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**Research article**

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# Review of the Chinese species of the genus *Tropidocephala* Stål, 1853 (Hemiptera: Fulgoromorpha: Delphacidae), with descriptions of two new species

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**Abstract.** The Chinese species of the genus *Tropidocephala* Stål, 1853 are reviewed. 26 species are recognized, of which *T. brunnipennis* Signoret, 1860, *T. dingi* Sun, Yang & Chen, 2014, *T. festiva* (Distant, 1906), *T. jiawenna* Kuoh, 1979, *T. longiapina* Ding, 1982, *T. nigra* (Matsumura, 1900), *T. serendiba* (Melichar, 1903), *T. sinica* Ding, 2006, and *T. sinuosa* Yang & Yang, 1986 are illustrated and redescribed, and two new species, *T. lamellata* sp. nov. and *T. yunnanensis* sp. nov. are described and illustrated. A checklist and key of Chinese species in the genus are provided.

**Keywords.** Fulgoroidea, Oriental region, delphacids, taxonomy, morphology.

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## Introduction

The delphacid planthopper genus *Tropidocephala* Stål, 1853 was established by Stål (1853), with *Tropidocephala flaviceps* Stål, 1855 as the type species. *Conicoda* Matsumura, 1900, *Orchesma*

Melichar, 1903, *Ectopiopterygodelphax* Kiraldy, 1906 and *Smara* Distant, 1906 are synonyms of *Tropidocephala* Stål, 1853 (Melichar 1902; Kiraldy 1907; Ding 2006; Bourgion 2024). This genus of the tribe Tropidocephalini Muir, 1912, subfamily Delphacinae Leach, 1815 (Hemiptera: Fulgoromorpha: Delphacidae), is the largest group including 56 species, representing about 27% of the tribe, distributed in the African, Australian, Oriental and Palaearctic regions (Ding 2006; Bourgoin 2024). Eighteen species have been reported as associated with Poaceae (R.Br.) Barnhart (Ishihara 1949; Drosopoulos 1982; Drosopoulos *et al.* 1983; Ding 2006; Fujinuma & Hayashi 2016; Gjonov 2022). To date, 24 species in this genus have been recorded from China, of which *T. brunnipennis* Signoret, 1860 is the most widely distributed and has been recorded in 14 provinces (Fennah 1956; Kuoh 1979; Yang 1989; Guo *et al.* 2005; Ding 2006; Sun *et al.* 2014; Hayashi & Fujinuma 2016; Bourgoin 2024). Recent treatments of the Chinese fauna include Sun *et al.* (2014) who published a replacement name for one species, and Ding (2006), who described six new species from China and provided an identification key to 20 Chinese species.

In this paper, the Chinese species of the genus *Tropidocephala* are reviewed and two new species, *T. lamellata* sp. nov. and *T. yunnanensis* sp. nov. from Hainan and Yunnan provinces, are described and illustrated. Hence, the known diversity of *Tropidocephala* has been raised to fifty-eight species, with twenty-six species occurring in China. A checklist and key to Chinese species of *Tropidocephala* are provided.

## Material and methods

The morphological terminology follows Yang & Yang (1986). Body length was measured from apex of vertex to tip of forewing. All measurements are in millimeters (mm). Dry male specimens were used for the description and illustration. The genital segments were removed from the examined specimens and macerated in 10% NaOH, washed in water and transferred to glycerin. External morphology and drawings were done under the Leica MZ 12.5 stereo microscope. Photographs were taken using the KEYENCE VHX-6000 system. The photographs and illustrations were imported into Adobe Photoshop ver. 6.0 for plate composition and labeling.

The type specimens and examined materials are deposited in the Institute of Entomology, Guizhou University, Guiyang, Guizhou Province, China (IEGU).

## Results

### *Taxonomy*

Class Insecta Linnaeus, 1758
Order Hemiptera Linnaeus, 1758
Infraorder Fulgoromorpha Evans, 1946
Family Delphacidae Leach, 1815
Subfamily Delphacinae Leach, 1815
Tribe Tropidocephalini Muir, 1915

Genus ***Tropidocephala*** Stål, 1853

*Tropidocephala* Stål, 1853: 266.
*Conicoda* Matsumura, 1900: 258.
*Orchesma* Melichar, 1903: 94.
*Ectopiopterygodelphax* Kiraldy, 1906: 412.
*Smara* Distant, 1906: 478.

*Tropidocephala* – Matsumura 1907: 57. — Muir 1913: 243; 1915: 247. — Kuoh *et al.* 1983: 31. — Yang & Yang 1986: 15. — Guo *et al.* 2005: 163. — Ding 2006: 156.

**Type species**

*Tropidocephala flaviceps* Stål, 1853, by original designation.

**Diagnosis**

Head including eyes narrower than pronotum. Except for a few species, vertex longer in midline than wide at base, apical part conical, extended well anterad of eyes, with 3 carinae, median carina simple, extended throughout entire head, lateral carinae converging apically, submedian carinae protruding from apex of lateral carinae, uniting at apex, forming anterior margin of vertex. Frons medium length, longer in middle line than wide at widest part, in profile more or less inclined apically, lateral carinae not completely connecting with lateral carinae of vertex; most of median carina forked at basal apex, forming a small chamber. Postclypeus at base wider than or subequal to frons at apex, distinctly tricarinate or not. Rostrum reaching mesocoxae, terminal segment slightly longer than width. Antennae short, cylindrical, second segment about twice as long as first, in most species not reaching frontoclypeal suture. Pronotum tricarinate, lateral carinae well developed, posterior part slightly curved inward, attaining hind margin. Post-tibial spur thick, posterior margin without teeth. Spinal formula of hind tibia 5-6(7)-4.

Pygofer of male in posterior view with opening longer than wide, lateral margins with or without production, ventral margin with distinct medioventral process. Anal segment relatively large. Genital style long, sometimes basal angle with long process. Aedeagus fastened in anal segment, with phallobase, phallus slender, curved ventrad, phallobase broad at base, concave medially to receive phallus with long process apically or basoventrally. Diaphragm membranous (Guo *et al.* 2005; Ding 2006).

**Distribution**

Palearctic, Oriental, Australian and African regions.

**Checklist to Chinese species of *Tropidocephala* Stål, 1853**

*T. andunna* Kuoh, 1979; distribution: China (Guizhou, Yunnan provinces)
*T. breviceps* Matsumura, 1907; distribution: China (Hainan Province)
*T. brunnipennis* Signoret, 1860; distribution: China (Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang provinces)
*T. dimidia* Yang & Yang, 1986; distribution: China (Taiwan Province)
*T. dingi* Sun, Yang & Chen, 2014; distribution: China (Hainan, Yunnan provinces)
*T. festiva* (Distant, 1906); distribution: China (Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangsu, Taiwan, Yunnan, Zhejiang provinces)
*T. flavovittata* Matsumura, 1907; distribution: China (Jiangxi, Taiwan provinces)
*T. formosana* Matsumura, 1910; distribution: China (Taiwan Province)
*T. grata* Yang & Yang, 1986; distribution: China (Taiwan Province)
*T. insperata* Yang, 1989; distribution: China (Taiwan Province)
*T. jiawenna* Kuoh, 1979; distribution: China (Guizhou, Yunnan provinces)
*T. lamellata* sp. nov.; distribution: China (Hainan Province)
*T. longiapina* Ding, 1982; distribution: China (Guizhou, Yunnan provinces)
*T. nigra* (Matsumura, 1900); distribution: China (Anhui, Fujian, Henan, Hubei, Shandong, Zhejiang provinces)
*T. orientalis* Ding, 2006; distribution: China (Hubei Province)
*T. prolixa* Guo & Liang, 2005; distribution: China (Fujian, Guangxi provinces)
*T. russa* Ding, 2006; distribution: China (Yunnan Province)

*T. saccharivorella* Matsumura, 1907; distribution: China (Hainan, Taiwan provinces)
*T. serendiba* (Melichar, 1903); distribution: China (Yunnan Province)
*T. simaoensis* Ding, 2006; distribution: China (Yunnan Province)
*T. sinica* Ding, 2006; distribution: China (Hainan, Yunnan provinces)
*T. sinuosa* Yang & Yang, 1986; distribution: China (Hainan, Taiwan provinces)
*T. speciosa* (Bierman, 1908); distribution: China (Guangdong Province)
*T. touchi* Kuoh, 1979; distribution: China (Yunnan Province)
*T. yichangensis* Ding, 2006; distribution: China (Hubei Province)
*T. yunnanensis* sp. nov.; distribution: China (Yunnan Province)

**Key to Chinese species of the genus *Tropidocephala* Stål, 1853**

1. Vertex at midline shorter than pronotum (Matsumura 1907: figs 1, 7) ..... ***T. breviceps*** Matsumura, 1907
– Vertex at midline longer than pronotum .....

2. Vertex more than 3 × as long as pronotum ..... 3
– Vertex less than 3 × as long as pronotum ..... 4

3. Spots of forewings darker, inner side of crossveins with 3 brownish black burl spots (Yang & Yang 1986: fig. 12d) ..... ***T. dimidia*** Yang & Yang, 1986
– Spots of forewings light, without burl spots within the crossveins (Yang & Yang 1986: fig. 14d) .... ***T. sinuosa*** Yang & Yang, 1986

4. Inner side of forewing crossveins with dark brown burl spots ..... 5
– Inner side of forewing crossveins without dark brown burl spots ..... 16

5. Vertex more than 2 × as long as pronotum ..... 6
– Vertex less than 2 × as long as pronotum ..... 7

6. Vertex with 2 dark longitudinal stripes; pronotum with 8 dark longitudinal stripes; inner side of forewing crossveins with 4 blackish brown burl spots (Bierman 1908: figs 9, 9c) ..... ***T. speciosa*** (Bierman, 1908)
– Vertex without 2 dark longitudinal stripes; pronotum without 8 dark longitudinal stripes; inner side of forewing crossveins with 3 blackish brown burl spots (Ding 2006: fig. 84a, h) ..... ***T. nigra*** (Matsumura, 1900)

7. Inner side of forewing crossveins with 2 blackish brown burl spots (Melichar 1903: table ii, fig. 5) ..... ***T. serendiba*** (Melichar, 1903)
– Inner side of forewing crossveins with 3 blackish brown burl spots ..... 8

8. Median carina of vertex and pronotum with dark stripe on both sides continuously ..... 9
– Median carina of vertex and pronotum without dark stripe on both sides or with dark stripe discontinuously .....11

9. Apex of frons, genae and clypeus black; pygofer with medioventral and lateroventral processes .... ..... 10
– Apex of frons, genae and clypeus not black; pygofer with medioventral process, without lateroventral processes (Sun *et al.* 2014: figs 1–7) ..... ***T. dingi*** Sun, Yang & Chen, 2014

10. Basal frons with large dark brown spots (Distant 1906: fig. 264) ..... ***T. festiva*** (Distant, 1906)
– Basal frons without dark brown spots (Kuoh 1979: figs 1–2) ..... ***T. jiawenna*** Kuoh, 1979

11. Pygofer with medioventral and lateroventral processes; apex of frons black or brown ..... 12
– Pygofer with medioventral process, without lateroventral process; frons not black or brown ..... 15

12. Mesonotum with tricarinate bordered with black or brown longitudinal stripes ..... 13
– Mesonotum with tricarinate not bordered with black or brown longitudinal stripes ..... 14

13. Basal angles of genital styles with spiny process, middle part of outer margin with blunt-toothed processes (Kuoh 1979: figs 2, 5, 7) .....***T. andunna*** Kuoh, 1979
– Basal angles of genital styles without spiny process, middle part of outer margin without blunt-toothed processes (Ding 2006: fig. 76c, g–i) .....***T. sinica*** Ding, 2006

14. General color light yellowish brown with green or yellowish-green; basal angles of genital styles and middle part of inner margin with spiny processes (Ding 2006: fig. 74d–f) ..... .....***T. brunnipennis*** Signoret, 1860
– General color light brown; inner and outer margins of genital styles undulating, without spiny processes (Yang & Yang 1986: fig. 13h–i) ..... ***T. grata*** Yang & Yang, 1986

15. Medioventral process of pygofer simple; outer margin of genital styles with small process near the middle, subconical (Yang 1989: fig. 9f, j) .....***T. insperata*** Yang, 1989
– Medioventral process of pygofer bidentate; basal angles of genital styles and middle part of outer margin with slender processes (Ding 2006: fig. 75c, g, k) ..... ***T. yichangensis*** Ding, 2006

16. Vertex more than 1.6× as long as pronotum ..... 17
– Vertex slightly longer than or nearly equal to pronotum ..... 20

17. Medioventral process of pygofer long ..... 18
– Medioventral process of pygofer short ..... 19

18. Genital styles simple, S-shaped; medioventral process of pygofer long rod shaped (Guo *et al.* 2005: figs 17, 19) ..... ***T. prolixa*** Guo & Liang, 2005
– Outer margin of genital styles strongly arched at supra-median part, inner margin with fingerlike process at middle part, not S-shaped; medioventral process of pygofer long spiny (Ding 1982: figs 11–13) .....***T. longiapina*** Ding, 1982

19. Apical part of forewing with big black spot, middle part of corium with a diagonal brown line (Matsumura 1907: table ii, fig. 7) .....***T. flavovittata*** Matsumura, 1907
– Apical part of forewing $M_2$, $M_3$ and $Cu_1$ veins with dark brown stripes, middle part of $Rs+M_1$ with a brown spot (Matsumura 1907: table ii, fig. 12) .....***T. saccharivorella*** Matsumura, 1907

20. Vertex, pro- and mesonotum with median carina bordered with dark lines on both sides ..... 21
– Vertex, pro- and mesonotum with median carina not bordered with dark lines on both sides or only mesonotum ..... 25

21. Genital styles small, long and narrow, slightly wavy ..... 22
– Genital styles wider, not wavy ..... 23

22. Anal segment short, ring-like, apical margin of two lateral angle triangular; pygofer without medioventral process (Kuoh 1979: figs 3, 5–6) ..... ***T. touchi*** Kuoh, 1979
– Anal segment (Fig. 10C–D) wider, cylindric, apical margin of two lateral angle round; medioventral process of pygofer (Fig. 10C–D) small, triangular ..... ***T. yunnanensis*** sp. nov.

