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PREVALENCE OF ENLARGED SALIVARY GLANDS IN *GLOSSINA PALPALIS*, *G. PALLICERA*, AND *G. NIGROFUSCA* (DIPTERA: GLOSSINIDAE) FROM THE VAVOUA AREA, IVORY COAST

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Abstract. Hypertrophied salivary glands are reported in tsetse for the first time from the Ivory Coast. Eleven cases were observed in 1,781 flies examined. Prevalence of this abnormality is given for *Glossina palpalis, G. pallicera,* and *G. nigrofusca* in Vavoua, a trypanosomiasis focus. No trypanosomal infection was detected by optical means in these enlarged glands.

Enlarged salivary glands were first reported for a tsetse species in *Glossina pallidipes* Austen in Zululand, South Africa (Withnall, 1934, Onderstepoort J. Vet. Sci. Anim. Ind. **2:** 7–21). Burt (1945, Ann. Trop. Med. Parasitol. **39:** 11–13), Jaenson (1978, Trans. R. Soc. Trop. Med. Hyg. **72:** 234–38), and Otieno, Kokwaro, Chimtawi & Onyango (1980, J. Invertebr. Pathol. **36:** 113–18) made similar observations in Kenya and Tanzania. Burt (1945, loc. cit.) found enlarged salivary glands in *G. morsitans* Westw., but he reported that *G. brevipalpis* Newstead and *G. austeni* Newstead glands were "all of normal size." No references to other species were found in the literature.

The present ecological research on tsetse was carried out in the mosaic savannah–forest zone of the Ivory Coast near Vavoua (7°25'N, 6°28'W), and similar hypertrophy of salivary glands was detected in *G. palpalis palpalis* (Rob.-Desv., 1830), *G. pallicera pallicera* Bigot, 1891, and *G. nigrofusca nigrofusca* Newstead, 1910, which are the most abundant species of *Glossina* in this area. Glands are enlarged 4 to 6 times and appear chalky white, making them immediately recognizable to the naked eye. At the beginning of the rains (March 1980), the prevalence of enlarged salivary glands for females and males, respectively, was 0.31% (3/967) and 0.26% (1/384) in *G. palpalis*; 1.00% (2/199) and 4.55% (4/88) in *G. pallicera*; and 0% (0/56) and 1.15% (1/87) in *G. nigrofusca.* All flies were collected with biconical traps in the coffee–cacao plantation zone of the Vavoua Gambian sleeping sickness focus (Gouteux, 1985, Ann. Parasitol. Hum. Comp. **60:** 329–47).

The relationship between hypertrophy of salivary glands and trypanosomal infection reported by Burt (loc. cit.) was not confirmed here, after examination of both fresh and stained preparations. Jaenson (1978, loc. cit.) found exceedingly heavy trypanosome infections in some of these glands. On the other hand, Otieno et al. (1980, loc. cit.) believe that the reduced lumen of these glands works against the efficient transmission of *Trypanosoma brucei.*

It was not determined if flies bearing these enlarged glands were sterile (males) or had ovariole abnormalities (females) as reported by Jaenson (1978, loc. cit.). The possibility that salivary gland hypertrophy is produced by a virus (Jaenson, 1978, loc. cit; Otieno et al., 1980, loc. cit.) makes this observation more interesting, as such a virus could be a potential biological control agent.

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