

A New Genus of the Tribe Eporini (Hemiptera: Fulgoromorpha: Tropicuchidae) with Description of Three New Species from Yunnan, China

Author(s): Zhimin Chang and Xiangsheng Chen

Source: Florida Entomologist, 97(4):1602-1612.

Published By: Florida Entomological Society

DOI: <http://dx.doi.org/10.1653/024.097.0434>

URL: <http://www.bioone.org/doi/full/10.1653/024.097.0434>

BioOne (www.bioone.org) is a nonprofit, online aggregation of core research in the biological, ecological, and environmental sciences. BioOne provides a sustainable online platform for over 170 journals and books published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Web site, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/page/terms_of_use.

Usage of BioOne content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

A NEW GENUS OF THE TRIBE EPORINI (HEMIPTERA: FULGOROMORPHA: TROPIDUCHIDAE) WITH DESCRIPTION OF THREE NEW SPECIES FROM YUNNAN, CHINA

ZHIMIN CHANG^{1,2} AND XIANGSHENG CHEN^{1,2,3*}

¹Institute of Entomology/Special Key Laboratory for Development and Utilization of Insect Resources, Guizhou University, Guiyang, Guizhou, 550025, P. R. China

²The Provincial Key Laboratory for Agricultural Pest Management of Mountainous Regions, Guizhou University, Guiyang, Guizhou, 550025, P. R. China

³College of Animal Science, Guizhou University, Guiyang, Guizhou, 550025, P. R. China

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

ABSTRACT

A new tropiduchid genus of the tribe Eporini (Hemiptera: Fulgoromorpha: Tropicuchidae) is described from Yunnan Province, China: *Paraepora* Chang & Chen **gen. nov.**. Three new species: *P. bifurca* Chang & Chen, **sp. nov.**, *P. cultellata* Chang & Chen, **sp. nov.** and *P. tegula* Chang & Chen, **sp. nov.**, are described and illustrated. A checklist and key to the genera in tribe Eporini, and a key to species of the genus *Paraepora* are given.

Key Words: Fulgoroidea, taxonomy, Oriental region, planthopper

RESUMEN

Se describe un nuevo género, *Paraepora* Chang y Chen **gen. nov.** de la familia Tropicuchidae y tribu Eporini (Hemiptera: Fulgoromorpha: Tropicuchidae) de la provincia de Yunnan, China. Se describen e ilustran tres especies nuevas: *P. bifurca* Chang y Chen, **sp. nov.**, *P. cultellata* Chang y Chen, **sp. nov.** y *P. tegula* Chang y Chen, **sp. nov.** Se provee una lista de verificación, una clave para los géneros de la tribu Eporini y una clave de las especies del género *Paraepora*.

Palabras Clave: Fulgoroidea, taxonomía, región Oriental, chicharrita, salta plantas

The planthopper tribe Eporini Fennah (1982) (Hemiptera: Fulgoromorpha: Tropicuchidae) is relatively small group comprised of 12 genera and 24 species (Stål 1866; Melichar 1914; Distant 1917; Synave 1961; Fennah 1982; Williams 1981; Men et al. 2011). The tribe mainly occurs in the Oriental region and Neotropical region. General characteristics of the tribe are as follows: frons unicarinate, posterior margin of mesoscutellum angulate; tegmen macropterous or brachypterous, in macropterous M vein not associated with Cu₁ basally, but in brachypterous usually so; nodal and subapical lines present; clavus extending two-thirds of length of tegmen; gonostyli symmetrical; first valvula of ovipositor devoid of teeth on ventral margin and with 2-4 teeth on dorsal margin; third valvula with teeth at apex and none on ventral margin. The tribe has consisted of 12 genera, which are presented in this report.

However, in the course of studying materials of the family Tropicuchidae from Yunnan Province, China, a new tropiduchid genus of the tribe

Eporini was described, i.e., *Paraepora* **gen. nov.**. Also 3 new species: *P. bifurca* **sp. nov.**, *P. cultellata* **sp. nov.** and *P. tegula* **sp. nov.**, were described and illustrated. A checklist and key to the genera in the tribe Eporini, and a key to species of the genus *Paraepora* **gen. nov.** are given. So far, 13 genera are included in the tribe Eporini.

MATERIALS AND METHODS

Morphological terminology follows Bourgoïn & Huang (1990). Dry specimens were used for the descriptions and illustrations. External morphology was observed by a stereoscopic microscope and characters were measured with an ocular micrometer. Measurements are given in millimeters. The genital segments of the examined specimens were macerated in 10% KOH, then washed in water and transferred to glycerin. Illustrations of the specimens were made by a Leica MZ 12.5 stereomicroscope. Photographs were taken by 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 and material examined are deposited in the Institute of Entomology, Guizhou University, Guiyang, China (GUGC).

CHECKLIST OF THE WORLD EPORINI

- Clardeina Fennah, 1982
Aethomyctus Williams, 1981
A. viridis Williams, 1981 — Mauritius.
Clardea Signoret, 1862
C. nigrostriata Synave, 1961 — Mauritius.
C. notatula Stål, 1866 — Reunion.
C. unicolor Signoret, 1862 — Mauritius, Reunion.
Conchyoptera Signoret, 1860
C. unicolor Signoret, 1860 — Mauritius, Reunion, Madagascar.
Cuneiceps Williams, 1981
C. insularis Williams, 1981 — Mauritius, Reunion.
Cyrtomycta Williams, 1981
C. perisema Williams, 1981 — Mauritius.
Daradaxoides Distant, 1917
D. mahensis Distant, 1917 — Seychelles.
Idiomycetus Williams, 1981
I. nigrostriatus (Synave, 1961) — Mauritius.
I. notatulus (Stål, 1866) — Reunion.
I. simus Williams, 1981 — Mauritius.
Pseudoclardea Williams, 1981
P. leguati (Muir, 1925) — Mauritius (Rodriguez).
Stiborus Melichar, 1903
S. viridis Melichar, 1903 — Sri Lanka (Peradeniya)
Eporina Fennah, 1982
Epora Walker, 1857
E. bilemisca Qin & Men, 2010 — China (Hainan, Guangdong).
E. biprolata Men & Qin, 2011 — China (Hainan, Fujian).
E. callosa Fennah, 1978 — Vietnam.
E. hainanensis Chou & Wang, 1985 — China (Hainan).
E. laticeps Fennah, 1970 — Philippine (Palawan).
E. montana Distant, 1912 — India (Nilgiri Hills, Bengal, Calcutta).
E. stenops Fennah, 1970 — Philippine (Palawan).
E. subtilis Walker, 1857 — Sri Lanka (Bogawantalawa).
E. themisto Fennah, 1970 — Philippine (Tawi Tawi).
Eporiella Melichar, 1914
E. ceylonica Melichar, 1914 — Sri Lanka.
Mesepora Matsumura, 1914
M. onuhii Matsumura, 1914 — China (Hainan, Taiwan), Japan.
Paraepora Chang & Chen **gen. nov.**
P. bifurca Chang & Chen **sp. nov.** — China (Yunnan).
P. cultellata Chang & Chen **sp. nov.** — China (Yunnan).
P. tegula Chang & Chen **sp. nov.** — China (Yunnan).

