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Description of a new species of *Leptogaster* Meigen, 1803 (Diptera: Asilidae: Leptogastrinae) from Papua New Guinea

Guy TOMASOVIC

Gembloux Agro-Bio Tech, Université de Liège, Entomologie fonctionnelle et évolutive (Prof. Frédéric Francis),
Passage des Déportés, 2, B-5030 Gembloux, Belgique. E-mail: guytomasovic@yahoo.fr



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Front cover: Habitus of *Leptogaster madangensis* Tomasovic sp. nov., Papua New Guinea, Madang province, Baiteta, 7.VI.1996, leg. O. Missa. © Gembloux Agro-Bio Tech.

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Abstract

A new species of *Leptogaster* is described from Madang province in Papua New Guinea. Herein we describe *Leptogaster madangensis* sp. nov., with addition of photographs and drawings. A new objective replacement name *Leptogaster aruensis* Tomasovic, **nom. nov.** is proposed for *L. ferrugineus* Walker, 1858.

Keywords: Australasian region, island, robber flies

Introduction

The material treated in this note is from Papua New Guinea that occupies the eastern half of the island of New Guinea. It has been collected by Olivier Missa during the Canopy mission in 1995–1996 to Baiteta, the locality in Madang province. The climate is tropical monsoon type, hot and humid all year round, though somewhat cooler in the highlands (WIKIPÉDIA 2020).

Until today only three species of *Leptogaster* from New Guinea and surrounding island (DANIEL 1989) are recorded: *Leptogaster ferrugineus* [homonym] Walker, 1858 *L. rufithorax* Meijere, 1913 and *L. tarsalis* Walker, 1861 (Fig. 5). With the warm climate and the large variety of habitats on this vast territory it is obvious that this low number of species is hugely underestimated. Until today there are no specimens of *Leptogaster* known for the country Papua New Guinea.

Nomenclatural changes

WALKER (1855: 771) described the Neotropical robber fly *Leptogaster ferrugineus*; the same WALKER (1858: 89) described the Australasian robber fly *Leptogaster ferrugineus*. In order to make it possible to distinguish both taxa by their names and prevent future confusion, following the ICZN Art. 60.3 we herewith propose *Leptogaster aruensis* Tomasovic, **nom. nov.** as the objective replacement name for *Leptogaster ferrugineus* Walker, 1858. The specific name derives from Aru islands a group of about ninety-five low-lying island and the Maluku province of eastern Indonesia.

Material and methods

The material studied in the present paper is part of 22 specimens of *Leptogaster* Meigen, 1803 collected by fumigation of the canopy by Olivier Missa in Papua New Guinea, (5°014'S 145°75'E). The specimens were studied using an Olympus SZ40 and a Wild M5 drawing tube. The male genitalia were dissected and glued on a cardboard attached to the pin of the corresponding specimen. The photographs were taken by J. Mignon with a Canon 90d equipped with a Canon EF 100mm f/2.8L Macro IS USM. The focus bracketing function was used and the image was compiled by stacking with the DPP 4.10 software.

For morphological terminology we have followed GELLER-GRIMM (2007).

The holotype and paratypes of the new species are preserved in the Royal Belgian Institute of Natural Sciences, Brussels, Belgium (RBINS). Following descriptions and keys were used to identify the species: WHITE (1917), FREY (1937) and HARDY (1942) and also the original descriptions of MEIJERE (1913) and WALKER (1858, 1861).

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Taxonomy

Family Asilidae Latreille, 1802
Subfamily Leptogastrinae Schiner, 1862
Genus *Leptogaster* Meigen, 1803

***Leptogaster madangensis* sp. nov.**

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(Figs. 1–4)



Fig. 1. Habitus of *Leptogaster madangensis* Tomasovic sp. nov., Papua New Guinea, Madang province, Baiteta, 7.VI.1996, leg. O. Missa. © Gembloux Agro-Bio Tech.

