

SERUM OF CATTLE No. 4 (Inoculated Pasteurella, June, 1910).
17/9/11.

No. of Tube.	Serum Inactivated.	Extract of Organism "P."	Complement 1-19.	Physiological water.	Amboceptor 1-100.	5 % washed sheep corpuscles.	Result.
1	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	Hæmolysis.
2	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	"
3	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	"
4	0.2	—	1 c.c.	1.8 c.c.	1 c.c.	1 c.c.	"
5	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
6	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
7	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
8	—	—	1 c.c.	2.0 c.c.	1 c.c.	1 c.c.	"
9	—	—	—	2.0	1 c.c.	1 c.c.	Zero.
1 hour at 36° C.				1 hour at 36° C.			

SERUM OF CATTLE No. 5. HEALTHY ANIMAL.

17/9/11.

No. of Tube.	Serum Inactivated.	Extract of Organism "P."	Complement 1-19.	Physiological water.	Amboceptor 1-100.	5 % washed sheep corpuscles.	Result.
1	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	Hæmolysis.
2	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	"
3	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	"
4	0.2	—	1 c.c.	1.8 c.c.	1 c.c.	1 c.c.	"
5	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
6	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
7	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
8	—	—	1 c.c.	2.0 c.c.	1 c.c.	1 c.c.	"
9	—	—	—	2.0 c.c.	1 c.c.	1 c.c.	Zero.
1 hour at 36° C.				1 hour at 36° C.			

SERUM OF CATTLE No. 6. HEALTHY ANIMAL.

17/9/11.

No. of Tube.	Serum Inactivated.	Extract of Organism "P."	Complement 1-19.	Physiological water.	Amboceptor 1-100.	5 % washed sheep corpuscles.	Result.
1	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	Slight Hæmolysis.
2	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	"
3	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	"
4	0.2	—	1 c.c.	1.8 c.c.	1 c.c.	1 c.c.	"
5	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
6	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
7	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
8	—	—	1 c.c.	2.0 c.c.	1 c.c.	1 c.c.	"
9	—	—	—	2.0 c.c.	1 c.c.	1 c.c.	Zero.
1 hour at 36° C.				1 hour at 36° C.			

SERUM OF CATTLE No. 55 (Inoculated Pasteurella Organism, 11/8/10).

No. of Tube.	Serum Inactivated.	Extract of Organism "P."	Complement 1-19.	Physiological water.	Amboceptor 1-100.	5 % washed sheep corpuscles.	Result.
1	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	Zero.
2	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	"
3	0.2	0.1	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	"
4	0.2	—	1 c.c.	1.8 c.c.	1 c.c.	1 c.c.	Hæmolysis.
5	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
6	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
7	—	0.1	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
8	—	—	1 c.c.	2.0 c.c.	1 c.c.	1 c.c.	"
9	—	—	—	2.0 c.c.	1 c.c.	1 c.c.	Zero.
1 hour at 36° C.					1 hour at 36° C.		

SERUM OF CATTLE No. 66. HEALTHY ANIMAL.

28/9/11.

No. of Tube.	Serum Inactivated.	Extract of Organism "P."	Complement 1-19.	Physiological water.	Amboceptor 1-100.	5 % washed sheep corpuscles.	Result.
1	0.2	0.3	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	Slightly Hæmolysis.
2	0.2	0.4	1 c.c.	1.4 c.c.	1 c.c.	1 c.c.	"
3	0.2	0.5	1 c.c.	1.3 c.c.	1 c.c.	1 c.c.	"
4	0.2	—	1 c.c.	1.8 c.c.	1 c.c.	1 c.c.	Distinct Hæmolysis.
5	—	0.3	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	Slight Hæmolysis.
6	—	0.4	1 c.c.	1.6 c.c.	1 c.c.	1 c.c.	"
7	—	0.5	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
8	—	—	1 c.c.	2.0 c.c.	1 c.c.	1 c.c.	Distinct Hæmolysis.
9	—	—	—	2.0 c.c.	1 c.c.	1 c.c.	Zero.
1 hour at 36° C.					1 hour at 36° C.		

SERUM OF CATTLE No. 55 (Inoculated Pasteurella, 11/8/10).

No. of Tube.	Serum Inactivated.	Extract of Organism "P."	Complement 1-19.	Physiological water.	Amboceptor 1-100.	5 % washed sheep corpuscles.	Result.
1	0.2	0.3	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	Zero.
2	0.2	0.4	1 c.c.	1.4 c.c.	1 c.c.	1 c.c.	"
3	0.2	0.5	1 c.c.	1.3 c.c.	1 c.c.	1 c.c.	"
4	0.2	—	1 c.c.	1.8 c.c.	1 c.c.	1 c.c.	Hæmolysis.
5	—	0.3	1 c.c.	1.7 c.c.	1 c.c.	1 c.c.	"
6	—	0.4	1 c.c.	1.6 c.c.	1 c.c.	1 c.c.	Query Hæmolysis.
7	—	0.5	1 c.c.	1.5 c.c.	1 c.c.	1 c.c.	"
8	—	—	1 c.c.	2.0 c.c.	1 c.c.	1 c.c.	Hæmolysis.
9	—	—	—	0.2 c.c.	1 c.c.	1 c.c.	Zero.
1 hour at 36° C.					1 hour at 36° C.		

SERUM OF OX SICK WITH LAMZIEKTE, 12 Months previous. Farm Y,
Owner, Native.

No. of Tube.	Serum Inactivated.	Extract of Organism "P."	Complement 1-19.	Physiological water.	Amboceptor 1-100.	5% washed sheep corpuscles.	Result.
1	0·2	0·3	1 c.c.	1·5 c.c.	1 c.c.	1 c.c.	Slight Hæmolysis.
2	0·2	0·4	1 c.c.	1·4 c.c.	1 c.c.	1 c.c.	"
3	0·2	0·5	1 c.c.	1·3 c.c.	1 c.c.	1 c.c.	"
4	0·2	—	1 c.c.	1·8 c.c.	1 c.c.	1 c.c.	Distinct Hæmolysis.
5	—	0·3	1 c.c.	1·7 c.c.	1 c.c.	1 c.c.	Slight Hæmolysis.
6	—	0·4	1 c.c.	1·6 c.c.	1 c.c.	1 c.c.	Query Hæmolysis.
7	—	0·5	1 c.c.	1·5 c.c.	1 c.c.	1 c.c.	"
8	—	—	1 c.c.	2·0 c.c.	1 c.c.	1 c.c.	Zero.
9	—	—	—	2·0 c.c.	1 c.c.	1 c.c.	"
1 hour at 36° C.				1 hour at 36° C.			

SERUM OF OX. OWNER, T. RECOVERING FROM LAMZIEKTE.

28/9/11.

No. of Tube.	Serum Inactivated.	Extract of Organism "P."	Complement 1-19.	Physiological water.	Amboceptor 1-100.	5% washed sheep corpuscles.	Result.
1	0·2	0·3	1 c.c.	1·5 c.c.	1 c.c.	1 c.c.	Slight Hæmolysis.
2	0·2	0·4	1 c.c.	1·4 c.c.	1 c.c.	1 c.c.	"
3	0·2	0·5	1 c.c.	1·3 c.c.	1 c.c.	1 c.c.	"
4	0·2	—	1 c.c.	1·8 c.c.	1 c.c.	1 c.c.	"
5	—	0·3	1 c.c.	1·7 c.c.	1 c.c.	1 c.c.	"
6	—	0·4	1 c.c.	1·6 c.c.	1 c.c.	1 c.c.	No Hæmolysis.
7	—	0·5	1 c.c.	1·5 c.c.	1 c.c.	1 c.c.	"
8	—	—	1 c.c.	2·0 c.c.	1 c.c.	1 c.c.	Slight Hæmolysis.
9	—	—	—	2·0 c.c.	1 c.c.	1 c.c.	Zero.
1 hour at 36° C.				1 hour at 36° C.			

SERUM OF CATTLE NO. 71. HEALTHY ANIMAL.

8/11/11.

No. of Tube.	Serum Inactivated.	Extract of Organism "P."	Complement 1-19.	Physiological water.	Amboceptor 1-100.	5% washed sheep corpuscles.	Result.
1	0·2	0·3	0·75	2·25 c.c.	0·50 c.c.	1 c.c.	Slight deviation.
2	0·2	0·4	0·75	2·15 c.c.	0·50 c.c.	1 c.c.	"
3	0·2	0·5	0·75	2·5 c.c.	0·50 c.c.	1 c.c.	"
4	0·2	—	0·75	2·55 c.c.	0·50 c.c.	1 c.c.	Hæmolysis.
5	—	0·3	0·75	2·45 c.c.	0·50 c.c.	1 c.c.	"
6	—	0·4	0·75	2·35 c.c.	0·50 c.c.	1 c.c.	"
7	—	0·5	0·75	2·25 c.c.	0·50 c.c.	1 c.c.	"
8	—	—	0·75	2·75 c.c.	0·50 c.c.	1 c.c.	"
9	—	—	—	3·50 c.c.	0·50 c.c.	1 c.c.	Zero.
1 hour at 36° C.				1 hour at 36° C.			