23. Forewing (Fig. 21F) without transparent spots; genital styles (Fig. 22F–G) without large process on basal angle .....***T. lamellata*** sp. nov.
– Forewing with transparent spots; genital styles with large process on basal angle ..... 24

24. Inner side of forewing crossveins without small black spots; apical margin of genital styles with dense small protrusions, outer margin of basal process smooth (Ding 2006: fig. 73e–f, k) ..... ***T. formosana*** Matsumura, 1910

– Inner side of forewing crossveins with many small black spots; apical margin of genital styles without dense small protrusions, outer margin of basal process with dentate processes (Ding 2006: fig. 88e, h, l) ..... ***T. russa*** Ding, 2006

25. Vertex, pro- and mesonotum with median carina not bordered with dark lines; basal ⅓ of forewing and terminal area with dark brown spots; pygofer with 3 dentate medioventral processes (Ding 2006: fig. 77c, k) ..... ***T. simaoensis*** Ding, 2006
– Both sides of middle carinae with dark lines only at mesonotum; corium of forewing with large oblong spot, with dark brown stripes along crossveins and posterior margin of proximal region; pygofer with single medioventral process (Ding 2006: fig. 86c, j) ..... ***T. orientalis*** Ding, 2006

***Tropidocephala brunnipennis*** Signoret, 1860
Figs 1–2, Table 1

*Tropidocephala brunnipennis* Signoret, 1860: 185, pl. 5 figs 2, 2a–c.
*Conicoda graminea* Matsumura, 1900: 259.
*Ectopiopterygodelphax eximius* Kirkaldy, 1906: 412.
*Tropidocephala philippina* Melichar, 1914: 273.

*Tropidocephala brunnipennis* – Matsumura 1907: 59, pl. 1 figs 3, 9. — Muir 1929: 190. — Matsumura & Ishihara 1945: 60, fig. 25. — Ishihara 1949: 12, figs 22–25. — Kuoh *et al.* 1983: 32, fig. 13. — Yang & Yang 1986: 18, fig. 7. — Ding & Wang 1996: 18, fig. 11. — Ding 2006: 161, fig. 74.
*Tropidocephala graminea* – Oshanin 1907: 300.
*Tropidocephala eximius* – Kirkaldy 1907: 142, pl. 12 figs 5–7, pl. 17 figs 15–16.

**Material examined**

CHINA • 2 ♂♂, 1 ♀; Hainan Province, Bawangling National Forest Park; 19°04′ N, 109°07′ E; 16 Apr. 2013; Jian-Kun Long and Yu-Bo Zhang leg.; IEGU • 1 ♂; Hainan Province, Yinggeling National Natural Reserve; 19°02′ N, 109°34′ E; 10 Aug. 2015; Zheng-Xiang Zhou leg.; IEGU • 5 ♂♂, 2 ♀♀; Hainan Province, Diaoluoshan National Forest Park; 18°44′ N, 109°50′ E; 13 Aug. 2015; Zheng-Xiang Zhou, Qiang Luo and Ya-Lin Yao leg.; IEGU • 1 ♂; Hainan Province, Yinggeling National Natural Reserve; 19°02′ N, 109°34′ E; 7 Apr. 2017; Hong-Xing Li leg.; IEGU • 1 ♂, 1 ♀; Hainan Province, Bawangling National Forest Park; 19°04′ N, 109°07′ E; 29 Apr. 2017; Hong-Xing Li leg.; IEGU • 1 ♂, 2 ♀♀; Yunnan Province, Mengla County, Menglun Town, Xishuangbanna Tropical Botanical Garden of Chinese Academy of Sciences; 21°54′ N, 101°17′ E; 27 Sep. 2015; Zheng-Xiang Zhou leg.; IEGU • 3 ♂♂, 1 ♀; Yunnan Province, Mengla County, Menglun Town; 21°55′ N, 101°15′ E; 1 Dec. 2016; Hong-Xing Li leg.; IEGU.

**Redescription**

Measurements. Body length including forewing: male 3.2–3.4 mm (N = 14), female 3.5–3.7 mm (N = 7).

Coloration. General color yellowish brown with green (Fig. 1A–B). Vertex, pronotum and mesonotum (Fig. 1A–D) pale yellowish brown with verdant green. Apical part of frons (Fig. 1E) dark brown. Clypeus (Fig. 1E) dark brown. Genae (Fig. 1B, D) black. First segment of antennae (Fig. 1A–E) with black brown stripe at apical part, second segment with a black brown stripe oblique from base to center, apical part with dark brown ring-like marking. Forewings (Fig. 1F) light yellowish brown, 2 large transparent spots near basal and middle parts, apex of each apical cells with transparent spot, inner side of crossveins with 3 dark brown burl spots, burl spot with lateral sides small, middle part big, $Sc_2$, $R_1$, Rs of apical part with small dark brown spots.


**Fig. 1.** *Tropidocephala brunnipennis* Signoret, 1860, ♂ (IEGU). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head and thorax, dorsal view. **D**. Head and thorax, lateral view. **E**. Frons, ventral view. **F**. Forewing.

Head and Thorax. Vertex (Figs 1C, 2A) triangular, longer in midline than wide at base (1.4:1). Frons (Figs 1E, 2B) fusiform, base obviously narrower than end, widest at middle level of eyes, longer in middle line than wide at widest part (1.8:1), with obvious median carinae, slightly concave near base. Antennae (Figs 1E, 2B) with first segment shorter than second segment about 1:2.0. Pronotum (Figs 1C, 2A) shorter than vertex about 0.9:1 in midline. Mesonotum (Figs 1C, 2A) longer than 0.9× pronotum and vertex combined, median carinae extend to terminal part of scutellum. Forewings (Fig. 1F) slightly broadened apically, longer than maximal width (2.5:1).

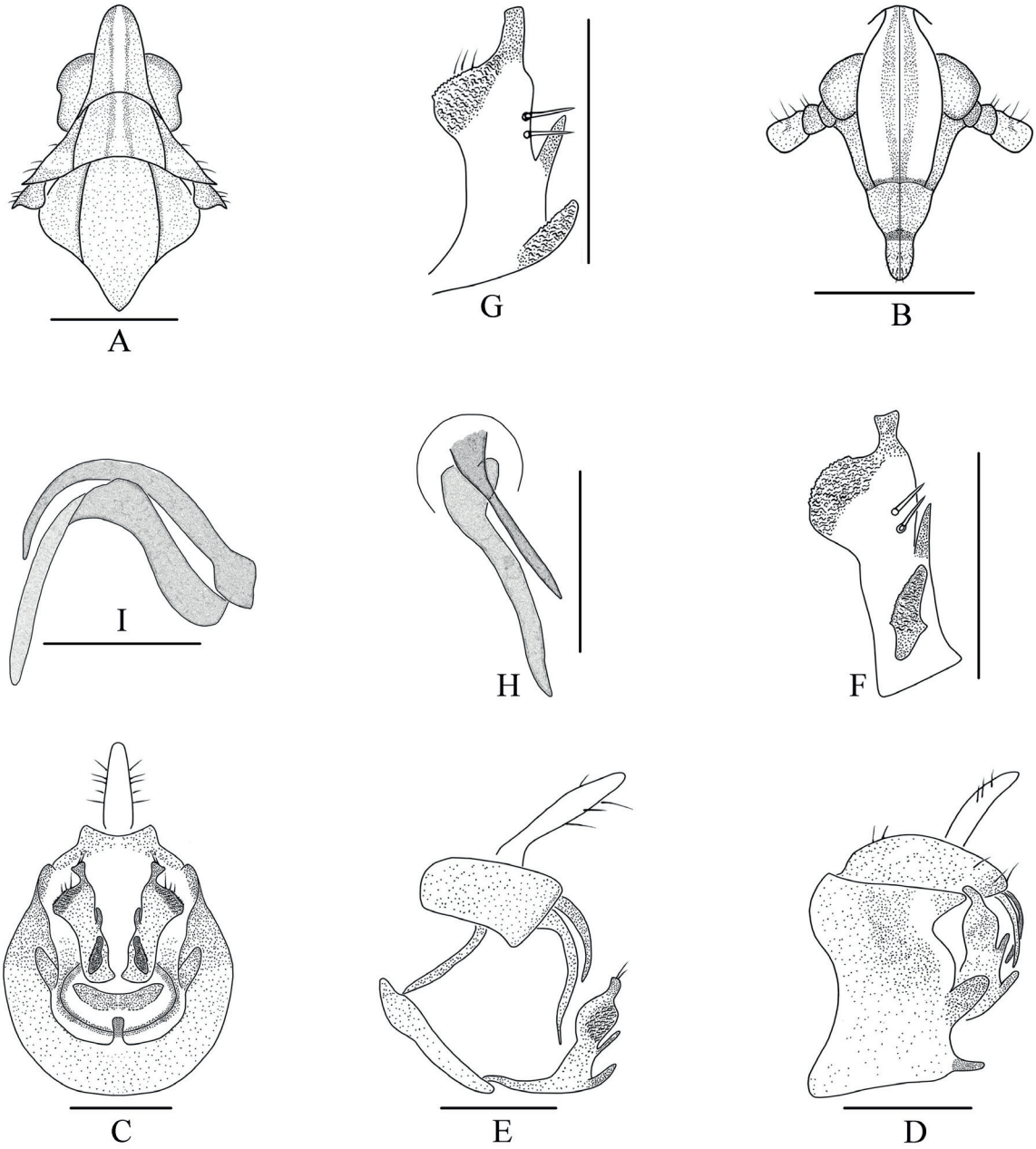


**Fig. 2.** *Tropidocephala brunnipennis* Signoret, 1860, ♂ (IEGU). **A**. Head and thorax, dorsal view. **B**. Frons, ventral view. **C**. Genitalia, posterior view. **D**. Genitalia, lateral view. **E**. Anal segment, aedeagus, connective and genital style, lateral view. **F**. Genital style, posterior view. **G**. Genital style, lateral view. **H**. Aedeagus, posterior view. **I**. Aedeagus, lateral view. Scale bars = 0.2 mm.

Male genitalia. Pygofer (Fig. 2C–D) ventral margin slightly longer than dorsal margin in lateral view, in posterior view with opening longer than wide, with rod-like medioventral process, lateroventral processes lamellar. Anal segment (Fig. 2C–E) short, without anal process, wider than long in lateral view, anal style long. Genital styles (Fig. 2F–G) lamellar, broad, basal and near middle parts each with long spiny process, basal one with several small dentate processes; apical part of inner side with short thick process; outer margin broadened abruptly at apex, outer apical angle arc-shaped, with several small toothlike processes. Aedeagus (Fig. 2E, H–I) with phallobase, phallus slender, tubular, curved ventrally medially, apical part cuspidal; phallobase wide and long, bend accordingly to phallus, apical part cuspidal.

**Host plant**

*Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae), *Miscanthus sinensis* Anderss. (Poales, Poaceae), *Oryza sativa* L. (Poales, Poaceae), *Saccharum officinarum* L. (Poales, Poaceae).

**Distribution**

China (Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang provinces), Australia, France, India, Indonesia, Japan, Korea, Madagascar, Malaysia, Nansei-shoto, New Guinea, North America, Philippines, South Africa, southern Europe, Sri Lanka.

***Tropidocephala dingi*** Sun, Yang & Chen, 2014
Figs 3–4, Table 1

*Tropidocephala speciosa* Ding, 2006: 167, fig. 78.
*Tropidocephala dingi* Sun, Yang & Chen, 2014: 44, figs 1–12.

**Material examined**

CHINA • 2 ♂♂; Hainan Province, Diaoluoshan National Forest Park; 18°44′ N, 109°50′ E; 13 Aug. 2015; Zheng-Xiang Zhou, Qiang Luo and Ya-Lin Yao leg.; IEGU • 1 ♂, 1 ♀; Hainan Province, Bawangling National Forest Park; 19°04′ N, 109°07′ E; 24 Aug. 2015; Zheng-Xiang Zhou leg.; IEGU • 1 ♀; Hainan Province, Yinggeling National Natural Reserve; 19°02’N, 109°34′ E; 7 Apr. 2017; Hong-Xing Li leg.; IEGU • 1 ♂; Hainan Province, Diaoluoshan National Forest Park; 18°44′ N, 109°50′ E; 14 Apr. 2017; Yong-Shun Ding leg.; IEGU • 7 ♂♂, 2 ♀♀; Hainan Province, Baisha Li autonomous County, Qifang Town, Xinjian Village; 19°15′ N, 109°19′ E; 16 Apr. 2017; Hong-Xing Li leg.; IEGU.

**Redescription**

Measurements. Body length including forewing: male 3.1–3.5 mm (N = 11), female 3.5–3.8 mm (N = 4).

Coloration. General color deep yellow (Fig. 3A–B). Vertex, pronotum and mesonotum (Fig. 3A–D) deep yellow, outer margins of vertex turquoise, median carinae of vertex, pronotum and mesonotum foul-white, lateral carinae of pronotum foul-white, each carinae with dark brown stripes on both sides. Frons (Fig. 3E) orange-red, apical part turquoise, outer margin and median carinae foul-white. Clypeus (Fig. 3E) yellowish. Genae (Fig. 3B, D) dark red. Eyes (Fig. 3A–D) dark brown, ocelli reddish brown. Antennae (Fig. 3A–E) light yellowish brown, apical part of first segment, apical and near middle parts of second segment with black brown ring-like stripes. Forewings (Fig. 3F) light yellowish brown, basal ⅓ with large dark brown spot, 2 large transparent spots near basal and middle parts, apex of each apical cells with transparent spot, 3 dark brown burl spots in central crossveins, burl spots with several white

granular processes, $Sc_2$, $R_1$, Rs of terminal part with small dark brown spots. Front and middle legs coxa (Fig. 3B, D) light yellow, rest orange yellow, hind legs dark yellowish-white.

Head and thorax. Vertex (Figs 3C, 4A) triangular, longer in midline nearly equal to base width. Frons (Figs 3E, 4B) elliptic, base obviously narrower than end, longer in middle line than wide at widest part (1.9:1), median carinae simple. Antennae (Figs 3E, 4B) with first segment shorter than second segment about 1:2.0. Pronotum (Figs 3C, 4A) shorter than vertex about 0.8:1 in midline. Mesonotum


**Fig. 3.** *Tropidocephala dingi* Sun, Yang & Chen, 2014, ♂ (IEGU). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head and thorax, dorsal view. **D**. Head and thorax, lateral view. **E**. Frons, ventral view. **F**. Forewing.