KEY TO GENERA OF EPORINI

1. Vertex with posterior margin broadly concave 2
- Vertex with posterior margin angulately concave 6
2. Forewings without transverse veins in cross cell *Eporiella*
- Forewings with transverse veins in cross cell 3
3. Forewings with numerous short longitudinal veins, form reticular veins in apical margin *Mesepora*
- Forewings without numerous short longitudinal veins, not form reticular veins 4
4. Forewings less 2.0 times longer than of the maximum width *Stiborus*
- Forewings more 2.2 times longer than the maximum width 5
5. Pronotum with 2 median carinae *Epora*
- Pronotum with one median carina *Paraepora* **gen. nov.**

- 6. Vertex obviously projecting before the eyes, more 2.0 times longer in middle than the breadth 7
- Vertex slightly projecting before the eyes, less 2.0 times longer in middle than wide 9
- 7. Forewings widest at or before the middle, then narrowing gradually *Conchyoptera*
- Forewings widest beyond the middle or at apex 8
- 8. Forewings with numerous irregular short veins in membrane *Cyrtomycta*
- Forewings with two ranks of transverse veins in membrane, form apical cells and subapical cells *Daradaxoides*
- 9. Forewings with incomplete transverse veins in cross cell 10
- Forewings with complete transverse veins in cross cell 12
- 10. Forewings with costal area wider than costal cell *Cuneiceps*
- Forewings with costal area narrower than costal cell 11
- 11. Forewings with apical cells small; vertex with complete median carina *Pseudoclardea*
- Forewings with apical cells big; vertex with incomplete median carina *Clardea*
- 12. Hind tibiae with 7 apical spines; 6 spines on first metatarsal segment *Idiomyctus*
- Hind tibiae with 6 or 7 apical spine; 5 spines on first metatarsal segment *Aethomyctus*

Taxonomy

Eporini Fennah, 1982

Eporina Fennah, 1982

Paraepora Chang & Chen, **gen. nov.**

Type Species

Paraepora bifurca Chang & Chen, **sp. nov.**, here designated.

Description

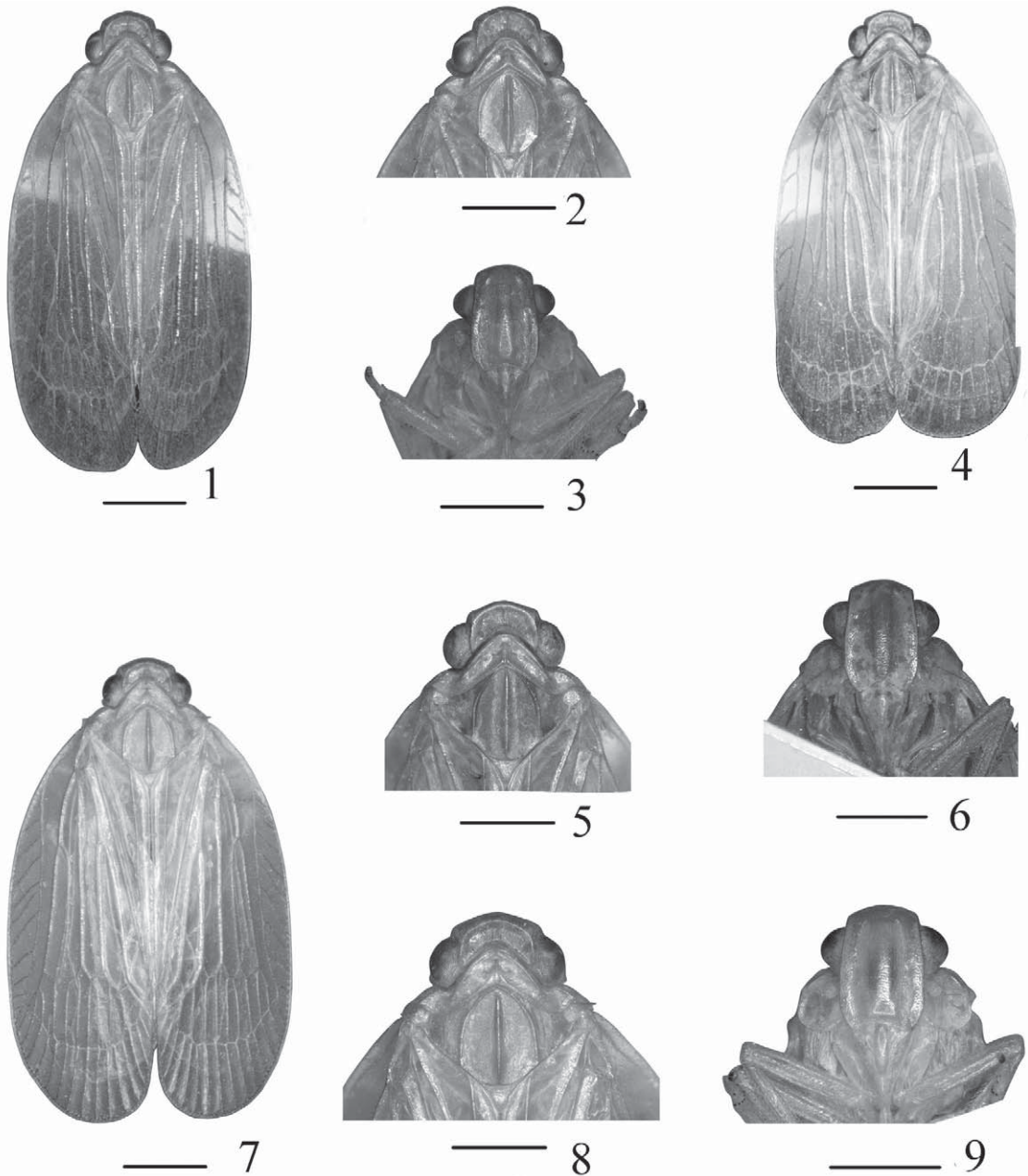
Medium-sized troiduchids. Body length (from apex of vertex to tip of forewings): male 6.8-7.6 mm, female 7.3-8.4 mm.

