

RESEARCH NOTE

A Survey of Freshwater Gastropods in the Microrregião Serrana of the State of Rio de Janeiro, Brazil

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In 1984 we received samples of freshwater gastropods from many localities of the State of Rio de Janeiro, sent by Fundação Nacional de Saúde for identification. In the past three years, aiming to elaborate a chart of planorbids of the State of Rio de Janeiro additional collecting was done by the authors in the area corresponding to the Microrregião Serrana of the state: Petrópolis, Teresópolis and São José do Vale do Rio Preto. The survey was extended to the neighbour towns, Guapimirim and Magé, in order to improve the knowledge of that poorly studied area.

The molluscs were collected from different suitable snail habitats: streams, rivers and marsh areas in the Atlantic forest as well as drainage and sewage ditches, wells, flood areas, ponds and irrigation canals.

Live snails were kept at the laboratory for a month in aquaria containing dechlorinated tap water and, at the bottom, a thin layer of a 2:1 mixture of screened reddish soil and ground oyster shells as a source of mineral nutrients. Snails were fed on fresh lettuce leaves. In the meantime specimens of *Biomphalaria* were exposed to artificial

light in intervals of five days to determine possible infection with trematode larvae, mainly *Schistosoma mansoni* cercariae. The ten larger snails of each sample were preserved in Railliet-Henry's fluid after relaxation in a 0.05% nembutal solution and two of them were dissected under stereomicroscope for identification. Technical details were described elsewhere (SC Thiengo 1995 Técnicas Malacológicas, p. 255-265. In FS Barbosa, *Tópicos em Malacologia Médica*, Fiocruz, Rio de Janeiro). Samples of taxonomic importance were deposited at the Malacological Collection of Instituto Oswaldo Cruz/Fiocruz.

In all, 7 species of planorbids and 10 species of other freshwater gastropods were found in 15 localities at the studied area (Table): *Antillorbis nordestensis* (Lucena, 1954); *Biomphalaria peregrina* (Orbigny, 1835); *Biomphalaria straminea* (Dunker, 1848); *Biomphalaria tenagophila* (Orbigny, 1835); *Drepanotrema anatinum* (Orbigny, 1835); *Drepanotrema cimex* (Moricand, 1839); *Drepanotrema lucidum* (Pfeiffer, 1839); *Ferrissia* sp.; *Gundlachia moricandi* (Orbigny, 1837); *Heleobia davisi* Silva & Thomé, 1985; *Lymnaea columella* (Say, 1817); *Lymnaea* sp.; *Melanoides tuberculata* (Müller, 1774); *Physa cubensis* Pfeiffer, 1839; *Physa marmorata* Guilding, 1828; *Pomacea canaliculata* (Lamarck, 1801); *Pomacea sordida* (Swainson, 1823).

Among the planorbid species *B. tenagophila* was the most frequent, occurring in 13 out of the 15 localities surveyed. According to WL Paraense (1986 Distribuição dos caramujos no Brasil, p. 117-128. In FA Reis, I Faria & N Katz (eds), *Modernos Conhecimentos sobre Esquistossomose Mansônica*, Biblioteca da Academia Mineira de Medicina, Belo Horizonte) it ranges from Caravelas (17° 45' S, 39° 15' W), Bahia, to Chuí (33° 41' S, 53° 27' W), Rio Grande do Sul, following the littoral border, extending westwards at the States of São Paulo and Rio Grande do Sul.

B. straminea is the most widely spread of the three natural vectors of *S. mansoni* in the Western Hemisphere, since it ranges from Central America to South America east of the Andes, between 10° N at Costa Rica and 35° S at Argentina (WL Paraense 1983 *Mem Inst Oswaldo Cruz* 78: 343-361). Concerning Rio de Janeiro, the data of the present paper extend its distribution (Table), since the previous records of this species are in the municipalities of Paracambi and Duque de Caxias (Paraense 1986 *loc. cit.*).

The municipalities of Guapimirim, Magé and Petrópolis presented two natural vectors of schistosomiasis, *B. tenagophila* and *B. straminea*. *Biomphalaria peregrina*, which may be considered a potential vector (WL Paraense & LR Corrêa 1973 *Rev Inst Med Trop São Paulo* 15: 127-130) was

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also found in the latter municipality as well as in Teresópolis.

Although many different kinds of cercariae had been observed, no specimens were found infected with *S. mansoni*.

Up to now *A. nordestensis* had not been found in Rio de Janeiro. Its distribution comprises the states of Alagoas, Distrito Federal, Goiás, Maranhão, Minas Gerais, Pará, Paraná, Pernambuco, Rio Grande do Sul, Santa Catarina and São Paulo (WL Paraense 1975 *Arq Mus Nac* 55: 105-128).

The Asiatic thiarid *M. tuberculata* was introduced in the municipality of Guapimirim about thirty years ago by local fish raisers and became the dominant species in the tanks. Recently, albino

specimens of *Helisoma duryi* (Wetherby, 1879), which do not occur naturally in Brazil, were found in the same municipality in aquaria of a fish raiser thus confirming that in spite of the ecological hazards from introduction of exotic species this situation is still occurring without any control.

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TABLE
List of species and the localities where they were found in the surveyed area

Snail identification	Guapimirim		Magé				Petrópolis					São José do Vale do Rio Preto		Teresópolis	
	Guapimirim	Magé	Santo Aleixo	Suruí	Guia de Pacobaíba	Inhomirim	Cascatinha	Itaipava	Pedro do Rio	Petrópolis	Posse	SJ do Vale do Rio Preto	Teresópolis	Vale de Bonsucesso	Vale do Paquequer
Ampullariidae															
<i>Pomacea canaliculata</i>	+	+													
<i>P. sordida</i>	+	+	+	+	+	+									
Hydrobiidae															
<i>Heleobia davisi</i>	+			+	+										
Thiaridae															
<i>Melanoides tuberculata</i>	+	+	+	+	+	+									
Planorbidae															
<i>Biomphalaria tenagophila</i>	+	+	+		+	+	+	+	+	+	+	+	+	+	+
<i>B. straminea</i>	+	+	+				+								
<i>B. peregrina</i>							+							+	
<i>Drepanotrema anatinum</i>	+	+	+	+											
<i>D. cimex</i>	+														
<i>D. lucidum</i>	+														
<i>Antillorbis nordestensis</i>	+					+									
Physidae															
<i>Physa cubensis</i>	+		+		+	+	+		+		+	+	+	+	+
<i>P. marmorata</i>	+	+	+		+	+					+				
Lymnaeidae															
<i>L. columella</i>	+	+	+		+	+					+	+	+	+	
<i>Lymnaea</i> sp. ^a												+			
Ancyliidae															
<i>Ferrissia</i> sp.	+														
<i>Gundlachia moricandi</i>		+		+	+		+								

a: only shells of young specimens available.