TABLE II.

Feeding of Ticks Collected at Batavia, Tours and Rietfontein, on Cattle at Onderstepoort in 1935 *and* 1936.

No. of Expt.	No. of Animal.	History.	Tick Feeding.					Result.	Sub-inoculations.				Result.
			Batch No.	Origin.	Infested.	Ticks Drop.	No.		Number of Animal.	Previous History.	Date of Inoculation.	Dose Injected Intravenously.	
S. 5719	C. 4283	Carrier of *T. mutans*, *A. centrale*, and *P. bigeminum*. Had been injected previously with Tzaneen Blue tongue virus	—	*R. evertsi* and *R. appendiculatus* collected at Batavia	5. 7.35	20. 7.35	12	No reaction	—	—	—	—	—
				Repeated infestation with same ticks	26. 7.35	31. 7.35	12	Ears markedly swollen, otherwise no reaction	—	—	—	—	—
				R. evertsi and *R. appendiculatus* collected at Tours	9. 8.35	16. 8.35	—	26–30.8.35 febrile reaction, highest temperature 105·4° F. 26.8.35 *A. marginale* and *T. mutans* appeared. 27.8.35 and 30.8.35 Koch's bodies found. No clinical symptoms.	S. 42892 S. 43831	BTI BTI	29. 8.36 29. 8.36	10 c.c. i.v. 10 c.c i.v.	— —
S. 5912	C. 6407	*T. mutans*, *P. bigeminum*, and *A. marginale carrier*	1405Aa	Rietfontein	26. 3.36	1. 4.36	12	5–8.4.36 febrile reaction, highest temperature 105·8° F. *T. mutans* in rare numbers appeared 17.4.36. 11.4.36 Koch's bodies fairly frequent. No clinical symptoms. 2.7.36 calf was splenectomized by Dr. Quinlan. 9.7.36 *P. bigeminum* appeared and calf injected with trypan blue. *T. mutans* was rare at first, but from 6.7.36 the numbers increased rapidly so that on 16.7.36, when animal was killed, more than 50 per cent. of the erythrocytes were infected with *T. mutans* 12–13.7.36 a few Koch's bodies could be found in the prescapular lymph gland. Koch's bodies in rare numbers were seen in the haemolymph gland situated near the precrural lymph gland.	—	—	—	—	—

Table III.

Feeding of Tzaneen Ticks on Sheep at Onderstepoort during 1935 *and* 1936.

No. of Expt.	No. of Animal.	History.	Tick Feeding: *R. appendiculatus* (adult).					Result.	Sub-inoculation.				Result.
			Batch No.	Origin.	Infested.	Ticks Drop.	No.		Number of Animal.	Previous History.	Date of Inoculation.	Dose Injected Intravenously.	
S. 6537	S. 35004	Splenectomized 6.2.34. Carrier of *T. ovis*	1357Aa3	Tzaneen, *R. appendiculatus* (adults)	1. 4.35	9. 4.35	6	9–14.4.35 marked swelling of ears..... 18–22.4.35 febrile reaction, highest temperature 106·2° F. *T. ovis* present during period of observation. Gland smears negative. (see Chart VII).	—	—	—	—	—
S. 5636	S. 42330	Susceptible blue tongue sheep...	1356Aa3	Tzaneen, *R. appendiculatus* (adults)	1. 4.35	9. 4.35	7	9–14.4.35 marked swelling of ears..... 14–18.4.35 febrile reaction, highest temperature 106·8° F. 29.4.35–11.5.35 *Eperythozoon ovis* frequent. Irregular febrile reactions associated with the appearance of these parasites, while severe anaemia developed (see Chart VI).	S. 42530 S. 42588 S. 44988 S. 45007 C. 5580	BTS BTI BTS BTS Vryburg	17. 4.35 17. 4.35 12.11.35 12.11.35 18. 4.35	10 c.c. i.v. 10 c.c. i.v. 5 c.c. i.v., blood collected 16·4·35 ,, 5 c.c. i.v., 5 c.c. intragland, 2 c.c. intram.	No reaction. Temperature rise on the 5th and 6th day. No reaction. No reaction. No reaction.
S. 5658	S. 42829	Susceptible blue tongue sheep...	1372Aa2	Tzaneen, *R. appendiculatus* (adults)	23. 4.35	4. 5.35	2	No reaction. Blood and gland smears negative.....	—	—	—	—	—
S. 5659	S. 39361	Immune blue tongue sheep.....	1372Aa1	Tzaneen, *R. appendiculatus* (adults)	23. 4.35	2. 5.35	16	4–9.5.35 febrile reaction, highest temperature 105° F. Blood smears negative. Killed on 10·5·35 and organs examined histologically *Liver:* Slight increase of connective tissues in the periphery and pigment in liver cells around central vein. *Spleen:* Loss of lymphoid tissue especially in respect of Malpighian corpuscles. *Lymph Glands:* Two fairly large haemorrhages in the medullary portion. There seems to be a loss of lymphoid tissue. *Smear from Prescapular Lymph Gland:* Lymphocytes seen with clusters of granules. Number frequent and granules *fine*.	—	—	—	—	—
S. 5875	S. 45738	Susceptible.....	1398Aa3	*R. appendiculatus* from Tzaneen (adults)	19. 1.36	26. 1.36	8	28.1.36–7.2.36 doubtful febrile reaction, highest temperature 104·6° F.	—	—	—	—	—
S. 5875	S. 44907	Susceptible blue tongue sheep...	1398Aa2	*R. appendiculatus* from Tzaneen (adults)	13. 2.36	21. 2.36	16	No reaction.....	—	—	—	—	—
S. 5875	S. 45756	Susceptible blue tongue sheep...	1398Aa4	*R. appendiculatus* from Tzaneen (adults)	19. 1.36	26. 1.36	8	6–8.2.36 febrile reaction, highest temperature 105·6°F.	—	—	—	—	—
S. 5875	S. 42882	Immune blue tongue sheep.....	1398Aa1	*R. appendiculatus* from Tzaneen (adults)	13. 2.36	20. 2.36	12	22–26.2.36 febrile reaction, highest temperature 106°F.	—	—	—	—	—

TABLE IV.

Feeding Larvae Bred from Adult Ticks Collected at Tzaneen in 1935.

No. of Expt.	No. of Animal.	History.	Tick Feeding.					Result.
			Batch No.	Origin.	Infested.	Ticks Drop.	No.	
S. 5706	S. 43491	Immune blue tongue sheep	1379B	*R. appendiculatus* larvae, bred from engorged Tzaneen ticks that fed on No. 4676	12. 7.35	16. 7.35	1,500	No reaction. On 9.8.35 sheep injected with Tzaneen blue tongue virus (40943). Sheep reacted and R. *appendiculatus* larvae Batch Bo. 1381B and nymphae Batch No. 1378Aa were allowed to feed on sheep while it was reacting. These ticks were fed on Sheep No. 44276 and 44971.
S. 5706	S. 43310	Immune blue tongue sheep	1378A	,, ,,	1. 7.35	8. 7.35	3,000	No reaction.
S. 5706	S. 43484	Immune blue tongue sheep	1379A	,, ,,	12. 7.35	16. 7.35	2,500	No reaction. On 9.8.35 sheep injected with Tzaneen blue tongue virus (40943). Sheep reacted and *R. appendiculatus* larvae Batch No. 1381C and nymphae Batch No. 1378Ab were allowed to feed on sheep while it was reacting. These ticks were fed on Sheep No. 44987 and 43771.
S. 5742	S. 42706	Immune blue tongue sheep	1381A	,, ,,	9. 8.35	13. 7.35	3,000	Ears markedly swollen, but no reaction.

TABLE V.

Feeding Nymphae and Adult Ticks that had Fed in the Previous Stage on Sheep that had Reacted to Tzaneen Blue Tongue Virus.

No. of Expt.	No. of Animal.	History.	Tick Feeding.					Result.	
			Batch No.	Origin.	Infested.	Ticks Drop.	No.		
S. 5779	S. 44987	Blue tongue susceptible	1381Ca	*R. appendiculatus* nymphae fed as larvae on sheep No. 43484 (14 and 15.8.35)	27. 9.35	3.10.35	40	No reaction.	
S. 5779	S. 43771	Blue tongue immune	1378Ab1	*R. appendiculatus* adults fed as nymphae on sheep No. 43484 (15 and 16.8.35)	27. 9.35	15.10.35	±12	No reaction.	
S. 5779	S. 44276	Blue tongue immune	1381Ba	*R. appendiculatus* nymphae fed as larvae on sheep No. 43491 (14 and 15.8.35)	27. 9.35	2.10.35	27	No reaction.	Died from diarrhoea 15/10/35.
S. 5779	S. 44971	Blue tongue susceptible	1378Aa1	*R. appendiculatus* adults fed as nymphae on sheep No. 43491 (15 and 16.8.35)	27. 9.35	8.10.35	±12	No reaction.	

APPENDIX V.—BLOOD AND ORGAN EMULSION TRANSMISSION EXPERIMENT.

TABLE I.

Sub-inoculation Experiments at Onderstepoort in 1934 and 1935 and at Tzaneen in 1935.

