6	104·2			25 „	101·6	102·6	
5 „	105·4	103·8			26 „	100·6	101·2	
6 „	102	104·4			27 „	100·6	105·6	
7 „	101·6	100·6			28 „	102·6	102	
8 „	100·4	102·4			29 „	102·6	103	
9 „	100·2	102						

Temperature Record: Sheep 8427 (continued).

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.	Date.	Morning Temperature.	Evening Temperature.	Pulse.
1924.					1924.			
3 July	102·2	103·8			21 July	102	103·6	
4 ,,	103	103·4			22 ,,	102·4	103·6	
5 ,,	103·6	104·6			23 ,,	102·6	102·2	
6 ,,	104·2	105	140	38	24 ,,	100	103	
7 ,,	103	106	140	38	25 ,,	103·4	103	
8 ,,	105·6	104·6	148	36	26 ,,	101·8	103	
9 ,,	105·6		140	36	27 ,,	102·8		
10 ,,	105·6	103·8	148	36	28 ,,	102·6	103·2	
11 ,,	101	103·6	148	40	29 ,,	102·4	104·8	
12 ,,	101·8	102·4	148	40	30 ,,	103·6	103	
13 ,,	102		144	48	31 ,,	102	102·4	
14 ,,	101·4	103	120	40				
15 ,,	102	101·6	110	36	1925.			
16 ,,	100·6	103·8			1 Aug.	103·2	102·6	
17 ,,	101·4	102			2 ,,	102·4	103·4	
18 ,,	102	102·6			3 ,,	104·4		
19 ,,	102·6	101			4 ,,	103	103·2	
20 ,,	101·6				5 ,,	103·2	103·8	
					6 ,,	102·2	104·2	

Case No. B. 124.
Sheep No. 8428. Weight 60 lb.
Merino lamb. Born at Bestersput. Free State.
Received at Onderstepoort, 19.3.24.

Previous History.

Non-infected sheep.

Experiment S. 1613.—"To ascertain the nature of anaplasma bodies appearing in the blood of splenectomized sheep."

19. 3.24. Injected intra-jugularly 10 c.c. blood of sheep 7443, showing anaplasma.

2. 4.24. Anaplasma appear in blood. The sheep was dull and showed slight anaemia of the skin and mucous membrane until 14.4.24. After this date it improved and became quite normal clinically. Sheep was transferred to Experiment S. 1602, 3.7.24.

Experiment S. 1602.

3. 7.24. Sheep splenectomized under general anaesthesia.
Chloral hydrate, 8 grams per os.
Chloroform, 7.5 c.c., as inhalation.
Duration of anaesthesia, 4 hours.
Weight of spleen, 184 grams.
The animal made an uninterrupted recovery from the operation. The wound healed *per primam intentionem*.

11. 7.24. Anaplasma appear fairly frequently with gonderia in blood.

16. 7.24. M.M. pale. Skin pale.
The anaemia of the mucosa and skin continued to become more marked until 19.7.24.

20. 7.24. M.M. white. Slight icterus.

21. 7.24. Sheep dull. Listless. Lying down. M.M. white. Slight icterus. Skin white. Not feeding.

22. 7.24. Somewhat improved. Feeds a little.

23. 7.24. Improvement continued. M.M. white.

24. 7.24. Improvement continued. M.M. still white.

25. 7.24. Improvement continued. M.M. very slightly pink.
This improvement continued until the 30th July, 1924, after which

Photograph: Plates S, T, and U, Appendix 4.
Chart 8 (2), Appendix 4.

Case No. B. 235.
Sheep No. 8429. Weight 58 lb.
Merino lamb. Born at Bestersput, Free State.
Received at Onderstepoort, 19.3.24.

Previous History.

Non-infected sheep.

Experiment S. 1613.—(To ascertain the nature of the anaplasma appearing in the blood of splenectomized sheep.)

19. 3.24. Injected intra-jugularly 10 c.c. blood from sheep 7369 (showing anaplasma).
This sheep showed the usual slight anaemia reaction to anaplasmosis as observed in normal sheep. The reaction began 30.3.24, and continued until 6.5.24. The sheep was transferred to Experiment S. 1602, 22.9.24.

