Description of Gonatopus sandovalae (Hymenoptera: Dryinidae), a New Species from Ecuador

Authors: Guglielmino, Adalgisa, Olmi, Massimo, and Speranza, Stefano

Source: Florida Entomologist, 99(3) : 437-439

Published By: Florida Entomological Society

URL: https://doi.org/10.1653/024.099.0314

Description of *Gonatopus sandovalae* (Hymenoptera: Dryinidae), a new species from Ecuador

Adalgisa Guglielmino[1], *Massimo Olmi*[2,*], *and Stefano Speranza*[1]

Abstract

Gonatopus sandovalae **sp. nov**. (Hymenoptera: Dryinidae) is described from Los Rios Province (Ecuador). *Gonatopus sandovalae* can be distinguished from the related Neotropical species *G. canadensis* (Olmi) and *G. malkini* (Olmi) by the different sculpture of the scutum (with 2 lateral pointed apophyses in *G. sandovalae*; without lateral pointed apophyses in *G. canadensis* and *G. malkini*).

Key Words: taxonomy; Los Rios Province; Neotropical region; Chrysidoidea

Resumen

Se describe la nueva especie, *Gonatopus sandovalae* (Hymenoptera: Dryinidae), obtenida en la provincia de Los Rios (Ecuador). *G. sandovalae* puede ser diferenciada de las especies neotropicales más cercanas (*G. canadensis* (Olmi) y *G. malkini* (Olmi)) por la escultura diferente en el escudo (con dos apófisis laterales agudas en *G. sandovalae*; sin apófisis laterales en *G. canadensis* y *G. malkini*).

Palabras Clave: taxonomía; Provincia de Los Rios; región Neotropical; Chrysidoidea

Dryinidae (Hymenoptera: Chrysidoidea) are parasitoids of Auchenorrhyncha (Hemiptera) (Guglielmino & Virla 1998; Guglielmino & Bückle 2003, 2010; Guglielmino et al. 2013). The biology of this small group of wasps is still poorly known (Carcupino et al. 1998; Guglielmino 2000; Guglielmino et al. 2006, 2008, 2015). The genus *Gonatopus* Ljungh, 1810 is present in all zoogeographical regions. About 441 species have been described from all continents (Olmi & Guglielmino 2013; Guglielmino & Olmi 2014; Olmi & Xu 2015).

The genus was revised at first at world level by Olmi (1984, 1991) and more recently by Xu et al. (2013) for the Oriental region, Olmi & Virla (2014) for the Neotropics, and Olmi & Xu (2015) for the Eastern Palaearctic region. One hundred and twenty-three species of *Gonatopus* are known from the Neotropical region (Olmi & Virla 2014). According to Olmi & Virla (2014), the genus *Gonatopus* is divided into 12 groups. They are distinguished on the basis of the following characters:

1.— Fully winged (not found in the Neotropical region) . . . . . Group 11

1'.— Apterous (Fig. 1) 2

2.— Enlarged claw without subapical tooth, or with 1 very small subapical tooth (Plate 181A in Olmi & Virla 2014) 3

2'.— Enlarged claw with one large subapical tooth (Fig. 5) 6

3.— Distal apex of enlarged claw with group of lamellae (not found in the Neotropical region) . . . . . Group 8

3'.— Distal apex of enlarged claw without lamellae (Plates 181A, E, 182E–G, 183C, D in Olmi & Virla 2014) 4

4.— Pronotum crossed by strong transverse impression (Plates 181C, D, 182A–D, 183A, B in Olmi & Virla 2014) . . . . . Group 7

4'.— Pronotum not crossed by transverse impression or slightly impressed (Plates 202, 203A, C in Olmi & Virla 2014) 5

