

RESEARCH PAPER

## New taxa and new records of Erythroneurini from China (Hemiptera: Cicadellidae: Typhlocybinae)

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**Abstract.** Two new genera of the leafhopper tribe Erythroneurini, *Hamata* gen. nov. and *Levigata* gen. nov., are established based on type species from Yunnan, China: *Hamata coralliformis* sp. nov. and *Levigata arborea* sp. nov., respectively. Two additional new species, *Gladkara bifida* sp. nov. from Yunnan and *Thapaia tibetensis* sp. nov. from Tibet, are described and illustrated and amended descriptions of their respective genera are provided. A new synonymy is suggested: *Elbelus tripunctatus* Mahmood, 1967 = *Elbelus melianus* Kuoh, 1992, syn. nov. Eleven species of nine erythroneurine genera are newly recorded from China: *Arboridia* (*Arboridia*) *kakogawana* (Matsumura, 1932), *A. (A.) suputinkaensis* (Vilbaste, 1968), *Balanda kara* Dworakowska, 1979, *Dorycnia vietnamica* Dworakowska, 1979, *Gambialoa* (*Gambialoa*) *borealis* Dworakowska, 1981, *Gladkara albida* Dworakowska, 1995, *Seriana dentata* Sohi & Mann, 1992, *S. malaica* Dworakowska, 1978, *Tautoneura mukla* Dworakowska, 1981, *Yakuza sumatrana* Dworakowska, 2002, and *Ziczacella lyrifera* (Dlabola, 1968). Additional faunistic data and illustrations are provided for the following species from China: *Arboridia* (*Arboridia*) *agrillacea* (Anufriev, 1969), *A. (A.) lunula* Song & Li, 2013, *A. (A.) maculifrons* (Vilbaste, 1968), *A. (A.) suzukii* (Matsumura, 1916), *Arboridia* (*Arborifera*) *surstyli* Cai & Xu, 2006, *Gambialoa* (*Gambialoa*) *asiatica* Dworakowska, 1979, *Kaukania anser* Dworakowska, 1972, *Seriana indefinita* Dworakowska, 1971, *S. ochrata* Dworakowska, 1971, *Ziczacella dworakowskiae* (Anufriev, 1970), *Z. heptapotamica* (Kusnezov, 1928), and *Z. steggerdai* (Ross, 1965).

**Key words.** Auchenorrhyncha, Cicadomorpha, Membracoidea, leafhopper, morphology, taxonomy, new genus, new species, distribution, Asia, Oriental Region, Palearctic Region

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### Introduction

Erythroneurini is the largest tribe of the microleafhopper subfamily Typhlocybinae, comprising 198 genera and ~2000 described species (DMITRIEV 2003, SONG et al. 2016, SONG & LI 2017), including several important agricultural pests and invasive species (AHMED 1970, CHIANG & KNIGHT 1990, DUSO et al. 2005, SONG & LI 2014, OH et al. 2015, KWADJO et al. 2018). The tribe was established by YOUNG (1952) based on the venation of the hind wing, particularly the absence of a submarginal vein, fusion of the posterior branch of R with the anteri-

or branch of M, and an unbranched vannal vein. YOUNG (1952) included only three genera in the tribe but focused exclusively on the New World fauna. His concept of the tribe has remained stable, but subsequent study of the Old World fauna, primarily by DWORAKOWSKA (1970a and subsequent papers), led to the discovery of many new genera and species, and narrower concepts of previously large, heterogeneous genera such as *Erythroneura* Fitch, 1851 and *Zygina* Fieber, 1866. Erythroneurini are distributed worldwide but most diverse in the Oriental Region (DIETRICH & DMITRIEV 2006).



The Chinese fauna of Erythroneurini is highly diverse. The first attempt to review the fauna was that of CHIANG & KNIGHT (1990), who focused on Taiwan and recognized 50 species in 20 genera. Since 2005, knowledge of the fauna of mainland China has increased dramatically. To date, 50 genera have been reported from China (SONG et al. 2016), and new taxa continue to be discovered. In this paper, five erythroneurine genera and fifteen species are newly reported from China, of which two genera and four species are described as new. Two genera, *Gladkara* Dworakowska, 1995 and *Thapaia* Dmitriev & Dietrich, 2006, are redescribed to account for interspecific variation observed in new species. One new synonymy is proposed. Additional distributional data, habitus photographs, and some improved illustrations are also provided for another twelve species previously reported from China.

### Material and methods

The morphological terminology follows YOUNG (1952) except for the abdominal apodemes and the wing; the definitions of the abdominal apodemes refer to ROSS (1959), and the nomenclature for the wing veins is adopted from DWORAKOWSKA (1993). AA (anal anterior) and AP (anal posterior) of forewing refer to two anal veins on the clavus, which are usually close to each other or even fused in Erythroneurini when present. CuA' and MP'' of forewing refer to the anterior branch of cubitus anterior and the posterior branch of media posterior, respectively. RA (radius anterior) of hind wing originates from the middle of the anterior margin and very close to the costa, but it does not reach the posterior margin in this tribe. The body size was measured from the apex of the vertex to the tip of the forewing.

Male abdomina and genitalia were removed from specimens examined and cleared in a 10% KOH solution heated for 1–2 minutes. Cleared material was then rinsed in water and stored in glycerine. A Nikon SMZ1500 stereoscopic microscope was used for examinations and an Olympus BH-2 compound microscope for drawings. Habitus photos were taken using a Canon EOS 5D camera equipped with a Canon MP-E 1–5x 65mm lens. Multiple photographs were stacked into final images by the CombineZP software.

The studied specimens are deposited in the following collections:

NWAU Entomological Museum, Northwest A&F University, Yangling, China;

CAU China Agricultural University, Beijing, China;

IZCAS Institute of Zoology, Chinese Academy of Sciences, Beijing, China.

### Descriptions of new taxa

#### *Hamata* gen. nov.

**Type species.** *Hamata coralliformis* sp. nov., here designated.

**Description.** Body medium-sized. Forewing with black patches along costal margin, at each end of brochosoma field. Basal triangles of mesonotum indistinct. Crown fore margin weakly produced and rounded apically, head

slightly narrower than pronotum, coronal suture indistinct. Ocelli rudimentary. Face short, anteclypeus relatively long, apex narrow, lorum large. Pronotum with hind margin concave. Forewing with first and third apical cells wide; fourth apical cell very short and narrow, shorter than half length of third apical cell; AA and AP absent. Hind wing venation usual for Erythroneurini, RA absent.

Abdominal apodemes 2S in male very broad and long.

**Male terminalia.** Anal tube without appendages. Genital capsule spherical, well sclerotized. Pygofer lobe with transverse rows of microsetae in the middle, without macrosetae; dorsal appendage lamellate, articulated to lobe; ventral appendage arising from ventro-caudal angle of lobe. Subgenital plate broad and short, slightly surpassing hind margin of pygofer lobe, mitten-shaped, pointed at apex and near midlength of outer margin, with oblique row of macrosetae from subapical inner margin to middle outer margin, with irregular rows of rigid microsetae along outer margin. Style with apical part falcate, curved outwards, with several sensory pits near preapical lobe. Connective V-shaped, manubrium and central lobe well developed. Aedeagal shaft tubular, provided with process; dorsal apodeme developed; preatrium rudimentary.

**Diagnosis.** The body shape and color pattern of the new genus resemble those of *Thailus* Mahmood, 1967, but black patches are present on the vertex and pronotum, and at both ends of the brochosoma field of the forewing. The male genitalia are quite different from those of *Thailus*: the anal tube appendage is absent; the pygofer lacks macrosetae on its side; the subgenital plate is flattened transversely and mitten-shaped; and the style is curved laterad apically.

**Etymology.** The generic name is a newly-created noun, derived from the Latin adjective “*hamatus*” which means “hooked”, referring to the hooked style. The gender is feminine.

**Diversity and distribution.** The genus is described as monotypic from southern China.

#### *Hamata coralliformis* sp. nov.

(Figs 1A–L, 12A–D)

**Type locality.** China, Yunnan province, Jinghong city environs, Yaoqu.

**Type material.** HOLOTYPE: ♂, CHINA: YUNNAN: Jinghong, Yaoqu, 5.ix.2010, light trap, Juan Han leg. (NWAU). PARATYPES: CHINA: YUNNAN: 9 ♂♂, same data as holotype; 9 ♂♂, same data as holotype except Meng Zhang leg.; 5 ♂♂, same data as holotype except 800 m, 28.v.2009, Wei Cui leg.; 1 ♂, Jinghong, Bubeng village, 4.ix.2010, light trap, Meng Zhang leg.; 1 ♂, same data as former except Juan Han leg.; 16 ♂♂, same data as former except, 20.v.2012, Yanghui Cao leg. (all NWAU).

**Description.** Ground color (Figs 12A–D) orange, eyes black, with four black patches along dorsal midline of body: vertex with big roundish patch at transition from crown to face and smaller one on hind margin, pronotum with oval patch in middle, scutellum with rhombic patch at tip. Scutellum pale basally. Forewing light tawny apically, veins orange.

Abdominal apodemes 2S in male (Fig. 1C) extended to middle of sternite VI.

**Male terminalia.** Anal tube (Fig. 1D) with narrow, well sclerotized dorsal ring at midlength. Pygofer side (Fig. 1D) with membranous area near dorsal margin, with nu-

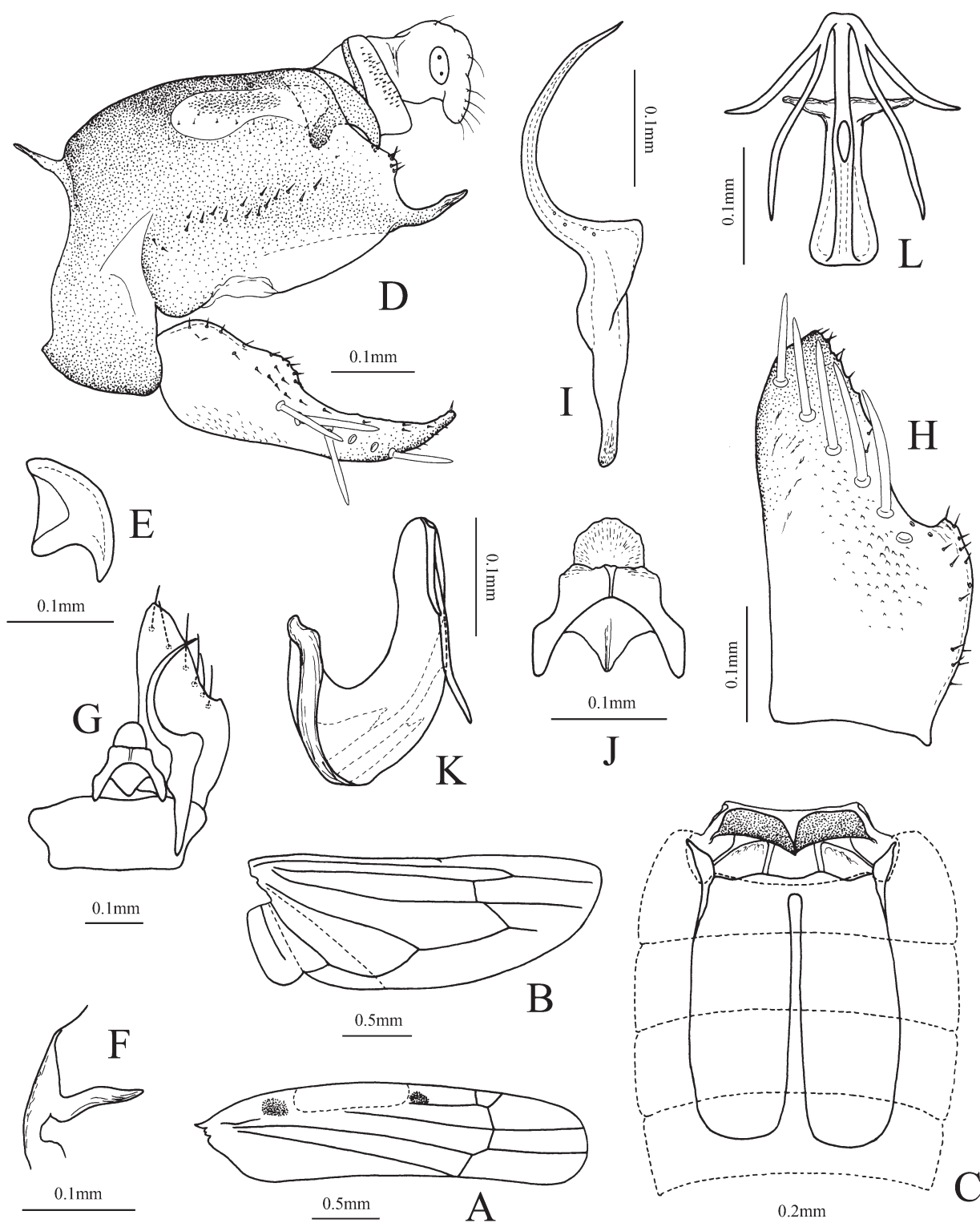


Fig. 1. *Hamata coralliformis* sp. nov. A – forewing; B – hind wing; C – apodeme 1S (dark) and apodemes 2S (large pair, light); D – genital capsule; E – pygofer dorsal appendage; F – pygofer ventral appendage, caudal view; G – subgenital plate, style, connective and sternite IX; H – subgenital plate, ventral view; I – style, dorsal view; J – connective; K – aedeagus, lateral view; L – aedeagus, caudal view.

merous tiny denticulations, ventral margin membranous, hind margin slightly produced, with several microsetae on caudal angle; dorsal appendage (Figs 1D, E) short, broad basally, apex pointed and curved ventrad; ventral appendage (Figs 1D, F) short and slim. Subgenital plate (Fig. 1H) with about 6 macrosetae. Connective (Fig. 1J) with manubrium lamellate, very thin, central lobe angulate

apically. Aedeagal shaft (Figs 1K, L) compressed, broad in lateral view, curved dorsad, with pair of processes apically, processes deeply branched at base, dorsal branch shorter than ventral branch, processes coral-shaped in caudal view; dorsal apodeme large, T-shaped in caudal view; gonopore central on ventral margin.

Measurements. Male body length 3.30–3.50 mm.

**Etymology.** The specific epithet is an adjective derived from the Latin noun “*corallium*” (= coral) and the suffix “*-formis*” (= having the form of), referring to the coral-shaped aedeagal processes in caudal view.