SERUM OF CATTLE No. 55 (Inoculated Pasteurella, 11/18/10, and
Extract of Organism "P").

8/11/11.

No. of Tube.	Serum Inactivated.	Extract of Organism "P."	Complement 1-19.	Physiological water.	Amboceptor 1-100.	5% washed sheep corpuscles.	Result.
1	0.2	0.3	0.75 c.c.	2.25 c.c.	0.50 c.c.	1 c.c.	Zero.
2	0.2	0.4	0.75 c.c.	2.15 c.c.	0.50 c.c.	1 c.c.	"
3	0.2	0.5	0.75 c.c.	2.5 c.c.	0.50 c.c.	1 c.c.	"
4	0.2	—	0.75 c.c.	2.55 c.c.	0.50 c.c.	1 c.c.	Hæmolysis, complete.
5	—	0.3	0.75 c.c.	2.45 c.c.	0.50 c.c.	1 c.c.	"
6	—	0.4	0.75 c.c.	2.35 c.c.	0.50 c.c.	1 c.c.	"
7	—	0.5	0.75 c.c.	2.25 c.c.	0.50 c.c.	1 c.c.	"
8	—	—	0.75 c.c.	2.75 c.c.	0.50 c.c.	1 c.c.	"
9	—	—	0.75 c.c.	3.50 c.c.	0.50 c.c.	1 c.c.	Zero.
1 hour at 36° C.					1 hour at 36° C.		

SERUM OF CATTLE (Owner Mr. H.), NATURAL CASE OF LAMZIEKTE.

Sick at time of test.

8/11/11.

No. of Tube.	Serum Inactivated.	Extract of Organism "P."	Complement 1-19.	Physiological water.	Amboceptor 1-100.	5% washed sheep corpuscles.	Result.
1	0.2	0.3	0.75 c.c.	2.25 c.c.	0.50 c.c.	1 c.c.	Hæmolysis.
2	0.2	0.4	0.75 c.c.	2.15 c.c.	0.50 c.c.	1 c.c.	"
3	0.2	0.5	0.75 c.c.	2.5 c.c.	0.50 c.c.	1 c.c.	"
4	0.2	—	0.75 c.c.	2.55 c.c.	0.50 c.c.	1 c.c.	"
5	—	0.3	0.75 c.c.	2.45 c.c.	0.50 c.c.	1 c.c.	"
6	—	0.4	0.75 c.c.	2.35 c.c.	0.50 c.c.	1 c.c.	"
7	—	0.5	0.75 c.c.	2.25 c.c.	0.50 c.c.	1 c.c.	"
8	—	—	0.75 c.c.	2.75 c.c.	0.50 c.c.	1 c.c.	"
9	—	—	—	3.50 c.c.	0.50 c.c.	1 c.c.	Zero.
1 hour at 36° C.					1 hour at 36° C.		

To note whether the serum of Lamziekte animals caused the reaction of the deviation of the complement using as antigen an emulsion of organs collected from a Lamziekte animal.

SERUM OF CATTLE No. 55 (Inoculated Pasteurella, 11/8/10).

Extract of Organs, Lamziekte Animal.

9/11/11.

No. of Tube.	Serum Inactivated.	Extract of organs of lamziekte animal. Liver and spleen.	Complement 1-19.	Physiological water.	Amboceptor 1-100.	Washed 5 % sheep corpuscles.	Result.
1	0·2	0·3	0·75	2·25	0·50	1	Hæmolysis slight.
2	0·2	0·3	0·75	2·25	0·50	1	"
3	0·2	0·3	0·75	2·25	0·50	1	"
4	0·2	—	0·75	2·55	0·50	1	Hæmolysis distinct.
5	—	0·3	0·75	2·45	0·50	1	"
6	—	0·3	0·75	2·45	0·50	1	"
7	—	0·3	0·75	2·45	0·50	1	"
8	—	—	0·75	2·75	0·50	1	"
9	—	—	—	3·50	0·50	1	Zero.
1 hour at 36° C.					1 hour at 36° C.		

SERUM OF CATTLE No. 71, HEALTHY ANIMAL, AND EXTRACT OF ORGANS, LIVER AND SPLEEN.

9/11/11.

No. of Tube.	Serum Inactivated.	Lamziekte Extract of Organs, Liver and Spleen.	Complement 1-19.	Physiological Water.	Amboceptor.	5% washed sheep corpuscles.	Result.
1	0·2	0·3	0·75 c.c.	2·25 c.c.	0·50 c.c.	1 c.c.	Hæmolysis.
2	0·2	0·3	0·75 c.c.	2·25 c.c.	0·50 c.c.	1 c.c.	"
3	0·2	0·3	0·75 c.c.	2·25 c.c.	0·50 c.c.	1 c.c.	"
4	0·2	—	0·75 c.c.	2·55 c.c.	0·50 c.c.	1 c.c.	"
5	—	0·3	0·75 c.c.	2·45 c.c.	0·50 c.c.	1 c.c.	"
6	—	0·3	0·75 c.c.	2·45 c.c.	0·50 c.c.	1 c.c.	"
7	—	0·3	0·75 c.c.	2·45 c.c.	0·50 c.c.	1 c.c.	"
8	—	—	0·75 c.c.	2·75 c.c.	0·50 c.c.	1 c.c.	"
9	—	—	—	3·50 c.c.	0·50 c.c.	1 c.c.	Zero.
1 hour at 36° C.					1 hour at 36° C.		

SERUM OF OX (OWNER H.), NATURAL LAMZIEKTE CASE, AND
9/11/11. EXTRACT OF ORGANS, LIVER, SPLEEN.

No. of Tube.	Serum Inactivated.	Lamziekte Extract of Organs, Liver and Spleen.	Complement 1-19.	Physiological water.	Amboceptor.	5% washed sheep corpuscles.	Result.
1	0.2	0.3	0.75 c.c.	2.25 c.c.	0.50 c.c.	1 c.c.	Hæmolysis.
2	0.2	0.3	0.75 c.c.	2.25 c.c.	0.50 c.c.	1 c.c.	"
3	0.2	0.3	0.75 c.c.	2.25 c.c.	0.50 c.c.	1 c.c.	"
4	0.2	—	0.75 c.c.	2.55 c.c.	0.50 c.c.	1 c.c.	"
5	—	0.3	0.75 c.c.	2.45 c.c.	0.50 c.c.	1 c.c.	"
6	—	0.3	0.75 c.c.	2.45 c.c.	0.50 c.c.	1 c.c.	"
7	—	0.3	0.75 c.c.	2.45 c.c.	0.50 c.c.	1 c.c.	"
8	—	—	0.75 c.c.	2.75 c.c.	0.50 c.c.	1 c.c.	"
9	—	—	0.75 c.c.	3.50 c.c.	0.50 c.c.	1 c.c.	Zero.
1 hour at 36° C.					1 hour at 36° C.		

Resume of Results of Complement Deviation Test using as antigen an extract of organism "P."

Animal No.	Date of Test.	History.	Result.	Remarks.
71	4/9/11	Healthy animal ...	No deviation.	
55	"	Inoculated Pasteurella, 11/8/10	Complete deviation.	
70	"	Natural Lamziekte case ...	No deviation.	
53	"	Inoculated Pasteurella, 11/8/10	Deviation.	
20/8/11	"	Natural Lamziekte case ...	No deviation.	
18/8/11	"	Natural Lamziekte case ...	"	
60	8/9/11	Inoculated Pasteurella, 20/8/11	Deviation.	
23	"	Inoculated Pasteurella, 20/3/09	"	
55	"	Inoculated Pasteurella, 11/8/10	"	
Serum 1	17/9/11	Inoculated Pasteurella, June, 1910	Slight deviation.	Owner Mr. P.
Serum 2	"	18 months ago suspected Lamziekte	No deviation.	"
Serum 3	"	Inoculated Pasteurella, June, 1910	"	"
Serum 4	"	"	"	"
Serum 5	"	Healthy animal ...	"	"
Serum 6	"	"	Slight deviation.	"
55	"	Inoculated Pasteurella, 11/8/10	Deviation.	
Tucker	8/9/11	Lamziekte case ...	No deviation.	3 weeks sick.
66	"	Healthy animal ...	Slight deviation.	
66	28/9/11	"	No deviation.	
55	"	Inoculated Pasteurella, 11/8/10	Deviation.	
Native Tucker	"	Had Lamziekte 12 months ago	Slight deviation.	
71	"	Recovered from Lamziekte...	"	
71	8/11/11	Healthy animal ...	"	
55	"	Inoculated Pasteurella ...	Deviation.	
H.	"	Natural Lamziekte case ...	No deviation.	Sick at time of test
Resume of Results of Complement Deviation Test using as Antigen an extract of organs:—				
55	9/11/11	Inoculated Pasteurella, 11/8/10	Slight deviation.	
H.	"	Natural Lamziekte case ...	No deviation.	Sick at time of test
71	"	Healthy animal ...	"	

