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TAMBINIA BAMBUSANA SP. NOV., A NEW BAMBOO-FEEDING SPECIES OF TAMBINIIINI (HEMIPTERA: FULGOROMORPHA: TROPIDUCHIDAE) FROM CHINA

ZHIMIN CHANG1,2 AND XIANGSHENG CHEN1,2*
1Institute of Entomology, Guizhou University, Guiyang, Guizhou, 550025 China
2The Provincial Key Laboratory for Agricultural Pest Management of Mountainous Regions, Guizhou University, Guiyang, Guizhou Province, 550025 China.

*Corresponding author; E-mail: chenxs3218@163.com

ABSTRACT

Tambinia bambusana sp. nov. (Hemiptera: Fulgoromorpha: Tropiduchidae: Tambiniini), a new species feeding on Dendrocalamus latiflorus Munro (Poaceae: Bambusoideae), is described and illustrated from Guizhou and Guangxi, China. This represents the first record of the members of genus Tambinia Stål feeding on bamboo. A key to all 25 species of Tambinia is given.

Key Words: bamboo-feeding planthoppers, Fulgoroidea, Oriental region, taxonomy

MATERIALS AND METHODS

Morphological terminology follows Wang et al. (2009) and Wang & Liang (2011). Dry specimens were used for the descriptions and illustrations.
External morphology was observed under a stereoscopic microscope and characters were measured with an ocular micrometer. Body length is measured from the apex of the head to the apex of the forewing in repose. The genital segments of the examined specimens were macerated in 10% KOH, washed in water and transferred to glycerine. Illustrations of the specimens were made with a Leica MZ 12.5 stereomicroscope. Photographs of the types were taken with a Leica D-lux 3 digital camera. The digital images were then imported into Adobe Photoshop 8.0 for labeling and plate composition. The type specimens are deposited in the Institute of Entomology, Guizhou University, Guiyang, China (IEGU), and the Natural History Museum, London (BMNH).

Descriptive Taxonomy
Genus Tambinia Stål, 1859


Type species: Tambinia languida Stål by subsequent designation.

Diagnosis

Small-sized tropiduchids. Head with eyes narrower than pronotum, distinctly produced in front of eyes and apically rounded, usually strongly dorsoventrally depressed and distinctly flattened in lateral view. Vertex tricarinate, disc of vertex (excluding median carina) depressed, posterior margin straight. Frons distinctly reclined caudad, somewhat flat and smooth, with or without median carina, rarely covered with sparsely microsetae. Clypeus triangular, relatively convex, with or without median carina, lateral margins not carinate. Rostrum short, not reaching mesotrochanters. Antennae with scape very small, pedicel cylindrical, covered with long setulae, sensory plaques present on top surface of pedical. Pronotum tricarinate, anterior margin straight and hind margin angulately excavate, with a single carina between eye and tegula. Mesonotum tricarinate. Hind tibiae each with 2 distinct lateral spines; spinal formula of hind leg (4-5)-(4-5)-2; metatarsal segment II short and small. Forewings with oblique nodal line, apical portion flexing ventrad at this line, basal portion somewhat sub-hyaline, with or without granulate, thicker than apical portion, costal cell without cross veins.

Male Genitalia. Pygofer symmetrical, dorsal margin deeply excavated to accommodate anal tube. Gonostylus elongate, bilaterally symmetrical, membranously fused with pygofer at base, with a conical, median process in ventral view, with a dorsally directed process arising from inner side near base and a laminate, inward directed, triangular process arising from inner side near middle. Periandrium dorsally connected with ventrobasal margin of anal tube, membranously fused with pygofer at ventral side, tube-like, distinctly sclerotized, surrounding aedeagus subapically or mesially, and visible in lateral view. Aedeagus, asymmetrical, elongate and tubular, shaft of aedeagus slender and elongate, tubular, and sinuate in lateral view, subapically or mesially embraced in perianidrnum, endosoma membranous, with or without spines (Wang & Liang 2011).

Distribution


Key to Species of Genus Tambinia Stål

(Modified from Wang & Liang 2011)

1. Vertex shorter in middle than the widest breadth, or about as long as broad .................. 2
   — Vertex distinctly longer in middle than the widest breadth .................................. 12

2. Frons with carina obsolete ................................................................. 3

3. Frons about as long as broad, forewings with two black elongate spots near bases of sutural margins, nodal line marked with several fuscous spots .................. T. atrosignata Distant
   — Frons distinctly longer than broad, forewings with two red elongate marks near bases of sutural margins, many orange or red spots marked from basal part to nodal line, nodal line suffused with one transverse orange to red band .................. T. macula Liang

