



New taxa of Meconematini (Orthoptera: Tettigoniidae: Meconematinae) from Guangxi, China

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Abstract

The following new taxa of Meconematini from Guangxi province were described: *Sionthaumaspis damingshanicus* Wang, Liu, Li **gen. & sp. nov.**, *Aphlugiolopsis punctipennis* Wang, Liu, Li **gen. & sp. nov.**, *Eoxizicus (Eoxizicus) curvicercus* Wang, Liu, Li **sp. nov.**, *Meconemopsis paraquadrinotata* Wang, Liu, Li **sp. nov.**, *Neocryptopsis? unicolor* Wang, Liu, Li **sp. nov.**, *Xiphidiopsis (Dinoxiphidiopsis) expressa* Wang, Liu, Li **sp. nov.** *Xiphidiopsis (Xiphidiopsis) fischerwaldheimi* Gorochov, 1993, a synonym of *Xiphidiopsis (Xiphidiopsis) jinxiuensis* Xia & Liu, 1990 was described. The opposite gender of *Sinocyrtaspis truncate* Liu, 2000 and *Abaxinicephora excellens* Gorochov & Kang, 2005 were firstly described. *Xiphidiopsis (Dinoxiphidiopsis) jacobsoni* Gorochov, 1993 was also firstly recorded from China. Two new combinations, *Meconemopsis quadrinotata* (Bey-Bienko, 1971) Wang, Liu, Li comb. nov. and *Xiphidiopsis (Dinoxiphidiopsis) fanjingshanensis* (Shi & Du, 2006) Wang, Liu, Li comb. nov., as well as a synonym of the former *Xizicus (Axizicus) xizangensis* Jiao & Shi 2013 syn. nov. which respectively relate to *M. paraquadrinotata* **sp. nov.** and *X. (D.) expressa* **sp. nov.**, were also noted.

