

Journal of Melittology

Bee Biology, Ecology, Evolution, & Systematics

The latest buzz in bee biology

No. 96, pp. 1–8

30 March 2020

BRIEF COMMUNICATION

A new species of the previously monotypic Neotropical cleptoparasitic bee genus *Rhynostelis*, with notes on *Rhynostelis multiplicata* (Hymenoptera: Megachilidae)

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Abstract. A new species of the cleptoparasitic bee genus *Rhynostelis* Moure & Urban (Megachilidae: Anthidiini) from the Amazon rainforest in Brazil is described and figured. Until now, *Rhynostelis multiplicata* (Smith) was the only known species in the genus. Females of *R. xavieri* Mahlmann, new species, can be easily recognized by the larger protuberance on the base of each mandible and the basal projection of the clypeus, which is larger and flat, resembling a bird's upper beak. Taxonomic notes are also provided for *R. multiplicata* and an update of occurrence records for the genus is given.

INTRODUCTION

Rhynostelis was proposed by Moure & Urban (1995) for *Anthidium multiplicatum* Smith, remaining until now its only known species. The genus is cleptoparasitic as are the related genera *Austrostelis* Michener & Griswold, *Dolichostelis* Parker & Bohart, *Heterostelis* Timberlake, *Hoplostelis* Dominique, *Melostelis* Urban, and *Stelis* Panzer, which are also represented in the Neotropics (Urban & Parizotto, 2012). Although common to several genera within the tribe, Gonzalez *et al.* (2012) showed that cleptoparasitism has evolved multiple times in Anthidiini. However, the authors included only *Hoplostelis* and *Stelis* in their analyses, so the phylogenetic position of *Rhynostelis* is uncertain, although it is morphologically more similar to *Hoplostelis* and *Melostelis*. Here I follow the classification proposed by Urban & Moure (2007) and Urban & Parizotto (2012) where *Rhynostelis* is treated at the generic level.

Very few specimens of *Rhynostelis* have been recorded so far. Besides the two

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doi: <http://dx.doi.org/10.17161/jom.vi96.13245>

females known from Amazonas, Brazil (Moure & Urban, 1995; Smith, 1879), Urban & Parizotto (2012) recorded two additional specimens from Pará, Brazil, a male and a female that emerged from a nest of *Eufriesea laniventris* (Ducke) (Apidae: Euglossini). Dominique (1898) studied a fifth specimen, one female collected in French Guiana, cited as *Stelis* (*Hoplostelis*) *tuberculata* (*nomen nudum*).

Here I described a new species of *Rhynostelis* from the Amazon rainforest in Brazil, present notes on *R. multiplicata* (Smith), and updates on the geographic distribution records for the genus. Three additional specimens of *Rhynostelis* collected in Amazonas, Brazil, and deposited at the Coleção de Invertebrados do Instituto Nacional de Pesquisas da Amazônia (INPA) are also reported.

MATERIAL AND METHODS

Urban & Parizotto (2012) provided a morphological key to the Neotropical cleptoparasitic anthidiine genera, which I used here to identify all the material examined. The material examined in this study is deposited in the Coleção de Invertebrados do Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas, Brazil (INPA). General morphological terminology followed Michener (2007), except for the propodeal triangle, referred to here as the metapostnotum (Brothers, 1976). Abbreviations used for common morphological terms are: S, metasomal sternum; T, metasomal tergum; F, flagellomere; OD, ocellar diameter (based on the lateral ocellus). The ocelloccipital and ocellocular distances were taken based on the lateral ocellus. The format of the description follows Urban & Parizotto (2012). Label information from separate labels are separated by “ // ” (double forward slashes). Photomicrographs were prepared using a Leica M205A coupled with a Leica DMC4500 and stacked using the software Leica Application Suite V4.10.0 Interactive Measurements, Montage. The distribution map was built using the online software SimpleMappr (Shorthouse, 2010).

