Short Communication

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First report of schistosomiasis on Serrambi beach, Ipojuca, State of Pernambuco

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ABSTRACT

Introduction: The expansion of schistosomiasis to previously unaffected areas is being monitored by identifying new cases and georeferencing outbreaks of vector snails. **Methods**: In 2014, the Laboratório de Esquistossomose began an epidemiological survey in Serrambi and registered 2,574 people living there. **Results**: Of these subjects, 1,414 (54.9%) underwent feces examination and 63 (4.5%) were diagnosed with *Schistosoma mansoni* infection. At this locality, seven breeding sites each were identified for *Biomphalaria straminea* and *Biomphalaria glabrata*. At two sites, *B. glabrata* were shedding cercariae. **Conclusions**: Implementing preventive measures is necessary to avoid the establishment of schistosomiasis in yet another tourist locality, Pernambuco.

Keywords: Schistosomiasis. Epidemiological survey. Pernambuco.

The first report of coastal transmission of schistosomiasis in the State of Pernambuco dates back to 1990. During that time, four medical students presented acute clinical form of the disease after accidental exposure via rainwater puddles on the streets of Forte Orange beach in Itamaracá Island, which had numerous *Biomphalaria glabrata* snails infected with the parasite *Schistosoma mansoni*[1].

Over the subsequent years, other human cases and foci of intermediate snail hosts were recorded in various coastal tourist localities in this state: Porto de Galinhas, in the municipality of Ipojuca[2] [3] [4] [5]; Carne de Vaca and Ponta de Pedras in Goiana[3] [6] [7]; Piedade, in Jaboatão dos Guararapes[8]; Janga and Pau Amarelo, in Paulista; and Mangue Seco, in Igarassu[3].

The expansion of schistosomiasis to these previously unaffected areas is being monitored by identifying and treating new patients and by georeferencing and epidemiologically characterizing the locations of the vector focus. The *Laboratório e Serviço de Referência em Esquistossomose* (LASERE) of the Centro de Pesquisas Aggeu Magalhães (CPqAM), of the Fundação Oswaldo Cruz (FIOCRUZ), has been conducting systematic surveys along the coast of Pernambuco. These surveys have detected snails infected with *S. mansoni* at rates of up to 31%, along with human communities exhibiting severe infection with this parasite[3] [5] [8] [9] [10] [11] [12]. In an expedition in September 2013[13], the first report of the presence of a breeding site for *B. glabrata* was registered in Serrambi, in the coastal tourist locality of Ipojuca; during this time, 49 specimens were collected. All these specimens were negative for *S. mansoni*. Attention was drawn to this finding because of the close proximity of Serrambi to Porto de Galinhas, where 425 humans had been diagnosed with schistosomiasis in 2010.

From October 2013 until the present time, the laboratory has been collecting vector snails on a monthly basis from Serrambi. In September 2014, *B. glabrata* snails infected with *S. mansoni* were detected for the first time in Serrambi. In 2014, LASERE began a parasitological survey and registered 2,574 people living there. Of these, 1,414 (54.9%) underwent feces examination, and 63 (4.5%) were diagnosed with *S. mansoni* infection, with parasite loads between 12 and 2,124 eggs per gram of feces. Until that time, seven breeding sites each for *B. straminea* and *B. glabrata* were identified in Serrambi. In two of the breeding sites, the snails were shedding cercariae of *S. mansoni* since September 2014, and this finding indicated the start and spread of schistosomiasis transmission in Serrambi **(Figure 1)**.

The results from the 2014 parasitological survey showed that men between the ages of 20 and 39 years were the most frequently parasitized both by *S. mansoni* and other helminthiases **(Table 1)**.

The infected humans could not be considered to be autochthonous because they had been exposed to contaminated waters from endemic areas. Nonetheless, the presence of parasitized *B. glabrata* snails that were shedding cercariae of

