


# Nomenclatural Act

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## *Miristhma boyi* sp. n. (Hymenoptera: Pteromalidae: Pteromalini), a new species from Uruguay

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**Abstract.** This study is focused on the parasitic wasps *Miristhma* Bouček, 1993 (Hymenoptera: Pteromalidae: Pteromalinae: Pteromalini), a small and poorly represented genus in entomological collections. Herein *Miristhma boyi* sp. n. is described as new to science based on specimens obtained from eastern Uruguay. Additionally, we provide illustrations, an identification key for these species, and a map with the geographical distribution of the known species of *Miristhma* based on the new record and literature data.

**Keywords:** Chalcidoidea, extension of geographic range, Neotropical Region.

Burks et al. (2022) elevated twenty-three former subfamilies and tribes of Pteromalidae to family rank and now Pteromalidae comprises eight subfamilies and about 400 genera in the world.

*Miristhma* Bouček, 1993 (Hymenoptera: Pteromalidae: Pteromalinae) belongs to the tribe Pteromalini (Burks et al. 2022) and is a small genus of chalcid wasps found exclusively in the New World. It includes *Miristhma peckorum* Bouček, 1993 and *Miristhma aenea* Bouček, 1993, both described by Bouček (1993). The former species has been reported in the USA, while the latter has been found in the USA and Venezuela (Bouček 1993). Additionally, there have been reports of at least one unidentified species of *Miristhma* in the state of Espírito Santo, Brazil (Azevedo et al. 2015). Nothing is known about the biology of *Miristhma* species.

Members of *Miristhma* may be distinguished by its remarkably elongated propodeum, resembling that of *Longinucha* Bouček, 1988, from Australia, from whom it differs in antennae shape, head structure, pronotum, and mesoscutum, among other features (Bouček 1993).

The present study aimed to describe and illustrate a new species of *Miristhma* collected in the Department of Rocha, in eastern Uruguay. Additionally, we provide a map with the geographical distribution of the known species of *Miristhma* based on this new record and literature data, as well as an identification key for these species.

Holotype and paratype of the new species collected in the Department of Rocha, in eastern Uruguay and described in this paper are deposited in the Coleção Entomológica of the Laboratório de Sistemática e Bioecologia de Predadores e Parasitoides (LRRP), Instituto Biológico, Ribeirão Preto, SP, Brazil (N. W. Perioto, curator). The sampling protocol conducted in Uruguay is detailed in Castiglioni et al. (2017) and Fernandes et al. (2019).

The images were obtained at the Laboratório de Sistemática e Bioecologia de Predadores e Parasitoides (Instituto Biológico, Ribeirão Preto, Brazil) using a Leica DFC295 digital camera attached to a Leica M205C automated research stereomicroscope. The specimens under study were illuminated using a Leica LED5000 HDI high diffuse dome of illumination (Kerr et al. 2008). Serial images from different layers were captured using Leica Application Suite software (LAS version 4.12.0), partially focused images were combined using Helicon Focus software (v. 5.3), and image clarity was enhanced using Adobe Photoshop software (v. 11.0).

The initial generic identification was conducted by Jeong Yoo (Department of Natural History, Royal Ontario Museum, Ontario, Canada) based on a publication by the first author on April 12, 2024, within the Hymenopterists Forum group on Facebook™. This identification was later confirmed by the publication of Bouček (1993).

The consistency of anatomical data with the Hymenoptera Anatomy Ontology project (Yoder et al. 2010; Seltsmann et al. 2012) was determined using the tool available through the Hymenoptera Glossary (HAO 2019). The integument sculpturing follows Harris (1979).

Species distributions were assembled in a dataset and incorporated into distribution maps generated by SimpleMapp (Shorthouse 2010).

The following acronyms refer to states of USA: FL, Florida; VA, Virginia; to a state of Venezuela: MER, Merida, and to a department in Uruguay: RO, Rocha.

Abbreviations are as follows: OOL = ocular ocellar line; POL = posterior ocellar line;  $F_n$  ( $n$  = number of funicular segment) = funicular segments.

Information on specimen labels is given *ad litteram*.