**Distribution.** So far only known from Yunnan province in the south of China.

***Levigata* gen. nov.**

**Type species.** *Levigata arborea* sp. nov., here designated.

**Description.** Body medium-sized. Forewing with black patches along costal margin at each end of brochosome field,

basal triangles of mesonotum black. Crown fore margin weakly produced and rounded apically, head as wide as pronotum, coronal suture obvious in basal half. Ocelli rudimentary. Face short, anteclypeus broad and short, narrowing towards apex, lorum small. Pronotum with hind margin slightly concave. Forewing with first and third apical cells wide; fourth apical cell very short and narrow, shorter than half length of third apical cell; AA and AP absent. Hind wing venation usual for Erythroneurini, RA present.

Abdominal apodemes 2S small, with apodemes 3T.

Male terminalia. Anal tube with appendages. Genital capsule cylindrical, with single basolateral macroseta

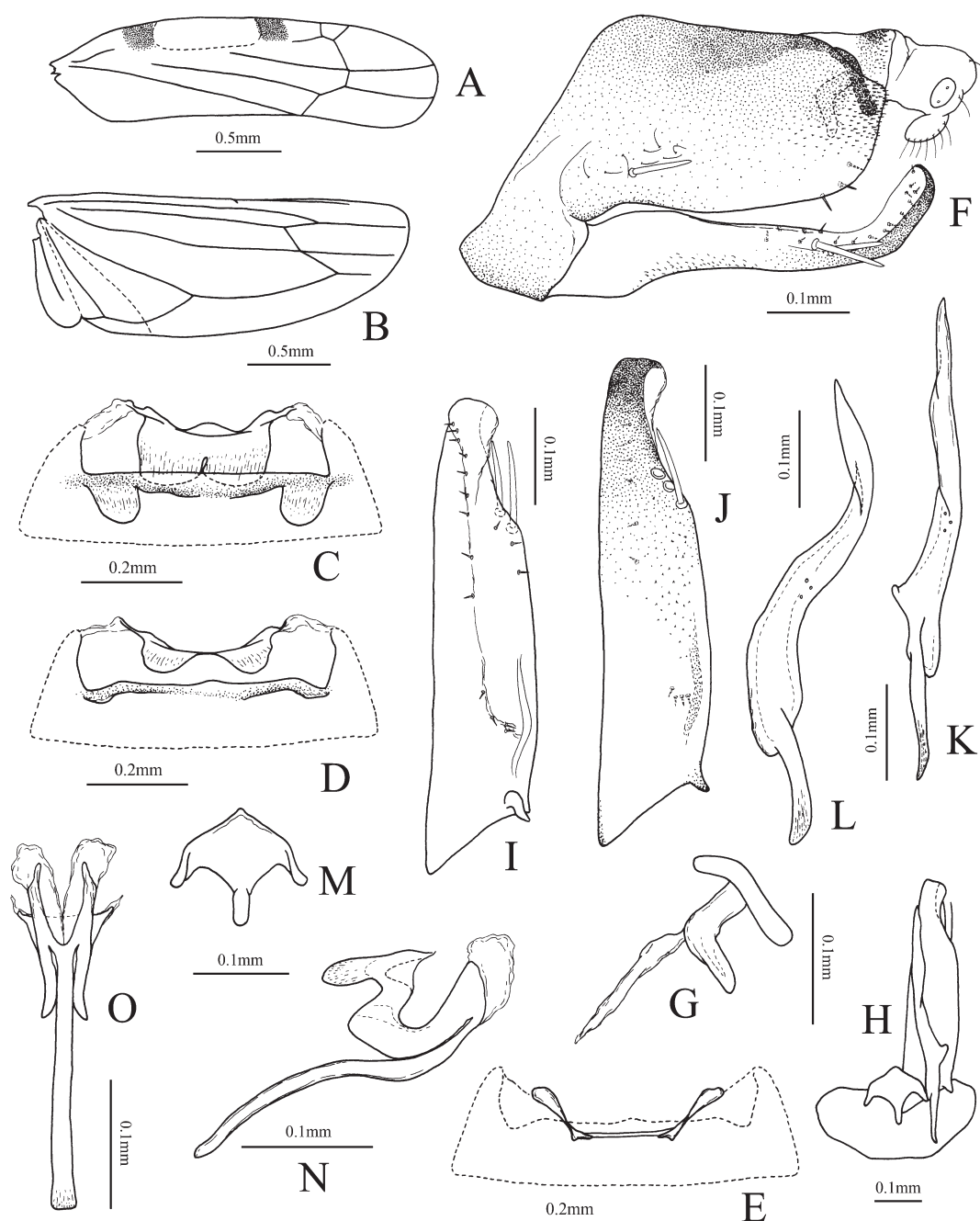


Fig. 2. *Levigata arborea* sp. nov. A – forewing; B – hind wing; C – apodeme 1S (upper pair) and apodemes 3T (lower pair) of holotype; D – apodeme 1S (upper pair) and apodemes 3T (lower pair) of paratype; E – apodemes 2S; F – genital capsule; G – anal tube appendage, pygofer dorsal appendage and ligament; H – subgenital plate, style, connective and sternite IX; I – subgenital plate, dorsal view; J – subgenital plate, ventral view; K – style, dorsal view; L – style, lateral view; M – connective; N – aedeagus, lateral view; O – aedeagus, ventral view.

surrounded by few fine setae, hind margin with some rigid setae on inner membrane; dorsal appendage stick-like, articulated to lobe; ventral appendage absent. Subgenital plate narrow and long, surpassing hind margin of pygofer side, apex truncate, slightly narrower than basal part, with dense row of few macrosetae along outer margin subapically, ventral side well sclerotized and smooth, without microsetae, dorsal side membranous, with row of microsetae along central furrow and several microsetae near middle of outer margin. Style with slender apical part, preapical lobe very small, with some sensory pits medially. Connective lamellate, central lobe well developed. Aedeagal shaft short, curved dorsad, inner side and apex membranous; dorsal apodeme small, but well developed; preatrium slim, much longer than shaft.

**Diagnosis.** The new genus is similar to *Aylala* Dworakowska, 1994 in body shape, markings of scutellum and forewings, wing venation, and shape of the subgenital plate and connective, but the new genus has anal tube appendages (absent in *Aylala*), its subgenital plate is smooth ventrally and with microsetae dorsally, and the aedeagus is also quite distinctive.

**Etymology.** The generic name is a newly-created noun derived from the Latin “*levigatus*”, perfect passive participle of the verb “*levigo*” which means “to make smooth”, referring to the smooth ventral surface of the subgenital plate. The gender is feminine.

**Diversity and distribution.** The genus is described as monotypic from southern China.

***Levigata arborea* sp. nov.**

(Figs 2A–O, 12E–H)

**Type locality.** China, Yunnan province, Jinghong city environs, Bubeng village.

**Type material.** HOLOTYPE: ♂, CHINA: YUNNAN: Jinghong, Bubeng village, 4.ix.2010, light trap, Meng Zhang leg. (NWAU). PARATYPES: 16 ♂♂, same data as holotype; 16 ♂♂, same data as holotype except Juan Han leg.; 2 ♂♂, same data as holotype except 3.ix.2010; 9 ♂♂, Jinghong, Yexianggu, 30.viii.2010, light trap, Meng Zhang leg. (all NWAU).

**Description.** Ground color (Figs 12E–H) dirty tawny, eyes black, vertex dirty pale-yellow, with blurry orange markings and small black patch in middle of transition from crown to face; frontoclypeal area dark with edges lighter, anteclypeus brown basomedially, lorum and gena pale. Pronotum with large black medial patch on fore margin. Scutum and scutellum off-white, black at tip. Forewing brown, with several lighter areas.

Abdominal apodemes 2S (Fig. 2E) extremely small, apodemes 3T (Figs 2C, D) variable in size among individuals.

Male terminalia. Anal tube (Fig. 2F) weakly sclerotized basally, with short appendage (Fig. 2G), bent in right angle, apex blunt. Pygofer side (Fig. 2F) nearly rectangular, hind margin truncate; dorsal appendage (Figs 2F, G) short, slightly curved ventrad. Subgenital plate (Figs 2I, J) with membranous dorsal side wider than sclerotized ventral side in apical part, with 2–3 macrosetae. Style (Figs 2K, L) with apex lance-shaped in lateral view, curved ventrad. Connective (Fig. 2M) broad, central lobe slim and long. Aedeagal shaft (Figs 2N, O) with lateral surfaces well sclerotized,

bifurcated both basally and apically in ventral view, two sides only fused at the connection with preatrium, with membranous inner side and apical part; dorsal apodeme wide in ventral view; preatrium about twice longer than shaft; gonopore not delimited.

Measurements. Male body length 2.85–2.90 mm.

**Etymology.** The specific epithet is the Latin adjective “*arboreus*” which means “resembling a tree”, referring to the tree-like aedeagal shaft in the ventral view.

**Distribution.** So far only known from Yunnan province in the south of China.

***Gladkara Dworakowska*, 1995**

*Gladkara* Dworakowska, 1995: 4. SONG & LI (2014): 83 (redescription in Chinese); SONG et al. (2017): 32 (redescription).

**Type species.** *Gladkara albida* Dworakowska, 1995, by original designation.

**Amended description.** Generic characteristics as in DWORAKOWSKA (1995) and SONG et al. (2017), with the following characters newly added or slightly different from former publications.

Body slim to robust. Coronal suture visible basally. Ocelli absent. Anteclypeus broad subapically, lorum large. Forewing with first and third apical cells broad; second apical cell narrowest; fourth apical cell short, about half length of third apical cells; both AA and AP present.

Male terminalia. Anal tube well sclerotized apically, shape of anal tube appendage quite complex, usually helically twisted, basal part directed ventro-cephalad or very short, then sharply curved caudad, apical part hooked or sinuated. Subgenital plate pigmented distally, basal part slightly broader than apical part, with about 3–7 macrosetae organized in row or irregularly placed in the center. Aedeagal shaft slim and long, curved dorsad; atrium and manubrium narrow in lateral view, but expanded laterad in caudal view.

**Diversity and distribution.** The genus currently includes 15 species distributed in the Oriental Region: Brunei (DWORAKOWSKA 1995), China (Yunnan) (new records), India (DWORAKOWSKA 1995), Thailand (SONG et al. 2017), and Vietnam (DWORAKOWSKA 1995).

***Gladkara albida* Dworakowska, 1995**

(Figs 3A–K, 12I–L)

*Gladkara albida* Dworakowska, 1995: 5, Figs 17–30.

**Material examined.** CHINA: YUNNAN: 2 ♂♂, Mengyuan, 1000 m, 10.xii.1999, I. Dworakowska leg.; 1 ♂, Jinghong, Guanping village, 29.viii.2010, light trap, Meng Zhang leg.; 1 ♂, Jinghong, Yaoqu, 5.ix.2010, light trap, Juan Han leg. (all NWAU).

**Distribution.** China (Yunnan) (new record), India (DWORAKOWSKA 1995).

***Gladkara bifida* sp. nov.**

(Figs 4A–I, 12M–P)

**Type locality.** China, Yunnan province, Mengyuan, Sanchahe nature reserve.

**Type material.** HOLOTYPE: ♂, CHINA: YUNNAN: Mengyuan, Sanchahe, 940 m, 20.xii.1999, I. Dworakowska leg. (NWAU). PARATYPE: CHINA: YUNNAN: 1 ♀, Menglun, 570 m, 7.xii.1999, I. Dworakowska leg. (NWAU).

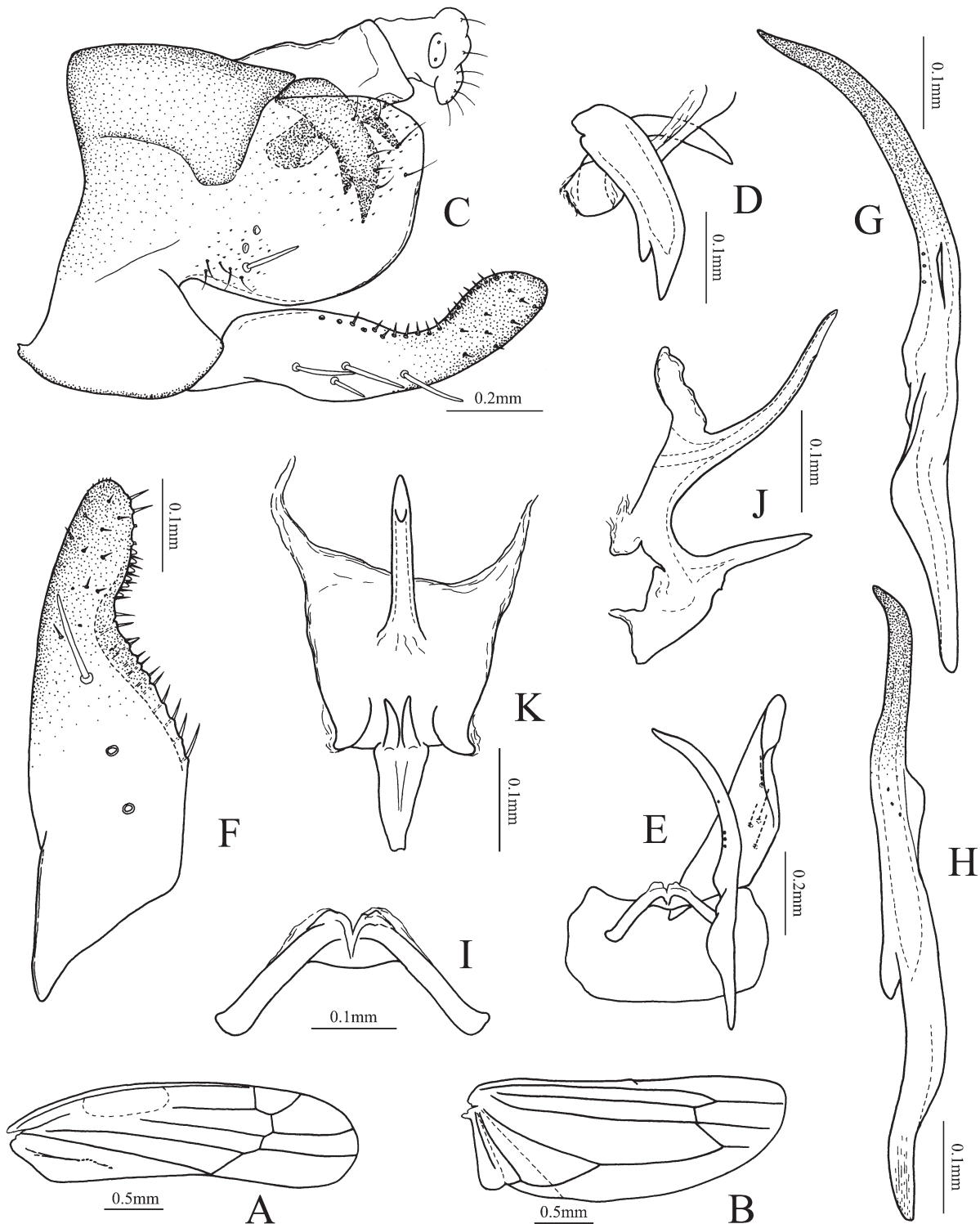


Fig. 3. *Gladkara albida* Dworakowska, 1995. A – forewing; B – hind wing; C – genital capsule; D – anal tube appendage and pygofer dorsal appendage; E – subgenital plate, style, connective and sternite IX; F – subgenital plate, ventral view; G – style, dorsal view; H – style, lateral view; I – connective; J – aedeagus, lateral view; K – aedeagus, caudal view.

