Review of species of the *Scaphoideus albovittatus* group (Hemiptera, Cicadellidae, Deltocephalinae) from China, with a checklist and distribution summary for Chinese species in the genus

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Abstract

The thirteen known leafhopper species of the *Scaphoideus albovittatus* species group, characterized by the presence of a dorsal white longitudinal stripe, are recognized. Eight species, including three new species, are reported in this group from China: *S. albovittatus* Matsumura (China: Guangxi, Guizhou, Hainan, Hebei, Henan, Hubei, Hunan, Shaanxi, Shandong, Sichuan, Xizang, Yunnan; Japan, Korea, Russia), *S. coniceus* Li (China: Hainan, Yunnan), *S. intermedius* Matsumura (China: Taiwan), *S. kumamotonis* Matsumura (China: Anhui, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Xizang, Yunnan, Zhejiang; Japan), *S. maai* Kitbamroong & Freytag (China: Yunnan, Hainan; Thailand), *S. rostratus* sp. nov. (China: Yunnan), *S. sagittatus* sp. nov. (China: Yunnan) and *S. yuani* sp. nov. (China: Guangxi). The detailed morphology of the new species is described; photographs of external habitus and male and female genitalia of the species from China are given. A checklist and a key to the species in this group are also provided, as well as a checklist with distribution summaries for all valid species in the genus from China.

Key words: Hemiptera, Auchenorrhyncha, Cicadina, leafhoppers, *Scaphoideus*

Introduction

*Scaphoideus*, first described by Uhler in 1889, is one of the larger leafhopper genera (Zahniser & Dietrich, 2013), with 194 previously described species (per. stat.). The species of this genus feed and breed on grasses, herbs, shrubs, and trees. Species occur in both the New World and the Old World, and one Nearctic species, *S. titanus* Ball, now established in Europe, is implicated in the transmission of the grapevine phytoplasma disease causing flavescence dorée (Bertin et al., 2007). Several other species in the genus are also known to transmit plant pathogens, and all are capable of inflicting injury to plants (Baker, 1948; Nielson, 1985; Rosenberger and Jones, 1978).

Recent reviews of the species of Scaphoideus from Thailand (Kitbamroong & Freytag, 1978), Japan (Kamitani & Hayashi, 2013), the Indian subcontinent (Viraktamath & Mohan, 2004) and China (Li et al., 2011) have resulted in a better understanding of the distribution of the species in Asia. In China, the genus is represented by 76 species (see Appendix 1), many of which are apparently endemics (Matsumura, 1914, Freytag, 1976; Kuoh, 1986; Li, 1988, 1990a,b, 1993, 1999; Li & Wang, 1991, 2002, 2005; Li & Kuoh, 1993; Cai et al., 1998, 2001; Cai & Huang, 1999; Cai & Shen, 1999; Li & Zhang, 2005; Li & Liang, 2005; Li et al., 2011; Chen et al., 2013; Yang et al., 2013). *Scaphoideus* comprises forms differing widely in colour and male genitalia. Among them, three species (*S. albovittatus*, *S. intermedius* and *S. kumamotonis*) were described from Taiwan by Matsumura (1914), which have a dorsal white longitudinal stripe extended from the head apex to the forewing clavus and two black spots near the eyes on the vertex. Later, three similar species: *S. maai* Kitbamroong & Freytag and *knappi* Kitbamroong & Freytag from Thailand, and *S. katrai* Rao & Ramakrishnan from India were described. Viraktamath & Mohan (2004) also described three related species from India. Recently, three species with similar color pattern: *coniceus* Li, 2011, from China, *ryukyuensis* Kamitani & Hayashi, 2013, from Japan and *viraktamathi* Meshram, 2014, from

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APPENDIX 1. Checklist of species of Scaphoideus from China.

acutistyleus Li & Zhang, 2005:157 Guizhou
alboguttatus Matsumura, 1914: 221 Taiwan
albomaculatus Li, 1990:466 Guizhou, Yunnan, Sichuan, Fujian, Taiwan
albovittatus Matsumura, 1913:68 Taiwan, Guizhou, Sichuan, Yunnan, Tibet, Shaanxi, Hebei; Japan, Korea
anlongensis Chen, Yang & Li, 2012:85 Guizhou
annulatus Li [In Li, Dai & Xing, 2011:248] Jiangxi
apicalis Li [In Cai & Huang, 1999:232] Fujian, Sichuan, Guizhou
aurantacus Kuoh, 1986:196 Yunnan, Henan
bannaensis Li [In Li, Dai & Xing, 2011:249] Yunnan
bilineus Li [In Li, Dai & Xing, 2011:250] Guangxi
bimaculatus Li & Wang, 2002: 112 Yunnan
bipedis Cai & He, 1998:71 Henan, Zhejiang
biprocessus Li, Song, & Song, 2007:683 Yunnan
breviplateus Li [In Li, Dai & Xing, 2011: 251] Guizhou
changjinganus Li, 1990:100 Hunan, Henan, Guizhou, Yunnan, Zhejiang, Jiangsu; Burma
colateralis Li [In Li, Dai & Xing, 2011:252] Shaanxi
conicplateus Li & Dai, 2004:283 Guizhou
coniceus Li [In Li, Dai & Xing, 2011:252] Hainan
curvusus Li & Wang [In Li, Wang & Liang, 2005:131] Yunnan
curvatureus Li, Song, & Song, 2007:682 Yunnan
dentaecagus Li & Wang, 2002:106 Guizhou
dentatysteles Li & Wang, 2002:107 Guizhou
diminutus Matsumura, 1914:226 Taiwan
erythreaeus Li, 1990: 464 Guizhou, Yunnan
exsertus Li, 1993:45 Sichuan, Guizhou
fanjingensis Li & Dai, 2004:284 Guizhou
festivus Matsumura, 1902:384 Guizhou, Sichuan, Yunnan, Shaanxi, Ningxia, Hunan, Beijing, Hebei, Henan, Jiangxi, Fujian, Guangdong, Guangxi, Hainan, Taiwan, Zhejiang; India, Japan, Korea, Sri Lanka