5.— Palpal formula 6/3 . . . . . Group 12

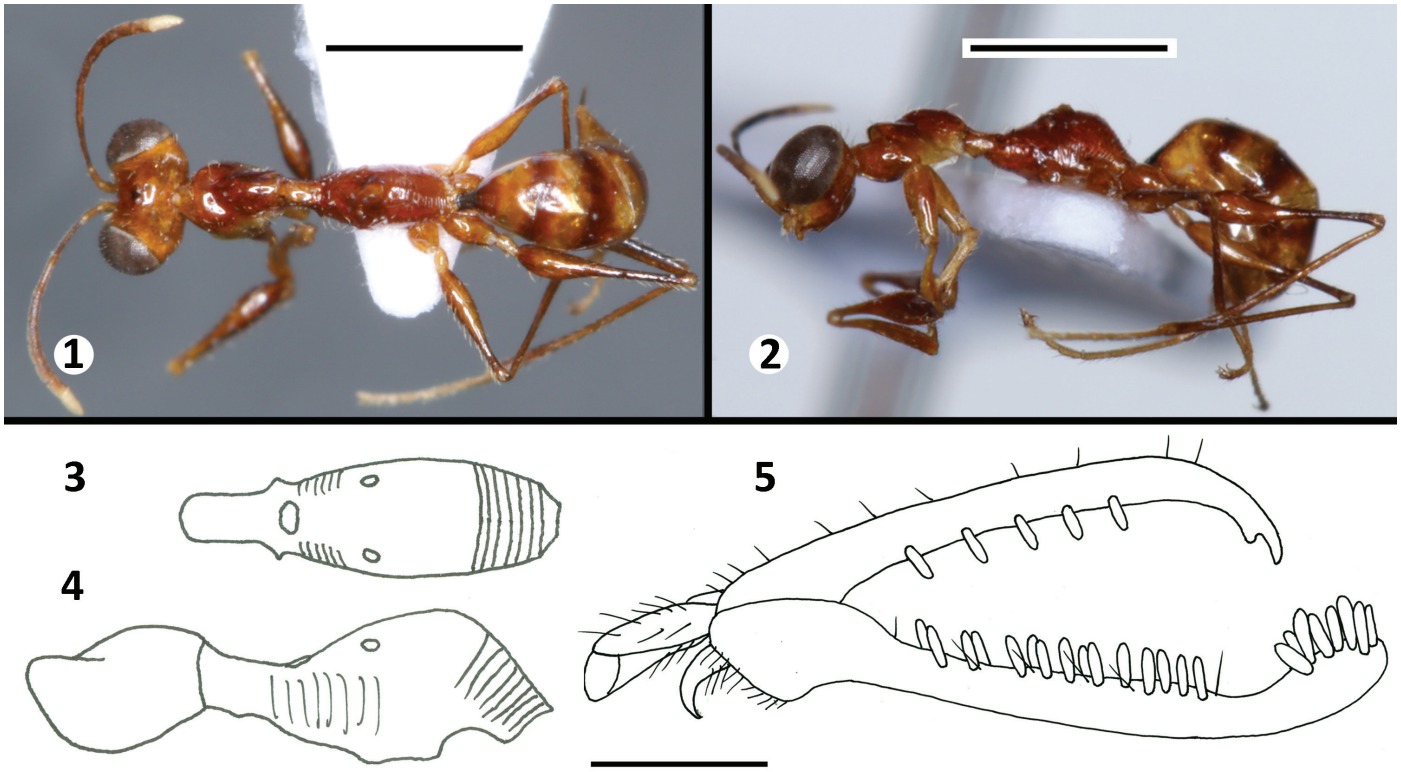
5'.— Palpal formula different . . . . . Group 6

6.— Pronotum not crossed by transverse impression or slightly impressed (as in Plate 172B in Olmi & Virla 2014) 7

6'.— Pronotum crossed by strong transverse impression (Fig. 2) 8

7.— Labial palpi 3-segmented . . . . . Group 9 (not found in the Neotropical region)

[1]Department of Agriculture and Forestry Sciences (DAFNE), University of Tuscia, Viterbo, 01100 Italy; E-mail: guglielm@unitus.it (A. G.), speranza@unitus.it (S. S.)
[2]Tropical Entomology Research Center, Via De Gasperi 10, Viterbo, 01100 Italy; E-mail: olmi@unitus.it (M. O.)
*Corresponding author; E-mail: olmi@unitus.it (M. O.)



Figs. 1–5. Female holotype of *Gonatopus sandovalae* **sp. nov.**: habitus in dorsal (1) and lateral (2) view; scutum, scutellum and metathorax + propodeum in dorsal view (3); mesosoma in lateral view (4); chela (5). Scale bar 1.28 mm for 1 and 2, 0.53 mm for 3, 0.58 mm for 4, and 0.14 mm for 5.