**Description.** Body slim, beige (Figs 12M–P), forewing with black patch at tip of third apical cell.

Abdominal apodemes 2S (Fig. 4A) extended to hind margin of sternite III.

Male terminalia. Anal tube appendage (Figs 4B, C) with basal part relatively long, apical part knife-like, apex pointed and slightly curved ventrad. Pygofer side (Fig. 4B) rectangular, with oblique row of macrosetae from lower

basal angle to dorso-caudal angle, variable in size, without long fine setae; dorsal appendage (Figs 4B, C) bifurcated, dorsal branch short, ventral branch much longer, directed ventrad basally then bent caudad at right-angle. Subgenital plate (Fig. 4E) relatively broad apically, with irregular row of 6–7 macrosetae, outer margin with row of stout setae subapically similar to those in type species. Style (Fig. 4F) curved ventrad apically, apex pigmented, without sculptu-

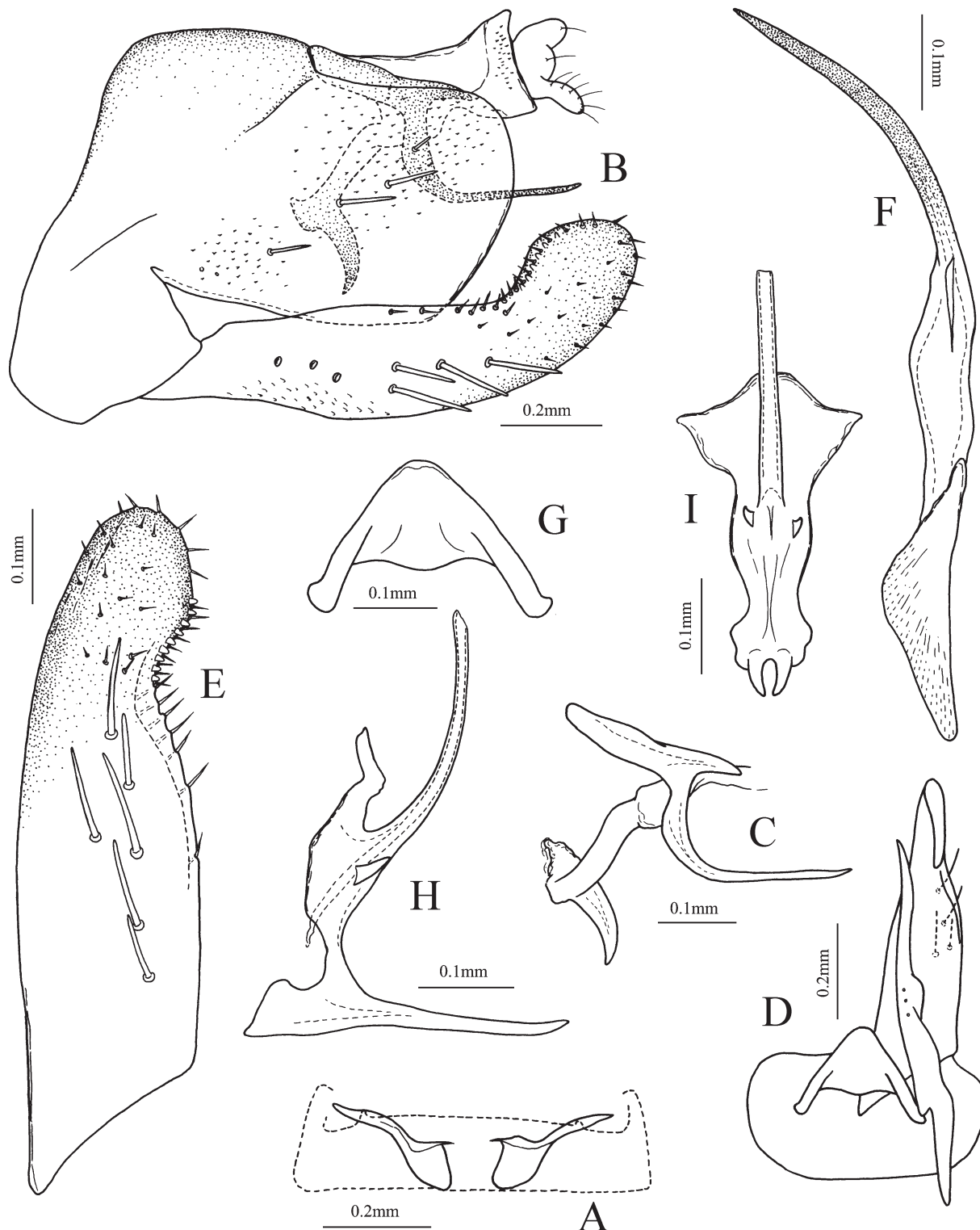


Fig. 4. *Gladkara bifida* sp. nov. A – apodemes 2S; B – genital capsule; C – anal tube appendage and pygofer dorsal appendage; D – subgenital plate, style, connective and sternite IX; E – subgenital plate, ventral view; F – style, lateral view; G – connective; H – aedeagus, lateral view; I – aedeagus, posterior view.

re. Connective (Fig. 4G) with distinct central lobe. Aedeagus (Figs 4H, I) with pair of short processes on atrium and pair of long, straight preatrial processes; dorsal apodeme wider than preatrium in caudal view; gonopore terminal.

Measurements. Male body length 3.75 mm; female body length 3.70 mm.

**Diagnosis.** Resembling the type species, *G. albida*, in ha-

ving the apex of the style undecorated and the connective with a central lobe, and in the shape of the aedeagus, but with a much longer ventral branch of the pygofer dorsal appendage and two pairs of basal aedeagal processes.

**Etymology.** The specific epithet is derived from the Latin adjective “*bifidus*” which means “forked”, referring to the forked dorsal appendage of the pygofer.

***Thapaia* Dmitriev & Dietrich, 2006**

*Masaakia* Thapa, 1989: 120; preoccupied by *Masaakia* Takeuchi, 1950 (Hymenoptera: Tenthredinidae).

*Thapaia* Dmitriev & Dietrich, 2006: 37 (new name for *Masaakia* Thapa, 1989). SONG & LI (2009): 62 (redescription).

**Type species.** *Masaakia nema* Thapa, 1989, by original designation.

**Amended description.** Generic characteristics as in THAPA (1989) and SONG & LI (2009), with the following characters newly added or slightly different from former publications.

Body shape resembling *Diomma* Motschulsky, 1863, flattened. Color pattern mottled, with numerous black spots, brown and grey areas. Pronotum with differently

sized black patches along fore margin, inner pair largest, central and hind regions dark with midline and two areas on hind margin smoky. Forewing with special venation for Erythroneurini, CuA' fused with MP proximal of MP bifurcation, leading to petiolate shape of second apical cell, MP''+CuA' curved basally, AA fused with AP. Hind wing venation usual for Erythroneurini, RA absent.

Male terminalia. Anal tube well sclerotized on distal region and near ventral side, hind and lower edges covered with acicular denticulations, without appendage. Pygofer dorsal appendage lamellate, immovably fused to pygofer lobe. Subgenital plate flattened, surpassing hind margin of pygofer side, apex pointed and hooked outwards, with

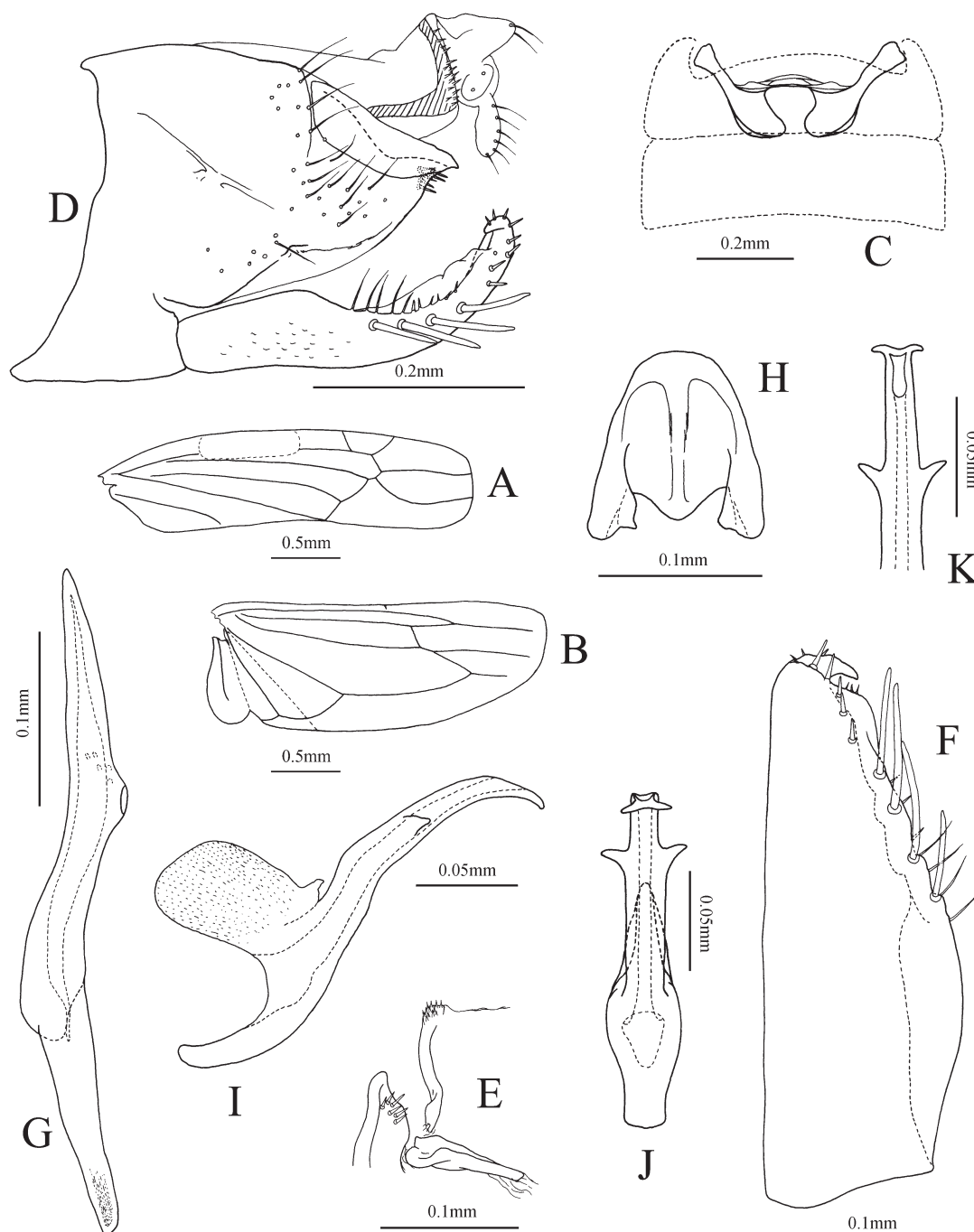


Fig. 5. *Thapaia plumula* Song & Li, 2009. A – forewing; B – hind wing; C – apodemes 2S; D – genital capsule; E – apex of pygofer side and anal tube, ventral view; F – subgenital plate, ventral view; G – style, dorsal view; H – connective; I – aedeagus, lateral view; J – aedeagus, caudal view; K – apex of aedeagal shaft, dorsal view.

about 4 macrosetae along outer margin and continued with several enlarged microsetae to apex, with row of setae from middle to apex on lateral margin, basal setae distinctly longer than apical ones. Aedeagus with dorsal apodeme large in lateral view, but narrow in ventral view; preatrium short to long, with or without processes.

**Remarks.** In the original description of the genus (THAPA 1989), the pygofer side was described as having “only a small process at hind margin”, but the pygofer dorsal appendage was not mentioned. SONG & LI (2009) described the genus as having the “pygofer without dorsal or ventral appendages”. However, both description and drawings of *T. sikkimensis* (Dworakowska, 1994) illustrated the pygofer

with a dorsal appendage (Dworakowska 1994). For both species examined in this study, we found that the pygofer dorsal appendage is in fact present but immovably fused to the lobe at both basal and ventral margins, thus, it can easily be confused as part of the lobe itself. Therefore, in all known species, except for *T. sikkimensis*, the small process on the dorso-caudal angle of the pygofer is probably the apical hook of the pygofer dorsal appendage.

**Diversity and distribution.** Currently including six species distributed in the Oriental and eastern Palaearctic Regions: China (Henan, Guizhou, Sichuan, Tibet) (SONG & LI 2009), India (Dworakowska 1994), and Nepal (THAPA 1989).