No. of Expt.	No. of Animal.	History.	Injected from					Result.
			No. of Animal.	History.	Date.	Material.	Dose.	
S. 5361	C. 5409	*T. mutans* carrier	C. 5214 C. 5224 C. 4980	Exposed at Tzaneen.... Exposed at Tzaneen.... Exposed at Tzaneen.... In all three Koch's bodies observed	20. 4.34 20. 4.34 20. 4.34	Blood..... Blood..... Blood and organ emulsion	5 c.c. i.v..... 2 c.c. intragld.	Reacted to *P. bigeminum* and treated with Acaprin. *T. mutans* was observed. Animal developed Heartwater and died 14.5.34.
S. 5361	C. 5454	Susceptible calf.....	C. 5214 C. 5224 C. 4980	Exposed at Tzaneen.... Exposed at Tzaneen.... Exposed at Tzaneen.... In all three Koch's bodies observed	20. 4.34 20. 4.34 20. 4.34	Blood..... Blood..... Blood and organ emulsion	5 c.c. i.v..... 2 c.c. intragld.	Reacted to *P. bigeminum* and treated with Acaprin *T. mutans* in rare numbers was observed. Animal developed Heartwater and died on the 23rd May, 1934.
S. 5373	C. 5188	Carrier of *T. mutans*, *A. centrale*, and *P. bigeminum*	C. 5454	Injected with material of cattle Nos. 5214, 5224, and 4980	9. 5.34	Blood.....	5 c.c. i.v..... 2 c.c. intragld.	Reacted to *P. bigeminum* and treated with Acaprin Died 15.5.34.
S. 5361	C. 5306	*T. mutans* carrier.....	C. 4954 C. 4984 C. 4985 C. 4986 C. 4987 C. 4988 C. 5198 C. 5200 C. 5210 C. 5225 C. 5520 C. 5526	Animals which had been exposed at Tzaneen	11. 5.34	Pooled blood	5 c.c. i.v..... 5 c.c. subcut... 2 c.c. intragld.	Reacted to *P. bigeminum* and treated with Acaprin *T. mutans* appeared and also *A. marginale*.
S. 5603	C. 6364	Susceptible.....	C. 5663 C. 5665 C. 5742 C. 6255	Were exposed at Tzaneen and showed Koch's bodies	5. 3.35	Blood.....	10 c.c. i.v..... 10 c.c. subcut. 2 c.c. intragld.	Reacted to *T. mutans* and *A. centrale*.
S. 5615	C. 5448	Carrier of *T. mutans*..	C. 5000	Exposed at Tzaneen and showed presence of Koch's bodies	13. 3.35	Blood and organ emulsion	20 c.c. i.v..... 5 c.c. intragld..	Blood smears showed presence of *T. mutans*.
S. 5615	C. 5464	Carrier of *T. mutans*..	C. 5000	Exposed at Tzaneen and showed presence of Koch's bodies	13. 3.35	Blood and organ emulsion	20 c.c. i.v..... 2 c.c. intragld.	Developed phlebitis with as febrile reaction from 27.3.35 to 30.3.35.
S. 6503	C. 5747	Vryburg.....	C. 5665	Exposed at Tzaneen and killed. No Koch's bodies seen	27. 2.35	Blood.....	10 c.c. subcut..	13–20.3.35 slight febrile reaction, highest temperature 104·8° F.
S. 5603	C. 5695	Vryburg.....	C. 5629	Exposed at Tzaneen and killed. Showed presence of Koch's bodies	27. 2.35	Blood.....	10 c.c. subcut..	13–20.3.35 febrile reaction, highest temperature 105·2° F.
S. 5603	C. 5587	Vryburg.....	C. 6287	Exposed at Tzaneen and killed. Showed Koch's bodies	8. 3.35	Blood.....	20 c.c. subcut.. 0·4 c.c. intraderm.	11.3.35–18.4.35 febrile reaction, highest temperature 106·8° F. From 8.4.35–2.5.35 *T. mutans* frequent.
S. 5603	C. 5566	Vryburg.....	C. 6033	Exposed at Tzaneen. Showed Koch's bodies	25. 2.35	Blood.....	10 c.c. subcut..	2–21.3.35 doubtful febrile reaction. 10.4.35–2.5.35 *T. mutans* fairly frequent.

TABLE I (*continued*).

No. of Expt.	No. of Animal.	History	Injected from					Result.
			No. of Animal.	History.	Date.	Material	Dose.	
S. 5615	C. 4970	Vryburg.....	C. 5742	Exposed at Tzaneen and killed. Showed Koch's bodies	11. 3.35	Organ emulsion	5 c.c. i.v..... 5 c.c. intram. 5 c.c. intragld.	13–26.3.35 febrile reaction. From 11.4.35–2·5.35 *T. mutans* fairly frequent.
S. 5615	C. 5765	Vryburg.....	C. 5742	Exposed at Tzaneen and killed. Showed Koch's bodies	11. 3.35	Organ emulsion	5 c.c. i.v..... 5 c.c. intram. 5 c.c. intragld.	13–23.3.35 febrile reaction. From 15.4.35–2.5.35 *T. mutans* and *A. marginale* frequent.
S. 5615	C. 5626	Vryburg.....	C. 6287	Exposed at Tzaneen and killed. Showed Koch's bodies	8. 3.35	Organ emulsion	20 c.c. i.v.....	13–22.3.35 febrile reaction. From 8–29 4.35 *T. mutans* fairly frequent.
S. 5737	C. 5651	Vryburg.....	C. 5563	This animal was injected with blood of sheep No. 41807 that reacted to Tzaneen blue tongue virus	23. 7.35	Blood.....	10 c.c. i.v.....	No reaction.
S. 5737	C. 5653	Vryburg.....	C. 5651	This animal had received blood from No. 5563	31. 8.35	Blood.....	10 c.c. i.v.....	Reacted to *P. bigeminum* and treated with Acaprin.
S. 5361	C. 5457	Carrier of *T. mutans*, *A. marginale*, and *P. bigeminum*	S. 37848	Sheep reacting to Tzaneen blue tongue	8. 6.34	Blood.....	10 c.c. i.v.....	Only *T. mutans* observed in blood smears.
S. 5195	C. 5410	Carrier of *T. mutans*, *A. centrale*, and *P. bigeminum*	S. 37848	Sheep reacting to Tzaneen blue tongue	8. 6.34	Blood.....	10 c.c. i.v.....	No reaction.
S. 5361	C. 4658	Carrier of *T. mutans* and *A. marginale*	S. 38850	Sheep reacting to Tzaneen blue tongue	15. 6.34	Blood.....	10 c.c. i.v....	No reaction. *A. marginale* and *T. mutans* present in blood smears.
S. 5418	C. 6026	Susceptible calf.....	S. 37096	Sheep reacting to Tzaneen blue tongue	2. 7.34	Blood.....	5 c.c. i.v..... 2 c.c. subcut.	No reaction.
S. 5611	C. 5441	*T. mutans* carrier.....	S. 41768	Sheep reacting to Tzaneen blue tongue virus	18. 3.35	Blood.....	20 c.c. i.v..... 5 c.c. intrgald.	No reaction.
S. 5611	C. 6291	Susceptible.....	S. 41841	Sheep reacting to Tzaneen blue tongue virus	18. 3.35	Blood.....	20 c.c. i.v..... 5 c.c. intragld.	No reaction.
S. 5611	C. 6365	Susceptible.....	S. 41801 S. 38908	Sheep reacting to Tzaneen blue tongue virus	20. 3.35	Blood.....	10 c.c. i.v..... 5 c.c. intragld.	No reaction.
S. 5611	C. 6411	Susceptible.....	S. 42359	Sheep reacting to Tzaneen blue tongue virus	10. 4.35	Blood.....	10 c.c. i.v. 5 c.c. intragld.	
S. 5611	C. 4283	Carrier of *T. mutans*, *A. centrale*, and *P. bigeminum*	S. 40955	Sheep reacting to Tzaneen blue tongue virus	12. 4.35	Blood.....	250 c.c. i.v.....	No reaction. This animal was at a later date infested with ticks from Tours.
S. 5737	C. 5563	Vryburg.....	S. 41807	Sheep reacting to Tzaneen blue tongue virus	7. 8.35	Blood.....	5 c.c. i.v.....	No reaction.
S. 5737	C. 5613	Obtained from Vryburg	S. 43870 S. 44545	Sheep reacting to Tzaneen blue tongue virus	13. 8.35	Blood.....	10 c.c. subcut.. 1·5 c.c. intram. 10 c.c. intraperitoneally 10 c.c. i.v.	No reaction.
S. 5774	C. 6463	Susceptible calf.....	S. 42738	Sheep reacted to Tzaneen virus	23. 9.35	Blood.....	5 c.c. i.v.....	No reaction. This animal was later infested with ticks from Tzaneen.

TABLE II.

Transmission Experiments in Laboratory Animals with Material from Cattle Exposed at Tzaneen.

