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## The *Protohermes latus* species group (Megaloptera: Corydalidae), with description of two new species from India and Myanmar

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### Abstract

The *Protohermes latus* species group is recognized by the sexual dimorphism of the adult pronotum and the male genitalia which possess a bilobed ectoproct. *Protohermes sonus* **sp. nov.** from northwestern Myanmar and *Protohermes sublunatus* **sp. nov.** from northeastern India are herein described as new species placed in the *P. latus* group. The potential for peculiar behaviour during courtship of the species in the *P. latus* group is also discussed based on some remarkable morphological features.

**Key words:** Corydalinae, sexual dimorphism, sound communication, India, Myanmar

### Introduction

The dobsonfly genus *Protohermes* van der Weele, 1907 is the most diverse group of Megaloptera genera, with more than 70 described species, which are mainly distributed in the Oriental realm. The adults of *Protohermes* are characterized by the anterior branch of 2A vein partly fused with stem of 1A vein in the forewing and most of them have yellow or white round markings on forewings. Liu & Yang (2006) described a peculiar species from Tibet, namely *Protohermes latus* Yang & Liu, in which the male pronotum is strongly expanded, much wider than in the female, representing a unique sexual dimorphism of the prothorax in Megaloptera. Recently, we obtained two male specimens collected from northwestern Myanmar and northeastern India. These males are very similar in appearance to *P. latus*, including the expanded pronotum, however their genitalia are distinctly different from the genitalia of *P. latus* and also differ from each other. Herein, we describe the two species from India and Myanmar as new to science. The new species together with *P. latus* form a monophyletic species group herein recognized as the *Protohermes latus* species group. The biogeography of *P. latus* group and the function of their expanded male pronotum are also discussed.

### Material and methods

The specimens for the present study are deposited in the Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Canada (CNC) and the Fumio Hayashi personal collection in Tokyo Metropolitan University, Tokyo, Japan (HFC).

Genitalic preparations were made by clearing the apex of the abdomen in a cold, saturated KOH solution for 8–10 h. After rinsing the KOH with acetic acid and water, the apex of the abdomen was transferred to glycerin for further dissection and examination. After examination it was moved to fresh glycerin and stored in a microvial pinned below the specimen. The terminology of the genitalia follows that of Aspöck & Aspöck (2008).