7′.—	Labial palpi 2-segmented	Group 5
8.—	Enlarged claw without lamellae, with or without bristles or peg-like hairs (Plate 153B, D in Olmi & Virla 2014)	Group 1
8′.—	Enlarged claw with lamellae (Fig. 5)	9
9.—	Labial palpus 2-segmented	10
9′.—	Labial palpus 3-segmented	11
10.—	Maxillary palpus composed of 2–4 segments	Group 2
10′.—	Maxillary palpus 5-segmented	Group 10
11.—	Maxillary palpus 6-segmented	Group 4
11′.—	Maxillary palpus with 4–5 segments	12
12.—	Maxillary palpus 5-segmented	Group 3
12′.—	Maxillary palpus 4-segmented	Group 10

In 2015, we examined additional specimens of *Gonatopus* from Ecuador and found the new species described herein.

Material and Methods

The descriptions follow the terminology used by Olmi (1984), Olmi & Guglielmino (2010), and Olmi & Virla (2014). The measurements reported are relative, except for the total length (head to abdominal tip, except antennae), which is expressed in millimeters. In the descriptions, POL is the distance between the inner edges of the 2 lateral ocelli; OL is the distance between the inner edges of a lateral ocellus and the median ocellus; OOL is the distance from the outer edge of a lateral ocellus to the compound eye; OPL is the distance from the posterior edge of a lateral ocellus to the occipital carina; and TL is the distance from the posterior edge of an eye to the occipital carina. The material studied in this paper is deposited in the collections of the Pontificia Universidad Católica del Ecuador, Quito, Ecuador (QCAZ).

Results

Gonatopus sandovalae **sp. nov.** (Figs. 1–5)

DESCRIPTION

Holotype female. Apterous (Fig. 1). Length 3.4 mm. Body testaceous-ferruginous, except petiole black; antenna brown, except segments 1 and 2 testaceous and segment 10 whitish. Antenna clavate;

antennal segments in following proportions: 8:6:14:9:7:6:6:6:5:10. Head very excavated, glossy, unsculptured; frontal line complete; occipital carina absent; temple absent; POL = 1; OL = 1; OOL = 6. Palpal formula 5/2. Pronotum glossy, unsculptured, crossed by strong transverse impression. Scutum glossy, unsculptured, with 2 lateral pointed apophyses (Figs. 1 and 3). Scutellum inclined. Metanotum inclined, unsculptured, not transversely striate, not hollow behind scutellum (Figs. 2 and 4). Meso- and metapleuron transversely striate. Metathorax + propodeum glossy, with anterior surface unsculptured; posterior surface transversely striate. Meso-metapleural suture obsolete. Protarsal segments in following proportions: 14:3:4:14:22. Enlarged claw (Fig. 5) with 1 large subapical tooth and 1 row of 5 lamellae. Segment 5 of protarsus (Fig. 5) with 2 rows of 4+11 lamellae; distal apex with at least 15 lamellae. Tibial spurs 1/0/1.

Male: Unknown.

TYPE MATERIAL

HOLOTYPE female, ECUADOR: Los Rios Province, Centro Científico Rio Palenque, 180 m, Col. MAB-UNESCO, 10-I-1981, col. S. Sandoval (QCAZ).

ETYMOLOGY

The species is named after the collector, Ms. Sonia Sandoval.

REMARKS

The characters distinguishing the new species are as follows: female apterous (Figs. 1 and 2); palpal formula 5/2; pronotum crossed by strong transverse impression (Figs. 2 and 4); scutum with 2 lateral pointed apophyses (Figs. 1 and 3); metanotum not hollow behind scutellum (Figs. 2 and 4); meso-metapleural suture obsolete; posterior surface of propodeum strongly transversely striate (Figs. 1, 3, 4); enlarged claw with lamellae and 1 large subapical tooth (Fig. 5). Because of the above characters, *G. sandovalae* belongs to *Gonatopus* group 10 (see Introduction of this paper). *Gonatopus sandovalae* is close to *G. canadensis* (Olmi 1984) and *G. malkini* (Olmi 1991). The main differences among these 3 species regard the sculpture of the scutum: with 2 lateral pointed apophyses in *G. sandovalae* (Figs. 1 and 3); without lateral apophyses in *G. canadensis* and *G. malkini* (Plate 154D in Olmi & Virla 2014). Following the description of *G. sandovalae*, the key to the females of the Neotropical species of *Gonatopus* group 10 published by Olmi & Virla (2014) can be modified by replacing couplet 4 as follows:

4.— Scutum with 2 lateral pointed apophyses (Figs. 1 and 3) . . . . . *G. sandovalae* **sp. nov**.

