

Elucidating the biology of opossum parasite: *Biomphalaria glabrata* and *Biomphalaria straminea* (Mollusca: Planorbidae) as intermediate hosts of *Rhopalias* sp. (Trematoda: Echinostomatidae) in Brazil

Hudson A. Pinto¹, Alan L. Melo, Vasyly V. Tkach²

¹Departamento de Parasitologia, Instituto de Ciências Biológicas, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.

²Department of Biology, University of North Dakota, Grand Forks, ND, USA.

The species of the genus *Rhopalias* are intestinal flukes mainly parasitizing opossums in the New World. In Brazil, these parasites were known since the description of the type species of the genus, *Rhopalias coronatus* (Rudolphi, 1819), followed by descriptions of additional five species, all reported from didelphid opossums. Despite this long history, the life cycle and mollusk intermediate hosts of these trematodes remained unknown. In this study, echinostome larvae lacking collar spines were found in *Biomphalaria glabrata* and *B. straminea* from waterbodies from the state of Minas Gerais, Brazil. The cercariae were subjected to morphological and molecular studies (amplification and sequencing of 28S rDNA). Morphologically, the larvae resembled *Cercaria macrogranulosa* Ruiz, 1952, a species described from *B. glabrata* from the same region of Brazil. The distinct morphological feature of these larvae is the presence of 2 or 3 large circular corpuscles in the main collecting canals of the excretory system. Partial sequences of the nuclear gene 28S rDNA (\approx 1200bp) and phylogenetic analyses revealed that these Brazilian larval trematodes are congeneric with a North American isolate of *Rhopalias macracanthus* (molecular divergence 0.9%), but the absence of reference sequences from adult specimens of South American species of *Rhopalias* preclude the specific identification of our cercariae from Brazilian reported here as *Rhopalias* sp. The complete life cycle of these parasites is speculated based on literature data, and likely involves amphibians as second intermediate hosts. This is the first report of a species of mollusk, i.e., planorbids of the genus *Biomphalaria*, as first intermediate hosts of a species of the genus *Rhopalias*.

Key-words: cercaria, *Rhopalias*, molecular, Brazil, life cycle.