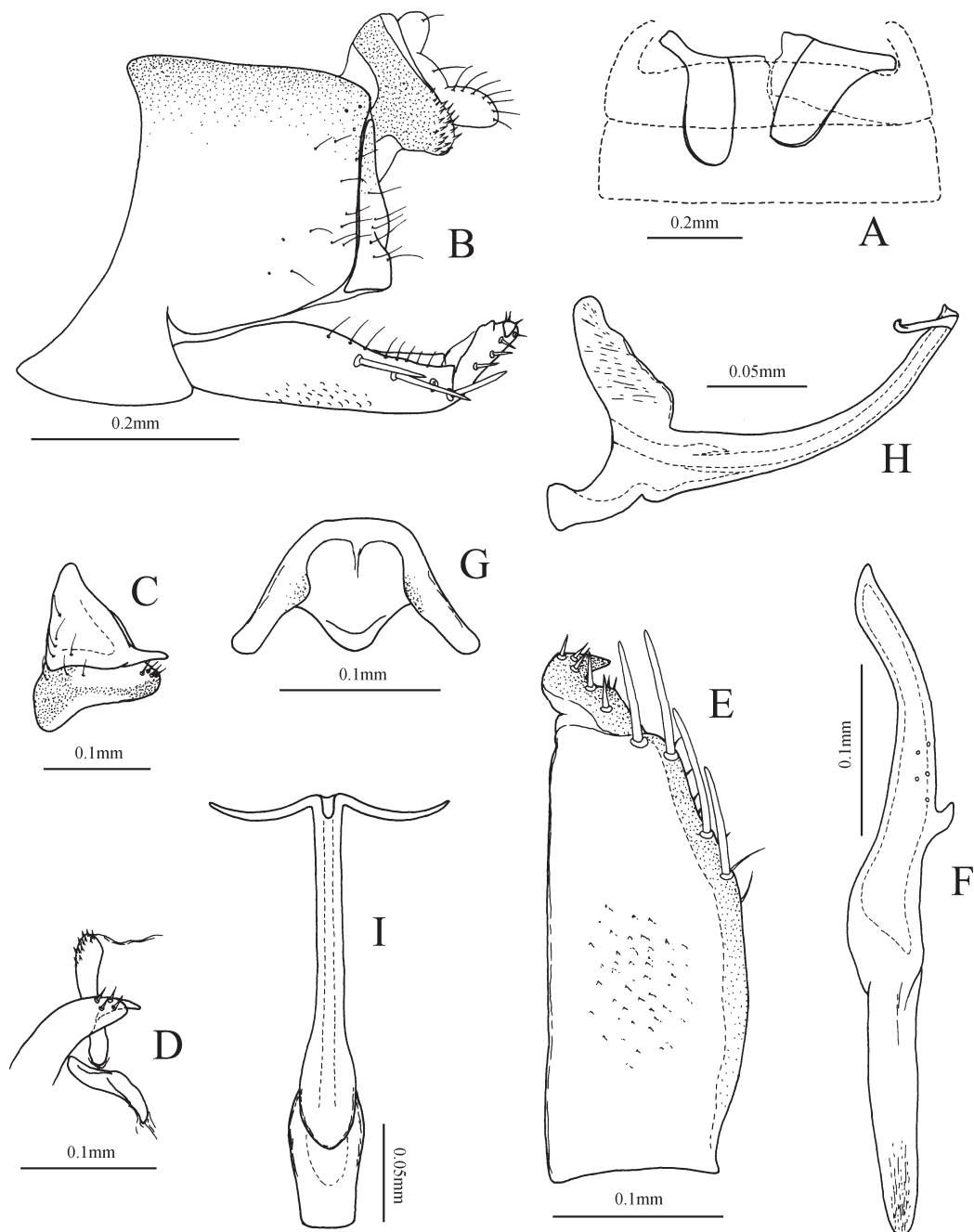


Fig. 6. *Thapaia tibetensis* sp. nov. A – apodemes 2S; B – genital capsule; C – apex of pygofer side and pygofer dorsal appendage, caudal view; D – apex of pygofer side and anal tube, ventral view; E – subgenital plate, ventral view; F – style, dorsal view; G – connective; H – aedeagus, lateral view; I – aedeagus, ventral view.

***Thapaia plumula* Song & Li, 2009**

(Figs 5A–K, 12Q–T)

*Thapaia plumula* Song & Li, 2009: 65, Figs 23–33. SONG & LI (2014): 192.**Material examined.** CHINA: SICHUAN: 2 ♂♂, back side of Mt. Qingcheng, 16.vii.2010, Yanghui Cao leg.; 1 ♂, same data except 18.vii.2010 (all NWAU).**Distribution.** China (Henan, Sichuan) (SONG & LI 2009).***Thapaia tibetensis* sp. nov.**

(Figs 6A–I, 12U–X)

**Type locality.** China, Tibet, Yigong.**Type material.** HOLOTYPE: ♂, CHINA: TIBET: Yigong, 2300 m, 14.vi.1978, Fasheng Li leg. (CAU). PARATYPE: CHINA: TIBET: 1 ♂, Linzhi, 3050 m, 6.vi.1978, Fasheng Li leg. (CAU).**Description.** Ground color (Figs 12U–X) brown, lower part of frontoclypeal area, anteclypeus, lorum and gena very dark, brochosome field on forewing dirty taupe.

Abdominal apodemes 2S (Fig. 6A) extended to middle of sternite IV.

Male terminalia. Pygofer side (Fig. 6B) separated into basal and apical sclerites, apical part triangular, bent inwards; with several rigid setae on outer surface of distal angle; dorsal appendage (Fig. 6C) triangular, apex protruded. Style (Fig. 6F) with apical part broader than in other species, preapical lobe gemma-like. Connective (Fig. 6G) broad. Aedeagal shaft (Figs 6H, I) curved dorsad, with apical pair of slim processes slightly curved upwards, shaft and processes T-shaped in ventral view; gonopore terminal.

Measurements. Male body length 3.00–3.10 mm.

**Diagnosis.** The new species is similar to *T. multibudna* Song & Li, 2009, but the connective is broader and the aedeagal shaft is curved dorsad with only one pair of processes.**Etymology.** The specific epithet is an adjective based on the geographical origin of the type series, Tibet.**New and additional species records from China*****Arboridia (Arboridia) agrillacea* (Anufriev, 1969)**

(Figs 13A–D)

*Erythroneura agrillacea* Anufriev, 1969: 182, Figs 13: 1–6.*Arboridia agrillacea*: ANUFRIEV (1978): 87; ANUFRIEV & EMELJANOV (1988): 119, Figs 79: 22–27; SONG & LI (2014): 27; SONG & LI (2015): 588.**Material examined.** CHINA: GANSU: 1 ♂ 2 ♀♀, Zhenyuan, 11.viii.1979, Wei Cao leg. SHAANXI: 1 ♂, Yangpingguan, *Juglans regia*, 4.x.1980, Ning Ma leg.; 1 ♂, Yangling, Northwest A&F University, 20.vii.1984, Yalin Zhang leg. SHANXI: 3 ♂♂, Yangcheng, Manghe nature reserve, *Cornus officinalis*, 15.ix.2011, Yanghui Cao leg. (all NWAU).**Host plants.** *Cornus officinalis* (Cornaceae), *Juglans regia* (Juglandaceae).**Distribution.** China (Gansu, Guangxi, Guizhou, Henan, Shanxi, Shaanxi, Sichuan) (SONG & LI 2013, 2014); Russia (Far East) (ANUFRIEV 1969).***Arboridia (Arboridia) kakogawana* (Matsumura, 1932)**

(Figs 13E–H)

*Zygina kakogawana* Matsumura, 1932: 113.*Erythroneura kakogawana*: ISHIHARA (1953): 33.*Arboridia (Arboridia) kakogawana*: DWORAKOWSKA (1970a): 610, Figs 25–29; ANUFRIEV & EMELJANOV (1988): 114, Figs 78: 1–8.**Material examined.** CHINA: SHANDONG: 4 ♂♂, Taian, 24.iv.1974, Fasheng Li leg. (CAU).**Host plants.** *Vitis amurensis* (ANUFRIEV 1971), *Vitis* sp. (GNEZDILOV et al. 2008) (both Vitaceae).**Distribution.** China (Shandong) (new record), Japan (MATSUMURA 1932), Russia (ANUFRIEV 1971), South Korea (NAST 1972).***Arboridia (Arboridia) lunula* Song & Li, 2013**

(Figs 13I–L)

*Arboridia (Arboridia) lunula* Song & Li, 2013: 234, Figs D, d, 22–28. SONG & LI (2014): 34; SONG & LI (2015): 590.**Material examined.** CHINA: HENAN: 1 ♂, Mt. Jigong, 11.vii.1997, collector unknown (NWAU).**Distribution.** China (Guizhou, Henan) (SONG & LI 2013).***Arboridia (Arboridia) maculifrons* (Vilbaste, 1968)**

(Figs 13M–P)

*Erythroneura maculifrons* Vilbaste, 1968: 107. ANUFRIEV (1969): 182, Figs 11: 1–4.*Arboridia (Arboridia) maculifrons*: DWORAKOWSKA (1970a): 611, Figs 20–22; ANUFRIEV & EMELJANOV (1988): 119, Figs 79: 2–4; SONG & LI (2014): 35.**Material examined.** CHINA: BEIJING: 1 ♂ 5 ♀♀, *Vitis amurensis*, 6.vii.1950, Youqiao Liu leg. (IZCAS).**Host plants.** *Parthenocissus quinquefolia* (SONG & LI 2014), *Vitis amurensis* (VILBASTE 1968) (both Vitaceae).**Distribution.** China (Beijing, Guizhou, Hebei) (SONG & LI 2014), North Korea (DWORAKOWSKA 1970a), Russia (Far East) (VILBASTE 1968), South Korea (NAST 1972).***Arboridia (Arboridia) suputinkaensis* (Vilbaste, 1968)**

(Figs 13Q–T)

*Erythroneura suputinkaensis* Vilbaste, 1968: 109, Fig. 89.*Arboridia (Arboridia) suputinkaensis*: DWORAKOWSKA (1970a): 613; ANUFRIEV & EMELJANOV (1988): 114, Figs 78: 9–15.**Material examined.** CHINA: HENAN: 1 ♂, Mt. Jigong, 11.vii.1997, collector unknown. ZHEJIANG: 1 ♂, Lin'an, Mt. Qingliang, 1000 m, light trap, 8.viii.2005, Yani Duan leg. (both NWAU).**Distribution.** China (Henan, Zhejiang) (new records), Russia (Far East) (VILBASTE 1968).***Arboridia (Arboridia) suzukii* (Matsumura, 1916)**

(Figs 13U–X)

*Zygina suzukii* Matsumura, 1916: 396.*Erythroneura suzukii*: ISHIHARA (1953): 34.*Erythroneura arboricola* Vilbaste, 1968: 101, Fig. 83. Synonymized by DWORAKOWSKA (1970a).*Arboridia (Arboridia) suzukii*: DWORAKOWSKA (1970a): 613; ANUFRIEV & EMELJANOV (1988): 119, Figs 80: 10–14; SONG & LI (2014): 40.**Material examined.** CHINA: SHAANXI: 1 ♂, Zhuyi, 1.v.2010, Lin Lv leg. SHANXI: 1 ♂, Yangcheng, Manghe natural reserve, *Cornus officinalis*, 15.ix.2011, Yanghui Cao leg. (both NWAU).**Host plants.** *Cornus officinalis* (Cornaceae); *Malus* sp. (ESAKI & ITO 1954), *Prunus maackii* (VILBASTE 1968), *Pyrus communis* (ESAKI & ITO 1954) (all Rosaceae).**Distribution.** China (Gansu, Shaanxi, Shanxi, Taiwan)

(MATSUMURA 1932, SONG & LI 2014), Japan (NAST 1972), North Korea (DWORAKOWSKA 1970a), Russia (Far East) (VILBASTE 1968), South Korea (NAST 1972).

***Arboridia (Arborifera) surstyli* Cai & Xu, 2006**

(Figs 14A–D)

*Arboridia (Arborifera) surstyli* Cai & Xu, 2006: 75, Fig. 1. SONG & LI (2014): 43; SONG & LI (2015): 591.

**Material examined.** CHINA: SHANXI: 6 ♂♂ 5 ♀♀, Yangcheng, Manghe natural reserve, *Cornus officinalis*, 15.ix.2011, Yanghui Cao leg. (NWAU).

**Remarks.** In the original description and drawing (CAI et al. 2006), the aedeagus is shown as having only one preatrial process. However, all specimens we checked have a pair of preatrial processes, which are thin and very close to each other. The profile of the aedeagus in the examined specimens is exactly the same as in the drawing by CAI et al. (2006).

**Host plant.** *Cornus officinalis* (Cornaceae) (CAI et al. 2006).

**Distribution.** China (Henan, Shanxi, Zhejiang) (CAI et al. 2006, SONG & LI 2014).

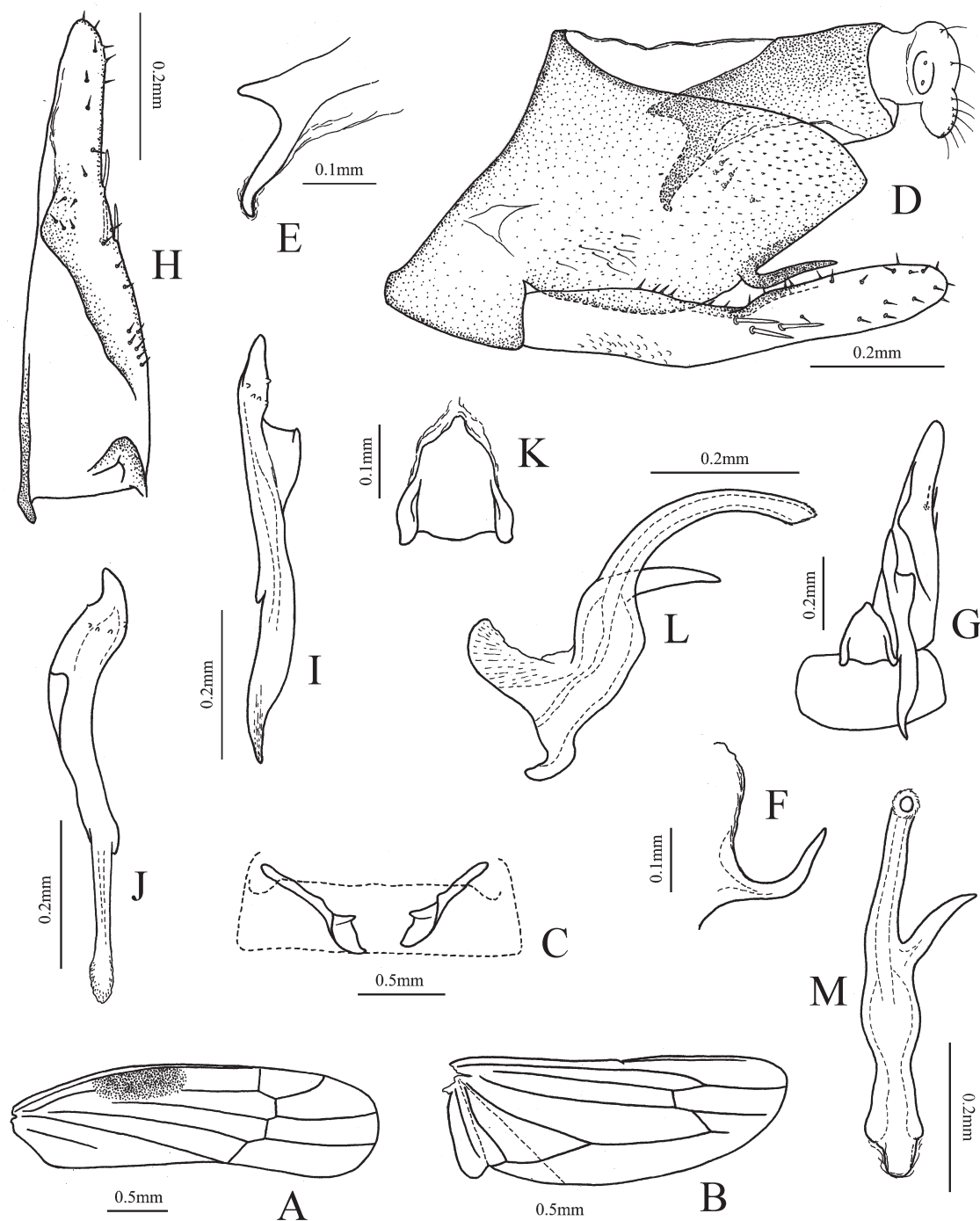


Fig. 7. *Dorycnia vietnamica* Dworakowska, 1979. A – forewing; B – hind wing; C – apodemes 2S; D – genital capsule; E – anal tube appendage; F – pygofer ventral appendage, caudal view; G – subgenital plate, style, connective and sternite IX; H – subgenital plate, dorsal view; I – style, dorsal view; J – style, lateral view; K – connective; L – aedeagus, lateral view; M – aedeagus, ventral view.

