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Remarks of the genus *Mirollia* (Orthoptera: Tettigoniidae: Phaneropterinae) from China

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Abstract

Mirollia species from China are discussed with six new species described. The male stridulatory structures and abdominal terminalia are used as the main taxonomic characters. The species are: *M. maculosus* sp. nov., *M. terminalis* sp. nov., *M. petiolulata* sp. nov., *M. acutilobata* sp. nov., *M. amplecta* sp. nov. and *M. unispina* sp. nov. Two species are reported as new records for China, namely *M. caligata* Ingrisch, 1998 and *M. hexapinna* Ingrisch, 1998. The female of *M. deficientis* Gorochov, 2005 is described for the first time. A key to species and a distribution map for the genus *Mirollia* in China are provided. All specimens are deposited in the Museum of Hebei University.

Key words: Orthoptera, Phaneropterinae, *Mirollia*, new species, new record species, China

Introduction

The genus *Mirollia* was proposed by Stål (1873) with the type species, *Locusta (Phylloptera) carinata* Haan, 1842. The tribe Mirolliini was reviewed recently by Ingrisch (2011), and dealt with five genera. Three species of *Mirollia* were transferred to new genera *Hemimirollia* and *Amirollia*, i.e. *H. gracilis* (Karny, 1925), *H. luteipennis* (Karny, 1925) and *A. ulla* (Gorochov, 2008), seven new species of the genus *Mirollia* were described. To date *Mirollia* includes 41 species (Haan, 1842; Hebard, 1922; Karny, 1926; Bey-Bienko, 1957, 1962; Ingrisch, 1990, 1998, 2011; Ingrisch & Shishodia, 1998, 2000; Gorochov, 1998, 2003, 2005, 2008; Gorochov & Kang, 2004; Liu, 2004; Mu, He & Wang, 1998; Shiraki, 1930; Shi & Wang, 2005; Shi, Chang & Chen, 2005). *Mirollia* is distributed in China, Malaysia, India, Thailand, Philippines, Vietnam. Fourteen species of which are now known to occur in China.

In the paper, we report six new species, present two new record species for China, and describe the female of *M. deficientis* Gorochov, 2005. We provide supplementary description of male abdominal terminalia. This includes the male phallic sclerites of *M. caligata* Ingrisch, 1998, as well as the new species. The male stridulatory structures are studied in detail, including the morphology of stridulatory file, the number of stridulatory teeth and measurements related to the stridulatory area.

Material and methods

Morphological structures were examined and measured using Leica M205A stereomicroscope, Leica DFC 450 digital imaging system was used to obtain morphological images. The illustrations were achieved with the program Corel DRAW. Photographs of complete specimens were made by Nikon Coolpix L5. The distribution map was prepared using the geographic information system software ArcView 3.2.

In the description below the following conventions were adopted for specimen measurements: Body—the distance from apex of fastigium verticis to posterior margin of tenth abdominal tergite; pronotum—the distance from anterior to posterior margin of pronotum; tegmen (length, width)—the distance from base to apex of tegmen,