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On the tribe Sarimini with two new genera from south of China (Hemiptera, Fulgoromorpha, Issidae)

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Abstract

Two new genera of the tribe Sarimini are described from south of China. They are *Sarimissus* **gen. nov.** with a new species *S. maculifrons* **sp. nov.** from Hainan province and *Duplexissus* **gen. nov.** with a new species *D. punctatulus* **sp. nov.** from Yunnan province. The photos of habitus and the male genitalia of the new species are provided. The biology, distribution and origin of the tribe Sarimini are discussed.

Key words: Taxonomy, New taxa, Hainan, Yunnan, Fulgoroidea

Introduction

The tribe Sarimini Wang, Zhang & Bourgoin, 2016 was revealed after a molecular phylogeny of the planthopper family Issidae (Wang *et al.*, 2016) and established on morphological characters particularly easily observable from the hind wing conformation and its venation schema: a 3-lobed hind wing with Pcu-A1 lobe more or less as wide as ScP-R-MP-Cu lobe, Pcu single or branched, anastomosing with A1 on a short or longer distance, A2 non branched. This diagnosis was recently precised and completed by Chang *et al*. (2019) and they reported the variations from this basal schema. Chang *et al.* (2019) also completed the list of the 12 genera originally included in the tribe by Wang *et al.* (2016), listing 19 genera including the newly described genera *Longieusarima* Wang, Bourgoin & Zhang, 2017 (Wang *et al.*, 2017) and *Microsarimodes* Chang & Cheng, 2019 (Chang *et al.*, 2019). To these, Constant & Bartlett (2019) added *Vishnuloka* Distant, 1906 and four more are here also formally added: *Givaka* Distant, 1906, *Balisticha* Jacobi, 1941, *Euroxenus* Gnezdilov, 2009 and *Sundorrhinus* Gnezdilov, 2010. With the two new genera described in this paper: *Saramissus* **gen. nov.** and *Duplexissus* **gen. nov**., the tribe now groups 26 genera.

Materials and methods

Morphological interpretations and subsequent terminologies follow Bourgoin (1987) for male genitalia, Bourgoin (1993) for female genitalia and Bourgoin *et al.* (2015) for wing venation. The metatibiotarsal formula provides the number of spines on (side of metatibia) apex of metatibia/apex of first metatarsomere/apex of second metatarsomere. All the type specimens are deposited in the Entomological Museum of Northwest A&F University (NWAFU), Yangling, China. The abbreviation IZCAS refers to the Institute of Zoology, Chinese Academy of Sciences, Beijing, China.

The abdomen of specimen was separated from the body using micro-scissors, and then boiled in a 10% NaOH solution for 5 minutes until muscles were completely dissolved leaving tegumentary structures. After rinsing in

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distilled water for several times, the abdomen was subsequently transferred to glycerine for final dissection and observation. Genitalia were conserved under the specimen in glycerine vials. Photographs for external morphology and genitalia characters were taken using Leica DFC495 camera attached to Leica M205A stereomicroscope and further refined with LAS V3.8.

Family Issidae Spinola, 1839

Subfamily Hemisphaeriinae Melichar 1906 (sec. Wang *et al.*, 2016)

Tribe Sarimini Wang, Zhang & Bourgoin, 2016

Sarimissus gen. nov.

Type species: *Sarimissus maculifrons* sp. nov., here designated.

Diagnosis. This new species appears similar to *Eusarima* Yang, 1994, but differs by: 1) Frons with sublateral carinae invisible (Fig. 4) or only weakly present at apical part, but in *Eusarima*, the sublateral carinae elevated from apical area extend to near base (Chan & Yang, 1994, fig. 45B); 2) ScP+RA on forewing relatively shorter, not reaching apical 1/3 of forewing (Fig. 5), while almost reaching apical 1/4 in *Eusarima* (Chan & Yang, 1994, fig. 45C); 3) Phallic complex with only a pair of processes (Fig. 10), while two pairs are present in *Eusarima* (Chan & Yang, 1994, fig. 45H).

This new genus is also similar to the genus *Dactylissus* Gnezdilov & Bourgoin, 2014, but differs by: 1) Vertex narrower, around 1.5 times wider than long in midline (Fig. 3), while around 2.0 times wider in *Dactylissus* (Gnezdilov *et al.*, 2014, fig.10); 2) Gonostylus trapezoidal in lateral view (Fig. 9), but trianglular in *Dactylissus* (Gnezdilov *et al.*, 2014, fig.18); 3) Periandrium without basal processes and aedeagus with a pair of lateral processes derived from the apical 1/6 (Fig. 10), but in *Dactylissus*, periandrium with several pairs of basal processes and aedeagus without lateral processes (Gnezdilov *et al.*, 2014, figs 15, 16).

Etymology. The name belongs to an arbitrary letter association between the names of "*Sarima*" and "*Issus*", respectively type genus name of the tribe Sarimini and family Issidae, to which the new genus belongs to. The gender is masculine.