Experiment S. 1602.—" Splenectomy in the Lower Animals."

22. 9.24. Splenectomized under general anaesthesia.
Chloral hydrate, 1½ gram per os.
Chloroform, few drops, as inhalation.
Duration of anaesthesia, 2 hours.
Weight of spleen, 176 grams.
This sheep, although anaplasma appeared in the blood and there were very slight anaemic changes clinically between 13.10.24 and 19.10.24, did not show the severe reaction of anaplasmosis usually observed in splenectomized sheep.
Photograph: Plates S, T, and U, Appendix 4.

Temperature Records: Sheep 8429.

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.	Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.
1924.					1924.				
20 Mar.		105·2			23 Sept.		101·8		
21 „	103	104			24 „	100·8	102·2		
22 „	102·2	103·2			25 „	102·2	102·6		
23 „	102·4	103			26 „	102·2	102·2		
24 „	103·8				27 „	102·8	103		
25 „	103·8	103			28 „	102·4			
26 „	101·4	103·2			29 „	103·2	103		
27 „	101	103·2			30 „	103·4	104		
28 „	101	101·8			1 Oct.	103·6	102·8		
29 „	102	102			2 „	103	103·6		
30 „	101·4	102·6			3 „	103	103·6		
31 „	102	103·2			4 „	101·2	102·8		
1 April	101	101·8			5 „	102·4			
2 „	101·2	103·2			6 „	105	103·6		
3 „	102·6	103·2			7 „	103·2	103·2		
4 „	101·6	102·4			8 „	103	102·4		
5 „	101	101·4			9 „	102·4	103·6		
6 „	101·6	101·4			10 „	102·2	103·6		
7 „	101·6	101			11 „	102·8	104·4		
8 „	101·8	102·2			12 „	103·4			
9 „	101·6	102·6			13 „	104	104		
10 „	102·2	103			14 „	102·4	103·2		
11 „	102	103·2			15 „	102·4	103		
12 „	102·4	104			16 „	100·6	101·4		
13 „	102·4	102·2			17 „	101·2	100·8		
14 „	101·8	102·8			18 „	102	102·4		
15 „	101·4	103·6			19 „	102			
16 „	103·6	103			20 „	102·4	104		
17 „	102·6	102·8			21 „	102·2	102·4		
18 „	102·6	103·4			22 „	102·4	102		

CASE No. B. 125.

Sheep No. 8434. Weight 56 lb.
Merino lamb. Born at Bestersput, Free State.
Arrived from the Free State, 19.3.24.

Previous History.

Non-infected sheep.

Experiment S. 1613.—(To ascertain the nature of anaplasma bodies appearing in the blood of splenectomized sheep.)

19. 3.24. Injected intravenously 10 c.c. blood from Sheep 7369.
No clinical symptoms were observed until 26.3.24.
26. 3.24. M.M. pale.
27. 3.24. Anaplasma present in peripheral blood. M.M. pale.
This condition continued until 31.3.24.
1. 4.24. M.M. pale, slight icterus.
This condition continued until 10.4.24.
The animal fed well, and beyond slight dullness and anaemia, showed no clinical symptoms.
10. 4.24. Animal began to recover and was clinically normal 20.4.24.
The sheep was transferred to Experiment S. 1602, 3.7.24.

Experiment S. 1602.—"Splenectomy in the Lower Animals."

3. 7.24. Splenectomized under general anaesthesia.
Chloral hydrate, 8 grams per os.
Chloroform, 7.5 c.c., as inhalation.
Duration of anaesthesia, 1½ hour.
Weight of spleen, 195 grams.
The sheep made an uneventful recovery from the operation. The wound healed *per primam intentionem*.
11. 7.24. Anaplasma frequent in blood.
15. 7.24. M.M. pale. Feeding. Bright.
16. 7.24. Feeding. Bright. M.M. pale. Respirations, 36 per minute. Pulse, 140 per minute.
17. 7.24. Not feeding. Dull. Listless. Lying down. Skin white. M.M. white. Temperature, 104° F. Respirations, 40 per minute. Pulse, 140 per minute.
18. 7.24. Symptoms exaggerated. M.M. and skin white. Temperature 105° F. Pulse, 160 per minute. Respirations, 44 per minute.
19. 7.24. Very dull. Listless. Lying down with muzzle on the ground. Skin and M.M. white, very slight icterus. Pulse, 158 per minute, weak and irregular. Respirations, 44 per minute, shallow. Sheep died during the night.
Chart 9 (2), Appendix 4.