***Balanda kara* Dworakowska, 1979**

(Figs 14E–H)

*Balanda kara* Dworakowska, 1979a: 47, Figs 371–384.**Material examined.** CHINA: YUNNAN: 1 ♂, Jinghong, Bubeng village, 4.ix.2010, light trap, Meng Zhang leg. (NWAU).**Distribution.** China (Yunnan) (new record); Vietnam (Dworakowska 1979a).***Dorycnia vietnamica* Dworakowska, 1979**

(Figs 7A–M, 14I–L)

*Dorycnia vietnamica* Dworakowska, 1979a: 4, Figs 16–24.**Material examined.** CHINA: YUNNAN: 1 ♂ 1 ♀, Yingjiang, Mangxian village, 24°28'33"N, 97°45'02"E, 1089 m, 30.iv.2012, Yanghui Cao leg.; 1 ♂ 2 ♀♀, Tongbiguan, Jinzhuzhai, 24°36'57"N, 97°36'56"E, 1447 m, 2.v.2012, Yanghui Cao leg. (NWAU).**Distribution.** China (Yunnan) (new record); Vietnam (Dworakowska 1979a).***Elbelus tripunctatus* Mahmood, 1967**

(Figs 8A–O, 14M–P)

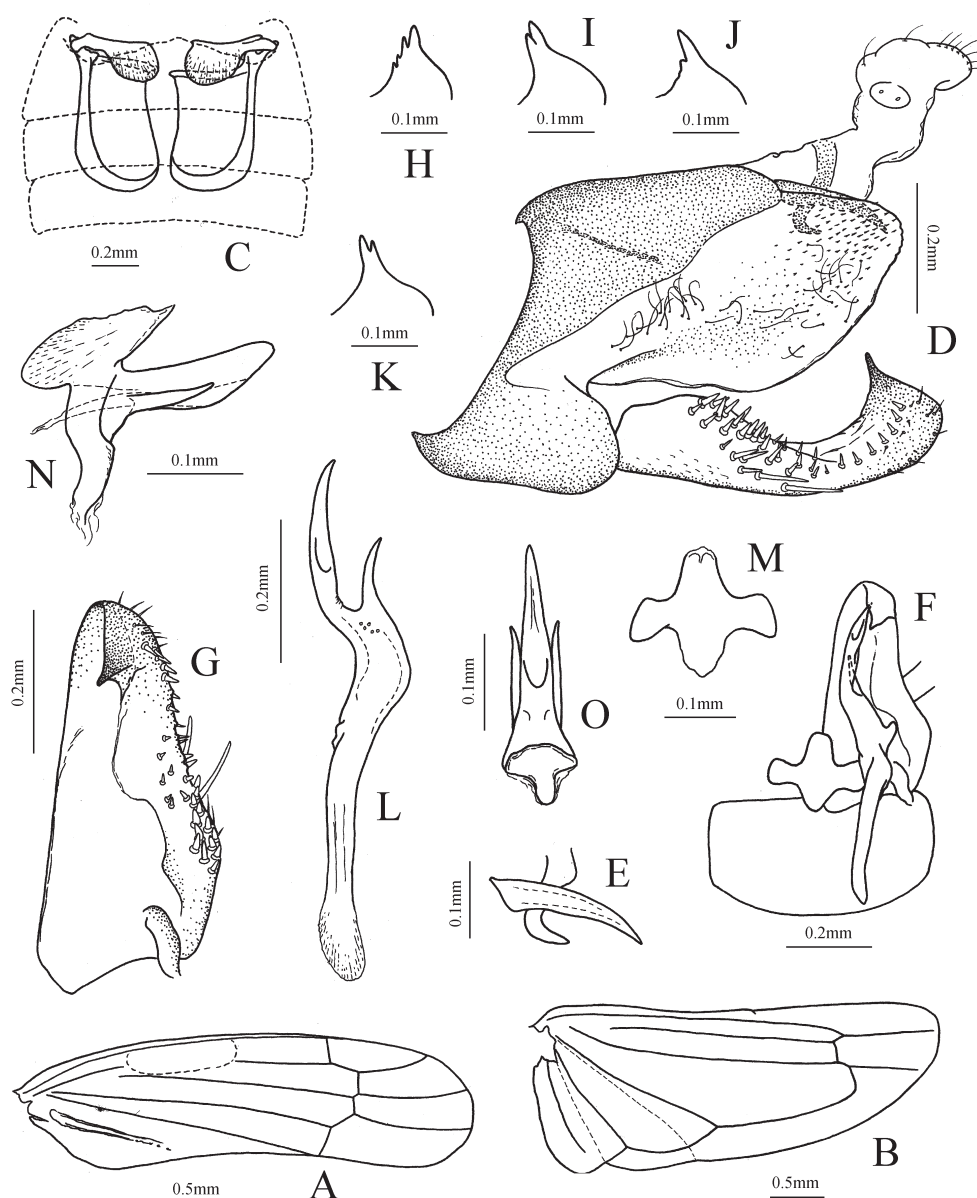
*Elbelus tripunctatus* Mahmood, 1967: 13, Pl. 1, Fig. 2. DWORAKOWSKA (1972): 107, Figs 12–15, 19–25; DWORAKOWSKA (1979a): 5; SONG & LI (2014): 55.*Elbelus melianus* Kuoh, 1992: 120, Fig. 1. SONG & LI (2014): 55. **Syn. nov.****Material examined.** CHINA: HAINAN: 2 ♂♂, Mt. Wuzhi, 600 m, 3.iv.2008, Qiulei Men leg.; 1 ♂, Mt. Wuzhi, 720 m, 31.vii.2009, Xia Gao leg.; 1 ♂ 1 ♀, Mt. Yingge, 320 m, 7.viii.2009, Xia Gao leg. FUJIAN: 2 ♂♂ 3 ♀♀, Mt. Wuyi, Sangang, 780 m, 14.viii.2008, Xia Gao & Xiaoting Li leg.; 11 ♀♀, same data as former except Bin Xiao leg. YUNNAN: 1 ♂, Menglun, 24.iv.1982, Jingruo Zhou & Sumei Wang leg.; 1 ♂, Menglun, 700 m, 26.vii.2005, light trap, Lin Lv leg.; 1 ♂, Menglun, 600m, 24.v.2009, light trap, Wei Cui leg.; 19 ♂♂, Daluo, 700 m, 7.v.2009, Libin Ma leg.; 7 ♂♂, same data as former except Wei Cui leg.; 12 ♂♂, Mengla, Longmen, 930 m, 17–20.v.2009, light trap, Wei Cui leg.; 5 ♂♂, Jinghong, Yaoqu, 800 m, 28–30.v.2009, light trap, Wei Cui leg.; 1 ♂, Jinping, 1900 m, 10.vi.2009, light trap, Wei Cui leg.; 5 ♂♂, Jinghong, Guanping village, 29.viii.2010, light trap, Meng Zhang

Fig. 8. *Elbelus tripunctatus* Mahmood, 1967. A – forewing; B – hind wing; C – apodeme 1S (small pair) and apodemes 2S (large pair); D – genital capsule; E – anal tube appendage and pygofer dorsal appendage; F – subgenital plate, style, connective and sternite IX; G – subgenital plate, dorsal view; H–K – variation of apical process of subgenital plate, lateral view; I – style, lateral view; M – connective; N – aedeagus, lateral view; O – aedeagus, ventral view.

leg.; 39 ♂♂, Jinghong, Yexianggu, light trap, Meng Zhang leg.; 54 ♂♂, Jinghong, Bubeng village, 3–4.ix.2010, light trap, Meng Zhang leg.; 15 ♂♂, Yingjiang, Nabang, 24°45'45"N, 97°33'56"E, 284 m, 2–3.v.2012, Yanghui Cao leg. (all NWAU).

**Remarks.** KUOH (1992) described *E. melianus* as a new species based on the following differences from *E. tripunctatus* and *E. yunnanensis* Chou & Ma, 1981: abdomen black; pygofer side provided with a long triangular lamella dorsally; dorso-apical process of the subgenital plate different; style with a curved, finger-like process near middle; apex of the aedeagal shaft not expanded. However, comparison of the drawings between *E. melianus* and *E. tripunctatus* indicated there were only slight differences in the processes on the subgenital plate and the style, and the other parts of the male genitalia were almost identical. In our study, we found that the dorso-apical process on the

subgenital plate (Figs 11H–K) is variable intraspecifically in *E. tripunctatus*; therefore, this character is not suitable for distinguishing different species in *Elbelus*. For the difference of the process on the style (Figs 11F, L), we speculate it is due to the drawing from a different angle: for instance, the finger-like process can be hidden in the lateral view. Therefore, we suggest here *E. melianus* as a junior synonym of *E. tripunctatus*.

**Host plants.** *Abutilon theophrasti* (Malvaceae), *Cannabis sativa* (Cannabaceae), *Gossypium* sp. (Malvaceae), *Melia azedarach* (Meliaceae) (KUOH 1992).

**Distribution.** China (Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Heilongjiang, Hubei, Hunan, Jiangsu, Jiangxi, Shanghai, Sichuan, Yunnan, Zhejiang) (KUOH 1992, SONG & LI 2014), India (SOHI & DWORAKOWSKA 1983), Thailand (MAHMOOD 1967), Vietnam (DWORAKOWSKA 1972).

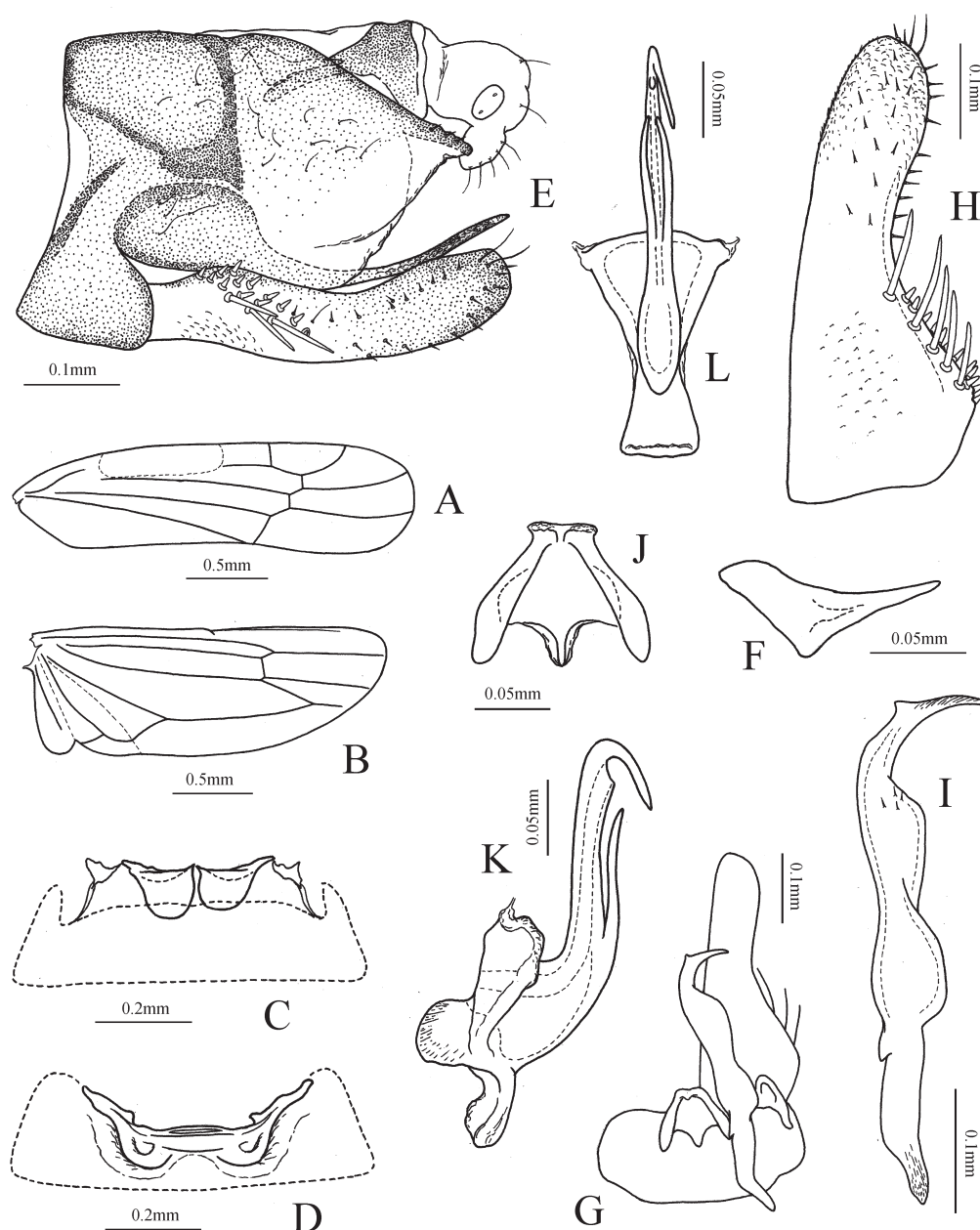


Fig. 9. *Gambialoa (Gambialoa) asiatica* Dworakowska, 1979. A – forewing; B – hind wing; C – apodeme 1S; D – apodemes 2S; E – genital capsule; F – pygofer dorsal appendage; G – subgenital plate, style, connective and sternite IX; H – subgenital plate, ventral view; I – style, dorsal view; J – connective; K – aedeagus, lateral view; L – aedeagus, caudal view.