### Key to world species of *Miristhma* (females)

1a. Stigmal vein strongly knobbed (see fig. 86 in Bouček (1993)); sides of propodeum with long and dense white setae; body dark aeneous, gaster brightly dark green with dark purple bands. Distribution: USA (VA), Venezuela (MER) (Fig. 9) ..... *M. aenea* Bouček

1b. Stigmal vein only slightly knobbed (see fig. 85 in Bouček (1993)); sides of propodeum with sparse setae ..... 2

2a. Petiole yellow, gaster bright green; head and mesosoma black with slight dark green to bronze or bluish tinge; eye prominent, eye height/malar space = 2.2; gaster anteriorly oval; posterior margin of T1 produced in two lobes separated by rectangular excision; T2 slightly less excised than T1. Distribution: USA (FL) (Fig. 9) .....  
..... *M. peckorum* Bouček, 1993

2b. Petiole and gaster bright brown (Fig. 1); head and mesosoma black with very slight bluish tinge (Figs. 2-4); eye not prominent, eye height/malar space = 1.7 (Fig. 3); posterior margin of T1 produced into two small lobes separated by slight triangular excision; T2 not excised. Distribution: Uruguay (RO) (Fig. 9) ..... *M. boyi* sp.n.



Figures 1-6. *Miristhma boyi* sp. n. (Hymenoptera, Pteromalidae). 1. Holotype female, lateral habitus; 2. Head, anterior view; 3. Head, anterolateral view; 4. Mesosoma, dorsal view; 5. Fore wing; 6. Propodeum, dorsolateral view.

***Miristhma boyi* Perioto & Lara sp. n.**

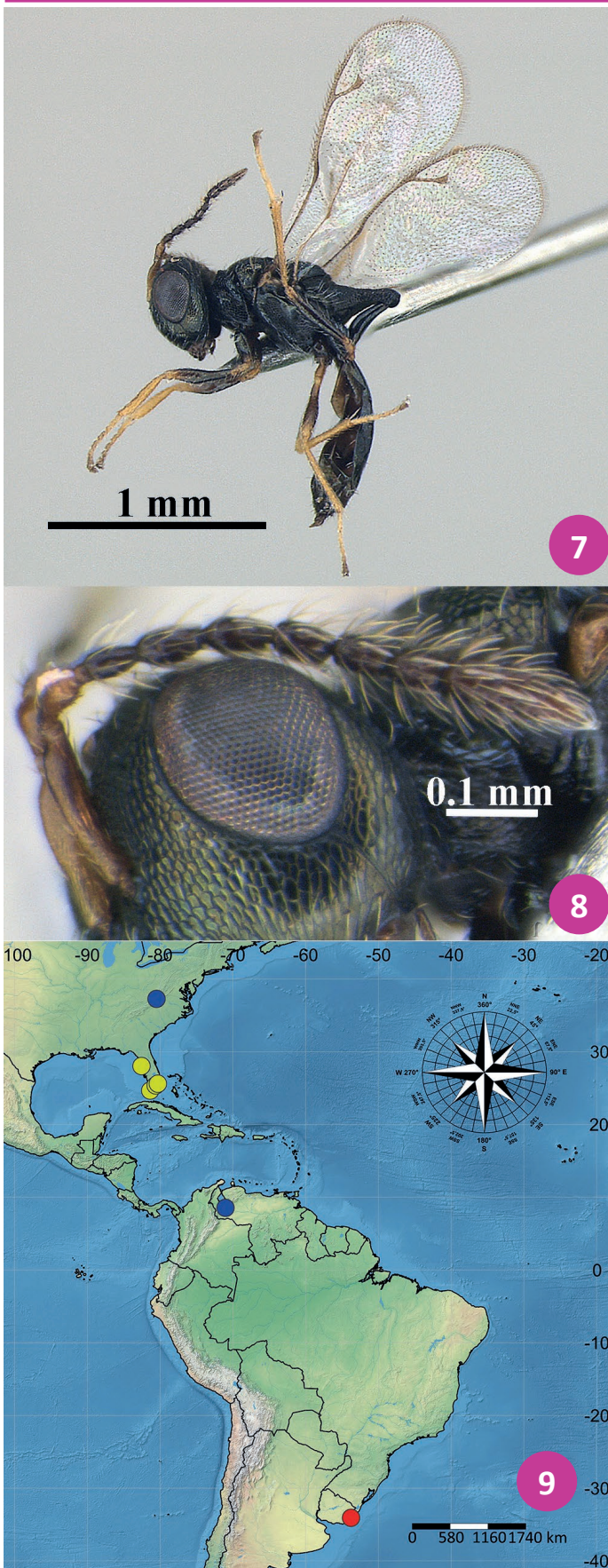
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**Figs. 1-9**

**Diagnosis:** *Miristhma boyi* sp. n. can be distinguished from all other species known in the genus by the following combined characters: stigmal vein only slightly knobbed; sides of propodeum with sparse setae; petiole and gaster bright brown.