No. of Animal	Injected from.		Date.	Dose.	Method.	Result.	Immunity Test.
	No. of Animal.	History.					
G.pig 1	S. 40994	Reacted blue tongue virus from Tzaneen	4. 9.34	1 c.c. blood	i.p.	Negative.....	—
G.pig 2	,,	,, ,,	,,	,,	,,	,, ...	—
G.pig 5	,,	,, ,,	,,	,,	,,	,, ...	—
G.pig 3	,,	,, ,,	,,	,,	,,	Febrile reaction 104° F. Killed 14.9.34. Spleen showed multiple localized abscesses.	—
G.pig 6	,,	,, ,,	,,	,,	,,	The same febrile reaction and post-mortem symptoms	—
G.pig 7	G.pig 6	Killed, showing febrile reaction	13. 9.34	,,	,,	Negative.....	—
G.pig 8	,,	,, ,,	,,	,,	,,	,, ...	—
G.pig 9	,,	,, ,,	,,	,,	,,	Febrile reaction 104° F. Killed 19.9.34 and injected G.pigs 13 and 14	—
S. 40995	G.pig 3 and 6	Both showed febrile reactions	14. 9.34	½-brain of each G.pig	i.p.	15–21.9.34 febrile reaction.. 3–6.10.34 febrile reaction	Reacted to injection with Tzaneen blue tongue virus which was injected 1.11.34.
S. 40942	S. 40995	Showed febrile reaction...	4.10.34	10 c.c. blood	subcut.	7–10.10.34 febrile reaction..	No reaction to injection of Tzaneen blue tongue virus which was injected 31.10.34
S. 41060	S. 40995	,, ,, ...	4.10.34	,,	,,	No reaction.....	Reacted to injection with Tzaneen blue tongue virus which was injected 31/10/34.
G.pig 13	G.pig 9	,, ,, ...	19. 9.34	0·5 c.c. blood	i.p.	24–27.9.34 febrile reaction. Killed 2.10.34. Injected G.pigs 19 and 20 and sheep 40985	—
G.pig 14	,,	,, ,, ...	,,	,,	,,	Negative.....	—
G.pig 19	G.pig 13	,, ...	25. 9.34	0·5 c.c. blood	,,	,, ...	—
G.pig 20	,,	,, ,, ...	,,	,,	,,	,, ...	—
S.40985	,,	,, ,, ...	28. 9.34	1 c.c blood	subcut.	6–8.10.34 febrile reaction 105·6° F. 15 and 16.10.34 febrile reaction 106·4° F.	No reaction to injection of Tzaneen blue tongue virus which was injected 31/10/34.

TABLE II (*continued*).

No. of Animal.	Injected from.		Date.	Dose.	Method.	Result.	Immunity Test.
	No. of Animal.	History.					
S. 41546	S. 40985	,, ,, ...	16.10.34	5 c.c. blood	,,	Paralized in hindquarters 29.10.34 and killed	—
S. 41573	S. 40985	,, ,, ...	,,	,,	,,	No reaction	—
G.pig 4	S. 40994	Reacted to Tzaneen blue tongue	4. 9.34	1 c.c. blood	i.p.	Febrile reaction 105° F. Killed 15.9.34. Injected G.pigs 11 and 12	—
G.pig 11	G.pig 4	Showed febrile reaction ...	15. 9.34	1 c.c., 10 per cent. brain emulsion	,,	No reaction	—
G.pig 12	,,	,, ,, ...	,,	,,	,,	Paralyzed in hindquarters 22.9.34. Destroyed 24/9/34	—
G.pig 10	G.pig 6	Killed, showing febrile reaction	13. 9.34	1 c.c. blood	,,	18–28.9.34 febrile reaction 105° F. killed 28.9.34. Injected G.pigs 15, 16 on 19.9.34; 17 and 18 on 22.9.34	—
G.pig 15	G.pig 10	Showed febrile reaction ...	19. 9.34	0·5 c.c blood	,,	No reaction	—
G.pig 16	,,	,, ,, ...	,,	,,	,,	,, ...	—
G.pig 17	,,	,, ,, ...	22. 9.34	,,	,,	,, ...	—
G.pig 18	,,	,, ,, ...	,,	,,	,,	,, ...	—
Rat 1	C. 5742	Bled 6 days after exposure at Tzaneen. Showed febrile reaction	26. 2.35	1 c.c blood	,,	Negative	—
Rat 2	,,	,, ,,	,,	,,	,,	,, ...	—
G.pig 1	,,	,, ,,	,,	,,	,,	Died from peritonitis 21/3/35	—
G.pig 6	,,	,, ,,	,,	,,	,,	Negative	—
Rat 3	C. 5629	Bled 7 days after exposure at Tzaneen. Showed febrile reaction	27. 2.35	,,	,,	,, ...	—
Rat 4	,,	,, ,,	,,	,,	,,	,, ...	—
Mouse 1	,,	,, ,,	,,	0·05 c.c. blood	i.c.	,, ...	—
Mouse 2	,,	,, ,,	,,	,,	,,	,, ...	—
Mouse 3	,,	,, ,,	,,	,,	,,	,, ...	—
Rat 5	C. 5648	,, ,,	,,	1 c.c. blood	i.p.	,, ...	—
Rat 6	,,	,, ,,	,,	,,	,,	,, ...	—
G.pig 7	,,	Bled 12 days after exposure at Tzaneen. Showed febrile reaction	4. 3.35	,,	,,	,, ...	—
G.pig 8	,,	,, ,,	,,	,,	,,	,, ...	—
Mouse 4	,,	,, ,,	,,	0·05 c.c. blood	i.c.	,, ...	—
Mouse 5	,,	,, ,,	,,	,,	,,	,, ...	—
Mouse 6	,,	,, ,,	,,	,,	,,	,, ...	—
Mouse 7	,,	,, ,,	,,	,,	,,	,, ...	—

TABLE II (*continued*).

No. of Animal.	Injected from.		Date.	Dose.	Method.	Result.	Immunity Test.
	No. of Animal.	History.					
G.pig 2	C. 6033	Bled 5 days after exposure at Tzaneen. Showed febrile reaction	25. 2.35	1 c.c blood	i.p.	Died from peritonitis 20/3/35	—
G.pig 3	,,	,, ,,	,,	,,	,,	Negative	—
G.pig 4	C. 6252	,, ,,	,,	,,	,,	,,	—
G.pig 5	C. 6252	,, ,,	,,	,,	,,	Died from peritonitis 27/3/35	—
Mouse 8	C. 5763	Bled 8 days after exposure at Tzaneen. Showed a febrile reaction	28. 2.35	0·05 c.c. blood	i.c.	Negative	—
Mouse 9	,,	,, ,,	,,	,,	,,	,,	—
Mouse 10	,,	,, ,,	,,	,,	,,	Died 5.3.35	—
Mouse 11	,,	,, ,,	,,	,,	,,	,,	—
Mouse 12	Mice 10 and 11	Brain emulsion of both mice pooled	5. 3.35	0·05 c.c. brain emulsion	,,	Negative	—
Mouse 13	,,	,, ,,	,,	,,	,,	,,	—
G.pig 12	C. 5742 C. 5676	Bled 19 days after exposure at Tzaneen. Showed febrile reaction and Koch's bodies	11. 3.35	1 c.c. blood	i.p.	,,	—
G.pig 13	,,	,, ,,	,,	,,	,,	,,	—
G.pig 14	,,	,, ,,	,,	,,	,,	,,	—
G.pig 15	,,	,, ,,	,,	,,	,,	Died from peritonitis 16/3/35	—
G.pig 16	,,	,, ,,	,,	,,	,,	Negative	—
G.pig 17	,,	,, ,,	,,	,,	,,	Died from peritonitis 17/3/35	—
G.pig 18	,,	,, ,,	,,	,,	,,	Negative	—
G.pig 19	,,	,, ,,	,,	,,	,,	,,	—
G.pig 20	,,	,, ,,	,,	,,	,,	,,	—
G.pig 21	,,	,, ,,	,,	,,	,,	,,	—
G.pig 22	,,	,, ,,	,,	,,	,,	Died from peritonitis 16/3/35	—
G.pig 23	,,	,, ,,	,,	,,	,,	Negative	—
G.pig 24	,,	,, ,,	,,	,,	,,	,,	—
G.pig 25	,,	,, ,,	,,	,,	,,	,,	—
G.pig 9	*R. appendiculatus*	Unengorged adult ticks collected on veld at Tzaneen	28. 2.35	1 c.c of a 10 % emulsion	,,	,,	—
G.pig 10	,,	,, ,,	,,	,,	,,	Died from peritonitis 17/3/35	—
G.pig 14	,,	,, ,,	,,	5 c.c. of a 10 % emulsion	,,	Negative	—
Mouse 15	,,	,, ,,	,,	0·05 c.c.	i.c.	,,	—
Mouse 16	,,	,, ,,	,,	,,	,,	,,	—
Mouse 17	,,	,, ,,	,,	,,	,,	,,	—
Mouse 18	,,	,, ,,	,,	,,	,,	Died 5.3.35	—
Mouse 19	Mouse 15	Brain emulsion in saline ...	5. 3.35	0·05 c.c.	,,	Negative	—
Mouse 20	,,	,, ,, ...	,,	,,	,,	,,	—

