Onderstepoort Journal of Veterinary Science and Animal Industry, Volume 1, Number 1, 1933.

Rabies in South Africa. Occurrence and distribution of cases during 1932.

By W. O. NEITZ, B.V.Sc., and A. D. THOMAS, D.V.Sc., Veterinary Research Officers, Onderstepoort.

Du Toit (1929) and Neitz and Marais (1932) have already dealt at some length with the occurrence of rabies in South Africa from 1893 and even earlier known or suspected cases to the end of 1931. These authors have mentioned the peculiarities exhibited by the disease in this country, for instance those associated with its propagation by small wild carnivora (Viverridae), and its apparent failure to become epidemic in domestic carnivora. This naturally has cast some doubt on the identity of the South African virus with that of Europe.

The importance of the disease from the Public Health point of view, and the necessity of paying the closest attention to its spread, or any other development, need no emphasis. Realizing, however, how very little is known of the propagation in nature beyond the fact that Viverrids are carriers, one cannot but experience a certain degree of uneasiness on account of the wide distribution of wild and domestic carnivora roaming uncontrolled all over the country, neither can one ignore the possibility of spread of rabies to the denizens of our national parks and the possible consequences which are almost unthinkable.

Discussion of the cases.

During the year 1932 some fourteen outbreaks of rabies have definitely been diagnosed in the Union. For the sake of convenience the available details of each case are tabulated below (Table I). This number represents an increase in positive cases diagnosed as compared with any of the previous years. It is possible that this increase may be ascribed purely to the fact that the prevalence and danger of rabies are gradually becoming appreciated by the public, so that greater efforts are being made to send material suitable for laboratory examination. Whether it is also due to further spread of the disease amongst natural carriers is impossible to say. The statistics nevertheless give some cause for alarm which is mitigated only by the apparent difficulty with which the disease spreads to other carnivorous animals. The cases recorded are usually traceable to a direct bite by an infected Viverrid.

It is not possible in this short paper to discuss every case at length, but attention should be drawn to a few of the outstanding ones.

Nos. 3 and 8 in Table I are the first two positive cases of rabies demonstrated in the domestic cat in South Africa. The first cat actually bit three persons who fortunately were successfully inoculated with anti-rabic vaccine. There is no precise history as to how these cats became infected, but it is presumed that the disease resulted from the bites of infected meercats. Suspected cases of rabies in the domestic cat had been reported previously, nut no material suitable for diagnosis having ever been submitted, confirmation was impossible.

No. 11 is interesting in that it was possible for the first time to note the incubation period in a dog after natural infection. The symptoms developed in the dog 14 days after a fight with a genet cat (*G. felina*). Furthermore, one of the rabbits (R828) subinoculated from this dog showed an unusually long duration of the disease (11 days) as compared with 3 to 6 days commonly seen in most of the other test rabbits.

A summary of the occurrences of rabies during the year 1932 is given in the appended Table II.

TABLE II.

Year.	Rabies diagnosed in.	Number of Cases in Transvaal.	No. of cases in Orange Free State.	No. of Cases in Cape Province.	Total. No. of Cases.
1932...	Human Beings.....	1	2	1	3
	Dog.....	—	—	1	1
	Ox.....	1	—	1	2
	Domestic cat.....	1	1	—	2
	Genetta felina.....	—	—	3	3
	Cynictis penicillata.....	2	4	—	6
	Suricata suricatta.....	—	1	—	1
	TOTAL FOR THE YEAR...	—	—	—	18

DISTRIBUTION OF THE DISEASE.