Key words: Tettigoniidae, Meconematini, new taxa, Guangxi, China

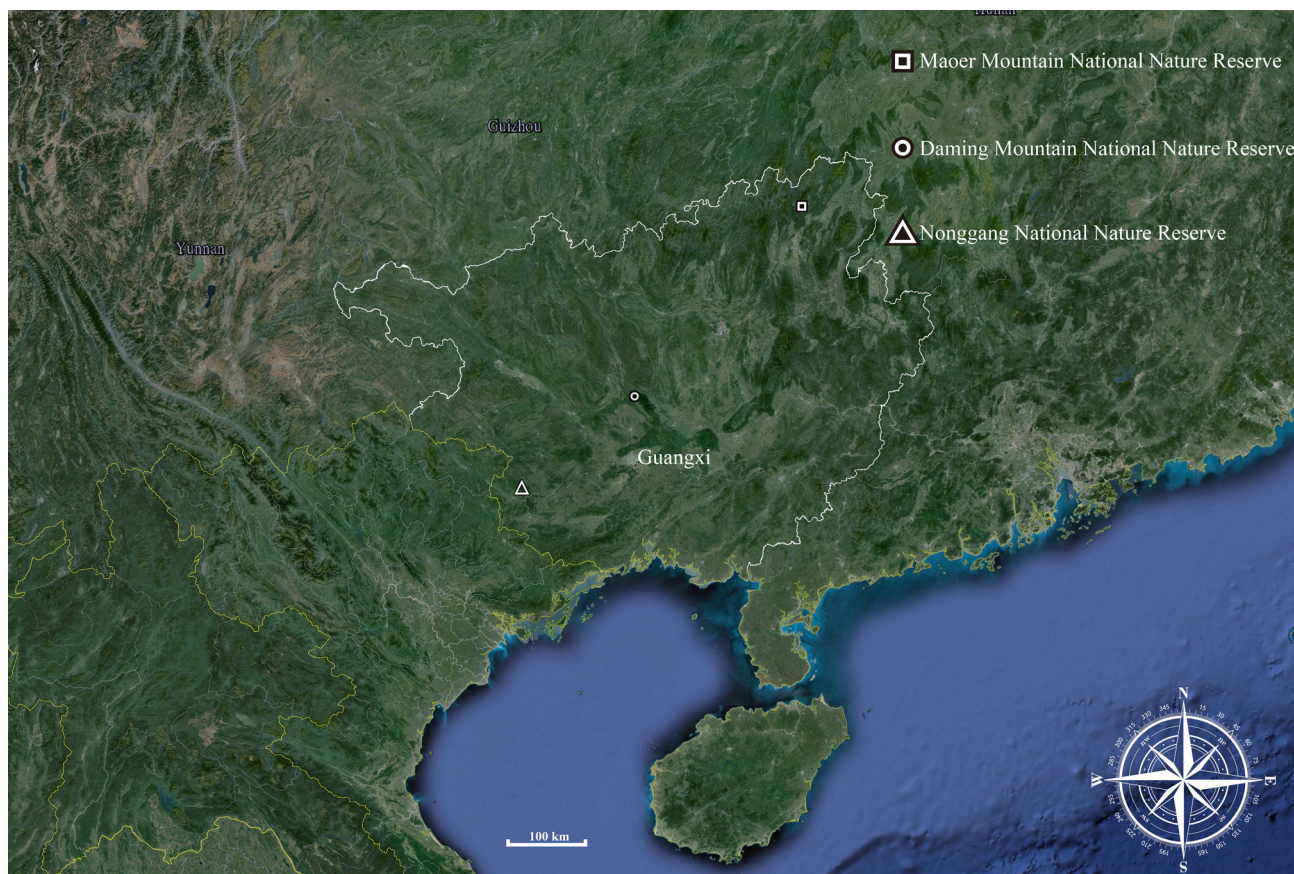
Introduction

The Shanghai Entomological Museum conducted an insect resource investigation for a month in the Nonggang National Nature Reserve, the Daming Mountain National Nature Reserve and the Maoer Mountain National Nature Reserve of Guangxi province in July 2013. We have been helped and supported well by relevant personnel. We have examined all the material from this field investigation, observed some new taxa of the tribe Meconematini covering 2 new genera and 6 new species: *Aphlugiolopsis punctipennis* Wang, Liu, Li **gen. & sp. nov.**, *Sionthaumaspis damingshanicus* Wang, Liu, Li **gen. & sp. nov.**, *Eoxizicus (Eoxizicus) curvicercus* Wang, Liu, Li **sp. nov.**, *Meconemopsis paraquadrinotata* Wang, Liu, Li **sp. nov.**, *Neocryptopsis? unicolor* Wang, Liu, Li **sp. nov.**, *Xiphidiopsis (Dinoxiphidiopsis) expressa* Wang, Liu, Li **sp. nov.** In addition, we collected a male of *Sinocyrtaspis truncate* Liu, 2000 and a female of *Abaxinicephora excellens* Gorochov & Kang, 2005 for the first time; addressing two questionable species *Xiphidiopsis (Xiphidiopsis) fischerwaldheimi* Gorochov, 1993 and *Xiphidiopsis jinxiuensis* Xia & Liu, 1990, we determined they are the same species: the former is a synonym of the latter. Besides, *Xiphidiopsis (Dinoxiphidiopsis) jacobsoni* Gorochov, 1993 is first recorded from China, 2 new combinations *Meconemopsis quadrinotata* (Bey-Bienko, 1971) Wang, Liu, Li comb. nov. and *Xiphidiopsis (Dinoxiphidiopsis) fanjingshanensis* (Shi & Du, 2006) Wang, Liu, Li comb. nov. which are related to two new species mentioned above respectively from Xizang and Guizhou, are addressed with note of another gender of each new combination and a synonym of the former *Xizicus (Axizicus) xizangensis* Jiao & Shi 2013 Wang, Liu, Li syn. nov. An illustrated key with diagnostic characters of each new species is presented.

Material and methods

The materials for this research were collected from 3 national nature reserves in Guangxi: the Nonggang National Nature Reserve, the Daming Mountain National Nature Reserve and the Maoer Mountain National Nature Reserve. Morphological structures were examined using a Leica MZ 125 and an OLYMPUS SZX 16 stereomicroscope, images were taken using a Motic Moticam Pro 252A digital imaging system, and line drawings were produced by Adobe Photoshop & Illustrator. All type specimens of new species are deposited in the SEM (Shanghai Entomological Museum, Chinese Academy of Sciences.).

We adopted length of body to mean the distance between apex of rostrum and posterior margin of tenth abdominal tergite; tegmina by the distance between attachment point and apex; ovipositor from base of 9th abdominal tergite to apex, pronotum and posterior femora by the distance between summit of base and apex. All lengths are shown in millimeters.



MAP 1. Location of the 3 national nature reserves of Guangxi, China.

New taxa, combinations and new descriptions

Genus *Sinothaumaspis* Wang, Liu, Li gen. nov.

Size medium. Fastigial cone prominent, with obtuse apex and a dorsal furrow. Face feebly oblique. Apical and subapical segments of maxillary palp almost of equal lengths. Pronotum elongate: lateral lobe low, with weak notch at posterior margin. Acoustical opening fully exposed. Tegmina shorter than pronotum, with the stridulating organ in male. All femora without spines, both tympana of fore tibiae open, hind tibiae with 2 paired of apical spurs. Male 10th abdominal tergite with a simple process; genitalia of male entirely membranous; dorsal valve of ovipositor with dorsal margin faintly denticulate.

Diagnosis. This new genus is close to *Thaumaspis* Bolívar, 1900 in single process of last abdomen tergite, but hypognathous type and face not oblique.

Type species. *Sinothaumaspis damingshanicus* sp. nov.

***Sinothaumaspis damingshanicus* Wang, Liu, Li sp. nov.**

(Figs. 1–8)

Holotype ♂, Paratype 11♂22♀, Daming Mountain, Wuming County, Guangxi province, alt. 1250m, 2013.VII.19–25, leg. LIU Xian-Wei *et al.*.