***Gambialoa (Gambialoa) asiatica* Dworakowska, 1979**

(Figs 9A–L, 14Q–T)

*Gambialoa (Gambialoa) asiatica* Dworakowska, 1979a: 10, Figs 63–73.  
SONG et al. (2011): 53, Figs 21–30; SONG & LI (2014): 82.**Material examined.** CHINA: HAINAN: 5 ♂♂, Mt. Diaoluo, 140 m, 9.iv.2008, Qiulei Men leg.; 1 ♂ 1 ♀, Mt. Qixian, 220 m, 26.vii.2009, Xia Gao leg.; 1 ♂, Maoyang, 325 m, 10.viii.2009, Xia Gao leg. YUNNAN: 2 ♂♂, Jinghong, Guanping village, 29.viii.2010, light trap, Juan Han leg.; 1 ♂, same data except Meng Zhang leg.; 1 ♂, Jinghong, Yexianggu, 26.vii.2011, light trap, Huining Zhang leg. (all NWAU).**Distribution.** China (Hainan, Yunnan) (SONG et al. 2011), Vietnam (DWORAKOWSKA 1979a).***Gambialoa (Gambialoa) borealis* Dworakowska, 1981**

(Figs 10A–J, 14U–X)

*Gambialoa (Gambialoa) borealis* Dworakowska, 1981a: 183, Figs 345–352.**Material examined.** CHINA: YUNNAN: 3 ♂♂ 20 ♂♂, Diqing, Hutiaoxia, 7.viii.2010, light trap, Meng Zhang leg. (NWAU).**Distribution.** China (Yunnan) (new record), India (SOHI et al. 1987), Nepal (DWORAKOWSKA 1981a).***Kaukania anser* Dworakowska, 1972**

(Figs 11A–H, 15A–D)

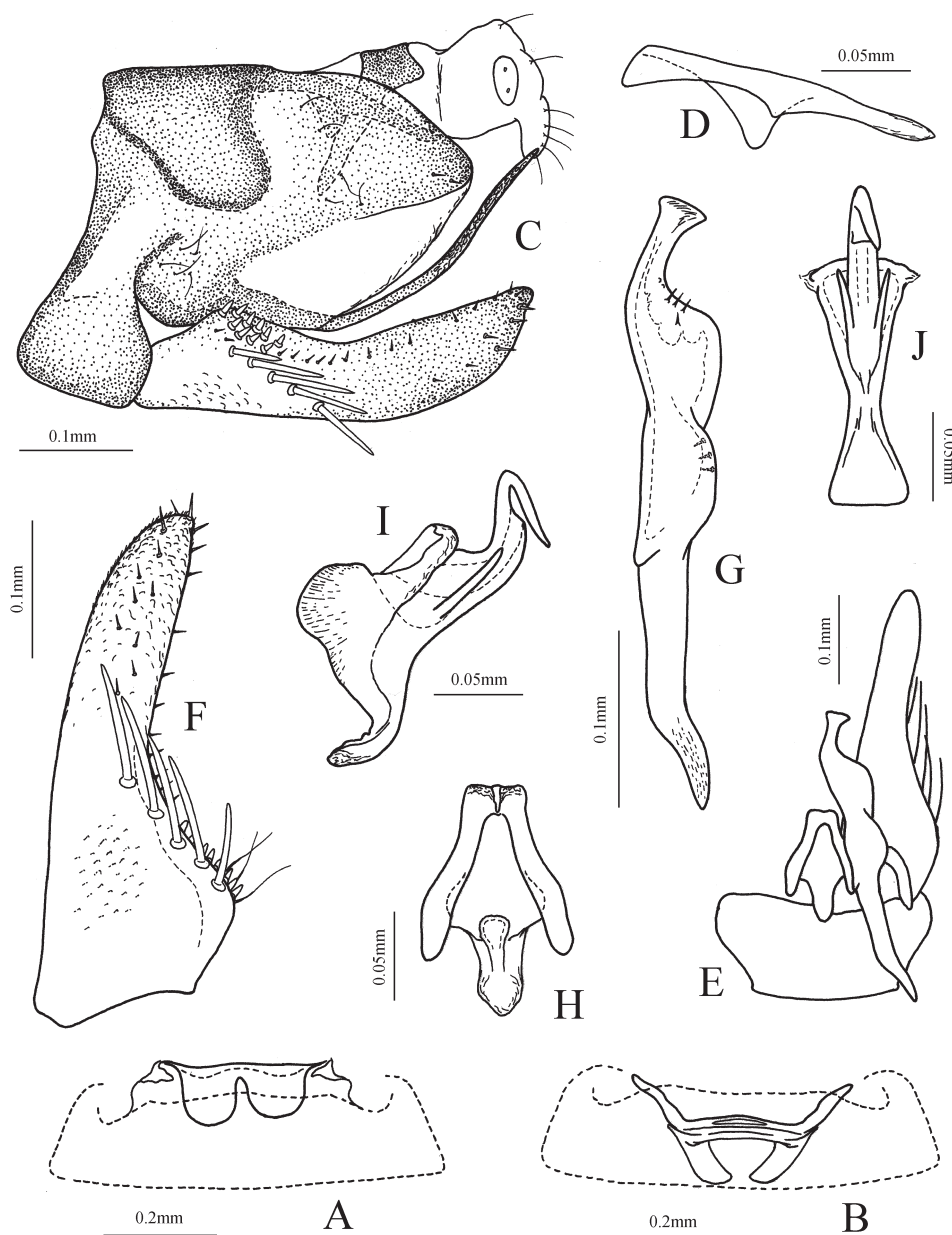
*Kaukania anser* Dworakowska, 1972: 113, Figs 28–40. DWORAKOWSKA (1976): 14; DWORAKOWSKA (1979a): 49; SONG & LI (2014): 100.**Material examined.** CHINA: YUNNAN: 1 ♂, Mengla, Longmen, 930 m, 17.v.2009, light trap, Wei Cui leg.; 126 ♂♂, Jinghong, Yaoqu, 5.ix.2010, light trap, Meng Zhang leg.; 4 ♂♂, same data except 800 m, 28.v.2009, Wei Cui leg.; 53 ♂♂, same data except 3.vi.2009; 1 ♂, Jinghong, Yexianggu, 30.viii.2010, light trap, Meng Zhang leg. (all NWAU).**Distribution.** China (Yunnan) (SONG & LI 2014), Laos (DWORAKOWSKA 1976), Vietnam (DWORAKOWSKA 1972).

Fig. 10. *Gambialoa (Gambialoa) borealis* Dworakowska, 1981. A – apodeme 1S; B – apodemes 2S; C – genital capsule; D – pygofer dorsal appendage; E – subgenital plate, style, connective and sternite IX; F – subgenital plate, ventral view; G – style, dorsal view; H – connective; I – aedeagus, lateral view; J – aedeagus, caudal view.

***Seriana dentata* Sohi & Mann, 1992**

*Seriana dentata* Sohi & Mann, 1992: 134, Figs 134–139.

**Material examined.** CHINA: YUNNAN: 1 ♂, Jinghong, Bubeng village, 4.ix.2010, light trap, Meng Zhang leg. (NWAU).

**Distribution.** China (Yunnan) (new record), Nepal (SOHI & MANN 1992).

***Seriana indefinita* Dworakowska, 1971**

(Figs 15E–H)

*Seriana indefinita* Dworakowska, 1971: 346, Figs 59–62, 71–76, 91, 92. DWORAKOWSKA et al. (1978): 248; SONG & LI (2014): 154.

*Seriana collina* Dworakowska, 1979b: 380, Figs 89–94. Synonymized by SONG & LI (2014).

*Seriana definita* Dworakowska, 1994: 124, Figs 500–505. Synonymized by SONG & LI (2014).

**Material examined.** CHINA: JIANGXI: 7 ♂♂ 7 ♀♀, Suichuan, Mt. Wuzhi, 760 m, 13.viii.2004, Cong Wei & Meixia Yang leg. (NWAU).

**Host plants.** *Cinnamomum migao* (Lauraceae), *Ipomoea batatas* (Convolvulaceae), *Distylium racemosum* (Hamamelidaceae), *Boehmeria penduliflora* (Urticaceae), *Broussonetia papyrifera* (Moraceae) (all SONG & LI 2014).

**Distribution.** China (Chongqing, Guangdong, Guangxi, Guizhou, Hainan, Jiangxi, Sichuan, Yunnan) (DWORAKOWSKA 1971, SONG & LI 2014), India (DWORAKOWSKA 1979b).

***Seriana malaica* Dworakowska, 1978**

(Figs 15I–L)

*Seriana malaica* Dworakowska, 1978: 159, Figs 77–83. DWORAKOWSKA et al. (1978): 248; DWORAKOWSKA (1984): 19.

**Material examined.** CHINA: YUNNAN: 2 ♂♂, Menglun, 570 m, *Ficus* sp., 8.xii.1999, I. Dworakowska leg.; 1 ♂, same data, on grass, 7.xii.1999 (NWAU).

**Host plant.** *Ficus* sp. (Moraceae).

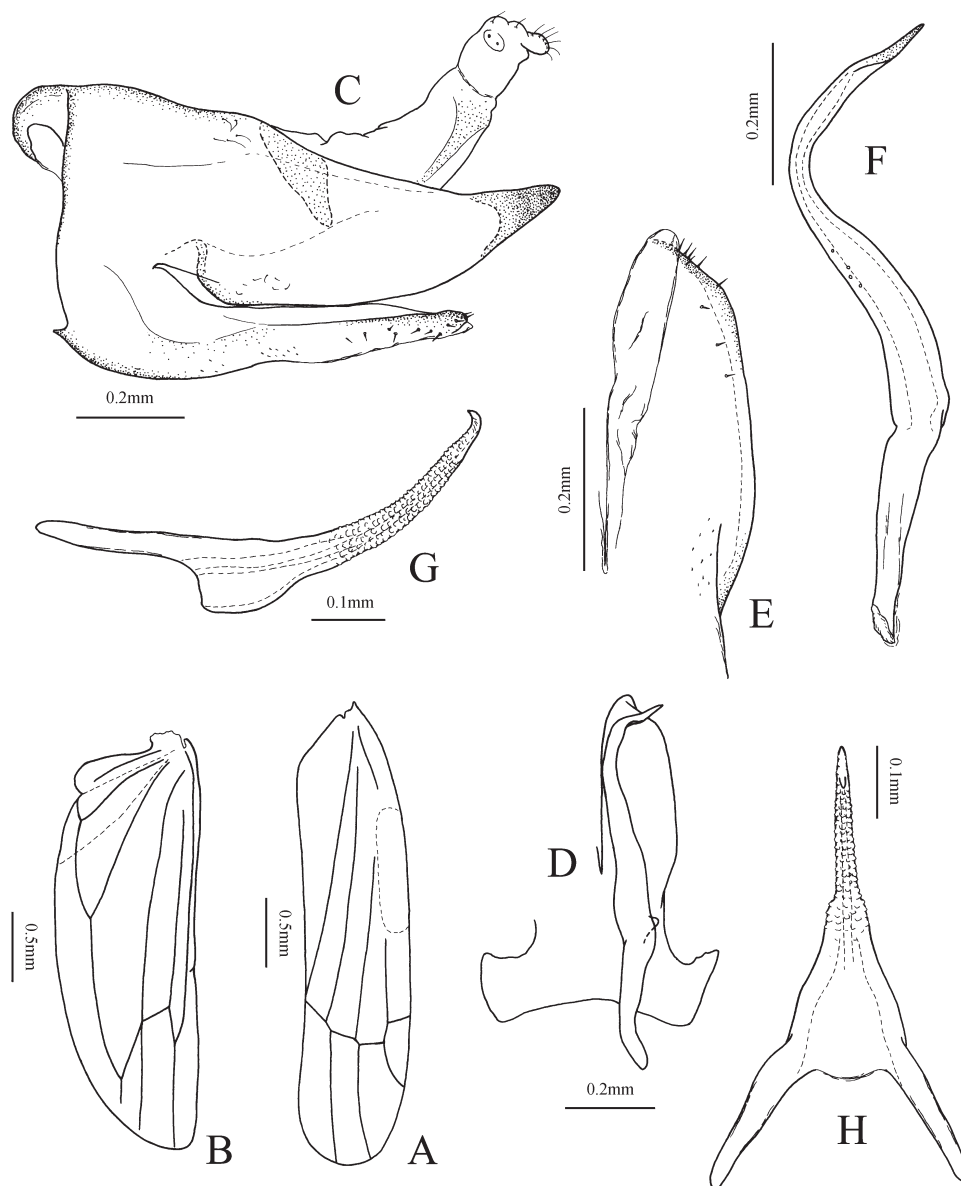


Fig. 11. *Kaukania anser* Dworakowska, 1972. A – forewing; B – hind wing; C – genital capsule; D – subgenital plate, style and sternite IX; E – subgenital plate, dorsal view; F – style, dorsal view; G – aedeagus and connective, lateral view; H – aedeagus and connective, ventral view.

**Distribution.** China (Yunnan) (new record), Malaysia (Dworakowska 1978).

***Seriana ochrata* Dworakowska, 1971**

(Figs 15M–P)

*Seriana ochrata* Dworakowska, 1971: 346, Figs 63, 64, 77–79. DWORAKOWSKA et al. (1978): 248; CHIANG & KNIGHT (1990): 239, Fig. 29; SONG & LI (2014): 155.

**Material examined.** CHINA: YUNNAN: 2 ♂♂, Jinghong, Yexianggu, 30.viii.2010, light trap, Juan Han leg.; 1 ♂, same data except Meng Zhang leg.; 2 ♂♂, Jinghong, Guanping village, 29.viii.2010, light trap, Meng Zhang leg. (all NWAU).