DIAGNOSIS. Species shiny, brown and yellow, small, slender and flimsy. Wings shorter than abdomen. Legs yellow, hind femora with a large distinguishable darker ring. Empodium very fine and small.

ETYMOLOGY. The name of the species refers to the Madang province where the type has been collected in Papua New Guinea.

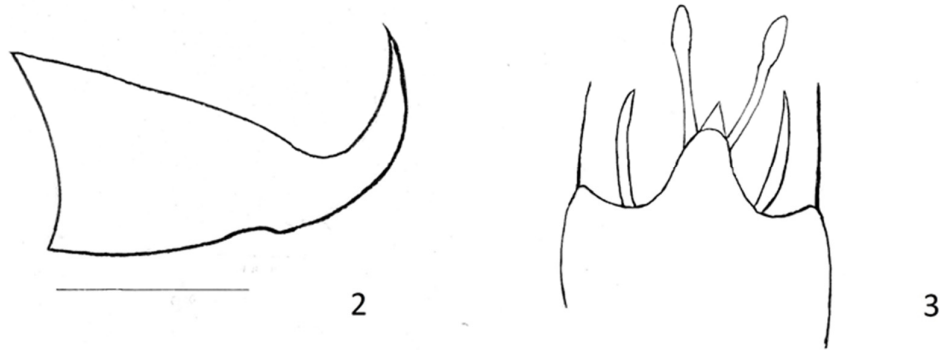


Fig. 2. Lateral view of epandrium. Scale bar 0.5 mm.

Fig. 3. Ventral view of the tip of hypandrium and structures of the gonopods.

DESCRIPTION. Length body 1.3 cm, wings 4 mm.

Head. Frons and face narrow. Mystax with 2–4 long, very fine and white setae. Proboscis yellowish-brown, palpi small with 1 fine and white hair on tip. Antennae: scape and pedicel small, yellow with clear small fine setae, postpedicel brown slightly longer as the scape and pedicel together, style longer than 3 first segments. Vertex and occiput with grey tomentum.

Thorax. Scutum shining brown with three broad darker stripes, one long, fine and black notopleural setae (this last is weak and often away). Pleura white orange. Legs yellow, claw black, empodium very fine and small. Metafemora with a large darker ring. Wings (Fig. 4) lightly brown at the tip, uniformly covered with microtrichia, costa with relatively long white and fine setae. Halter with a long, fine and clear stem, knob with a black spot.

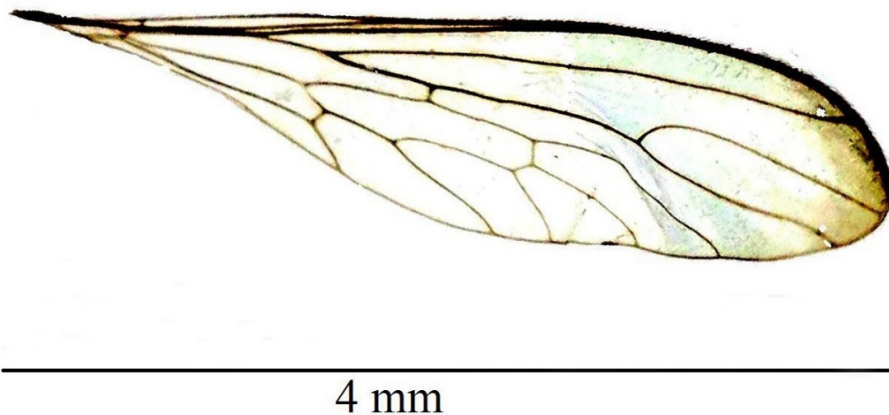


Fig. 4. Wing of *Leptogaster madangensis* Tomasovic sp. nov.