Description. Head with compound eyes a little wider than pronotum (Figs 1, 3). Vertex rectangular, around 1.5 times broader than long, margins elevated, anterior margin slightly angularly convex, posterior margin anteriorly angularly concave at middle, median carina absent on disc (Figs 1, 3). Frons almost the same width in widest part than length in midline, slightly broaden below level of compound eyes, the lateral angles rounded; margins elevated, dorsal margin slightly concave, median carina elevated from apex extending to near base but not reaching frontoclypeal suture (Fig. 4), sublateral carinae only weakly visible at apical part or invisible (Fig. 4). Frontoclypeal suture slightly convex (Fig. 4). Clypeus smooth, without median carina (Fig. 4). Rostrum reaching hind coxae, the apical segment nearly the same length as subapical segment. Gena in lateral view oblique with a small protuberance above the clypeus (Fig. 2). Antenna with scape extremely short, pedicel rounded (Fig. 4). Pronotum triangular, margins elevated, anterior margin angularly protruded, posterior margin nearly straight, median carina only present on the middle (Fig. 3) or invisible. Mesonotum a little longer than pronotum, anterior margin nearly straight, tricarinated on the disc (Fig. 3). Forewings obviously longer than broad, longitudinal veins elevated (Figs 1, 2, 5); costal area relatively broad, ScP+RA and RP fused with a short stem, ScP+RA median length, exceeding the middle of costal margin but not reaching apical 1/3 of forewing, RP extremely long, reaching to the outer margin of forewing (Figs 2, 5); MP forking only once near the middle into the forked MP1+2 and forked or unforked MP3+4 (Figs 2, 5); CuA forking slightly after MP (Figs 2, 5), CuA1 and CuA2 unforked (Figs 2, 5). Clavus closed, Pcu and A1 fused at middle of clavus (Figs 1, 5). Hind wings developed of Sarimini type with 3-lobes, Pcu-A1 lobe as wide as ScP-R-MP-Cu lobe, Pcu and A1 anastomosing on a long distance, Pcu unbranched, A2 lobe developed, a little wider than Pcu-A1 lobe, A2 vein non branched (Fig. 6). Metatibia with two lateral spines on apical half.

Male genitalia. Anal tube in lateral view extremely long and narrow, surpassing the posterior margin of gonostyli, dorsal margin inclined downward from basal 1/6 (Fig. 7). Pygofer in lateral view long rectangular, much lon-

ger than broad, dorsal margin slightly sloping posterior, posterior margin convex near middle (Fig. 7). Gonostylus trapezoidal in lateral view, dorsal margin regularly convex, posterior ventral lobe short with caudo-ventral angle nearly rectangular (Figs 7, 9). Capitulum of gonostylus short and broad, with an antero-lateral protuberance and a posterior protuberance near the base (Figs 7, 9). Periandrium symmetric, divided into dorsal lobes, lateral lobes and ventral lobe in the apex, dorsal and lateral lobes a little longer than ventral lobe in lateral view (Fig. 10). Aedeagus with a pair of processes derived from the apical 1/6 (Fig. 10).

Distribution. China (Hainan province).

***Sarimissus maculifrons* sp. nov.**
(Figs 1–11)

Diagnosis. This new species appears similar to *Eusarima contorta* Yang, 1994, but differs by: 1) Frons with a pair of curved eyelike markings on the disc (Fig. 4), but the latter species without these eyelike markings (Chan & Yang,1994, fig. 45B); 2) Capitulum of gonostylus thick and short, with tip obtuse (Fig. 9), but long and slender, with tip acute in *E. contorta* (Chan & Yang, 1994, fig. 45E); 3) Aedeagus with a pair of short hook-like processes (Fig. 10), but the latter species with a pair of extremely long processes (Chan & Yang, 1994, fig. 45H).

Etymology. This species name is a combination of Latin words "*macula*" and "*frons*", referring to the light yellowish M-shaped markings on the frons.

Description. Length: male (including forewings) (N=4): 5.1–5.2 mm.

Coloration. Vertex brown, anterior, lateral and posterior margins all brown (Figs 1, 3). Compound eyes grayish brown, supported by grayish callus (Figs 1, 3). Frons brown, with an obvious light yellowish M-shape eyelike marking on the middle and some irregular yellow patches near base (Fig. 4); median carina brown from apex extending to near base, but not reaching to the frontoclypeal suture (Fig. 4); apical margin and lateral margins brown (Fig. 4). Antennae brown (Fig. 4). Postclypeus mainly brown, with light yellow near the base (Fig. 4). Gena brown, with one light yellow transverse fascia below compound eyes in lateral view (Fig. 2). Pronotum brown, anterior and posterior margins brown, median carina brown, only visible at middle (Figs 1, 3). Mesonotum brown, median and sublateral carinae all brown (Figs 1, 3). Forewings tawny to brown, longitudinal veins brown (Figs 1, 5). Hind wings brown (Fig. 6). Legs tawny, distributed with irregular brownish markings (Figs 2, 4).