(Figs 3C, 4A) longer than 1.3 × pronotum and vertex combined, median carinae extend to terminal part of scutellum. Forewings (Fig. 3F) slightly broadened apically, longer than maximal width (2.8:1).

Male genitalia. Pygofer (Fig. 4C–D) ventral margin longer than dorsal margin in lateral view, posterior margin undulant, in posterior view with opening longer than wide, with broad lamellar medioventral process. Anal segment (Fig. 4C–E) ring-like, dorsal margin concave, without anal process, two lateral

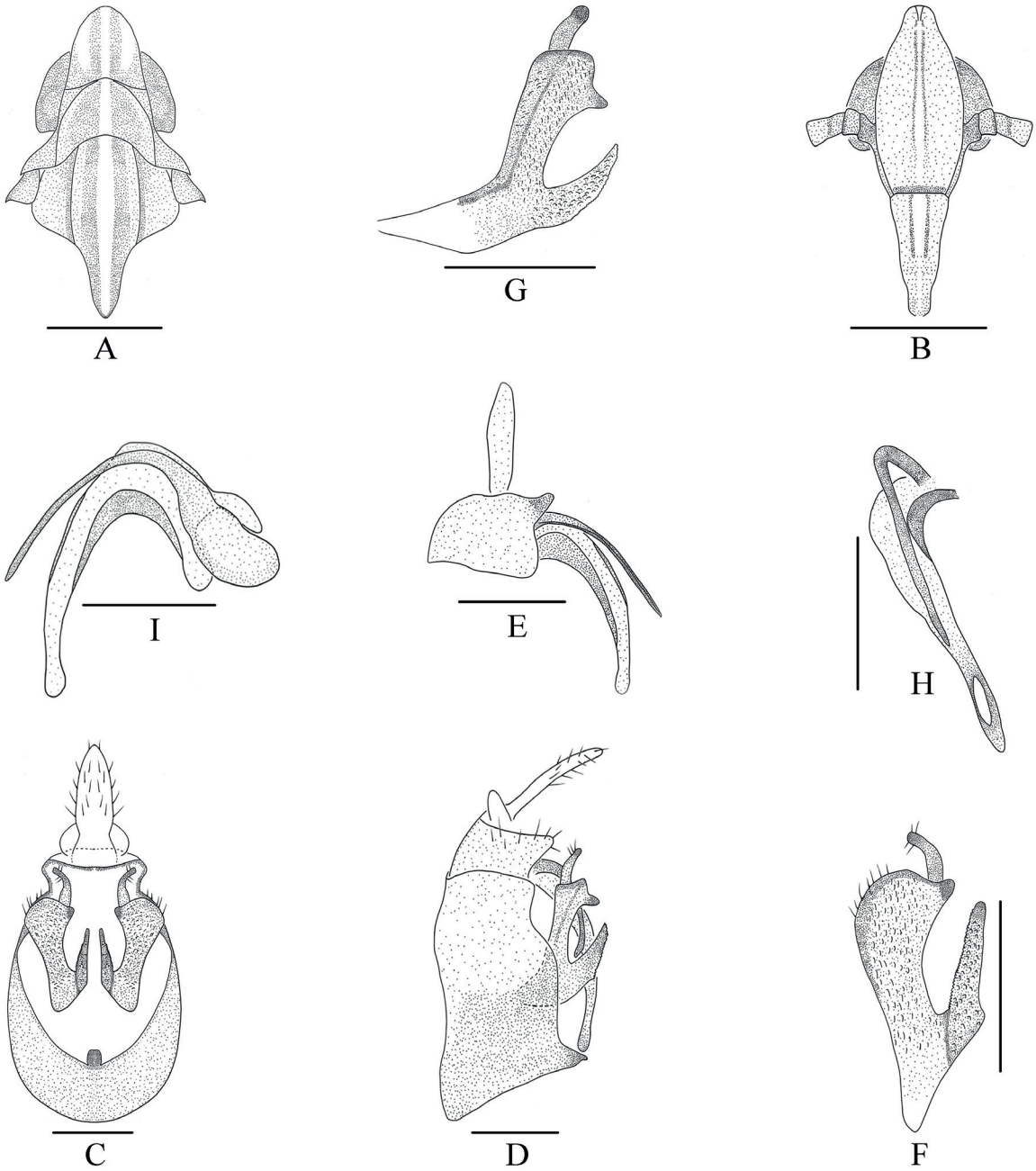


**Fig. 4.** *Tropidocephala dingi* Sun, Yang & Chen, 2014, ♂ (IEGU). **A**. Head and thorax, dorsal view. **B**. Frons, ventral view. **C**. Genitalia, posterior view. **D**. Genitalia, lateral view. **E**. Anal segment and aedeagus, lateral view. **F**. Genital style, posterior view. **G**. Genital style, lateral view. **H**. Aedeagus, posterior view. **I**. Aedeagus, lateral view. Scale bars = 0.2 mm.

angles wide and convex, anal style long. Genital styles (Fig. 4F–G) broad lamellar, dorsal side with a long fingerlike process, directed outward, inner apical angle with a small angular process, outer apical angle broad and round, basal angle with long fingerlike process, tapering to apex. Aedeagus (Fig. 4H–I) with phallobase, phallus slender, tubular, curved ventrally medially, apical part cuspidal; phallobase wide and long, apical ⅔ ventrally curved, bend accordingly to phallus, apical part round.

**Host plant**

*Miscanthus* sp. (Poales, Poaceae).

**Distribution**

China (Hainan, Yunnan provinces).

***Tropidocephala festiva*** (Distant, 1906)
Figs 5–6, Table 1

*Smara festiva* Distant, 1906: 478, fig. 264.

*Tropidocephala festiva* – Matsumura 1907: 62, pl. 1 figs 6, 12. — Muir 1913: 244, pl. 6 figs 9, 9a. — Matsumura & Ishihara 1945: 60, fig. 27. — Ishihara 1949: 13, fig. 27. — Kuoh *et al.* 1983: 33, fig. 14. — Yang & Yang 1986: 19, fig. 8. — Ding 2006: 158, fig. 72.

**Material examined**

CHINA • 27 ♂♂, 14 ♀♀; Guizhou Province, Libo County, Wengang Town; 25°15′ N, 107°54′ E; 23~26 Jul. 2015; Zheng-Xiang Zhou, Yang-Yang Liu, Yuan Liu and Ya-Lin Yao leg.; IEGU • 3 ♂♂; Guizhou Province, Ziyun County, Shuitang Town, Getu River Scenic Area; 25°40′ N, 106°16′ E; 18 Jul. 2016; Zheng-Xiang Zhou leg.; IEGU • 14 ♂♂, 8 ♀♀; Guizhou Province, Anlong County, Xianheping State Level Natural Reserve; 24°59′ N, 105°37′ E; 23 Jul. 2016; Hong-Xing Li leg.; IEGU • 2 ♂♂; Guizhou Province, Tongren City, Sinan County; 27°58′ N, 108°15′ E; 24 Jul. 2016; Zheng-Xiang Zhou leg.; IEGU • 3 ♂♂; Guizhou Province, Ceheng County, Pomei Town; 25°14′ N, 105°40′ E; 30 Jul. 2016; Hong-Xing Li leg.; IEGU • 1 ♂, 1 ♀; Guizhou Province, Changshun County, Guangshun Town; 26°11′ N, 106°23′ E; 22 Jul. 2018; Qiang Luo leg.; IEGU • 10 ♂♂; Guizhou Province, Dushan County, Cuiquan Forest Park; 25°49′ N, 107°30′ E; 29 Jul. 2018; Hong-Xing Li, Feng-E Li and Zhe-Zhe Wang leg.; IEGU • 4 ♂♂, 11 ♀♀; Guangxi Province, Mulun National Natural Reserve; 24°50′ N, 108°16′ E; 18–22 Aug. 2015; Zheng-Xiang Zhou, Yang-Yang Liu and Ya-Lin Yao leg.; IEGU • 6 ♂♂, 4 ♀♀; Hainan Province, Jianfengling National Forest Park; 18°43′ N, 108°54′ E; 9 Apr. 2013; Jian-Kun Long leg.; IEGU • 5 ♂♂, 3 ♀♀; Hainan Province, Bawangling National Forest Park; 19°04′ N, 109°07′ E; 16 Apr. 2013; Jian-Kun Long and Yu-Bo Zhang leg.; IEGU • 2 ♂♂; Hainan Province, Diaoluoshan National Forest Park; 18°44′ N, 109°50′ E; 13 Aug. 2015; Zheng-Xiang Zhou, Qiang Luo and Ya-Lin Yao leg.; IEGU • 15 ♂♂, 6 ♀♀; Hainan Province, Bawangling National Forest Park; 19°04′ N, 109°07′ E; 24 Aug. 2015; Zheng-Xiang Zhou, Qiang Luo and Ying-Jian Wang leg.; IEGU • 8 ♂♂, 3 ♀♀; Hainan Province, Yinggeling National Natural Reserve; 19°02′ N, 109°34′ E; 7 Apr. 2017; Hong-Xing Li and Yong-Shun Ding leg.; IEGU • 17 ♂♂, 8 ♀♀; Hainan Province, Diaoluoshan National Forest Park; 18°44′ N, 109°50′ E; 15 Apr. 2017; Hong-Xing Li and Yong-Shun Ding leg.; IEGU • 12 ♂♂, 2 ♀♀; Hainan Province, Bawangling National Forest Park; 19°04′ N, 109°07′ E; 29 Apr. 2017; Hong-Xing Li leg.; IEGU • 1 ♂, 1 ♀; Hainan Province, Houmiling Nature Reserve; 18°56′ N, 109°03′ E; 10 May 2017; Hong-Xing Li leg.; IEGU • 3 ♂♂, 19 ♀♀; Hunan Province, Xiaoxi National Natural Reserve; 28°48′ N, 110°12′ E; 21 Aug. 2016; Hong-Xing Li leg.; IEGU • 1 ♂; Yunnan Province, Mengla County, Mohan Town; 21°14′ N, 101°42′ E; 30 Nov. 2016; Hong-Xing Li leg.; IEGU.

**Redescription**

Measurements. Body length including forewing: male 3.0–3.3 mm (N = 134), female 3.5–4.0 mm (N = 80).

Coloration. Vertex, pronotum and mesonotum (Fig. 5A–D) yellow-green, lateral sides of median carinae, outer side of lateral carinae each with a dark brown stripe, proximal lateral region of pronotum with dark brown diagonal stripe. Basal and apical parts of frons (Fig. 5E) black, middle part turquoise.


**Fig. 5.** *Tropidocephala festiva* (Distant, 1906), ♂ (IEGU). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head and thorax, dorsal view. **D**. Head and thorax, lateral view. **E**. Frons, ventral view. **F**. Forewing.

Clypeus (Fig. 5E) and genae (Fig. 5B, D) black. Rostrum (Fig. 5E) yellowish brown, apical part dark brown. Antennae (Fig. 5A–E) light yellowish brown, apical part of first segment and middle part of second segment with black brown ring-like spot, apical part of second segment with dark brown ringlike spot. Forewings (Fig. 5F) yellowish brown, basal part with 2 yellowish-green diagonal stripes, apex of

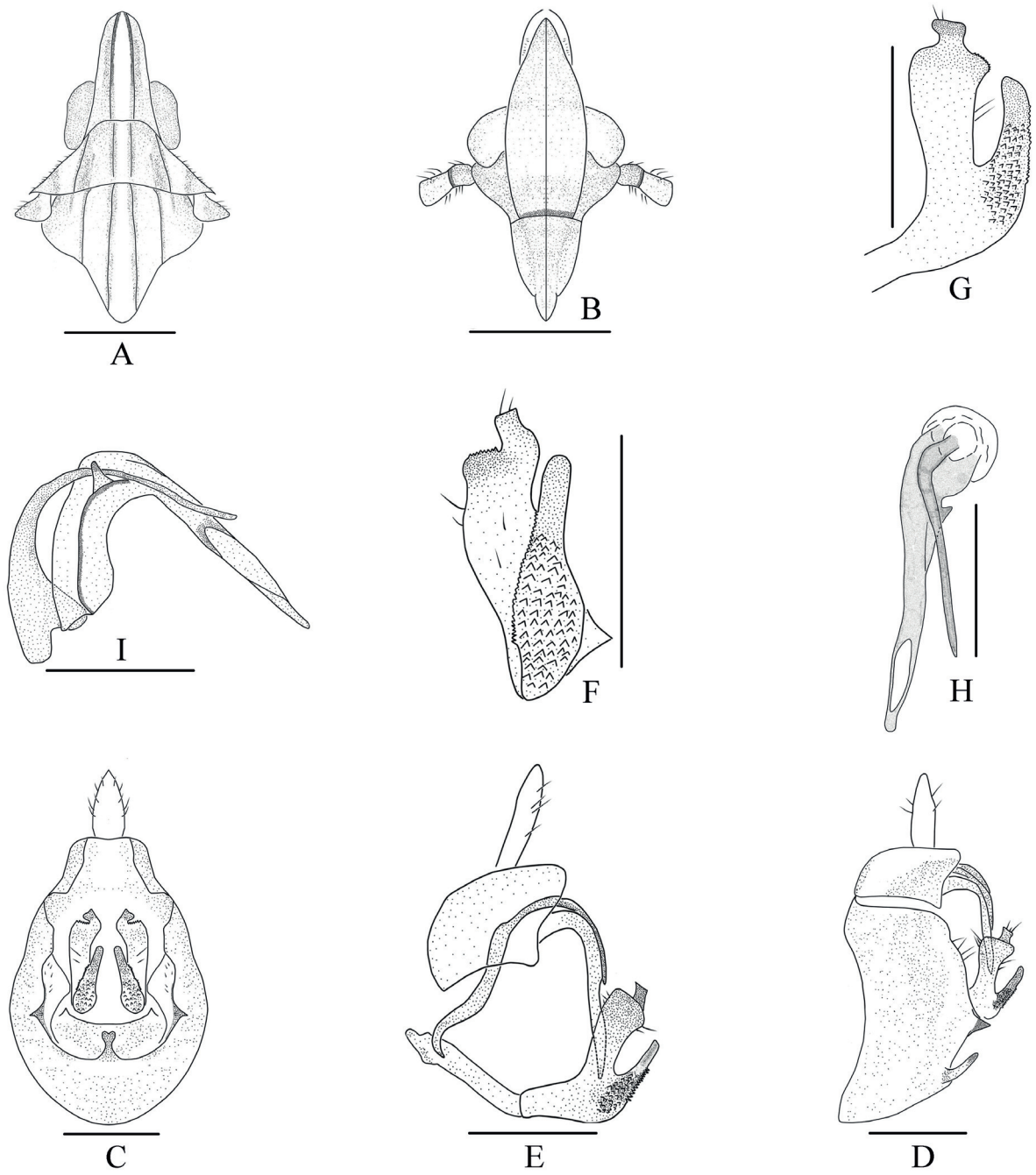


**Fig. 6.** *Tropidocephala festiva* (Distant, 1906), ♂ (IEGU). **A**. Head and thorax, dorsal view. **B**. Frons, ventral view. **C**. Genitalia, posterior view. **D**. Genitalia, lateral view. **E**. Anal segment, aedeagus, connective and genital style, lateral view. **F**. Genital style, posterior view. **G**. Genital style, lateral view. **H**. Aedeagus, posterior view. **I**. Aedeagus, lateral view. Scale bars = 0.2 mm.

apical and postcostal cells with 8–9 different-sized transparent spots, inner side of crossveins with 3 dark brown burl spots, burl spot with lateral sides small, middle part big.

