

ECOLOGY OF SANDFLIES IN A RECENT FOCUS OF CUTANEOUS  
LEISHMANIASIS IN PARATY, LITTORAL OF RIO DE JANEIRO STATE (DIPTERA,  
PSYCHODIDAE, PHLEBOTOMINAE)

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Many authors have observed the occurrence of alterations in the epidemiology of cutaneous leishmaniasis, suspecting domiciliar and peridomiciliar transmission. These alterations were varied and need to be re-examined. In Rio de Janeiro State A. Lutz & A. Neiva (1912, *Mem. Inst. Oswaldo Cruz*, 4: 84-95) reported presence of *Lutzomyia intermedia* inside the houses. H. Aragão (1922, *Bras. Med.*, 36: 129-130); N. A. Araújo Filho (1978, *M. Sc. Thesis*, Universidade Federal do Rio de Janeiro, 144 p.); M. A. Souza et al. (1981, *Mem. Inst. Oswaldo Cruz*, 76: 161-168); L. C. R. Lima et al. (1981, *Rev. Bras. Malariol. D. Trop.*, 33: 64-74 and E. F. Rangel et al. (1986, *Mem. Inst. Oswaldo Cruz*, 81: 347-349), also reported the distribution of the species and suggested the domiciliar and peridomiciliar transmission of the disease.

From November 1990 to October 1991 a study on the ecology of sandflies was performed in Paraty, Rio de Janeiro State, where many cases of cutaneous leishmaniasis were found. Three collecting sites were chosen to investigate the site and sandfly species involved in the transmission of the disease to man and animals: domestic (human bait, inside walls and light traps), peridomestic (taken off walls simultaneously with other baits: man, dog and chicken, and light trap) and forest (human bait and light trap). The captures were performed from 8:00 p.m. to mid-night in a house where two cases of the disease had been found.

A total of 8,794 flies were captured which belonged to 15 species of genus *Lutzomyia* (see Table). The most common species was *L. intermedia* (59%), followed by *L. migonei* (23%), *L. fischeri* (16%); the other 12 species

summed 2%. Of the captures 49% were from walls; 29% in light traps; 12% off dogs and chickens, and 10% off human bait. *L. fischeri* was the major anthropophilic species (57%), followed by *L. intermedia* (33%), *L. migonei* (7%) and the other five species (3%). Inside the house *L. intermedia* was dominant in respect to *L. fischeri* and *L. migonei*. *L. fischeri* was taken off man more than the other two. In the peridomestic site, in all kinds of capture, *L. intermedia* prevailed and, together with *L. fischeri* was attracted to man more than the other species mean while *L. migonei* was attracted more to dogs. *L. intermedia* was not found in the forest; *L. migonei* was present but in reduced numbers; *L. fischeri* was the dominant species taken off man; *L. geniculata*, *L. arthuri* and *L. ayrozai* were the least common species.

According to the present results, *L. intermedia* was considered as potentially being the main transmissor of the disease because of its prevalence, anthropophily and the fact that it is known to be a vector of *Leishmania (V.) braziliensis* in other areas of the Southeastern region of Brazil. Due to its cinophily, *L. migonei* could participate in the transmission chain of canine leishmaniasis, and *L. fischeri*, due to its anthropophily, could also be involved. It is important to emphasize that, although this species may be adapted to domestic habitat, its occurrence in the forest is significant as it could transmit the disease to man and wild animal.

Although Paraty city is surrounded by the Atlantic forest, the transmission of the disease may be happening, as in other areas, at the domiciliar-peridomiciliar level, especially because of the behaviour of *L. intermedia* and also as there is a significant incidence in individuals who do not regularly go into the forest, including very small children.

TABLE

Total of phlebotomines captured in domestic, peridomestic and forest habitats by different methods in Paraty, Rio de Janeiro state, from November 1990 to October 1991

Species	Domestic			Peridomestic				Forest		Total	
	Human bite	Wall	Light trap	Human bite	Dog	Chicken	Wall	Light trap	Human bite		Light trap
<i>L. intermedia</i>	81	634	97	197	31	363	2,745	1,008	—	—	5,156
<i>L. migonei</i>	18	89	65	37	309	191	543	762	3	11	2,028
<i>L. fischeri</i>	116	96	32	106	5	173	208	183	267	222	1,408
<i>L. pascalei</i>	—	—	—	—	—	—	—	—	—	79	79
<i>L. geniculata</i>	—	—	—	3	—	—	—	—	8	27	38
<i>L. ayrozai</i>	—	—	—	—	—	—	—	—	4	21	25
<i>L. arthuri</i>	—	—	—	1	—	—	—	—	5	19	25
<i>L. schreiberi</i>	—	—	—	—	—	—	—	—	—	13	13
Others <sup>a</sup>	—	—	—	—	—	—	—	—	2	20	22
<b>Total</b>	<b>215</b>	<b>819</b>	<b>194</b>	<b>344</b>	<b>345</b>	<b>727</b>	<b>3,496</b>	<b>1,953</b>	<b>289</b>	<b>412</b>	<b>8,794</b>
Total spent (hr)	20	20	144	26	8	8	20	144	18	144	552

a: *L. firmatoi*, *L. monticola*, *L. shannoni*, *L. whitmani*, *L. edwardsi*, *L. pessoai*, *L. quinquefer*.

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