Coloration. General color light green or yellow green (Figs. 1, 4, 7). Forewings translucent. Compound eyes brown, ocelli yellow green (Figs. 2, 5, 8). Tips of spines on hind tibiae and tarsi black.

Head and Thorax. Head with eyes narrower than pronotum, produced in front of eyes and apically rounded. Vertex (Figs. 16, 26, 36) more 2.0 times broader than long in middle line; anterior margin archly convex, lateral margins ridged and subparallel, posterior margin concave; disc depressed, with two subtle median carinae, not reaching anterior margin. Frons (Figs. 18, 28, 38) longer than broad, widest at apical fourth, with a distinct median carina, disc depressed between median carina and lateral margins, lateral margins slightly ridged, frontoclypeal suture distinctly arched. Clypeus with median carina, without lateral carinae. Rostrum long, reaching between hind coxae. Compound eyes oval, ocelli small.

Antenna with scape short, ring-like; pedicel subglobose. Pronotum (Figs. 16, 26, 36) tricarinate, longer than vertex in middle line; anterior margin distinctly arched, posterior margin obtusely excavated, lateral carinae converging anteriorly; median carina distinctly ridged, not reaching anterior margin, with a short subcarinae between eyes and tegulae on each side. Mesonotum (Figs. 16, 26, 36) tricarinate, median carina straight, reaching to the mesoscutellum, lateral carinae curving anteriorly towards median carina. Forewings (Figs. 19, 29, 39) subhyaline, less than 2.5 times as long as the maximum width, widest at level of nodal line, anterior margin slightly arched, posterior margin straight, rounded apically; corium smooth, without granulation, costal cell broader, with sparse oblique transverse veinlets, Sc+R veins forked basad of middle of forewing, and Cu veins bifurcated in basal quarter, M veins simply reaching to nodal line, claval veins uniting in middle of clavus, nodal line and subapical line distinct, forming 7-9 subapical cells and 11-15 apical cells. Hind wing (Figs. 20, 30, 40) hyaline, simple. Hind tibia with 3 lateral spines, spinal formula of hind leg 7-7-2.

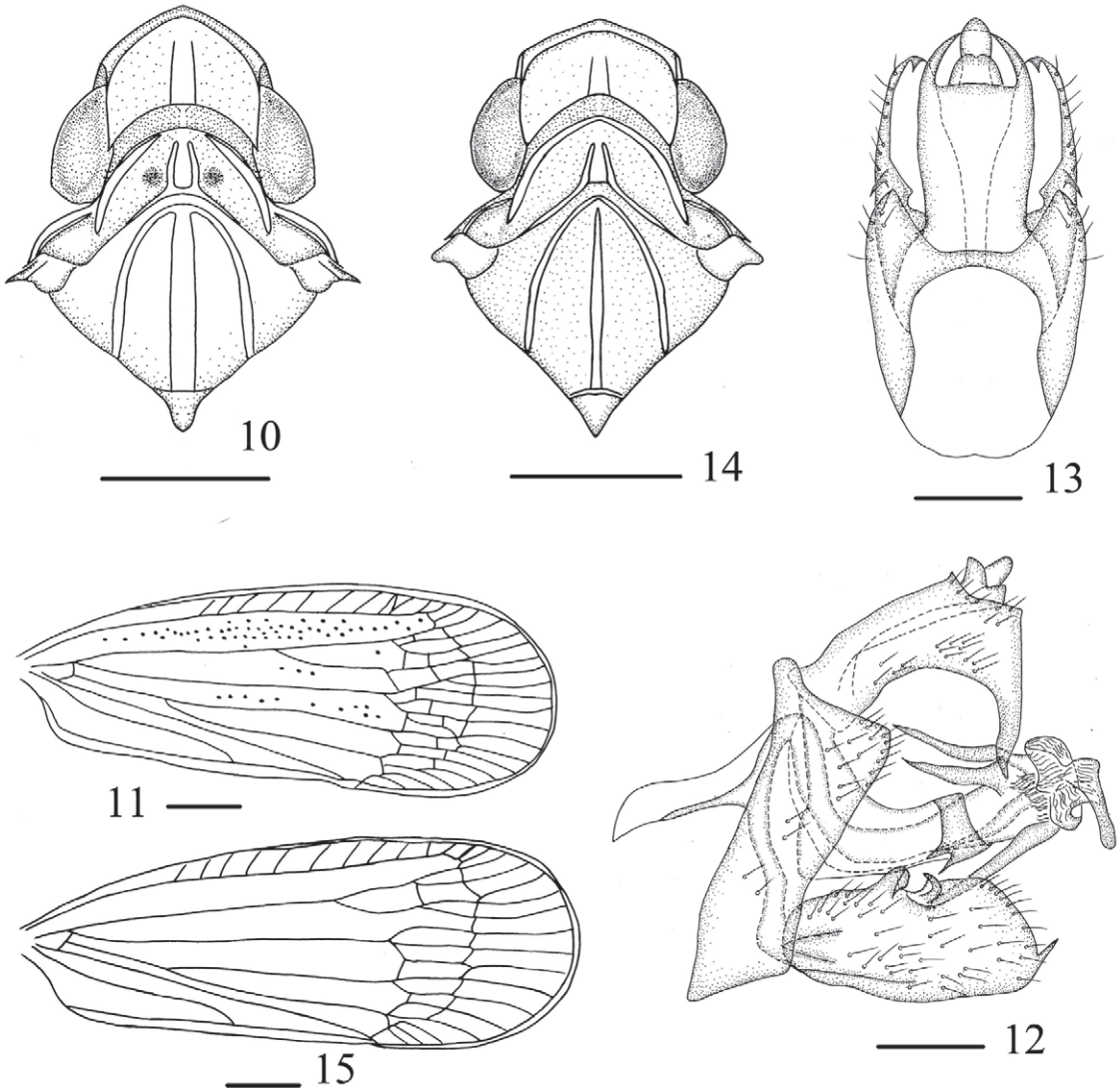
Male Genitalia. Pygofer (Figs. 21, 31, 41) bilaterally symmetrical, irregularly subquadrate in side profile, dorsal margin broad, ventral margin narrow, dorsal margin inclining to the ventrad. Anal tube (Figs. 21-22, 31-32, 41-42) symmetrical, relatively long, surpassing or not apex of aedeagus; anal styles relatively elongate, surpassing or not apex of anal tube in dorsal view. Gonostyli (Figs. 21-23, 31-33, 41-43) symmetrical, elongate; in lateral view, basal part narrower than breadth, the apical aspect