Head and thorax. Vertex (Figs 5C, 6A) triangular, longer in midline than wide at base (1.8:1). Frons (Figs 5E, 6B) oblong, widest at middle level of eyes, longer in middle line than wide at widest part (2.5:1), median carinae simple, slightly concave near base. Antennae (Figs 5E, 6B) with first segment shorter than second segment about 1:1.7. Pronotum (Figs 5C, 6A) shorter than vertex about 0.6:1 in midline. Mesonotum (Figs 5C, 6A) longer than 0.8 × pronotum and vertex combined, median carinae extend to terminal part of scutellum. Forewings (Fig. 5F) slightly broadened apically, longer than maximal width (2.4:1).

Male genitalia. Pygofer (Fig. 6C–D) ventral margin longer than dorsal margin in lateral view, in posterior view with opening longer than wide, medioventral process lamellar, apical part widened, middle part concave, lateroventral spinous process cuspidal at apex. Anal segment (Fig. 6C–E) short, without anal process, wider than long in lateral view, anal style long. Genital styles (Fig. 6F–G) broad lamellar, outer apical angle slightly rounded, with several small toothed processes; inner apical part with thick process, apical margin truncate; basal part with broad long lamellar process, base wider, with several toothed processes. Aedeagus (Fig. 6H–I) with phallobase, phallus slender, tubular, curved ventrally medially, apical part slender, apex pointed, phallobase wide and long, bend accordingly to phallus, with finger-like protrusion at bend.

**Host plant**

*Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae).

**Distribution**

China (Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangsu, Taiwan, Yunnan, Zhejiang provinces), Indonesia, Japan, Malaysia, Nansei-shoto, Philippines, Sri Lanka.

***Tropidocephala jiawenna*** Kuoh, 1979
Figs 7–8, Table 1

*Tropidocephala jiawenna* Kuoh, 1979: 175, fig. 1.

*Tropidocephala jiawenna* – Kuoh *et al.* 1983: 34, fig. 15. — Ding 2006: 170, fig. 80.

**Material examined**

CHINA • 6 ♂♂, 16 ♀♀; Yunnan Province, Hekou County, Hekou Town; 22°30′ N, 103°58′ E; 24 Nov. 2016; Hong-Xing Li, Yong-Shun Ding and Ya-Lin Yao leg.; IEGU.

**Redescription**

Measurements. Body length including forewing: male 3.1–3.2 mm (N = 6), female 3.2–3.5 mm (N = 16).

Coloration. Vertex (Fig. 7A, C) turquoise, lateral carinae dark brown, median carinae with 2 blackish brown stripes on both sides. Frons (Fig. 7E) cyan, apical part black. Genae (Fig. 7B, D) and clypeus (Fig. 7E) black. Rostrum (Fig. 7E) dark yellow. Ventral side of eyes (Fig. 7A–E) blackish brown, dorsal side tawny. Antennae (Fig. 7A–E) yellowish, apical part of first segment with dark brown ringlike marking, second segment with black brown stripe oblique from base to center, apical part with dark brown ringlike marking. Pronotum (Fig. 7A, C) bluish green with dark yellow, tricarinate with blackish

brown stripe on both side, lateral posterior margin with black brown short oblique spot on both sides. Mesonotum (Fig. 7A, C) dark yellow with turquoise, median carinae with blackish brown stripe on both sides, outer side of lateral carinae each with 2 dark brown stripes, scutellum blackish brown. Forewings (Fig. 7F) straw-yellow, semi-transparent, basal and proximal parts each with blackish brown spot, inner side of crossveins with 3 dark brown burl spots, burl spot with lateral sides small, middle part big, apex of apical and postcostal cells with several different-sized transparent spots.


**Fig. 7.** *Tropidocephala jiawenna* Kuoh, 1979, ♂ (IEGU). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head and thorax, dorsal view. **D**. Head and thorax, lateral view. **E**. Frons, ventral view. **F**. Forewing.

Head and thorax. Vertex (Figs 7C, 8A) triangular, longer in midline than wide at base (1.4:1). Frons (Figs 7E, 8B) oblong, base obviously narrower than the end, widest at middle level of eyes, longer in middle line than wide at widest part (2.0:1), with obvious median carinae. Antennae (Figs 7E, 8B) with first segment shorter than second segment about 1:2.1. Pronotum (Figs 7C, 8A) shorter than vertex about 0.8:1 in midline. Mesonotum (Figs 7C, 8A) longer than 0.9× pronotum and vertex combined, median

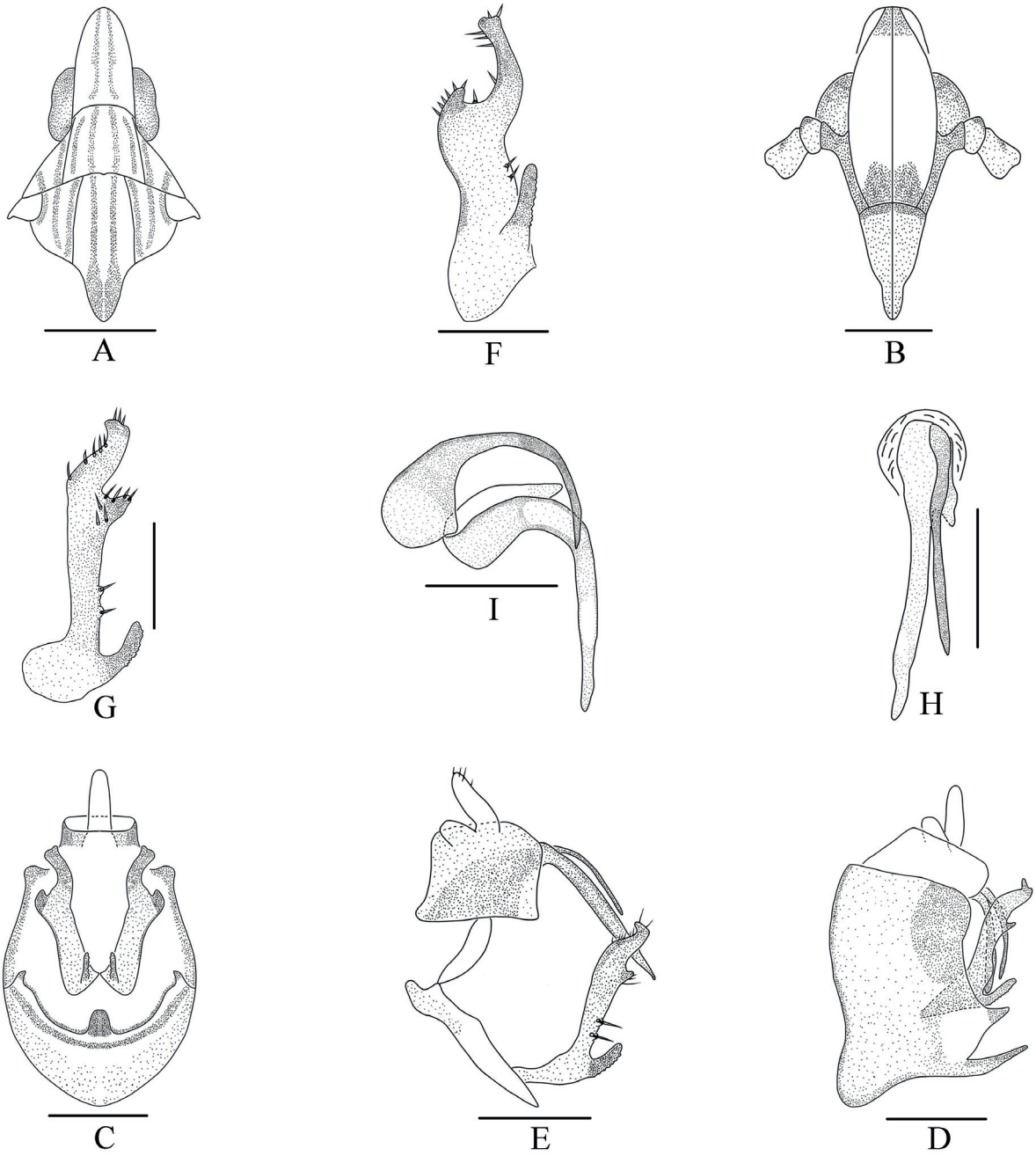


**Fig. 8.** *Tropidocephala jiawenna* Kuoh, 1979, ♂ (IEGU). **A**. Head and thorax, dorsal view. **B**. Frons, ventral view. **C**. Genitalia, posterior view. **D**. Genitalia, lateral view. **E**. Anal segment, aedeagus, connective and genital style, lateral view. **F**. Genital style, posterior view. **G**. Genital style, lateral view. **H**. Aedeagus, posterior view. **I**. Aedeagus, lateral view. Scale bars = 0.2 mm.

carinae extend to terminal part of scutellum. Forewings (Fig. 7F) slightly broadened apically, longer than maximal width (2.8:1).

Male genitalia. Pygofer (Fig. 8C–D) ventral margin slightly longer than dorsal margin in lateral view, in posterior view with opening longer than wide, with lamellar medioventral process, lateroventral process finger-like, directed inward. Anal segment (Fig. 8C–E) short, ringlike, without anal process, wider than long in lateral view, anal style long. Genital styles (Fig. 8F–G) wide, outer margin suddenly narrowed at basal ⅔, with small process; inner apical part with long rod-like process; basal part with slender fingerlike process, inner margin with serrated processes. Aedeagus (Fig. 8H–I) with phallobase, phallus slender, tubular, curved ventrally medially, apical part cuspidal; phallobase bend accordingly to phallus, basal part thick, tapering at apex, with fingerlike process at base ⅓.

**Host plant**

*Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae).

**Distribution**

China (Guizhou, Yunnan provinces).

***Tropidocephala lamellata*** sp. nov.
urn:lsid:zoobank.org:act:B622B879-B42B-4FC6-BE8F-3E7E0F0CD292
Figs 9–10

**Diagnosis**

The salient features of the new species include: vertex (Figs 9C, 10A) slightly longer than pronotum; middle carinae of vertex, pronotum and mesonotum (Fig. 9A, C) with short dark lines on both sides; forewing (Fig. 9F) without transparent spots, inner side of forewing crossveins without dark brown burl spots; genital styles (Fig. 10E, F) broad and lamellar, with a lamellar process; phallobase (Fig. 10G–H) with a fingerlike process at basal ⅓.

**Etymology**

The specific epithet is derived from the Latin word '*lamellata*', referring to genital styles with a lamellar process.

**Type material**

**Holotype**

CHINA • ♂; Hainan Province, Qiongzhong Li and Miao autonomous County, Yinggen Town, Xinjian Village; 19°01′ N, 109°54′ E; 14 Apr. 2017; Hong-Xing Li leg.; IEGU.

**Paratypes**

CHINA • 1 ♂; Hainan Province, Bawangling National Forest Park; 19°04′ N, 109°07′ E; 24 Aug. 2015; Zheng-Xiang Zhou leg.; IEGU • 2 ♂♂, 8 ♀♀; Hainan Province, Qiongzhong Li and Miao autonomous County, Yinggen Town, Xinjian Village; 19°01′ N, 109°54′ E; 14 Apr. 2017; Hong-Xing Li leg.; IEGU • 1 ♀; Hainan Province, Diaoluoshan National Forest Park; 18°44′ N, 109°50′ E; 14 Apr. 2017; Yong-Shun Ding leg.; IEGU.

**Description**

Measurements. Body length including forewing: male 3.2–3.4 mm (N = 4), female 3.6–3.9 mm (N = 9).

Coloration. Vertex, pronotum and mesonotum (Fig. 9A–D) greenish-yellow, median carinae of vertex and mesonotum and tricarinate of pronotum each with short dark brown stripe on both sides. Frons (Fig. 9E) yellowish greenish or pale yellowish greenish, apical part brownish black, each side of middle carinae with long dark brown spot near base. Clypeus (Fig. 9E) and genae (Fig. 9B, D) dark brown or black. Antennae (Fig. 9A–E) light yellowish brown, apex of first segment and basal ½ of second segment with dark brown ringlike spot. Outer side of tegula (Fig. 9A, C) dark brown, inner side yellowish-white. Forewings (Fig. 9F) brown-black, base with turquoise yellow-green diagonal stripe.


**Fig. 9.** *Tropidocephala lamellata* sp. nov., ♂, holotype (IEGU). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head and thorax, dorsal view. **D**. Head and thorax, lateral view. **E**. Frons, ventral view. **F**. Forewing.

Head and thorax. Vertex (Figs 9C, 10A) triangular, apical part round, longer in midline than wide at base (2.0:1). Frons (Figs 9E, 10B) oblong, widest in middle, base obviously narrower than end, longer in middle line than wide at widest part (2.0:1), with obvious median carinae. Antennae (Figs 9E, 10B) with first segment shorter than second segment about 1:1.9. Pronotum (Figs 9C, 10A) shorter than vertex about 0.7:1 in midline. Mesonotum (Figs 9C, 10A) approximately equal length to pronotum and vertex combined, median carinae extend to terminal part of scutellum. Forewings (Fig. 9F) slightly narrowed apically, longer than maximal width (2.5:1).

