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***Jubogaster towai*, a new Neotropical genus and species of Trogastrini (Coleoptera: Staphylinidae: Pselaphinae) exhibiting myrmecophily and extreme body enlargement**

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Abstract

Jubogaster towai **gen. et sp. nov.** is described from a colony of *Pheidole xanthogaster* Wilson (Hymenoptera: Formicidae) in the Peruvian Amazon. The new taxon is amongst the largest pselaphine species known. Its transverse head implies an affinity with Trogastrini (Pselaphinae: Euplectitae), but *J. towai* lacks typical characters diagnostic for trogastrines and possesses others, such as a Jubini-like pronotum and equally-sized tarsal claws, that obscure its systematic relationships. To place *J. towai* phylogenetically, we sequenced a fragment of 28s rDNA for the new species and a range of other pselaphines, including members of Trogastrini and other tribes of Euplectitae. The topology produced by this analysis supports the inclusion of *Jubogaster* in Trogastrini, thereby indicating that morphology within this tribe can be more malleable than previously thought. Many of the largest pselaphine taxa are guests of social insect colonies. We discuss whether an evolutionary correlation (or causal relationship) exists between body enlargement and an inquiline lifestyle in Pselaphinae.

Key words: phylogeny, beetles, Peru, ant

Introduction

The pselaphine tribe Trogastrini is comprised of two dozen genera distributed in Australia, Europe, the Nearctic and the Neotropics (Newton and Chandler 1989), with the latter region holding the greatest diversity of genera and species (Park 1942; 1952). Trogastrini are currently placed in the supertribe Euplectitae, based on their possession of contiguous, projecting metacoxae and an absence of characters diagnostic of other supertribes. The tribe as a whole has a distinctive facies. They are distinguished from other euplectite taxa by the transverse head, which is received ventrally by a prosternal excavation when held deflexed. In addition, a dense beard of long setae commonly adorns the genae, and most genera possess reduced or hair-like posterior tarsal claws (Chandler, 2001). Trogastrini also tend to show distinct medial-longitudinal and antebasal sulci on the pronotum. Ecologically, little is known about their biology; most taxa have been recovered from forest litter samples and decaying wood, and like other pselaphines, trogastrines are probably predatory on microarthropods. However, a handful are known to be guests of social insects. The three known species of *Phategnomus* Raffray are thought to be termitophilous, while one species each of *Conoplectus* Brendel, *Eurhexius* Sharp and *Mesoplatus* Raffray have been collected from ant colonies (Lea 1912; Bruch 1929; Carlton 1983).

Here, we add a new and highly distinctive neotropical genus and species to the Trogastrini. The new taxon is remarkable for its greatly enlarged body size and putatively myrmecophilous lifestyle. Furthermore, although exhibiting apparent synapomorphies with the Trogastrini, the new genus lacks several characters normally exhibited by this tribe, and possesses others that suggest an affinity with another euplectite tribe, Jubini. Given its curious suite of morphological features, we have placed the genus into the current tribal classification using 28s rDNA, an informative molecular marker for higher-level pselaphine systematics (J. Parker and A. Vogler,