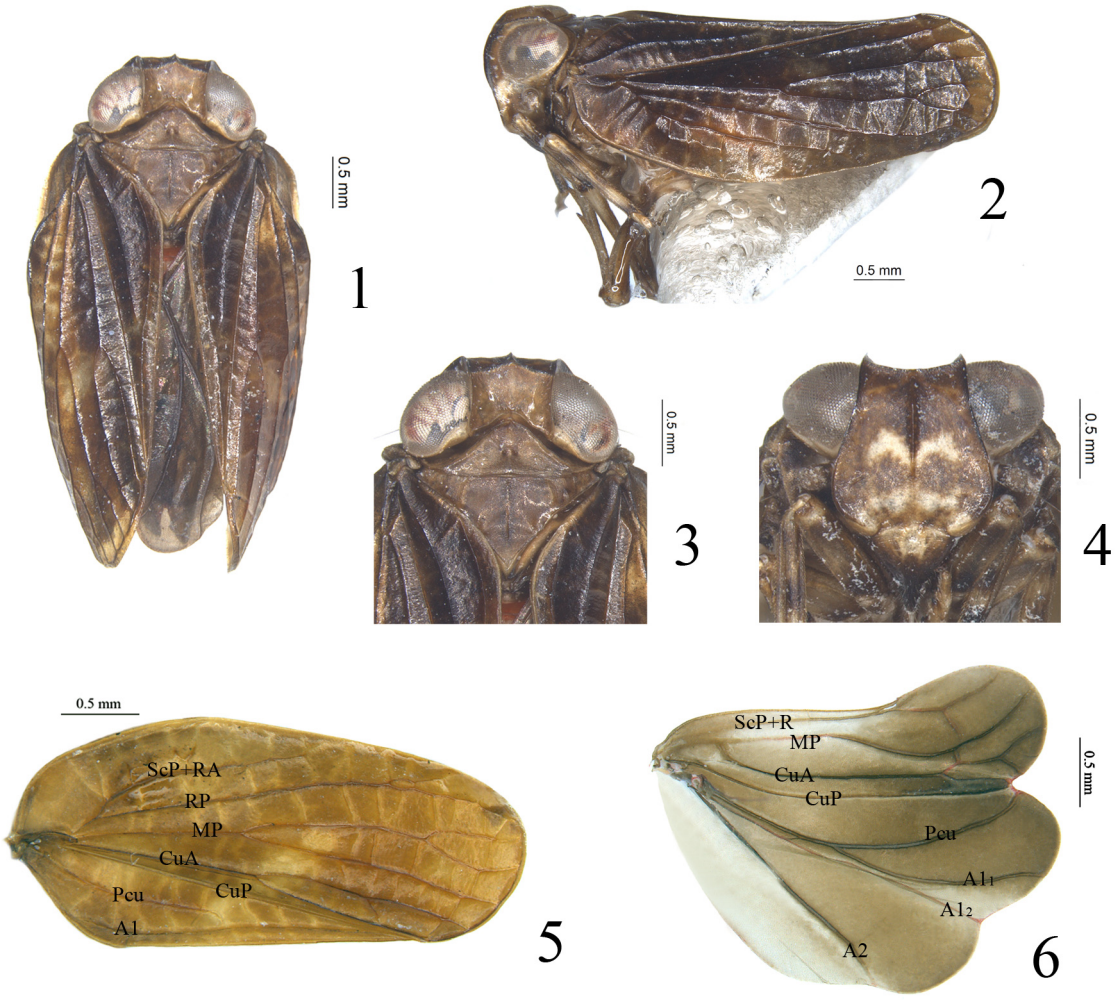
Head and thorax. Vertex 1.5 times wider in midline than long in midline, lateral margins nearly parallel, slightly concave at middle (Figs 1, 3). Frons 1.0 times wider at widest part than long in midline, 1.6 times wider at widest part than apical margin (Fig. 4); lateral margins nearly parallel from the apex to the middle of compound eyes, then expand to below antennae and finally narrow to the base (Fig. 4); sublateral carinae weakly present or invisible (Fig. 4). Pronotum 3.0 times wider at posterior margin than long in midline, 1.0 times longer in midline than vertex (Figs 1, 3); median carina weakly present or absent, with a small incision on each side of midline (Figs 1, 3). Mesonotum with anterior margin 1.8 times wider than long in midline, 1.7 times longer in midline than pronotum, median carina visible from anterior margin elevated to the basal 1/4, sublateral carinae elevated from anterior margin to the posterior margin (Figs 1, 3). Forewings 2.2 times longer at longest part than widest part, CuA forking slightly after MP (Figs 2, 5), MP1+2 vein bifurcate at apical 1/6 (Figs 2, 5), MP3+4 vein forked at apical 1/6 (Fig. 2) or unforked (Fig. 5), CuA1 and CuA2 unforked (Fig. 5). Metatibiotarsal formula: (2)–7/(8-10)/2.

Male genitalia. Anal tube in lateral view curved downward near apex (Fig. 7), in dorsal view long cylindrical, widest at basal 1/3, 3.0 times longer in midline than widest part, apical margin rounded, lateral margins nearly parallel at apical half and convex at basal half (Fig. 8); anal opening located at basal 1/3 of anal tube (Fig. 8). Pygofer in lateral view long and slender, 2.6 times higher in midline than broad in midline, dorsal margin strongly sloping posterior, posterior margin convex at middle (Fig. 7); tectiductus large and broad (Fig. 7). Gonostylus in lateral view gradually broadened to apex, widest at apical 1/4, dorsal margin elevated at middle, then parallel with ventral margin; ventral margin deeply expand downward at basal 1/9 then straight with caudo-ventral angle subrectangular (Fig. 9). Capitulum of gonostylus directed cephalad, with an arc-shaped antero-lateral process on the base and a finger-shaped postero-lateral process at base (Fig. 9). Periandrium dorsal lobes slightly shorter than lateral lobes, the apical part laminar (Fig. 10). Periandrium lateral lobes in lateral view rounded in the apex (Fig. 10), in ventral view the median part deeply biforked (Fig. 11). Periandrium ventral lobe in lateral view rounded at apex (Fig. 10), in ventral view with apical margin rounded, lateral margins nearly parallel (Fig. 11). Aedeagus with a pair of short

broad hook-like processes derived from apical 1/6, this pair of processes in lateral view curved downward then extending to the apical 1/3 of periandrium, tip pointed slightly surpassing the ventral margin (Fig. 10), in ventral view this pair of processes curved outward (Fig. 11)