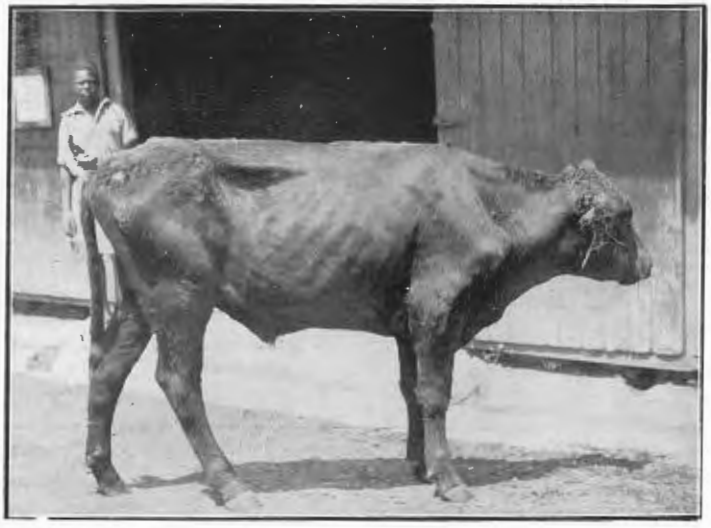

FIG. 1.—Bovine 5648, 1935 Tzaneen Exposure Experiment. Note emaciation, abnormal stature, and particularly the condition of the ears. Within the space of about 4 weeks this animal in excellent condition, was reduced to this condition.

FIG. 2.—Liver of Bovine 5648, 1935 Tzaneen Exposure Experiment. Note extent and distribution of lymphoid hyperplasia.

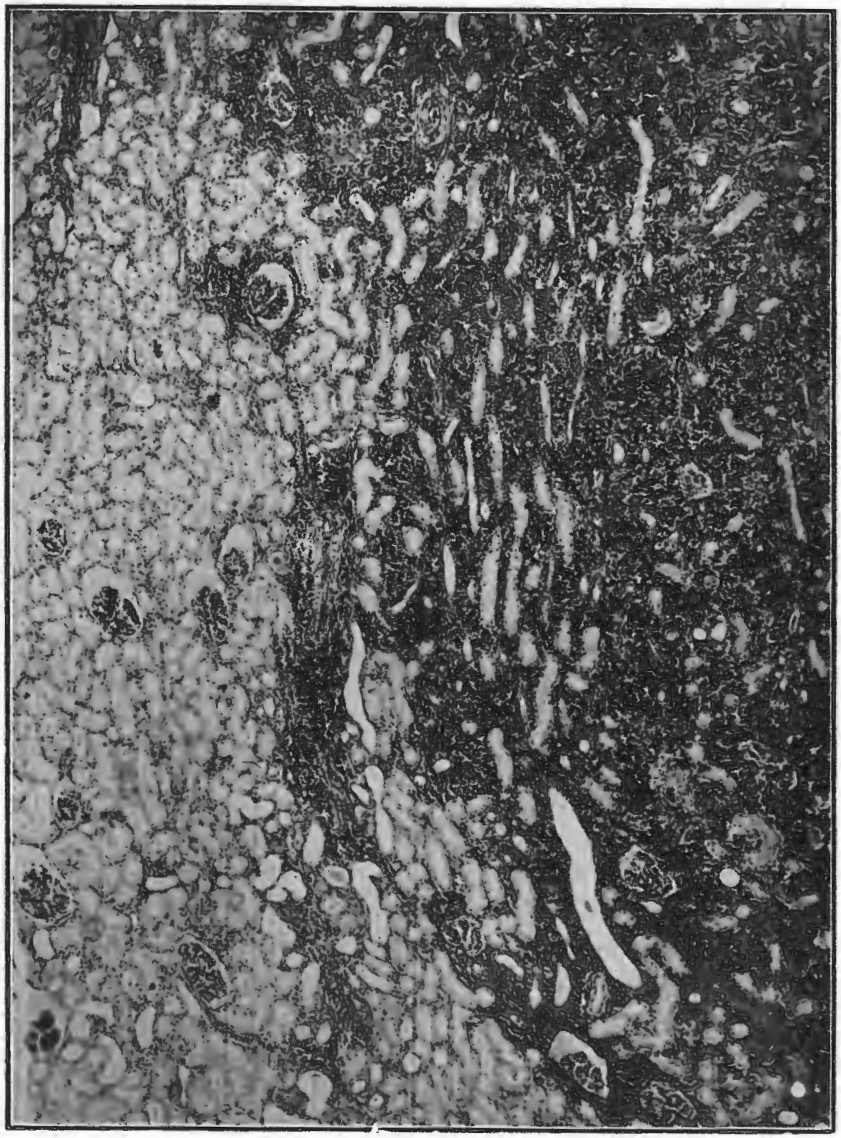

FIG. 3.—Kidney of Bovine 5641, 1935 Tzaneen Exposure Experiment. Note extent of lymphoid hyperplasia.

FIG. 4.—Spleen of Bovine 5763, 1935 Tzaneen Exposure Experiment. Note the distribution of the oedema in relation to Malpighian bodies.

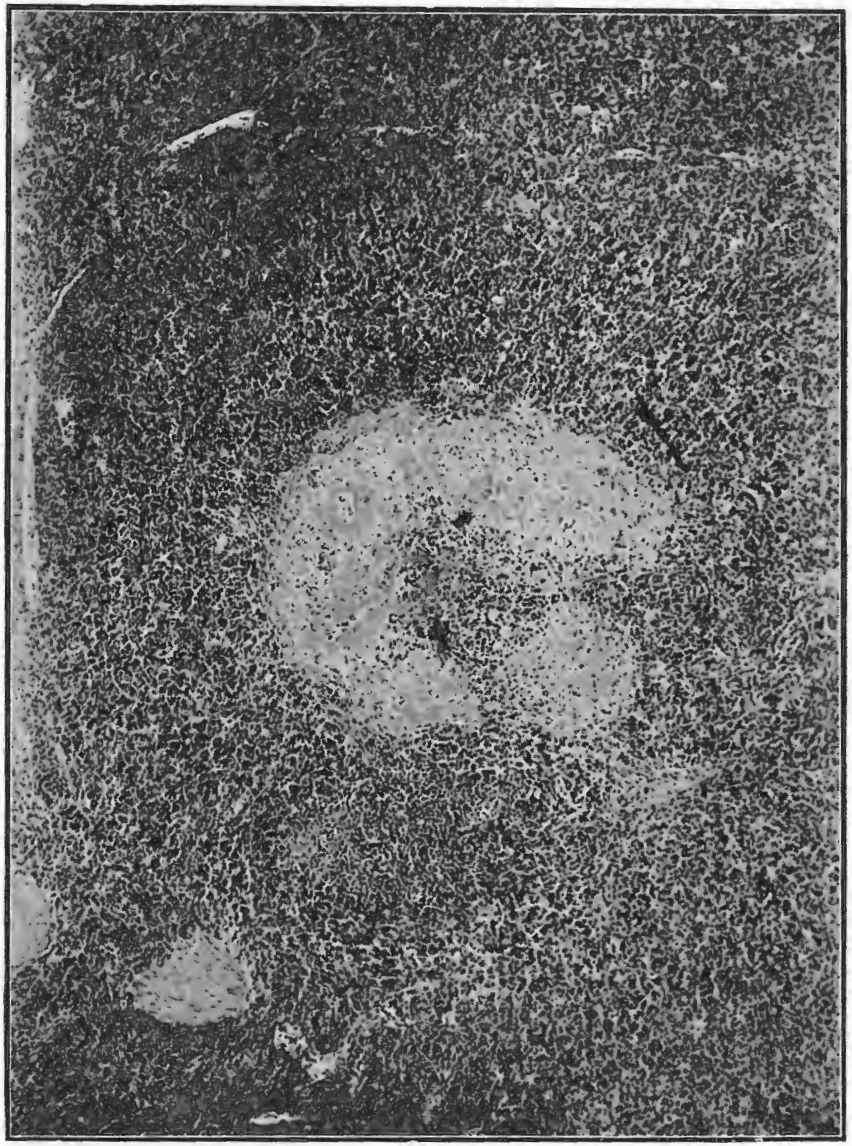

Fig. 5.—Spleen of Bovine 5763, 1935 Tzaneen Exposure Experiment. Higher magnification of Fig. 4, illustrating nature and distribution of oedema and the loss of lymphoid tissue in connection with the Malpighian bodies.