4. Forewing granulate ................................................................. 5
— Forewing non granulate ................................................. 6
5. Forewing marked without transverse bands ........................................ T. debilis Stål
   — Forewing marked with two brown transverse bands across sub-basally, on nodal line and in clavus ........................................ bizonata Matsumura
6. Forewing with nodal line near apex ........................................ 9
   — Forewing with nodal line near middle ........................................ 9
7. Forewing with marks and stripes distinct ........................................ 8
   — Forewing with marks and stripes very pale, nearly absent ................ T. similis Liang
8. Forewing with 11 apical cells, 4-5 subapical cells ....................... T. rubrolineata Liang
   — Forewing with 9 apical cells, 3-4 subapical cells ....................... T. theivora Fennah
9. Body suffused with distinct spots and markings .............................. 10
   — Body without spots and markings, median carinae of vertex and pronotum thickened and broad, frons with basal part of median carina strongly broad and thickened, not reaching to frontoctyleal suture, obsolete on level of antennae ................ T. robustocarina Liang
10. Body pale green, vertex without spot ........................................ 11
   — Body pale yellow, vertex, pronotum and mesonotum marked with reddish spots, forewing with nodal line suffused with red stripes ................ T. menglunensis Men & Qin
11. Pronotum with posterior margin marked with reddish stripes, mesonotum with carinae reddish, forewing with nodal line suffused with fuscous ................ T. rufoornata Stål
   — Pronotum without reddish stripes, mesonotum with carine pale green, forewings with nodal line and sutural margins suffused with grey ................ T. bambusana sp. nov.
12. Vertex medially 1.1-1.3 times as long as maximum breadth ............... 13
   — Vertex medially 1.4-1.8 times as long as maximum breadth ............... 19
13. Body above suffused with marks of different colors .......................... 14
   — Body above concolorous, without marks of different colors ............... 17
14. Vertex with sublateral carinae basally between median carina and lateral margins ........ 15
   — Vertex without sublateral carinae between median carina and lateral margins ........................................ 16
15. Vertex with six red spots, pronotum and mesonotum without spots, forewing with two pairs of red spots near bases of sutural margins and distad of level of union of claval veins respectively ................ T. sexmaculata Liang
   — Vertex with two short reddish stripes, pronotum with a pair of orange spots outside lateral carinae, carinae on vertex and pronotum orange, mesonotum with a pair of orange spots beside lateral carinae near posterior margin, forewing with many reddish spots marked from basal part to nodal line ................ T. conus Liang
16. Carinae on vertex, pronotum and mesonotum without pigmentation, mesonotum suffused with ochraceous ........................................ T. languida Stål
   — Carinae on vertex, pronotum and mesonotum reddish, mesonotum suffused with dark brown ................ T. zonata Muir
17. Head not prominently narrowed anteriorly ..................................... 18
   — Head gradually narrowed to apex ........................................ T. capitata Distant
18. Forewing with Cu1 forking distad of level of union of claval veins, with 12 apical cells, subapical cells less than 5 .............................................. *T. guamensis* Metcalf

— Forewing with Cu1 forking basad of level of union of claval veins, with 14 apical cells, subapical cells more than 6 .............................................. *T. pitho* Fennah

19. Body concolorous, without marks of different colors .................................................. 20

— Body suffused with marks of different colors .................................................. 21

20. Vertex medially 1.4 times as long as maximum breadth, pronotum without short carinae between median carina and lateral margin .............................................. *T. inconspicua* Distant

— Vertex medially 1.7 times as long as maximum breadth, pronotum with a pair of short carinae basally between median carina and lateral margins .............................................. *T. sisyphus* Fennah

21. Forewing with nodal line suffused with pigmentation .................................................. 22

— Forewing with nodal line concolorous, without pigmentation .................................................. 23

22. Vertex and pronotum with orange marks, nodal line fuscous .............................................. *T. verticalis* Distant

— Vertex, pronotum and mesonotum red, carinae green .............................................. *T. fasciculosa* Melichar

23. Forewing suffused with marks .................................................. 24

— Forewing without marks .................................................. *T. exoleta* Melichar

24. Vertex and pronotum finely marked with red spots .............................................. *T. rubromaculata* Distant

— Vertex marked with six red spots, pronotum with lateral carinae red .............................................. *T. venusta* (Kirkaldy)

*Tambinia bambusana* sp. nov. (Figs. 1-19)

Material Examined

Holotype: ♀, Maolan National Nature Reserve (25°24’N, 107°52’E), Libo, Guizhou Province, China, on bamboo, 16-23 July 2011, Z.-M. Chang, Q.-Z. Song, J.-K. Long and W.-B. Zheng (IEGU); paratypes: 12♂♀, same data as holotype (IEGU); 5♂♂, 8♀♀, Nandan (24°59’N, 107°32’E), Guangxi Province, China, on bamboo (*Dendrocalamus latiflorus* Munro), 4 August 2010, X.-S. Chen (IEGU), one male and female deposited in BMNH.

Etymology

The new species is named after the host plant bamboo (Bambusoideae).

