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The *Protohermes dichrous* species group (Megaloptera: Corydalidae), with description of two new species from eastern Malaysia

XINGYUE LIU¹, FUMIO HAYASHI² & DING YANG¹

¹Department of Entomology, China Agricultural University, Beijing 100193, China. E-mail: liu_xingyue@yahoo.com.cn

²Department of Biology, Tokyo Metropolitan University, Minamiosawa 1-1, Hachioji, Tokyo 192-0397, Japan

Abstract

A dobsonfly species group, the *Protohermes dichrous* group, endemic to Borneo, is characterized by the straight directed male ninth gonostylus with a narrow base and the elongate male ectoproct. *Protohermes goodgeri* sp. nov. and *P. karubei* sp. nov. from northern Borneo (eastern Malaysia) are herein described as new species placed in the *P. dichrous* group.

Key words: Megaloptera, Corydalinae, *Protohermes*, new species, Malaysia

Introduction

Borneo has the richest fauna of Megaloptera in Malesia. Currently, one species of Sialidae and nine species of Corydalidae are known from this island; six species of the Corydalidae have been described or redescribed recently by Liu *et al.* (2008, 2010, 2012). The dobsonfly genus *Protohermes* van der Weele, 1907, the largest genus with more than 70 described species, is widely distributed in eastern, southern, and southeastern Asia. This genus is the dominant group of the megalopterans in Borneo, with seven described species. Liu *et al.* (2008) placed three species, i.e. *P. sabahensis* Liu, Hayashi & Yang, 2008, *P. spectabilis* Liu, Hayashi & Yang, 2008, and *P. tortuosus* Liu, Hayashi & Yang, 2008, into the *P. sabahensis* group, characterized by the short and broad male ectoproct. However, these authors indicated that the remaining *Protohermes* species from Borneo might be assigned as a distinct species group because of the long band-like male ectoproct. In this paper, we describe all the *Protohermes* species known from Borneo except those belonging to the *P. sabahensis* group. Two species, *P. goodgeri* sp. nov. and *P. karubei* sp. nov. from northern Borneo (eastern Malaysia) are described as new. The elongate male ectoproct is shared character processed by all species described here. We include these species in the *P. dichrous* group. A key to the species of the *P. dichrous* group is also given.

Material and methods

The specimens for the present study are deposited in several collections worldwide, their depositories and codens are provided below:

BAUC	Entomological Museum, China Agricultural University, Beijing, China.
BMNH	Natural History Museum, London, U.K.
BPBM	Bishop Museum, Honolulu, Hawaii, U.S.A.
EUMJ	Ehime University Museum, Matsuyama, Japan.
HFIC	Fumio Hayashi personal insect collection in Tokyo Metropolitan University, Tokyo, Japan.
ISNB	Royal Belgian Institute of Natural Sciences, Brussels, Belgium.
MNHN	Muséum National d'Histoire Naturelle, Paris, France.
MZPW	Warsaw Museum of the Institute of Zoology, Polish Academy of Sciences, Warsaw, Poland.
NSMT	National Museum of Nature and Science, Tokyo, Japan.