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Short Communication

First report of *Rhodnius neglectus* (Hemiptera, Reduviidae, Triatominae) from the State of Acre, Brazil, and the Brazilian Western Amazon Region

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Abstract

Introduction: This communication reports the occurrence of *Rhodnius neglectus* in the State of Acre, Brazil. **Methods**: An adult male *R. neglectus* specimen was collected from the Catuaba Experimental Reserve, which is located in the municipality of Senador Guiomard. **Results**: This increases the number of triatomine species reported from the State of Acre to eight and is also the first report of *R. neglectus* from the Brazilian Western Amazon Region. **Conclusions**: The occurrence of *R. neglectus* is alarming because even though the species is wild, it can invade and colonize human dwellings and peridomiciles, thereby increasing Chagas disease transmission.

Keywords: *Rhodnius neglectus*. Chagas disease. Western Amazon.

American trypanosomiasis, or Chagas disease, is an infectious illness caused by the protozoan parasite *Trypanosoma cruzi* Chagas 1909, which is transmitted by triatomines (Hemiptera, Reduviidae, Triatominae)[1]. In Brazil, the Triatominae is represented by ten genera, including *Alberprosenia*, *Belminus*, *Cavernicola*, *Eratyrus*, *Microtriatoma*, *Panstrongylus*, *Parabelminus*, *Psammolestes*, *Rhodnius*, and *Triatoma*[2]. However, only four genera (seven species: *Rhodnius montenegrensis*[2], *Rhodnius robustus*[3], *Rhodnius stali*[1], *Rhodnius pictipes*[4], *Panstrongylus geniculatus*[4], *Eratyrus mucronatus*[5], and *Triatoma sordida*[6]) have been reported to occur in the State of Acre. The aim of the present study is to report, for the first time, the occurrence of an additional species, *Rhodnius neglectus*, in the State of Acre and in the Brazilian Western Amazon Region.

An adult male *R. neglectus* (**Figure 1**) and seven *R. robustus* specimens were collected from the Catuaba Experimental Reserve, which is located in the municipality of Senador Guiomard, State of Acre, Brazil (10° 09' 03" S; 67° 44' 09" W), and belongs to the *Universidade Federal do Acre* (UFAC). Triatomines were collected from palm (*Attalea* sp.) trees during June 2016 by individually removing most of the palm bracts, and the identities of the collected triatomines were confirmed at the Insectarium of the Department of Biological Sciences, Faculty of Pharmaceutical Sciences, *Universidade Estadual Paulista Júlio de Mesquita Filho* (UNESP), Araraquara, State of São Paulo, Brazil, according to genital morphology[7,8] (**Figure 2**).

Feces and urine from the specimen were diluted in saline solution, prepared on microscope slides, and then examined using an optical microscope (640× magnification), for analysis of trypanosomatid infection.

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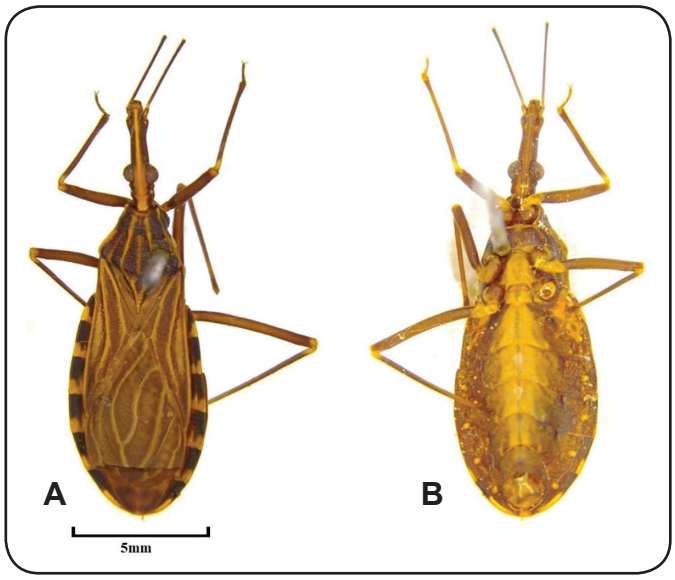

FIGURE 1: *Rhodnius neglectus.* **A)** Dorsal view. **B)** Ventral view.