Conclusions :—

1. The serum of 6 recent cases of Lamziekte caused no fixation of the complement, using as antigen an extract of the organism "P."
2. The serum of 4 cattle inoculated with the organism "P" using as antigen an extract of the organism "P," caused a deviation of the complement.
3. The serum of 1 beast which had been inoculated with a culture of the organism "P" about 15 months previously caused a slight deviation in the presence of an extract of the organism "P."
4. The serum of 2 cattle which had been inoculated with a culture of the organism "P" about 15 months previously caused no deviation using as antigen an extract of the organism "P."
5. The serum of a Lamziekte animal which had recovered 12 months previously gave a slight deviation with an extract of the organism "P."
6. The serum of a Lamziekte animal in the presence of an extract of the organs (liver and spleen), of a Lamziekte animal gave no deviation of the complement.

AGGLUTINATION METHOD.

Technique :—

A strain was obtained and cultures were prepared on ordinary agar and incubated for 24 hours at a temperature of 36° C. and after testing as to their purity, were washed off with sterile physiological water, the liquid filtered through ordinary filter paper and the filtrate diluted until it had a slightly milky appearance. In each test the serum of at least one animal which had been inoculated with organism "P" and which was visibly affected when the serum was collected (the agglutination titre of which had previously been ascertained), and the serum of at least one healthy animal which had no agglutinating properties were used as controls.

An orientation test was made, using at least 6 tubes for each serum, the serum was diluted 1-40 with sterile physiological water and then added to the tubes as shown in the following table. Controls were made as shown in the detailed lists of the tests :—

Test Tube.	Titre.	Quantity of serum dilution 1-40.	Quantity of testing liquid.
1	1·100	0·8 c.c.	2 c.c.
2	1·200	0·4 c.c.	2 c.c.
3	1·300	0·27 c.c.	2 c.c.
4	1·500	0·16 c.c.	2 c.c.
5	1·800	0·1 c.c.	2 c.c.
6	1·1000	0·08 c.c.	2 c.c.

The test tubes were incubated for forty-eight hours at a temperature of 36° C. and tubes examined on several occasions during this period. Agglutination was considered to have taken place when the upper part became clear and a deposit formed at the bottom of the tube. The agglutination tests made and results were as follows; viz.:

AGGLUTINATION TEST, 4/6/11.

Serum of R. and W. Ox No. 73 Natural Lamziekte Case, Farm "Y," and emulsion in Physiol. water of "P" organism, 24 hours' old culture.

Tube.	Titre.	Quantity of serum dilution, 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	No agglutination	Incubated tubes at 30° C. for 48 hours.
2	1·100	0·8 c.c.	2 c.c.	"	
3	1·200	0·4 c.c.	2 c.c.	"	No. 10 tube serum heated to 62° C. for ½ hour.
4	1·300	0·27 c.c.	2 c.c.	"	
5	1·500	0·16 c.c.	2 c.c.	"	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	"	
10	1·50	1·6 c.c.	2 c.c.	—	

AGGLUTINATION TEST, 4/6/11.

Serum of Black and White Calf No. 71. Healthy Animal. Emulsion in Physiol. water of "P" organism, 24 hours' old culture.

Tube.	Titre.	Quantity of serum dilution, 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	No agglutination.	Incubated tubes at 35° C. for 48 hours.
2	1·100	0·8 c.c.	2 c.c.	"	
3	1·200	0·4 c.c.	2 c.c.	"	No. 10 tube serum heated to 62° C. for ½ hour.
4	1·300	0·27 c.c.	2 c.c.	"	
5	1·500	0·16 c.c.	2 c.c.	"	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	"	
10	1·50	1·6 c.c.	2 c.c.	"	

AGGLUTINATION TEST, 5/6/11.

Serum of Black Ox No. 55 injected on the 4/8/10 with culture of "P" Organism.

Emulsion in Physiol. water of "P" Organism, 36 hours old culture.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	Agglutination ...	Tube No. 10 heated for $\frac{1}{2}$ hr. at 62° C.
2	1·100	0·8 c.c.	2 c.c.	"	
3	1·200	0·4 c.c.	2 c.c.	"	
4	1·300	0·27 c.c.	2 c.c.	" (slight)	
5	1·500	0·16 c.c.	2 c.c.	No agglutination	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	"	
10	1·50	1·6 c.c.	2 c.c.	Agglutination	

AGGLUTINATION TEST, 9/6/11.

Serum of R. and W. Ox No. 73, Natural Lamziekte Case, Farm "Y." Emulsion in Physiol. water of 24 hours old, culture of "P."

No. of Tube.	Titre.	Quantity of Serum dilution 1-40	Quantity of testing fluid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	No agglutination.	
2	1·100	0·8 c.c.	2 c.c.	"	
3	—	2 c.c.	—	"	
4	—	—	2 c.c.	"	

AGGLUTINATION TEST, 10/6/11.

Serum of Black Ox No. 55, injected 11/8/10 with Culture of "P." Emulsion in Physiol. water of "P" organism.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40	Quantity of testing fluid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	Agglutination.	
2	1·100	0·8 c.c.	2 c.c.	"	
3	—	2 c.c.	—	No agglutination.	
4	—	—	2 c.c.	"	

AGGLUTINATION TEST, 13/6/11.

Serum of R. & W. Ox No. 73. Natural Lamziekte case. Emulsion of "P" Organism in Physiol. water (18 hours old culture).

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	No agglutination	Serum of tube 10 was heated for $\frac{1}{2}$ hour to 62° C. and then added to tube.
2	1·100	0·8 c.c.	2 c.c.	"	
3	1·200	0·4 c.c.	2 c.c.	"	
4	1·300	0·27 c.c.	2 c.c.	"	
5	1·500	0·16 c.c.	2 c.c.	"	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	"	
10	1·50	1·6 c.c.	2 c.c.	"	

AGGLUTINATION TEST, 13/6/11.

Serum of Black Ox No. 55, injected with culture of "P," 11/8/10. Emulsion of "P" Organism, 18 hours old culture.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	Agglutination	Serum of tube 10 was heated for $\frac{1}{2}$ hour to 60° C. and then added to tube. Agglutination occurred within 1 hour after incubating.
2	1·100	0·8 c.c.	2 c.c.	"	
3	1·200	0·4 c.c.	2 c.c.	" (slight)	
4	1·300	0·27 c.c.	2 c.c.	No agglutination	
5	1·500	0·16 c.c.	2 c.c.	"	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	"	
10	1·50	1·6 c.c.	2 c.c.	Agglutination	

AGGLUTINATION TEST, 18/6/11.

Serum of Cattle No. 71, diluted with 0.5% carb. acid, physiol. water. Healthy Animal. P. Organism emulsion in physiol. water 24 hours old culture.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	No agglutination ...	Tube 10, the serum was heated for 1 hour at 60° C., a precipitate formed after heating the serum.
2	1·100	0·8 c.c.	2 c.c.	"	
3	1·200	0·4 c.c.	2 c.c.	"	
4	1·300	0·27 c.c.	2 c.c.	"	
5	1·500	0·16 c.c.	2 c.c.	"	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	At 24 " hours after incubating a deposit and liquid turbid.	
10	1·50	1·6 c.c.	2 c.c.	At 48 hours after incubating a deposit and liquid turbid.	

AGGLUTINATION TEST, 18/6/11.

Cattle No. 72 was injected with Culture of "P."

Serum of Cattle No. 72, diluted with 0.5% carb., physiol. water, "P" Organism Emulsion in Physiol. water, 24 hours old culture.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	Agglutination ...	Tube 10, the serum was heated for 1 hour at 60° C., a precipitate formed after heating the serum.
2	1·100	0·8 c.c.	2 c.c.	" (slight)	
3	1·200	0·4 c.c.	2 c.c.	No agglutination.	
4	1·300	0·27 c.c.	2 c.c.	"	
5	1·500	0·16 c.c.	2 c.c.	"	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	"	
10	1·50	1·6 c.c.	2 c.c.	At 24 hours deposit. At 48 hours deposit and liquid became slightly turbid.	

AGGLUTINATION TEST, 18/6/11.

