

## The Stephanidae (Hymenoptera) of Mexico, with description of six new species and key to western *Foenatopus* Smith

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## Abstract

The Mexican genera and species of Stephanidae, and the western species of *Foenatopus* Smith are revised. Twelve species are recognized, two in *Foenatopus* and ten in *Megischus* Brullé, all but one occurring in Mexico. Six new species of *Megischus* are described, *M. anaxeus* sp. n., *M. celaenocephalus* sp. n., *M. jaliscoensis* sp. n., *M. melanogladus* sp. n., *M. mexicanus* sp. n., and *M. peninsularis* sp. n. One genus (*Foenatopus* Smith) and four species are registered for the first time in Mexico, *F. annulipes* Kieffer, *M. arizonicus* Townes, *M. bicolor* (Westwood), and *M. niger* Smith. Many new distribution records in Mexico and intensive new morphological variation are registered, illustrated and discussed for *M. texanus* Townes. Much new morphological variation is reported and illustrated for *M. arizonicus*. The male of *F. aurantiiceps* Brues is reported for the first time. Mexico is identified as an area of overlapping distribution between the essentially North American *M. bicolor* and the typically Central American *M. niger*; intermediate forms between these two species are described, and new diagnostic features are proposed for their identification. Some of the treated species are proposed as possibly highly endemic, occurring only in particular regions in the country, namely *M. peninsularis*, restricted to Baja California, and *M. celaenocephalus*, restricted to central Mexico. Some of the morphological variation observed for *F. aurantiiceps* is tentatively linked to specimens occurring in the south vs. north of the Amazon river, and to localities of high vs. low altitude. General stephanid morphology is illustrated, its correspondent terminology updated, and a key is provided for recognition of all treated genera and species. Full description is provided for each new taxon, and photographic illustrations are provided for all valid taxa. Extensive biometric data, and RGB formulas for color variation are provided for nearly all treated species.

**Key words:** Revision, parasitoid, *Stephanus*, Neotropical, Nearctic

## Introduction

Stephanids are currently known from 332 living species, in 11 genera, plus another 9 species and 3 genera represented only in Baltic amber or shale fossils (updated from Aguiar, 2004b; new taxa proposed in the present work also counted). The Oriental region seems to be the richest in number of species, most of them in the genus *Foenatopus* Smith (= *Diastephanus* Enderlein, = *Neostephanus* Kieffer). The genera are mostly restricted to one or two particular zoogeographical regions, such as *Hemistephanus* (Neotropical), *Parastephanellus* (Oriental and Australian), and *Foenatopus* (mostly Oriental and Afrotropical), except the worldwide, but also highly paraphyletic, *Megischus* Brullé (Aguiar, 2004b). No stephanid species, except for one introduced taxon, has been found in more than one zoogeographic region, suggesting a considerable degree of endemism (Aguiar, 2004b). An introduction to the family, in Spanish, can be found in Aguiar (2005c/d).

Most stephanids live in tropical forests, but many inhabit desert or semi-desert areas (see Benoit 1984), reach high latitudes (e.g., *Megischus bicolor* in Canada, *Stephanus serrator* in Germany, *Hemistephanus villosus* Kieffer in Argentina), or are endemic in