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Short Communication

Confirmation of the occurrence of *Panstrongylus rufotuberculatus* (Champion, 1899) in the state of Acre, Western Amazon

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Abstract:

Introduction: This study aimed to confirm the occurrence of *Panstrongylus rufotuberculatus* in the state of Acre, Brazil. **Methods**: The four specimens of *P. rufotuberculatus* were obtained from the entomological collection of the Zoobotanical Park of the Federal University of Acre (UFAC). **Results**: Confirmation of the occurrence of this species in the state of Acre increases the number of species already registered, from nine to ten. **Conclusions**: The necessity to develop further studies was verified, especially with the domiciliary process of *P. rufotuberculatus*, resulting in tracing prophylactic measures against the vector transmission of *Trypanosoma cruzi*.

Keywords: Triatominae. American trypanosomiasis. Chagas disease.

Chagas disease or American trypanosomiasis is a neglected illness and is considered one of the main endemic diseases in Latin America[1]. In Brazil, it is estimated that more than 1.9 million people are affected, causing significant social and economic impacts[2].

The vector of this disease belongs to the family Reduviidae and subfamily Triatominae, which has 18 genera and 153 species (151 recent and 2 fossil species)[3,4]. In the state of Acre (Brazilian Western Amazon), 4 genera and 10 species have been described: *Rhodnius robustus* by Stal, 1872; *R. montenegrensis* by Rosa et al., 2012; *R. pictipes* by Stal, 1872; *R. neglectus* by Lent, 1954; *R. stali* by Lent, Jurberg & Galvão, 1993; *Panstrongylus geniculatus* by Latreille, 1811; *P. megistus* by Burmeister, 1835; *P. lignarius* by Walker, 1873; *Eratyrus mucronatus* by Stal, 1859; and *Triatoma sordida* by Stål, 1859[1,5,6].

The two most important genera for the vectorial transmission of Chagas disease are *Triatoma* and *Panstrongylus* because of their potential roles in domiciliation and high parasitic rates[2,7,8]. Both genera are already described for the state of Acre[1,5], but with the occurrence of few species.

The present study aimed to confirm the occurrence of the species *P. rufotuberculatus* in the state of Acre, Brazilian Western Amazon.

Four specimens of *P. rufotuberculatus* were found in the entomological collection of the Zoobotanical Park of the Federal University of Acre (UFAC). These were collected since 1994

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from açaí trees (*Euterpe oleracea*) at the Catuaba Experimental Reserve (10 ° 09'03 "S, 67 ° 44 '09" W) belonging to UFAC located in the municipality of Senador Guiomard, 27.2 km from Rio Branco, the capital of the state of Acre.

The triatomines were sent to the Laboratory of Tropical Medicine (LABMEDT) of the UFAC, where the species were identified based on the morphological characteristics described by Lent & Wygodzinsky[8], Jurberg et al[2], and Galvão[7].

Three of the four triatomines were decayed and dried, and only one was intact. As such, no positivity test for trypanosomatids was performed to preserve the specimen.

The identification confirmed the occurrence of *P. rufotuberculatus* (**Figure 1**) in the state of Acre. The present study used the terminology confirmation, since this species was previously quoted for Acre in an abstract published in the annals of the 64th Annual Meeting of the Brazilian Society for the Advancement of Science (SBPC) in 2014[9]. However, the abstract did not include a photograph of the specimen, and this report is not considered in scientific papers.

P. rufotuberculatus (**Figure 1**) shows a body with golden bristles on the dorsal surface; anterior pronotum lobe with reddish tubers; scutellum process that is rounded, conical, or truncated at the edge; segments of the connexival with a dark mark in the center; and light-green front wings[2].

Confirmation of the occurrence of the species *P. rufotuberculatus* in the state of Acre was already foreseen by Galvão[7]. The present registry increased the geographic distribution of the species in Brazil to four states: Acre, Amazonas, Mato Grosso, and Pará, all belonging to the Brazilian Amazon (**Figure 2**). In addition to Brazil, *P. rufotuberculatus* has been found in Argentina, Bolivia, Colombia, Costa Rica, Ecuador, French Guiana, Mexico, Panama, Peru, and Venezuela[4] (**Figure 2**).

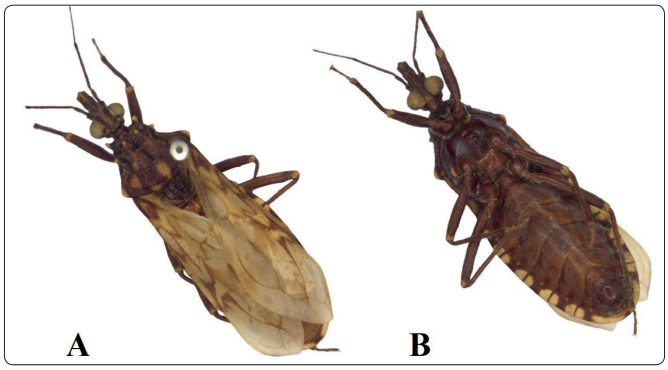

FIGURE 1: *Panstrongylus rufotuberculatus*. **(A)** Dorsal view; **(B)** Ventral view.

The species *P. rufotuberculatus* has been shown to be able to infest human dwellings (incursion and domiciliation) and in peridomestic areas. It also can be naturally infected with *Trypanosoma cruzi*[4], and this situation has already been described in Colombia[10], Venezuela[11], Argentina[12], Costa Rica[13], Peru[14], and Ecuador[15].

The occurrence of this triatomine in the state of Acre increases the number of species described for the state from

FIGURE 2: Geographic distribution in South America and new report of the species *P. rufotuberculatus*.

ten to eleven, demanding the development of further studies in order to expand our knowledge about their feeding habits, infection by *T. cruzi*, and its domiciliation, making it possible to appraise and establish prophylactic measures against the vectorial transmission of *T. cruzi*.

Ethical considerations

The 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 Nr. 52260-1.

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Conflict of Interest: The authors declare that there is no conflict of interest.

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