INCIDENCE OF TRYPANOSOMA INFECTION IN SMALL MAMMALS OF CHAMPAIGN COUNTY, ILLINOIS

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One might very well ask the value of a study such as is reported here. Is it of any practical value beyond the mere accumulation of information?

It is well known that the brown rat is one of man's worst pests. Every year this rodent cheats mankind out of millions of dollars worth of food. It carries lice and fleas which spread plague, typhus, and many other diseases. Any information which may help to cut down the population of rats is of great value.

A rat which is infected with a blood parasite such as *Trypanosoma lewisi* is a sick animal. Hence, it is less able to cause harm to man. Even if the parasite does not directly cause the death of the host, it must be considered pathogenic. It is robbing the host of needed energy.

Wenyon (1926) reports a method for increasing the virulence of trypanosomes by passing them rapidly through a series of rats. If, then, it were possible to infect large numbers of rats with these organisms we might have a biological method for control of rodents.

The work reported here was done in the spring and fall of 1948 between the first of April and early November. Altogether fifty-nine rodents and seven shrews were examined for blood parasites.

The animals were trapped in Sherman live traps fitted with boxes of waste to protect them from the cold. Sunflower seed and corn were used as bait. Trapping was done in an area of fifteen miles radius from Champaign, Illinois. Traps were set in ten different places throughout this area. Part of the work was done in conjunction with a population and distribution study being made by Ralph M. Wetzel in the Trelease woods and grassland, a property of the University of Illinois. The animals obtained there were marked, blood for smears obtained by clipping the tip of the tail, and the animals released. In trapping other places the animals were brought back to the laboratory for study.

The species trapped and the number of each examined are as follows:

Species	*Number examined*
Prairie vole, *Microtus ochrogaster* (Wagner)	21
Woodland deer mouse, *Peromyscus leucopus* (Fischer)	11
Prairie deer mouse, Peromyscus maniculatus (Hoy and Kennicott)	15
Common house mouse, *Mus musculus* Linnaeus	7
Common brown rat, *Ratus norvegicus* (Erxleben)	5
Short-tailed shrew, *Blarine brevicauda* (Say)	7

Identification of the above was by Mr. Wetzel.

Only two species, the brown rat and the microtus, were infected by trypanosomes. Of the 21 microtus examined, fourteen (66.6 percent) were infected. Only five rats were examined, but of these two were infected. The trypanosome found in

the rats conforms with the description of *Trypanosoma lewisi* (Kent) as given by Kudo in the 1947 edition of his Protozoology. It is therefore presumed to be *T. lewisi.*

Laveran and Pettit (1909) described a species of trypanosome found in the European field vole, *Microtus arvalis* Pallas. They proposed to call this organism *Trypanosoma microti.* Since that time several writers have recorded the occurrence of the organism in other species of microtus. Coatney (1935) found it in *Microtus pennsylvanicus.* Wood and Wood (1937) found the organism in *Microtus californicus.* Laveran and Pettit (1909) and Wenyon (1926) each give one drawing of the trypanosome. No record has been found in the literature for the occurrence of the flagellate in *Microtus ochrogaster.*

This trypanosome agrees very closely with the description of *T. microti* as given by Laveran and Pettit (1909) and by Coatney (1935) with one exception. The blepharoplast of the trypanosome found by the writer is much enlarged. In this respect there is a certain resemblance to *T. cruzi,* but when compared directly with *T. cruzi,* it is obvious that they are not the same. Two attempts were made to inoculate the organism into white laboratory rats, but without success. It is therefore concluded that the organism described here is *T. microti.*

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