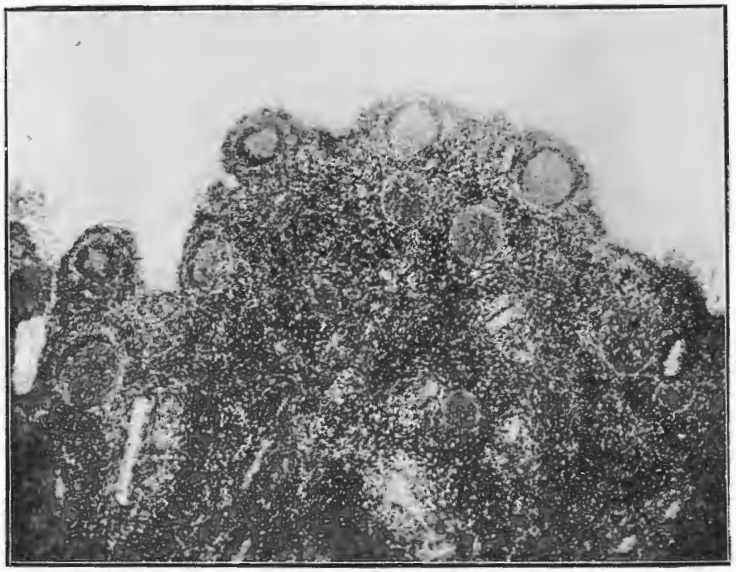

FIG. 6.—Lymphoid Gland of clinically healthy bovine 6401, showing the number and distribution of primary and secondary follicles.

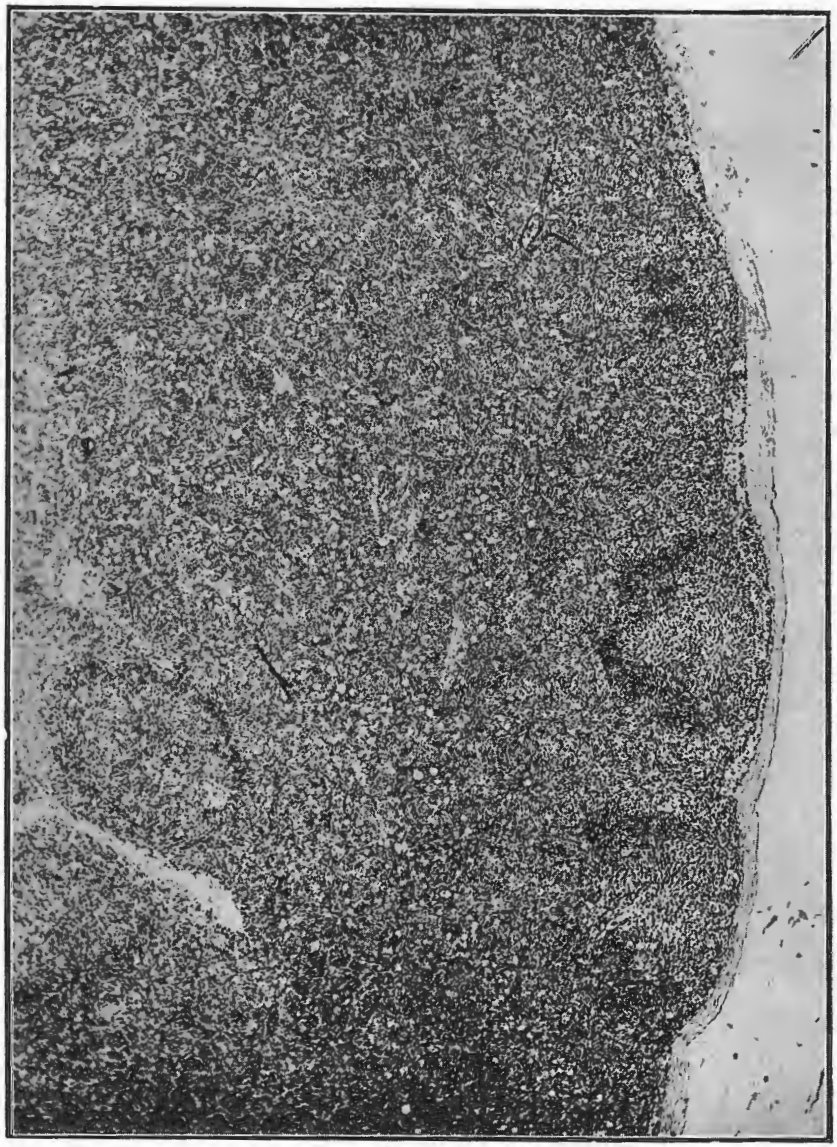

FIG. 7.—Lymphoid Gland of Bovine 5763, 1935 Tzaneen Exposure Experiment. Note the changes and loss of the lymphoid nodules.

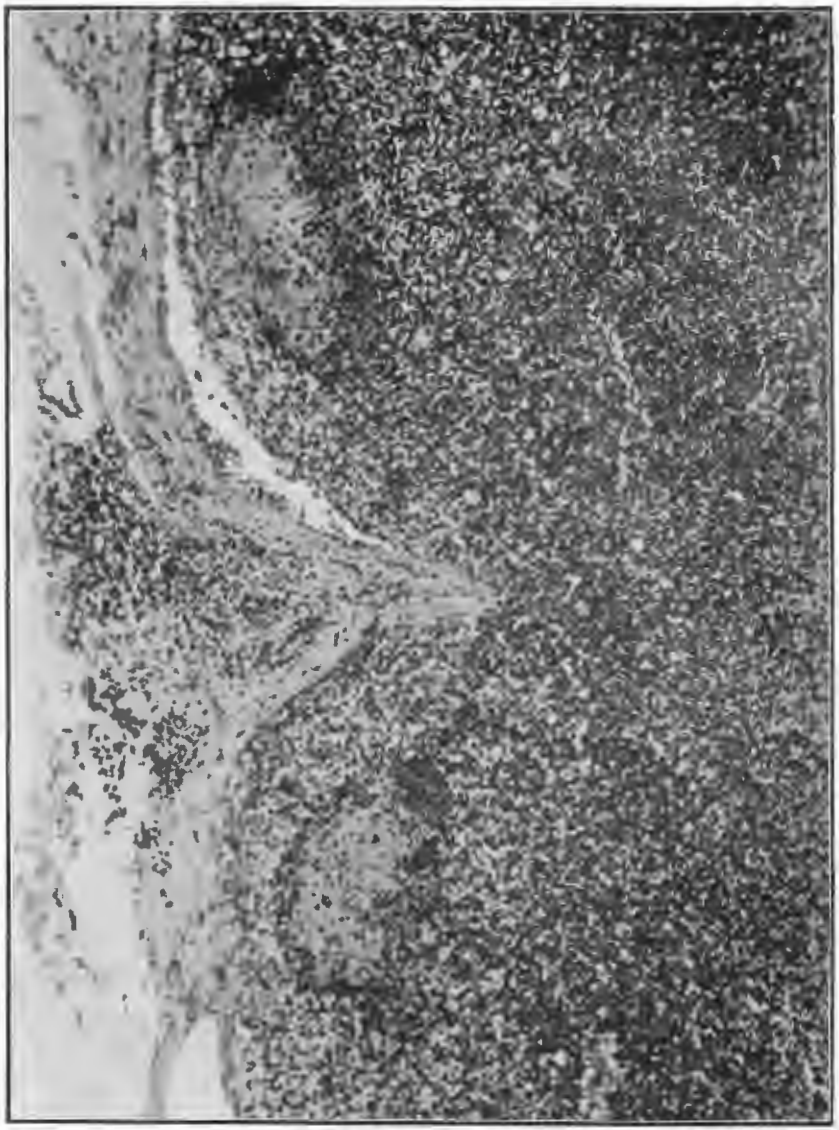

FIG. 8.—Higher magnification of Fig. 7, illustrating the nature and distribution of the oedema and the changes brought about in the nodules.

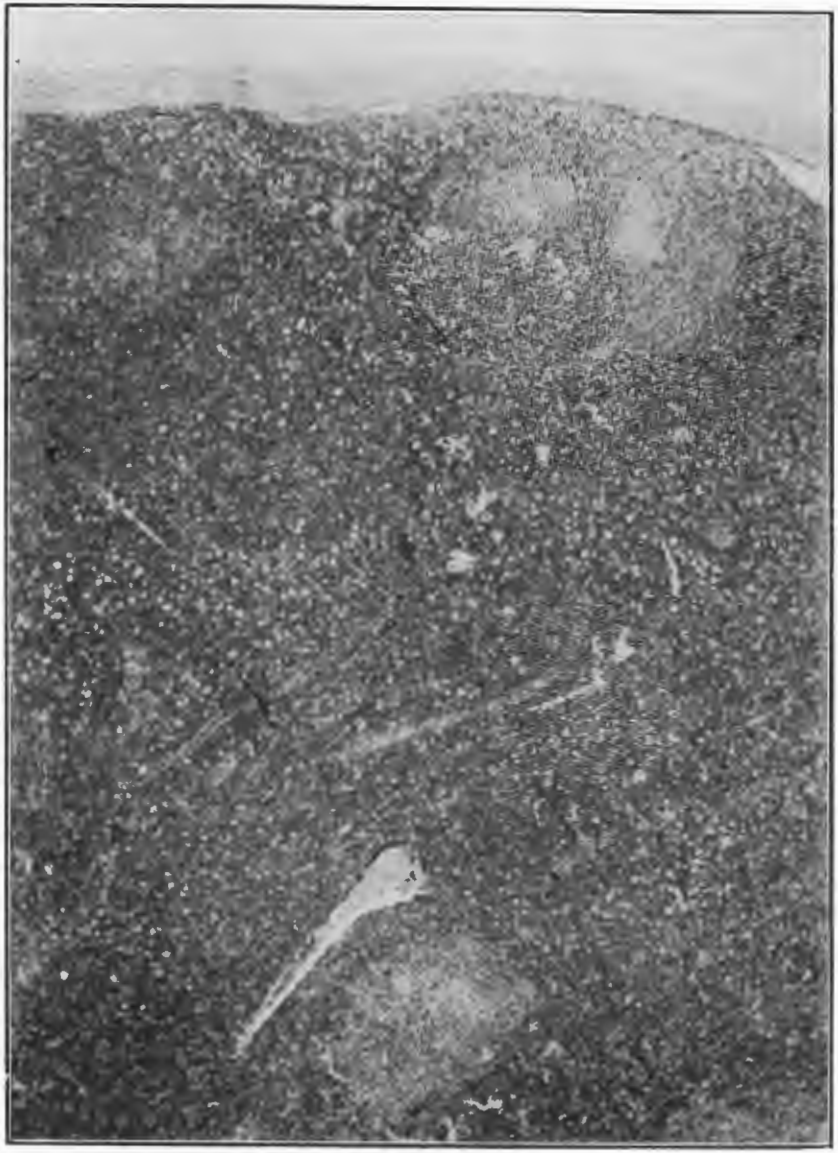

Fig. 9.—As Fig. 8.

