Article

Frigitilla gen. nov., a new genus of Amazonian Mutillidae (Hymenoptera)

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Abstract

Mutilla frigidula Cresson, 1902 was transferred to *Tobantilla* by Williams *et al.* (2011), based on morphological similarities with females of that genus. Discovery of the male of this species indicated significant morphological differences from *Tobantilla*. We therefore erect the genus, *Frigitilla* **gen. nov.**, for *Mutilla frigidula*. Herein, we describe the male of *F. frigidula* (Cresson, 1902), **comb. nov.**, associate it with its host (*Trypoxylon* spp.), and discuss its relations to other mutillid genera. The impact of collecting method and specimen age on the integumental coloration of specimens is discussed, emphasizing the need to diagnose species on consistent structural features rather than differences in color pattern.

Key words: Sphaeropthalminae, Sphaeropthalmini, velvet ants, *Traumatomutilla*, *Tobantilla*, trap nests, Crabronidae, *Trypoxylon*

Introduction

Wasps in the family Mutillidae, commonly known as velvet ants, have been effectively used to study historical biogeography (Wilson & Pitts, 2012; Wilson *et al.* 2012a) and are potentially useful for studying mimicry (Wilson *et al.* 2012b, 2013) and ecosystem health (Boehme *et al.*, 2012). Sadly, each of these research avenues is impeded by taxonomic uncertainty, much of which can be attributed to sexual dimorphism (Williams *et al.*, 2012). In the Neotropical region, fewer than 10% of species are recognized from both sexes (Nonveiller, 1990) and many genera are known from a single sex (*e.g. Cephalomutilla* André, 1908 and *Mickelia* Suárez, 1966). Without morphological data from both sexes, doubts arise concerning the validity or relationships of these taxa (D. J. Brothers, pers. comm.).

Although *Tobantilla frigidula* (Cresson, 1902) differs from other *Tobantilla* Casal, 1965 species in morphological traits, such as the pygidial sculpture and metasomal shape, it was transferred to this genus by Williams *et al.* (2011). This generic placement was justified by similarities of female mesosomal structure to other *Tobantilla* species and hesitance to erect new genera for species known from only females (Williams *et al.*, 2011).

Recently, trap nests from Acre, Brazil yielded females of *T. frigidula* with an unknown male that shares structural features with *T. frigidula*. These males are not similar to other *Tobantilla* males and do not match the diagnostic features of other known genera. Additionally, in a recent Bayesian phylogenetic reconstruction (Williams 2012), *T. frigidula* was recovered in a separate clade from *T. drosos* Williams, Brothers & Pitts, 2011, a more typical *Tobantilla* species.

Based on morphology, distribution, and trap nest data, we associate the male of *T. frigidula*. Based on derived unique combinations of characters in both sexes and molecular data from Williams *et al.* (2011), we describe *Frigitilla* **gen. nov.** to contain this species.