Serum of R. & W. O_x No. 73. Natural Lamziekte case, Serum diluted with 0.5% Carb. Physiol. water, "P" Organism, 24 hours old culture, Emulsion in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution, 1-40	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	No agglutination.	Tube 10, the serum was heated for 1 hour at 60° C., precipitate formed after heating the serum.
2	1·100	0·8 c.c.	2 c.c.	"	
3	1·200	0·4 c.c.	2 c.c.	"	
4	1·300	0·27 c.c.	2 c.c.	"	
5	1·500	0·16 c.c.	2 c.c.	"	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	"	
10	1·50	1·6 c.c.	2 c.c.	At 24 hours, deposit, liquid turbid.	

AGGLUTINATION TEST, 18/6/11.

Serum of Cattle No. 74. Serum diluted with 0.5% Carb. Physiol. water. Animal healthy. "P" organism, 24 hours' old culture, Emulsion in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	No agglutination.	Tube 10 serum was heated for 1 hour at 60° C., no precipitate or turbidity after heating.
2	1·100	0·8 c.c.	2 c.c.	"	
3	1·200	0·4 c.c.	2 c.c.	"	
4	1·300	0·27 c.c.	2 c.c.	"	
5	1·500	0·16 c.c.	2 c.c.	"	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	"	
10	1·50	1·6 c.c.	2 c.c.	"	

AGGLUTINATION TEST, 18/6/11.

Serum of Cattle No. 55 diluted with 0.5% Carb. Physiol. water.
 "P" Organism, 24 hours old culture, Emulsion in Physiol. water.
 Cattle 55 was inoculated 11/8/10 with "P" culture.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	Agglutination.	Tube 10 serum was not heated. Tube 11 serum was heated for one hour at 60° C., precipitate (turbidity after heating the serum).
2	1·100	0·8 c.c.	2 c.c.	"	
3	1·200	0·4 c.c.	2 c.c.	"	
4	1·300	0·27 c.c.	2 c.c.	No agglutination.	
5	1·500	0·16 c.c.	2 c.c.	"	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	2 c.c.	"	
10	1·50	1·6 c.c.	2 c.c.	Agglutination.	
11	1·50	1·6 c.c.	2 c.c.	"	

AGGLUTINATION TEST, 23/6/11.

Cattle No. 55 (artificially inoculated with "P" culture 11/8/10).
 Serum of Cattle No. 55 diluted with Physiol. water, and "P"
 Organism, Emulsion (24 hours old culture) in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.	
1	1·50	1·6 c.c.	2 c.c.	Agglutination	Tube 10 the serum was heated for $\frac{1}{2}$ hour at 60° C.	
2	1·100	0·8 c.c.	2 c.c.	"		
3	1·200	0·4 c.c.	2 c.c.	"		
4	1·300	0·27 c.c.	2 c.c.	"		
5	1·500	0·16 c.c.	2 c.c.	"		
6	1·800	0·1 c.c.	2 c.c.	No agglutination.		
7	1·1000	0·08 c.c.	2 c.c.	"		
8	—	—	2 c.c.	"		
9	—	2 c.c.	—	"		Deposit at bottom of tube.
10	1·50	1·6 c.c.	2 c.c.	Agglutination.		
11	1·50	1·6 c.c.	—	No agglutination.		2 c.c. of physiol. water added to serum.

AGGLUTINATION TEST, 23/6/11.

Cattle 71, Healthy Animal. Serum of Cattle No. 71 diluted with Physiol. water, and "P" Organism Emulsion, 24 hours old culture.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1.50	1.6 c.c.	2 c.c.	No Agglutination. Deposit, no agglutination.	Tube 10 serum heated to 60° C. for ½ hour.
2	1.100	0.8 c.c.	2 c.c.	No deposit.	
3	1.200	0.4 c.c.	2 c.c.	"	
4	1.300	0.27 c.c.	2 c.c.	"	
5	1.500	0.16 c.c.	2 c.c.	"	
6	1.800	0.1 c.c.	2 c.c.	"	
7	1.1000	0.08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	Deposit.	
10	1.50	1.6 c.c.	2 c.c.	No agglutination.	
11	1.50	1.6 c.c.	—	"	

AGGLUTINATION TEST, 23/6/11.

Serum of Cattle No. 72. Experimental animal injected with culture of "P" 2/6/11. "P" Emulsion in Physiol. water, 24 hours old culture.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1.50	1.6 c.c.	2 c.c.	Agglutination	Tube 10 serum heated for ½ hour at 60° C.
2	1.100	0.8 c.c.	2 c.c.	"	
3	1.200	0.4 c.c.	2 c.c.	No Agglutination	
4	1.300	0.27 c.c.	2 c.c.	"	
5	1.500	0.16 c.c.	2 c.c.	"	
6	1.800	0.1 c.c.	2 c.c.	"	
7	1.1000	0.08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	"	
10	1.50	1.6 c.c.	2 c.c.	"	
11	1.50	1.6 c.c.	—	"	

AGGLUTINATION TEST, 23/6/11.

Serum of Cattle No. 73. Natural Lamziekte case. "P" Emulsion in Physiol. water, 24 hours old culture.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	No Agglutination	Tube 10 serum heated for $\frac{1}{2}$ hour at 60° C.
2	1·100	0·8 c.c.	2 c.c.	"	
3	1·200	0·4 c.c.	2 c.c.	"	
4	1·300	0·27 c.c.	2 c.c.	"	
5	1·500	0·16 c.c.	2 c.c.	"	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	Slight deposit	
10	1·50	1·6 c.c.	2 c.c.	"	2 c.c. physiol. wate. added to serum tube 11.
11	1·50	1·6 c.c.	—	"	

AGGLUTINATION TEST, 23/6/11.

Serum of Cattle No. 74 (Healthy Animal). Emulsion of "P" Organism.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·50	1·6 c.c.	2 c.c.	No agglutination.	Tube 10 serum heated for $\frac{1}{2}$ hour at 60° C.
2	1·100	0·8 c.c.	2 c.c.	"	
3	1·200	0·4 c.c.	2 c.c.	"	
4	1·300	0·27 c.c.	2 c.c.	"	
5	1·500	0·16 c.c.	2 c.c.	"	
6	1·800	0·1 c.c.	2 c.c.	"	
7	1·1000	0·08 c.c.	2 c.c.	"	
8	—	—	2 c.c.	"	
9	—	2 c.c.	—	"	
10	1·50	1·6 c.c.	2 c.c.	"	2 c.c. physiol. water added to serum, tube 11.
11	1·50	1·6 c.c.	—	"	

AGGLUTINATION TEST, 28/8/11.

Serum Cow No. 70, Natural Lamziekte case; 12 hours old culture of "P" Organism in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No agglutination.	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	

AGGLUTINATION TEST, 28/8/11.

Serum of Cattle, dated 18/8/11, Natural Lamziekte case. Emulsion of "P" Organism in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum Dilution 1-40.	Quantity of Testing Liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No Agglutination.	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

AGGLUTINATION TEST, 28/8/11.

Serum of Calf No. 71. Healthy Animal. Emulsion of "P" Organism in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum Dilution 1-40.	Quantity of Testing Liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No Agglutination.	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

AGGLUTINATION TEST, 28/8/11.

Serum dated 20/8/11. Natural Lamziekte case. Emulsion of "P" in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No Agglutination	After 2 hours at 35° C. no clumping.
2	1·200	0·4 c.c.	2 c.c.	"	After 24 hours at 35° C.
3	1·300	0·27 c.c.	2 c.c.	"	slight clumping (?)
4	1·500	0·16 c.c.	2 c.c.	"	in tube No. 1 and in
5	1·800	0·1 c.c.	2 c.c.	"	tube No. 2 slight
6	1·1000	0·08 c.c.	2 c.c.	"	clumping (?) after
7	—	—	2 c.c.	"	24 hours at 36° C. but no deposit at bottom of tube.

AGGLUTINATION TEST, 28/8/11.

Injected with Pasteurella Culture, 11/8/10. Serum of Black Ox No. 55. Emulsion of "P" Organism.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	Agglutination.	After 24 hours in incubator at 36° C. faint agglutination in tube No. 1.
2	1·200	0·4 c.c.	2 c.c.	" (?)	
3	1·300	0·27 c.c.	2 c.c.	" (?)	
4	1·500	0·16 c.c.	2 c.c.	" (?)	After 48 hours in incubator at 36° C. distinct deposit in tubes 2 to 4 (?) agglutination.
5	1·800	0·1 c.c.	2 c.c.	No agglutination.	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	Control.	

AGGLUTINATION TEST, 12/9/11.

Serum of Cattle No. 4 (Owner Mr. P.), inoculated June, 1910, with "P" culture.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No Agglutination	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	

AGGLUTINATION TEST, 12/9/11.