**Host plant.** *Ipomoea batatas* (Convolvulaceae) (CHIANG & KNIGHT 1990).

**Distribution.** China (Hainan, Taiwan, Yunnan) (CHIANG & KNIGHT 1990, SONG & LI 2014), Vietnam (Dworakowska 1971).

***Tautoneura mukla* Dworakowska, 1981**

(Figs 15Q–T)

*Tautoneura mukla* Dworakowska, 1981a: 197, Figs 481–491.

**Material examined.** CHINA: YUNNAN: 5 ♂♂, Jinghong, Yexianggu, 30.viii.2010, light trap, Meng Zhang leg. (NWAU).

**Distribution.** China (Yunnan) (new record), India (Dworakowska 1981a).

***Yakuza sumatrana* Dworakowska, 2002**

(Figs 15U–X)

*Yakuza sumatrana* Dworakowska, 2002: 271, Figs 58–77.

**Material examined.** CHINA: HAINAN: 35 ♂♂, Mt. Jianfeng, 959 m, *Alocasia* sp., 29.v.2011, Yanghui Cao leg. SICHUAN: 10 ♂♂ 13 ♀♀, Mt. Emei, 1000 m, *Alocasia* sp., 27.x.1999, Daozheng Qin leg.; 17 ♂♂ 3 ♀♀, Mt. Emei, Wuxiangang, 600 m, 2.xi.1999, I. Dworakowska leg.; 76 ♂♂, Ya'an, Sichuan Agricultural University, *Alocasia* sp., 10.vii.2010, Yanghui Cao leg. YUNNAN: 42 ♂♂ 53 ♀♀, Jinghong, 500 m, 4.xii.1999, I. Dworakowska leg.; 16 ♂♂ 20 ♀♀, Jinghong, Xishuangbanna Tropical Botanical Garden, 1100 m, *Alocasia* sp., 4.xii.1999, Daozheng Qin leg.; 37 ♂♂ 26 ♀♀, Menglun, 600 m, 10.xii.1999, I. Dworakowska leg. (all NWAU).

**Host plants.** *Alocasia macrorrhiza* (Araceae) (Dworakowska 2002), *Alocasia* sp. (this paper).

**Distribution.** China (Hainan, Sichuan, Yunnan) (new records); Indonesia (Dworakowska 2002).

***Ziczacella dworakowskiae* (Anufriev, 1970)**

(Figs 16A–D)

*Erythroneura hirayamella*: VILBASTE (1968): 99, nec MATSUMURA (1932): 111 (misidentification).

*Erythroneura (Ziczacella) dworakowskiae* Anufriev, 1970: 698.

*Ziczacella dworakowskiae*: NAST (1972): 312; VILBASTE (1980): 44; DWORAKOWSKA (1981b): 376, Figs 45–52; ANUFRIEV & EMELJANOV (1988): 120, Figs 82: 1–11; SONG & LI (2014): 197.

**Material examined.** CHINA: SICHUAN: 1 ♂, Chengdu, Tazishan Park, 21.vii.2010, Yanghui Cao leg. (NWAU).

**Distribution.** China (Henan, Jiangxi, Sichuan) (SONG & LI 2014); Russia (Far East) (ANUFRIEV 1970).

***Ziczacella heptapotamica* (Kusnezov, 1928)**

(Figs 16E–H)

*Erythroneura heptapotamica* Kusnezov, 1928: 316. ANUFRIEV (1969): 181, Figs 11: 8–10.

*Zygina inazuma* Kato, 1933: 8. Synonymized by DWORAKOWSKA (1981b). *Erythroneura ardeians* Ross, 1965: 268. VILBASTE (1968): 101, Fig. 82. Synonymized by ANUFRIEV (1970).

*Erythroneura (Ziczacella) heptapotamica*: ANUFRIEV (1970): 698.

*Ziczacella inazuma*: DWORAKOWSKA (1970b): 760. NAST (1972): 312. Synonymized by DWORAKOWSKA (1981b).

*Ziczacella heptapotamica*: NAST (1972): 312; DWORAKOWSKA (1981b): 371, Figs 18–26; ANUFRIEV & EMELJANOV (1988): 121, Figs 82: 12–20; SONG & LI (2014): 198.

**Material examined.** CHINA: HUNAN: 1 ♂, Chenzhou, viii.1985, Yalin Zhang & Yonghui Chai leg. SHAANXI: 2 ♂♂ 1 ♀, Taibai, Taochuan, 1100 m, 14.vi.2009, Xia Gao & Juxia Kang leg. SICHUAN: 1 ♂, Leshan, Haitang Park, 3.vii.2010, Yanghui Cao leg.; 1 ♂, Leshan Giant Buddha, *Humulus japonicus*, 4.vii.2010, Yanghui Cao leg.; 1 ♂, Ya'an, Zhangjiashan Park, 11.vii.2010, Yanghui Cao leg.; 1 ♂, Dujiangyan, Xiangfengqiao Residential District, 13.vii.2010, Yanghui Cao leg. (all NWAU).

**Host plants.** *Humulus lupulus* (Cannabaceae) (MITJAEV 1968), *Humulus japonicus* (Cannabaceae), *Rubus idaeus* (Rosaceae) (MITJAEV 1968), *Ulmus* sp. (Ulmaceae) (ANUFRIEV 1970), *Urtica* sp. (Urticaceae) (MITJAEV 1968).

**Distribution.** China (Northeast of China (Manchuria), Beijing, Henan, Hunan, Jiangxi, Shaanxi, Sichuan) (ROSS 1965, NAST 1972, SONG & LI 2014), Japan (MITJAEV 1968), Kazakhstan (MITJAEV 1963), Kyrgyzstan (NAST 1972), Russia (ANUFRIEV & EMELJANOV 1988, VILBASTE 1968), Ukraine (NAST 1987).

***Ziczacella lyriflora* (Dlabola, 1968)**

*Erythroneura (Arboridia) lyriflora* Dlabola, 1968: 368, Figs 15–17.

*Ziczacella lyriflora*: DWORAKOWSKA (1970b): 760; NAST (1972): 312; DWORAKOWSKA (1981b): 375, Figs 37–44.

**Material examined.** CHINA: SHANXI: 1 ♂, Ningwu, Mt. Luya, 1600 m, 30.viii.2011, Yanghui Cao leg. (NWAU).

**Distribution.** China (Shanxi) (new record), Mongolia (DLABOLA 1968).

***Ziczacella steggerdai* (Ross, 1965)**

(Figs 16I–L)

*Erythroneura steggerdai* Ross, 1965: 267.

*Erythroneura (Ziczacella) hirayamella*: ANUFRIEV (1970): 698, Figs 1–5, nec MATSUMURA (1932): 111 (misidentification).

*Ziczacella steggerdai*: DWORAKOWSKA (1970b): 760; NAST (1972): 312; DWORAKOWSKA (1979a): 16; DWORAKOWSKA (1981b): 373, Figs 27–36; SONG & LI (2014): 200.

**Material examined.** CHINA: SHAANXI: 1 ♂, Yangling, Northwest A&F University, ix.1983, collector unknown. SICHUAN: 1 ♂, Ya'an, Sichuan Agricultural University, 10.vii.2010, Yanghui Cao leg. (NWAU).

**Distribution.** China (Guizhou, Shaanxi, Sichuan) (SONG & LI 2014), South Korea (Dworakowska 1970b), Vietnam (Dworakowska 1979a).

**Discussion**

Studies of the Chinese erythroneurine fauna have intensified over the past decade, greatly enriching taxonomic knowledge of this tribe. Most recent publications have focused on the description of new taxa by providing detailed descriptions and high-quality drawings and photos. Unfortunately, many previously described taxa remain inadequately characterized, with most recent reports of these taxa limited to new geographical records. For the majority

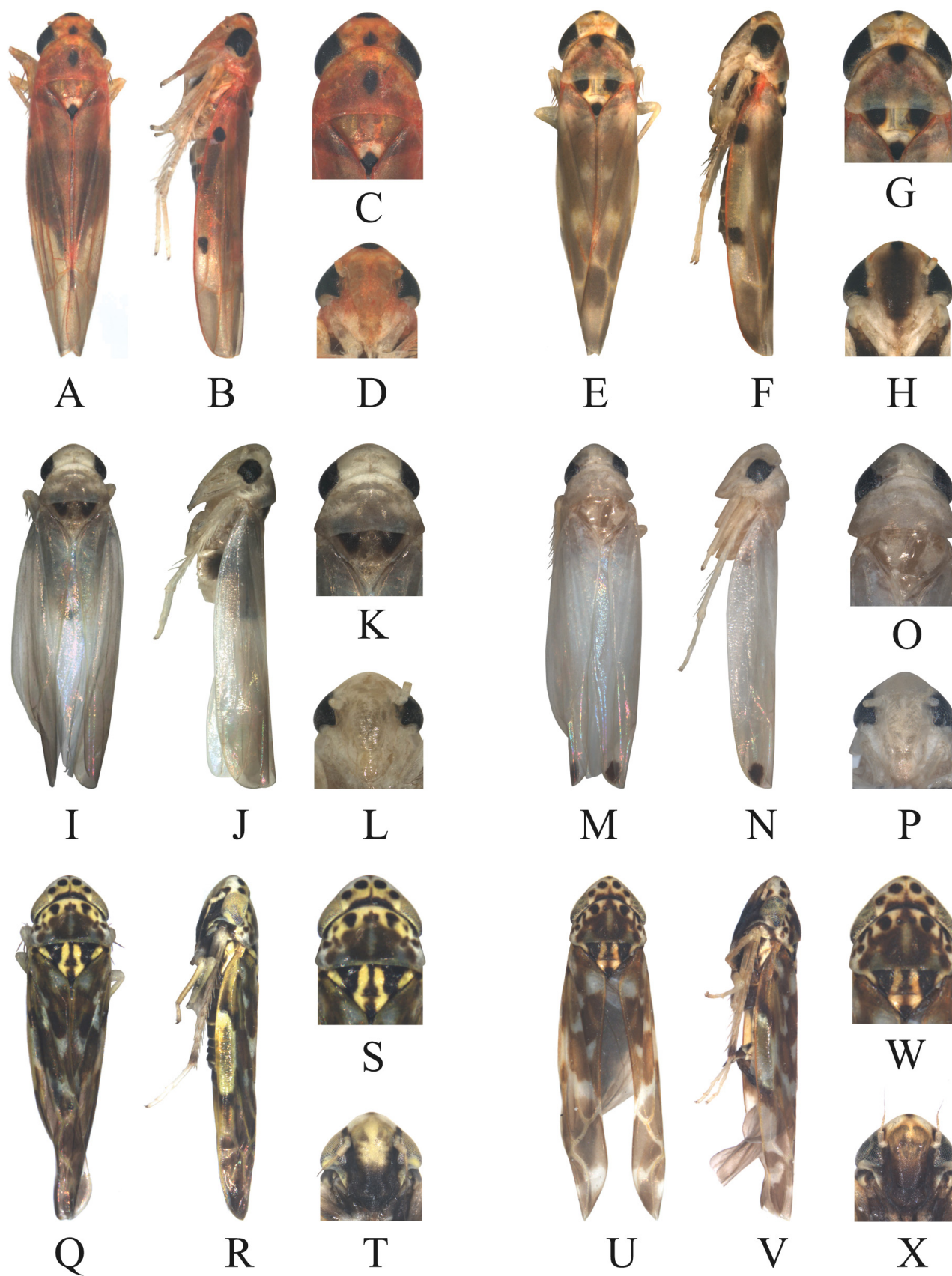


Fig. 12. A–D – *Hamata coralliformis* sp. nov.; E–H – *Levigata arborea* sp. nov.; I–L – *Gladkara albida* Dworakowska, 1995; M–P – *G. bifida* sp. nov.; Q–T – *Thapaia plumula* Song & Li, 2009; U–X – *T. tibetensis* sp. nov.

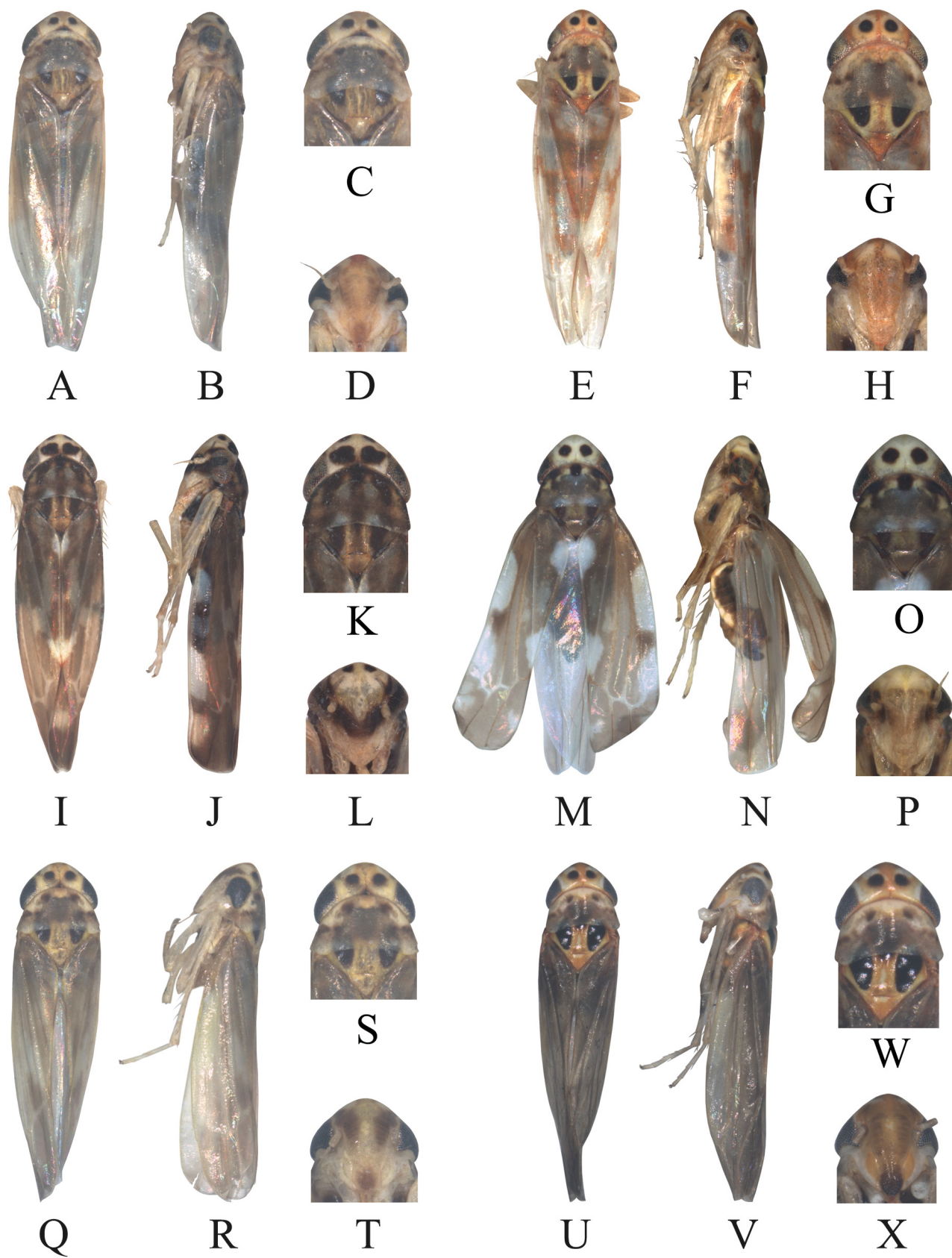


Fig. 13. A–D – *Arboridia* (*Arboridia*) *agrillacea* (Anufriev, 1969); E–H – *A. (A.) kakogawana* (Matsumura, 1932); I–L – *A. (A.) lunula* Song & Li, 2013; M–P – *A. (A.) maculifrons* (Vilbaste, 1968); Q–T – *A. (A.) suputinkaensis* (Vilbaste, 1968); U–X – *A. (A.) suzukii* (Matsumura, 1916).