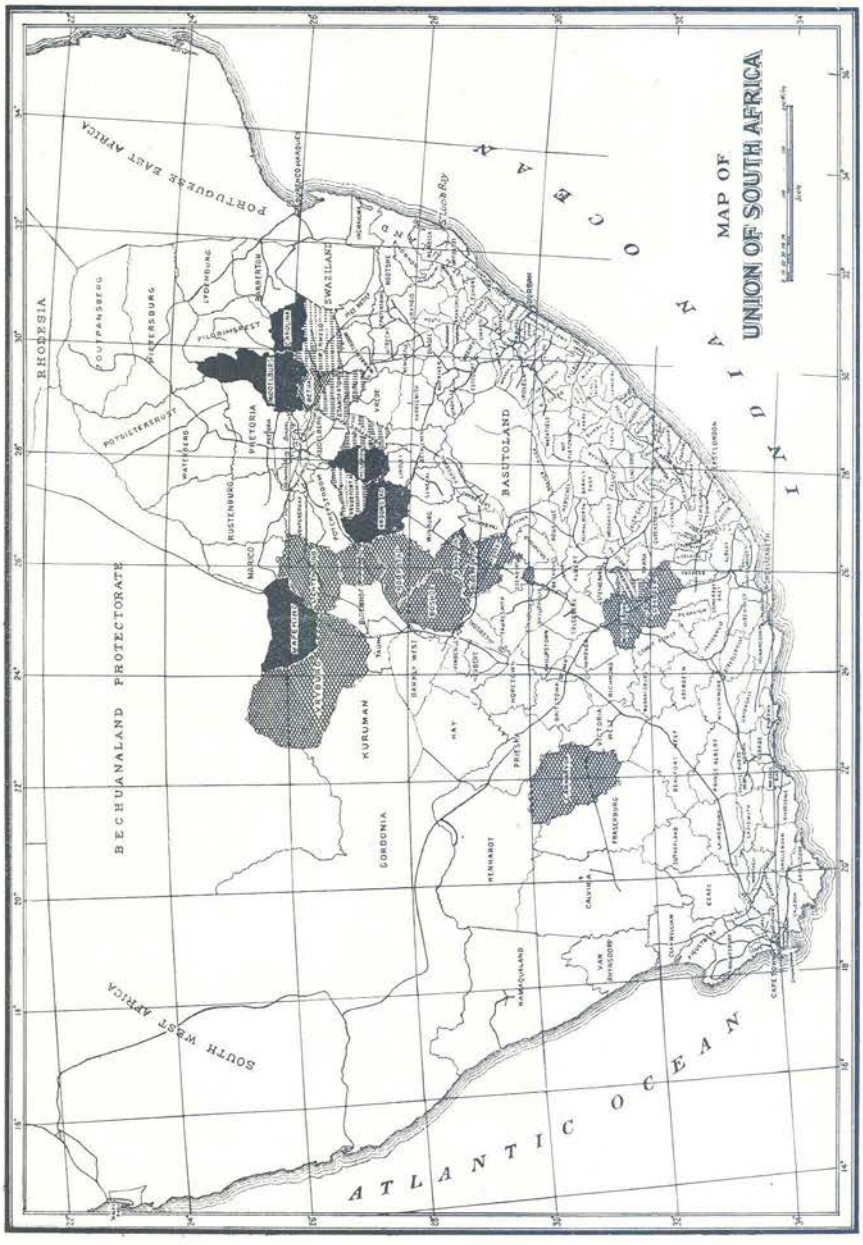
A map is appended showing the districts in which rabies is known to have occurred. The areas shown should not be taken as indicating the limits of infection today, since our data in this connection are far too scanty. It is more than likely as time goes on that it will be found that in many intervening districts infection is present or has been present for some time. Only by comparing data such as this will it be possible to obtain an idea as to whether the disease is spreading. From the map it will be seen that Mafeking, Cape Province, Kroonstad, Orange Free State, Heilbron, Orange Free State, Middelburg, Transvaal and Carolina, Transvaal (shaded black), are included for the first time as districts in which positive case of rabies have occurred. The other districts indicated by cross-hatching are areas where definite cases of rabies have occurred before, and in those indicated by hatching suspected cases of rabies have been reported.

TABLE I.

Month and Year.	Locality.			Spec. No.	File No.	Origin of material.	Wild animal concerned in original material.	Histo-Patho. Exam. of original material.
	Province.	District.	Town or Farm.					
April, 1932..... Case 1	Tvl.....	Middelburg.....	Uitzicht (farm).....	Sp. 258..	131/676.	*Cynictis penicillata*.....	—	Negri bodies frequent....
May, 1932..... Case 2	Tvl.....	Carolina.....	Van Wyksvlei (farm)...	—	258/283.	European male (44 years)	*Cynictis penicillata*.....	—
May, 1932..... Case 3	Tvl.....	Wolmaransstad...	Leeuwdoornstad (Townlands)	Sp. 676...	133/2...	Domestic cat.....	—	Unsuitable.....
June, 1932..... Case 4	O.F.S...	Tromspburg.....	Trompsburg (Townlands)	Sp. 1765..	141/310.	*Suricata surricatta*.....	—	Negri bodies frequent....
June, 1932..... Case 5	C.P.....	Vryburg.....	Farm Boston.....	Sp. 2221G. 2222F.	144/474.	Ox.....	—	Negri bodies frequent....
June, 1932..... Case 6	C.P.....	Mafeking.....	Farm The Grange.....	—	258/283.	Native Male (50 years)..	*Genetta felina*.....	—
July, 1932..... Case 7	O.F.S...	Tromspburg.....	Trompsburg Townlands.	Sp. 2957G. 2958F	141/310.	*Cynictis penicillata*.....	—	Negri bodies fairly frequent
July, 1932..... Case 8	O.F.S...	Brandfort.....	Farm Saltpan.....	Sp. 3123F. Sp. 3124G.	141/1798	Domestic cat.....	—	Negri bodies frequent....
August, 1932.... Case 9	C.P.....	Mafeking.....	Farm The Grange.....	Sp. 3293..	144/202.	*Genetta felina*.....	—	Negri bodies frequent....
Sept., 1932..... Case 10	O.F.S...	Hoopstad.....	Farm Holfontein (Bultfontein)	Sp. 4660G. Sp. 4663F.	141/1634	*Cynictis penicillata*.....	—	Negri bodies present....
Sept., 1932..... Case 11	C.P.....	Vryburg.....	Farm Middlebult.....	Sp. 5713G. Sp. 5714F.	141/82..	Dog.....	*Genetta felina*.....	Negative for Negri bodies
Oct., 1932..... Case 12	O.F.S...	Kroonstad..	Wesselsbron (Farm).....	Sp. 6086G. Sp. 6087F.	141/2474	*Cynictis penicillata*.....		Negri bodies present.....
Dec.. 1932..... Case 13	Tvl.....	Wolmaransstad...	Farm Leeuwbos (Leeuwdoornstad)	Sp. 9725G. Sp. 9726F.	139/133.	Ox.....	—	Negri bodies freqeunt..
Dec., 1932..... Case 14	O.F.S...	Heilbron.....	Farm Vaalbank.....	—	258/283.	European Male (12 years)	*Cynictis penicillata*.....	—

