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DISTRIBUTION OF GLOSSINA IN THE BECHUANALAND
PROTECTORATE.*

BY

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INTRODUCTION.

Although *Glossina morsitans* or tsetse has been known to exist in Ngamiland for over seventy years, comparatively little information is available regarding its distribution, bionomics, etc.

The word "tsetse" has been used by the Bamangwato tribe of Bechuana stock from time immemorial. When a portion of the tribe (now Batawana) occupied the country around Lake Ngami about the year 1800, the term was adopted by the subject tribes. It refers not only to the genus *Glossina*, but also to the group of diseases caused by *Trypanosoma congolense*, *T. brucei*, and *T. vivax* of which glossina is the vector.

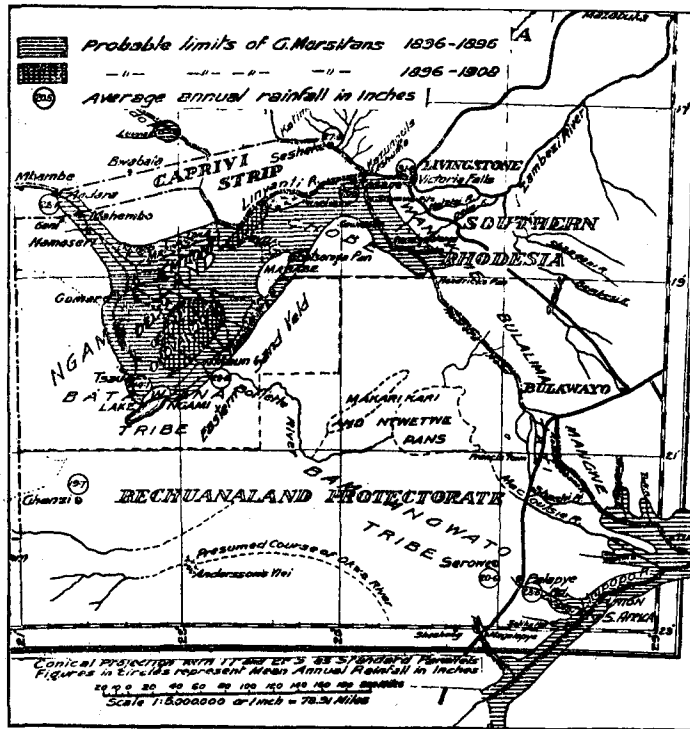
* A summary of a paper appearing in the *18th Report of the Director of Veterinary Services and Animal Industry*, Onderstepoort, Pretoria, 1932.

History up to 1896.

The distribution is traced along the *eastern* border of the Transvaal from 1836 to the 'seventies when glossina disappeared. Along the northern section of the Southern Rhodesian boundary, "fly" apparently no longer existed when rinderpest made its appearance in 1896, except possibly near Kazungula. Along the *northern* march, glossina formerly occurred along the south bank of the Chobe River west of Kazungula for over 100 miles. After rinderpest, this vast area of infection was reduced to approximately one quarter, forming more or less the Chobe fly area of today.

About the Okoyango delta itself tsetse was formerly widely distributed. It would appear that not only were the present Okovango and Chobe fly areas continuous, but that the "fly" country extended east into Southern Rhodesia.

Map A indicates the position from 1836 to 1896 and from 1896 to 1908.



MAP A.—NORTHERN KALAHARI REGION.

For about twelve years after rinderpest, glossina was very little evident. In fact, it was not until the report that "gotsello"* was prevalent in the Okovango marshes in 1908, that any particular notice was taken of "fly."

Distribution since 1908.

Whereas a little over a generation previously tsetse country was arranged semicircle-like fashion about the northern and eastern borders of the Bechuanaland Protectorate (interrupted only at the Bulalima and Mangwe districts of Southern Rhodesia), after rinderpest only two centres remained, *viz.*, the Okovango and Chobe fly areas.

Both areas unfortunately have extended, especially the Okovango area, where the position became so serious that in 1930 a Commission consisting of a medical entomologist Dr. G. D. HALE CARPENTER, and the writer were appointed to investigate matters.