**Description:** Holotype female (Fig. 1). Body length 2.4 mm. Head and mesosoma black with very slightly bluish tinge, except antenna, mandible, tegula, coxa and femur light brown, and tibia and tarsi pale yellow; petiole and gaster bright brown. Wings hyaline.

Head about 1.1x as broad as mesoscutum, in dorsal view, about 1.8x broad as long and 1.2x as broad as height (Fig. 2); OOL:POL= 0.7; eye not prominent, 1.2x as height as broad, 1.7x malar space (Fig. 3). Clypeal margin emarginate, not produced; surface striate. Antenna (Fig. 2) clavate, scape length 0.5x as flagellum plus pedicel, extending beyond the posterior margin of the anterior ocellus; all 3 anelli combined 0.8x as long as first funicular segment; clava with oblique sutures, 1.8x as broad as pedicel. Head and dorsal mesosoma reticulate, with sparse setae (Figs. 2-4). Scutellum (Fig. 4) slightly transverse, 1.3 times as broad as long, with sides steep, axillula not conspicuous in dorsal view.



**Figures 7-9.** *Miristhma boyi* sp. n. (Hymenoptera, Pteromalidae). 7. Paratype male, lateral habitus; 8. Antenna of male; 9. Map of North (part), Central and South America showing distribution of *Miristhma* Bouček, 1993 species: blue dots= *M. aenea* Bouček, 1993; yellow dots= *M. peckorum* Bouček, 1993 and, red dot= *Miristhma boyi* sp. n..

Dorsellum smooth and shiny laterally. Propodeum (Fig. 6) 1.5x longer than petiole, with strong raised reticulation appearing rasp-like

on sides of long neck; callus finely reticulate, with sparse, long white setae. Hind coxa finely reticulate with sparse setae anterolaterally. Fore wing (Fig. 5) with bare speculum; stigmal vein only slightly knobbed; marginal vein 1.3x as long as postmarginal vein and 2.0x as long as stigmal vein. Petiole broadest behind middle, tapering distinctly forward. Gaster of triangular shape, apex strongly acuminate (Fig. 1). Posterior margin of T1 produced into two small lobes separated by slight triangular excision; T2 not excised.

Male (Fig. 7). Very similar to female except for antennae, black petiole and form of gaster, latter translucent, pale in middle and ventrally. Antenna (Fig. 8) with 2 anelli, both combined as long as broad; scape slightly widened distally; flagellum distinctly setaceous, setae longer than broad of full segments;  $F_{1-6}$  longer than wide (1.7x, 1.8x, 2.0x, 1.5x, 1.7x, 1.4x, respectively); clava slightly broader, acuminate, almost as long as 3 preceding segments together.

**Material Examined:** HOLOTYPE female (LRRP), URUGUAY, Rocha, Castillos, 34°05'0.08"S; 53°45'38.1"W, arm. Malaise, 13/X/2015, E. Castiglioni e eq., cols. PARATYPE, 1 male (LRRP), same data. The holotype and paratype are in good condition.

**Distribution:** Presently known only from the Uruguay (Rocha) (Fig. 9).

**Discussion:** *Miristhma boyi* sp. n. can be distinguished from *M. aenea* by the stigmal vein only slightly knobbed and sides of propodeum with sparse setae (vs. stigmal vein strongly knobbed and sides of propodeum with long and dense white setae) and from *M. peckorum* by the eye not prominent (vs. eye prominent), petiole and gaster bright brown (vs. petiole yellow, gaster bright green) and gaster anteriorly triangular (vs. gaster anteriorly oval). The results presented here extend the geographical distribution of the genus *Miristhma*, by recording it for the first time in Uruguay.

**Etymology:** The name is in honor of the Brazilian hymenopterologist Daniell Rodrigo Rodrigues Fernandes, also known as "Boy".

### Taxonomic Authorities

*Miristhma* Bouček, 1993 in Bouček (1993). *Miristhma peckorum* Bouček, 1993 in Bouček (1993). *Miristhma aenea* Bouček, 1993 in Bouček (1993). *Longinucha* Bouček, 1988 in Bouček (1988).

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### Authors' Contributions

NWP and RIRL: Conceptualization, Formal Analysis, Writing - original draft, Writing - review & edition.

### Conflict of Interest Statement

The authors declare no conflicts of interest.

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