First record of *Phanuropsis laniger* Johnson in Brazil and first record of *P. semiflaviventris* Girault in Amazonas (Hymenoptera: Platygastridae) with notes of their hosts, stink-bugs of cupuaçu

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Abstract

Background

We report the first record and collection of *Phanuropsis laniger* Johnson, 1987, for Brazil since its original description. In addition we expand the distribution of *Phanuropsis semiflaviventris* Girault, 1916, for Amazonas, Brazil and present an updated list of records for both species with the occurrence of *P. semiflaviventris* in egg of stink-bugs on cupuaçu (*Theobroma grandiflorum*).

New information

First record of *Phanuropsis laniger* Johnson, 1987, for Brazil. We also expanded the distribution of *Phanuropsis semiflaviventris* Girault, 1916, for the state of Amazonas, Brazil.
Keywords

Antiteuchus, Parasitoid, Telenominae, Theobroma grandiflorum

Introduction

The Neotropical genus *Phanuropsis* Girault (Hymenoptera: Platygastridae) is represented by two species: *Phanuropsis semiflaviventris* Girault, 1916, and *Phanuropsis laniger* Johnson, 1987 (Hymenoptera Online, various contributors 2016). The most common species is *P. semiflaviventris* which can be found from Belize to southern Brazil (Oliveira 2016). *Phanuropsis laniger* is rarely collected, until now known only from two localities in Colombia and Peru.

Host associations are known for both species (Hymenoptera Online, various contributors 2016) in which *P. semiflaviventris* was found in association mainly with *Antiteuchus* Dallas (Hemiptera: Pentatomidae) and *P. laniger* was associated only with *Edessa* Fabricius (Hemiptera: Pentatomidae). Relationships with species and their hosts can support additional information on behavior from species also facilitating future collections.

The objective of this work was to report the first occurrence of *P. laniger* in Brazil with the first collection after its description. In addition we report the first record of *P. semiflaviventris* for Amazonas, Brazil updating the occurrence with some notes on the parasitism in eggs of stink-bugs on “cupuaçu” (*Theobroma grandiflorum*).

Materials and methods

The collections were taken at different times in 2014-2015 at natural vegetation areas containing "cupuaçu trees" (*Theobroma grandiflorum*) of the Instituto Nacional de Pesquisas da Amazônia (INPA), located in the city of Manaus, Amazonas, Brazil (3° 5’45.80”S; 59°59’21.86”W). Cupuaçu trees canopies were sampled randomly seeking for ovipositions of Hemiptera. Egg masses with signs of parasitism were collected and held in an incubator with temperature of 25ºC ±1, humidity of 70% ±5 and photo period of 12 hours of light and 12 hours of dark until the emergence of adults. After the emergency the insects were killed and mounted for identification. The specimens of *Phanuropsis* were identified based on the diagnosis of the genera and by the discussion presented by Johnson 1987). Photos were sent to Lubomir Masner to confirm our identification.

Photomicrographs were prepared using a LeicaM205C stereomicroscope coupled with a Leica DFC295 and a Leica Application Suite V4.1 Interactive Measurements, Montage. All the material is deposited at Invertebrates Collection of INPA.
Taxon treatments

*Phanuropsis laniger* Johnson, 1987

- Hymenoptera Online [http://hol.osu.edu/index.html?id=2577](http://hol.osu.edu/index.html?id=2577)

**Distribution**

This species is so far known from Colombia and Peru (Johnson 1987) and is a new record for Brazil (Table 1).

Table 1.
List of species of *Phanuropsis* Girault occurring in Brazil, including regions and the states where they were collected.

| Species             | Region    | Locality     | Reference                                           |
|---------------------|-----------|--------------|-----------------------------------------------------|
| *P. semiflaviventris* | North     | Amazonas*    | Mahlmann & Oliveira (present study)*                |
|                     |           | Pará         | Hymenoptera Online, various contributors (2016)     |
|                     | Northeast | Pernambuco   | Loilacono and Margaria (2002)                       |
|                     |           | Piauí        | Paz-Neto et al. (2015)                              |
|                     | Southeast | Espírito Santo | Azevedo et al. 2015                                |
|                     |           | Rio de Janeiro | Santos and Albuquerque (2001)                      |
|                     |           | São Paulo    | Johnson 1987                                       |
| *P. laniger*        | North     | Amazonas*    | Mahlmann & Oliveira (present study)*                |
|                     |           | *new record* |                                                     |

*Phanuropsis semiflaviventris* Girault, 1916

- Hymenoptera Online [http://hol.osu.edu/index.html?id=2578](http://hol.osu.edu/index.html?id=2578)

**Distribution**

This species is so far known from Central America (Honduras, Costa Rica and Panama) and South America (Colombia, Venezuela, Trinidad and Tobago, Suriname and Brazil). In Brazil is a new record for Amazonas (Table 1).
Discussion

A single female specimen of *P. laniger* was collected during the period of observation (Fig. 1). The insect was at the bottom of a cupuaçu leaf near an egg mass of *Antiteuchus* sp. We did not observe however the contact of *P. laniger* with those eggs even though they were collected at the exact time of observation. This is the first record of *P. laniger* in Brazil (Table 1) with the first record of collection since its original description in 1987.

![Figure 1. Female of Phanuropsis laniger Johnson.](image1)

**Figure 1.**
Female of *Phanuropsis laniger* Johnson.
- **a:** Dorsal view
- **b:** Lateral view

Were collected seven Hemiptera egg postures in the cupuaçu trees all belonging to genus *Antiteuchus*. The species of parasitoids emerged were *Gryon* sp., *P. semiflaviventris* (Fig. 2) and *Trissolcus urichi* Crawford. This is the first record of *P. semiflaviventris* in the Amazonas, Brazil. Thus, there are currently records for the North, Northeast and Southeast of Brazil.

![Figure 2. Female of Phanuropsis semiflaviventris Girault.](image2)

**Figure 2.**
Female of *Phanuropsis semiflaviventris* Girault.
- **a:** Dorsal view
- **b:** Lateral view
Acknowledgements

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Supplementary materials

Suppl. material 1: Phanuropsis laniger_DarwinCoreFile

Authors: Mahlmann, Olivera & Elijah
Data type: occurrences
Filename: Phanuropsis laniger_DarwinCoreFile.xlsx - Download file (9.28 kb)
Suppl. material 2: *Phanuropsis semiflaviventris* DarwinCoreFile

**Authors:** Mahlmann, Oliveira & Elijah  
**Data type:** occurrences  
**Filename:** Phanuropsis semiflaviventris_DarwinCoreFile.xlsx - [Download file](14.76 kb)