Description. Male. Fastigium of vertex conical, apically blunt and dorsally furrowed. Head hypognathous, last segment of maxillary palp approximately equal to the preceding. Paranota of pronotum low, humeral sinus absent. Thoracic auditory spiracle totally exposed. Tegmina short, too transparent to notice while alive, hind margin pointedly rounded and exceeding the terminal of pronotum, hind wings degraded. Fore tibiae spines of type 4, 4 (1, 1) armed on either margin of ventral surface, 5–6 outer and 4 inner spines on ventral margin of each mid tibia, hind tibiae with 28–30 dorsal teeth each margin above and 2 pairs of apical spurs. Posterior margin of abdominal tergite 10 bearing a conical middle process (Figs 4, 6). Cerci robust, near cylindrical, a pair of processes occur on inner base, of which lower one acute at terminal; apex with bunch of seta (Fig. 4). Posterior half of subgenital plate distinctly narrower than another, hind margin truncate, styli long, genitalia entirely membranous.

Female. Cerci short and thin, conical, subgenital plate inverted trapezoidal (Fig. 7). Ovipositor short, upcurved, dorsal margin denticulate at middle one third. ventral valve without apical hook (Fig. 8).

Coloration. Generally peak green of body, legs even lighter, transparent somewhat. Patches and stripes are bright yellow: paired paralleled stripes on dorsum of pronotum, each dorsum of abdomen tergite with a pair of patches. Eyes are also bright yellow. Antenna and spines of hind tibiae brownish.

Diagnosis. General appearance of this new species is similar to *Thaumaspis*, but characterized by not strongly oblique face, male 10th abdominal tergite with a simple pointed conical projection at middle of hind margin (Fig. 4); female ovipositor denticulate on dorsal margin.

Measurements. Lengths in millimeter: body ♂9.0–10.0, ♀10.0–11.0; pronotum ♂3.9–4.2, ♀4.0–4.6; tegmina ♂2.5–2.8, ♀2.5–2.7; hind femora ♂9.5–10.5, ♀10.0–11.0; ovipositor ♀6.5–7.0.

Etymology. The specific epithet refers to type locality Damingshan Mountain. The gender of the epithet is masculine.

Distribution. Guangxi (Daming Mountain).

Genus *Aphlugiolopsis* Wang, Liu, Li gen. nov.

Size smaller. Fastigial cone prominent, with obtuse apex and furrow above. Face slightly oblique, eyes subcircular, strongly prominent. Apical and subapical segments of maxillary palp almost of equal lengths. Pronotum elongate: lateral lobe low, with weak notch at hind margin. Acoustical opening fully exposed. Tegmina shortened, but extending to abdominal end, wings shorter than tegmina. All femora without spines, both tympana of fore tibiae open, hind tibiae with 3 paired of apical spurs. male 10th abdominal tergite with rounded hind margin; subgenital plate of male with styli placed at subapical sites; genitalia of male entirely sclerotized.

Diagnosis. This new genus is close to *Neoconicephora* Gorochoy, 1998 but differs in the male subgenital plate with styli and genitalia entirely sclerotized. Differs from *Phlugiolopsis* Zeuner, 1940 by the fully developed tegmina and wings.

Type species. *Aphlugiolopsis punctipennis* Wang, Liu, Li sp. nov.