SYSTEMATICS

Genus *Rhynostelis* Moure & Urban, 1995

Rhynostelis xavieri Mahlmann, new species

ZooBank: urn:lsid:zoobank.org:act:FDA24339-0C58-4870-B4A8-CF0A65AA871E

(Figs. 1–4)

DIAGNOSIS: Females of this species can most readily be separated from those of *R. multiplicata* (Smith) as follows: in *R. xavieri* the process at the base of each mandible is bigger and slightly bent, the median basal projection of the clypeus is much larger and flat (Fig. 1), and the labrum is entirely yellow with a larger tubercle, which is not bilobed near the clypeal base (Figs. 1, 2). Additionally, the protuberances on the mesoscutum are larger, more acute, hairless, and whitish apically (Fig. 3); the omaular carina is very pronounced, lamellate, and extends ventrally near the forecoxa.

DESCRIPTION: ♀: Body length approximately 13 mm; forewing length 10.3 mm; head width 4.3 mm; head length 3.1 mm; compound eye length 2.6 mm; ocelloccipital distance about 2 OD; ocellocular distance about 2.3 OD.

Structure. Mandible with five teeth, apical tooth elongate; basal area with strong, slightly bent, tooth-shaped process (Fig. 1). Labrum with large basal tubercle. Clypeus flat with a median, large, and flat basal projection. Frons with long, well-marked



Figures 1–4. Holotype (female) of *Rhynostelis xavieri*, new species. 1. Head, dorsolateral view. 2. Head, frontal view (figures 1–2: scale bar = 1 mm). 3. Dorsal habitus. 4. Lateral habitus (figures 3–4: scale bar = 5 mm).

carina. Juxtantennal carina short, lamellate, and extending upward. Mesoscutum and mesoscutellum bigibbous; protuberances on mesoscutum large, pointed, and hairless, apex of each higher than adjacent hairs; axilla gibbous; metapostnotum with weak row of pits connecting postspiracular foveae; propodeum with irregular fovea delimited posteriorly by carina behind spiracle. Omaular carina quite pronounced, lamellate, extending ventrally near forecoxa; mesepisternum notably convex in lower

half. Fore and middle tibiae with dorsoapical spine on outer surface; arolia present. T6 deeply concave. S1 with pronounced keel.

Coloration. Head integument yellow except as follows: mandible black apically; large black quadrangular area arising above superior margin of antennal sockets extending to vertex and above compound eyes. F3 to F10 with ventral surfaces darkish yellow. Pronotal lobe yellow; mesoscutum black with reverse U-shaped yellow macula on each side; mesoscutellum black with yellow gibbous area on each side; axilla yellow; metanotum black; metapostnotum and propodeum yellow, propodeum basally with triangular black spot. Mesoscutum with pair of protuberances hairless and whitish at apex. Mesepisternum yellow except for discal black spot and black scrobe; metepisternum yellow with V-shaped black macula. Tegula amber and wing membrane brown. Legs almost totally yellow; all coxae with dorsal black spots, middle femur with external darkish area; middle and hind tibiae with internal and external darkish areas. Metasomal terga black except T1 yellow basally and with yellow continuous discal band slightly angled anteromedially; T2 to T6 each with large yellow band interrupted at midline. Sterna almost entirely yellow except S1 to S5 with narrow black area basally and translucent distal margin; S5 with lateral black spots; S6 black with lateral yellow spots.

Pubescence. Golden yellow, ventrally lighter, with moderate size hairs (about 1 OD). Frons among ocelli and mesoscutellum with longer and denser hairs. Mesepisternum with hairs longer than hairs on mesoscutum. Mesoscutum almost glabrous on convex areas. S1 to S4 sparsely hairy, hairs denser on S5 and S6.

Sculpture. Head finely punctate with sparser punctures on clypeal disc. Labrum and mandible impunctate, integument weakly rugose. Mesoscutum with integument microreticulated, punctures deeper than those on head, protuberances finely punctate. Mesepisternum with larger and sparser punctures on convex areas than elsewhere; distance between punctures at least one puncture diameter. Punctures of terga fine; yellow bands with punctures larger and sparser than those on black areas. T4 and T5 with median longitudinal weak impunctate carina.

♂: Unknown.

