

**DESCRIPTIONS OF THREE NEW SPECIES
OF *PETALOCEPHALA* STÅL, 1853 FROM CHINA
(HEMIPTERA: CICADELLIDAE: LEDRINAE)**

Yu-Jian Li* and Zi-Zhong Li**

* Institute of Entomology, Guizhou University, Guiyang, Guizhou Province, 550025, CHINA. E-mail: yujian528@163.com

** Guizhou Key Laboratory for Plant Pest Management of Mountainous Region, Guizhou University, Guiyang, Guizhou Province, 550025, China. E-mail: lizizhong38@163.com

[Li, Y.-J. & Li, Z.-Z. 2011. Descriptions of three new species of *Petaloccephala* Stål, 1853 from China (Hemiptera: Cicadellidae: Ledorinae). *Munis Entomology & Zoology*, 6 (1): 499-503]

ABSTRACT: The paper deals with three new species of the genus *Petaloccephala* Stål, 1853 (Hemiptera: Cicadellidae: Ledorinae), *Petaloccephala kuankuoensis* sp. nov., *Petaloccephala dicondylica* sp. nov. and *Petaloccephala gongshanensis* sp. nov., from Guizhou and Yunnan, China are described. The type specimens of new species are deposited in the Institute of Entomology, Guizhou University (GUGC).

KEY WORDS: Homoptera, Auchenorrhyncha, leafhopper, morphology, new species.

The subfamily Ledorinae is a fairly large group of the 50 major subfamilies of leafhoppers (Dietrich, 2005). Ledorinae represent a relatively small subfamily within the very large and diverse leafhopper family Cicadellidae with over 450 species in 73 genera worldwide (Oman et al., 1990). The subfamily distributed worldwide, but primarily in Australia, Africa, and the South East Asia region, usually on trees and shrubs. This newly revised classification strengthens hypotheses that the Ledorinae is a very old group within Cicadellidae. As recently report, the subfamily includes 5 tribes with a total of 38 genera and approximately 300 species (Jones et al., 2009). *Petaloccephala* Stål is the largest genus (87 described species) in Ledorinae (Jones et al., 2009). These taxa, *Petaloccephala kuankuoensis* sp. nov., *Petaloccephala dicondylica* sp. nov. and *Petaloccephala gongshanensis* sp. nov., are described and illustrated in this paper.

MATERIALS AND METHODS

The genital segments of the examined specimens were macerated in 10% NaOH and drawn from preparations in glycerin using a light microscope. Figures of the specimens were made using Leica MZ12.5.

The type specimens are deposited in the Institut of Entomology of Guizhou University, Guiyang, China (GUGC).

Petaloccephala kuankuoensis sp. nov.

Figs 1, 4, 7-11

Description. Body large. Length (including forewing): ♂, 12.5 mm. Body virescent, head and face usually stained red along margin (Figs 1, 4). Eyes dark brown; ocelli translucent (Fig. 1). Forewing semitransparent; an infusate spot on disc.

Pygofer side in lateral aspect tapering posteriorly, end curved dorsally, with a process extending like a oblate hook from middle ventral margin inside (Figs 9, 10). Style long, anterior portion shorter than caudal portion, caudal portion

obviously robust and tapering posteriorly, apex strongly recurved like a head of duck, with some macrosetae near the recurved area (Figs 7, 8). Connective T-shaped with high dorsomedial keel (Figs 7, 8). Aedeagus with a pair of lateral processes, the processes elongate at both ends, anterior apex flat straight and posterior apex contorted like a hook; shaft tapering unobvious, slight curved dorsally in lateral view (Figs 7, 8); gonopore apical.

Other characteristics are as shown in Figs 1, 4, 7-11.

Type Material. Holotype ♂, CHINA: Guizhou, Suiyang, Kuankuoshui, 6-9 June 2010, coll. Zhang Bin.

Host plant. Unknown.

Etymology. The species name is derived from the locality of the types.

Remarks. This new species is superficially similar to *Petalocephala sanguineomarginata* Kuoh, but can be distinguished from the latter by: (1) The shape of style is different; (2) pygofer side process extending from middle ventral margin not caudal; (3) The shape of lateral process of aedeagal shaft is different.

***Petalocephala dicondylica* sp. nov.**

Figs 2, 5, 12-16

Description. Body large. Length (including forewing): ♂, 11.5 mm. Body virescent, head and face usually stained orange red along margin (Figs 2, 5). Apex of vertex angular forward (Figs 2, 5). Eyes dark brown; ocelli translucent (Fig. 2). Forewing semitransparent, end margin stained yellow; an infusate spot on disc.

Pygofer side in lateral aspect triangular, end curved dorsally, with a process extending like a gracile hook from middle ventral margin inside (Figs 14, 15). Style long, anterior portion shorter than caudal portion, caudal portion obviously robust, apex strongly recurved, with some macrosetae near the recurved area (Figs 12, 13). Connective T-shaped with dorsomedial keel (Figs 12, 13). Aedeagus with a pair of lateral processes, the processes elongate at both ends, thick in the center and tapered at each end; shaft tapering posteriorly and slight curved dorsally in lateral view (Fig. 13); gonopore apical.