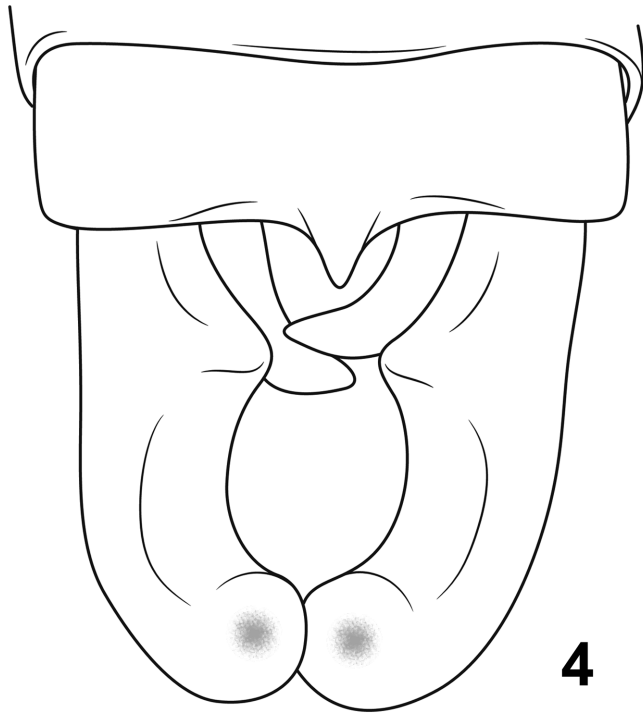
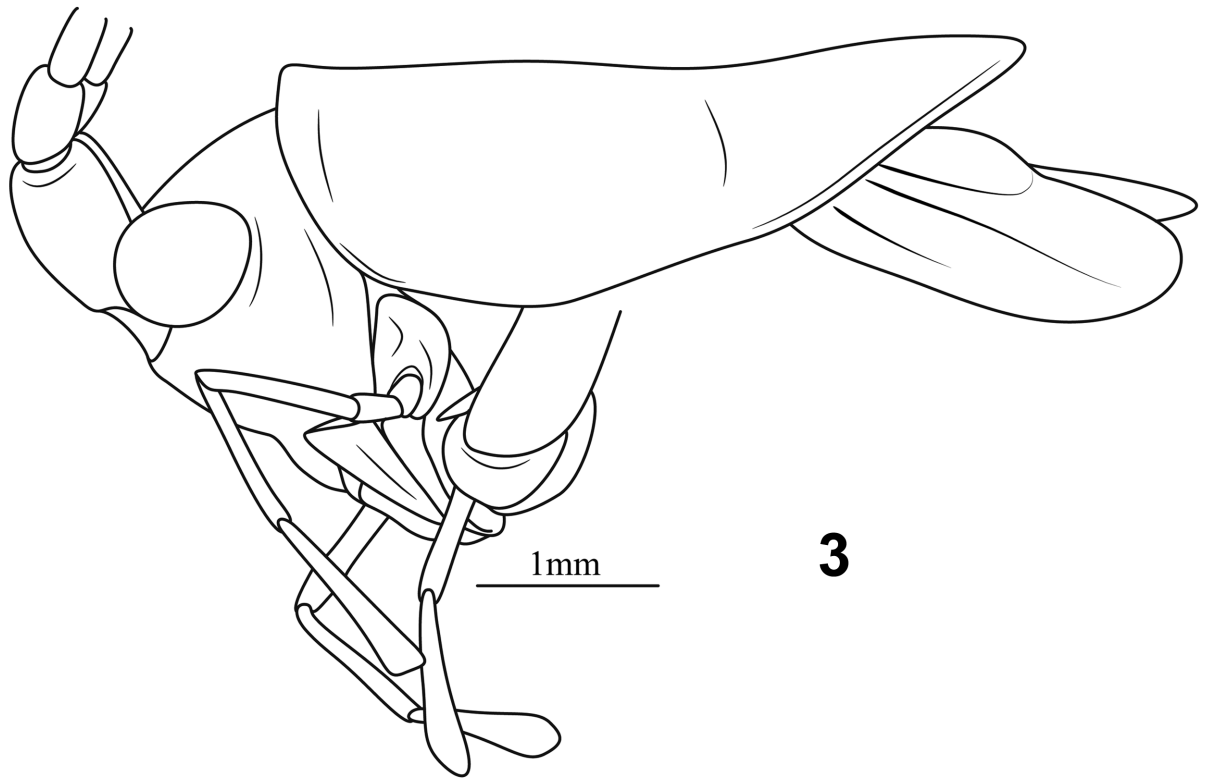
***Aphlugiolopsis punctipennis* Wang, Liu, Li sp. nov.**

(Figs. 9–16)

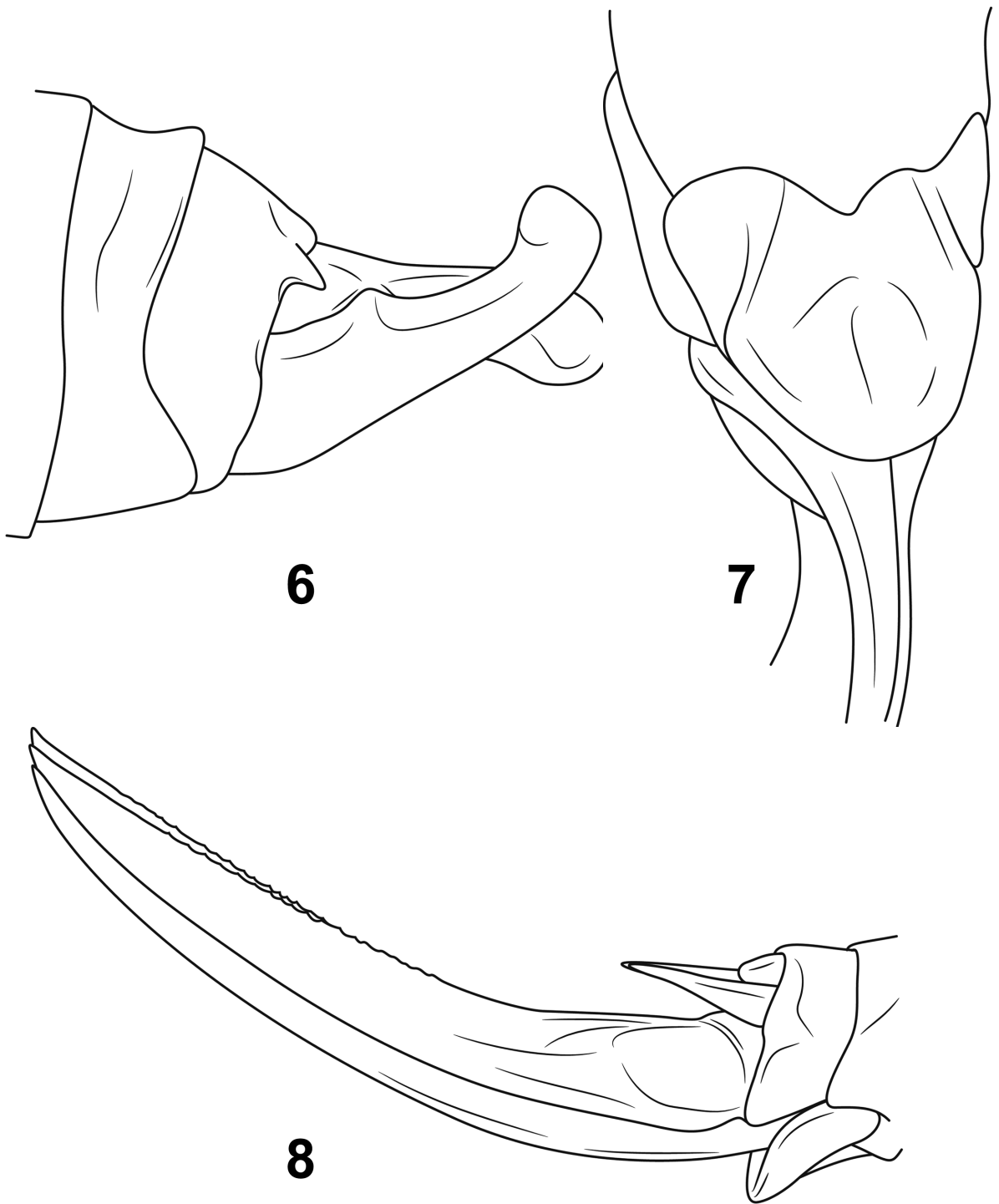
Holotype♂, Paratype16♂1♀, Daming Mountain, Wuming County, Guangxi province, alt. 1250 m, 2013.VII.19–25, leg. LIU Xian-Wei *et al.*.



