The subfamily Cratocentrinae (Hymenoptera: Chalcididae): reappraisal of their morphological characters and review of the West Palaearctic species, with the description of two new species

MEDHAT I. ABUL-SOOD1, NEVEEN S. GADALLAH2,4, MOHAMMED T. HOSSNI1 & GÉRARD DELVARE3

1Zoology Department, Faculty of Science (Boys), Al-Azhar University, P.O. Box 11884, Nasr City, Cairo, Egypt. E-mail: medhatibrahim_23@yahoo.com
2Entomology Department, Faculty of Science, Cairo University, Giza, Egypt; E-mail: n_gadallah@hotmail.com
3Cirad-CBGP, 755 avenue du Campus Agropolis, CS30016, 34988 Montferrier-sur-Lez Cedex France
4Corresponding author. E-mail: n_gadallah@hotmail.com

Abstract

The Cratocentrinae (Hymenoptera: Chalcididae) of the West Palaearctic region are reviewed. A reappraisal of the morphological characters used for their recognition and phylogeny is provided as is a key to separate the genera and species of the region. Their distribution in the West Palaearctic is updated and the subfamily is reported for the first time in Europe. Cratocentrus inermus Delvare sp. nov. and Philocentrus papillus Abul-Sood & Gadallah sp. nov. are described. A neotype is designated for Philocentrus argenteopilosus (Cameron), which is revalidated and transferred to Philocentrus comb. nov. & stat rev.

Key words: Spain, Morocco, Egypt, Saudi Arabia, United Arab of Emirates, Iraq, Iran

Introduction

Although the first species of the group, Cratocentrus decoratus Klug, was described as early as 1834, the subfamily Cratocentrinae was not recognized as a discrete group until much later when Steffan (1951) erected the tribe Cratocentrini. The same author wrote the single monograph available to date. Traditionally, the group was recognized as a tribe of Chalcidinae (Bouček 1988; Gibson et al. 1999; Munro et al. 2011; Narendran & van Achterberg 2016). Wijesekara (1997) recognized Cratocentrinae and Brachymeriinae as separate subfamilies based on his phylogenetic analysis. This status was confirmed by a study based on both morphological and molecular analyses (Heraty et al. 2013), which revealed that the subfamily Cratocentrinae always forms an independent clade, as sister to all other subfamilies or tribes of Chalcididae.

The Cratocentrinae form a relict group currently comprising 22 described species (Noyes 2017), actually 26 species, after correcting mistakes made in synonymizing some species and taking into account the taxa described as varieties by Steffan (GD, pers. observ.), classified in eight genera: Acanthochalcis Cameron, Acrocentrus Steffan, Cratocentrus Cameron, Marres Walker, Megachalcis Cameron, Philocentrus Steffan, Spatocentrus Steffan, and Vespomorpha Steffan. Apart from Acanthochalcis, which includes two New World species, the other genera are distributed in the Old World only, mostly in the tropical regions (Steffan 1959; Bouček 1988). Four of the genera are monospecific; only Megachalcis and Cratocentrus include over 5 described species each. As far as is known all Cratocentrinae are parasitoids of the larvae of xylophagous Coleoptera belonging to the families Cerambycidae, Buprestidae, Bostrichidae and Curculionidae (Steffan 1959; Bouček 1988; Delvare 2017).

Phylogenetic studies of the subfamily were carried out by Wijesekara (1997), Delvare (2010) and Heraty et al. (2013). In the first study, Wijesekara (1997) used 40 morphological characters for the phylogenetic inference of the Cratocentriti [their original status] and the Phasgonophorini. Because a large proportion of the characters were homoplastic, it was not possible to assess the precise relationships between the relevant genera. Moreover the