Table I (*continue*)

Histo-Patho. Exam. of original material.	Biological Tests.								Remarks.
	Expt. No.	Lab. Animal.	Inocul. from.	Method.	Incub. period in days.	Duration of disease.	Symptoms.	Histo-Path. Examination.	
Negri bodies frequent....	S. 4659	R 666 R 668 R 669	Sp. 258. ,, ,,	Subdural ,, ,,	16 — —	1 — —	Appeared dull Did not react —	Positive. Negative —	— — Killed 3½ months later.
—	—		—	—	—	—	—	—	Diagnosis made by Dept. for Public Health. European developed symptoms 3 weeks after being bitten and died 6 days later from rabies.
Unsuitable.....	S. 4681	R 678 R 684 R 685	Sp. 676 ,, ,,	Subdural ,, ,,	10 12 12	6 5 4	Dumb rabies. Dumb rabies. Dumb rabies.	Positive. Positive. Positive.	Three persons were bitten and no symptoms developed treated with antirabic vaccine.
Negri bodies frequent....	S. 4717	R 702 R 703	Sp. 1765 ,,	Subdural ,,	17 17	5 3	Dumb rabies. Dumb rabies.	Positive. Positive.	— —
Negri bodies frequent....	S. 4732	R 708 R 709	Sp. 22219	Subdural ,,	12 14	1 2	Appeared dull Dumb rabies.	Positive. Positive.	— —
—	—	—	—	—	—	—	—	—	Diagnosis made by Dept. for Public Health, confirmed by laboratory examination. Native developed symptoms 3 weeks after being bitten on the upper lip and died 6 days later from rabies.
Negri bodies fairly frequent	S. 4752	R 722 R 723	Sp. 2957G. ,,	Subdural ,,	14 13	4 4	Dumb rabies. Dumb rabies.	Positive. Positive.	Age of cat 11½ years. Showed symptoms of rabies for 7½ days.
Negri bodies frequent....	S. 4754	R 726 R 727	Sp. 3124G. ,,	Subdural ,,	14 14	3 4	Dumb rabies. Dumb rabies.	Positive. Positive.	— —
Negri bodies frequent....	—	—	—	—	—	—	—	—	Biological test not carried out.
Negri bodies present....	S. 4788	R 752 R 753	Sp. 4660G. ,,	Subdural ,,	13 17	2 4	Dumb rabies. Dumb rabies.	Positive. Positive.	— —
Negative for Negri bodies	S. 4804	R 804 R 805 R 826 R 827 R 828	Sp. 5713G. ,, R804 & 805 ,, ,,	Subdural ,, ,, ,, ,,	30 13 17 18 16	2 3 6 4 11	Dumb rabies. Dumb rabies. Dumb rabies. Dumb rabies. Dumb rabies.	Negative Negative Positive. Positive. Positive.	The dog showed symptoms of rabies 14 days after having been bitten by Genetta felina.
Negri bodies present.....	S. 4820	R 812 R 813	Sp. 6086G. ,,	Subdural ,,	10 10	3 3	Dumb rabies. Dumb rabies.	Positive. Positive.	— —
Negri bodies freqeunt..	S. 4915	R 986 R 969	Sp. 9725G. ,,	Subdural ,,	10 12	5 3	Dumb rabies. Dumb rabies.	Positive. Positive.	— ...
—	—	—	—	—	—	—	—	—	Diagnosis made by Department for Public Health confirmed by laboratory examination. European developed symptoms 30 days after being bitten and died three days later from rabies.



ACKNOWLEDGEMENTS.

Thanks are due to Mr. F. Boughton for assisting in the operations and in keeping records, to Mr. I. Walker for preparing the map, and to the Department for Public Health for information supplied.

LITERATURE.

DU TOIT, P. J. (1929). Rabies in South Africa. *Proc. Pan-African Vet. Conf. ,Pretoria,* August, 1929, pp. 272–284.

NEITZ, W. O. and MARAIS, I. P. (1932). Rabies as it occurs in the Union of South Africa. 18*th Rep. Dir. Vet. Serv. & An. Ind. Union of S.A., August* 1932, *pp.* 71–98.

THOMAS, A. D. and JACKSON, C. (1930). The Value of the Midbrain in the Diagnosis of Rabies in Rabbits. *Jal. S.A. Vet. Med. Assoc.*, Vol. I, part 4, pp. 67–73.