Serum of Cattle No. 5 (Owner Mr. P.), Healthy Animal. 18 hours old "P" Organism; Emulsion in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No agglutination.	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

AGGLUTINATION TEST, 12/9/11.

Serum of Cattle No. 2, Owner Mr. P., inoculated "P" Culture, June, 1910. 18 hours old culture of "P" organism; Emulsion in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No agglutination.	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

AGGLUTINATION TEST, 12/9/11.

Serum of Cattle No. 3, owner Mr. P., inoculated "P" Culture, June, 1910. 18 hours old culture of "P," Emulsion in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No agglutination.	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

AGGLUTINATION TEST, 12/9/11.

Serum of Cattle No. 53. Inoculated "P" 11/8/10. Emulsion of "P" Organism, 18 hours old, in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No agglutination.	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

AGGLUTINATION TEST, 12/9/11.

Healthy Animal. Cattle No. 71. Emulsion of "P" Organism, 18 hours old culture, in physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No agglutination.	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

AGGLUTINATION TEST, 12/9/11.

Serum of cattle No. 6, owner Mr. P. (Healthy Animal). 18 hours old "P" Emulsion in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No Agglutination	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

AGGLUTINATION TEST, 12/9/11.

Serum of Cattle No. 23. Inoculated with "P" Culture on station 20/11/09. 18 hours old "P" Emulsion in Physiol. water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No Agglutination	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

AGGLUTINATION TEST, 12/9/11

Serum of Cattle No. 55. Inoculated with Culture of "P" 11/8/10. Emulsion of "P" Organism. 18 hours old culture in Physiol water.

No. of Tube.	Titre.	Quantity of Serum dilution 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	Agglutination.	After 4 hours and $\frac{3}{4}$ at 32° C. distinct clumping in tube 1 and after 17 hours at 32° C., deposit in tube.
2	1·200	0·4 c.c.	2 c.c.	No Agglutination.	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

AGGLUTINATION TEST.

Serum of Cattle No. 1. Inoculated with "P" Culture, June, 1910. Emulsion of "P" Organism.

No. of Tube.	Titre.	Quantity of Serum dilution, 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No agglutination.	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.		Control.

AGGLUTINATION TEST.

Serum of Cattle, owner Mr. T. Natural Lamziekte case. "P" Emulsion.

No. of Tube.	Titre.	Quantity of Serum dilution, 1-40.	Quantity of testing liquid.	Result.	Remarks.
1	1·100	0·8 c.c.	2 c.c.	No agglutination.	
2	1·200	0·4 c.c.	2 c.c.	"	
3	1·300	0·27 c.c.	2 c.c.	"	
4	1·500	0·16 c.c.	2 c.c.	"	
5	1·800	0·1 c.c.	2 c.c.	"	
6	1·1000	0·08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

AGGLUTINATION TEST.

Serum of Cattle, owner Mr. H. Natural Lamziekte case. "P"
Emulsion.

No. of Tube.	Titre.	Quantity of Serum dilution, 1:40.	Quantity of testing liquid.	Result.	Remarks.
1	1:100	0.8 c.c.	2 c.c.	No agglutination.	
2	1:200	0.4 c.c.	2 c.c.	"	
3	1:300	0.27 c.c.	2 c.c.	"	
4	1:500	0.16 c.c.	2 c.c.	"	
5	1:800	0.1 c.c.	2 c.c.	"	
6	1:1000	0.08 c.c.	2 c.c.	"	
7	—	—	2 c.c.	"	Control.

RESUME OF AGGLUTINATION TESTS.

Cattle No.	Date of Test.	History.	Result.	Remarks.
73	4.6.11	Natural Lamziekte case	No agglutination	Serum collected for the test from the sick animal.
71	5.6.11	Healthy animal ...	"	Visibly affected at time of test.
55		Inoculated Pasteurella, 11.8.10	Agglutinates, 1-300 dil.	
73	9.6.11	Natural Lamziekte case	No agglutination	Serum collected from the sick animal for the test.
55	10.6.11	Inoculated Pasteurella, 11.8.10	Agglutinates, 1-100 dil.	
73	13.5.11	Natural Lamziekte case	No agglutination	Visibly sick at time of test.
55	"	Inoculated Pasteurella, 11.8.10	Agglutinates, 1-200	
71	18.6.11	Healthy animal ...	No agglutination	Serum collected from the sick animal for the test.
72		Experimental animal injected intra-lymphatically (prescapular gland) with culture of Pasteurella, 2.6.11	Agglutinates, 1-100	
73	"	Natural Lamziekte case	No agglutination	Visibly sick at time of test.
74	"	Normal animal ...	"	
55	23.6.11	Inoculated Pasteurella, 11.8.10	Agglutinates, 1-200	Serum collected from the sick animal for the test.
55		"	Agglutinates, 1-500.	
71		Healthy animal ...	No agglutination.	
72		Experimental animal injected intra-lymphatically with culture of Pasteurella, 2.6.11	Agglutinates, 1-100.	
73	"	Natural Lamziekte case	No agglutination	Visibly affected at time of test.
74	"	Healthy animal ...	"	
70	28.8.11	Natural Lamziekte case	"	Visibly affected at time of test.
18.8.11		"	"	
71	20.8.11	Healthy animal ...	"	Visibly affected at time of test.
55		Natural Lamziekte case	Agglutinates, 1-100 (?)	
4	12.9.11	Inoculated Pasteurella culture, 11.8.10	No agglutination.	Visibly sick at time of test.
5		Inoculated Pasteurella culture, June, 1910	"	
2	"	Inoculated Pasteurella, June, 1910, culture	"	Visibly sick at time of test.
3	"	Inoculated Pasteurella, June, 1910	"	
6	23	Healthy animal ...	"	Visibly sick at time of test.
23		Inoculated Pasteurella, 20.11.09	"	
55	"	Inoculated Pasteurella, 11.8.10	Agglutinates, 1-100	Visibly sick at time of test.
53	"	"	No agglutination.	
71	21.10.11	Healthy animal ...	"	Visibly sick at time of test.
1		Inoculated Pasteurella, June, 1910, culture	"	
T	21.10.11	Natural Lamziekte case	"	Visibly sick at time of test.
H		"	"	

Conclusions :

- (1) The serum of Lamziekte animals did not agglutinate the organism "P" (6 experiments.)
- (2) The serum of one animal inoculated with culture of organism "P" 11/8/10 agglutinated the organism "P."
- (3) The serum of 4 cattle inoculated with Pasteurella culture in June, 1910, had no agglutinating properties for organism "P."
- (4) The serum of one beast inoculated with "P" culture in November, 1909, did not agglutinate the "P" organism.
- (5) The serum of an animal injected with culture of organism "P" 2/6/11 agglutinated organism "P."
- (6) No agglutination was seen when the serum of a healthy animal was tested with the organism "P." (4 experiments).

I. Serum of rabbit injected with B. Coli. Emulsion of B. Coli. culture.

No. of Tube.	Titre.	Serum dilution 1-40.	Testing Liquid.	Result.
1	1·100	0·8 c.c.	2 c.c.	After 1 hour agglutination in tubes 1-4.
2	1·200	0·4 c.c.	2 c.c.	
3	1·300	0·27 c.c.	2 c.c.	
4	1·500	0·16 c.c.	2 c.c.	
5	1·800	0·1 c.c.	2 c.c.	
6	1·1000	0·08 c.c.	2 c.c.	

II. Serum of rabbit injected with "Pasteurella." Emulsion of "Pasteurella" culture.

No. of Tube.	Titre.	Serum dilution 1-40.	Testing Liquid.	Result.
1	1·100	0·8 c.c.	2 c.c.	No agglutination.
2	1·200	0·4 c.c.	2 c.c.	
3	1·300	0·27 c.c.	2 c.c.	
4	1·500	0·16 c.c.	2 c.c.	
5	1·800	0·1 c.c.	2 c.c.	
6	1·1000	0·08 c.c.	2 c.c.	

III. Serum of rabbit injected with B. Coli. Emulsion of
"Pasteurella" culture.

No. of Tube.	Titre.	Serum dilution 1-40.	Testing Liquid.	Result.
1	1·100	0·8 c.c.	2 c.c.	No agglutination.
2	1·200	0·4 c.c.	2 c.c.	
3	1·300	0·27 c.c.	2 c.c.	
4	1·500	0·16 c.c.	2 c.c.	
5	1·800	0·1 c.c.	2 c.c.	
6	1·1000	0·08 c.c.	2 c.c.	

Conclusions.