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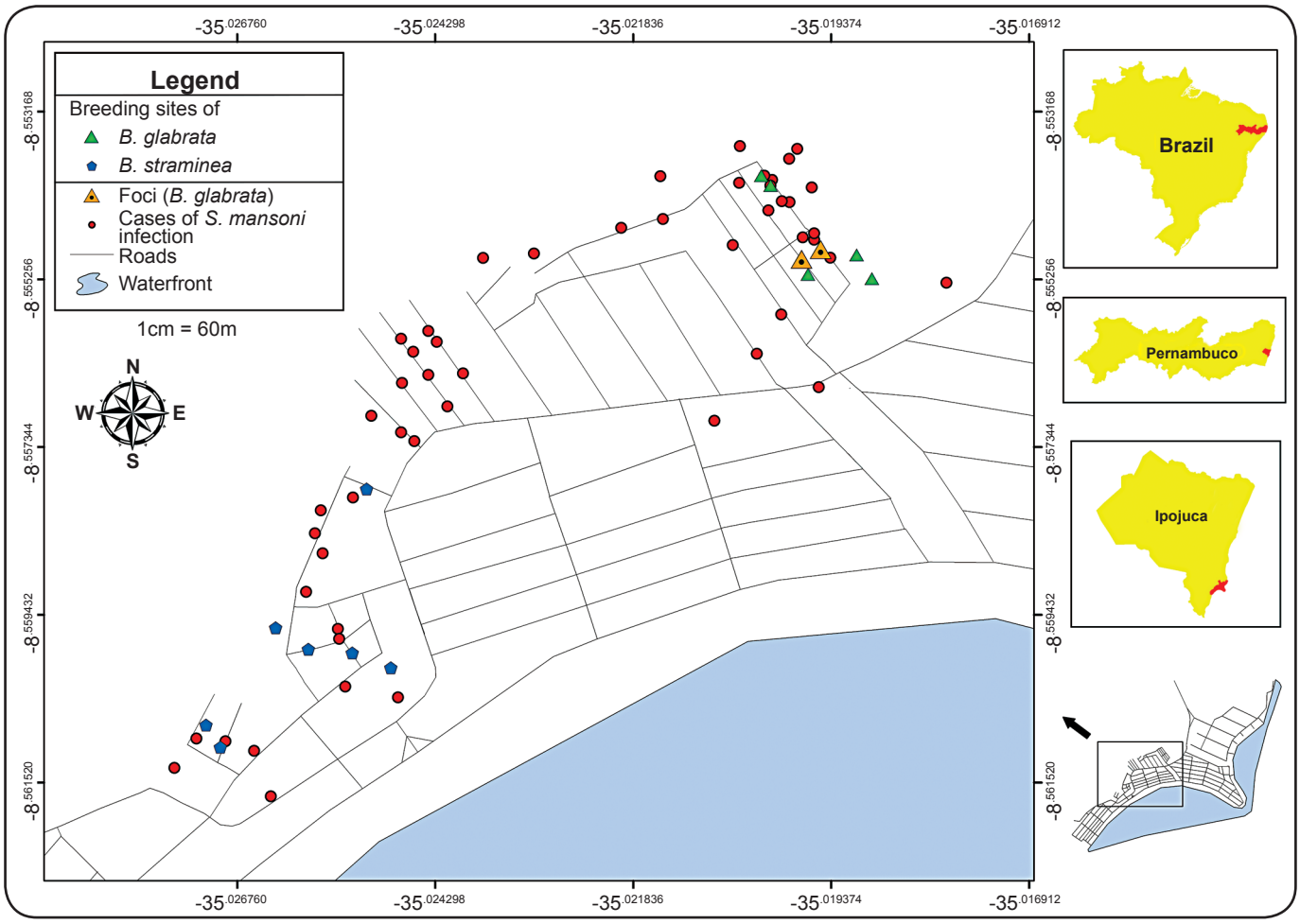

FIGURE 1 - Spatial distribution of the patients diagnosed with schistosomiasis, breeding sites for *B. glabrata* and *B. straminea*, and foci of *B. glabrata* with snails positive for *S. mansoni* in Serrambi, Ipojuca, State of Pernambuco. *B.*: *Biomphalaria; S.*: *Schistosoma.*

TABLE 1 - Individuals infected with helminths according to sex and age group in Serrambi, Ipojuca, State of Pernambuco.

Variable	*Schistosoma mansoni* (n = 63)		*Ascaris lumbricoides* (n = 38)		*Trichuris trichiura* (n = 68)		Hookworms (n = 25)	
	n	%	n	%	n	%	n	%
Sex								
male	42	66.7	20	52.6	34	50.0	17	68.0
female	21	33.3	18	47.4	34	50.0	8	32.0
Age group (years)								
0–9	1	1.6	16	42.1	18	26.4	1	4.0
10–19	8	12.7	10	26.3	28	41.2	6	24.0
20–39	31	49.2	2	5.3	11	16.2	8	32.0
40–59	16	25.4	9	23.7	8	11.8	8	32.0
>60	5	7.9	1	2.6	3	4.4	2	8.0
not stated	2	3.2	-	-	-	-	-	-

Schistosoma mansoni is an epidemiological indicator suggesting the establishment of disease transmission in Serrambi.

In Serrambi, malacological surveys, involving monthly measurements of environmental and biological data such as rainfall rates, snail population densities, and snail infectivity rates, are ongoing in order to compile seasonal maps for identifying the periods of greater risk of schistosomiasis transmission in this locality.

The diagnosed human patients were properly treated, and the maps containing the malacological information were submitted to the local health department so that preventive measures could be implemented to avoid the establishment of schistosomiasis transmission in another tourist locality in Pernambuco, which would increased the risk of infection for vacationers and tourists who visit this region to admire its natural beauty.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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