



## Six new species of *Epicephala* Meyrick, 1880 (Lepidoptera: Gracillariidae) associated with Phyllanthaceae plants

JING ZHANG, BINGBING HU & SHUXIA WANG, HOUHUN LI<sup>1</sup>

College of Life Sciences, Nankai University, Tianjin 300071, P. R. China

<sup>1</sup>Corresponding author: E-mail: lihuhun@nankai.edu.cn

### Abstract

Six new species of *Epicephala* Meyrick, 1880 are described based on the specimens collected or reared from *Breynia* and *Glochidion* plants during a biological survey: *E. lanceolaria* sp. nov., *E. lativalvaris* sp. nov., *E. mirivalvata* sp. nov., *E. vitisidaea* sp. nov., *E. bipollenella* sp. nov., and *E. eriocarpa* sp. nov. These species are obligate pollinators of Phyllanthaceae plants. Photographs of adults and illustrations of genital structures are provided.

**Key words:** *Breynia*, *Glochidion*, hostplants, leafminer moths, new species, taxonomy, China

### Introduction

The genus *Epicephala* Meyrick, 1880 consists of 40 described species worldwide, with 33 species distributed in the Australian and Oriental Regions, one in the Palearctic Region, and six in the African Region (Vári 1961; Kuznetsov 1979; Nielsen *et al.* 1996; De Prins & De Prins 2005, 2011). The genus is defined by the combination of the following characters: head with long hairs extending forward between antennae; antenna with pecten on scape; maxillary palpus long; labial palpus with second segment as long as or slightly longer than third segment. Forewing elongate, narrow, R<sub>1</sub> from basal 1/8 of cell, M<sub>3</sub> and CuA<sub>1</sub> coalescent or close at base, CuA<sub>1</sub> and CuA<sub>2</sub> faint basally, CuA<sub>2</sub> from lower corner of cell; hindwing with M<sub>1</sub> and M<sub>2</sub> stalked, M<sub>3</sub> absent; hindtibia bristly on dorsal surface. Male genitalia with tegumen broadly elliptic or ligulate; valva with costa bearing setae or dentate ventrally, sacculus developed and separated, varied in shape; vinculum V-shaped or U-shaped; phallus tubular, with or without cornutus; seventh and eighth abdominal segments each with a pair of coremata. Female genitalia with extensible, sclerotized ovipositor adapted for piercing, spiculate apically and dentate laterally; apophyses posteriores joined basally, stronger and longer than apophyses anteriores; ostium bursae produced posterolaterally; lamella postvaginalis or antevaginalis developed; antrum long or short, heavily sclerotized; ductus seminalis from left of ductus bursae at base. Corpus bursae small oval; signum present or absent.

Larvae of *Epicephala* species feed on seeds of their host plants in the family Phyllanthaceae (Euphorbiaceae *sensu lato*); some species have been known to coevolve with their host plants within Phyllanthaceae (Kawakita 2010; Hu *et al.* 2011).

In China, three species were recorded prior to this study: *E. venenata* Meyrick, 1935, *E. albifrons* (Stainton, 1859), and *E. relictella* Kuznetsov, 1979 (De Prins & De Prins 2005, 2011; Kendrick 2005; Bai & Li 2008; Hu *et al.* 2011). The aim of the present paper is to describe six new species based on the specimens reared from their host plants while authors were studying their evolutionary biology (to be reported in different papers), or collected by light traps (specially indicated).

The type specimens are deposited in the Insect Collection, College of Life Sciences, Nankai University, Tianjin, China.