FIGURES 1–8. *Sinothaumaspis damingshanicus* sp. nov. 1. male in habitat; 2. female in habitat; 3. head, pronotum and tegmina of male, lateral view; 4–6. male abdomen terminal in dorsal view, ventral view and lateral view; 7, 8. female abdomen terminal in ventral view and lateral view.



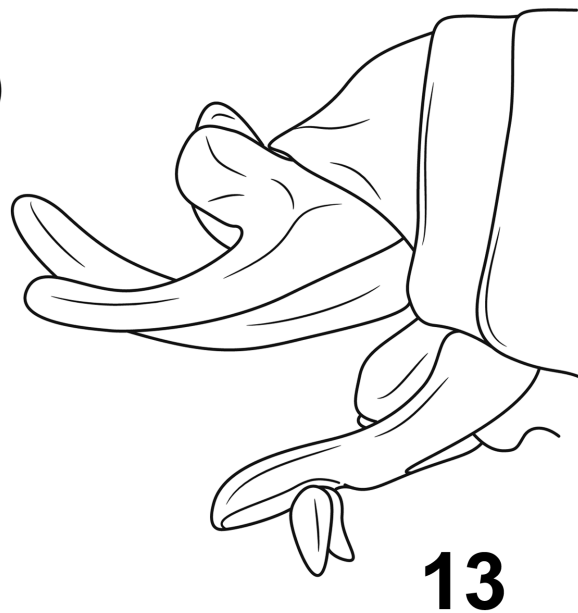
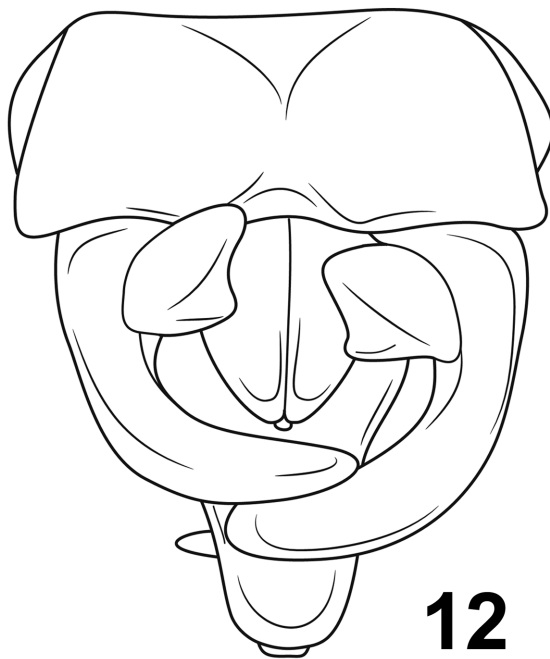
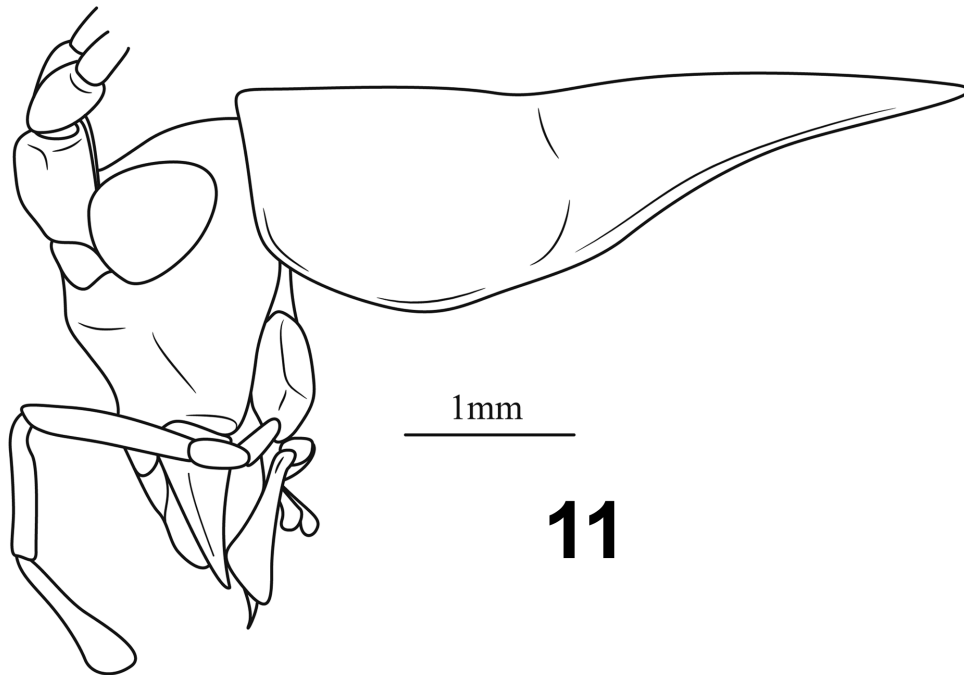
FIGURES 1–8. (Continued)



