

Scientific Note

First record of the neotropical subgenus *Hylaeus* (*Gongyloprosopis*) Snelling, 1982, for Brazil (Hymenoptera: Colletidae)

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Abstract. We report the first record of the neotropical bee subgenus *Hylaeus* (*Gongyloprosopis*) Snelling, 1982 (Colletidae) for Brazil. Additionally, an overview of the current geographic records for the three known species of the subgenus is presented. We expand the distribution of *Hylaeus* (*Gongyloprosopis*) *orbicus* (Vachal, 1910), the male is illustrated, and the first floral association with *Vismia japurensis* Reichardt (Hypericaceae) is reported for this species.

Keywords: *Hylaeus orbicus*, Amazonas, *Vismia japurensis*.

Hylaeus Fabricius, 1793 (Colletidae: Hylaeinae) is a worldwide large genus of usually small bees, comprising 47 subgenera with more than 600 described species (Michener 2007). The neotropical subgenus *Hylaeus* (*Gongyloprosopis*) Snelling, 1982, with three known species, was proposed to house *Prosopis cruenta* Vachal, 1910. In addition to the type species, the subgenus includes *H. (G.) orbicus* (Vachal, 1910) and *H. (G.) preposterosus* Snelling, 1982. This subgenus, until now, presents the disjunct occurrence with records from Bolivia, French Guiana, Guyana, and Trinidad and Tobago (Urban & Moure 2012; Ascher & Pickering 2020).

Silveira et al. (2012) report the subgenus to Brazil, contemplating the same in the key to the subgenera of *Hylaeus* present in the country. However, the authors do not list any of the three known species among the 19 species cited for the genus. On the other hand, Michener (2007) says that the group would be widespread in South America, ranging from Argentina and Bolivia to Trinidad, further more stating that the “five” species were reviewed by Snelling (1982). However, as previously reported, this subgenus contains only three known species (Snelling 1982; Urban & Moure 2012; Ascher & Pickering 2020) and no occurrence records were found in the reviewed literature other than those here reported.

In the present work, the unprecedented occurrence of the subgenus *Hylaeus* (*Gongyloprosopis*) on Amazon rainforest, Amazonas, Brazil is documented and an overview of the current geographic records for the three known species is presented (Table 1). The distribution of the species *H. (G.) orbicus* is expanded. We sampled the specimens in the border of an experimental Amazon rainforest crop field at Embrapa Amazônia Ocidental, in Manaus, Amazonas State, Brazil (2°53'29.19"S/ 59°58'40.58"W). All individuals were deposited in the Invertebrates Collection of INPA and utilized Snelling (1982) for species identification. Photomicrographs were prepared using a Leica M205C stereomicroscope coupled with a Leica DFC295 and a Leica Application Suite V4.1 Interactive Measurements, Montage., the male is illustrated (Fig. 1) and the first floral association record is provided to this species.

Eleven male specimens were collected during a visit on a *Vismia japurensis* Reichardt (Hypericaceae) flowers between 10 A.M. and 2 P.M. Despite the field collections had been realized during one year (June/2016 to May/2017), all specimens were collected only in September (one specimen) and October (ten specimens). The

specimens collected in October flew over the flowers like a cloud, suggesting a pattern similar to the search for receptive females. The rainy season generally occurs between January and June, with a noticeable reduction in rainfall between July and September (Antonio 2017). During the main study, insects were also sampled with tree distinctives sample methods: active samplings on flowers, malaise, and yellow pantraps. However, all specimens reported were only collected through active collections on flowers.

Table 1. Species of *Hylaeus* (*Gongyloprosopis*) Snelling, sex known and distribution.

Taxon	Sex known	Distribution
<i>Hylaeus</i> (<i>Gongyloprosopis</i>) <i>cruentus</i> (Vachal)	♀♂	French Guiana, Guyana
<i>Hylaeus</i> (<i>Gongyloprosopis</i>) <i>orbicus</i> (Vachal)	♂	Brazil*, French Guiana, Guyana, Trinidad and Tobago
<i>Hylaeus</i> (<i>Gongyloprosopis</i>) <i>preposterosus</i> Snelling	♀♂	Bolivia

*New record

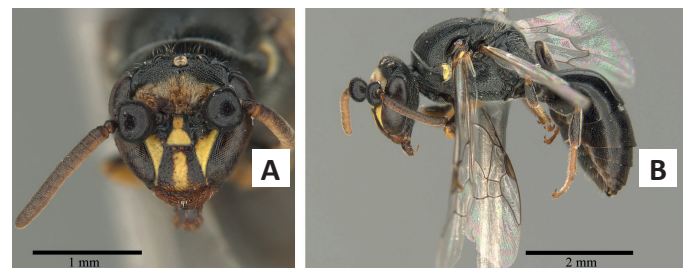


Figure 1. Male of *Hylaeus* (*Gongyloprosopis*) *orbicus* (Vachal). A. Head, frontal view; B. Lateral habitus.

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Authors' contributions

T Mahlmann performed species identification. T Mahlmann and J Hipólito review the literature and wrote the manuscript. C Krug and M Montefusco performed data collection. All authors contributed substantially to paper writing and approved the final version on the manuscript.

References

- Antonio, I. C. (2017) *Estação Agroclimatológica da Embrapa Amazônia Ocidental na Rodovia AM-010, Km 29–Manaus*. Boletim Agrometeorológico série anual, Embrapa Amazônia Ocidental.
- Ascher, J. S.; Pickering, J. (2020) Discover Life bee species guide and world checklist (Hymenoptera: Apoidea: Anthophila). http://www.discoverlife.org/mp/20q?guide=Apoidea_species. Access on: 12.iii.2020.
- Michener, C. D. (2007) *The Bees of the World*. 2nd. Ed. Baltimore: Johns Hopkins University Press.
- Silveira, F. A.; Melo, G. A. R.; Almeida, E. A. B. (2002) *Abelhas Brasileiras: Sistemática e Identificação*. Belo Horizonte, 1Ed.
- Snelling, R. R. (1982) The taxonomy of some neotropical *Hylaeus* and descriptions of new taxa. *Bulletin of the Southern California Academy of Sciences*, 81: 1-25.
- Urban, D.; Moure, J. S. (2012) Hylaeini Viereck, 1916. In Moure, J. S.; Urban, D.; Melo, G. A. R. (Orgs). Catalogue of Bees (Hymenoptera, Apoidea) in the Neotropical Region - online version. <http://www.moure.cria.org.br/catalogue>. Access on: 12.iii.2020.
- Vachal, J. (1910) Espèces nouvelles ou litigieuses d' Apidae du haut Bassin du Parana et des régions contiguës et délimitation d' une nouvelle sous-famille Diphaglossinae (Hym.). *Revue d'Entomologie (Caen)*, 28: 65-70.