HOLOTYPE: ♀, Brazil: Amazonas, Benjamin Constant, 4°25'3.96"S; 70°3'37.73"W, rede entomológica, varredura, x.2019 [October 2019]; F. Xavier Leg. (INPA).

GEOGRAPHIC RECORD: Brazil (Amazonas).

ETYMOLOGY: The specific epithet honors the Amazonian entomologist Francisco Felipe Xavier Filho, who collected and provided the material for this study.

Rhynostelis multiplicata (Smith)
(Figs. 5–13)

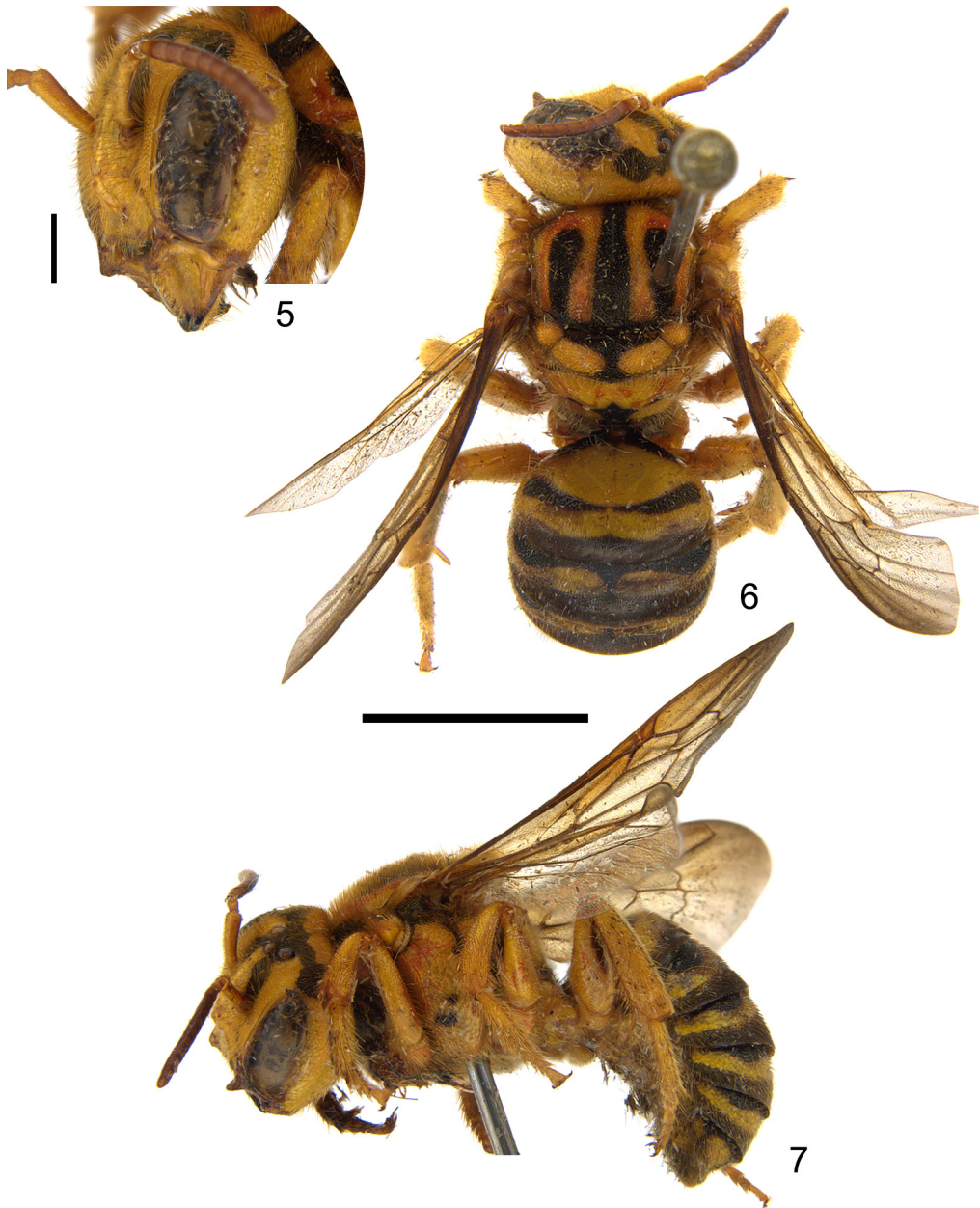
Anthidium multiplicatum Smith, 1879: 87.