FIGURES 1–8. (Continued)



FIGURES 9–16. *Aphlugiolopsis punctipennis* sp. nov. 9. male in habitat; 10. female in habitat. 11. head and pronotum of male, lateral view; 12–14. male abdomen terminal in dorsal view, lateral view and ventral view; 15, 16. female abdomen terminal in ventral view and lateral view.



FIGURES 9–16. (Continued)

Description. Male. Body small sized among this tribe. Conical rostrum of vertex of which apex obtuse shallowly furrowed on dorsum, with subcircular and prominent compound eyes and almost of equal lengths last two segments of maxillary palp. Pronotum elongate but low in profile, metazona longer than prozona, humeral sinus weak. Thoracic auditory spiracle fully exposed. Tegmina extending to abdominal terminal and longer than wings. Each femur unarmed, fore tibiae with inner and outer ventral spines of type 4, 5 (1, 1); 6 outer and 5 inner ventral spines on each ventral margin of mid tibia, hind tibiae with 23–26 teeth and 1 pair of apical spurs on the each margin of dorsal surface, ventral surface with 2 pairs of apical spurs. 10th abdominal tergite with rounded hind

margin, middle little concave (Fig. 12); cerci with 2 branches, upper one shorter than lower one and bearing a ventral lobe. Subgenital plate long and narrow, with narrowly rounded apex, styli placed at subapical part of subgenital plate (Fig. 14). Genitalia entirely sclerotized, notched at apex and dorsal surface with a median keel.

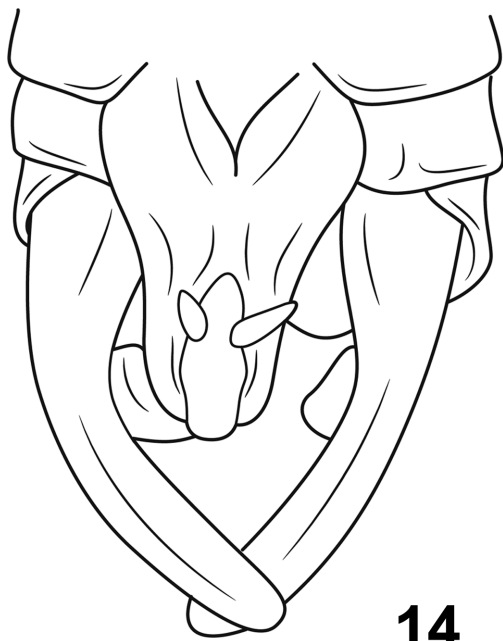
Female. Generally similar to male. Prozona and metazona about equi-long. Cerci short and small. Subgenital plate with almost parallel lateral margins, hind margin triangular and obtuse at apex (Fig. 15). Ovipositor long with a small ventral apical hook.

Coloration. Brownish with sparse dark rings of antennae, darkish brown lateral stripes of pronotal disc, darkish spots of tegmina, brownish rings of fore and middle legs, keel of hind legs darkened.