Other characteristics are as shown in Figs 2, 5, 12-16.

Type Material. Holotype ♂, CHINA: Suiyang, Kuankuoshui, 4 June 2010, coll. Zheng Yanli.

Host plant. Unknown.

Etymology. This species is named from its aedeagus with a vimineous process on each side, the processes elongate at both ends, thick in the center and tapered at each end.

Remarks. This new species is superficially similar to *Petalocephala kuankuoensis* sp. nov., but can be distinguished from the latter by: (1) apex of vertex angular forward; (2) pygofer side inside process very gracile; (3) lateral process of aedeagal shaft tapered at each end, uncurved.

***Petalocephala gongshanensis* sp. nov.**

Figs 3, 6, 17-21

Description. Body large. Length (including forewing): ♂, 13.0-13.1 mm. Body virescent, head and face usually stained brown red along margin (Figs 3, 6). Eyes dark brown; ocelli translucent (Fig. 3). Forewing semitransparent, end margin stained yellow, veins green; an infusate spot on disc.

Pygofer side in lateral aspect trapezoidal, end curved dorsally, with a process extending like a hook from caudal ventral margin inside (Figs 19, 20). Style long, anterior portion shorter than caudal portion, caudal portion obviously robust and tapering posteriorly, apex recurved, with some macrosetae near the recurved area (Figs 17, 18). Connective T-shaped with high dorsomedial keel (Figs 17, 18). Aedeagus with a pair of lateral processes, the processes elongate at both ends, anterior apex straight tapered and posterior apex contorted; shaft burly, tapering posteriorly and slight curved dorsally in lateral view (Fig. 18); gonopore apical.

Other characteristics are as shown in Figs 3, 6, 17-21.

Type Material. Holotype ♂, CHINA: Yunnan, Gongshan, 7 June 2009, coll. Zhu Daxian. Paratype: 1♂, same data as holotype.

Host plant. Unknown.

Etymology. The species name is derived from the locality of the types.

Remarks. This new species is superficially similar to *Petalocephala kuankuoensis* sp. nov., but can be distinguished from the latter by: (1) length of vertex longer than half head width (including eyes), but *P. kuankuoensis* sp. nov. about same as it; (2) pygofer side process extending from caudal ventral margin not middle; (3) lateral process of aedeagal shaft anterior apex straight tapered and posterior apex contorted not like a hook.

ACKNOWLEDGEMENTS

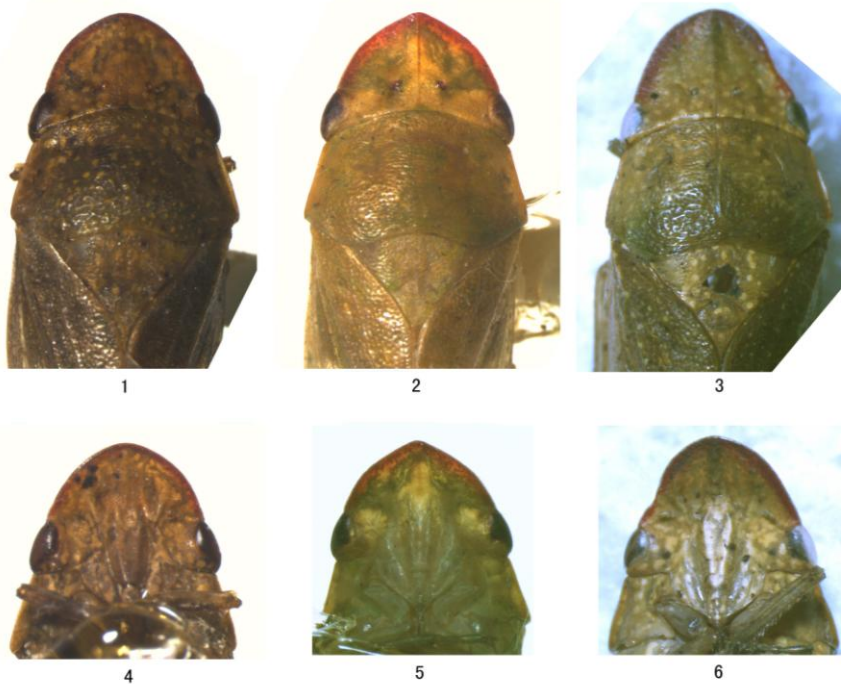
We thanks Zhang Bin, College of Life Sciences and Technology, Inner Mongolia Normal University, China, and Zheng Yanli, Institute of Entomology, Guizhou University, China, gave some helps for this study.

