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New World species of *Asymphyloptera* Collin (Diptera: Empididae: Clinocerinae)

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Abstract

Eight species are recognized among New World species of *Asymphyloptera* Collin, including seven new species (*A. cajanuma* **sp. nov.** (Ecuador), *A. chilensis* **sp. nov.** (Chile), *A. chiricahua* **sp. nov.** (USA: Arizona), *A. dominica* **sp. nov.** (Dominica), *A. havasu* **sp. nov.** (USA: Arizona), *A. lutea* **sp. nov.** (Costa Rica) and *A. mexicana* **sp. nov.** (Mexico)). The new species are described, male terminalia illustrated, distributions mapped and a key to species is presented. Two additional undescribed species based on single females, are known from Ecuador and Venezuela.

Key words: Diptera, Empididae, Clinocerinae, *Asymphyloptera*, madicolous habitats, New World, Gondwana

Introduction

The genus *Asymphyloptera* Collin was erected on the basis of a single female specimen from Peru (Collin 1933). Although Smith (1961) described an additional species from eastern Australia, no further information on the genus was published until the surprising discovery of a species in southeastern Arizona, USA (Sinclair 1995). In this study, the latter species is described, along with several additional species discovered in collections or from recent surveys.

Asymphyloptera was named from the Latin for “different wing”, in reference to its unusual wing venation, where R_{2+3} is branched (Figs 1, 2). The genus is confined to madicolous habitats, where adults are found on wet rocks in seepages and splash zones of cascading streams and rivers.

Material and methods

This study is based on material borrowed from or deposited in the following institutions: American Museum of Natural History, New York, USA (AMNH); Natural History Museum, London, UK (BMNH); Canadian National Collection of Insects, Ottawa, Canada (CNC); University of Guelph Insect Collection, Guelph, Canada (DEBU); United States National Museum of Natural History, Washington D.C., USA (USNM); Instituto de Ecología, Universidad Técnica Particular de Loja, Loja, Ecuador (UTPL).

Terms used for adult structures primarily follow those of Cumming & Wood (2009). The following abbreviations are used in the descriptions for the following thoracic setae: dc—dorsocentral setae, npl—notopleural setae, pprn—postpronotal setae; sctl—scutellar setae.

Label data for primary types are cited from the top downward, with the data from each label in quotation marks. Labels are cited in full, with original spelling, punctuation, and date, and label lines are delimited by a slash (/). Additional information is included in square [] brackets. The repository of each type is given in parentheses. Secondary type data are abridged and listed alphabetically.