

## Thesis evaluation

It is my honor to provide an evaluation of doctoral thesis entitled “Trypanosomes transmitted by mosquitoes: Occurrence in hosts, transmission, and specificity” by Magdaléna Kulich Fialová, supervised by Milena Svobodová and co-supervised by Jana Brzoňová. The thesis topic revolves around the trypanosomes, their ecology and hosts. There is no doubt, that trypanosomes of free-ranging avian and mammalian hosts represent a neglected group among the kinetoplastids, particularly in the Central Europe.

The thesis is submitted in a short form, being based on two published research articles and one MS in preparation. Publications themselves are attached a part of the thesis, preceded by aims and a short literature review and followed by a summary and conclusions. Magdaléna is a first author in two out of three papers. The quality of already published results is undoubtedly proven by review process of respected journals. This fact makes the work of reviewer easy and difficult at the same time.

The introduction itself is a short concise text providing a short review of diversity and biology of avian trypanosomes, detailing knowledge on mosquitoes as vectors, which gives the reader unnecessary insight into the topic. This part is followed by introduction of studied species. Second part similarly deals with trypanosomes of the *T. theileri* group.

The main objectives of the thesis were defined as: (i) to elucidate trypanosomes life cycle including vectorial capacity of putative vectors, (ii) to elucidate occurrence of trypanosomes in wild vector and host populations and (iii) to elucidate host specificity of trypanosomes in both vertebrate and invertebrate host. Included publications and MS sufficiently prove that these aims were reached. *T. thomasbancrofti* and *T. tertium* are apparently able to develop infections in the hindgut mosquitoes with a high prevalence, reaching high proportion of heavy infections. Both species were also found in collected mosquitoes. Similarly, also *T. theileri* was found in range of mosquitoes and keds; role of these hosts in the parasite transmission was proven by successful infection of *Aedes aegypti* and *Phlebotomus perniciosus*. Research on *T. theileri* is complemented by phylogenetic analysis of the 18S rRNA gene, proving existence of a lineage transmitted by nematode. Last but not least, third publication, a MS prepared for Parasitology, describes a new species of avian trypanosome, *T. tertium* whose probable vector is *C. pipiens*.

In general, the thesis is written in decent English. As I am not native English speaker, I cannot truly appreciate the level of language; however, I noticed only few minor issues throughout the text. As a reviewer, I should also make some criticism. Luckily enough, provided list of references gives me such an opportunity as the journal names are listed in truly inconsistent format, including full and abbreviated forms and several formatting errors. Despite this little criticism, it is my pleasure to conclude, that thesis of Magdaléna Kulich Fialová merits the acceptance as a doctoral dissertation as it fully meets the requirements for such a study. I can congratulate both the author and her supervisors for very interesting outcomes. However, to satisfy my curiosity and to prove, that I have really read the text, below I have few questions that might be answered during the defense.

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David Modrý

## Questions:

? As veterinary parasitologist, I wonder if there is any impact of studied trypanosomes on their vertebrate hosts. The study itself deals with vectors, but this is an intriguing topic that deserves few words.

? comparing the diversity of trypanosomes with diversity of other parasitic protists, it seems to me being much lower. How many species of trypanosomes are known from Czech birds? What is the prevailing species concept and is it possible, that true diversity is highly underestimated?