CASE No. B. 236.

Sheep No. 8462. Weight 56 lb.
Merino lamb. Born at Bestersput, Free State.
Received at Onderstepoort 19.3.24.

Previous History.

Non-infected sheep.

Experiment S. 1613.—(To ascertain the nature of anaplasma bodies appearing in the blood of splenectomized sheep.)

30. 5.24. Injected intra-jugularly 10 c.c. blood of sheep 8458.
This animal gave the usual mild reaction of anaplasmosis as observed in normal sheep. It was transferred to Experiment S. 1602, 29.9.24.

Experiment S. 1602.—"Splenectomy in the Lower Animals."

22. 9.24. The sheep was put under general anaesthesia.
Chloral hydrate, 6 grams per os.
Chloroform, few drops, as inhalation.
Duration of anaesthesia, 1½ hour.
Laparotomy was performed and the spleen loosened from its attachments, with the exception of the splenic vessels, which were ligatured.
The spleen was not removed.
25. 9.24.—The sheep died during the forenoon. Previous to death it was dull and listless, with a sub-normal temperature.

Temperature Record: Sheep 8462.

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.	Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.
1924.					1924.				
21 May		102·6			6 June	103	102·4		
22 „	100·6	103			7 „	101·2	102·4		
23 „	100·8	102·6			8 „	103	101·6		
24 „	102·6	103·6			9 „	101·6	101		
25 „	101				10 „	102·2	103·6		
26 „	102·6	100·6			11 „	102·6	102·4		
27 „	103·2	101·6			12 „	102·4	102·2		
28 „	101·2	102·4			13 „	103	105		
29 „	104	103·4			14 „	102	102·6		
30 „	103·4	104·6			15 „	102·2			
31 „	102	103·4			16 „	100·4	102·6		
1 June	102·6				17 „	102·4	102·4		
2 „	100·4	100·2			18 „	102·6	102·6		
3 „	101·8	103			19 „	102·4	101·6		
4 „	100·4	102			20 „	102·2	102·2		
5 „	102·4	104							

CASE No. B. 395.
Sheep No. 8455. Weight 58 lb.
Merino lamb. Born at Bestersput, Free State.
Received at Onderstepoort, 19.3.24.

Previous History.

Non-infected sheep.

Experiment S. 1613.—" To ascertain the nature of the anaplasma bodies appearing in the blood of splenectomized sheep."

5. 5.24. This animal gave the usual mild reaction of anaplasmosis as observed in normal sheep. It was transferred to Experiment S. 1841, 20.11.24.

Experiment S. 1841.—(To ascertain whether in sheep certain chemicals can produce anaplasma-like bodies.)

20.11.24. Injected intra-jugularly 5 c.c. 5 per cent. phenyl hydrazine hydrochloric boracic solution.

24.11.24. Injected intra-jugularly 5 c.c. 50 per cent. solution of pyrogalic acid.

28.11.24. Injected intra-jugularly 5 c.c. 50 per cent. solution of pyrogalic acid.

1.12.24. Injected intra-jugularly 5 c.c. 50 per cent. solution of pyrogalic acid.

3.12.24. Injected intra-jugularly 5 c.c. 50 per cent. solution of pyrogalic acid.

4.12.24. Dull. Not feeding well. M.M. pale and icteric.
This condition persisted until 13.12.24, when the animal began to improve, and was normal 14.1.25.
Transferred to Experiment S. 1602, 16.1.25.

Experiment S. 1602.—" Splenectomy in the Lower Animals."

16. 1.25. Splenectomized under general anaesthesia.
Chloral hydrate, 6 grams per os.
Chloroform, 5 c.c., as inhalation.
Weight of spleen, 270 grams.
Died at 10 p.m. without entirely recovering from the anaesthetic.
Chart 14, Appendix 4.