Stelis (*Hoplostelis*) *tuberculata* Dominique, 1898: 61, *nomen nudum*.

Rhynostelis multiplicata (Smith); Moure & Urban, 1995: 297; Rasmussen *et al.*, 2007: 60; Urban & Parizotto, 2012: 29.

Hoplostelis (*Rhynostelis*) *multiplicata* (Smith); Michener, 2000: 501; Michener, 2007: 518.

REMARKS: Both species of the genus are recorded for the Amazon region, but *R. xavieri* is only known from the far west of the region (Fig. 14). In the two examined specimens of *R. multiplicata* the mesoscutellum is black with yellow gibbous areas, as in the new species (Figs. 3, 6, 9). Female: ocellocipital and ocellocular distances



Figures 5–7. Female of *Rhynostelis multiplicata* (Smith) (INPA). 5. Head, dorsolateral view (scale bar= 1 mm). 6. Dorsal habitus. 7. Lateral habitus (figures 6–7: scale bar = 5 mm).

about $3.0\times$ OD and $2.8\times$ OD, respectively, giving the vertex a noticeably wider aspect in *R. multiplicata*; S1 with a developed keel occupying the anterior half of the sternum, as in *R. xavieri*. The examined male matches the description of Urban & Parizotto (2012), except the mandibles are tridentate (Fig. 8) and the clypeus without an evident basal tubercle; T7, S6, and the genital capsule as in figures 11–13.

GEOGRAPHIC RECORDS: Brazil (Amazonas, Pará); French Guiana (Saint-Laurent-du-Maroni).



Figures 8–13. Male of *Rhynostelis multiplicata* (Smith) (INPA). 8. Head, frontal view. 9. Dorsal habitus. 10. Lateral habitus (figures 9–10: scale bar = 5 mm). 11. Metasomal tergum 7. 12. Sternum 6. 13. Genital capsule (figures 8, 11–13: scale bar = 1 mm).

MATERIAL EXAMINED: Brazil: Amazonas, Manaus, AM-010 km 29, EMBRAPA, -2.890751; -59.978722, 28.ix.2016 [28 September 2016], rede entomológica, C. Krug & M. Montefusco Leg. // Mestrado M. Montefusco INPA/EMBRAPA #4749 (♂, INPA); Amazonas, Novo Aripuanã, Reserva Soka, 5°15'53"S; 60°07'08"W, 17–25.viii.1999 [17–25 August 1999] // Arm. Malaise, J. Vidal & A.L. Henriques Leg. // *Rhynostelis multiplicata* Urban det., 2007 (♀, INPA).