1. Serum of a rabbit injected with B. coli cultures agglutinated an emulsion of the strain of B. coli used for the injection of the rabbit.
 2. Serum of a rabbit injected with cultures of the organism "P" had no agglutinating properties against the organism "P".
 3. Serum of a rabbit injected with cultures of B. coli did not agglutinate the organism "P".
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The following plant feeding experiments were carried out:—

Expt. No.	Date.	Number of the Cattle used in the Expt.	Material fed.	Quantity fed.	How fed.	Condition of plants when fed.	Result.	Remarks.
1	20/6/10	H. 653 ...	Geigeria	1 lb. ...	Cut and mixed with veldt hay.	Partly green	Nil	
2	21/6/10	"	"	"	" " "	"	"	
3	22/6/10	"	"	"	" " "	"	"	
4	28/6/10	"	"	"	" " "	"	"	
5	24/6/10	"	"	"	" " "	"	"	
6	25/6/10	"	"	"	" " "	"	"	
7	26/6/10	"	"	"	" " "	"	"	
8	27/6/10	"	"	"	" " "	"	"	
9	28/6/10	"	"	"	" " "	"	"	
10	29/6/10	"	"	"	" " "	"	"	
11	30/6/10	"	"	"	" " "	"	"	
12	1/7/10	"	"	"	" " "	"	"	
13	2/7/10	"	"	"	" " "	"	"	
14	9/7/10	"	"	2,400 c.c. ...	Infusion	"	"	
15	10/7/10	"	"	800 c.c. ...	"	"	"	
16	17/7/10	"	"	$\frac{1}{2}$ lb. ...	Powdered and mixed with wet mealies.	Dry	"	
17	18/7/10	"	"	"	" " "	"	"	
18	19/7/10	"	"	"	" " "	"	"	
19	19/7/10	C. 294 ...	Asclepias fruticosa (Melkbosje) ...	"	Green with crushed wet mealies, about $\frac{1}{4}$ lb. eaten.	Green	"	
20	19/7/10	H. 653 ...	Geigeria... ..	"	Powdered and mixed with wet mealies.	Dry	"	
21	19/7/10	C. 294 ...	Asclepias fruticosa (Melkbosje) ...	"	Green with crushed wet mealies, cow eat about half the dose.	Green	"	
22	20/7/10	H. 869 ...	" "	"	Infusion and drenched with liquid portion, remainder fed mixed with mealies.	Green	"	
23	20/7/10	H. 653 ...	Geigeria... ..	$\frac{1}{2}$ lb. ...	Powdered and mixed with wet mealies.	Dry	"	

Plant Feeding Experiments — *Continued.*

Expt. No.	Date.	Number of the Cattle used in the Expt.	Material fed.	Quantity fed.	How fed.	Condition of plants when fed.	Result.	Remarks.
24	21/7/10	H. 869 ...	¼ lb. <i>Asclepias fruticosa</i> (Melkbosje)	"	Infusion and drenched with liquid portion, remainder fed mixed with mealies.	Green		21/7/10. Salivates a little after administration. 22/7/10. Fæces fluid. 23/7/10. Fæces partly fluid, salivating a little.
25	22/7/10	H. 652 ...	" "	"	Chopped into small pieces infusion made with tepid water, drenched with liquid portion, remainder fed with mealies.			
26	23/7/10	"	<i>Asclepius fruticosa</i> (Melkbosje) ...	¼ lb. ...	Infusion, drenched with liquid portion, remainder given with mealies, but none consumed.	Green		23/7/10. Fæces partly fluid, mixed with a considerable amount of mucus. 24/7/10. Fæces partly fluid. 26/7/10. Fæces normal.
27	23/7/10	H. 653 ...	<i>Geigeria</i>	½ lb. ...	Infusion, drenched with liquid portion, remainder fed mixed with mealies.	Dry		
28	23/7/10	H. 869 ...	<i>Asclepias fruticosa</i> (Melkbosje) ...	¼ lb. ...	----	Green		24/7/10. Fæces still partly fluid. 25/7/10. Fæces getting normal.
29	24/7/10	H. 652 ...	" "	"	Infusion, drenched with fluid portion, and remainder mixed with mealies, but not eaten.	"		
30	24/7/10	H. 653 ...	<i>Geigeria</i>	½ lb. ...	Infusion, drenched with fluid portion, and remainder mixed with mealies, but not fed.	Dry	Negative	
31	25/7/10	H. 652 ...	<i>Asclepias fruticosa</i> (Melkbosje) ...	¼ lb. ...	Infusion, drenched with fluid portion, and remainder mixed with mealies, but not eaten.	Green	"	
32	25/7/10	H. 653 ...	<i>Geigeria</i>	½ lb. ...	" "	Dry	"	

33	26/7/10	H. 652	...	Asclepias fruticosa (Melkbosje)	...	¼ lb.	...	Infusion, drenched with fluid portion, and remainder mixed with mealies, but not eaten well.	Green	..
34	26/7/10	H. 653	...	Geigeria...	...	½ lb.	...	Infusion, drenched with fluid portion, remainder mixed with mealies.	Dry	..
35	27/7/10	H. 652	...	Asclepias fruticosa (Melkbosje)	...	¼ lb.	...	Material ground to powder mixed with water hot, and when cool drenched with this.	Green	..
36	27/7/10	H. 653	...	Geigeria...	...	½ lb.	...	Material chopped up, mixed with hot water and when cool drenched fluid portion, remainder given with mealies.	Green	..
37	28/7/10	H. 652	...	Asclepias fruticosa (Melkbosje)	...	¼ lb.	...	Material ground, mixed with hot water and drenched when cool d.	Green	..
38	28/7/10	H. 653	...	Geigeria...	...	½ lb.	...	Infusion, drenched with fluid portion, remainder given with mealies.	Dry	..
39	29/7/10	H. 652	...	Asclepias fruticosa (Melkbosje)	...	¼ lb.	...	Ground, infusion and drenched.	Green	..
40	29/7/10	H. 653	...	Geigeria...	...	½ lb.	...	Powdered, infusion and drenched.	Dry	..
41	30/7/10	H. 652	...	Asclepias fruticosa (Melkbosje)	...	¼ lb.	...	Material ground, mixed with hot water and drenched when cool.	Green	..
42	30/7/10	H. 653	...	Geigeria...	...	½ lb.	...	Powdered, infusion and drenched.	Dry	..
43	31/7/10	H. 652	...	Asclepias fruticosa (Melkbosje)	...	¼ lb.	...	Material ground, mixed with hot water and drenched when cool.	Green	..
44	31/7/10	H. 653	...	Geigeria...	...	½ lb.	...	Powdered, infusion and drenched.	Dry	..
45	2/8/10	H. 653	...	"	...	"	...	Powdered, infusion and drenched.		..
46	2/8/10	H. 652	...	¼ lb. Asclepias fruticosa (Melkbosje)	...	¼ lb.	...	Ground, made in infusion and drenched.	Green	..

Plant Feeding Experiments.—*Continued.*

Expt. No.	Date.	Number of the Cattle used in the Expt.	Material fed.	Quantity fed.	How fed.	Condition of plants when fed.	Result.	Remarks.
47	2/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle 800 c.c.	Material chopped up fine, mixed with water and drenched.	Green	Negative	
48	3/8/10	H. 653 ...	Geigeria... ..	½ lb. ...	Powdered, infusion and drenched.	Dry	"	
49	3/8/10	H. 652 ...	Asclepias fruticosa (Melkbosje) ...	¼ lb. ...	Material powdered, made infusion and drenched.	Green	"	
50	3/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle ...	Material chopped fine and drenched.	"	"	
51	4/8/10	H. 653 ...	Geigeria... ..	½ lb. ...	Powdered, infusion made and drenched.	Dry	"	
52	4/8/10	H. 652 ...	Asclepias fruticosa (Melkbosje) ...	¼ lb. ...	Chopped material, made infusion and drenched.	Green	"	
53	4/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle ...	Chopped fine, mixed with water and drenched.	Partly dry	"	
54	5/8/10	H. 653 ...	Geigeria... ..	½ lb. ...	Powdered, made infusion and drenched.	Dry	"	
55	5/8/10	H. 652 ...	Asclepias fruticosa (Melkbosje) ...	¼ lb. ...	Chopped fine, mixed with water and drenched.	Green	"	
56	5/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle 800 c.c.	" "	Partly green	"	
57	6/8/10	H. 653 ...	Geigeria... ..	½ lb. ...	Powdered, made infusion and drenched.	Dry	"	
58	6/8/10	H. 652 ...	Asclepias fruticosa ...	¼ lb. ...	Chopped fine, mixed with water and drenched.	Green	"	
59	6/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle 800 c.c.	" "	Partly green	"	
60	7/8/10	H. 653 ...	Geigeria... ..	½ lb. ...	Powdered, made infusion and drenched.	Dry	"	
61	7/8/10	H. 652 ...	Asclepias fruticosa ...	¼ lb. ...	Chopped fine, mixed with water and drenched.	Green	"	
62	7/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle 800 c.c.	" "	Partly green	"	
63	8/8/10	H. 653 ...	Geigeria... ..	½ lb. ...	Powdered, made infusion and drenched.	Dry	"	
64	8/8/10	H. 652 ...	Asclepias fruticosa ...	¼ lb. ...	Chopped fine, mixed with water and drenched.	Green	"	

