Short Communication

Panstrongylus rufotuberculatus (Champion, 1899) (Hemiptera, Reduviidae, Triatominae) in Rondônia, Brazil: A novel report

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Abstract

Introduction: This short communication presents a novel report on the occurrence of Panstrongylus rufotuberculatus in the Brazilian state of Rondônia. Methods: Two specimens were collected inside dwellings and identified using dichotomous keys. Results: The present study showed the extensive geographic distribution of P. rufotuberculatus and the increased number of species in the state of Rondônia. Conclusions: This new record of P. rufotuberculatus is important for understanding the epidemiology of Chagas disease because this species is found naturally infected with Trypanosoma cruzi. Studies on the ecology, biology, and vector–host–parasite interactions of this species are essential for surveillance programs.

Keywords: Chagas disease. New records. Vectors. Surveillance programs.

Blood-sucking insects of the subfamily Triatominae (Hemiptera: Reduviidae) include 153 extant and three fossil species assigned to five tribes and 18 genera, all the extant species being considered potential vectors of Trypanosoma cruzi (Chagas, 1909), the etiologic agent of Chagas disease[1,2]. Among the five tribes, Triatomini is the most diverse, with more than 70% of the species of the subfamily. The genus Triatoma is the most speciose within the tribe (82 species), followed by Panstrongylus (15 species). The tribe has the widest geographical distribution among Triatominae, reaching an extensive range of ecotopes[3].

Panstrongylus rufotuberculatus (Champion, 1899) is a wild species widely distributed in South America; its occurrence has been reported in the Brazilian states of Acre; Amazonas; Mato Grosso; Pará; and the neighboring countries of Argentina, Bolivia, Colombia, Costa Rica, Ecuador, Peru, Suriname, and Venezuela. In Central and North America, it has been found only in Panama and Mexico (Figure 1A)[3].

Despite being reported a long time ago, the literature on P. rufotuberculatus is scarce, and it remains among the least known triatomines. The first report of natural infection caused by T. cruzi was published in Venezuela in 1940, and since then, its natural infection has been reported in Argentina, Bolivia, Costa Rica, Colombia, Ecuador, and Peru[4,6,9,10]. In Argentina, specimens of P. rufotuberculatus were found in dwellings and attributed to the probable “attraction” to the ligths[5]. Incipient domiciliation has also been reported in Bolivia and Ecuador[7,8]. However, authors have already reported intradomiciliary colonies of P. rufotuberculatus in Peru, where several nymphs and adults were collected inside the dwellings[9,10]. In Colombia, P. rufotuberculatus is considered a species with a high epidemiological risk for the transmission of T. cruzi, constituting the second most common triatomine caught inside dwellings[11].

In August 2018, a male specimen of triatomine was found inside a dwelling by the resident in the municipality of Rio Crespo (latitude 09° 42’18” S and longitude 62° 53’59” W), Rondônia state, Brazil (Figure 1B). This insect, Panstrongylus rufotuberculatus, was identified by the third author (CG) based on their external morphological characteristics through photographic records. For the identification of the genus Panstrongylus, the main criterion is the position of the antennae, inserted close to the eyes. The diagnosis
The present report demonstrates that nine species of triatomines were found in the state of Rondônia: *Eratyrus mucronatus* Stål, 1859, *Panstrongylus geniculatus* (Latreille, 1811), *P. lignarius* (Walker, 1873), *P. megistus* (Burmeister, 1835), *P. rufotuberculatus* (Champion, 1899), *Rhodnius milesi* Carcavallo, Rocha, Galvão, and Jurberg, 2001, *R. montenegrensis* Rosa et al., 2012, *R. pictipes* Stål, 1872, and *R. robustus* Larrousse, 1927. The data of the geographical distribution of *P. rufotuberculatus* to Rondônia state are consistent with those in the prediction map for the potential distribution of this species in Brazil presented by Galvão, but these findings in North Brazil are limited to a few specimens. Knowledge of the biology of this species is scarce, and in natural environments, this species has been found to feed on bats, armadillos, domestic animals, and humans, but its habits are usually wild.

The increase in the number of reports of *P. rufotuberculatus* domiciliation may be related to changes in the wild environment, causing displacement to domestic environments as an alternative in the search for food. This finding emphasizes the need for careful entomological and epidemiological surveillance of this and other triatome species in the Amazon region.
FIGURE 3: (A, B) Arrows indicate the jugae blunt, another important diagnostic characteristic of *Panstrongylus rufotuberculatus* (Champion, 1899). (B, C) Jugae sharpened, *Panstrongylus* spp.

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AUTHORS’ CONTRIBUTION

AL: conducted the fieldwork and microscopic analysis of infection with *Trypanosoma cruzi*; DSR: written the original draft; CG: studied the specimens and reviewed whole text. All authors have read and agreed to the published version of the manuscript.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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