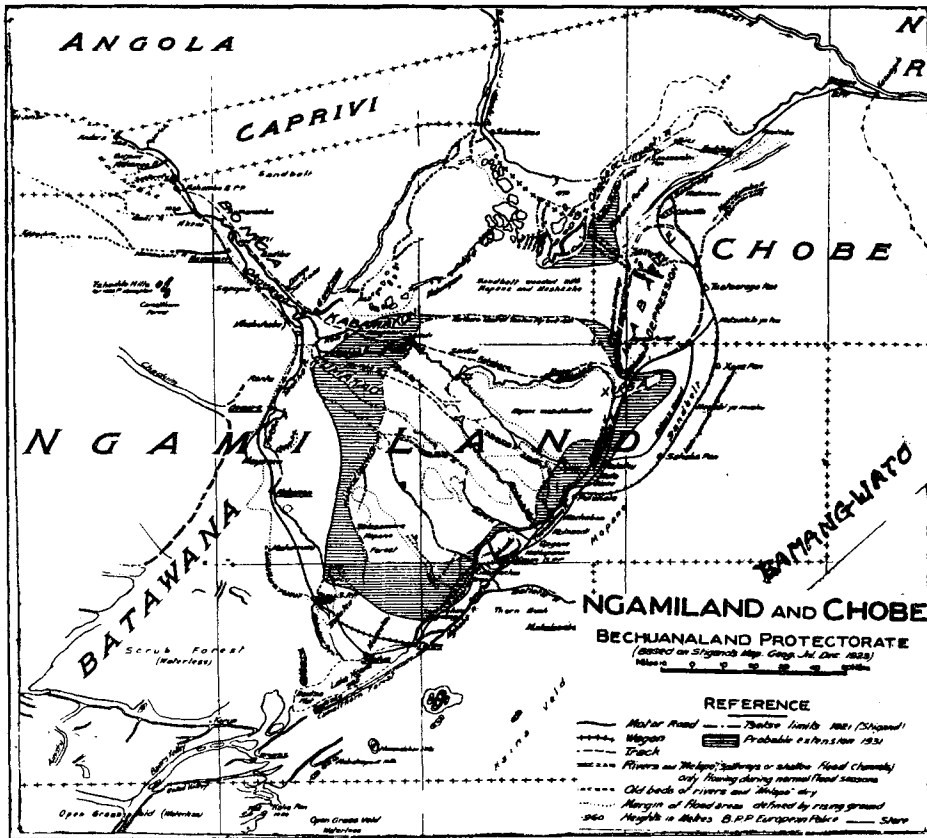
With regard to encroachment, all available records have been scanned and undoubtedly the most important is that of STIGAND (1923) who published two maps of Ngamiland. Among the details he gave was the approximate distribution of glossina in 1921. It was evident that considerable extension had taken place, particularly with regard to the Okovango fly area. Whereas up to 1909, encroachment was only in the north-eastern (Xusa) sector of the Okovango area, between 1909 and 1921 country to the north, south and east had also been invaded.

As in 1920 an export trade in cattle had been established from Maun *via* Kazungula to Northern Rhodesia, it was imperative to provide a "fly-free" route north to the Zambesi-Chobe confluence. Various schemes were tried (*e.g.*, widening of existing route, cutting of tracks further to the east, driving cattle by night, etc.), but it was not until 1928 that a safe cattle road was made. This is well to the east of the Xusa danger zone and branches off at Puluhele.

HALE CARPENTER and the writer circumambulated the Okovango fly area in December, 1930, and it was clear that much encroachment had taken place since 1921, especially in the Kabamakoni sector and along the southern border. Each of the two members of the Commission submitted a report, including recommendations, to the Resident Commissioner, Bechuanaland Protectorate.

With regard to the Chobe fly area, extension in this region was reported by DU TOIT (1926). The area was visited by the writer in November, 1930, and February, 1931. On the second occasion the object was to test the efficiency of the Harris fly trap. Owing, however, to lack of time and unfavourable weather the investigation was hampered, but in Appendix 1 of the full Report observations made in connection with the Harris fly trap are recorded. The opinion of the writer is that HARRIS "is proceeding on right lines and his trap

* See *Sleeping Sickness Bulletins* (1909), No. 9, p. 348 and No. 12, p. 492



MAP B.—APPROXIMATE LIMITS OF GLOSSINA AT THE PRESENT TIME.

(or modifications) will undoubtedly decimate glossina. A claim, however, that it will rid the country of tsetse is hardly practicable, for there will always remain the last few flies which evade capture, but which are sufficient in numbers to lead to nagana outbreaks as experience in Zululand has shown.”

REFERENCES.

DU TOIT, A. L. (1926). *Report of the Kalahari Reconnaissance of 1925.* Government Printing and Stationery Office, Pretoria.
 STIGAND, A. G. (1923). Ngamiland. *Geog. Jl.*, lxii (6), 401.