Figs. 1-9. Dorsal and ventral habitus of *Paraepora* Chang & Chen **gen. nov.** species. (Figs. 1-3), *P. bifurca* Chang & Chen **sp. nov.**; (Figs. 4-6), *P. cultellata* Chang & Chen **sp. nov.**; (Figs. 7-9) *P. tegula* Chang & Chen **sp. nov.**. Scale bars = 1.0 mm.

round, with a stout triangular process on upper margin at base or in middle, beyond this process with a hooked process, lateroventrally directed, dorsal margin with a hooked-triangular process near apex, pointing medially. Aedeagus (Figs. 24-25, 34-35, 44-45) elongate, tube-like, membranous, narrow

at base, distinctly expanded at apex, with several different processes. Periandrium (Figs. 24-25, 34-35, 44-45) tube-like, well developed, surrounding aedeagus medially, with different process at apex. Corpus connective (Figs. 24-24, 34-35, 44-45) stout, with a subtriangular plate-shaped process.



Figs. 10-15. Genus *Epورا* Walker, 1857; (Figs. 10-13) *Epورا hainanensis* Chou & Wang, 1985; Figs. 14-15. *Epورا biprolata* Men & Qin, 2011; (10) Head and thorax, dorsal view; (11) Forewing; (12) Male genitalia, lateral view; (13) Same, dorsal view; (14) Head and thorax, dorsal view; (15) Forewing. Scale bars = 1.0 mm (Figs. 10-11, 14-15), 0.5 mm (Figs. 12-13).

Etymology

The genus name, which is feminine, is a combination of “para-” (which means parallel, beside or near) and “*Epورا*” (name of a similar genus), indicating that the new genus is similar to the genus *Epورا* Walker.

Host Plant

Unknown.

Distribution

China (Yunnan).

Remarks

This new genus is similar to *Epورا* Walker, 1857, in: i) vertex broader at base than long in midline, with subtle median carina or no carina (Figs. 2, 5, 8, 11); ii) forewings with complete oblique transverse veinlets in costal cell, with two ranks of transverse veins in membrane, forming

apical cells and subapical cells (Figs. 12, 15, 19, 29, 39); iii) gonostyli with a triangular process on upper margin, with a hooked process, lateroventrally directed (Figs. 13-14, 21-22, 31-32, 41-42). But this new genus can be distinguished from the latter by: i) pronotum with one median carina, not reaching anterior margin (pronotum with two median carinae in *Epora*) (Figs. 2, 5, 8, 11); ii) forewings less than 2.5 times as long as their maximum width, costal cell broad, with 6-8 oblique transverse veinlets (forewings more 2.5 times longer than the maximum width, costal cell narrower, with 13-16 oblique transverse veinlets in *Epora*) (Figs. 12, 15, 19, 29, 39); iii) gonostyli long, dorsal margin with a hooked-triangular process near apex (gonostyli short, usually not reaching to the tip of anal tube in *Epora*) (Figs. 13-14, 21-22, 31-32, 41-42).

Paraepora bifurca Chang & Chen, **sp. nov.**
(Figs. 1-3, 16-25)

Description

Measurements. Body length (from apex of vertex to tip of forewings): male 6.8-6.9 mm ($N = 6$), female 7.7-7.8 mm ($N = 5$).

Coloration. General color yellow green. Compound eyes brown, ocelli yellow green. Tips of spines on hind tibiae and tarsi black.

Head and Thorax. Vertex (Fig. 16) broader than long in middle line (2.5:1.0). Frons (Fig. 18) longer in middle than maximum width (1.5:1.0), widest at apical fourth. Pronotum (Fig. 16) obviously wider than long in middle (5.4:1.0). Mesonotum (Fig. 16) wider than long in middle (1.4:1.0). Forewings (Fig. 19) anterior margin arched, posterior margin straight, costal cell with 5-7 short transverse veinlets, Sc+R forking about at basal 2/5, Cu₁ forking about at basal 1/4, with about 11 apical cells and 8 subapical cells, claval veins uniting middle of clavus. Hindwing with venation as in Fig. 20. Hind tibia with 3 lateral spines, spine formula of hind leg 7-7-2.

Male Genitalia. Pygofer (Fig. 21) narrow and high in lateral view, anterior margin concave on dorsal 1/3, posterior margin concave on ventral 1/4, lateral margins parallel. Anal tube (Figs. 21-22) relatively short, not reaching the apex of aedeagus; anal styles relatively elongate, just reaching to apex of anal tube in dorsal view. Gonostyli (Figs. 21-23) symmetrical, elongate, in lateral view, relatively long, basal part narrower than apical part, the apical margin round, with a stout triangular process on upper margin at basal 1/3, beyond this process with a hooked process, lateroventrally directed, dorsal margin with a hooked-triangular process near in middle, pointing inward. Aedeagus (Figs. 21, 24-25) elongate, tube-like, distinctly expanded and membranous, with a cystic component at apex on left side, with

a bifurcate process near apex in right view. Perianthrium (Figs. 24-25) tube-like, developed, surrounding aedeagus medially, with an acinaciform process at apex on left side, with a foliate plate in right side. Corpus connective stout, with a subtriangular plate-shape process.