65	8/8/10	H. 526	...	<i>Scirpus nodosus</i>	...	1 bottle 800 c.c.	"	Partly green	"
66	10/8/10	H. 653	...	<i>Geigeria...</i>	...	½ lb.	Powdered, made infusion and drenched.	Dry	"
67	10/8/10	H. 652	...	<i>Asclepias fruticosa</i>	...	¼ lb.	Chopped fine, mixed with water and drenched.	Green	"
68	10/8/10	H. 526	...	<i>Scirpus nodosus</i>	...	1 bottle	"	Partly green	"
69	11/8/10	H. 653	...	<i>Geigeria...</i>	...	½ lb.	Powdered, made infusion and drenched.	Dry	"
70	11/8/10	H. 526	...	<i>Scirpus nodosus</i>	...	1 bottle 800 c.c.	Chopped fine, mixed with water and drenched.	Partly green	"
71	12/8/10	H. 653	...	<i>Geigeria...</i>	...	½ lb.	Powdered, made infusion and drenched.	Dry	"
72	12/8/10	H. 526	...	<i>Scirpus nodosus</i>	..	1 bottle 800 c.c.	Chopped fine, mixed with water and drenched.	Partly green	"
73	13/8/10	H. 652	...	<i>Asclepias fruticosa</i>	...	¼ lb.	Chopped fine, mixed with water and drenched.	Green	"
74	13/8/10	H. 653	...	<i>Geigeria...</i>	...	½ lb.	Powdered, made infusion and drenched.	Dry	"
75	13/8/10	H. 887	...	<i>Chrysocoma tenuifolia</i>		¼ lb.	Powdered, mixed with water and drenched.	Partly dry	"
76	13/8/10	H. 526	...	<i>Scirpus nodosus</i>	...	1 bottle full...	Chopped fine, mixed with water and drenched.	Partly dry	"
77	14/8/10	H. 652	...	<i>Asclepias fruticosa</i>	...	½ lb.	Chopped fine, made infusion and drenched.	Green	"
78	14/8/10	H. 653	...	<i>Geigeria...</i>	...	"	Powdered, made infusion and drenched.	Dry	"
79	14/8/10	H. 887	...	<i>Chrysocoma tenuifolia...</i>		¼ lb.	Chopped fine, made infusion and drenched.	Partly dry	"
80	14/8/10	H. 526	...	<i>Scirpus nodosus</i>	...	1 bottle	Chopped fine, mixed with water and drenched.	Partly green	"
81	16/8/10	H. 653	...	<i>Geigeria...</i>	...	½ lb.	Powdered, mixed with water and drenched.	Dry	"
82	16/8/10	H. 652	...	<i>Asclepias fruticosa</i>	...	¼ lb.	Chopped fine, mixed with water and drenched.	Green	"
83	16/8/10	H. 526	...	<i>Scirpus nodosus</i>	...	1 bottle	"	Partly dry	"
84	16/8/10	H. 887	...	<i>Chrysocoma tenuifolia</i>		¼ lb.	"	Dry	"
85	17/8/10	H. 653	...	<i>Geigeria...</i>	...	½ lb.	Powdered, mixed with water and drenched.	Dry	"
86	17/8/10	H. 652	...	<i>Asclepias fruticosa</i>	...	¼ lb.	Chopped fine, mixed with water and drenched.	Green	"
87	17/8/10	H. 526	...	<i>Scirpus nodosus</i>	...	1 bottle	"	Partly dry	"
88	17/8/10	H. 887	...	<i>Chrysocoma tenuifolia</i>		¼ lb.	"	"	"

Plant Feeding Experiments.—Continued.

Expt No.	Date.	Number of the Cattle used in the Expt.	Material fed.	Quantity fed.	How fed.	Condition of plants when fed.	Result.	Remarks.
89	17/8/10	H. 653 ...	Geigeria... ..	½ lb. ...	Powdered, mixed with water and drenched.	Dry	Negative	
90	17/8/10	H. 652 ...	Asclepias fruticosa ...	¼ lb. ...	Chopped fine, mixed with water and drenched.	Green	"	
91	17/8/10	H. 887 ...	Chrysocoma tenuifolia	"	"	Dry	"	
92	17/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle ...	"	"	"	
93	19/8/10	H. 653 ...	Geigeria... ..	½ lb. ...	Powdered, mixed with water and drenched.	"	"	
94	19/8/10	H. 652 ...	Asclepias fruticosa ...	¼ lb. ...	Chopped fine, mixed with water and drenched.	Green	"	
95	19/8/10	H. 887 ...	Chrysocoma tenuifolia	"	Chopped fine, mixed with water and fed.	Dry	"	
96	19/8/10	H. 526 ...	Scirpus nodosus ...	1 bottl. ...	"	"	"	
97	20/8/10	Cow 653 ...	Geigeria... ..	½ lb. ...	"	"	"	
98	20/8/10	" 652 ...	Asclepias fruticosa ...	¼ lb. ...	"	Green	"	
99	20/8/10	H. 887 ...	Chrysocoma tenuifolia	"	"	Dry	"	
100	20/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle ...	"	"	"	
101	21/8/10	H. 653 ...	Geigeria	½ lb. ...	"	"	"	
102	21/8/10	Cow 652 ...	Asclepias fruticosa ...	¼ lb. ...	"	Green	"	
103	21/8/10	H. 887 ...	Chr. socoma tenuifolia	"	"	Dry	"	
104	21/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle ...	"	"	"	
105	21/8/10	H. 653 ...	Geigeria	½ lb. ...	"	"	"	
106	22/8/10	Cow 652 ...	Asclepias fruticosa ...	¼ lb. ...	"	Green	"	
107	22/8/10	H. 526 ...	Scirpus nodosus ...	1 bott'e ...	"	Dry	"	
108	22/8/10	H. 887 ...	Chrysocoma tenuifolia	¼ lb. ...	"	"	"	
109	23/8/10	Cow 653 ...	Geigeria	½ lb. ...	"	"	"	
110	23/8/10	Cow 652 ...	Asclepias fruticosa ...	¼ lb. ...	"	Green	"	
111	23/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle ...	"	Dry	"	
112	23/8/10	H. 887 ...	Chrysocoma tenuifolia	¼ lb. ...	"	"	"	
113	24/8/10	Cow 653 ...	Geigeria	½ lb. ...	"	"	"	
114	24/8/10	Cow 652 ...	Asclepias fruticosa ...	¼ lb. ...	"	Green	"	25/8/10. Not feeding well, lying a good deal.
115	24/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle ...	"	Dry	"	
116	24/8/10	H. 887 ...	Chrysocoma tenuifolia	¼ lb. ...	"	"	"	