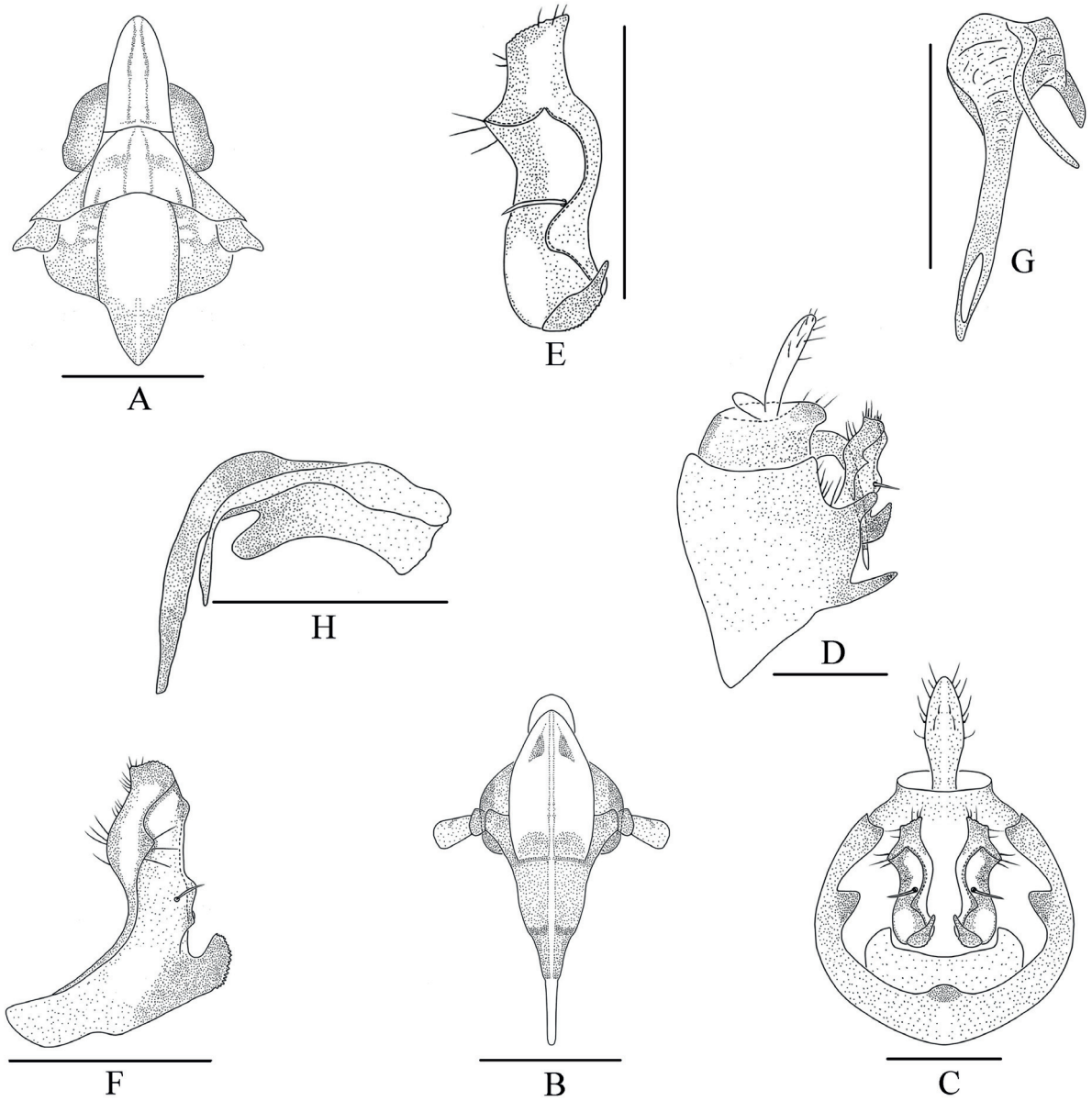


**Fig. 10.** *Tropidocephala lamellata* sp. nov., ♂, holotype (IEGU). **A**. Head and thorax, dorsal view. **B**. Frons, ventral view. **C**. Genitalia, posterior view. **D**. Genitalia, lateral view. **E**. Genital style, posterior view. **F**. Genital style, lateral view. **G**. Aedeagus, posterior view. **H**. Aedeagus, lateral view. Scale bars = 0.2 mm.

Male genitalia. Pygofer (Fig. 10C–D) ventral margin longer than dorsal margin in lateral view, in posterior view with opening slightly wider than long, outer margins each with triangular lamellar process, medioventral process round, lamellar. Anal segment (Fig. 10C–D) cylindric, without anal process, wider than long in lateral view, posterior margin oblique, anal style long and large. Genital styles (Fig. 10E–F) broad and lamellar, with lamellar process, apex wider, lateral margins curved; basal part with broad long lamellar process, tapering to apex, base wide and flat with many dentate processes. Aedeagus (Fig. 10G–H) with phallobase, phallus slender, tubular, curved ventrally near middle, apical part cuspidal, basal part slightly broad; phallobase long, bend accordingly to phallus, basal ⅓ with fingerlike process.

**Host plant**

Unknown.

**Distribution**

China (Hainan Province).

**Remarks**

This species is similar to *Tropidocephala jiawenna*, but differs from the latter in: (1) mesonotum with outer side of lateral carinae without dark brown stripes, scutellum greenish-yellow (mesonotum with outer side of lateral carinae with dark brown stripes, scutellum dark brown in *T. jiawenna*); (2) forewing without transparent spots (forewing with many different-sized transparent spots in *T. jiawenna*); (3) genital styles broad and lamellar, apical part lamellar (genital styles slender, apical part fingerlike in *T. jiawenna*).

***Tropidocephala longispina*** Ding, 1982
Figs 11–12, Table 1

*Tropidocephala longispina* Ding, 1982: 42, figs 7–14.

*Tropidocephala longispina* – Ding 2006: 174, fig. 83.

**Material examined**

CHINA • 7 ♂♂, 6 ♀♀; Yunnan Province, Mengla County, Menglun Town; 21°55′ N, 101°15′ E; 12 Mar. 2017; Ying-Jian Wang leg.; IEGU • 3 ♂♂, 2 ♀♀; Yunnan Province, Yingjiang National Wetland Park; 24°41′ N, 97°56′ E; 16 Aug. 2018; Hong-Xing Li leg.; IEGU • 2 ♂♂; Yunnan Province, Jinghong City, Menglong Town; 21°35′ N, 100°41′ E; 21 Jun. 2019; Hong-Xing Li leg.; IEGU • 7 ♂♂, 6 ♀♀; Guizhou Province, Wangmo County; 25°11′ N, 106°06′ E; 10–13 Aug. 2020; Sha-Sha Lv, Feng-E Li and Jian-Kun Long leg.; IEGU.

**Redescription**

Measurements. Body length including forewing: male 3.4–3.5 mm (N = 19), female 3.5–3.8 mm (N = 14).

Coloration. Vertex, pronotum and mesonotum (Fig. 11A–D) golden-yellow. Middle carinae of vertex and mesonotum, tricarinate of pronotum with dark brown stripe on both side, lateral margins of vertex dark brown, lateral border area of pronotum with dark brown oblique band, lateral carinae of mesonotum with 2 blackish brown bands on outer side, dark brown near base of tegula. Frons (Fig. 11E) grayish brown, large blackish brown spot near base, apical part blackish brown. Genae (Fig. 11B, D) and clypeus (Fig. 11E) dark brown. Antennae (Fig. 11A–E) yellowish brown, with dark brown ringlike spot on end of first segment and on base to middle of second segment. Forewings (Fig. 11F) grey brown, 3

transparent spots of different sizes near anterior margin of apex, and narrow transparent bands along transverse vein at apex.

Head and thorax. Vertex (Figs 11C, 12A) long, longer in midline than wide at base (2.6:1). Frons (Figs 11E, 12B) oblong, widest in the middle, base obviously narrower than end, longer in middle line than wide at widest part (2.4:1), median carinae simple. Antennae (Figs 11E, 12B) with first segment shorter than second segment about 1:2.5. Pronotum (Figs 11C, 12A) shorter than vertex about 0.5:1


**Fig. 11.** *Tropidocephala longispina* Ding, 1982, ♂ (IEGU). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head and thorax, dorsal view. **D**. Head and thorax, lateral view. **E**. Frons, ventral view. **F**. Forewing.

in midline. Mesonotum (Figs 11C, 12A) longer than 0.9× pronotum and vertex combined, median carinae extend to terminal part of scutellum. Forewings (Fig. 11F) slightly narrowed apically, longer than maximal width (2.7:1).

Male genitalia. Pygofer (Fig. 12C–D, F) ventral margin slightly longer than dorsal margin in lateral view, in posterior view with opening longer than wide, with long spiny medioventral process, extends to base of anal segment, lateroventral process toothlike. Anal segment (Fig. 12C–E) short, without anal process, wider than long in lateral view, anal style long and large. Genital styles (Fig. 12G–H) lamellar

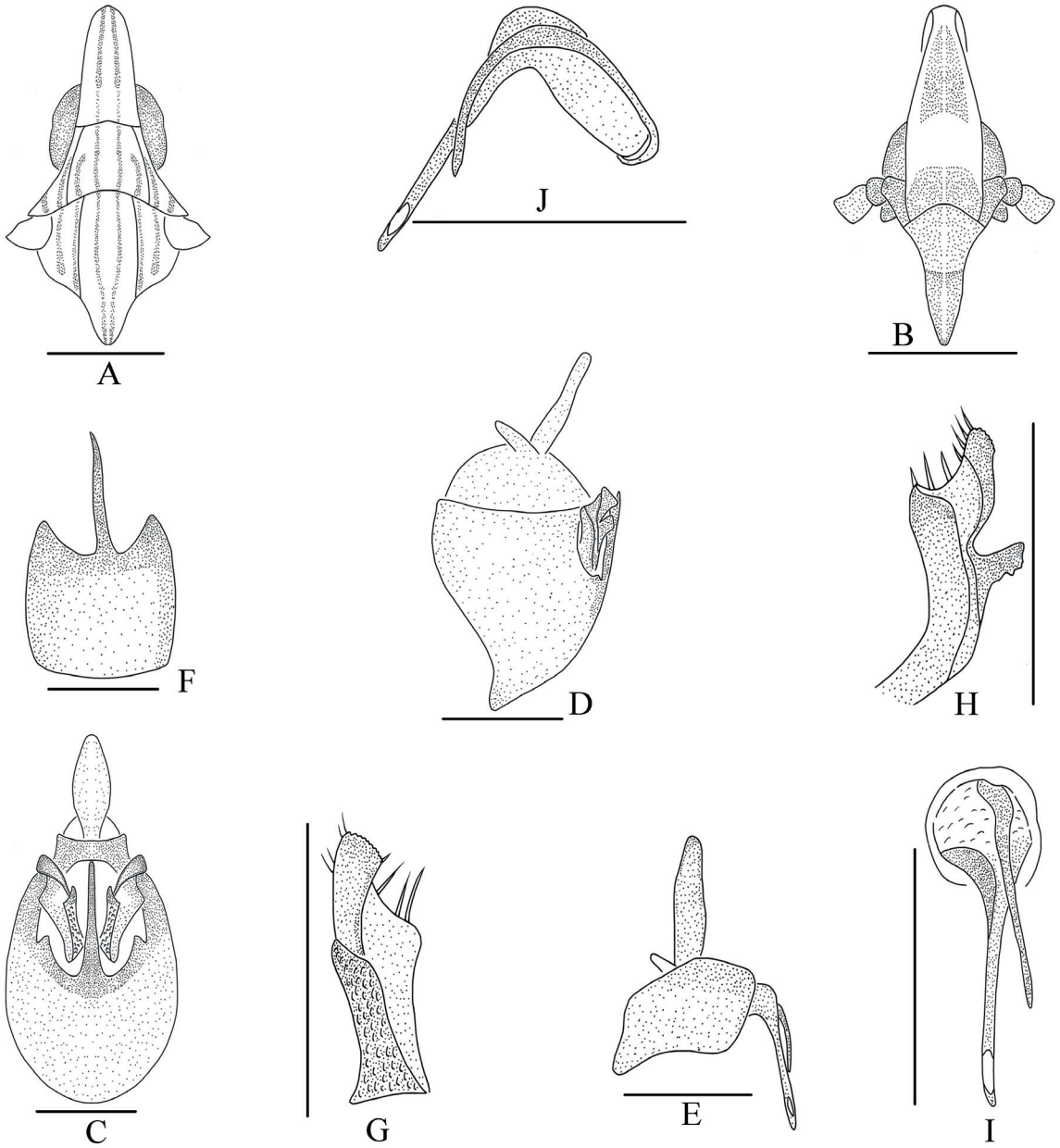


**Fig. 12.** *Tropidocephala longispina* Ding, 1982, ♂ (IEGU). **A**. Head and thorax, dorsal view. **B**. Frons, ventral view. **C**. Genitalia, posterior view. **D**. Genitalia, lateral view. **E**. Anal segment and aedeagus, lateral view. **F**. Pygofer, ventral view. **G**. Genital style, posterior view. **H**. Genital style, lateral view. **I**. Aedeagus, posterior view. **J**. Aedeagus, lateral view. Scale bars = 0.2 mm.

and broad, outer margin strongly arched above middle, middle of inner margin with fingerlike process. Aedeagus (Fig. 12I–J) with phallobase, phallus slender, tubular, curved ventrally near the middle, apical part cuspidal; phallobase wide and long, bend accordingly to phallus, tapered end.

**Host plant**

*Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae).

**Distribution**

China (Guizhou, Yunnan provinces).

***Tropidocephala nigra*** (Matsumura, 1900)
Figs 13–14, Table 1

*Conicoda nigra* Matsumura, 1900: 251.
*Tropidocephala maculosa* Matsumura, 1907: 63, pl. 2 figs 3, 9.

