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## Phylogenetic affinities of *Monarea Szépligeti, 1904* (Hymenoptera: Braconidae, Doryctinae, with description of a new species from Mexico

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### Abstract

The genus *Monarea Szépligeti* is recorded from Mexico for the first time. A new species, *Monarea fridae* sp. nov., is described and illustrated from the states of Morelos, Puebla and Jalisco, Mexico. The phylogenetic placement of the genus is investigated based on nuclear (28S) and mitochondrial (COI) DNA sequence data. Based on the relationships recovered, *Monarea* is transferred to the tribe Holcobraconini, which is also supported by features of the internal ovipositor structure and the venom glands and reservoir. A key to the four currently recognised species of *Monarea* is provided.

**Key words:** Apocrita, Neotropics, parasitoid, Ichneumonoidea, taxonomy

### Introduction

*Monarea Szépligeti, 1904* is one of the most morphologically distinctive Doryctinae genera, currently including three Neotropical species: the type species, *M. fasciipennis* (Szépligeti, 1902), which occurs in Brazil and British Guiana, *M. nigricoxa* Szépligeti, 1906 (= *M. caudata* Szépligeti, 1906, *M. longicornis* Enderlein, 1912) and *M. tripartita* (Brullé, 1846) (= *M. diversa* Szépligeti, 1906), both recorded for Brazil and Peru (Shenefelt & Marsh, 1976; Fischer, 1981a). In addition, an unidentified species of this genus has been recently discovered in northwest Argentina (J.J. Martínez, unpubl. data).

The phylogenetic position of *Monarea* is currently unclear based on morphological information. Fischer (1981a) carried out a taxonomic revision of this genus, where he redescribed it and provided an illustrated key to its three recognised species. Shenefelt & Marsh (1976) and subsequently Belokobyskiy (1992) placed the genus within the tribe Doryctini, the latter mainly based on the following morphological trends: first metasomal tergite wide and not petiolate, brachial (first subdiscal) cell closed postero-apically by distinct brachial (2cu-a) vein, both radiomedial veins (RS and r-m) of fore wing present, frons usually not concave, nervellus (cu-a) of hind wing present, recurrent vein (m-cu) of hind with never strongly curved forwards. On the other hand, two comparative morphological surveys within the Doryctinae, one of the venom gland and reservoir and the other one of the inner structure of the ovipositor, found that *Monarea* shares some features with the examined members of the cosmopolitan tribe Holcobraconini (Quicke *et al.*, 1992; Rahman *et al.*, 1998).

Species of *Monarea* are not common in collections and had never been recorded in Central and North America. A recent examination of material deposited in some Mexican collections allowed us to find various specimens belonging to a new species of *Monarea*. In this paper, we describe this new species and clarify the taxonomic position of the genus based on a molecular phylogenetic analysis including nuclear and mitochondrial DNA sequence data.

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