LITERATURE CITED

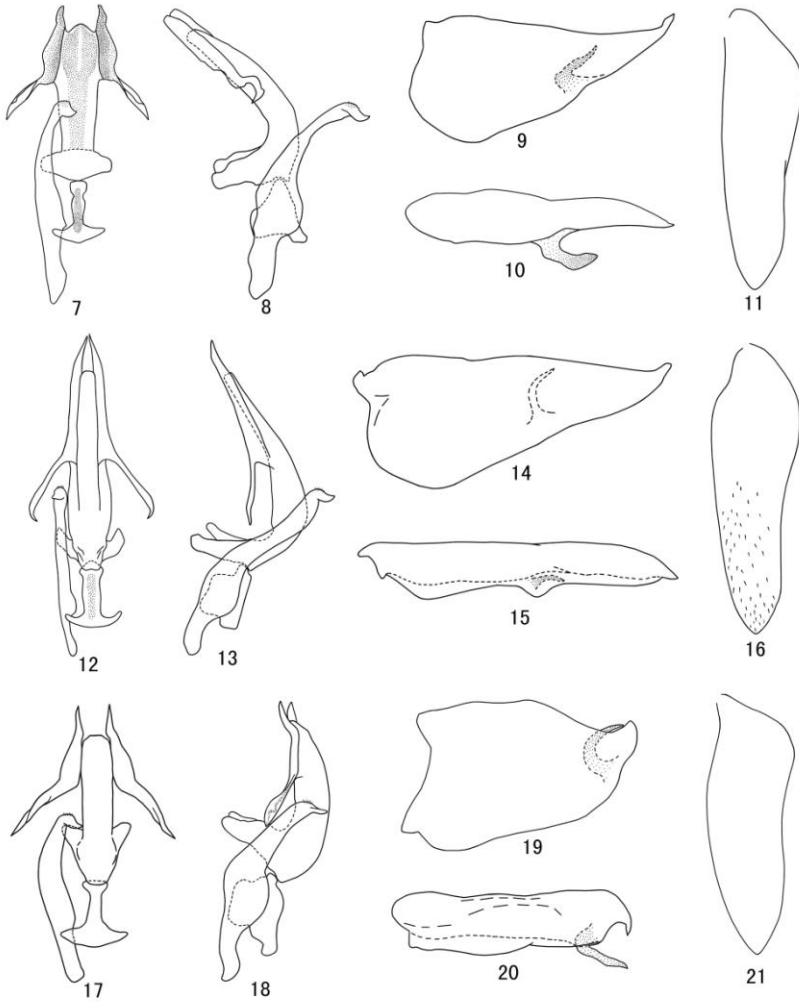
- Cai, P. & Ge, Z. L.** 1992. Three new species of the genus *Petalocephala* from China (Homoptera: Cicadellidae; Ledrinae). *Zoological Research*, 13 (2): 117-121.
- Cen, Y. W. & Cai, P.** 2000. Two new species of genus *Petalocephala* Stål (Homoptera: Cicadellidae; Ledrinae) from China. *Entomotaxonomia*, 22 (4): 247-250.
- Dietrich, C. H.** 2005. Keys to the families of Cicadomorpha and Subfamilies and Tribes of Cicadellidae (Hemiptera: Auchenorrhyncha). *Florida Entomologist*, 88: 10-15.
- Kato, M.** 1931. Japanese Ledridae. *Dobutsugaku Zasshi*, 43, 431-440.
- Jones, J. R. & Deitz L. L.** 2009. Phylogeny and systematics of the leafhopper subfamily Ledrinae (Hemiptera: Cicadellidae). *Zootaxa*, 2186: 1-120.
- Kuoh, C. L.** 1984. Six new species of genus *Petalocephala* (Homoptera: Ledrinae). *Entomotaxonomia*, 6 (4): 271-278.

Oman, P. W., Knight W. J. & Nielson M. W. 1990. Leafhoppers (Cicadellidae): a bibliography, generic Check-list and index to the world literature 1956-1985. CAB International Institute of Entomology, Wallingford, U.K. 1-368.

Stål, C. 1853. Nya genera bland Hemiptera. Öfversigt af Kongliga Svenska Vetenskaps-Akadamiens Förhandlingar, 10: 231-255.



Figures 1-8. 1. *Petalocephala kuankuoensis* **sp. nov.**, Head and thorax, dorsal view; 2. *Petalocephala dicondylica* **sp. nov.**, Head and thorax, dorsal view; 3. *Petalocephala gongshanensis* **sp. nov.**, Head and thorax, dorsal view; 4. *Petalocephala kuankuoensis* **sp. nov.**, Face; 5. *Petalocephala dicondylica* **sp. nov.**, Face; 6. *Petalocephala gongshanensis* **sp. nov.**, Face.



Figures 17-21. 7-11. *Petalocephala kuankuoensis* **sp. nov.**, Aedeagus, connective and paramere, ventral view; Aedeagus, connective and paramere, side view; Pygofer side, side view; Pygofer side, ventral view; Subgenital plate; 12-16. *Petalocephala dicondylica* **sp. nov.**, Aedeagus, connective and paramere, ventral view; Aedeagus, connective and paramere, side view; Pygofer side, side view; Pygofer side, ventral view; Subgenital plate; 17-21. *Petalocephala gongshanensis* **sp. nov.**, Aedeagus, connective and paramere, ventral view; Aedeagus, connective and paramere, side view; Pygofer side, side view; Pygofer side, ventral view; Subgenital plate.