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Description of a new genus, *Chileana* (Hymenoptera: Chalcidoidea: Torymidae), with four new species

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Abstract

Chileana Janšta & Křížková **gen. nov.** and four new species, *C. cyanea* Janšta & Křížková **sp. nov.**, *C. maculata* Janšta & Křížková **sp. nov.**, *C. tricarinata* Janšta & Křížková **sp. nov.** and *C. penai* Janšta & Křížková **sp. nov.**, all from Chile, are described. The placement of this new genus within the tribe Monodontomerini is discussed and several characters suggest a close relationship to *Zaglyptonotus*.

Key words: Monodontomerini, *Zaglyptonotus*, *Perissocentrus*, taxonomy

Introduction

Grissell (1995) divided the family Torymidae in two subfamilies, Megastigminae and Toryminae, and the latter into seven tribes, Chalcimerini, Microdontomerini, Monodontomerini, Palachiini, Podagrionini, Torymini and Torymoidini. The subfamilies and tribes, but not the family, were supported as monophyletic based on the molecular analysis of Munro et al. (2011). Recently, Heraty et al. (2013) made the first comprehensive study of the phylogeny of the Chalcidoidea using both morphological and molecular characters. They recovered the family Torymidae as monophyletic with Ormyridae or Ormyridae + Cerocephalinae (Pteromalidae) as its sister group. Currently, 67 extant valid genera of Torymidae are recognized (12 in Megastigminae and 55 in Toryminae), with about 1100 valid species (Grissell 1995, Noyes 2012, Janšta et al. 2011). Most species of Megastigminae are phytophagous (seed-feeders) with a few entomophagous species, whereas species of Toryminae are primarily entomophagous.

Herein, we describe a new genus of Toryminae known only from Chile, with four new species. We discuss the placement of this new genus in the tribe Monodontomerini based on published morphological (Grissell 1995) and preliminary unpublished molecular studies.

Material and methods

Images of specimens were made by environmental SEM and using a digital camera. SEM micrographs of uncoated specimens were prepared at the Department of Paleontology of the National Museum in Prague using a Hitachi S-3700N scanning electron microscope. Habitus pictures were obtained using a Canon 60D digital camera, equipped with a Canon MP-E 65/2.8 MACRO lens and 5:1 optical magnification. Partially focused images of each specimen were combined using Zerene photo stacker software, version 1.04. The dry mounted specimens were examined under Leica MZ16 stereoscopic microscope. All plates were built using program GIMP 2.8.

Morphological abbreviations and acronyms. Morphological terms and morphological abbreviations mostly follow Gibson et al. (1997): MPS = multiporous plate sensilla; HTE = height of eye; LTE = length of eye; msp = length of malar space; F1–F7 = funicle segments 1–7; POL = distance between posterior ocelli; OOL = distance

Metasoma. About the same length as mesosoma; in lateral view oval; in dorsal view 0.72× as wide as mesosoma. Petiole short, dorsally transverse. Gaster smooth and shiny dorsally or at most very slightly alutaceous, the sculpture more conspicuous laterally; Gt₁ medially slightly emarginate, rest of tergites with straight margins; Gt₁ with patch of long dense white setae basolaterally and Gt₃₋₅ with few brown setae laterally. Ovipositor 2.38× as long as metasoma, ovipositor index 3.3.

MALE. Unknown.

Biology. Unknown.

Discussion

Chileana is indicated to belong to the tribe Monodontomerini based on several morphological characters mentioned by Grissell (1995). The clava is composed of three antennomeres separated by distinct annulations that completely encircle the club and it lacks ventral micropilosity; the anterior edge of the propodeal foramen is closer to the posterior edge than the anterior edge of the hind coxal foramen; the interior coxal carinae joins the medial edge of the propodeal foramen and continues to the anterior margin of the plate; the metasternal area is longitudinally narrowed, its length subequal to the diameter of the propodeal foramen; the marginal vein is 2–3× as long as the postmarginal vein and 4–6× as long as the stigmal vein; the hind femur has a single tooth distally; and the hind tibia is straight.

Chileana differs from other genera belonging to the tribe Monodontomerini in having the occipital carina well developed with the ventrolateral edges extending below an imaginary line drawn across the dorsum of the hypostoma and not touching the hypostomal carina. Further, the dorsum of the occipital carina is located midway between the posterior ocelli and occipital foramen. This latter character also occurs in *Zaglyptonotus* Crawford, which was placed as sister to Monodontomerini by Grissell (1995) in his “Working Hypothesis” (Grissell 1995, fig. 37) and as *incertae sedis* as part of a multichotomy in his “Ending Hypothesis” (Grissell 1995, fig. 38). The emargination of Gt₁–Gt₃ in *Chileana* is also lacking from other Neotropical and Nearctic Monodontomerini but observed in *Zaglyptonotus*, though it is not as deep as in *Zaglyptonotus*. However, in contrast to *Zaglyptonotus*, the frenal line and frenum is well developed, and the frenum is smooth or at most is alutaceous.

Based on the few shared morphological similarities, we suggest that *Chileana* belongs to the tribe Monodontomerini (*sensu* Grissell 1995) and is closely related to *Zaglyptonotus*. This position is further supported by a preliminary molecular study based on 5 genes (Janšta et al., in prep). In that study, *Zaglyptonotus*, *Chileana* and the South American genus *Perissocentrus* Crawford form a monophyletic clade sister to the rest of the genera of Monodontomerini except *Zdenekius*, which is sister to the all known genera of the tribe Monodontomerini.

Chileana has never been recovered outside of Chile despite the extensive study of Neotropical torymid specimens by the first author. This suggests that *Chileana* could be endemic to the Chilean Andes. Some records also indicate that it is probably a parasitoid of unspecified gall-makers on *Nothofagus* (possibly some larvae of a weevil). *Chileana* is the second genus new to science described from South America in the last few years and suggests that the Neotropical torymid fauna is still very poorly known (Janšta et al. 2011).

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