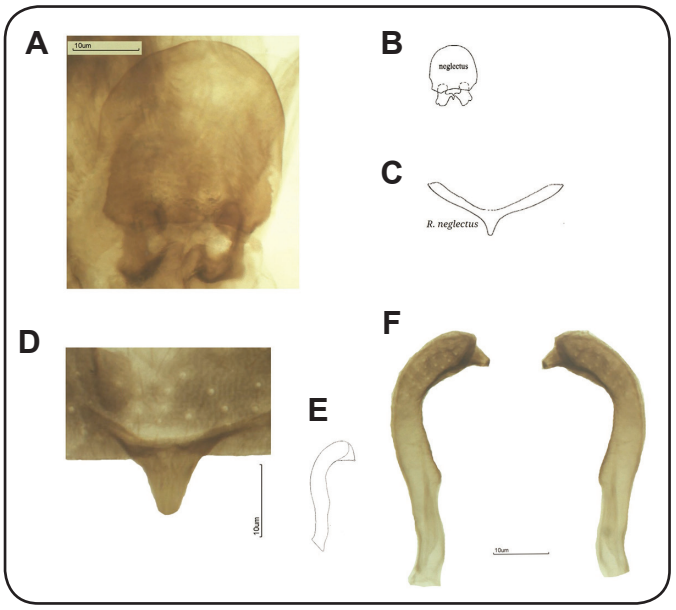

FIGURE 2: Male genitalia of *Rhodnius neglectus*. **A)** Phallosoma, ventral view. **B)** Phallosoma, drawing from Lent & Jurberg 1969. **C)** Median process of pygophore, drawing from Lent & Jurberg 1969. **D)** Median process of pygophore. **E)** Parameres, drawing from Lent & Jurberg 1969. **F)** Parameres, dorsal view.

Rhodnius neglectus (**Figure 1**) is 17.5 to 20.5 mm in length, dark brown in color, lacking a mottled appearance, and possesses a head that is substantially longer than the pronotum, a third antennal segment (with dark basal portion and clear apical portion) that is shorter than the second, a second frontal segment that does not reach the posterior margin of the head, anteriorly projected pronotal anterolateral angles, a posterior pronotal lobe with two dark longitudinal bands and a single clear band between the submedial carenas, legs with no spots or dark rings, trochanters that are more clear than the femurs, slender previous femurs, and a clear connexivum with well-defined dark rectangular spots[9]. In addition, the species' genital morphology is characterized by a median pygophore process that is short and triangular with a rounded tip, hairy and thin-tipped parameres, and a phallosome with a broad plaque and rounded upper region.

The internal genitalia of the putative male *R. neglectus* specimen presented were consistent with the morphological description of Lent & Jurberg[8]. However, no trypanosomatids were detected.

Despite the lack of infection in the collected specimen, *R. neglectus* is frequently infected by *T. cruzi* and *T. rangeli*[10] and is the most common *Rhodnius* species to invade houses in Brazil. Recent data also indicate that *R. neglectus* plays an important role in maintaining the enzootic circulation of *T. cruzi* and *T. rangeli* in the Brazilian savanna[11]. This study increases the number of triatomine species reported from the State of Acre to eight and is also the first report of *R. neglectus* from the Brazilian Western Amazon Region. The occurrence of *R. neglectus* is alarming because, even though the species is wild, it can invade and colonize human dwellings and peridomiciles[12,13], with colonies even reported from the tenth floor of a building in Araçatuba, State of São Paulo, Brazil[14]. The present study also confirms the findings of Gurgel-Gonçalves et al.[15], who reported that *R. neglectus* occurs in human environments in the Brazilian the States of Mato Grosso, Mato Grosso do Sul, Goiás, Minas Gerais, and Tocantins, among others, and predicted that *R. neglectus* was also present in the State of Acre. Another alarming issue regarding the occurrence of *R. neglectus* in the State of Acre is that the species is often observed to colonize homes with palm thatch roofs[14], which are common among homes in the Amazon region and may facilitate the domiciliation of *R. neglectus*.

Further studies should investigate the ecology and distribution of *R. neglectus* in the State of Acre, with the purpose of a future georeferencing and prophylaxis of vector transmission for this and other species that have been registered in this region.

Ethical considerations

All specimens were collected with permission from the Brazilian Institute of Environment and Renewable Natural Resources [*Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis* (IBAMA), permanent license no. 52260-1].

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Conflict of interest

The authors declare that there is no conflict of interest.

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