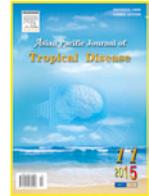




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## Asian Pacific Journal of Tropical Disease

journal homepage: [www.elsevier.com/locate/apjtd](http://www.elsevier.com/locate/apjtd)



Letter to editor

doi: 10.1016/S2222-1808(15)60958-6

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### Significance of correct identification of larval trematodes in molluscs

Hudson Alves Pinto\*, Alan Lane de Melo

Department of Parasitology, Institute of Biological Sciences, Federal University of Minas Gerais, Brazil

Dear editor,

The study of the involvement of molluscs in transmission of trematodes is a matter of great importance, given the existence of several species with medical and veterinary importance causing diseases such as schistosomiasis and fascioliasis in different parts of the world, especially in the tropics. The correct identification of both molluscan intermediate hosts and larval trematodes is important to implement control measures against parasitic diseases transmitted by molluscs, since the high diversity of these invertebrates is sometimes unknown by non-specialists. Thus, cases of misidentification are not uncommon and can result in serious scientific, social and economic impacts.

In the recent study published in this journal by Luka and Mbaya[1], molluscs harboring larval trematodes [identified as *Schistosoma haematobium* (*S. haematobium*) and *Fasciola* spp.] were reported in localities from Nigeria. However, some comments are here performed concerning to taxonomic identification of these molluscs and parasites. Regarding molluscs, the specimens shown in Figure 2 as *Bulinus globosus* correspond to a caenogastropod belonging to family Ampullariidae (possibly a species belonging to the genera *Lanistes* or *Pila*). A misidentification probably happened also with the specimens identified as *Lymnaea natalensis* represented in Figure 3, which are stylommatophoran land molluscs from the family Achatinidae (possibly a species of the genus *Archachatina* or *Achatina*).

About the larval parasites, two different species of bifurcated distome cercariae were identified as *S. haematobium*. One of them (Figure 4), probably used for morphological and morphometric studies, differs from *S. haematobium* mainly due to the measures and morphological traits. The cercariae of this human schistosome are considerably smaller and have no eyespots[2]. They are larvae of a species of avian schistosome or spirorchiid. Yet, the bifurcated larva shown in Figure 5 looks like a *Schistosoma* cercaria but its identification as *S. haematobium* is also problematic, given the occurrence of a close related important species, *Schistosoma bovis*, which is also transmitted by *Bulinus* spp. in West Africa. Moreover, a mistaken identification occurred with the single-tailed cercaria,

since the larvae of *Fasciola hepatica* or *Fasciola gigantica* are larger than that described by the authors[3,4]. The larva shown in Figure 6 could belong to the gymnocephalous (other than *Fasciola*) or echinostome cercarian groups.

As the morphological differences can be subtle, a detailed study is needed for the correct identification of molluscs and their larval trematodes. The specialized literature concerning the morphological and molecular study of these invertebrates, including taxonomic keys for identification and the diversity previously known for several African countries, is extensive and should be consulted by the researchers interested in the matter. Moreover, whenever possible, the help of a specialist should be requested in order to prevent taxonomic misidentification. In this sense, the in-depth and careful morphological studies of molluscs and larval trematodes are here encouraged during epidemiological surveys aiming to the correct identification of species and the discovery of new areas of transmission of diseases transmitted by molluscs. This for sure can contribute to the actual control of parasitic diseases in a global scenario.

#### Conflict of interest statement

We declare that we have no conflict of interest.

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\*Corresponding author: Hudson Alves Pinto, PhD, postdoctoral researcher, Laboratório de Taxonomia e Biologia de Invertebrados, Department of Parasitology, Institute of Biological Sciences, Federal University of Minas Gerais, Box 486, 31270-901, Belo Horizonte, Minas Gerais, Brazil.  
Tel: +55 031 3409 2978  
E-mail: [hudsonalves13@ig.com.br](mailto:hudsonalves13@ig.com.br)

Article history:  
Received 26 Jun 2015  
Received in revised form 1 Jul 2015  
Accepted 20 Aug 2015  
Available online 19 Nov 2015