

HELMINTHS IN RATS FROM PANAMA CITY AND SUBURBS

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Studies have been reported on the intestinal parasites of man and other animals (cats, dogs, equines, monkeys, opossums and capybaras) in Panama. No account is available for intestinal helminths of rats. The present communication records our findings on 400 rats captured in Panama City and suburbs. These rats were obtained through the Gorgas Board of Health Laboratory, Canal Zone.

If we consider the type of habitation of our poor sections of Panama City, the prevailing crowded conditions, and the enormous rat population infesting those sections, the need of this study is quite apparent.

MATERIAL AND METHODS

Four of the rats were *Mus rattus*, the others were *M. norvegicus*; 204 were males, 196 females. For the study, the stomach and the small and large intestines were removed. The three sections were opened separately and each section placed on a dish for macroscopic observations of the adult parasites which might be present. The final identification of these macroscopic parasites was always made with the help of the dissecting microscope. The stomach wall was carefully observed with the dissecting microscope to determine the incidence of infestation by *Gongylonema neoplasticum*, found in its wall. The contents of the appendix were examined for adult parasites, such as *Syphacia obvelata* and *Trichocephalus muris*, which normally are found in it. The walls and contents of the small intestine, leading from the pylorus, and of the large intestine, starting at the appendix, were studied microscopically with the dissecting microscope to determine the incidence of parasites. Finally, two smears were made, and the scrapings of the wall and the contents of the first duodenal section and of the cecum were studied microscopically to determine the incidence of ova, larvae and microscopic parasites. The liver was always examined for *Cysticercus fasciolaris* and flukes.

RESULTS

Specific diagnosis was made by the finding of both eggs and adult specimens in all cases except *Ascaris lumbricoides* where only eggs were found. Of 400 rats examined, helminth parasites were present in 333, or 83%. Of these, 100 were found to harbor only one species; 87 were hosts for two species; 85 for three species; 46 for four species; 14 for five species; and only 1 was found to harbor seven species. The highest incidence of infestation was by *Hymenolepis diminuta* 38%, followed by *Gongylonema neoplasticum* 28%, *Protospirura muricola* 29%, *Strongyloides ratti* 16%, *Moniliformis moniliformis* 16%, *Nippostrongylus muris* 13%, *Hepaticola hepatica* 12%, *Cysticercus fasciolaris* 10%, *Trichocephalus muris* 2%, *Syphacia obvelata* 1%, *Ascaris lumbricoides* 1%. Eggs of an unidentified trematode species were observed. *G. neoplasticum*, *H. hepatica* and *P. muricola* are useful experimental species and a source of material as readily accessible as Panama City may be of interest to helminthologists.

Received for publication, January 24, 1950.

The authors are grateful to Col. Norman W. Elton, Director of the Gorgas Board of Health, Canal Zone, for furnishing the rats in the study here reported.

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