Type Material

HOLOTYPE: ♂, CHINA: Bingzhongluo (N 28° 00' E 98° 37"), Gongshan County, Yunnan Province, 30-VII-2012, J.-K. Long; (GUGC). PARATYPES: 4 ♂♂, 4 ♀♀, same data as holotype; (GUGC). 1 ♂, Fugong County (N 27° 00' E 98° 51"), Yunnan Province, 25-VII-2012, Y.-G. Xiao; (GUGC). 2 ♂♂, 5 ♀♀, Pengdang (N 27° 57' E 98° 40"), Gongshan County, Yunnan Province, 29-VII-2012, J.-K. Long and Y.-G. Xiao (GUGC).

Etymology

The name is derived from the Latin word "bifurca" referring to the bifurcate process near the apex of aedeagus.

Host Plant

Unknown.

Distribution

China (Yunnan).

Remarks

This new species is distinguished from other species of this genus *Paraepora* **gen. nov.** by: i) aedeagus with a cystic component at apex in left side, with a bifurcate process near apex in right view; ii) perianthrium with an acinaciform process at apex in left side, and with a foliate plate in right side.

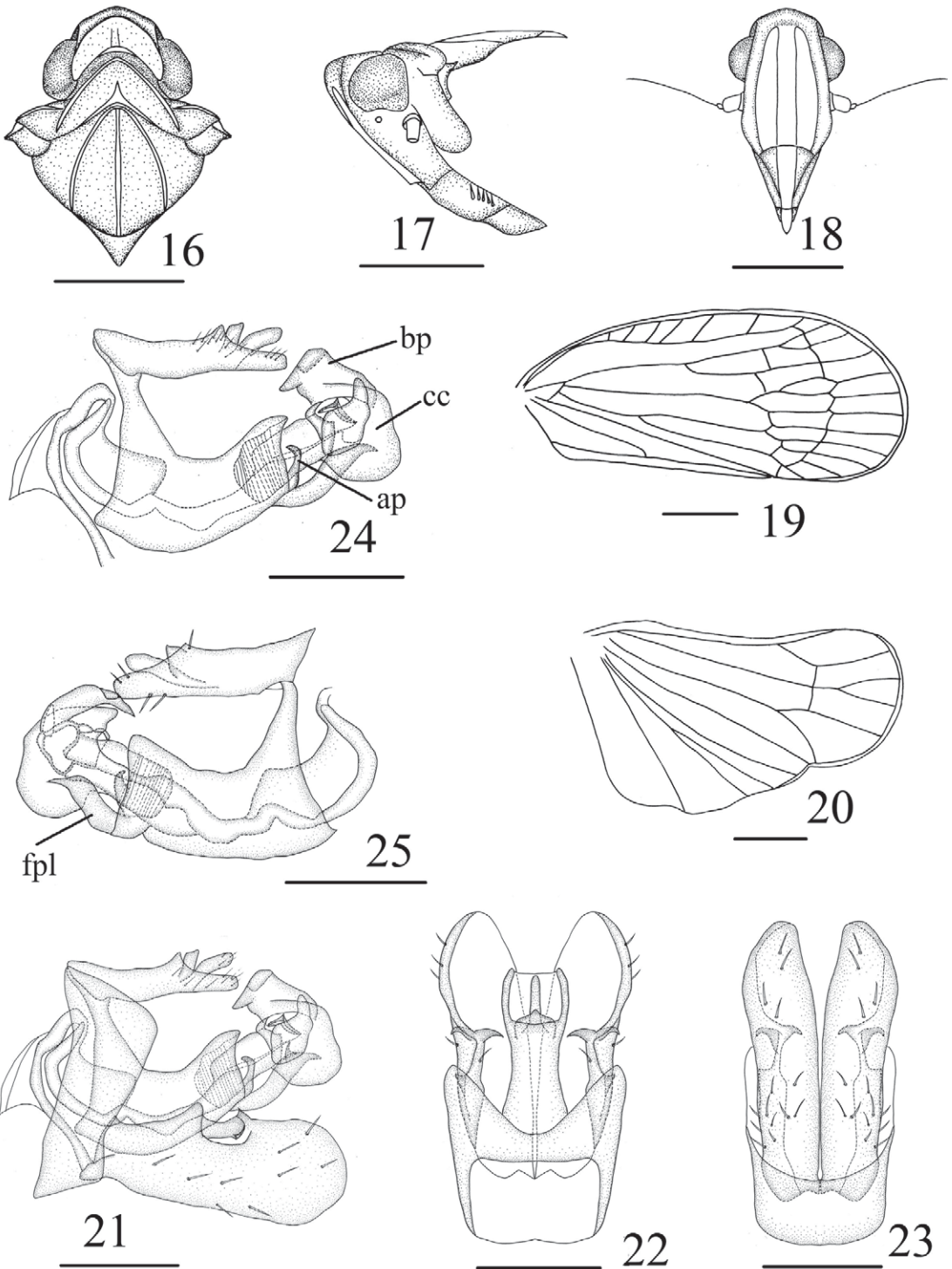
Paraepora cultellata Chang & Chen, **sp. nov.**
(Figs. 4-6, 26-35)

Description

Measurements. Body length (from apex of vertex to tip of forewings): male 7.4-7.5 mm ($N = 5$), female 8.2-8.4 mm ($N = 4$).

Coloration. General color green or yellow green. Compound eyes brown, ocelli yellow green. Tips of spines on hind tibiae and tarsi black.