CASE No. B. 396.
Sheep No. 8458. Weight 72 lb.
Merino lamb. Born at Bestersput, Free State.
Received at Onderstepoort, 19.3.24.

Previous History.

Experiment S. 1613. 24.4.24.—(To ascertain the nature of anaplasma bodies appearing in the blood of splenectomized sheep.) This animal showed the usual reaction to anaplasmosis observed in normal sheep.

Experiment S. 1841. 10.11.24.—(To ascertain whether in sheep certain chemicals can produce anaplasma-like bodies.)

(*a*) Clean sheep.
(*b*) Infected sheep.

Experiment S. 1602.—" Splenectomy in the Lower Animals."

16. 1.25. Splenectomized under general anaesthesia.
Chloral hydrate, 8 grams per os.
Chloroform, few drops, as inhalation.
Duration of anaesthesia, 2 hours.
Weight of spleen, 220 grams.

17. 1.25. Appears well. Bright and feeding.
This sheep continued to do well until 20.1.25.

20. 1.25. Dull and listless. Not feeding.

21. 1.25. Sheep collapsed and died during the morning.

Temperature Record: Sheep 8458.

Date.	Morning Temperature.	Evening Temperature.	Pulse.	Respiration.
1925.				
16 Jan.		103·2		
17 „	103	105·4		
18 „	102·6			
19 „	104·6	105·4		
20 „	104·2	105·4		
21 „	104·8	—		

APPENDIX 3.

Under this is included :—

(*a*) A study of the blood of a number of equines, bovines, and ovines splenectomized, infected or otherwise, giving :

Date and time..... = Animals were injected, splenectomized, or bled.
Source..... = Where blood was collected from.
R.P. ..... = Percentage volume of erythrocytes.
R.C. ..... = Number of erythrocytes per cubic millimeter.
W.C. ..... = Number of leucocytes per cubic millimeter.
L. ..... = Lymphocytes.
M. ..... = Monocytes.
N. ..... = Neutrophiles, in differential counts.
E. ..... = Eosinophiles, in differential counts.
B. ..... = Basophiles.

OTHER ABREVIATIONS.

J..... = Jugular.
Intraj..... = Intrajugularly.
Anapl..... = Anaplasma.
P. bigem..... = Piroplasma bigeminum.
Gond..... = Gonderia.
A. ..... = Anisocytosis.
S.A. ..... = Slight anisocytosis.
P. ..... = Polychromasia.
S.P. ..... = Slight polychromasia.
P.D. ..... = Punctate degeneration.
E. ..... = Erythroblasts, in the blood-smear examination.
N. ..... = Normoblasts, in the blood-smear examination.
J.B. ..... = Jolly-bodies.
Freq..... = Frequent.
Infreq..... = Infrequent.
C. ..... = Bovine.
V.C..... = Vena cava.
V.P..... = Vena porta.

Experiment No. S. 1602.—Horse 15186.

Date.	Time.	Source.	R.C.	R.P.	W.C.	L.	M.	N.	E.	B.	Remarks.
11/10/24			5·3	26	10,400	43	8	42	5	2	
13/10/24			5·9	25	11,100	46	9	41	3	1	
18/10/24			4·8	25	10,200	35	9	40	4	2	
24/10/24			5·3	24	11,000	26	3	64	6	1	Animal starved.
25/10/24	12 noon	splenecto	mized.								
	4 p.m.		5·3	27	24,000	8	7	85			
	8 p.m.		5·3	28	28,800	8	7	85			
26/10/24	9 a.m.		4·7	25	16,400	12	6	82			
	4 p.m.		5·2	24	15,800	18	2	80			
27/10/24	9 a.m.		5·2	24	14,100	12	16	71			
	4 p.m.		5·3	24	11,700	21	13	66			
28/10/24	9 a.m.		4·9	23	12,400	28	18	53			Nuttallia equi. very rare.
	4 p.m.		5·1	24	10,600	31	20	42	6	1	Nuttallia equi. not frequent.
29/10/24	9 a.m.		5·1	25	17,300	12	9	79			Nuttallia equi. frequent.
	4 p.m.		5·3	23	14,300	13	15	72			Nuttallia equi.; vac. monocyte.
30/10/24	9 a.m.		4	21	21,600	11	8	81			Nuttallia equi. very frequent; Phag. monoc.
	4 p.m.		3	18	33,100	8	5	56			Nuttallia in about 70% Erythrocytes; more than one parasite in some Erythrocytes.
31/10/24	9 a.m.	J.	2·2	± 10	21,800	11	12	77			
	10 a.m.	Chlorofor	med—								
		V.C.	1·5	± 5	31,700	9	16	75			Monocytes, neutrophiles, and lymphocytes vacuolated.