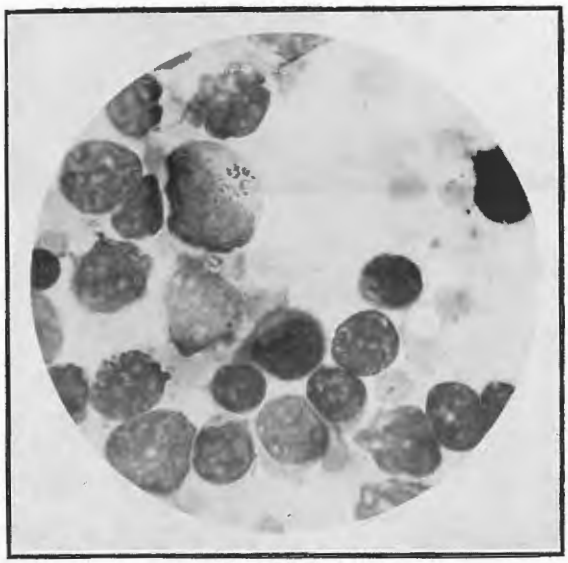

FIG. 10.—Prescapular lymph gland. Bovine 6463. Subinoculation Experiment. See App. 4, Table I. Note nature and distribution of the granules in the lymphocytes.

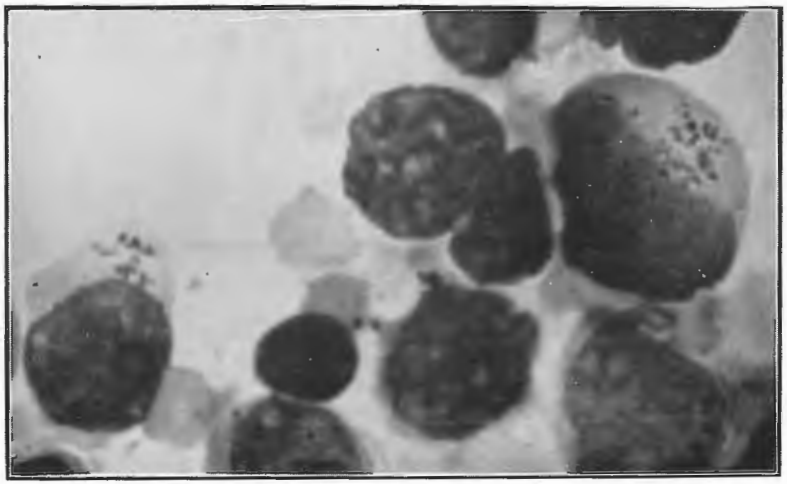

FIG. 11.—Higher magnification of Fig. 10.

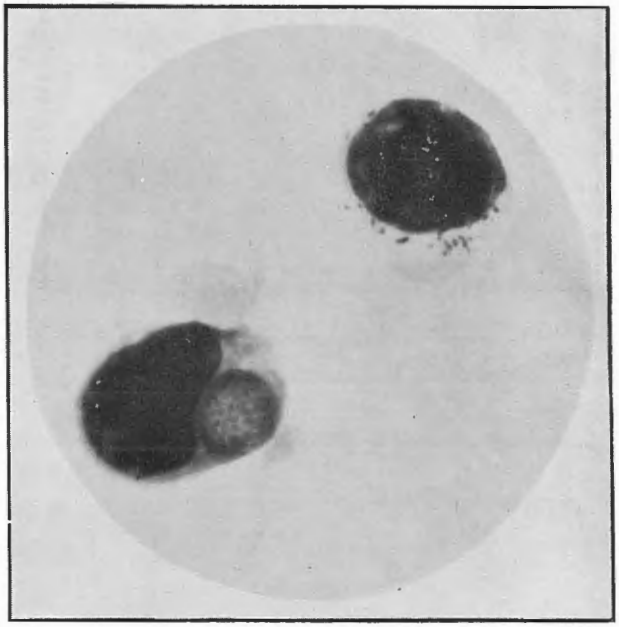

FIG. 12.—Prescapular lymph gland. Bovine 6463, Subinoculation Experiment. Note in the one lymphocyte the intracellular body *Rickettsia bovis* referred to and in the other the nature and distribution of the granules.

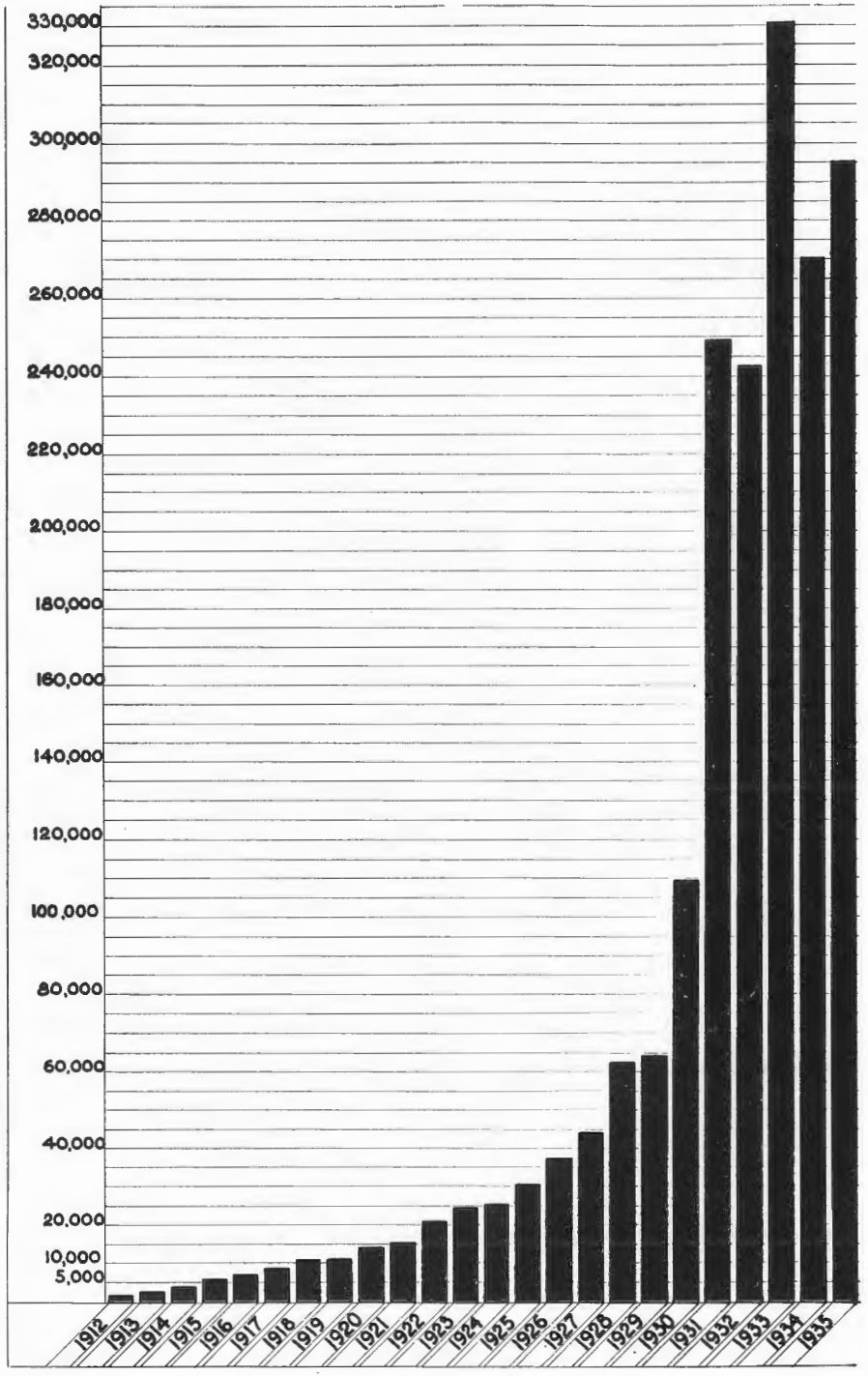

CHART I.—Annual returns of smear examination at Allerton Laboratory, Pietermaritzburg.