Head and Thorax. Vertex (Fig. 26) broader than long in middle line (2.7:1.0). Frons (Fig. 28) longer in middle than maximum width (1.4:1.0), widest at apical fifth. Pronotum (Fig. 26) obviously wider than long in middle (5.2:1.0). Mesonotum (Fig. 26) wider than long in middle (1.4:1.0). Forewings (Fig. 29) anterior margin arched, posterior



Figs. 16-25. *Paraeopora bifurca* Chang & Chen **sp. nov.** (16) Head and thorax, dorsal view; (17) Same, lateral view; (18) Head, ventral view; (19) Forewing; (20) Hind wing; (21) Male genitalia, lateral view; (22) Same, dorsal view; (23) Same, ventral view; (24) Aedeagus and anal segment, left side; (25) Same, right side. Scale bars = 1.0 mm (Figs. 16-20), 0.5 mm (Figs. 21-25). Abbreviations: ap, acinaciform process; bp, bifurcate process; cc, cystic component; fpl, foliate plate.

margin straight, costal cell with 7-8 short transverse veinlets, Sc+R forking about at basal 2/5, Cu₁ forked near basal 1/4, with about 11 apical cells and 7-8 subapical cells, claval veins uniting middle of clavus. Hind wing with venation as in Fig. 30. Hind tibia with 3 lateral spines, spine formula of hind leg 7-7-2.

Male Genitalia. Pygofer (Fig. 31) narrow and high in lateral view, anterior margin concave on dorsal 1/2, posterior margin concave on ventral 2/3, dorsal margin 2.4 times broader than ventral margin. Anal tube (Figs. 31-32) relatively short, not reaching the apex of aedeagus; anal styles relatively elongate, just surpassing to apex of anal tube in dorsal view. Gonostyli (Figs. 31-33) symmetrical, elongate, in lateral view, relatively long, basal part narrower than apical part, the apical margin narrow, with a stout triangular process on dorsal margin at basal 1/2, beyond this process with a hooked process, lateroventrally directed, dorsal margin with a hooked-triangular process near apical 1/3, pointing inward. Aedeagus (Figs. 34-35) elongate, tube-like, distinctly expanded and membranous, with a cystic component at apex in left side, with a cultrated process near apex on right side. Periandrium (Figs. 34-35) tube-like, developed, surrounding aedeagus medially, with a falcate process at apex in left side, tip of the process truncate or acute, with a hooked process in right side. Corpus connective stout, with a subtriangular plate-shape process.

Type Material

HOLOTYPE: ♂, CHINA: Baihualing (N 25° 18' E 98° 48"), Gaoligong Mountain National Nature Reserve, Yunnan Province, 13~15-VI-2011, Y.-J. Li; (GUGC). **PARATYPES:** 4 ♂♂, 4 ♀♀, same data as holotype (GUGC).

Etymology

This new species is named for the presence of a cultrated process near apex of aedeagus in right side.

Host Plant

Unknown.

Distribution

China (Yunnan).

Remarks

This new species is similar to *P. bifurca* Chang & Chen, **sp. nov.**, but can be distinguished from the latter by: i) vertex broader than long in middle line (2.7:1.0); ii) aedeagus with a cultrated

process near apex in right side; iii) periandrium with a falcate process at apex in left side, with a hooked process in right side.

Paraepora tegula Chang & Chen, **sp. nov.**
(Figs. 7-9, 36-45)

Description

Measurement. Body length (from apex of vertex to tip of forewing): male 7.4-7.6 mm (*N* = 7), female 7.3-8.0 mm (*N* = 4).

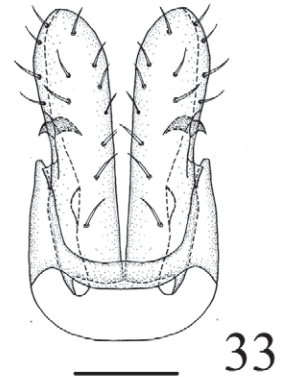
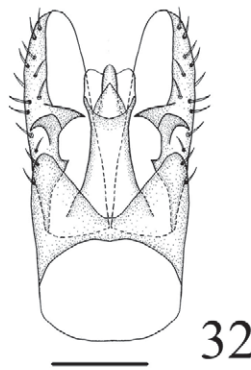
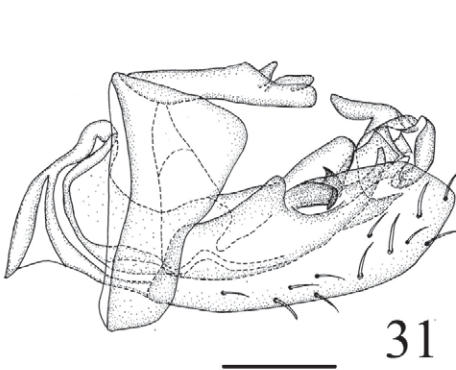
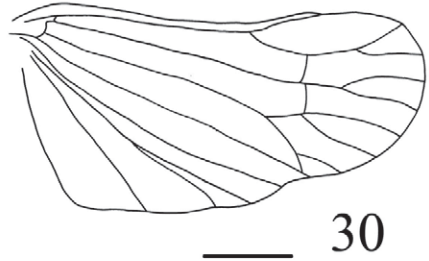
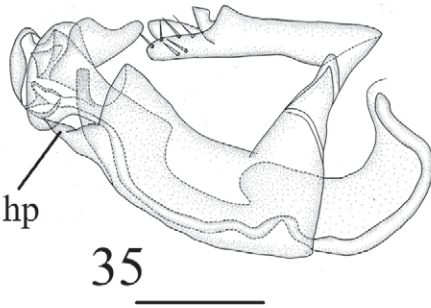
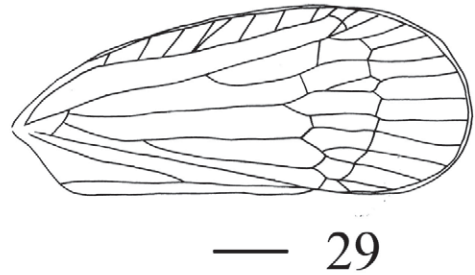
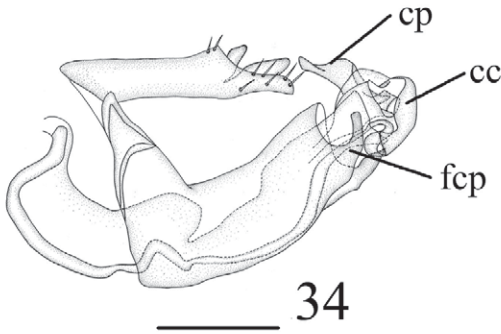
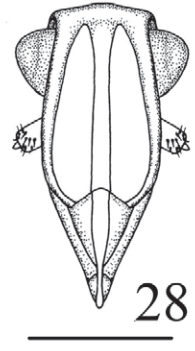
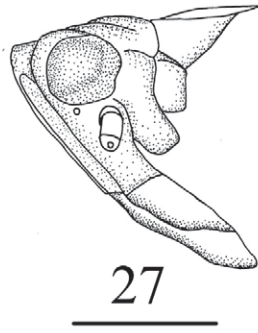
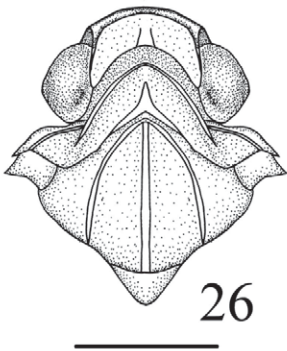
Coloration. General color yellowish green. Vertex, pronotum and mesonotum green. Compound eyes brown to black, ocelli yellow green. Tips of spines on hind tibiae and tarsi black.

