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Revision of Chinese Dilaridae (Insecta: Neuroptera) (Part III): Species of the genus *Dilar* Rambur from the southern part of mainland China

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Abstract

A revision of species of the genus *Dilar* Rambur, 1838, from the southern part of mainland China is presented. Twenty species are recorded in this region, with 12 species described as new to science. *Dilar spectabilis* Zhang, Liu, H. Aspöck & U. Aspöck, 2014, is recorded in this region for the first time. The other seven valid species previously recorded in this region are re-described. *Dilar wangi* Yang, 1992, is herein treated as a junior synonym of *Dilar montanus* Yang, 1992. A key to all species of the genus *Dilar* so far recorded from China is provided.

Key words: Dilaridae, *Dilar*, new species, China

Introduction

The family Dilaridae (pleasing lacewings) is a remarkable group of the order Neuroptera, having sexually dimorphic antennae and a prolonged female ovipositor (consisting of the gonocoxites 9). The extant world fauna of Dilaridae is currently composed of ca. 80 species comprising two subfamilies: the subfamily Dilarinae with the genera *Dilar* Rambur, 1838, *Berothella* Banks, 1934, and *Neonallachius* Nakahara, 1963; the subfamily Nallachiinae, comprising the genus *Nallachius* Navás, 1909 (Oswald 1998, 2013; Zhang *et al.* 2014c). In the Old World, the genus *Dilar* is the predominant group of Dilaridae and highly diversified in Asia and Europe, with 47 described species. China is one of the regions with rich species diversity of *Dilar*, with 21 described species previously recorded (Navás 1932; Nakahara 1957; Oswald 1998; Yang 1986, 1987, 1988, 1992, 1999, 2001; Zhang *et al.* 2014a, b, c). Our recent works dealt with the Chinese species of *Dilar* from the northern part of mainland China, from Tibet, and from two islands (i.e. Hainan and Taiwan) of southern China (Zhang *et al.* 2014a, b, c). However, the southern part of mainland China, bordered by the Qinling mountain range and Huai river (Zhang 1999) occupies a vast territory with extraordinarily rich diversity of ecosystems and species, thus providing also suitable biotopes for Dilaridae. Hitherto, there are only 10 dilarid species (all placed in *Dilar*) known from the southern part of mainland China, including nine species described by Yang (1986, 1987, 1988, 1992, 1999, 2001) and a doubtful species, namely *Dilar subdolos* Navás, 1932. All these species were described mainly based upon characters of wing marking patterns and of wing venation, and lack modern redescrptions and illustrations of the genitalia, which is crucial for the species identification. The present study focusing on the *Dilar* species from the southern part of mainland China represents the last part of our revision on Dilaridae of China. We recorded 20 species of *Dilar* in this region, including 12 new species. The doubtful species *D. subdolos* is not considered in the following sections due to the loss of type, poor description, and unclear species identity. With the exception of the recently described *D. spectabilis* all the other 19 species are herein described or re-described. A key to the species of *Dilar* from China is also given.

Material and methods

Specimens for the present study are deposited in the Entomological Museum of China Agricultural University (CAU), Beijing, China; the Institute of Zoology, Chinese Academy of Sciences (IZCAS), Beijing, China; the Museum für Naturkunde, Leibniz-Institut für Evolutions- und Biodiversitätsforschung an der Humboldt-Universität zu Berlin (MFN), Berlin, Germany; and the collection of Horst and Ulrike Aspöck (HUAC), Vienna, Austria. Genitalic preparations were made by clearing the apex of the abdomen in a cold, saturated KOH solution for 3–4 h. After rinsing the KOH with acetic acid and water, the apex of the abdomen was transferred to glycerin for further dissection and examination. Habitus photos of adults were taken by using Nikon D90 digital camera with Nikon MICRO NIKKOR 105 mm lens, and the genitalic figures were made by hand drawing under Motic SMZ168 stereo microscope. The terminology of the genitalia generally follows U. Aspöck and H. Aspöck (2008).

Taxonomy

Genus *Dilar* Rambur

Dilar Rambur, 1838: 445. Type species: *Dilar nevadensis* Rambur, 1838: pl. 9 (monotypy).