*Tropidocephala nigra* – Matsumura & Ishihara 1945: 60, fig. 26. — Ishihara 1949: 14, fig. 26. — Ding & Zhuo 1985: 17, figs 1–4. — Ding 2006: 175, fig. 84.

**Material examined**

CHINA • 7 ♂♂, 4 ♀♀; Henan Province, Luanchuan County; 33°47′ N, 111°37′ E; 19 Aug. 2008; Hong-Rong Li leg.; IEGU • 4 ♂♂, 3 ♀♀; Shandong Province, Fei County, Daqing Mountain; 35°24′ N, 118°07′ E; 22 Aug. 2011; Wei-Bin Zheng leg.; IEGU • 2 ♂♂; Hubei Province, Dabieshan National Natural Reserve; 31°05′ N, 115°47′ E; 20 Jun. 2014; Zheng-Xiang Zhou leg.; IEGU • 2 ♂♂, 1 ♀; Guizhou Province, Longli County, Longjiashan National Forest Park; 26°28′ N, 106°57′ E; 27 Jul. 2014; Qiang Luo leg.; IEGU • 3 ♂♂, 2 ♀♀; Guizhou Province, Zunyi City, Suiyang County; 27°57′ N, 107°11′ E; 30 Jul. 2014; Hai-Yan Sun leg.; IEGU.

**Redescription**

Measurements. Body length including forewing: male 3.4–3.6 mm (N = 18), female 3.6–3.9 mm (N = 10).

Coloration. General color dark yellowish brown (Fig. 13A–B). Apical part of vertex (Fig. 13A, C) with long black spot along each side of middle carinae. Antennae (Fig. 13A–E) with apical part of first segment, middle and apical parts of second segment with dark brown ringlike markings. Forewings (Fig. 13F) light yellowish brown, inner side of crossveins with 3 dark brown burl spots, burl spot with lateral sides small, middle part big, many transparent spots of different sizes in middle to apex, posterior of apical part with large dark brown spot.

Head and thorax. Vertex (Figs 13C, 14A) triangular, longer in midline than wide at base (2.0:1). Frons (Figs 13E, 14B) rhomboid, base obviously narrower than end, longer in middle line than wide at widest part (2.4:1), with obvious median carinae. Antennae (Figs 13E, 14B) with first segment shorter than second segment about 1:2.5. Pronotum (Figs 13C, 14A) shorter than vertex about 0.5:1 in midline, with 5 carinae. Mesonotum (Figs 13C, 14A) longer than 0.7× pronotum and vertex combined, median carinae extend to terminal part of scutellum. Forewings (Fig. 13F) slightly broadened apically, longer than maximal width (2.5:1).

Male genitalia. Pygofer (Fig. 14C–D) ventral margin slightly longer than dorsal margin in lateral view, in posterior view with opening longer than wide, with lamellar medioventral process, lateroventral process

broad and round. Anal segment (Fig. 14C–E) without anal process, wider than long in lateral view, anal style long. Genital styles (Fig. 14F–G) slender, apical part slightly wider, inner and outer margins curved, inner basal angle with long spinous process, outer margin toothed. Aedeagus (Fig. 14H–I) with


**Fig. 13.** *Tropidocephala nigra* (Matsumura, 1900), ♂ (IEGU). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head and thorax, dorsal view. **D**. Head and thorax, lateral view. **E**. Frons, ventral view. **F**. Forewing.

phallobase, phallus slender, tubular, curved ventrally near middle, apical part cuspidal; phallobase broad and long, apical ⅔ curved at right angle to abdomen, apex pointed.

**Host plant**

*Miscanthus* sp. (Poales, Poaceae), *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae).

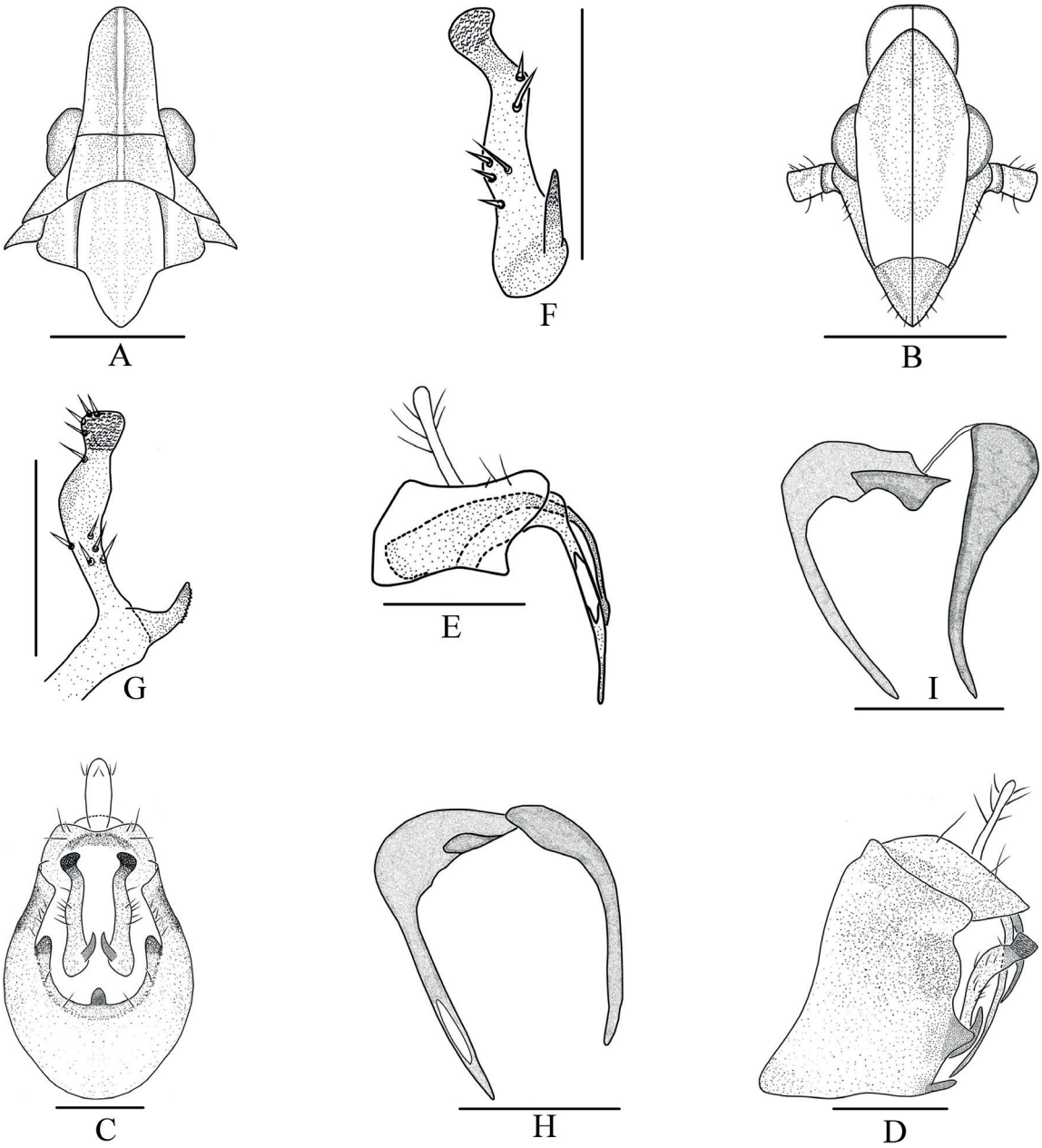


**Fig. 14.** *Tropidocephala nigra* (Matsumura, 1900), ♂ (IEGU). **A**. Head and thorax, dorsal view. **B**. Frons, ventral view. **C**. Genitalia, posterior view. **D**. Genitalia, lateral view. **E**. Anal segment and aedeagus, lateral view. **F**. Genital style, posterior view. **G**. Genital style, lateral view. **H**. Aedeagus, lateral view. **I**. Aedeagus, posterior view. Scale bars = 0.2 mm.

**Distribution**

China (Anhui, Fujian, Henan, Hubei, Shandong, Zhejiang provinces), Korea, Japan.

***Tropidocephala serendiba*** (Melichar, 1903)
Figs 15–16, 23, Table 1

*Orchesma serendiba* Melichar, 1903: 95, pl. 2 fig. 5.
*Orchesma signata* Distant, 1912: 192.

*Tropidocephala signata* – Muir 1921: 480.
*Orchesma serendiba* – Metcalf 1943: 98.
*Tropidocephala serendiba* – Fennah 1975: 85.


**Fig. 15.** *Tropidocephala serendiba* (Melichar, 1903), ♂ (IEGU). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head and thorax, dorsal view. **D**. Head and thorax, lateral view. **E**. Frons, ventral view. **F**. Forewing.

**Material examined**

CHINA • 1 ♂, 3 ♀♀; Yunnan Province, Mengla County, Menglun Town; 21°55′ N, 101°15′ E; 12 Mar. 2017; Ying-Jian Wang leg.; IEGU • 6 ♂♂, 6 ♀♀; Yunnan Province, Yingjiang National Wetland Park; 24°41′ N, 97°56′ E; 16 Aug. 2018; Hong-Xing Li leg.; IEGU • 1 ♂; Yunnan Province, Jinghong City, Menglong Town; 21°35′ N, 100°41′ E; 21 Jun. 2019; Hong-Xing Li leg.; IEGU.

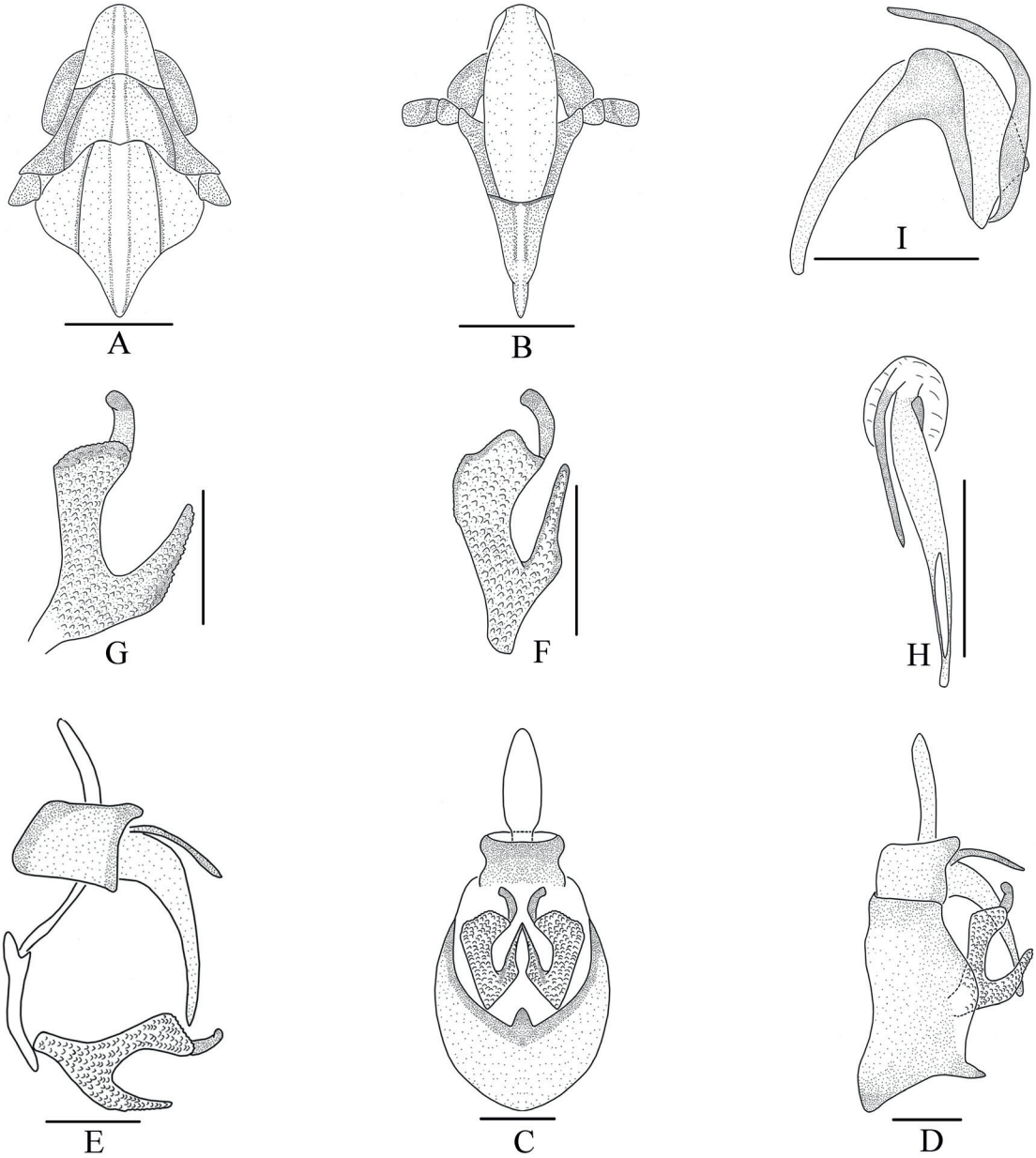


**Fig. 16.** *Tropidocephala serendiba* (Melichar, 1903), ♂ (IEGU). **A**. Head and thorax, dorsal view. **B**. Frons, ventral view. **C**. Genitalia, posterior view. **D**. Genitalia, lateral view. **E**. Anal segment, aedeagus, connective and genital style, lateral view. **F**. Genital style, posterior view. **G**. Genital style, lateral view. **H**. Aedeagus, posterior view. **I**. Aedeagus, lateral view. Scale bars = 0.2 mm.

**Redescription**

Measurements. Body length including forewing: male 4.0–4.2 mm (N = 8), female 4.2–4.5 mm (N = 9).

Coloration. General (Fig. 15A–B) color rust yellow or rust brown. Vertex, pronotum and mesonotum (Fig. 15A–D) rust yellow. Middle carinae of vertex grayish yellow, with black fine line on both sides. Frons, genae and clypeus (Fig. 15D–E) rusty yellow with reddish. Eyes (Fig. 15A–E) dark brown, ocelli reddish brown. Antennae (Fig. 15A–E) light yellowish brown, apical part of first segment and middle part of second segment each with black brown ring-like stripe. Pronotum (Fig. 15A, C) yellowish-white near tegula, carinae gray, each with fine line on both sides. Middle carinae of mesonotum (Fig. 15A, C) light brown, with fine line on both sides, lateral carinae brown. Forewings (Fig. 15F) yellowish brown, 2 large transparent spots near basal and middle parts, apical ½ with multiple transparent spots, apical posterior area with dark gray marking, inner side of crossveins with 2 dark brown burl spots, burl spots with yellowish-white particles.

