

**STUDIES OF THE GENUS STOMOXYS
WITH SPECIAL REFERENCE TO STOMOXYS CALCITRANS**

IN SRI LANKA

X

**A Thesis submitted for the Degree of
MASTER OF VETERINARY SCIENCE**

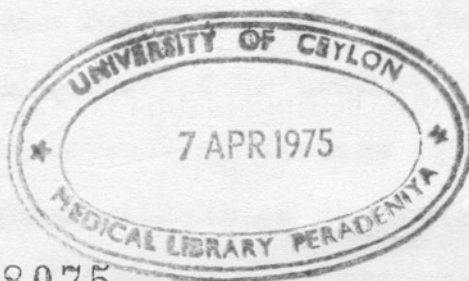
**THE EFFECTS OF CERTAIN INSECTICIDES
ON THE ADULT STOMOXYS CALCITRANS**

by

KANDIAH KRISHNANANTHASIVAM

11

PERMANENT REFERENCE
FOR USE IN THE
LIBRARY ONLY



0
308075

**Department of Paraclinical Studies,
School of Veterinary Science,
University of Sri Lanka,
Peradeniya Campus.**

August, 1974.

SUMMARY

The larval period lasted 7 to 10 days and the pupal period 7 to 9 days within the above ranges of temperature. A study of the genus Stomoxys in Sri Lanka revealed that the most common species was Stomoxys calcitrans. The incidence of this fly in various climatic zones ranged from 74 - 80%. The other species found were Stomoxys dubitalis and Stomoxys indica, the latter being the least abundant. 245 of the 3742 specimens examined could not be identified, because the characteristic features used in the identification of the species were not present.

A detailed study of the morphology of the various stages of Stomoxys calcitrans revealed that the egg shell had a honey comb-like structure with a conspicuous longitudinal furrow. The larvae had cephalic glands and an evertible pharynx in the buccal capsule. The buccal capsule had glandular cells on the floor.

The larvae also had anal pads. The adult had arisal sensoria on the third segment of the antenna, similar to those seen in Glossina species. All these features of the various stages of the fly had not been described in the literature before.

Two types of mites belonging to the genera Microtombidium (Family Trombididae) and Macrocheles (Family Macrochelidae) were seen to parasitise a small number of flies.

Studies of the life cycle of S. calcitrans under conditions in Sri Lanka revealed that the most favoured media for egg deposition were cattle and horse dung. The eggs hatched in 24 to 36 hours at a temperature range of 23 to 31°C.

The larval period lasted 7 to 16 days and the pupal period 5 to 7 days within the above ranges of temperature.

Development was slow in sterilized media and the larval stages took up to 25 days to pupate. The percentage of pupation of these larvae was 5 to 10, whereas the percentage of larvae that pupated in normal cattle or horse dung was 30 to 75. Eighty one to hundred percent of pupae when protected from direct sunlight produced flies, whereas when they were exposed to sunlight this percentage was reduced from 33 to 81.

The adult fly lived from 28 to 64 days and required a blood meal. It was most active from 11 a.m. to 4 p.m., the activity reaching a peak from 2 to 3 p.m. The fly was most abundant in the hill country and mid country cattle farms. It preferred to feed on those areas of the animals where it was least likely to be disturbed such as the front legs. It preferred to feed on European breeds of cattle rather than the Indian breeds. It was not found on animals at night when it rested on the inferior surfaces of the leaves of shrubs and grass blades.

In a preliminary study of four insecticides, consisting of three organo phosphorous preparations (Supona, Ciodrin and Bercotox) and a chlorinated hydrocarbon, toxaphene (Coopertox), the former group was found to be more effective. Of this group the most effective compound appeared to be Supona.