Emeia gen. nov., a new genus of Luciolinae fireflies from China (Coleoptera: Lampyridae) with an unusual trilobite-like larva, and a redescription of the genus Curtos Motschulsky

XINHUA FU1, LESLEY BALLANTYNE2,4 & CHRISTINE LAMBKIN3

1Hubei Insect Resources Utilization and Sustainable Pest Management Key Laboratory, College of Plant Science and Technology, Huazhong Agricultural University, Wuhan, 430070, China. E-mail: fireflyfxh@mail.hzau.edu.cn

2School of Agricultural and Wine Sciences, Charles Sturt University, PO Box 588, Wagga Wagga 2678, Australia. E-mail: lballantyne@csu.edu.au

3Queensland Museum, PO Box 3300 South Brisbane, 4101, Australia. E-mail: christine.lambkin@qm.qld.gov.au

4Corresponding author

Abstract

Emeia, a new genus of Luciolinae fireflies, is described from males, flightless females and unusual trilobite-like larvae for a single species pseudosauteri (Geisthardt) transferred from Curtos Motschulsky. Flashing patterns and ecological data are presented. A phylogenetic analysis covering 143 Luciolinae species uses 436 morphological characters of males, females and larvae to support the erection of the new genus. A generic redescription of Curtos Motschulsky from a restricted number of species is given. A key to genera and certain species groups using males is provided.

Key words: Luciolinae, Emeia gen. nov., flightless females, trilobite-like larva, Curtos Motschulsky

Introduction

Geisthardt (2004) described Curtos pseudosauteri from Mt E Mei in China, listing it as the fourth species of Curtos Motschulsky to have been recorded from China. Phylogenetic analyses including two Curtos species (Ballantyne & Lambkin 2009 and herein) do not support the assignment of pseudosauteri to Curtos. This analysis establishes the distinctiveness of Curtos, as defined by the two species we included, as well as indicating that C. pseudosauteri Geisthardt does not belong in Curtos. Here we describe Emeia gen. nov., for a single species pseudosauteri transferred from Curtos, from males, flightless females and unusual “trilobite”-like larvae (Figs 1–6), as well as including behavioural and ecological information. The genus Curtos is redescribed from the two species scored in this analysis. A key to genera and certain species groups using males is provided.

Material and methods

Ballantyne and Lambkin (2009) is followed.

Abbreviations, taxonomic characters

A, B, C  pronoatal dimensions; A=width across anterior 1/3; B=width across middle; C=width across posterior 1/3

ASD  smallest distance between inner margins of antennal sockets

ASW  antennal socket width measured along the same horizontal line as for ASD

BP  basal piece aedeagus

FS  antennal flagellar segments