Type materials. Holotype: ♂, China, Hainan Province, Jianfengling, Chahekou, N 18º 44.727′, E 108º 59.632′, 235 m, 17 viii 2010, coll. Guo Zheng (IZCAS).

Paratypes: 1♂, same data as holotype (IZCAS); 1♂, China, Hainan Province, Dialuoshan, N 18º 40.440′, E 109º 52.600′, 494 m, 10 viii 2010, coll. Guo Zheng (IZCAS); 1♂, China, Hainan Province, Yinggeling, Yinggezui, 797 m, 22 viii 2010, coll. Guo Zheng (IZCAS).



FIGURES 1–6. *Sarimissus maculifrons* **sp. n.**, male **1**. Habitus, dorsal view; **2**. Habitus, lateral view; **3**. Head and thorax, dorsal view; **4**. Habitus, frontal view; **5.** Forewing; **6.** Hind wing. Venation terminologies on Figs 5, 6 as in the text.

Duplexissus gen. nov.

Type species: *Duplexissus punctatulus* sp. n., here designated.

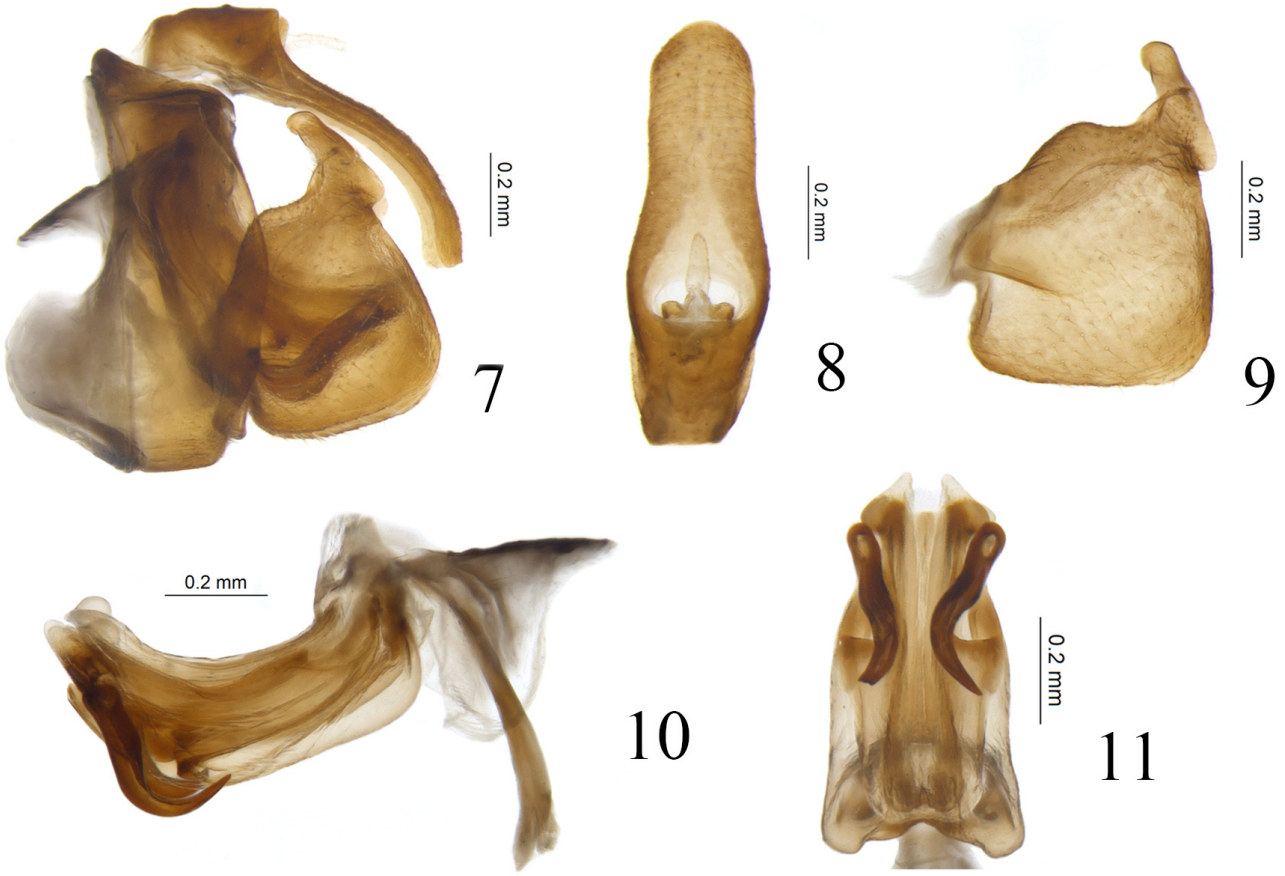
Diagnosis. This new genus is very similar to *Eusarima* Yang, 1994 in general appearances, but differs by: phallic complex with two pairs of long processes directed to cephalad, one of it dentated (Fig. 21), while phallic complex with a pair of long process directed to cephalad and a pair of relatively short process without teeth directed to caudal in *Eusarima* (Chan & Yang, 1994, fig. 45H).

