First Report of Biomphalaria glabrata in the State of Rio Grande do Sul, Brazil

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Among the ten species of molluscs of the genus Biomphalaria existing in Brazil, only three are found naturally infected with Schistosoma mansoni: B. glabrata, B. straminea and B. tenagophila. B. glabrata is the most important intermediate host, because of its distribution and efficiency in the transmission of schistosomiasis. B. straminea is the most successful species because it is the one which is best adapted to climatic variations. It is found in almost all of the hydrographic basins replacing B. glabrata in importance as the intermediate host of S. mansoni in the northeast of the country (WL Paraense 1975 (Arq Mus Nac RJ 55: 105-128). The molluscs had a diameter ranging from 0.6 to 3.5 cm. The 29 surviving specimens were examined and none of them were shedding cercariae. The snails were identified as B. glabrata, B. straminea and B. tenagophila. B. glabrata is the most important intermediate host of S. mansoni because of its distribution and efficiency in the transmission of schistosomiasis. It is found in almost all of the hydrographic basins replacing B. glabrata in importance as the intermediate host of S. mansoni in the northeast of the country (WL Paraense 1975 (Arq Mus Nac RJ 55: 105-128).

An epidemiological survey carried out by Fundação Nacional da Saúde (FNS), Secretaria Estadual de Saúde and the authors revealed that this disease has already been reported. The epidemiological survey also revealed the existence of a small pond (approximately 400 m of perimeter) close to the patient’s residence, near the road (BR 116), and the industrial area in the neighborhood of Osório Village, municipalities of Esteio (Fig.). This pond is often visited by local inhabitants to collect molluscs which are used as bait for fishing.

A total of 81 molluscs specimens collected by FNS were sent to the Laboratório de Helminthoses Intestinais of the Centro de Pesquisas Renê Rachou-Fiocruz where they were measured, examined by exposure to artificial light for cercariae and identified morphologically according to WL Paraense 1975 (Arq Mus Nac RJ 55: 105-128). The molluscs had a diameter ranging from 0.6 to 3.5 cm. The 29 surviving specimens were examined and none of them were shedding cercariae. The snails were identified as B. glabrata, B. occidentalis and B. t. guaibensis. B. glabrata was also found in other water collections in the region in a malacological survey carried out by the authors in April 1997. It is worth noting that this parasitosis is also described in the northeast of the State of Bahia, State of Pernambuco, State of Paraíba, State of Minas Gerais, State of Espírito Santo, State of São Paulo, State of Rio de Janeiro, State of Rio Grande do Sul, State of Santa Catarina, and the most southeaster distribution of this parasitosis in Brazil (OJ Bernardini & MM Machado 1981 Arq Cut Med 10: 213, JA Ferreira Neto & JR Cavalcanti 1983 Summary of the XIX Congr Soc Bras Med Trop, Rio de Janeiro, RI, p. 98-99, PT São Tiago 1994 Rev Soc Med Trop 27: 192). Although an autochthonous case of schistosomiasis from the municipality of São Valentim in RS has already been described (ILZ Louzada 1973 Rev Bras Med 30: 533-535), this data deserves a more detailed study.


In January 1997, a case of schistosomiasis mansoni from the municipality of Esteio located in the metropolitan region of Porto Alegre, RS, was diagnosed at the Hospital Getulio Vargas (Sapucaia do Sul, RS). A quantitative stool examination (Kato-Katz method), revealed 696 eggs per gram of faeces. The patient was treated with oxamniquine.


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mentioning that at least two of these hydric collections are tributaries of the Sinos river, so the finding of B. glabrata downstream will not be a surprise.

Previously, southeast record of B. glabrata was at the city of Curitiba (latitude 25°25’S) in the State of Paraná (WL Paraense 1986 loc. cit.). As a result of its discovery in Esteio, the southern limit of this species is extended to latitude 29°51’S. This observation is of importance because it has been found in water collections located in an industrial district which has been attracting workers, including some from areas of schistosomiasis transmission.

Since the three most important Biomphalaria species occur in RS and with risk of introduction of schistosomiasis in the state, a meeting was therefore organized among technicians of FNS, Secretaria Estadual de Saúde and Secretaria Municipal de Saúde of the municipalities of Esteio and Porto Alegre. At this meeting a series of sanitary vigilance measures for schistosomiasis were proposed: (1) Coproparasitological survey (Kato-Katz method) in human groupings such as army, industries and schools (7 to 14 years old). Special attention must be paid to migrants; (2) Treatment of the patients with S. mansoni infection and their follow-up to confirm the cure; (3) Malacological survey in the metropolitan region of Porto Alegre; (4) Sanitary engineering measures; (5) Compulsory notification of schistosomiasis cases; (6) Personnel training.

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