Contribution to the knowledge of the sand fly fauna (Diptera, Psychodidae) in the Reserva Biológica do Gurupi in the Amazônia Maranhense, Northeastern Brazil

Judson Chaves Rodrigues[1], Rosa Cristina Ribeiro da Silva[1], Maxcilene da Silva de Oliveira[1], Ronayce Conceição de Jesus Serrão Pimenta[1], Antonia Suely Guimarães e Silva[1], Valéria Cristina Soares Pinheiro[1]

[1]Universidade Estadual do Maranhão – UEMA/Campus Caxias, Maranhão, Brazil

Phlebotomine sand flies (Diptera, Psychodidae, Phlebotominae) are hematophagous insects of great medical and veterinary importance, because several species are vectors of protozoa of the genus *Leishmania* Ross, 1903, the etiological agent of visceral and cutaneous leishmaniasis, which have a high incidence of human and canine cases in the state of Maranhão. Constant monitoring of phlebotomine sand flies in protected areas is often not carried out, endangering visitors and professionals, as in the case of the Reserva Biológica do Gurupi in the Amazônia Maranhense, which still has no published data on the fauna of these insects in the region. Therefore, we conducted a survey of the sand fly fauna of the Reserva Biológica do Gurupi. The specimens were captured in May and June/2022 with light traps of the CDC (Center of Disease Control) type installed from 6:00 p.m. to 6:00 a.m. The capture effort was 6 traps x 12h x 5 nights totaling 360 hours. We captured 94 individuals of 14 species, one identified only at the genus level, belonging to nine genera: *Trichophoromyia viannamartinsi* Sherlok & Guotton, 1970 (7,4%), *Lutzomyia longipalpis* (Lutz & Neiva, 112) (6,4%), *Nyssomyia whitmani* (Antunes & Coutinho, 1939) (5,3%), *Brumptomyia brumpti* (Larrousse, 1920) (4,3%), *Psychodopygus sp.* (Mangabeira, 1941) (4,3%), *Bichromomyia flaviscutellata* (Mangabeira, 1942) (3,2%), *Evandromyia evandroi* (Costa Lima & Antunes, 1936) (3,2%), *Mycropygomyia trinidadensis* (Newstead, 1922) (2,1%), *P. amazonensis* (Root, 1934) (2,1%), *L. gomezi* (Nitzulescu, 1931) (2,1%), *E. lenti* (Mangabeira, 1938) (1,1%), *L. evangelistai* Martins & Fraiha, 1971 (1,1%), *P. chagasi* (Costa Lima, 1941) (1,1%), *Psathyromyia abunaensis* (Martins, Falcão & Silva, 1965) (1,1%), unidentified specimens lost in the clarification process (18,1%) and the most abundant species in this study *P. davisi* (Root, 1934) (37,1%). This species has been reported as a probable vector of *Leishmania* spp. in the states of Rondônia, Amazonas and Acre, since several studies have detected DNA of *Leishmania (Viannia) braziliensis, L. (V.) naiffi, L. (L.) amazonensis* and *L. (V.) guyanensis* in *P. davisi* in these states. In the present research, it is important to highlight that the species *L. longipalpis*, *N. whitmani*, *B. flaviscutellata*, and *P. chagasi* are important transmitters of visceral and cutaneous leishmaniasis in Brazil. Thus, this work provides information on the distribution of sand flies in the Reserva Biológica do Gurupi, including those considered potential vectors of *Leishmania*, because knowledge of the sand fly fauna and the study of their presence in a given area is extremely important to elucidate the local epidemiology of the disease.

Keywords: Environmental protection area, Insect vectors, *Psychodopygus*, Leishmaniases.