



The *grandiculus*- and *metacarpalis*-group of the genus *Apanteles* Foerster, 1862 (Hymenoptera, Braconidae, Microgastrinae) from China, with descriptions of eight new species

ZHEN LIU, JUN-HUA HE & XUE-XIN CHEN¹

State Key Laboratory of Rice Biology and Ministry of Agriculture Key Laboratory of Agricultural Entomology, Institute of Insect Sciences, Zhejiang University, Hangzhou 310058, China

¹Corresponding author. E-mail: xxchen@zju.edu.cn

Abstract

Two species groups (the *grandiculus*- and the *metacarpalis*-group) of genus *Apanteles* Foerster (Hymenoptera, Braconidae, Microgastrinae) from China are revised and keyed, with eight new species, namely, *A. muticulus* Liu & Chen, **sp. n.**, *A. parvus* Liu & Chen, **sp. n.** and *A. flavicapus* Liu & Chen, **sp. n.** of the *grandiculus*-group; *A. transtergum* Liu & Chen, **sp. n.**, *A. malleus* Liu & Chen, **sp. n.**, *A. dumosus* Liu & Chen, **sp. n.**, *A. cosmoptyrigivorus* Liu & Chen, **sp. n.** and *A. incurvus* Liu & Chen, **sp. n.** of the *metacarpalis*-group, and two newly recorded species of the *metacarpalis*-group described and illustrated. Keys to the Chinese species of these two species-groups are provided.

Key words: parasitoid, *Dolichogenidea*, *Exoryza*, *Pholetesor*, host, Lepidoptera, Palaearctic, Oriental, Afrotropical, Australasian, Holarctic

Introduction

Apanteles Foerster *s.l.* (Hymenoptera, Braconidae, Microgastrinae) is characterized by a single but very striking feature, namely, the open 2nd submarginal cell of fore wing since it was erected by Foerster in 1862 (Papp, 1976). Nixon divided the *Apanteles* species into 44 species-groups (Nixon, 1965 & 1973). In 1981, Mason redefined *Apanteles* to include only the following species-groups: *ater*, *caesar*, *crassicornis*, *grandiculus*, *mycetophilus*, *taeniaticornis*, *trifasciatus* and most of the *metacarpalis* group (Mason, 1981). Yu et al. (2013) included 975 species in this genus consisting of two subgenera *Choeras* Mason, 1981 (33 species) and *Exoryza* Mason, 1981 (4 species) and 938 species unassigned to subgenera (Yu et al., 2013). We follow largely the system of Yu et al. (2013), but exclude those 230 species previously belonging to *Dolichogenidea* Viereck, 1911 because of their distinct characters (punctures of mesonotum typically distinctly separated and never breaking into aciculations posterolaterally; margin of vannal lobe never concave and hairless, but convex and evenly thickly hairy; first tergite parallel-sided or slightly constricted or widened apically; and apico-lateral areas of propodeum, if distinct, wider than high) which we think guarantees its independent genus status. Due to the large number of the remaining unassigned species (708 species), we divided them into eight species-groups that largely followed the Nixon's treatment mentioned above.

The *grandiculus*-group of *Apanteles* Foerster was proposed by Nixon (1965) based on five species, namely *A. emesa* Nixon, 1965; *A. orsedice* Nixon, 1965; *A. conopiae* Watanabe, 1934; *A. grandiculus* Wilkinson, 1929 and *A. seyrigi* Wilkinson, 1936. Only another two species, namely *A. longicaudatus* You & Zhou, 1991 and *A. spiciculus* Chen & Song, 2004 have been added to this group. Thus, this species-group at present includes seven species. They are distributed in eastern Palaearctic, Afrotropical, Australasian and Oriental regions. Species of this group are all parasitoids of Aegeriidae (Lepidoptera), such as *Conopia hector* Butler, *Conopia theobroma* Bradley, *Epitarsipus rufithorax* Le Cerf, and *Synanthedon* sp. Many of them are important pests causing damage in fruit production. Four species of this group were previously reported from China. You et al. (1991) described *A. longicaudatus* You

Acknowledgement

We are grateful to Dr. C. van Achterberg (Leiden, the Netherlands) for his kind help during the research. Funding for this study was provided by the State Key Program of National Natural Science Foundation of China (31230068) and the 973 Program (2013CB127600).

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