This new genus also resembles to *Sinesarima* Yang, 1994, but differs by: 1) Forewing with ScP+RA extremely long (Fig. 16), but ScP+RA very short in *Sinesarima* (Chan & Yang, 1994, fig. 40C); 2) Frons with median carina and sublateral carinae all long, from the apex extending to near base (Fig. 15), but much shorter in *Sinesarima*,

median carina extending less than middle, sublateral carinae only present in apical 1/4 (Chan & Yang, 1994, fig. 40B).

This new genus is also similar to *Yangissus* Chen, Zhang & Chang, 2014, but differs by: 1) ScP+RA on forewing extremely long, reaching about apical 1/6 (Fig. 16), but much shorter in *Yangissus*, only reaching to middle of forewing (Chen *et al.*, 2014, fig. 2-82F); 2) Vertex with apical margin angularly convex (Fig. 14), but roundly convex in *Yangissus* (Chen *et al.*, 2014, fig. 2-82C) ; 3) Posterior margin of pygofer smooth, without posterior spine (Fig. 18), but with an obvious and sharp posterior spine near the apex on posterior margin (Chen *et al.*, 2014, fig. 2-82I).

Etymology. The name refers to the phallic complex with two pairs of processes in the male genitalia. The gender is masculine.



FIGURES 7–11. *Sarimissus maculifrons* **sp. n.**, male **7**. Genitalia, lateral view; **8**. Anal tube, dorsal view; **9**. Gonostylus, lateral view; **10**. Phallic complex, lateral view; **11**. Phallic complex, ventral view.

Description. Head with compound eyes slightly wider than pronotum (Figs 12, 14). Compound eyes axis in dorsal view converging (Figs 12, 14). Vertex rectangular, broader than long, margins elevated, anterior margin slightly angularly convex, posterior margin anterior angularly concave at middle, median carina weakly present (Figs 12, 14) or absent on disc. Frons in widest part a little wider than long in midline, broaden below level of antennae, the lateral angles rounded (Fig. 15); all margins elevated, dorsal margin slightly concave at middle, lateral margins gradually broadening from apex to the level below the antennae; median carina present from apex extending to near base with apical half elevated and basal part unconspicuous (Fig. 15), sublateral carinae weakly present from apex extending to near base (Fig. 15). Frons with apical and lateral areas distributed with some large tubercles (Fig. 15). Frontoclypeal suture very slightly convex, almost straight (Fig. 15). Clypeus smooth (Fig. 15). Rostrum reaching hind coxae, the apical segment slightly shorter than subapical segment. Gena in lateral view oblique (Fig. 13). Antenna with scape extremely short, pedicel rounded (Fig. 15). Pronotum triangular, a little longer than vertex, margins elevated, anterior margin angularly protruded, posterior margin straight, with a small incision on each side of midline, median carina weakly present, disc with few small tubercles on each side of lateral area (Figs 12, 14). Mesonotum longer than pronotum in midline, anterior margin straight, tricarinated on the disc (Figs 12, 14). Forewings obviously longer than broad, longitudinally elevated; costal area narrow, ScP+RA and RP in a common stem

at base, ScP+RA and RP all extremely long, respectively reaching to the apical 1/6 and the outer margin of forewing (Figs 13, 16); MP forking at the middle into a forked MP1+2 and a forked or unforked MP3+4; CuA first forking almost in the same level with MP (Figs 13, 16). Clavus closed, Pcu and A1 fused at middle of clavus (Figs 12, 16). Hind wings developed, of Sarimini type with 3 well-developed lobes, Pcu-A1 lobe as wide as ScP-R-MP-Cu lobe, Pcu and A1 anastomosing on a long distance, Pcu unbranched, A2 lobe developed, slightly wider than Pcu-A1 lobe, A2 vein unbranched (Fig. 17). Metatibia with two lateral spines on apical half.

Male genitalia. Anal tube in lateral view long and broad (Fig. 18). Pygofer in lateral view rectangular, posterior margin slightly convex (Fig. 18). Gonostylus trapezoid in lateral view, dorsal margin convex and elevated at apical 1/3, ventral margin with caudo-ventral angle deeply convex, posterior margin sinuate (Figs 18, 20). Capitulum of gonostylus short and broad, antero-lateral margin with a process near base (Figs 18, 20). Periandrium U-shaped, divided into dorsal, lateral and ventral lobes in the apical part, dorsal lobe with a pair of dentated processes originated from apical 1/4 of each side (Fig. 21). Aedeagus with pair of processes originated from apical 1/4 directed to cephalad in lateral view (Fig. 21).

Distribution. China (Yunnan province).

