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The *Protohermes guangxiensis* species-group (Megaloptera: Corydalidae), with descriptions of four new species

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Abstract

The *Protohermes guangxiensis* group (Megaloptera: Corydalidae) is proposed for five species from eastern and southeastern Asia. Four species are described as new to science: *Protohermes furcatus* **sp. nov.**, *Protohermes impunctatus* **sp. nov.**, *Protohermes piaoacanus* **sp. nov.**, and *Protohermes zhuae* **sp. nov.** A key is provided for males of the species.

Key words: Corydalidae, Corydalinae, *Protohermes*, new species, Asia

Introduction

Protohermes (Megaloptera: Corydalinae) is the most species rich dobsonfly genus, with more than 50 species from eastern and southeastern Asia. The adult is characterized by a trifurcate 1A vein and a posteriorly incised male 9th sternum. The male genitalia of *Protohermes* are morphologically diversified among the different species, especially the male 10th tergite, providing a number of useful diagnostic characters. On the basis of the shape of the male 10th tergite, most *Protohermes* species can be sorted into one of several species-groups, those recently proposed by Liu & Yang (2005, 2006a, b) and Liu *et al*. (2006, 2007a, b, c, 2008). To date, eight species-groups of *Protohermes* have been proposed, namely the *P. assamensis* group, the *P. changninganus* group, the *P. costalis* group, the *P. davidi* group, the *P. differentialis* group, the *P. fruhstorferi* group, the *P. sabahensis* group, and the *P. xanthodes* group.

Protohermes guangxiensis Yang & Yang (1986) is characterized by the male 9th tergum having its posterolateral portions strongly produced into clavate bars. Our recent studies of the systematics of Megaloptera from Asia have uncovered additional species that are related to *P. guangxiensis* by virtue of their similarly shaped male 9th and 10th tergites. Herein, we describe four new species, and with the existing *P. guangxiensis*, proposed the *P. guangxiensis* species-group. Species are compared to presumed close relatives and a key is provided for identification of male group members.

Material and methods

Specimens for the present study are deposited in the Entomological Museum of China Agricultural University (CAU), Beijing; Fumio Hayashi's personal collection (HC), Tokyo; the Institute of Zoology, China Academy of Sciences (IZCAS), Beijing; the National Science Museum (NSMT), Tokyo; and the Zoologisches Fors-

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