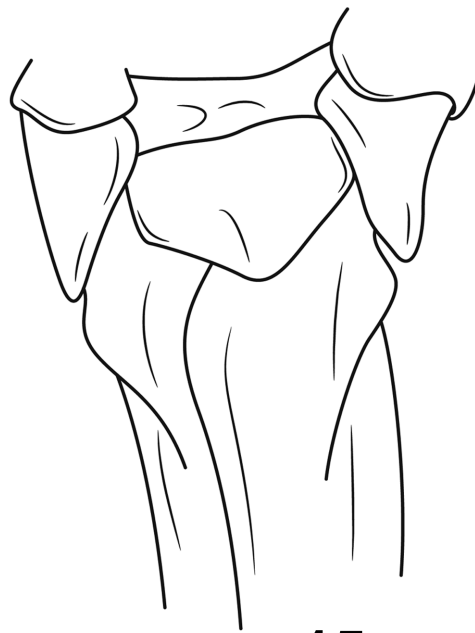
Measurements. Lengths in millimeter: body ♂6.0–6.5, ♀6.0; pronotum ♂4.5–4.6, ♀4.6; tegmina ♂5.5–5.6, ♀6.0; hind femora ♂8.5–8.6, ♀8.6; ovipositor ♀7.2.

Etymology. The specific epithet refers to darkish spots of tegmina, from Latin ‘punctatus’ and ‘penna’. The gender of the epithet is feminine.

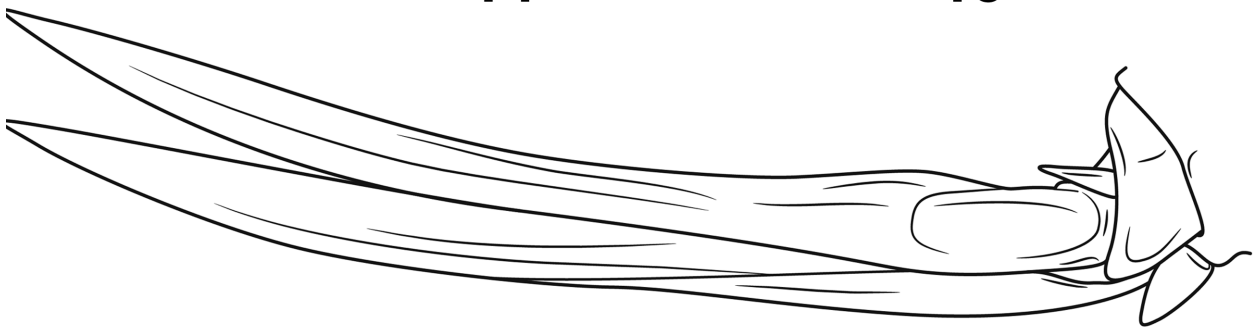
Distribution. Guangxi (Daming Mountain).



14



15



16

FIGURES 9–16. (Continued)

Genus *Eoxizicus* Gorochov, 1993

Type species. *Xiphidiopsis kulingensis* Tinkham, 1943

Subgenus *Eoxizicus* Gorochov, 1993

Eoxizicus (Eoxizicus) curvicercus Wang, Liu, Li sp. nov.

(Figs. 17–21)

Holotype♂, paratype2♂2♀, Maoer Mountain, Xing'an County, Guangxi province, alt.1100–1700m, 2013.VII.30–VIII.6, leg. LIU Xian-Wei *et al.*; 1♀, Maoer Mountain, Xing'an County, Guangxi province, alt. 900–1500m, 1992.VIII.22–23, leg. LIU Xian-Wei & YIN Hai-Sheng.

Description Male. Body medium sized among this group. Fastigium of vertex conical, apex obtuse and dorsum grooved in the middle. Face not oblique at all, last two segments of maxillary palp almost of equal lengths. Pronotum high in profile: hind margin sinuated, humeral notch inconspicuous. Wings fully developed, hind wings longer than tegmina by about 1mm. Fore tibiae with inner and outer ventral spines of type 4, 5 (1, 1), outer 6 and inner 5 spines on ventral margin of each mid tibia, hind tibia bearing 24–26 small teeth each margin above also 3 pairs of apical spurs. Hind margin of 10th abdominal tergite with a pair of separated small tubercles. Cerci extremely bended, a flaky lobe occurred at inner base (Fig. 18), apex rounded. Subgenital plate concave in hind margin, styli on apex. Genitalia totally membranous.

Female. Conical cerci small and short. Subgenital transverse, generally alike majority female of this genus, apical half with curving lateral edge, high and shallowly sunken in profile (Fig. 20). Ovipositor as long as hind femora, ventral valve with an apical hook.

Coloration. Body pale green. Pronotum with paired darkish brown lateral stripes. Spines of hind tibia dark.

Diagnosis. This new species is similar to *Eoxizicus (Eoxizicus) dao* Gorochov, 1998 and *Eoxizicus (Eoxizicus) duplum* Gorochov, 1998, but differs in size of body small, processes of male 10th abdominal tergite very indistinct (Fig. 18) and cerci strongly curved (Fig. 18); subgenital plate of female transverse and with curved lateral keels in apical half (Fig. 20).

Measurements. Lengths in millimeter: body ♂10.0, ♀11.0–13.5; pronotum ♂3.6, ♀3.5; tegmina ♂18.0, ♀20.0; hind femora ♂10.0, ♀10.5; ovipositor ♀11.0.

Etymology. The specific epithet from Latin 'curve' + 'cercus', corresponding the feature of male upcurved cerci. The gender of the epithet is masculine.