117	28/8/10	Cow 653 ...	Geigeria	$\frac{1}{2}$ lb. ...	"	"	"	"
118	28/8/10	Cow 652 ...	Asclepias fruticosa ...	$\frac{1}{4}$ lb. ...	"	"	"	"
119	28/8/10	H. 526 ...	Scirpus nodosus ...	1 bottle ...	"	"	"	"
120	28/8/10	H. 887 ...	Chrysocoma tenuifolia	$\frac{1}{4}$ lb. ...	"	"	"	"
121	29/8/10	Cow 653 ...	Geigeria	$\frac{1}{2}$ lb. ...	"	"	"	"
122	29/8/10	Cow 652 ...	Asclepias fruticosa ...	$\frac{1}{4}$ lb. ...	Chopped fine, mixed with water and drenched.	Green	"	"
123	29/8/10	H. 526 ...	Scirpus nodosus or Cy- perus marginata	1 bottle ...	"	"	Partly green	"
124	29/8/10	H. 887 ...	Chrysocoma tenuifolia	$\frac{1}{4}$ lb. ...	"	"	Dry	"
125	30/8/10	Cow 653 ...	Geigeria	$\frac{1}{2}$ lb. ...	"	"	"	"
126	30/8/10	Cow 652 ...	Asclepias fruticosa ...	$\frac{1}{4}$ lb. ...	"	"	Green	"
127	30/8/10	H. 526 ...	Scirpus nodosus or Cy- perus marginata	1 bottle ...	"	"	Partly green	"
128	30/8/10	H. 887 ...	Chrysocoma tenuifolia	$\frac{1}{4}$ lb. ...	"	"	"	"
129	31/8/10	Cow 653 ...	Geigeria	$\frac{1}{2}$ lb. ...	"	"	Dry "	"
130	31/8/10	H. 526 ...	Scirpus nodosus or Cy- perus marginata	1 bottle ...	"	"	Partly dry	"
131	31/8/10	H. 887 ...	Chrysocoma tenuifolia	$\frac{1}{4}$ lb. ...	"	"	"	"
132	1/9/10	Cow 653 ...	Geigeria	$\frac{1}{2}$ lb. ...	"	"	Dry "	"
133	1/9/10	H. 526 ...	Scirpus nodosus or Cy- perus marginata	1 bottle ...	"	"	Partly dry	"
134	1/9/10	H. 887 ...	Chrysocoma tenuifolia	$\frac{1}{4}$ lb. ...	"	"	Dry	"
135	2/9/10	Cow 653 ...	Geigeria	$\frac{1}{2}$ lb. ...	"	"	"	"
136	2/9/10	H. 526 ...	Scirpus nodosus ...	1 bottle ...	"	"	Partly dry	"
137	2/9/10	H. 887 ...	Chrysocoma tenuifolia	$\frac{1}{4}$ lb. ...	"	"	"	"
138	3/9/10	Cow 653 ...	Geigeria	$\frac{1}{2}$ lb. ...	"	"	Dry "	"
139	3/9/10	H. 887 ...	Chrysocoma tenuifolia	$\frac{1}{4}$ lb. ...	"	"	"	"
140	3/9/10	H. 526 ...	Scirpus nodosus or Cy- perus marginata	1 bottle ...	"	"	"	"
141	6/9/10	Cow 653 ...	Geigeria	$\frac{1}{2}$ lb. ...	"	"	"	"
142	6/9/10	H. 887 ...	Chrysocoma tenuifolia	$\frac{1}{4}$ lb. ...	"	"	"	"
143	6/9/10	H. 526 ...	Scirpus nodosus or Cy- perus marginata	1 bottle ...	"	"	Partly dry	"
144	7/9/10	Cow 653 ...	Geigeria	$\frac{1}{2}$ lb. ...	"	"	Dry	"
145	7/9/10	H. 887 ...	Chrysocoma tenuifolia	$\frac{1}{4}$ lb. ...	"	"	Partly dry	"
146	7/9/10	H. 526 ...	Scirpus nodosus ...	1 bottle ...	"	"	"	"
147	8/9/10	Cow 653 ...	Geigeria	$\frac{1}{2}$ lb. ...	"	"	Dry "	"
148	8/9/10	H. 887 ...	Chrysocoma tenuifolia	$\frac{1}{4}$ lb. ...	"	"	Partly dry	"
149	8/9/10	H. 526 ...	Scirpus nodosus ...	1 bottle ...	"	"	"	"
150	13/9/10	H. 887 ...	Chrysocoma tenuifolia	$2\frac{3}{4}$ lbs. ...	Chopped fine, infusion and drenched.	Partly green	"	"

Plant Feeding Experiments.—*Continued.*

Expt. No.	Date.	Number of the Cattle used in the Expt.	Material fed.	Quantity fed.	How fed.	Condition of plants when fed.	Result.	Remarks.
151	13/9/10	H. 837 ...	Asclepias fruticosa ...	5 lbs. ...	Chopped fine, infusion and drenched	Green		
152	14/9/10	H. 837 ...	" "	2 lbs. ...	" "	"		Drenched in morning, at 1.30 p.m., frothy saliva hanging from mouth. Pulse 74. Temp. 102°. Watery diarrhoea, watery discharge from eyes. 15/9/10. Watery diarrhoea mixed with yellow mucus, frothy saliva from lips. Pulse 62. Temp. 102° 16/9/10. Feeds indifferently, faeces firmer, still mixed with yellowish stringy mucus. 17/9/10. Feeding, faeces normal.

Resume of Results of Feeding Experiments.

$\frac{1}{4}$ lb. *Asclepias Fruticosa* (melk bosje) given daily, with the exception of 10 consecutive days, from the 22/7/10—14/9/10 to a heifer, caused on the second day, slight diarrhoea for two days.

$\frac{1}{2}$ lb. *Asclepias Fruticosa* (melk bosje) was given daily for two days to cow 294 with negative results.

$\frac{1}{4}$ lb. *Asclepias Fruticosa* (melk bosje), given to H.869 for 3 days, produced salivation and diarrhoea, and frequent micturition on the second day.

5 lbs. *Asclepias Fruticosa* given to H.837 on the 13/9/10 followed by 2 lbs. *Asclepias Fruticosa* (melk bosje) on the 14/9/10 produced salivation, increase of pulse, diarrhoea lasting for two days.

$\frac{1}{4}$ lb. *Scirpus nodosus* was drenched daily from the 2/8/10—8/9/10 with the exception of 7 consecutive days, to H.526, result negative.

$\frac{1}{4}$ lb. *Chrysocoma Tenuifolia* drenched daily with the exception of 10 non-consecutive days to cattle No. 887, produced no ill effects.

$\frac{1}{2}$ lb. *Geigeria* given daily to a heifer with the exception of a few non-consecutive days, from the 20/6/10-8/9/10 gave negative results.
Conclusions :—

Lamziekte is not transmitted by feeding with *Asclepias Fruticosa*, *Chrysocoma Tenuifolia*, *Geigeria* or *Scirpus Nodosus*.

CHARACTER OF THE ORGANISM "P."

When carrying out research work in connection with the complement deviation and agglutination tests the morphological and cultural characters and biological properties of the organism "P" were studied. These were found to be as follows, viz. :—

Morphological characters :—In young cultures (24 hours), the forms chiefly seen are a cocco-bacillary shape, but short rods may also be observed; in older cultures rods are more numerous and their length varies 2.4 microns occurring usually singly, the longer are sometimes flexuous, no spore formation was observed.

Coloration. The organism stains uniformly with the basic aniline dyes, forms stained at poles, with unstained portions in the centre, are seen, organism is gram-negative.

Motility. The organism is motile, particularly the younger forms.

Flagella. On staining by the method of Nicol and Morax the number of flagella seen varies from 4-6. 4 appears to be an average number, their length varies from 3-5 microns.

Condition of the Culture. The organism grows readily aerobically and anaerobically at room temperature. In bouillon; at 37° C. the development is apparent after a few hours, and the media becomes uniformly turbid and on shaking the contents of the tube a fine granular suspension is seen to be uniformly distributed throughout the media and a deposit appears later at the bottom of the tube. On gelatine no liquefaction, on gelatine inclined a transparent bluish

growth appears gradually becoming opaque whitish and glistening, contours have a festooned appearance. On gelatine plate cultures the colonies appear first as small whitish opaque grains, and later these become round, oval or whetstone, in shape. On examining the colonies microscopically an outer transparent zone, slightly bluish, a middle zone dark and granular looking is apparent. On the surface of the media the colonies have a raised rounded appearance, whitish in colour and transparent and later becoming opaque and dark, darker in the centre than at the margins. On potato the cultures are at first yellowish white and viscid looking and as the growth becomes older it has a dirty white appearance.

Biochemical re-actions.

Indol re-action. The method of Salkowski was employed and cultures made in a media of peptone water and sodium chloride, gave a positive re-action. *Action on Sugars.* In plate cultures employing the method of Raymond, a distinct change of colour was apparent in the media round the growth, due to the acid liberated by the decomposition of the lactose by the organism. The inoculation subcutaneous of the organism into rabbits and guinea pigs produced at the seat of inoculation an abscess but not death.

Conclusion:

The organism described as a *Pasteurella* has not the specific characters of the type "*Pasteurella*," its morphological, cultural and biological characters correspond with the type "*Coli*."

The non-efficaciousness of inoculation with Anthrax vaccine as a preventive of Lamziekte.

It is frequently maintained by owners that the inoculation of Anthrax vaccine is a preventive of Lamziekte in fact it was found that, in a number of cases, owners had inoculated with the result that the total losses of cattle had in some instances diminished, and they naturally attribute this to the effects of inoculation, the real explanation of the decrease being however as follows:—

On some farms both Anthrax and Lamziekte exist and this fact appears not to have been taken into consideration. Presuming the losses from Anthrax, previous to inoculation, were 5 per cent. and that from Lamziekte 9 per cent., a 5 per cent. decrease of mortality would result from inoculation.

From the following particulars one is justified in concluding that inoculation of Anthrax vaccine is not a preventative against Lamziekte. Owing to an outbreak of Anthrax the various lots of the experimental cattle were inoculated on the 24/3/10 with 1st vaccine and on the 6/4/10 with 2nd vaccine, nevertheless cow No. 954 (Lot No. 2) contracted Lamziekte on the 29/4/10.