Duplexissus punctatulus sp. nov.

(Figs 12–22)

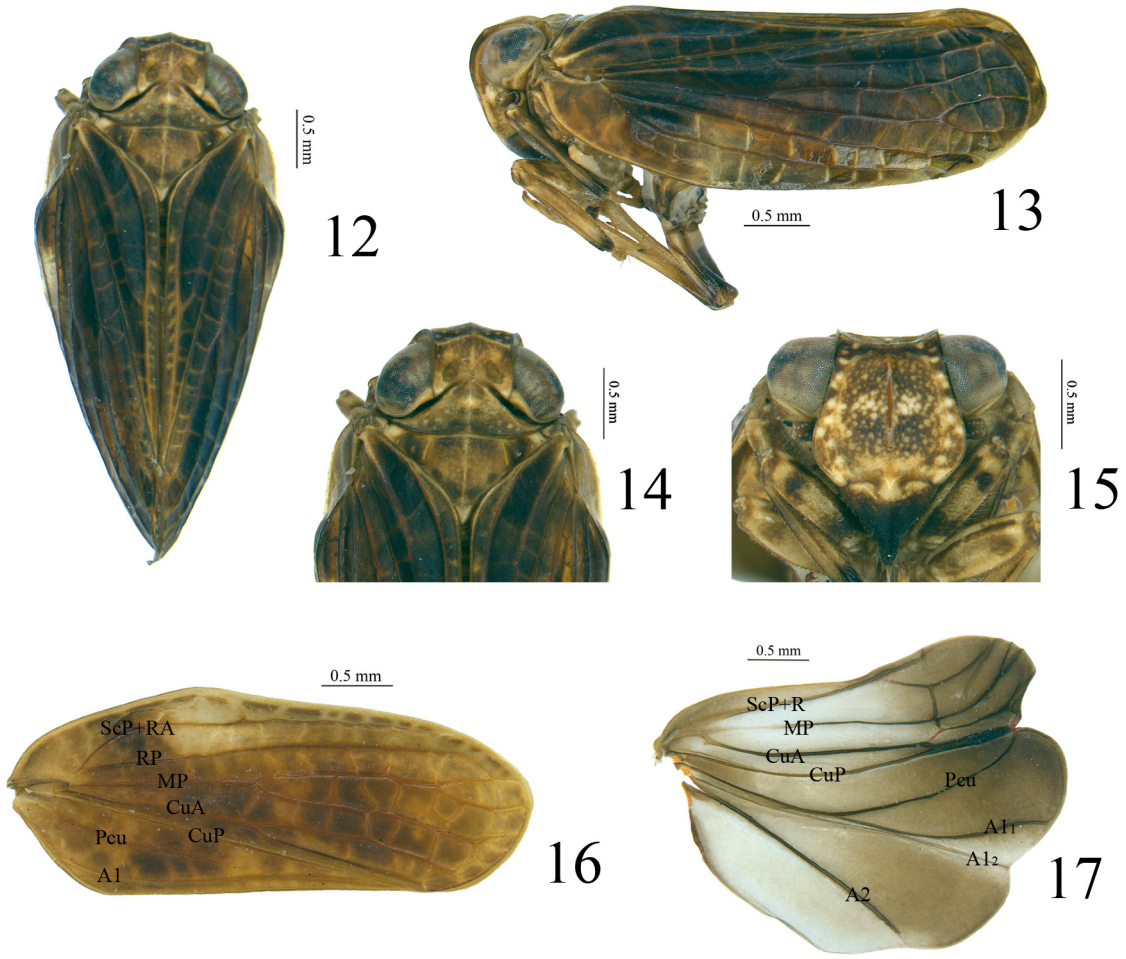
Diagnosis. This new species is similar to *Eusarima delira* Yang, 1994, but differs by: 1) Dorsal margin of gonostylus strongly convex, elevated on apical 1/3 (Figs 18, 20), but very slightly convex in *E. delira*, nearly straight (Chan & Yang, 1994, fig. 47E); 2) Capitulum of gonostylus short and broad (Figs 18, 20), but long and narrow in *E. delira* (Chan & Yang, 1994, fig. 47E); 3) Phallic complex with two pairs of long processes directed to cephalad, one of it dentated (Fig. 21), but in *E. delira*, phallic complex with a pair of long process directed to cephalad and a pair of long process directed to caudal, all the processes without teeth (Chan & Yang, 1994, fig. 47H).

Etymology. The name "*punctatulus*" refers to the numerous yellowish punctuate markings on the frons.

Description. Length: male (including forewings) (N=4): 4.3–4.5 mm.