4'.— Scutum without lateral pointed apophyses (Plate 154D in Olmi & Virla 2014) 4*

4*.— Metathorax + propodeum with anterior region granulated and disc with strong track of median longitudinal furrow . *G. canadensis* (Olmi)

4*'.— Metathorax + propodeum with anterior region alutaceous and disc without strong track of median longitudinal furrow. . . . . *G. malkini* (Olmi)

Acknowledgments

Many thanks to Giovanni Onore for his help during a recent trip to Ecuador. We are also grateful to the QCAZ Museum staff (Pontificia Universidad Católica del Ecuador, Quito) for the loan of the specimen studied in the present paper.

References Cited

Carcupino M, Guglielmino A, Mazzini M, Olmi M. 1998. Morphology and ultrastructure of the cephalic vesicles in two species of the *Gonatopus* genus: *Gonatopus camelinus* Kieffer and *Gonatopus clavipes* (Thunberg) (Hymenoptera, Dryinidae, Gonatopodinae). Invertebrate Reproduction and Development 34: 177–186.

Guglielmino A. 2000. A contribution to the knowledge of Auchenorrhyncha–Dryinidae relationships in the Palaearctic region. Mitteilungen aus dem Museum für Naturkunde in Berlin–Deutsche Entomologische Zeitschrift 47: 147–159.

Guglielmino A, Bückle C. 2003. Description of larval instars of *Neodryinus typhlocybae* (Ashmead, 1893) (Hymenoptera Dryinidae), with remarks on its biology. Mitteilungen aus dem Museum für Naturkunde in Berlin–Deutsche Entomologische Zeitschrift 50: 143–150.

Guglielmino A, Bückle C. 2010. Description of larval instars of *Mystrophorus formicaeformis* Ruthe (Hymenoptera: Dryinidae). Zootaxa 2602: 57–66.

Guglielmino A, Olmi M. 2014. Revision of the Afrotropical species of *Gonatopus* group 3 (Hymenoptera: Dryinidae), with description of a new species from Ghana. Zootaxa 3802: 35–50.

Guglielmino A, Virla EG. 1998. Postembryonic development of *Gonatopus lunatus* Klug (Hymenoptera: Dryinidae: Gonatopodinae), with remarks on its biology. Annales de la Société entomologique de France (N.S.) 34: 321–333.

Guglielmino A, Bückle C, Moya-Raygoza G. 2006. Description of the larval instars of *Gonatopus bartletti* Olmi, 1984 (Hymenoptera: Dryinidae). Zootaxa 1226: 51–60.

Guglielmino A, Virla EG, Olmi M, Moya-Raygoza G, Vollaro M. 2008. Parasitization behaviour and postembryonic development in the subfamily Gonatopodinae. Bulletin of Insectology 61: 211.

Guglielmino A, Olmi M, Bückle C. 2013. An updated host–parasite catalogue of world Dryinidae (Hymenoptera: Chrysidoidea). Zootaxa 3740: 1–113.

Guglielmino A, Parise G, Bückle C. 2015. Description of larval instars of *Dryinus tarraconensis* Marshall, 1868 and *Gonatopus baeticus* (Ceballos, 1927) (Hymenoptera: Chrysidoidea: Dryinidae), parasitoids of the genus *Dictyophara* Germar (Hemiptera: Auchenorrhyncha: Dictyopharidae). Zootaxa 4032: 42–54.

Ljungh SJ. 1810. *Gonatopus*, novum insectorum genus. Beiträge zur Naturkunde 2: 161–163.

Olmi M. 1984. A revision of the Dryinidae (Hymenoptera). Memoirs of the American Entomological Institute 37: 1–1913.

Olmi M. 1991. Supplement to the revision of the world Dryinidae (Hymenoptera Chrysidoidea). Frustula entomologica (1989 N.S.) 12: 109–395.

Olmi M, Guglielmino A. 2010. Description of Erwiniinae, new subfamily of Dryinidae from Ecuador (Hymenoptera: Chrysidoidea). Zootaxa 2605: 56–62.

Olmi M, Guglielmino A. 2013. Description of *Gonatopus rileyi* sp. nov. from Arkansas (Hymenoptera: Dryinidae). The Pan-Pacific Entomologist 89: 79–83.

Olmi M, Virla EG. 2014. Dryinidae of the Neotropical region (Hymenoptera: Chrysidoidea). Zootaxa 3792: 1–534.

Olmi M, Xu Z. 2015. Dryinidae of the Eastern Palaearctic region. Zootaxa 3996: 1–253.

Xu Z, Olmi M, He J. 2013. Dryinidae of the Oriental region (Hymenoptera: Chrysidoidea). Zootaxa 3614: 1–460.