Head and Thorax. Vertex (Fig. 36) broader than long in middle line (2.5:1.0). Frons (Fig. 38) longer in middle than maximum width (1.4:1.0), widest at apical fifth. Pronotum (Fig. 36) obviously wider than long in middle (5.1:1.0). Mesonotum (Fig. 36) wider than long in middle (1.5:1.0). Forewing (Fig. 39) about 2.4 times longer than the widest part, anterior margin arched, posterior straight, costal cell with 7-8 short transverse veinlets, Sc+R forked near basal 1/3, Cu₁ forked near basal 1/3, with about 15 apical cells and 9 subapical cells, claval veins unite at middle of clavus. Hind wing with venation as in Fig. 40. Hind tibia with 3 lateral spines, spine formula of hind leg 7-7-2.

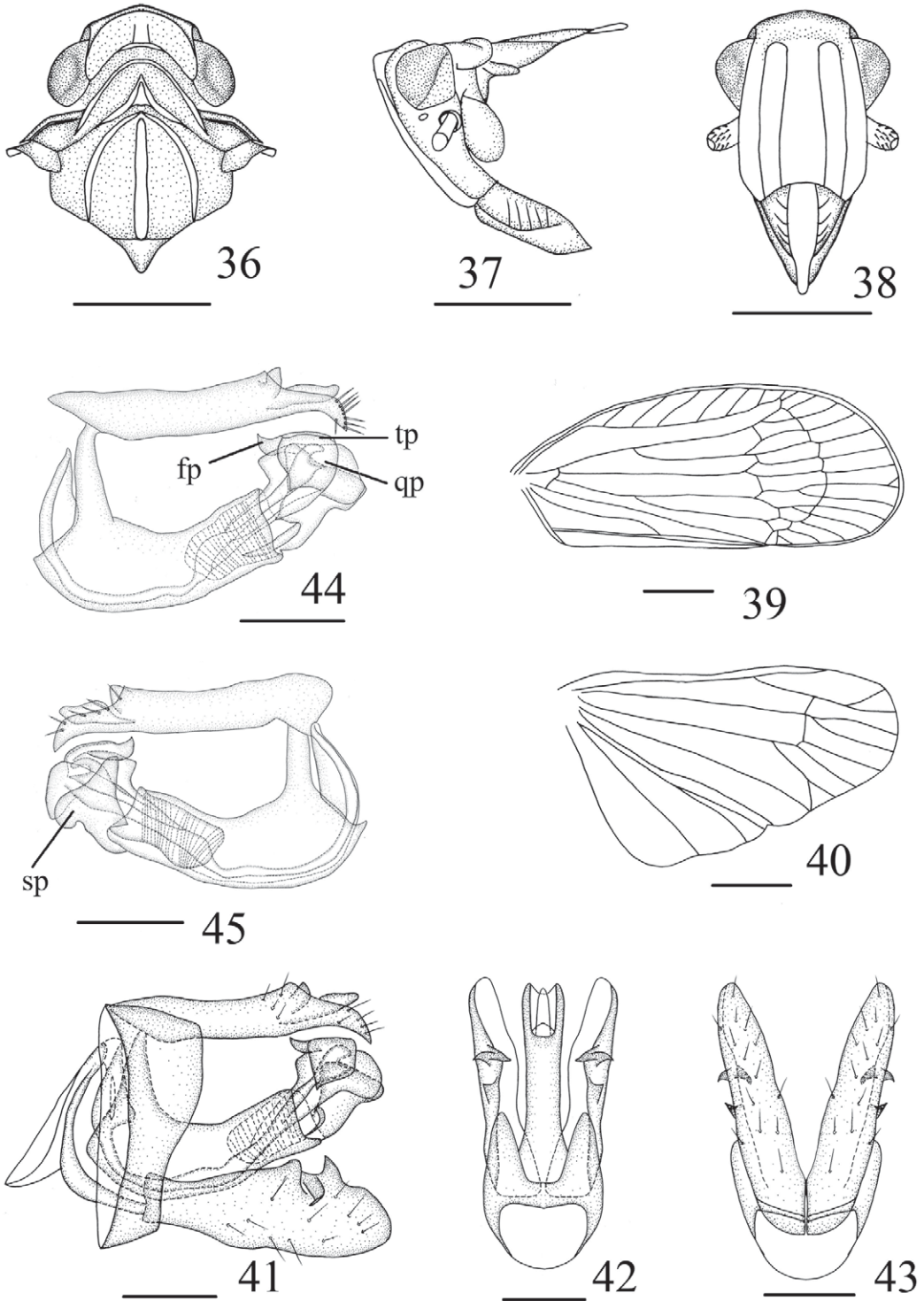
Male Genitalia. Pygofer (Fig. 41) irregularly subquadrate in lateral view, anterior margin moderately concave, posterior margin concave on ventral 1/3, dorsal margin broad, ventral margin narrow. Anal tube (Figs. 41-42) elongate, reaches to apex of aedeagus, dorsal margin and ventral margin parallel, ventral margin bent ventrad in apical 1/5, with a sharp point in lateral view; lateral margins parallel in dorsal view; anal styles relatively long, slightly surpass apex of anal tube in dorsal view. Gonostyli (Figs. 41-43) elongate, expanded at basal 1/3 then narrowing toward the apex in lateral view, with median triangular process in apical 2/5 and a hook-like process produced in dorsolateral side, pointing outward, with a distinct triangular process in apical 1/5, directed inward. Aedeagus (Figs. 44-45) tubular, apex of aedeagus expanded membranous, with tegular process in dorsal margin, with a quadrangular process in left view, with one foliate process in right view. Periandrium (Figs. 44-45) asymmetrical, well developed, tubular, surrounding aedeagus in basal 3/4, with an irregular sheet-like process in right view.

