

SHORT COMMUNICATION

First Report of *Lutzomyia (Nyssomyia) umbratilis* Ward & Frahia, 1977 outside of Amazonian Region, in Recife, State of Pernambuco, Brazil (Diptera: Psychodidae: Phlebotominae)

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Lutzomyia umbratilis, a known vector of *Leishmania guyanensis* in the north of Amazon basin, has been exclusively found in the Amazonian region. Here we report for the first time the occurrence of this species in northeastern Brazil. The epidemiological importance of the occurrence of this species in the Atlantic Forest is commented.

Key words: *Lutzomyia umbratilis* - Phlebotominae - distribution - Brazil

Lutzomyia umbratilis Ward & Frahia, 1978 has been reported in Bolivia, Brazil, Colombia, French Guyana, Guyana, Peru, Suriname and Venezuela (Young & Duncan 1994, Burgos & Hudson 1994) and Ecuador (F Le Pont 1996, pers. commun.). To date, it has only been found in the Amazonian region, usually associated to large tree trunks in primary forest (Ready et al. 1986). It was also observed in and near houses in French Guyana (Chippaux et al. 1984) and in the Island of São Luís (Maranhão, Brazil) (Rebêlo et al. 1999).

Lu. umbratilis feeds mostly on sloths (Christensen et al. 1982) and also bites man at the ground level and even in the tree canopy (Le Pont & Pajot 1980). This occurs mostly when flies are disturbed from tree trunks, during the day, resulting in the transmission of *Leishmania guyanensis* Floch, 1954 to man, which is a common occurrence in the north of the Amazonas River but rarer to the south (Lainson et al. 1994). *Lu. umbratilis* was also found infected with *Endotrypanum schaudinni* Mesnil & Brimont, 1908, a trypanosomatid parasite of sloths (Rogers et al. 1988).

Lu. umbratilis was collected at Dois Irmãos Park, Recife, State of Pernambuco (8°03'14"S 34°52'52"W, 4 m a. s. l.). Dois Irmãos Park is a reserve of primary Atlantic rain forest, little disturbed in the past, that surrounds a small reservoir, which supplies water to Greater Recife. A total of 945 specimens of *Lu. umbratilis* was collected between 18 August 1999 and 16 February 2000 (Table), besides one male of *Lutzomyia whitmani* (Antunes & Coutinho, 1939) and two males and five females of *Lutzomyia choti* (Floch & Abonnenc, 1941). *Lu. umbratilis* is commonly found on trunks in several parts of the park and avidly bites the collectors in the forest at night.

The morphology of female flies matches the description of Ward and Frahia (1977, p. 314): spermathecae are annulated, with a long "head", and individual and common ducts are totally striated. Insects are predominantly brown, with pale markings. Insects from Recife were compared to *Lu. umbratilis* from French Guiana and Amazonian States and to *Lutzomyia anduzei* (Rozeboom, 1942) from Amazonas, belonging to Universidade Federal de Santa Catarina (UFSC) collection. Insects were deposited at the collections of Universidade Federal de Santa Catarina, Universidade Federal de Pernambuco and Faculdade de Saúde Pública (Universidade de São Paulo).

This finding is unexpected because of the distance and lack of continuity between the Amazonian

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nian forest and the Atlantic rain forest, specially to a weak flier like a sand fly. However, the Brazilian Platine and Amazonian regions share many species of phlebotomine sand flies (Martins & Morales-Farias 1972) possibly because of past links between the Atlantic and the Amazonian rain forests. Information on the *Lu. whitmani* supports an ancient continuum of rain forest among Rondônia, Eastern Amazonia and Pernambuco (Ishikawa et al. 1999).

Lu. anduzei, a Amazonian species similar to *Lu. umbratilis*, was also found in the northeastern State of Bahia (Vexenat et al. 1986) and in the central State of Goiás (Coelho et al. 1965). However, as the last report was published before the description of *Lu. umbratilis*, this material should be re-examined. *Lutzomyia wellcomei* (Frahia, Shaw & Lainson, 1971) and *Lutzomyia complexa* (Mangabeira, 1941), which are also very common in Amazonian primary forests, also occur situated in the northeastern region forests; the first is found in Ceará (Ready et al. 1983) and Pernambuco (Brandão-Filho et al. 1996) and the second in Pernambuco (Brandão-Filho et al. 1998). *Lu. choti*, *Lutzomyia fischeri* (Pinto, 1926), *Lutzomyia lenti* (Mangabeira, 1938) and *Lutzomyia migonei* (França, 1921) are also found on both regions (Young & Duncan 1994). The last two are more ubiquitous and also occur in semiarid regions.

The phlebotomine fauna in the State of Pernambuco is not yet well known, and almost all insects collected so far came from endemic regions of cutaneous or visceral leishmaniasis. A previous study performed in the region of Greater Recife used Damasceno traps catches from tree holes, burrows and rock crevices habitats in 15 localities including Dois Irmãos reserve (Oliveira et al. 1977/1978). Eight species were recorded, but they did not include *Lu. umbratilis*. We found that this species was homogeneously distributed over the entire reserve area, so it is possible that an increase in vector density has occurred in recent years, due to yet unknown environmental factors.

TABLE

Specimens of *Lutzomyia umbratilis* collected at Dois Irmãos Park, Recife, State of Pernambuco, between 18 August 1999 and 16 February 2000

Method	Specimens		
	Males	Females	Total
CDC-like light trap	368	390	758
Manual collection-trunks	41	45	86
Shannon light trap	59	42	101
Total	468	477	945

Lu. umbratilis in Amazon seems to be more sensitive to vegetation modifications; in fact it was not found in gmelin plantations in Jari Project, while *Lutzomyia flaviscutellata* (Mangabeira, 1942) was very common in that plantation (Ready et al. 1983). Similarly, we have only found *Lu. umbratilis* in well preserved forest areas around Recife, while other vector species, also found in forest areas, are seen in disturbed landscapes.

One of us (BA) collected, in 5 September 2000, some sand flies in crevices on tree trunks, 2 h after dawn, in the Dois Irmãos forest, identified by one of us (CBM) as *Lu. umbratilis*. This behaviour is similar to that of the flies from the north of Amazon basin (Le Pont & Pajot 1980, Ready et al. 1986) and not to those from the State of Mato Grosso (Rangel et al. 1999). This aspect of its biology at Dois Irmãos forest should be studied.

The geographical isolation between populations of the *Lu. umbratilis* of northeast and Amazonian populations could result in morphological and molecular differences. More detailed studies are needed to genetic markers and morphological characterization.

Although there are records of cutaneous leishmaniasis in this region of Pernambuco (e.g., Aldeia Village and Camaragibe), the vector remains unknown. More studies are needed on *Leishmania* transmission among wild mammals and on the ecology of *Lu. umbratilis* similar to those that have been performed on the different populations of *L. whitmani* (Campbell-Lendrum et al. 1999).

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