Zootaxa 3700 (3): 361–392
www.mapress.com/zootaxa/

Article

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

http://dx.doi.org/10.11646/zootaxa.3700.3.3
http://zoobank.org/urn:lsid:zoobank.org:pub:28E77AEB-00BD-4046-BE2A-E270FC06773D

Review of the Leafhopper Genus *Macrosteles* Fieber (Hemiptera: Cicadellidae: Deltocephalinae) from China

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Abstract

The leafhopper genus *Macrosteles* Fieber in China comprises 25 species including ten new species: *Macrosteles brochus* Zhang & Lu, *M. brunneus* Zhang & Lu, *M. choui* Zhang & Lu, *M. ehensis* Zhang & Lu, *M. gracilis* Zhang & Lu, *M. falcatus* Zhang & Lu, *M. haperatus* Zhang & Lu, *M. nabiae* Kwon, *M. parastriifrons* Zhang & Lu and *M. spinosus* Kwon. Five species are newly recorded from China, including *M. abludens* Anufriev, *M. albicostalis* Vilbaste, *M. alpinus* (Zetterstedt), *M. lividus* (Edwards) and *M. sordidipennis* (Stål). One taxon previously treated as a subspecies of *M. fascifrons* (Stål) is elevated to species rank: *M. lindbergi* Dlabola, n. stat. The following six new synonyms are proposed: *M. bimaculatus* Dai, Li & Chen, 2008 = *M. lividus* (Edwards, 1894), *M. heiseles* Kuoh, 1981 = *M. guttatus* (Matsumura, 1915); *M. huangxionis* Kuoh, 1981 = *M. heitiacus* Kuoh, 1981; *M. latiaedeagus* Dai *et al.*, 2008 = *M. cristatus* Ribaut, 1927; and *M. serrata* Dai *et al*., 2011 = *M. striifrons* Anufriev, 1968 and also a junior homonym of *M. serratus* Kwon, 2010; and *M. symphorosus* Yang, 1996 = *M. viridigriseus* (Edwards, 1924). A checklist to the *Macrosteles* species from China is provided together with a key for separation of males.

Key words: taxonomy, Homoptera, Auchenorrhyncha, Macrostelini, new species, synonym, homonym

Introduction

The tribe Macrostelini Kirkaldy of the leafhopper subfamily Deltocephalinae (Hemiptera: Cicadellidae) comprises about 300 species in 34 genera distributed worldwide (Knight & Webb, 1993). Two further genera *Paramacrosteles* Dai *et al*. (2006) and *Evinus* Dlabola (Lu *et al.*, 2011) have subsequently been included bringing the total genera to 36, but the genus *Paramacrosteles* Dai *et al*. is soon treated as a junior synonym of *Chlorotettix* Van Duzee (Li *et al*., 2011). The tribe is important to agriculture as it contains species that feed directly on plant fluids and transmit plant pathogens (Knight & Webb, 1993).

The largest genus in this tribe, *Macrosteles*, was established by Fieber (1866) with *Cicada sexnotata* Fallén as its type species. This genus contains over 100 known species distributed worldwide but is predominantly Holarctic in distribution. Members of the genus are difficult to identify due to their uniform appearance with intraspecific variation of male genitalia and color patterns in some species (Beirne, 1952). However, Hamilton (1983) showed how head and wing proportions, coupled with biogeographic analysis could distinguish the identity of several cryptic species and Ossiannilsson (1983) found additional specific characters in abdominal apodemes of mature specimens. Apodemal characters must be used with care, because they develop slowly after eclosion, and are not fully developed in "subteneral" individuals (Hamilton, 1980) which can usually be recognized by their fragile exoskeleton. A PhD dissertation by Kwon (1988) provided an improved dissection technique and reviewed the species of the genus worldwide, proposing 43 new species and 15 synonymies, but only a very small part of this work has been published (Hamilton & Kwon, 2010a, b).

The Asian species of *Macrosteles* are poorly known. One distinctive species, *M. buzonensis* (Matsumura, 1902), has been described from Japan, and another, *M. alticola* Vilbaste (1965) was described from Mongolia;

Accepted by Chris Dietrich: 17 Jul. 2013; published: 14 Aug. 2013