Coloration. Vertex tawny, margins brown; with two inconspicuous brownish circular markings near base (Figs 12, 14). Compound eyes dark brown, supported by tawny callus (Figs 12, 14). Frons with brownish and light yellowish color mixed on the disc, median area brown, scattered with numerous small light yellow spots; sublateral carinae light yellow, lateral areas with around 11 yellow tubercles outside of sublateral carinae on each side, basal part of frons light yellow (Fig. 15); anterior and lateral margins elevated and black, median carina brown extending from apex near to base, sublateral carinae light yellow from apex extending near base (Fig. 15). Antennae brown (Fig. 15). Postclypeus mostly black with apical area light yellow (Fig. 15). Gena brown, in lateral view with small yellowish transverse fascia below compound eyes (Fig. 13). Pronotum tawny, anterior and posterior margins brown; median carina light yellow and two small incisions besides the midline; disc with around five small yellow tubercles on each side of lateral area (Figs 12, 14). Mesonotum tawny in median area, lateral areas dark brown, median and lateral carinae tawny (Figs 12, 14). Forewings tawny, longitudinal veins tawny, transverse veins tawny; scattered with some irregular dark brown markings on the forewing (Figs 13, 16). Hind wings brown (Fig. 17). Legs light yellow, scattered with dark brown markings (Fig. 15).

Head and thorax. Vertex 1.8 times wider in midline than long in midline, lateral margins parallel (Figs 12, 14). Frons 1.1 times wider at widest part than long in midline, 1.4 times wider at widest part than apical margin (Fig. 15); lateral margins gradually broadening from apex to basal 1/5, broadest at basal 1/5 (Fig. 15). Pronotum 2.6 times wider at posterior margin than long in midline, 1.4 times longer in midline than vertex (Figs 12, 14); anterior margin sharply angularly convex (Figs 12, 14). Mesonotum with anterior margin 1.7 times wider than long in midline, 1.6 times longer in midline than pronotum, median carina and sublateral carinae developed from anterior margin to the base (Figs 12, 14). Forewings 2.5 times longer at longest part than widest part, costal area relatively narrow, the area before middle of MP and CuA veins with less transverse veins (Figs 13, 16); CuA almost forking the same level with MP (Figs 13, 16), MP1+2 bifurcate at apical 1/6, MP3+4 unforked (Fig.13) or forking at apical 1/9 (Fig. 16), CuA1 and CuA2 unforked (Fig. 16). Metatibiotarsal formula: (2)–6/9/2.



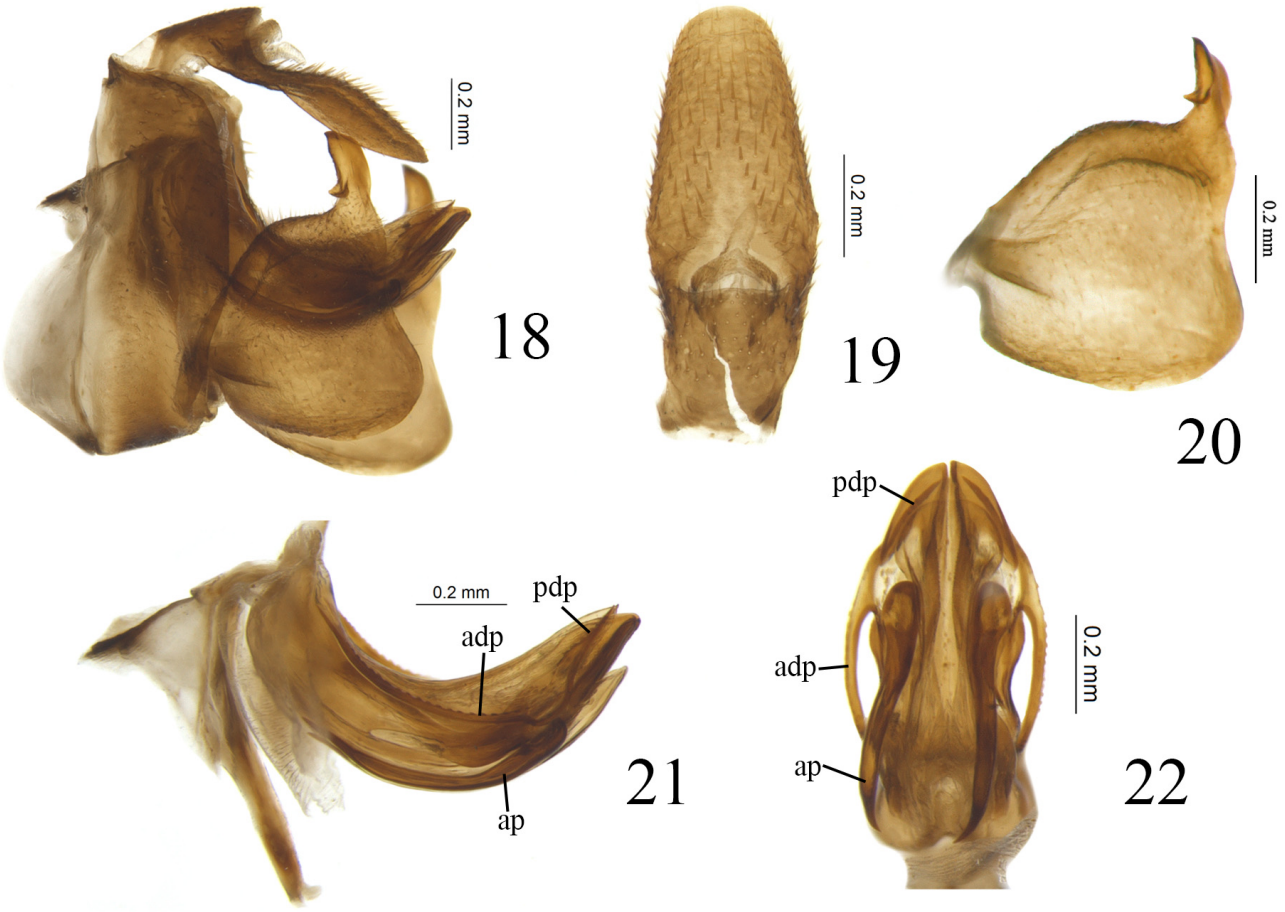
FIGURES 12–17. *Duplexissus punctatulus* **sp. n.**, male **12**. Habitus, dorsal view; **13**. Habitus, lateral view; **14**. Head and thorax, dorsal view; **15**. Habitus, frontal view; **16.** Forewing; **17.** Hind wing. Venation terminologies on Figs 16, 17 as in the text.