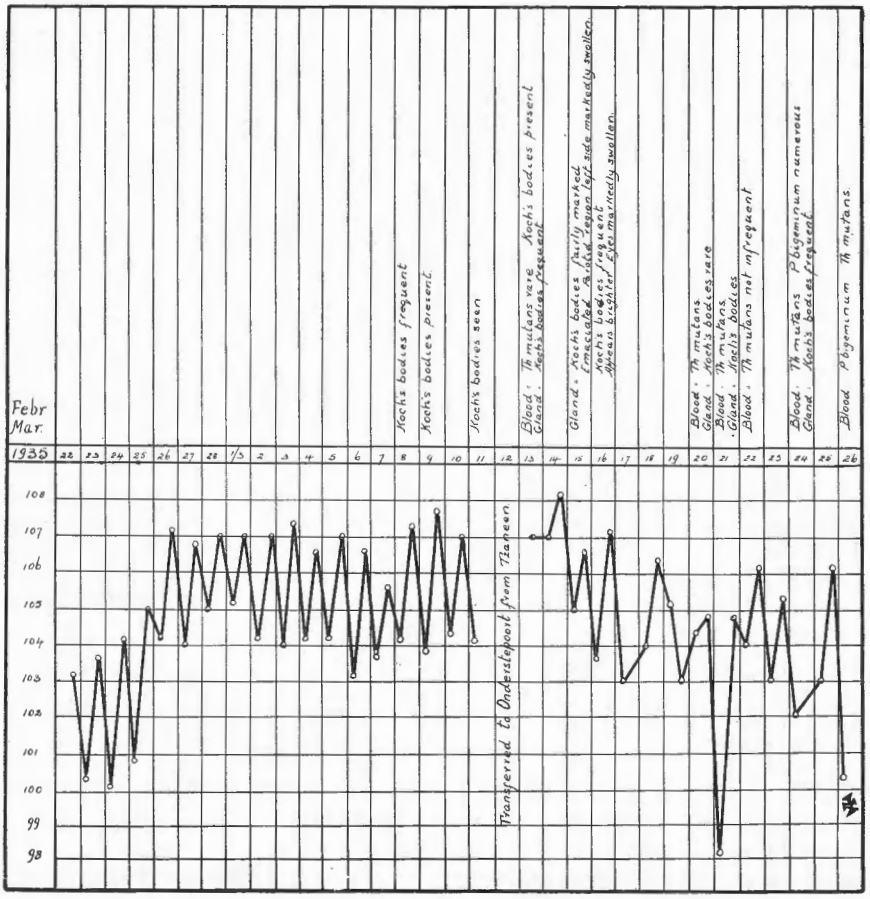

CHART II.—Temperature chart of bovine 5641 bred at Vryburg and exposed at Tzaneen 1935. Note the nature of the temperature reaction. Refer to Table V.

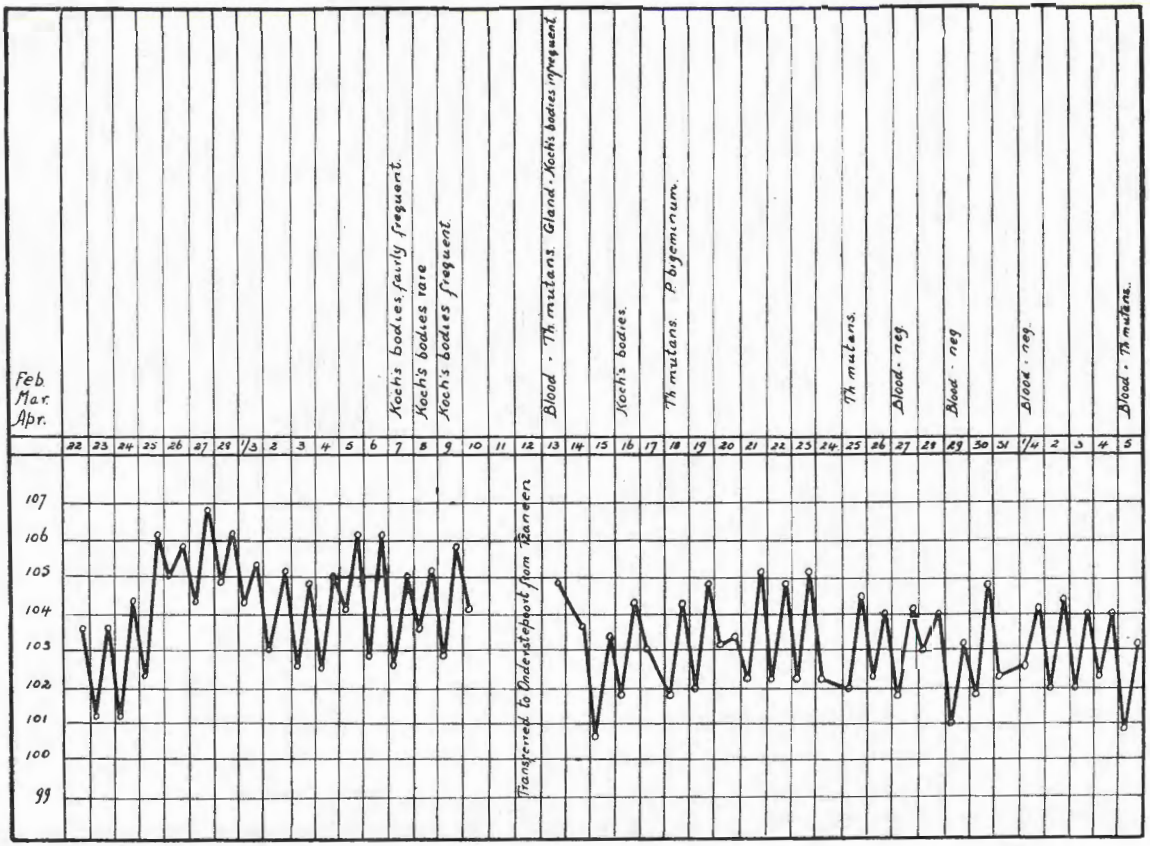

CHART III.—Temperature chart of bovine 5469 bred at Onderstepoort and exposed at Tzaneen 1935. Note the nature of the temperature reaction. Refer to Table V.

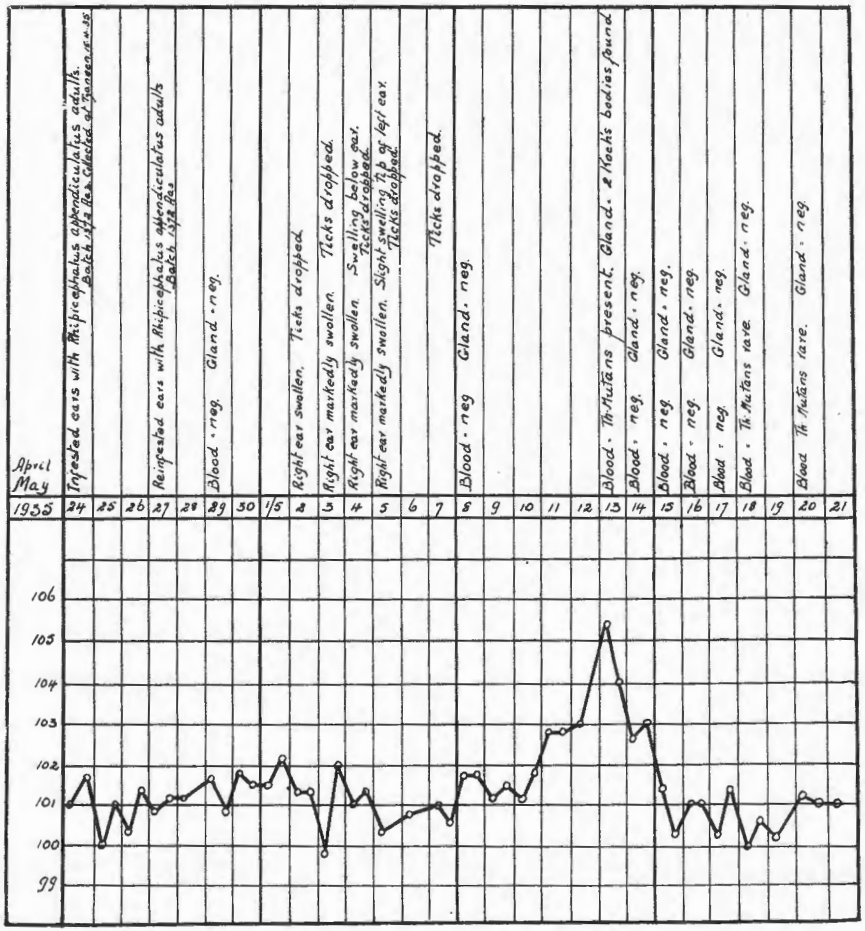

CHART IV.—Temperature chart of bovine 5523 bred at Vryburg, infested with ticks collected from the veld at Tzaneen. Refer to Table I, Appendix IV.