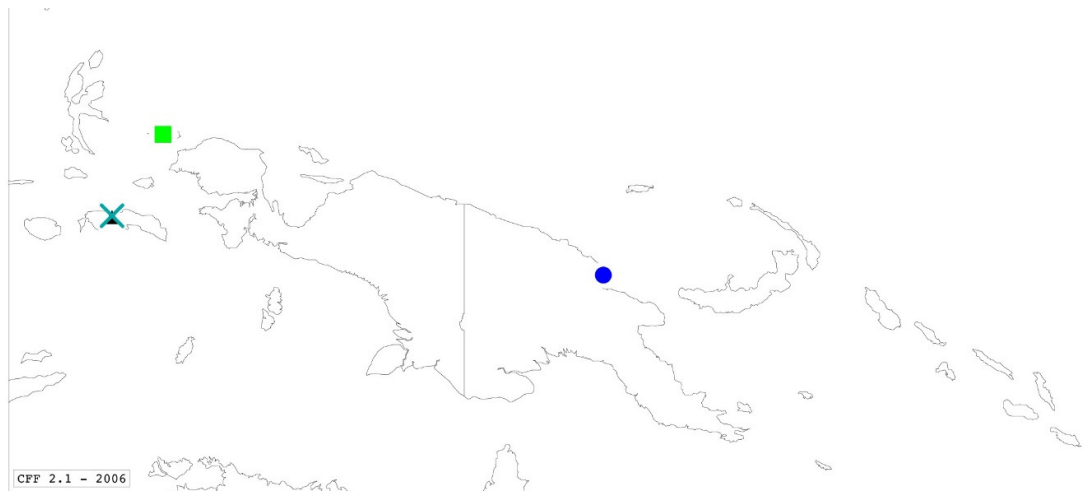
Abdomen. Fine and long, shining brown, covered by macrosetae yellowish. Tergite I ♀♀ considerably longer than tergite II and with a central ring yellowish. All tergites with posterior margin yellowish. Male genitalia: brown-dark with fine and sparse small and black setae. Epandrium (Fig. 2) triangular with inward curved and pointed apex. Hypandrium (Fig. 3) with 2 long, fine and black laterally setae. Gonopods displaced to sides of apex of Hypandrium, dististylus lightly curved and sharp to the top, sclerites lightly club-shaped, phallus no studied.

TYPE MATERIAL. **Holotype** ♂ is labelled as follows: ‘Canopy mission P.N.G. Madang province Baiteta, FOG AR56 7.VI.1996. Leg. Olivier Missa /Holotype *Leptogaster madangensis* sp. nov. det. G. Tomasovic 2020. The specimen is double mounted (minute pin in block of foam), is in excellent condition, and is deposited in the RBINS.

Paratypes 12♂, 9♀: same locality as the holotype: 1♂ same data as holotype; 1♂1♀, FOG AR52-11, 17.V.1996. 1♂1♀, FOG AR42, 12.IV.1996. 3♂2♀, FOG AR62, 3.VII.1998. 1♂, FOG AR60, 27.VI.1996. 1♂1♀, FOG AR58, 18.V.1996. 2♂2♀, FOG AR61, 28.V.1995. 1♂, FOG AR3, 6.VII.1995. 1♀, FOG AR70, 25.VII.1996. 1♂ 1♀, FOG AR66, 16.VII.1996 all deposited in the RBINS.

Key of the *Leptogaster* from Papua

1. Scutum black, pleura with whitish tomentum 2
- Scutum other colour 3
2. Legs tawny. Wings slightly greyish *L. aruensis* Tomasovic, **nom. nov.**
- Legs yellow and black. Wings with a black spot *L. tarsalis* Walker, 1861
3. Thorax reddish-yellow, wings with a brown black strip at the tip. Legs tawny, femora black at the tip; tarsi black *L. rufithorax* Meijere, 1913
- Thorax shining brown, with three darker strips. Wings clear and lightly brown at the tip. Legs wholly yellowish *L. madangensis* **sp. nov.**



- ▲ *Leptogaster ferrugineus* 1 specimen
- *Leptogaster madangensis* 3 specimens
- *Leptogaster rufithorax* 1 specimen
- × *Leptogaster tarsalis* 1 specimen

Fig. 5. Distribution map of *Leptogaster* species.

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