

Bovine Anaplasmosis: The Transmission of Anaplasma Marginale to a Black-Wilde- beest. (*Conochaetes Gnu*).

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INTRODUCTION.

IN 1932 Neitz and du Toit reported on the susceptibility of the blesbuck (*Damaliscus albifrons*) and the duiker (*Sylvicapra grimmii grimmii* L.) to *Anaplasmosis*. Since then it has been found that another South African Antelope, the Black-Wildebeest is also susceptible to *Anaplasma marginale*.

EXPERIMENTAL OBSERVATIONS.

A black-wildebeest was obtained from the farm Spesbona, Geneva Station, Orange Free State, and arrived at Onderstepoort on the 25th June, 1932. It is not known to what extent ticks occur in that area but on arrival no ticks could be found on the animal. During the time that the animal was in experiment it was kept in an apparently tick free camp. In the beginning the animal was very wild but later became so tame that it would lie down and patiently wait for its temperature to be taken and for smears to be prepared.

Experiment (1). (S. 4762.)

Object.—To ascertain whether it is possible to demonstrate microscopically blood parasites belonging to the families Babesidae, Theileridae and Anaplasmidae in the black-wildebeest.

Method.—Blood-smears were examined twice weekly for a period of six months.

Result.—No blood parasites could be demonstrated during this period.

Experiment (2). (S.4953.)

Object.—To transmit *P. bigeminum*, *Th. mutans* and *A. marginale* to the black-wildebeest.

Method.—20 c.c. Blood from calf 4660 which harboured *P. bigeminum*, *Th. mutans* and a virulent strain of *A. marginale* was injected subcutaneously into black-wildebeest 5193 (Fig 1).

Result.—It was not possible to demonstrate *P. bigeminum* and *Th. mutans* microscopically but on the 38th day after subinoculation *A. marginale* appeared and could be demonstrated for a period of 17 days. Up to 2 per cent. of the erythrocytes were infected. The animal did not manifest any clinical symptoms, no temperature reaction and no anaemic changes in the blood.

Experiment (3).

Object.—(1) To ascertain whether a latent infection of *P. bigeminum*, *Th. mutans* existed in black-wildebeest.

(2) (a) To confirm the diagnosis of *A. marginale*.

(b) To note whether the virulence and morphology of *A. marginale* was changed through passage.

Method. 10 c.c. Blood from black-wildbeest was injected subcutaneously into two six-months-old calves 5214 and 5271 reared under tick free conditions.

TABLE.—*Experiments (2) and (3).*

D.O.B. No. of animal.	Date of injection.	Injected from.	Incubation period in days of <i>A. marginale</i> .	Remarks.
Black - wildebeest 5193	1/2/33	4660	38	No clinical symptoms. No anaemic changes.
Calf 5214....	25/4/33	5193	27	Typical anaplasmosis reaction with marked anaemic changes in blood.
Calf 5271....	5, 6, 33	5193	22	No clinical symptoms. Marked anaemic changes in blood.

Result.—*P. bigeminum* and *Th. mutans* could not be demonstrated in the above two calves. After an incubation period of 27 days in case of 5214 and 22 days in case of 5271 *A. marginale* appeared. Both animals showed temperature reactions and marked anaemic changes. Calf 5214 showed listlessness, inappetence and constipation and was treated satisfactorily with a purgative. Both calves were found later to be susceptible to *P. bigeminum* and *Th. mutans* when injected with known infective blood.

CONCLUSIONS.

1. It was found that the black-wildebeest is susceptible to *A. marginale* but no clinical symptoms were noticed.

2. Neither *P. bigeminum* nor *Th. mutans* could be transmitted to the black-wildebeest.

3. *A. marginale* neither lost its virulence nor its characteristic morphology by passage through the black-wildebeest.

4. The fact that the black-wildebeest is susceptible to *A. marginale* but refractive to *P. bigeminum* and *Th. mutans*, indicates that this antelope can also be utilized for separating these three parasites which usually occur together in South Africa and thus obtaining pure infection of *A. marginale*.

REFERENCES.

- NEITZ, W. O., AND DU TOIT, P. J. (1932). Bovine Anaplasmosis: A Method of obtaining Pure Strains of *Anaplasma marginale* and *Anaplasma centrale* by transmission through antelopes. 18th Rep. Div. Vet. Serv. and An. Ind. Union of South Africa, pp. 3-20.



Fig. 1.—Black Wildebeest 5193, harbouring *A. marginale*.