

## Susceptibility of Laboratory Animals to Brugia tupaia

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OBJECTIVE: These experiments were undertaken to test the susceptibility of laboratory animals to the tree shrew (Tupaia glis) filarial worm Brugia tupaia. If maintenance of the parasite in the laboratory were possible, a useful model for studies of host pathophysiology would be provided.

DESCRIPTION: Monthly trappings of tree shrews were made to provide a source of microfilaria and to determine whether or not seasonal fluctuations in prevalence occurred in nature.

Infective larvae were inoculated subcutaneously (see 1969 Annual Report) into 21 rats (10–20 larvae each), 15 hamsters (10–20 larvae each), 3 rabbits (20–36 larvae each) and 2 gibbons (40–48 larvae each). Weekly complete blood counts were made on 10 rats and 5 hamsters, with peripheral blood examinations for microfilaria made periodically on all inoculated animals.

Two autopsies were performed on infected tree shrews to investigate the pathology of the infection in the natural host.

PROGRESS: The results of the field study suggest a peak in the tree shrew population occurring between September and January, as judged from the rise in the number of animals captured during this period. No trend suggestive of seasonal variation in prevalence of infection was observed.

The rats and hamsters have been studied for 60 and 48 weeks respectively; none have developed a patent infection. The rabbits and gibbons were bled monthly for 10 and 12 months respectively and have also remained negative for microfilaria. No remarkable changes in blood counts have been observed, except for a slight and transient elevation of eosinophils in some rats shortly after inoculation (see 1969 Annual Report).

Autopsies on the two infected tree shrews revealed numerous pathologic changes of the kidneys, liver, and certain lymph nodes. However, few, if any, specific changes could be directly attributed to the parasite. In one of the specimens, serial sections of adult worms, suspected to be B. tupaia, were found associated with lymph nodes in the abdominal cavity. This is the first time adult worms have been found.

When an animal remains negative for more than 12 months, it is assumed that the infection was not successful and the animal is then sacrificed. If none of the experimental animals develop a patent infection, the project will be terminated.

SUMMARY: Attempts to infect laboratory animals with Brugia tupaia have, to date, been unsuccessful.