Experiment No. S. 1602.—Horse 15420.

Date.	Time.	Source.	R.C.	R.P.	W.C.	L.	M.	N.	E.	B.	Remarks.
10/11/23	9 a.m.		6·5	29	11,700	46	7	44	2	1	
13/11/23			6·7	30	15,900	48	7	42	2	1	
15/11/23			6·6	29	10,400	41	4	54		1	
17/11/23			6·1	28	13,200	52	4	38	3	3	
19/11/23	12 a.m.	splenecto	mized.								
	3 p.m.		6	28	13,000	23	2	73	1	1	
20/11/23	9 a.m.		6·1	28	14,000	28	2	70			
	3 p.m.		7	28	11,500	37	11	52			
21/11/23	9 a.m.		7·8	30	4,100	34	12	54			Monocytes vacuolated.
	3 p.m.		7·2	30	6,300	36	12	52			
22/11/23	9 a.m.		7·2	31	7,400	31	17	52			Nuttallia equi. rare; neutrophiles vacuolated.
	3 p.m.		7	31	8,600	32	16	52			Nuttallia equi. not infrequent.
23/11/23	9 a.m.		7·2	30	8,100	35	7	58			Nuttallia equi. frequent.
24/11/23	9 a.m.		5·2		13,300	20	9	71			Nuttallia equi., path. lymphocytes, Rieder cell.

Experiment No. S. 1602.—Horse 16072.

Date.	Time.	Source.	R.C.	R.P.	W.C.	L.	M.	N.	E.	B.	Remarks.
24/1/24			13	45	14,000	36	5	59			
31/1/24			13	46	10,000	42		56	2		
5/2/24			12	44	10,900	49	2	49			
7/3/24			11	44	11,600						
	3 p.m.	splenecto	mized.								
8/3/24			11	38	16,500	26	2	72			
10/3/24			11	40	15,700	36	5	57	2		
12/3/24			10	37	17,000	33	6	59	2		Neutrophiles vacuolated.
13/3/24			10	38	15,100	33	3	63	1		
17/3/24			10	37	16,800	39	9	49	3		J.B.
19/3/24			9	35	19,500	36	18	45	1		J.B.'s, Reiz. cell; endothelial cells.
20/3/24			9·9	34	21,000	37	12	49	1	1	J.B.'s on margin of erythrocyte, erythrophagocytosis.
22/3/24			9·2	32	16,900	37	20	42	1		J.B. more frequent.
24/3/24						37	16	46	1		
28/3/24			9·3	34	35,000	38	15	47	1		
3/4/24			9·1	34	18,700	43	11	44	2		J.B. frequent.
7/4/24			8·8	33	27,000	40	8	48	4		J.B. not infrequent.
10/4/24			8·5	29	23,400	30	6	53	1		J.B. not infrequent.
14/4/24			8·1	35	21,700	34	12	52	2		J.B. not frequent.
19/4/24				33	17,100	38	5	55	2		J.B. not frequent.
24/4/24			9·9	31	21,200	46	6	46	1	1	J.B. rare.
30/4/24			9·6	32	30,000	28	12	60			J.B.; monocytes mononuclear type.
6/5/24			9·3	34	16,900	41	8	50	1		J.B.,; monocytes mononuclear type.
12/5/24			9·7	31	15,000	44	17	33	5	1	
27/5/24			9·5	33	19,500	58	6	34	1	1	Few J.B.
7/6/24			9	32	19,100	60	5	34	1		
10/6/24	2.30 p.m.	Intrajugul	arly 40 c.c.	Haemoly	tic serum,	H.S. 15281	(9/6/24),				Symptoms of shock.
12/6/24	9 a.m.		8·8	35	21,000	43	3	54			Few J.B.
	3 p.m.		8·4	33	22,900	48	7	45			Haemoglobinaemia.
13/6/24	10 a.m.		6·9	30	27,000	43	11	41	5		
14/6/24	9 a.m.		4·3	21	23,500	44	20	34	2		Some lymphocytes difficult to distinguish from monocytes.
15/6/24	9 a.m.		2·4	± 5	31,800	37	12	50	1		No erythrophagocytosis as yet.

