



A conspectus of the flower fly genus *Allograpta* (Diptera: Syrphidae) with description of a new subgenus and species

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Abstract

A new subgenus [*Allograpta* (*Costarica* Mengual & Thompson), type *Allograpta zumbadoi* Thompson], and one new species [*Allograpta* (*Costarica*) *nishida* Mengual & Thompson; type-locality: Costa Rica, type-depository: Instituto Nacional de Biodiversidad de Costa Rica] of flower flies (Diptera: Syrphidae) are described from the Neotropical biotic region. A checklist of the world species of *Allograpta* including synonyms is provided, and a key to and diagnoses of the subgenera are also supplied. The phylogenetic relationships among *Allograpta* species, representing all hitherto detected morphological diversity of the genus, and related genera were studied under parsimony based on morphological characters.

Key words: *Costarica*, identification key, Syrphinae, taxonomy

Introduction

Allograpta flower flies are common in all areas except the extreme north and south and most of the Palaearctic Region. These flies are pollinators and show considerable variation in morphological characters, such as color pattern and head shape. The immatures of most species are predators of hemipteran pests (see Rojo *et al.* 2003 for review of published prey records). Recent studies have revealed that some species are secondarily leaf-miners (Nishida *et al.* 2002), stem-borers (Zuijen & Nishida 2009) or pollen-feeders (Weng & Rotheray 2009). This major and important shift in biology from predation to phytophagy has highlighted the need for a reassessment of the genus *Allograpta*. This is the first review of the current classification of the group including a new name for the group of stem-boring species. All subgenera and species groups are morphologically diagnosed, and all names of included species in each subgenus or comparable grouping are given, as well as a key to subgeneric taxa. In order to provide a basis for further studies, morphological characters of *Allograpta* species and related genera, representing all known morphological diversity, were studied to explore their phylogenetic information content.

Other reports on the genus are in process. Mengual *et al.* (2008b) examined DNA sequence data and the immature stages will be analyzed. Then a phylogenetic assessment based on the combined dataset may provide resolution upon which to base a new and improved classification.