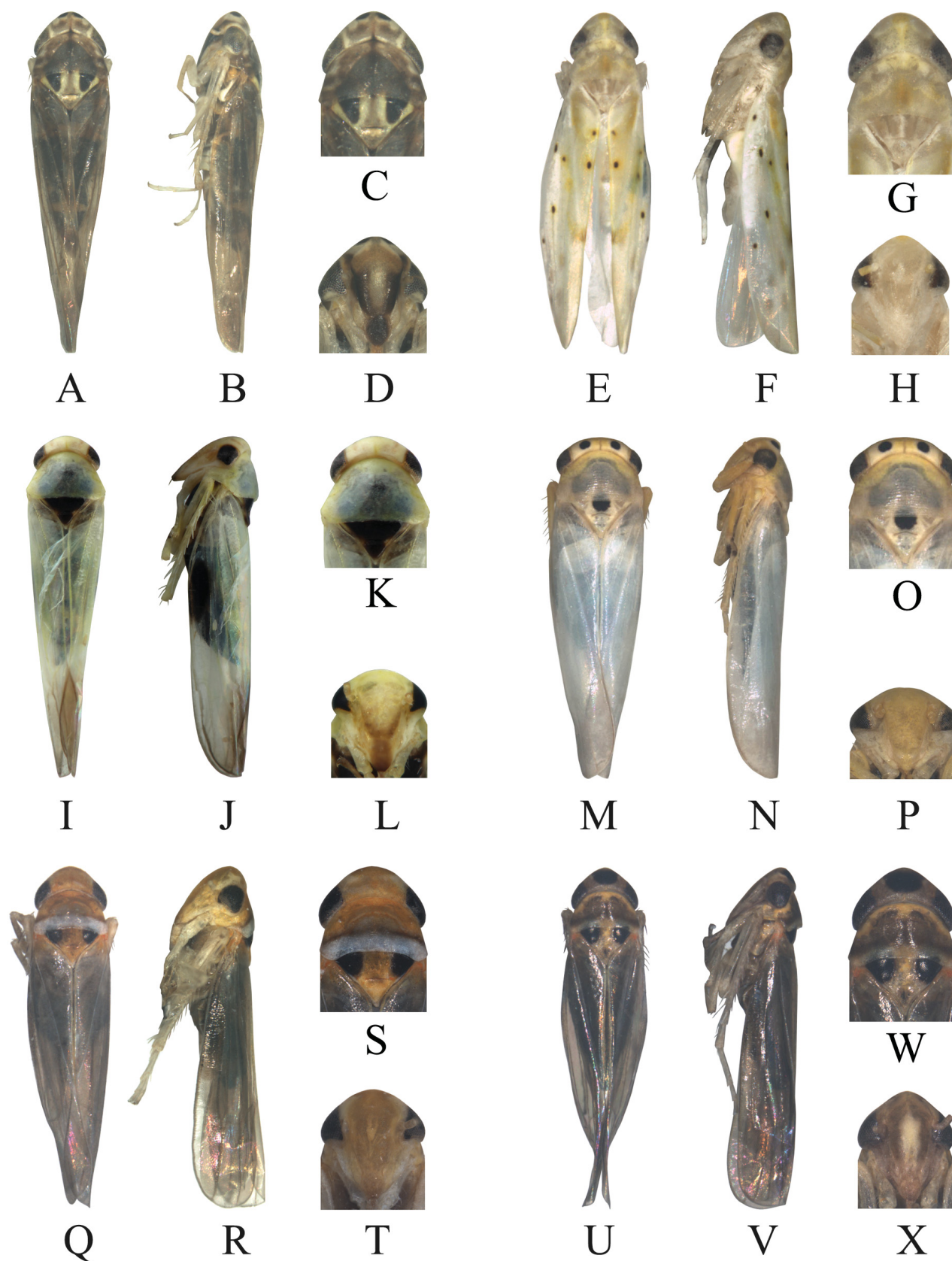


Fig. 14. A–D – *Arboridia (Arborifera) surstyli* Cai & Xu, 2006; E–H – *Balanda kara* Dworakowska, 1979; I–L – *Dorycnia vietnamica* Dworakowska, 1979; M–P – *Elbelus tripunctatus* Mahmood, 1967; Q–T – *Gambialoa (Gambialoa) asiatica* Dworakowska, 1979; U–X – *G. (G.) borealis* Dworakowska, 1981.

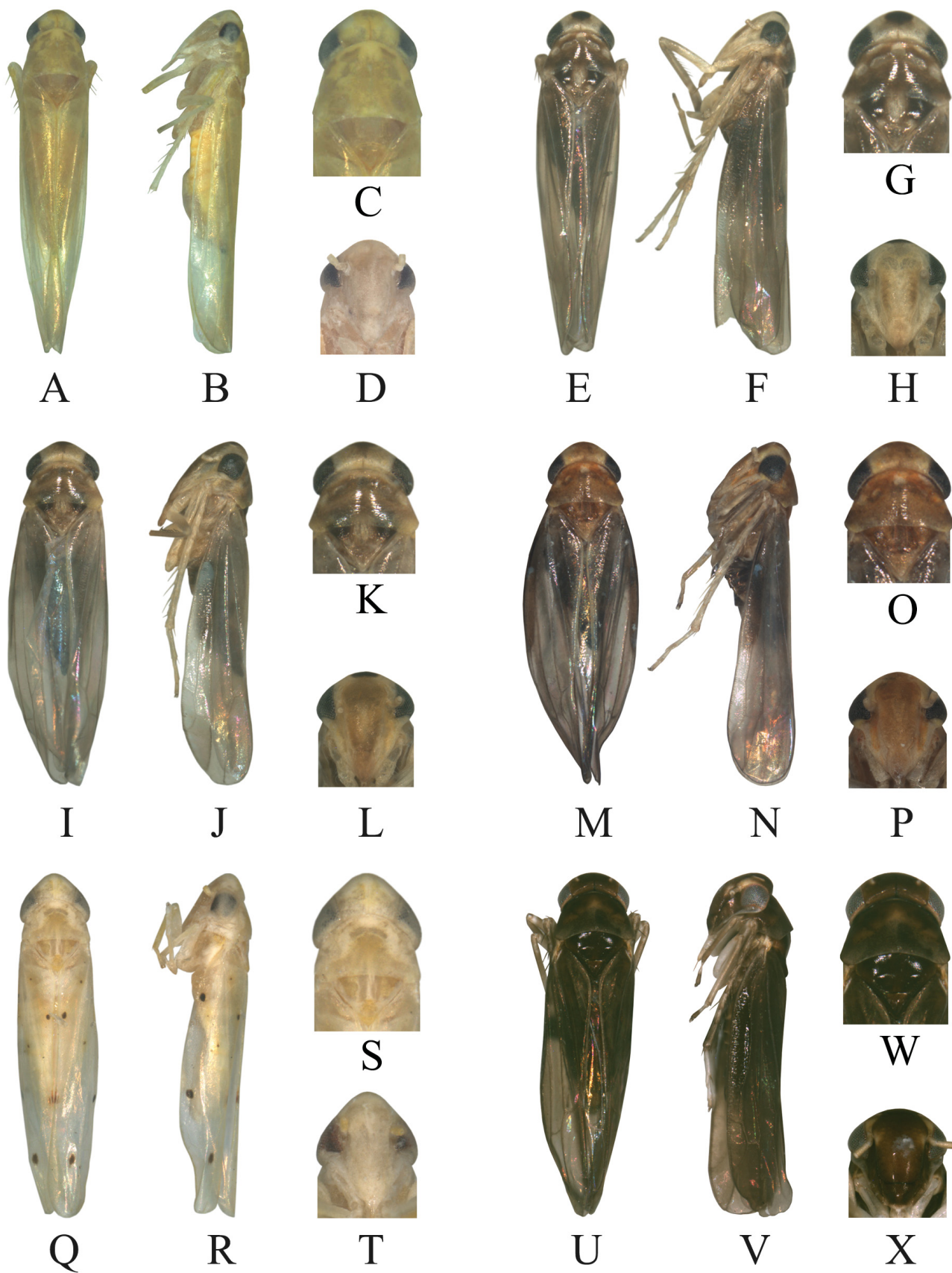


Fig. 15. A–D – *Kaukania anser* Dworakowska, 1972; E–H – *Seriana indefinita* Dworakowska, 1971; I–L – *S. malaica* Dworakowska, 1978; M–P – *S. ochrata* Dworakowska, 1971; Q–T – *Tautoneura mukla* Dworakowska, 1981; U–X – *Yakuza sumatrana* Dworakowska, 2002.

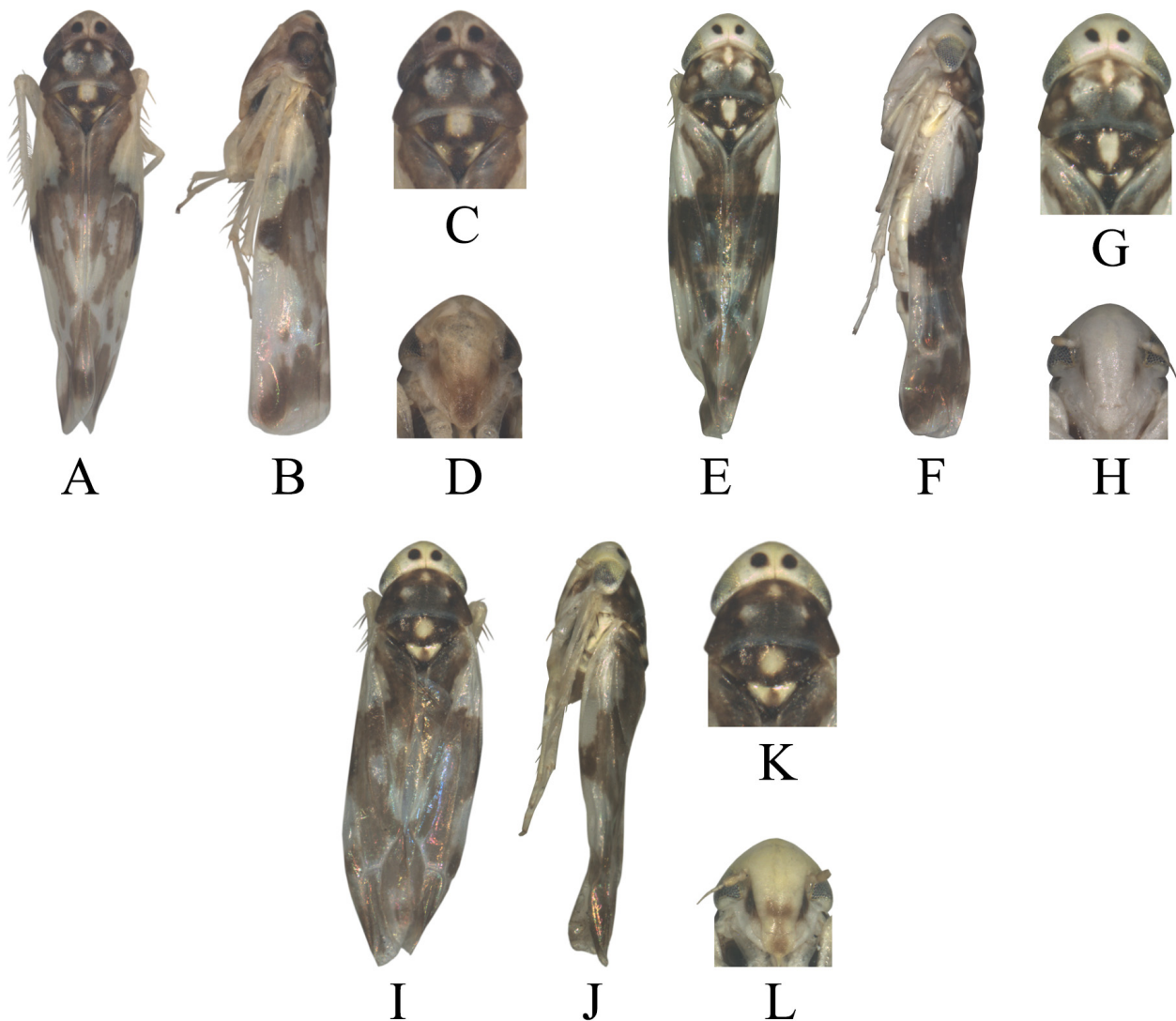


Fig. 16. A–D – *Ziczacella dworakowskiae* (Anufriev, 1970); E–H – *Z. heptapotamica* (Kusnezov, 1928); I–L – *Z. steggerdai* (Ross, 1965).

of the species described before 2000, habitus illustrations still have not been published and the original descriptions include very few characters. Thus, obstacles remain for the identification of such species and the lack of data also hampers phylogenetic study of this group. In this paper, we reported fourteen genera and twenty-nine species from China, all of which are illustrated with habitus photographs, except two species recorded based only on damaged specimens. We also added morphological character data for both genera and species. To facilitate the systematic study of Erythroneurini, we suggest that thorough investigation of morphological characters and comprehensive revisions should be performed for all the taxa.

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