Zootaxa 3920 (4): 555–562
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3920.4.4
http://zoobank.org/urn:lsid:zoobank.org:pub:F78E7175-502D-4F54-9013-3D1E91F2791C

Two new species in the endemic Chinese leafhopper genera *Flexocerus* and *Idioceroides* (Hemiptera: Cicadellidae: Idiocerinae)

QINGQUAN XUE & YALIN ZHANG[1]

Key Laboratory of Plant Protection Resources and Pest Management, National Ministry of Education, Entomological Museum, P. O. Box 55#, Northwest A&F University, Yangling, Shaanxi 712100, China

[1]Corresponding author. E-mail: yalinzh@nwsuaf.edu.cn

Abstract

Two new species of endemic Chinese leafhopper genera (*Flexocerus* Kuoh & Fang and *Idioceroides* Matsumura), *F. sinuatus* **sp. nov.** and *I. petaliformis* **sp. nov.** are described and illustrated. Keys to species for both genera are provided.

Key words: Homoptera, Auchenorrhyncha, morphology, taxonomy, China

Introduction

Idiocerinae is a small subfamily of arboreal leafhoppers (Cicadellidae) with 21 genera in China, including five endemic genera: *Anidiocerus* Maldonado-Capriles, *Flexocerus* Kuoh & Fang, *Idioceroides* Matsumura, *Neoidioscopus* Huang & Maldonado-Capriles and *Taiwanocerus* Huang & Maldonado-Capriles.

Kuoh & Fang (1985) established *Flexocerus* based on the type species, *Flexocerus flexureus* Kuoh & Fang. Li (1986) added *F. citrinus*, Li & Wang (1997) described *F. evodianus* and Chen & Li (1998) added *F. maolanus*. All four of these species were collected from Guizhou Province. *Idioceroides* was established by Matsumura (1912) with the type species *Idioceroides tettigoniformis* Matsumura from Taiwan. Maldonado-Capriles (1976) transferred this genus to Agallinae after examining the male type but Zhang & Viraktamath (2009) returned the genus to Idiocerinae and added a second species, *I. sichuanensis* from Sichuan.

Here we describe two new species, *F. sinuatus* **sp. nov.** and *I. petaliformis* **sp. nov.** from China. These species are photographed and illustrated. Checklists and keys for both genera are also provided.

Material and methods

Material used in this study is deposited in the Entomological Museum, Northwest A&F University, Yangling, China (NWAFU) and the National Zoological Museum of China, Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IOZ).

The male abdomen was removed from the specimen and treated with 8–10 % NaOH solution at approximately 80°C for about half an hour. It was rinsed with water and transferred to glycerol for further dissection and examination. After examination, the dissected male genitalia were stored in a microvial with fresh glycerol, and pinned below the specimen. Illustrations were made using a Nikon SMZ1500 dissecting microscope and an Olympus BH-2 stereoscopic microscope.

Morphological terminology mainly follows Zhang (1990) and Dietrich (2005).

Accepted by C. Dietrich: 28 Jan. 2015; published: 24 Feb. 2015

Face without short setae adjacent to corresponding eye; rostrum short, not reaching hind coxae. Pronotum rugose. Scutellum about as long as pronotum and crown together (Fig. 1K). Hind tibiae with 22–24 setae on row PD, 9 setae on AD and 12 setae on row AV. Other characters as in generic description.

Male genitalia. Male pygofer elongate, broader in middle, compressed apically, with dense setae on lateral area, ventral margin convex. Subgenital plate broad, dorsal margin straight, ventral margin convex, with many setae on dorsal margin and lateral area, pointed apically (Fig. 4A). Valve broader than long, caudal margin rounded, shieldlike. Style with process on dorsal margin nearer base than apex; caudal part tapering apically, apex curved (Fig. 4F). Connective T-shaped, stem slender and long. Aedeagus with preatrium well developed, dorsal apodeme short; shaft evenly curved dorsad, with lateral preapical flange bearing two pairs of long distally projecting spines, dorsal surface with pair of long retrorse preapical spines, apex in lateral view with shorter spine projecting anterad; gonopore subapical on ventral surface.(Figs. 4D–E).

Etymology. The specific epithet name refers to the flower like appearance of the aedeagus in ventral view.

Material examined. Holotype: ♂, CHINA, Guangxi Prov., Jinxiu, Mt. Dayaoshan, 13.vi.1982, coll. Li Fasheng (NWAFU).

Remarks. This species has face color similar to that of *Idioceroides tettigoniformis* Matsumura, but can be distinguished from the latter by the crown and pronotum with a black round spot and aedeagal shaft with dorsal margin lacking a pair of forked processes, apex rounded and with a pair of broad processes on ventral margin.

Acknowledgements

We would like to express our sincere thanks to the IOZ for loaning us the specimens for this study, and to Dr. C. A. Viraktamath (Agricultural Sciences University, India) for his kind help in our preparations of this study. We also thank Prof. John Richard Schrock (Emporia State University, USA) for proofreading this manuscript. This study is supported by the National Natural Science Foundation of China (31071960, 31272346) and The Ministry of Education of the People's Republic of China (TS2011XBNL061).

References

Chen, X.S. & Li, Z.Z. (1998) A new species of *Flexocerus* from Guizhou (Homoptera: Cicadellidae: Idiocerinae). *Journal of Mountain Agricultural and Biology*, 1 (1), 25–27. [in Chinese]

Dietrich, C.H. (2005) Keys to the families of Cicadomorpha and subfamilies and tribes of Cicadellidae (Hemiptera: Auchenorrhyncha). *Florida Entomologist*, 88 (4), 502–517. http://dx.doi.org/10.1653/0015-4040(2005)88[502:KTTFOC]2.0.CO;2

Kuoh, C.L. & Fang, Q.Q. (1985) A new genus and a new species of the Idioceridae (Homoptera: Cicadelloidea). *Acta Entomologica Sinica*, 28 (1), 91–93. [in Chinese]

Li, Z.Z. (1986) A new species of the genus *Flexocerus* (Homoptera: Idioceridae). *Entomotaxonomia*, 8 (1–2), 125–127. [in Chinese]

Li, Z.Z. & Wang, L.M. (1997) A new species of the genus *Flexocerus* from China (Homoptera: Cicadellidae: Idiocerinae). *Acta Zootaxonomica Sinica*, 22 (1), 69–71. [in Chinese]

Maldonado-Capriles, J. (1976) Studies on Idiocerinae Leafhoppers: XIII. *Idioceroides* Matsumura and *Anidiocerus*, a new genus from Taiwan (Agallinae: Idiocerinae). *Pacific Insects*, 17 (1), 139–143.

Matsumura, S. (1912) Die Acocephalinen und Bythoscopinen Japans. *Sapporo College of Agriculture Journal*, 4, 279–325.

Zhang, B. & Viraktamath, C.A. (2009) New placement of the leafhopper genus *Idioceroides* Matsumura (Hemiptera: Cicadellidae: Idiocerinae), with description of a new species. *Zootaxa*, 2242, 64–68.

Zhang, Y.L. (1990) *A taxonomic study of Chinese Cicadellidae (Homoptera).* Tianze Eldonejo, Yangling, Shaanxi, China, 1–218. [in Chinese]