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A PRELIMINARY STUDY ON THE SALIVARY GLANDS OF *HAEMATOBIA EXIGUA* (DIPTERA: MUSCIDAE)

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Haematobia exigua de Mejire (1903), commonly referred to as the buffalo fly is a hematophagous fly found in cattle and buffaloes. It is commonly found in the intermediate and dry zones of the Sri Lanka. It is an obligatory bloodsucker, and during feeding it introduces salivary secretions containing pharmacologically active substances. Relatively little is known of either the secretions or cellular anatomy of the glands. This study investigates the morphology, histology and immunogenic proteins of the salivary gland.

The adult flies were collected from Nikawaratiya and Kekirawa farms during November and December 1998. Gross morphology of the salivary glands (n = 10) was studied using wet mount preparations of dissected specimens. Glands (n = 10) were measured using a camera lucida attachment and micrometer. Histological studies were carried out on Bouin's fluid fixed specimens that were sectioned and stained with Azan stain. Extracts of salivary gland (7.5 µg) were subjected to SDS- PAGE and western blot analysis.

The salivary apparatus of the fly consisted of four major parts, namely, a paired tubular secretory portion, salivary ducts arising from each secretory part, common salivary duct and the salivary pump. The tubular secretory portion was long and gradually broadened towards the distal end. This portion of the gland was situated on either side of the oesophagus and extended up to the 2nd segment of the abdomen (length = 1.53+0.12 mm, width at the proximal, middle and distal ends were 42.5-3.5 µm, 46.2-2.5 µm, 55.5"4 µm, respectively). The secretory portion consisted of a single layer of cuboidal cells that rested on a basement membrane. High secretory activity (yellow stain) of cells was seen in Azan stained sections. The lumen had high concentrations of mucin, which stained blue with the same stain.

Several protein bands were observed with SDS-PAGE. Western blot analysis of SDS-PAGE separated fractions revealed two bands that were immuno-reactive when probed with sera of naturally infected cattle. Of the two bands that were immuno-reactive one band cross-reacted with sera from cattle exposed to other Arthropods. The second band could be a *Haematobia* genus specific antigen. This is a first report on the morphology of salivary glands of *Haematobia exigua*.

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