Description

Body length (from apex of vertex to tip of forewing): male 5.7-6.5 mm (N = 18); female 6.0-6.8 mm (N = 15).

Coloration. General color (Figs. 17-19) pale green, eyes red brown to black. Forewings translucent with veins yellowish green, nodal line and sutural margins suffused with grey zones, formed a reverse Y-shaped, tips of spines on hind tibiae and tarsi black.

Head and Thorax. Head projecting before eyes approximately median length of eye, not strongly dorsoventrally depressed. Vertex distinctly shorter in middle than the widest breadth (1.0: 1.9), disc of vertex with one median carina, with a pair of short tender sublateral carinae basally between median carina and lateral margins; anterior margin slightly projected at an obtuse round, posterior margin nearly straight; lateral margins strongly ridged in dorsal view. Frons flat, disc slightly depressed, longer in middle than the widest breadth (1.6: 1.0), lateral margins of frons incurved below level of socket of antennae, with basal part of median carina broad then thickened. Clypeus triangular, with thin median carina. Pronotum distinctly shorter than mesonotum in midline (1.0: 3.8), carinae strongly ridged, lateral carinae diverging posteriorly, median carina distinct, reaching posterior margin. Pronotum and mesonotum together medially 5.4 times as long as median length of vertex. Hind tibiae each with 2 distinct lateral spines, spinal formula of hind leg 5-5-2. Forewing broad, 2.0 times as long as maximum breadth, without granulae, Sc-R forking about medially, Cu1 forking about at 2/5 basal, with about 15 apical cells and 6 subapical cells, claval veins uniting basad of middle of clavus.
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Figs. 1-16. *Tambinia bambusana* sp. nov. 1. Head and thorax, dorsal view; 2. Head, ventral view; 3. Head and thorax, lateral view; 4. Forewing; 5. Hind wing; 6. Male genitalia, lateral view; 7. Gonostylus, dorsal view; 8. Pygofer and gonostylus, ventral view; 9. Anal segment, dorsal view; 10. Aedeagus and periandrium, dorsal view; 11. Aedeagus and periandrium, lateral view; 12. Female genitalia, lateral view; 13. Female genitalia, ventral view; 14. First valvula, lateral view; 15. Second valvula, ventral view; 16. Apex of third valvula. Scale bars = 0.2 mm (Figs. 8, 9, 15, and 16), 0.4 mm (Figs. 7, 12), 0.5 mm (Figs. 6, 10, 11, 13, and 14), 1.0 mm (Figs. 1-5).
Male Genitalia. Pygofer irregular subquadrate in lateral view, anterior margin moderately concave, posterior margin concave on ventral 1/3. Anal tube relatively elongate, dorsal margin nearly straight, ventral margin bent ventrad in lateral view; lateral margins parallel in dorsal view; anal styles relatively long, approaching apex of anal tube in dorsal view. Gonostylus elongate, expanded at apical 1/3 then narrowing to apex in dorsal view, with median triangular process distinct, with a hook-like process produced near the base; in ventral view bridge of gonostylus round at tip. Perandrium tube-like, distinctly sclerotized, with a short process at ventral base, surrounding aedeagus medially. Aedeagus with shaft sinuate, apical part expand with two process, which dorsal one distinctly shorter than the lateral one directed to the base.

Female Genitalia. Anal segment moderately elongate in lateral view. In lateral view first valvula of ovipositor sclerotized, narrowing at apical half, dorsal margin with 5 teeth, ventral margin with 3 teeth and several indistinct minute teeth submedially. Second valvulae triangular, converging apically. Third valvula membranous and large, then narrowing distally, apical part with 8 teeth.

Figs. 20-21. Host plant of Tambinia bambusana sp. nov. 20. View of the area where the specimens of T. bambusana were captured, in Nandan (Guangxi, China) with Dendrocalamus latiflorus Munro; 21. View of the plant, D. latiflorus Munro.
Host Plant

Bamboo (*Dendrocalamus latiflorus* Munro) (Figs. 20 and 21).

Distribution

Southern China (Guizhou and Guangxi Provs.).

Remarks

This new species is similar to *T. robustocarina* Wang & Liang, 2011 and *T. macula* Wang & Liang, 2011, but can be distinguished from those two species in forewings with a reverse V-shaped grey zones in dorsal view; aedeagus with shaft sinuate, apical part expand with one short process and one long, with bridge of gonostylus round at tip.

ACKNOWLEDGMENTS

We are grateful to Prof. Guang-Qian Gou (College of Life Sciences, Guizhou University, China) for identifying the host plant bamboo. This research was supported by the National Natural Science Foundation of China (No. 31060290, 31093430, 31160163), by China Post-doctoral Science Foundation (No. 2005037111), and by the International Science and Technology Cooperation Program of Guizhou (20107005).

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