

## Abstract

Avian trypanosomes are quite common parasites of birds, although knowledge of their life cycles and vectors is still insufficient. There are some insect families which serve as vectors of these parasites: blackflies (Simuliidae), hippoboscid flies (Hippoboscidae), mosquitoes (Culicidae), biting midges (Ceratopogonidae) and sandflies (Psychodidae). In this study we have been focused on mosquitoes. We have examined prevalence of avian trypanosomes at wild-caught mosquitoes from genus *Culex*. Furthermore we have studied experimental transmission of avian trypanosomes from mosquitoes to birds.

Mosquitoes were caught with CDC traps in three different localities during seasons 2017 and 2018. We caught 956 (125 pools) mosquitoes belonging to genus *Culex*, from whom 14,4 % pools were positive for avian trypanosomes. MIR (Minimal Infection Rate) fluctuated between 0 % to 8,3 % in studied months (May-August). The most frequently identified parasite was *T.culicavium*, detected in 13,6% (n=17) pools. Parasites belonging to *T. avium* group were detected only in 0,8 % (n=1), it was *T. thomasbancrofti*.

In our experimental part we have been focused on development of *T. thomasbancrofti* and *Trypanosoma* sp. in laboratory bred mosquitoes *Cx. quinquefasciatus* and *Cx. molestus* and on their experimental transmission to laboratory songbirds (Passeriformes). These trypanosomes were able to develop heavy infections in both species of mosquitoes. After peroral inoculation of mosquitoes guts we managed to infect birds with *T. thomasbancrofti*.

In this thesis we have shown that prevalence of avian trypanosomes among mosquitoes belonging to genus *Culex* is quite low. Furthermore, we succeeded in experimental life cycle of *T. thomasbancrofti*, which was transmitted from experimentally infected mosquitoes to birds. The vector role of mosquitoes was proved after the infection was able to develop even in the guts of mosquitoes fed on infected birds.

**Key words:** *Trypanosoma*, prevalence, bird, mosquitoes, infection, life cycle