Head and thorax. Vertex (Figs 15C, 16A) triangular, longer in midline nearly equal to base width. Frons (Figs 15E, 16B) elliptic, widest in middle, base narrower than end, longer in middle line than wide at widest part (2.2:1), with obvious median carinae. Antennae (Figs 15E, 16B) with first segment shorter than second segment about 1:2.0. Pronotum (Figs 15C, 16A) shorter than vertex about 0.9:1 in midline, with 5 carinae. Mesonotum (Figs 15C, 16A) longer than 1.4 × pronotum and vertex combined, median carinae extend to terminal part of scutellum. Forewings (Fig. 15F) slightly broadened apically, longer than maximal width (2.6:1).

Male genitalia. Pygofer (Fig. 16C–D) ventral margin longer than dorsal margin in lateral view, in posterior view with opening longer than wide, with rod-like medioventral process, simple. Anal segment (Fig. 16C–E) cylindric, without anal process, lateral margins deep concave in the middle, wider than long in lateral view, anal style long. Genital styles (Fig. 16F–G) broad lamellar, apex slightly wider than base, inner margin concave, inner apical angle with slender process toward inner side, basal angle with large process, tapering to apex, outer margin with many serrated processes. Aedeagus (Fig. 16H–I) with phallobase, phallus slender, tubular, curved ventrally medially, apical part cuspidal, protruding from dorsal of phallobase; phallobase wide and long, bend accordingly to phallus.

**Host plant**

*Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae).

**Distribution**

China (Yunnan Province), Vietnam.

***Tropidocephala sinica*** Ding, 2006
Figs 17–18, Table 1

*Tropidocephala sinica* Ding, 2006: 164, fig. 76.

**Material examined**

CHINA • 4 ♂♂, 1 ♀; Hainan Province, Datian National Natural Reserve; 19°06′ N, 108°47′ E; 12–13 Apr. 2013; Bin Li, Yu-Bo Zhang and Jian-Kun Long leg.; IEGU • 6 ♂♂; Hainan Province, Yinggeling National Natural Reserve; 19°02′ N, 109°34′ E; 10–12 Aug. 2015; Zheng-Xiang Zhou, Qiang Luo and Ya-Lin Yao leg.; IEGU • 5 ♂♂, 3 ♀♀; Hainan Province, Limushan National Forest Park; 19°12′ N, 109°46′ E; 4 May 2017; Yong-Shun Ding leg.; IEGU.

**Redescription**

Measurements. Body length including forewing: male 2.9–3.1 mm (N = 15), female 3.2–3.4 mm (N = 4).

Coloration. Vertex, pronotum and mesonotum (Fig. 17A–D) bluish-yellow. Middle carinae of vertex with blackish brown striped spot on both sides. Lateral border areas of pronotum and mesonotum slightly dark brown. Frons (Fig. 17E) brown-blue. Apical part of frons, clypeus (Fig. 17E) and genae (Fig. 17B, D) black. Antennae (Fig. 17A–E) yellowish brown, circular spot at apex of first segment, second segment with oblique spot from base to middle, circular spot at apex dark brown. Forewings


**Fig. 17.** *Tropidocephala sinica* Ding, 2006, ♂ (IEGU). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head and thorax, dorsal view. **D**. Head and thorax, lateral view. **E**. Frons, ventral view. **F**. Forewing.

(Fig. 17F) dark brown, apex of apical and postcostal cells with 5–6 different-sized transparent spots, inner side of crossveins with 3 dark brown burl spots, middle part big.

Head and thorax. Vertex (Figs 17C, 18A) triangular, longer in midline slightly than wide at base (1.1:1). Frons (Figs 17E, 18B) elliptic, widest in the middle, base narrower than end, longer in middle line than wide at widest part (2.0:1), with obvious median carinae. Antennae (Figs 17E, 18B) with first segment shorter than second segment about 1:2.0. Pronotum (Figs 17C, 18A) same length as vertex. Mesonotum (Figs 17C, 18A) longer than 1.2× pronotum and vertex combined, median carinae extend to terminal part of scutellum. Forewings (Fig. 17F) slightly broadened apically, longer than maximal width (2.4:1).

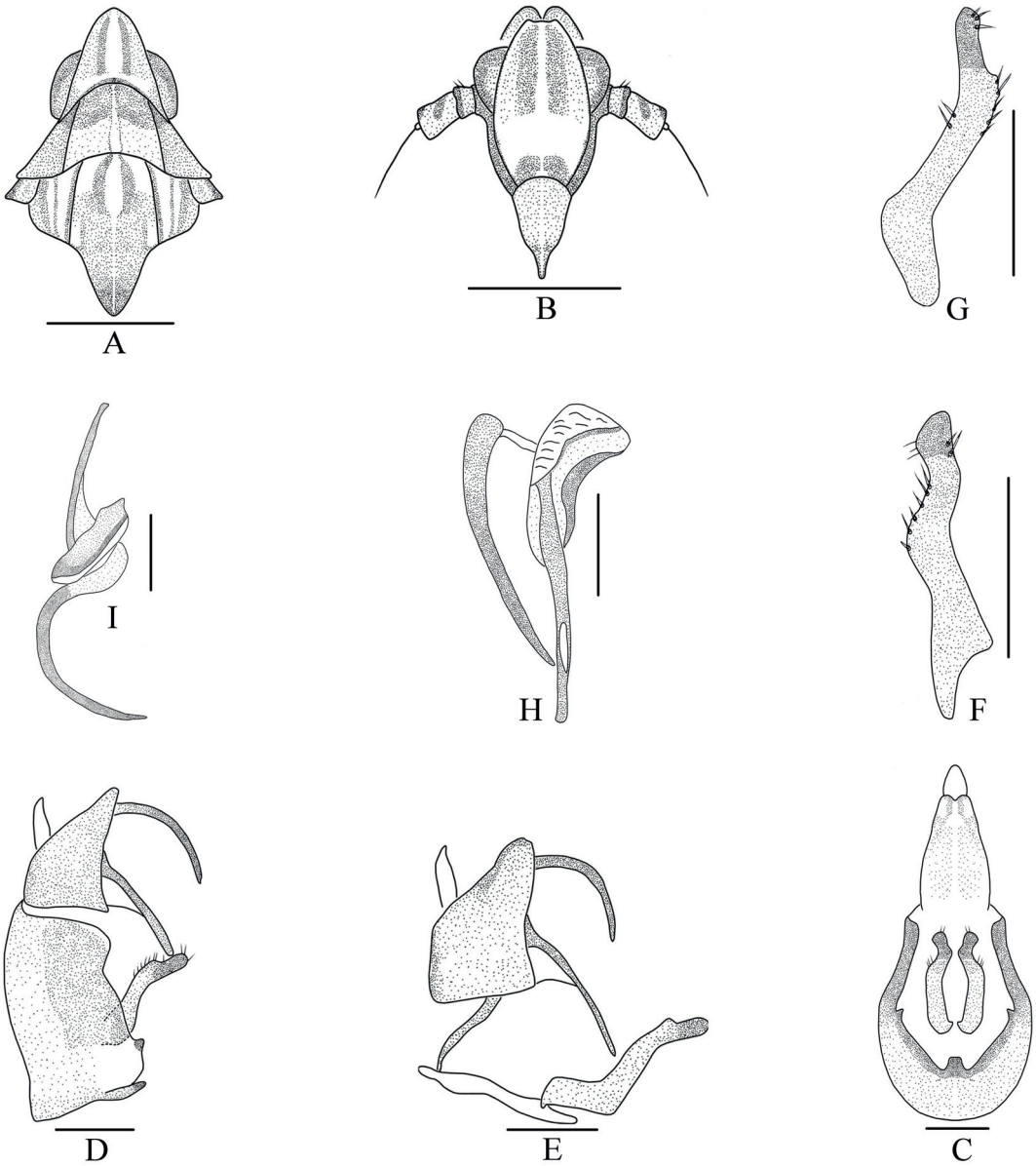


**Fig. 18.** *Tropidocephala sinica* Ding, 2006, ♂ (IEGU). **A**. Head and thorax, dorsal view. **B**. Frons, ventral view. **C**. Genitalia, posterior view. **D**. Genitalia, lateral view. **E**. Anal segment, aedeagus, connective and genital style, lateral view. **F**. Genital style, posterior view. **G**. Genital style, lateral view. **H**. Aedeagus, lateral view. **I**. Aedeagus, posterior view. Scale bars = 0.2 mm.

Male genitalia. Pygofer (Fig. 18C–D) ventral margin longer than dorsal margin in lateral view, in posterior view with opening longer than wide, lateral margin each with triangular process, medioventral process lamellar, apical margin truncate. Anal segment (Fig. 18C–E) long and large, without anal process, anal style small. Genital styles (Fig. 18F–G) slender, apical part round, inner and outer margins concave. Aedeagus (Fig. 18H–I) with phallobase, phallus slender, tubular, curved ventrally near middle, apical part cuspidal, phallobase equal in length to phallus, apical part round.

**Host plant**

*Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae).

**Distribution**

China (Hainan, Yunnan provinces).

***Tropidocephala sinuosa*** Yang & Yang, 1986
Figs 19–20, Table 1

*Tropidocephala sinuosa* Yang & Yang, 1986: 28, fig. 14.

*Tropidocephala sinuosa* – Ding 2006: 176, fig. 85.

**Material examined**

CHINA • 4 ♂♂, 2 ♀♀; Hainan Province, Datian National Natural Reserve; 19°06′ N, 108°47′ E; 14 Apr. 2013; Bin Li and Ji-Chun Xing leg.; IEGU.

**Redescription**

Measurements. Body length including forewing: male 3.5–3.7 mm (N = 4), female 3.9–4.2 mm (N = 2).

Coloration. General color light yellow to orange (Fig. 19A–B). Forewings (Fig. 19F) transparent, yellowish brown, with large yellow spot near the middle, smoky brown band near apex.

Head and thorax. Vertex (Figs 19C, 20A) triangular, apex far out in front of eyes, longer in midline than wide at base (2.8:1). Frons (Figs 19E, 20B) nearly diamond-shaped, widest in middle, base obviously narrower than end, longer in middle line than wide at widest part (2.7:1), with obvious median carinae. Antennae (Figs 19E, 20B) with first segment shorter than second segment about 1:2.1. Pronotum (Figs 19C, 20A) shorter than vertex about 0.3:1 in midline. Mesonotum (Figs 19C, 20A) longer than 0.6× pronotum and vertex combined, median carinae extend to terminal part of scutellum. Forewings (Fig. 19F) slightly broadened apically, longer than maximal width (2.6:1).

Male genitalia. Pygofer (Fig. 20C–D) ventral margin longer than dorsal margin in lateral view, in posterior view medioventral process small, lamellar, lateral margins with long spiny process. Anal segment (Fig. 20C–E) large, without anal process, longer than wide in lateral view, anal style long and large. Genital styles (Fig. 20F–G) slender, undulant, apical part cuspidal, with triangular process at basal ⅓. Aedeagus (Fig. 20H–I) with phallobase, phallus slender, tubular, curved ventrally medially, tapering to apex; phallobase wide and long, bend accordingly to phallus, basal part with slender process, apex of right side with lobate process toward ventrally.

**Host plant**

*Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae).

**Distribution**

China (Hainan, Taiwan provinces).


**Fig. 19.** *Tropidocephala sinuosa* Yang & Yang, 1986, ♂ (IEGU). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head and thorax, dorsal view. **D**. Head and thorax, lateral view. **E**. Frons, ventral view. **F**. Forewing.

***Tropidocephala yunnanensis*** sp. nov.
urn:lsid:zoobank.org:act:346FF81C-9BBC-44B5-8655-0B470B8F4E1E
Figs 21–22

**Diagnosis**

The salient features of the new species include: vertex (Figs 21C, 22A) slightly longer than pronotum; middle carinae of vertex, pronotum and mesonotum (Fig. 21A, C) with dark lines on both sides; inner side of forewing (Fig. 21F) crossveins without dark brown burl spots; medioventral process of pygofer