Type Material

HOLOTYPE: ♂, CHINA: Baoshan city (N 25° 12' E 99° 08", 1,946 m), Yunnan Province, China, 21-VIII-2006, Q.-Z. Song and Y. Tang; (GUGC).



Figs. 26-35. *Paraepora cultellata* Chang & Chen **sp. nov.** (26) Head and thorax, dorsal view; (27) Same, lateral view; (28) Head, ventral view; (29) Forewing; (30) Hind wing; (31) Male genitalia, lateral view; (32) Same, dorsal view; (33) Same, ventral view; (34) Aedeagus and anal segment, left side; (35) Same, right side. Scale bars = 1.0 mm (Figs. 26-30), 0.5 mm (Figs. 31-35). Abbreviations: cc, cystic component; cp, cultrated process; fcp, falcate process; hp, hooked process.



Figs. 36-45. *Paraepora tegula* Chang & Chen **sp. nov.** (36) Head and thorax, dorsal view; (37) Same, lateral view; (38) Head, ventral view; (39) Forewing; (40) Hind wing; (41) Male genitalia, lateral view; (42) Same, dorsal view; (43) Same, ventral view; (44) Aedeagus and anal segment, left side; (45) Same, right side. Scale bars = 1.0 mm (Figs. 36-40), 0.5 mm (Figs. 41-45). Abbreviations: fp, foliate process; qp, quadrangular process; sp, sheet process; tp, tegular process.

PARATYPES: 8 ♂♂, 4 ♀♀, same data as holotype (GUGC). Remarks

Host Plant

Unknown.

Distribution

China (Yunnan).

Etymology

The specific name refers to the Latin word "tegula", meaning the aedeagus with tegular process in dorsal margin.

This new species is similar to *P. bifurca* Chang & Chen, **sp. nov.** and *P. cultellata* Chang & Chen, **sp. nov.**, but can be distinguished from those 2 species by the following traits: i) forewings with 9 subapical cells and 15 apical cells; ii) apex with tegular process in dorsal margin, with a quadrangular process in left view, with one foliate process in right view; iii) periandrium with an irregular sheet-like process in right view.

KEY TO THE SPECIES OF THE GENUS *PARAEPORA* GEN. NOV.

- 1. Apex of periandrium without any process in left side, with an irregular sheet-like process in right side (Figs. 44-45) *P. tegula* **sp. nov.**
- Apex of periandrium with 2 diverse processes 2
- 2. Aedeagus with a bifurcate process near apex in right side; periandrium with an acinaciform process at apex in left side, with a foliate plate in right side (Figs. 24-25) *P. bifurca* **sp. nov.**
- Aedeagus with a cultrated process near apex in right side, periandrium with a falcate process at apex in left side, with a hooked process in right side (Figs. 34-35) *P. cultellata* **sp. nov.**

ACKNOWLEDGMENTS

This research was supported by the National Natural Science Foundation of China (No. 31060290, 31093430, 31160163), by China Postdoctoral Science Foundation Program of Science and Technology, and by the International Science and Technology Cooperation Program of Guizhou (20107005).

REFERENCES CITED

BOURGOIN, T., AND HUANG, J. 1990. Morphologie Comparée des Genitalia Mâles des Trypetimorphini et Remarques Phylogénétiques (Hemiptera: Fulgoro-morpha: Tropicuchidae). Ann. Soc. entomol. France 26: 555-564.

DISTANT, W. L. 1917. Rhychota. Part II: Suborder Homoptera. The Percy Sladen Trust Expedition to the Indian Ocean in 1905, under the leadership of Mr. J. Stanley Gardiner, M. A. Trans. Linnean Soc. London. Second series. Zoology 17: 273-322.

FENNAH, R. G. 1982. A tribal classification of the Tropiduchidae (Homoptera: Fulgoroidea), with the description of a new species on tea in Malaysia. Bull. Entomol. Res. 72: 631-643.

MELICHAR, L. 1914. Monographie der Tropiduchinen (Homoptera). Verhandlungen des Naturforschenden Vereins in Brünn 53: 1-145.

MEN, Q.-L., FENG, J.-N., AND QIN, D.-Z. 2011. The planthopper genus *Epora* Walker (Hemiptera: Fulgoroidea: Tropiduchidae) from China with description of one new species. Zootaxa 2803: 32-40.

STÅL, C. 1866. Hemiptera Homoptera Latr. Hemiptera Africana 4: 1-276.

SYNAVE, H. 1961. Homoptères de l'Angola. Publicações Culturais, Companhia de Diamantes de Angola (Diamang), Lisboa 52: 83-104.

WANG, R.-R., AND LIANG, A.-P. 2011. Taxonomic review of the genus *Tambinia* Stål (Hemiptera, Fulgoro-morpha, Tropicuchidae) with descriptions of four new species from the Pacific Region. Zookeys 132: 13-31.

WILLIAMS, J.-R. 1981. Tropiduchidae (Fulgoroidea: Homoptera) from the Mascarenes. J. Entomol. Soc. Southern Africa 44(1): 109-130.