Experiment No. S. 1602.—Horse 16032.

Date.	Time.	Source.	R.C.	R.P.	W.C.	L.	M.	N.	E.	B.	Remarks.
18/1/24	10 a.m.		10·7	39	12,900	28	2	69		1	
19/1/24	9 a.m.		10·3	40	11,200	28	1	69	1	1	
22/1/24			9·8	36	10,200	24	5	70	1		
25/1/24			8·2	32	11,500	36	1	63			
7/6/24			8	33	11,800	43	3	51	2	1	
11/6/24	2.30 p.m.	20 c.c. intr	ajugularly	serum, Hor	se 15281						Symptoms of shock.
12/6/24	9 a.m.		8	30	18,500	38	4	58			
	3 p.m.			30	18,800	47	1	51			
13/6/24			6·9	23	21,500	37	2	54	2		
14/6/24			5		17,400	33	3	61	1	1	
15/6/24			2·9	± 10	17,800	35	6	57	1	1	
17/6/24			2·5	± 15	11,100	33	8	59			
18/6/24			1·8	± 10	15,400	36	3	61			Slight anisocytosis.
23/6/24			2·5	19	10,500	39	5	55	1		
26/6/24			3·3	22	12,000	47	6	45	1	1	
30/6/24			5·3	24	11,000	45	6	49			
9/7/24			6	28	7,900	43	5	50	2		
8/8/24			7·8	30	11,800	58	3	38	3		Few J.B.
12/9/24			8·8	34	20,800	34	4	60	2		
8/10/24			8·8	34	16,700	55	4	40	1		
14/10/24			8·3	30	13,500	55	0	43	2	2	
21/10/24			8·3	34	18,400	67	3	24	6		
23/10/24	Splenecto	mized.									
25/10/24			7·7	32	18,000	30	5	64	1		Few J.B.; young neutrophiles.
27/10/24			6·5	31	12,000	38	14	33	15		Nuttallia equi. not infrequent.
29/10/24			6·2	30	23,000	40	20	38	2		Nuttallia equi. frequent (25 %); path. lymphocyte.
30/10/24			4·6	20	19,500	20	10	70			Nuttallia equi. frequent (60 %), in some erythrocytes more than one.
31/10/24		J.	1·4	± 5	20,100	28	16	56			Young neutrophiles; vac. monocytes.
		A.	1·8	± 4	18,300	32	15	53			
		V.C.	2·3	± 5	27,800	30	22	48			Erythrophagocytosis.

EXPERIMENT NO. S. 1613.—C. 844.

Date.	Time.	Source.	R.C.	R.P.	W.C.	L.	M.	N.	E.	B.	Remarks.
16/4/24			8·8	50	11,500	53	9	34	4		
	Intrajugul	arly, 10 c.c.,	blood She	ep 8433 (ov	ine anapla	smosis).					
19/4/24			8·5	45	11,800	40	6	48	5	1	
21/4/24			8·3	49	10,300	30	16	40	3		
25/4/24			8·5	47	8,600	50	15	30	5		
28/4/24			7·8	44	10,800	47	9	43	1		
6/5/24			8·2	45	9,800	50	3	45	2		
12/5/24			8	45	5,700	52	10	38	1		
28/5/24			9·3	49	8,500	50	14	28	7	1	
11/6/24			10·1	50	9,300	57	9	29	5		— Negative.
19/6/24	Intrajugul	arly, 20 c.c.,	blood She	ep 8453.							
11/8/24	Discontinu	ed; negati	ve.								
						IMMUNITY TEST.					
20/4/25	C. 844.	Intrajugular	ly, 20 c.c.,	blood C. 8	40.						Reacted to bovine piroplasmosis and anaplasmosis.