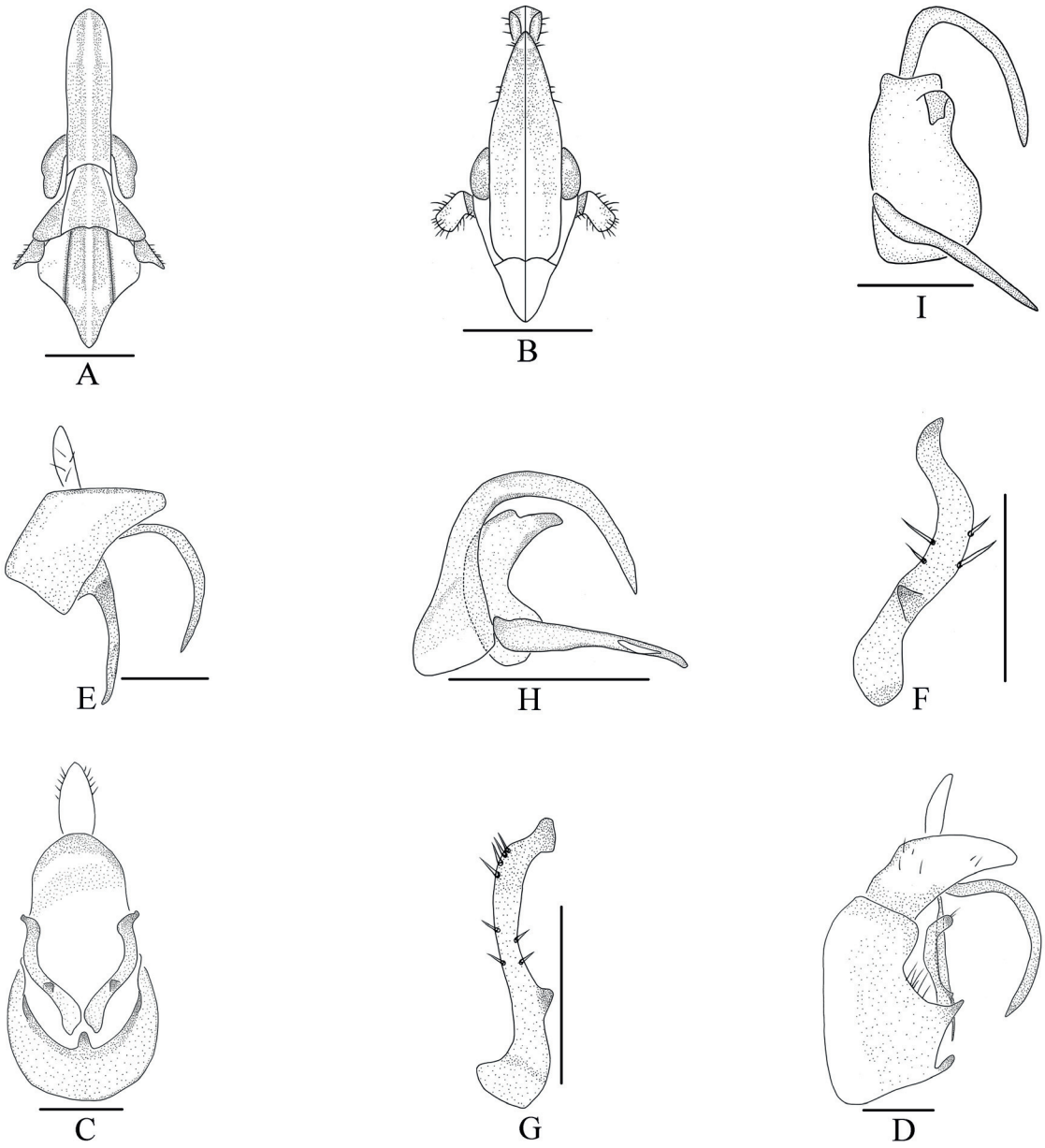


**Fig. 20.** *Tropidocephala sinuosa* Yang & Yang, 1986, ♂ (IEGU). **A**. Head and thorax, dorsal view. **B**. Frons, ventral view. **C**. Genitalia, posterior view. **D**. Genitalia, lateral view. **E**. Anal segment and aedeagus, lateral view. **F**. Genital style, posterior view. **G**. Genital style, lateral view. **H**. Aedeagus, lateral view. **I**. Aedeagus, posterior view. Scale bars = 0.2 mm.

(Fig. 22C) small, triangular; anal segment (Fig. 22C) with apical margin of two lateral angle round; genital styles (Fig. 22F–G) long and narrow, slightly wavy.

### Etymology

The specific epithet name is derived from the name of the type locality, Yunnan Province.

### Type material

#### Holotype

CHINA • ♂; Yunnan Province, Mengla County, Mohan Town; 21°11′ N, 101°41′ E; 31 Aug. 2017; Yan Zhi leg.; IEGU.

#### Paratypes

CHINA • 16 ♂♂, 6 ♀♀; Yunnan Province, Yingjiang County, Nabang Town; 24°45′ N, 97°34′ E; 18 Aug. 2018; Hong-Xing Li leg.; IEGU • 2 ♂♂, 2 ♀♀; Yunnan Province, Mengla County, Mohan Town;


**Fig. 21.** *Tropidocephala yunnanensis* sp. nov., ♂, holotype (IEGU). **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C**. Head and thorax, dorsal view. **D**. Head and thorax, lateral view. **E**. Frons, ventral view. **F**. Forewing.

21°11′ N, 101°41′ E; 16 Jun. 2019; Feng-E Li leg.; IEGU • 7 ♂♂, 1 ♀; Yunnan Province, Sun River National Forest Park; 22°36′ N, 101°06′ E; 27 Jun. 2019; Hong-Xing Li; IEGU.

**Description**

Measurements. Body length including forewing: male 2.4–2.5 mm (N = 25), female 2.6–2.8 mm (N = 9).

Coloration. Vertex and pronotum (Fig. 21A–D) deep tawny with greenish, mesonotum (Fig. 21A–D) deep tawny, median carinae of vertex, pro- and mesonotum each with dark brown stripe on both sides. Frons (Fig. 21E) light brownish yellow with virescent. Clypeus (Fig. 21E) yellowish. Apical part of rostrum (Fig. 21E) brown-black. Antennae (Fig. 21A–E) grayish yellow, apical part of first segment and apical and middle of second segment each with dark brown ring-like marking. Outer side of tegula dark

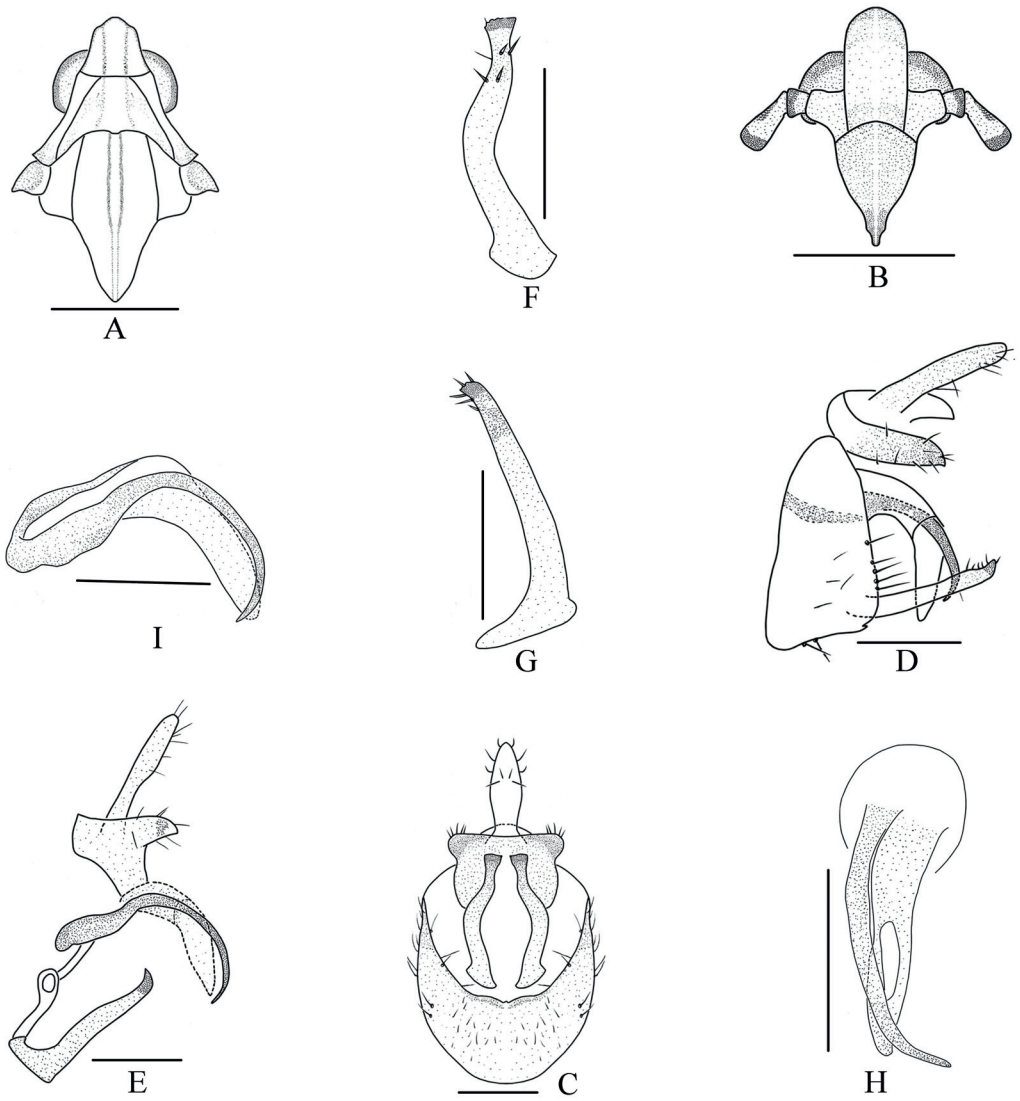


**Fig. 22.** *Tropidocephala yunnanensis* sp. nov., ♂, holotype (IEGU). **A**. Head and thorax, dorsal view. **B**. Frons, ventral view. **C**. Genitalia, posterior view. **D**. Genitalia, lateral view. **E**. Anal segment, aedeagus, connective and genital style, lateral view. **F**. Genital style, posterior view. **G**. Genital style, lateral view. **H**. Aedeagus, posterior view. **I**. Aedeagus, lateral view. Scale bars = 0.2 mm.

**Tab. 1.** Host plants of the genus *Tropidocephala* Stål, 1853.

| Species | Host plants |
|---|---|
| *T. andropogonis* Horváth, 1895 | *Dichanthium ischaemum* (L.) Roberty (Poales Small, Poaceae Barnhart) |
| | *Bothriochloa ischaemum* (L.) Keng (Poales, Poaceae) |
| | *Chrysopogon gryllus* (L.) Trin. (Poales, Poaceae) |
| *T. andunna* Kuoh, 1979 | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |
| *T. brunnipennis* Signoret, 1860 | *Oryza sativa* L. (Poales, Poaceae) |
| | *Saccharum officinarum* L. (Poales, Poaceae) |
| | *Miscanthus sinensis* Anderss. (Poales, Poaceae) |
| | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |
| *T. formosana* Matsumura, 1910 | *Saccharum officinarum* L. (Poales, Poaceae) |
| | *Miscanthus* sp. (Poales, Poaceae) |
| *T. saccharivorella* Matsumura, 1907 | *Saccharum officinarum* L. (Poales, Poaceae) |
| | *Miscanthus* sp. (Poales, Poaceae) |
| *T. serendiba* (Melichar, 1903) | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |
| *T. tuberipennis* (Mulsant & Rey, 1855) | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |
| *T. dimidia* Yang & Yang, 1986 | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |
| *T. dingi* Sun, Yang & Chen, 2014 | *Miscanthus sinensis* Anderss. (Poales, Poaceae) |
| *T. festiva* (Distant, 1906) | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |
| *T. grata* Yang & Yang, 1986 | *Miscanthus* sp. (Poales, Poaceae) |
| | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |
| *T. jiawenna* Kuoh, 1979 | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |
| *T. longispina* Ding, 1982 | *Imperata* sp. (Poales, Poaceae) |
| *T. nigra* (Matsumura, 1900) | *Miscanthus sinensis* Anderss. (Poales, Poaceae) |
| | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |
| *T. simaoensis* Ding, 2006 | *Neyraudia* sp. (Poales, Poaceae) |
| *T. sinica* Ding, 2006 | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |
| *T. sinuosa* Yang & Yang, 1986 | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |
| *T. russa* Ding, 2006 | *Imperata cylindrica* (L.) P. Beauv. (Poales, Poaceae) |


**Fig. 23.** Adult of *Tropidocephala serendiba* (Melichar, 1903) resting on the leaf of *Imperata cylindrica* (L.) P. Beauv. (Poales Small, Poaceae Barnhart). Photographed by Xiang-Sheng Chen.

brown, inner side tawny. Forewings (Fig. 21F) grayish white, transparent, faint yellowish brown spots or stripes along the longitudinal and transverse veins, a small dark brown spot on tip of each terminal cells.

Head and thorax. Vertex (Figs 21C, 22A) longer in midline than wide at base (1.3:1). Frons (Figs 21E, 22B) oblong, longer in middle line than wide at widest part (1.6:1), basal margin triangular, median carinae simple. Antennae (Figs 21E, 22B) with first segment shorter than second segment about 1:1.6. Pronotum (Figs 21C, 22A) shorter than vertex about 0.8:1 in midline. Mesonotum (Figs 21C, 22A) longer than 1.6× pronotum and vertex combined, median carinae extend to terminal part of scutellum. Forewings (Fig. 21F) slightly broadened apically, longer than maximal width (2.5:1).

Male genitalia. Pygofer (Fig. 22C–D) ventral margin longer than dorsal margin in lateral view, in posterior view with opening longer than wide, with short and triangular medioventral process, without lateroventral process. Anal segment (Fig. 22C–E) cylindric, without anal process, wider than long in lateral view, apical margin of two lateral angle round, anal style long and big. Genital styles (Fig. 22F–G) small, long and narrow, basal part wide, apical part narrow, apical margin serrated, convex outward at basal ½. Aedeagus (Fig. 22H–I) with phallobase, phallus wide and long, tubular, basal ⅓ wider, curved ventrally; phallobase slender, basal ⅔ wider, bend accordingly to phallus.

**Host plant**

Unknown.

**Distribution**

China (Yunnan Province).

**Remarks**

This species is similar to *Tropidocephala touchi* Kuoh, 1979, but differs from the latter in: (1) anal segment broad, cylindric, apical margin of two sides rounded in posterior view (anal segment small, annular, apical margin of two sides triangular in posterior view in *T. touchi*); (2) pygofer with short and triangular medioventral process (pygofer without short and triangular medioventral process in *T. touchi*); (3) basal part of aedeagus without a arcuate slender process directed dorsad (basal part of aedeagus with a arcuate slender process directed dorsad in *T. touchi*).

## Discussion

Among the records of host plants of the Fulgoroidea and even the family Delphacidae, there are relatively more records for species of Tropidocephalini. The Tropidocephalini feed on Poaceae, most of which with reported plant associations feed on bamboo, and many of them are important or potential pests on bamboo (Wilson *et al.* 1994; Chen 2003; Ding 2006; Chen & Tsai 2009; Qin & Zhang 2010; Bartlett & Kennedy 2018). In *Tropidocephala*, there are no reports of its harm on bamboo, but have been reported as host plants (see Tab. 1). Among them, *T. brunnipennis* was found to harm rice (*Oryza sativa* L.), *T. brunnipennis*, *T. formosana* and *T. saccharivorella* were found to feed on sugar cane (*Saccharum officinarum* L.), and twelve of these species feed on *Imperata cylindrica* (L.) P. Beauv. (Drosopoulos 1982; Drosopoulos *et al.* 1983; Ding 2006; Fujinuma & Hayashi 2016; Gjonov 2022). These insects often perch on the back of the leaves and are well camouflaged. The group includes a wide variety of species that are easy to confuse with one another, and they often occur in high densities, making them important or potential agricultural and forestry pests.

## Acknowledgments

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