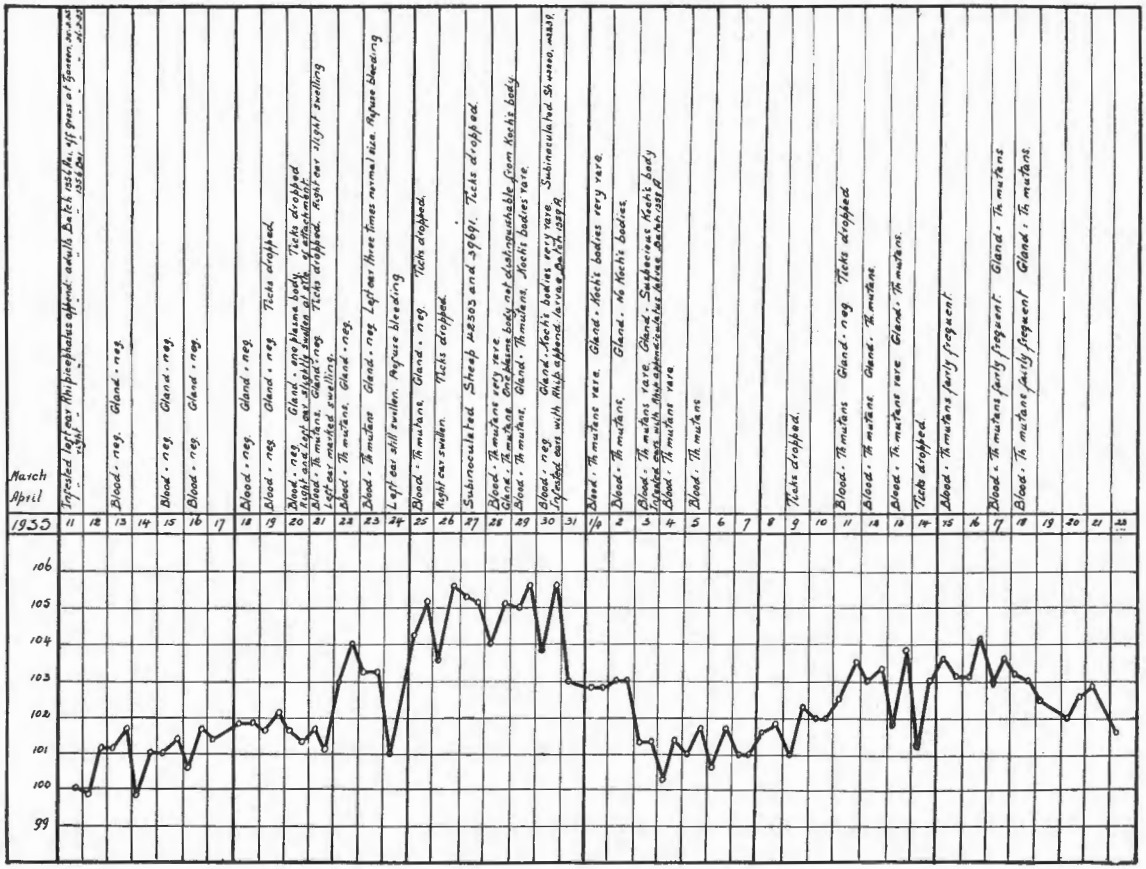

CHART V.—Temperature chart of splenectomized bovine 4676 bred at Onderstepoort, infested with ticks collected from the veld at Tzaneen. Refer to Table I, Appendix IV.

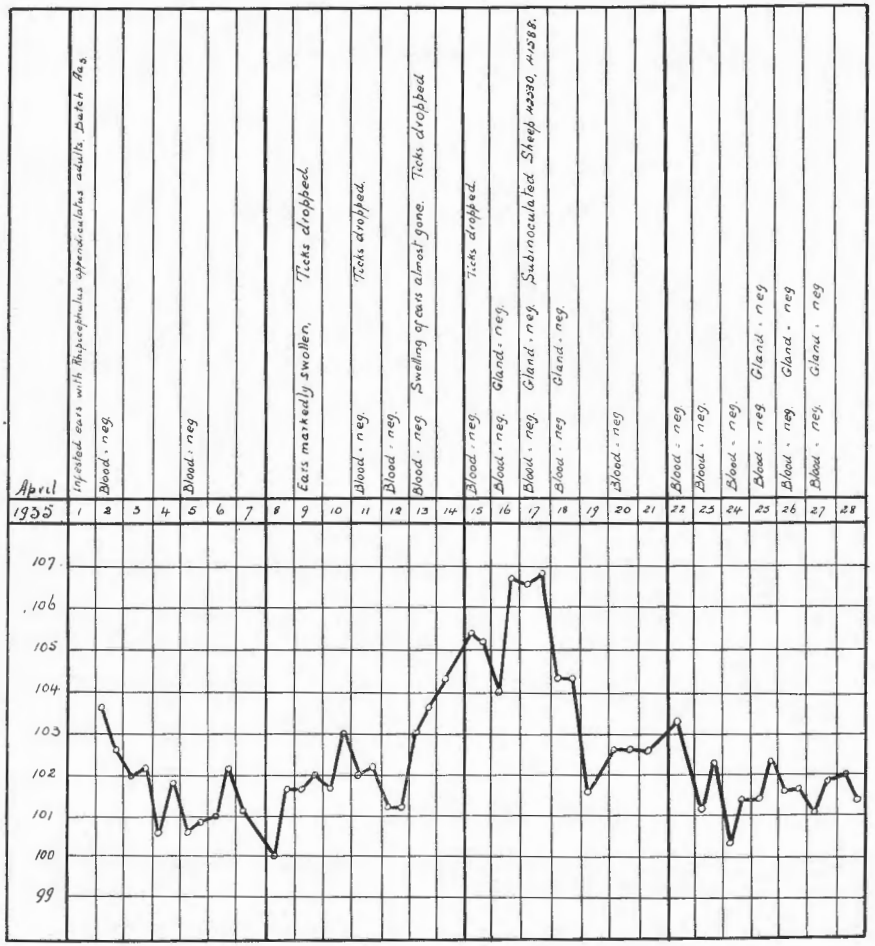

CHART VI.—Temperature chart of sheep 42330 infested with ticks collected from the veld. Refer to Table III of Appendix IV.

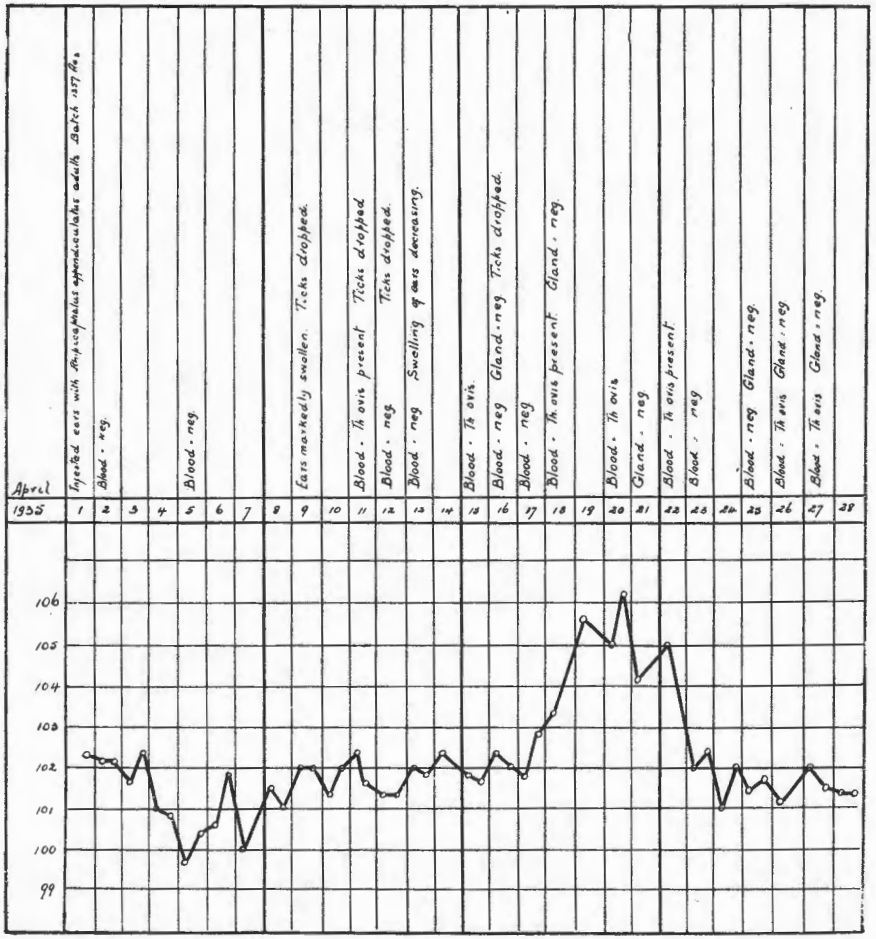

CHART VII.—Temperature chart of splenectomized sheep 35004 infested with ticks collected from veld at Tzaneen. Refer to Table III, Appendix IV.