Male genitalia. Anal tube in lateral view with apical half broader (Fig. 18); in dorsal view long cylindrical, 2.4 times longer in midline than widest part, widest slightly below middle, apical margin shallowly roundly convex, lateral margins inclined outward in apical 2/3 then narrowing to base in basal 1/3 (Fig. 19); anal opening located at basal 1/3 of anal tube (Fig. 19). Pygofer in lateral view with dorsal margin slightly sloping posterior, posterior margin slightly convex (Fig. 18); tectiductus large and broad (Fig. 18). Gonostylus in lateral view widest at middle; dorsal margin sloping anterior at basal 2/3 and apical 1/3 straight, ventral margin with caudo-ventral angle deeply convex, posterior margin concave at middle (Figs 18, 20). Capitulum of gonostylus finger-shaped, antero-lateral margin with auriform process near base (Figs 18, 20). Periandrium dorsal lobe in lateral view with apex triangular and tip pointed, ventral margin obviously oblique (Fig. 21); bearing a pair of dentated processes originated from apical 1/4, this pair of processes with anterior part (adp) long, directed ~~to~~ cephalad, reaching basal 1/6 of periandrium and posterior part (pdp) short extending along the ventral margin of periandrium dorsal lobe and reaching the tip of the periandrium dorsal lobe (Fig. 21); anterior part of dentated processes (adp) in ventral view slightly convex to outwardly at middle (Fig. 22). Periandrium lateral lobe a little longer than dorsal lobe, apex rounded in lateral view, ventral margin strongly sclerotized (Fig. 21); in ventral view apical margin rounded with median bifurcate (Fig. 22). Periandrium ventral lobe almost the same length with dorsal lobe, apex pointed in lateral view (Fig. 21), in ventral view with apical margin fan-shaped (Fig. 22). Aedeagus with pair of long spinous processes (ap) originated from apical 1/4 extending along the ventral margin of periandrium reaching the basal 1/4 of periandrium (Fig. 21), in ventral view this pair of processes directed downward (Fig. 22).

Type materials. Holotype: ♂, China, Yunnan Province, Xishuangbanna, Mengla county, Menglun, N 21° 57′ 9.53″, E 101° 12′ 3.05″, 781 m, 13 viii 2011, coll. Guo Zheng (IZCAS).

Paratypes: 3♂♂, same data as holotype (IZCAS).

Note. This species refers to the taxon "*Eusarima* sp. 3" on the phylogeny tree in Wang *et al.* (2016). The Genbank accession numbers of the whole 18S, 28S (D3–D5), 28S (D6–D7), COXI and Cytb are available from Wang *et al.* (2016).



FIGURES 18–22. *Duplexissus punctatulus* **sp. n.**, male **18**. Genitalia, lateral view; **19**. Anal tube, dorsal view; **20**. Gonostylus, lateral view; **21**. Phallic complex, lateral view; **22**. Phallic complex, ventral view. Abbreviations: adp: anterior part of dentated processes on periandrium dorsal lobe; pdp: posterior part of dentated processes on periandrium dorsal lobe; ap: processes on aedeagus.

Discussion

Sarimini tribe constitutes an oriental Issidae lineage, the biology of which remains almost unknown: the genus *Eusarima* mainly feeds on host plants belonging to Apiales, Celastrales, Ericales, Fagales, whereas *Sarima* utilizes Fagales (Bourgoin, 2019). Sarimini taxa are widely distributed, and the current profile of their specific richness (26 genera including the two new genera described here) ranges the tribe between 70° to 180° of longitude and mainly in the northern hemisphere from -5° to 45° of latitude (Bourgoin, 2019), which corresponds to the Australian, Oceanian (Fiji), Oriental, Sino-Japanese, Palaearctic (Mongolia) and Saharo-Arabian (Iran, Pakistan) in Holt (2013)'s zoogeographic realms.

Like all Issidae tribes (sec. Wang *et al.*, 2016), Sarimini started to diversify at least during the Cretaceous, and molecular calibration analysis even originated the lineage during the lower Cretaceous (106 Mya, Bourgoin *et al.*, 2018). We don't exclude therefore that some genera of the tribe that will be described in the future might have dispersed in the Nearctic. Indeed, New World taxa currently included in Thioniinae (sec. Wang *et al.*, 2016) form a group of mixed lineages according to our current knowledge. An example can be here, the genus *Picumna* Stål, 1864, which was shown to be closer to Oriental Hemisphaeriinae (sec. Wang *et al.*, 2016) than to New world Thioniinae.

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