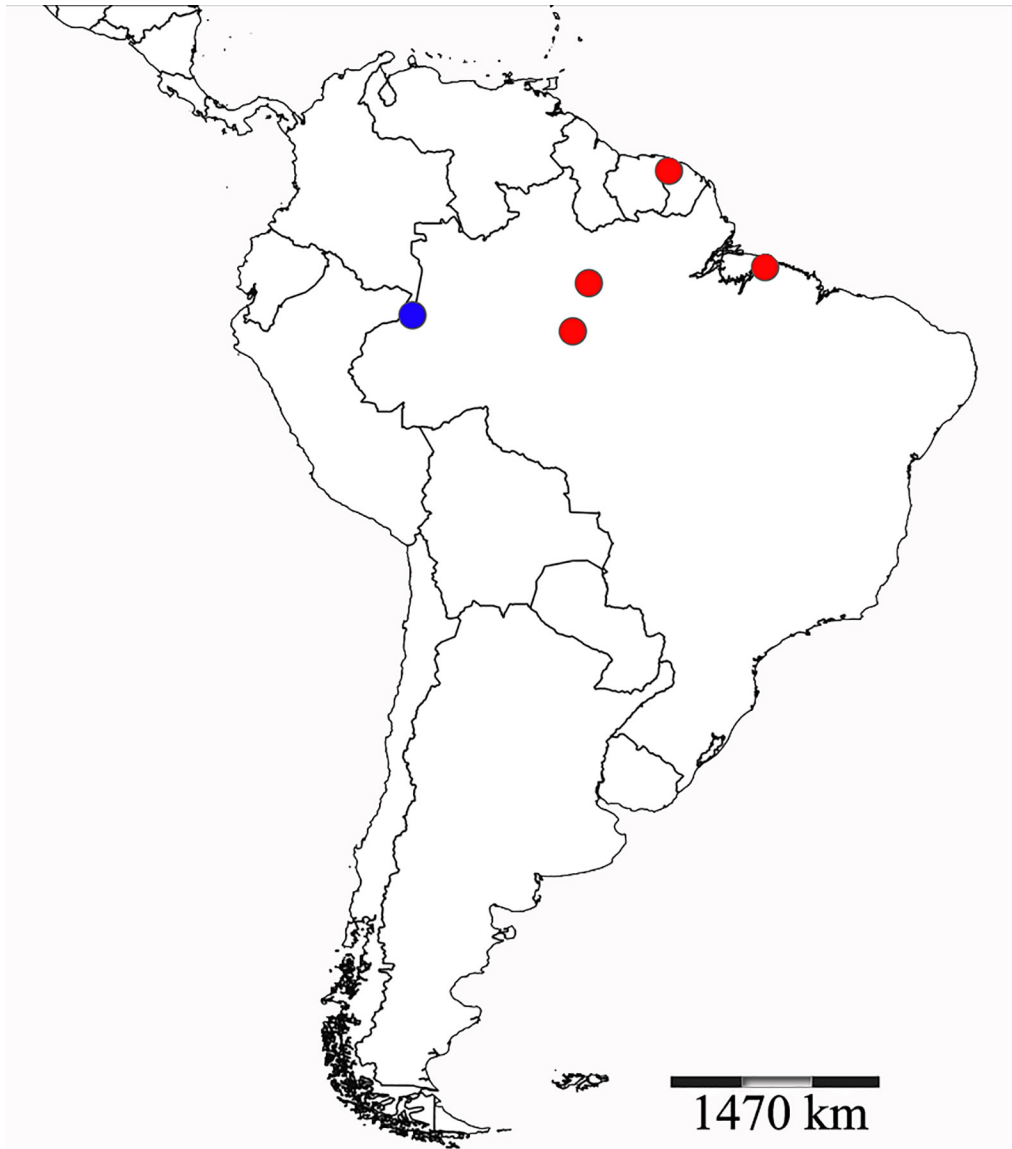


Figure 14. Map of South America with geographic records for *Rhynostelis multiplicata* (Smith) (red circles) and *R. xavieri*, new species (blue circle).

ACKNOWLEDGEMENTS

I am grateful to the Fundação de Amparo à Pesquisa do Estado do Amazonas (FAPEAM; Edital N° 002/2018, Programa de Apoio à Pesquisa – Universal Amazonas, processo N° 127/2018) for funding, to Francisco Felipe Xavier Filho who collected the holotype, to Juliana Hipólito and Pedro Bartholomay for proofing the article for proper use of English and support in many capacities, and to the anonymous reviewers for their helpful input.

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ZooBank: urn:lsid:zoobank.org:pub:DD6EB1A6-0785-497F-BF3A-135C23F636B6



Journal of Melittology

A Journal of Bee Biology, Ecology, Evolution, & Systematics

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The *Journal of Melittology* was established at the University of Kansas through the efforts of Michael S. Engel, Victor H. Gonzalez, Ismael A. Hinojosa-Díaz, and Charles D. Michener in 2013 and each article is published as its own number, with issues appearing online as soon as they are ready. Papers are composed using Microsoft Word® and Adobe InDesign® in Lawrence, Kansas, USA.

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ISSN 2325-4467