Distribution. Guangxi (Maoer Mountain).

Genus *Meconemopsis* Karny, 1924

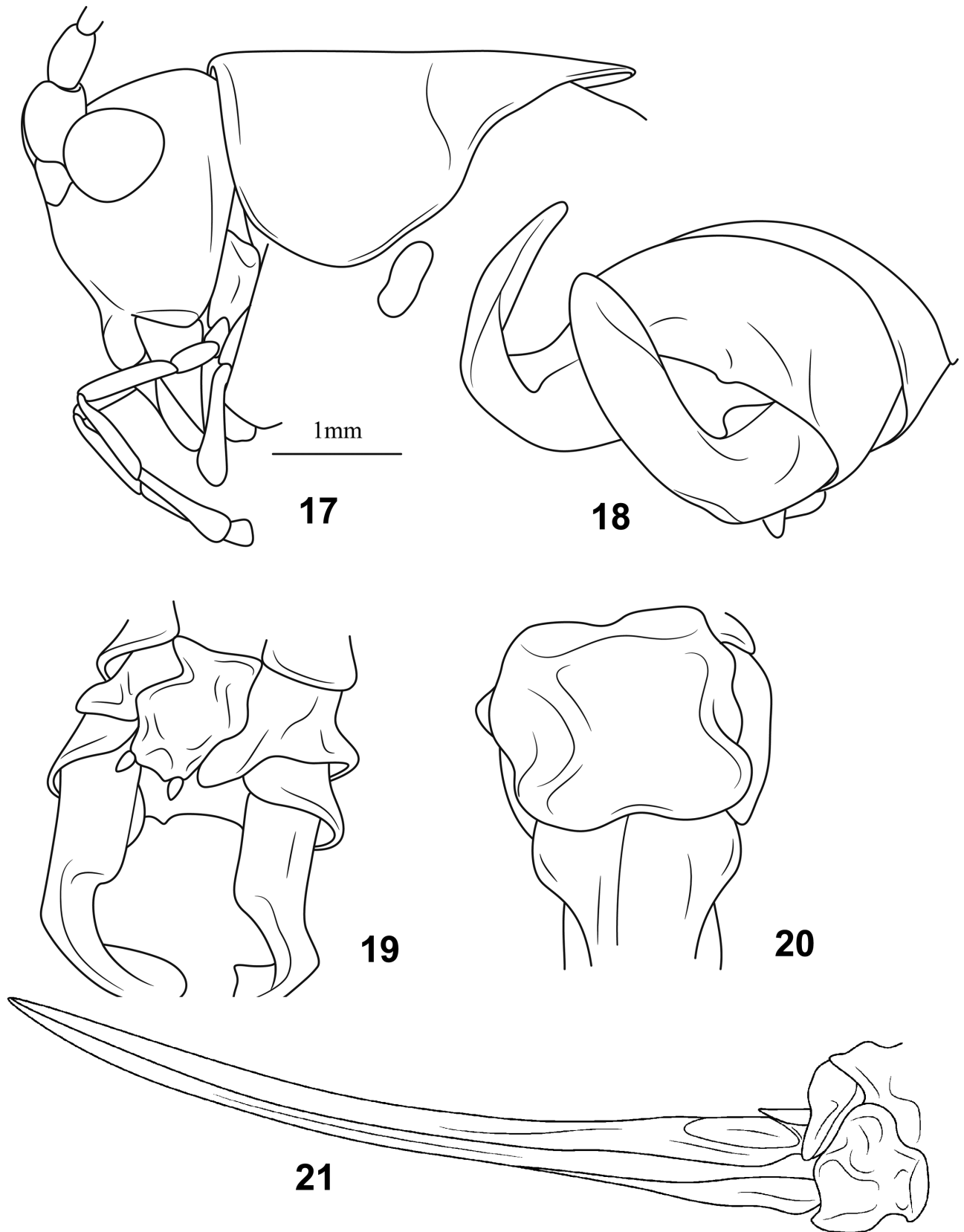
Type specie: *Meconemopsis borelli* Karny, 1924.

Meconemopsis paraquadrinotata Wang, Liu, Li sp. nov.

(Figs. 22–30)

Holotype♂, Maoer Mountain, Xing'an County, Guangxi province, alt. 900–1500 m, 1992.VIII.22–23, leg. LIU Xian-Wei & YIN Hai-Sheng; Paratype1♂10♀, Daming Mountain, Wuming county, Guangxi province, alt. 1250 m, 2013.VII.19–25, leg. LIU Xian-Wei *et al.*; 2♀, Maoer Mountain, Xing'an County, Guangxi province, alt. 1200 m, 2012.VII.28–31, leg. BI Wen-Xuan; 1♀, Jinzhong Mountain, Yongfu County, Guangxi province, alt. 1400–1819 m, 1993.X.11, leg. ZEN Zhi-Ying; 1♀, Erlang Mountain, Tianquan County, Sichuan province, alt. 900 m, 2010.IX.5, leg. BI Wen-Xuan; 1♀, Mount Huangshan, Anhui province, 1985.X.21, leg. LIU Xian-Wei.

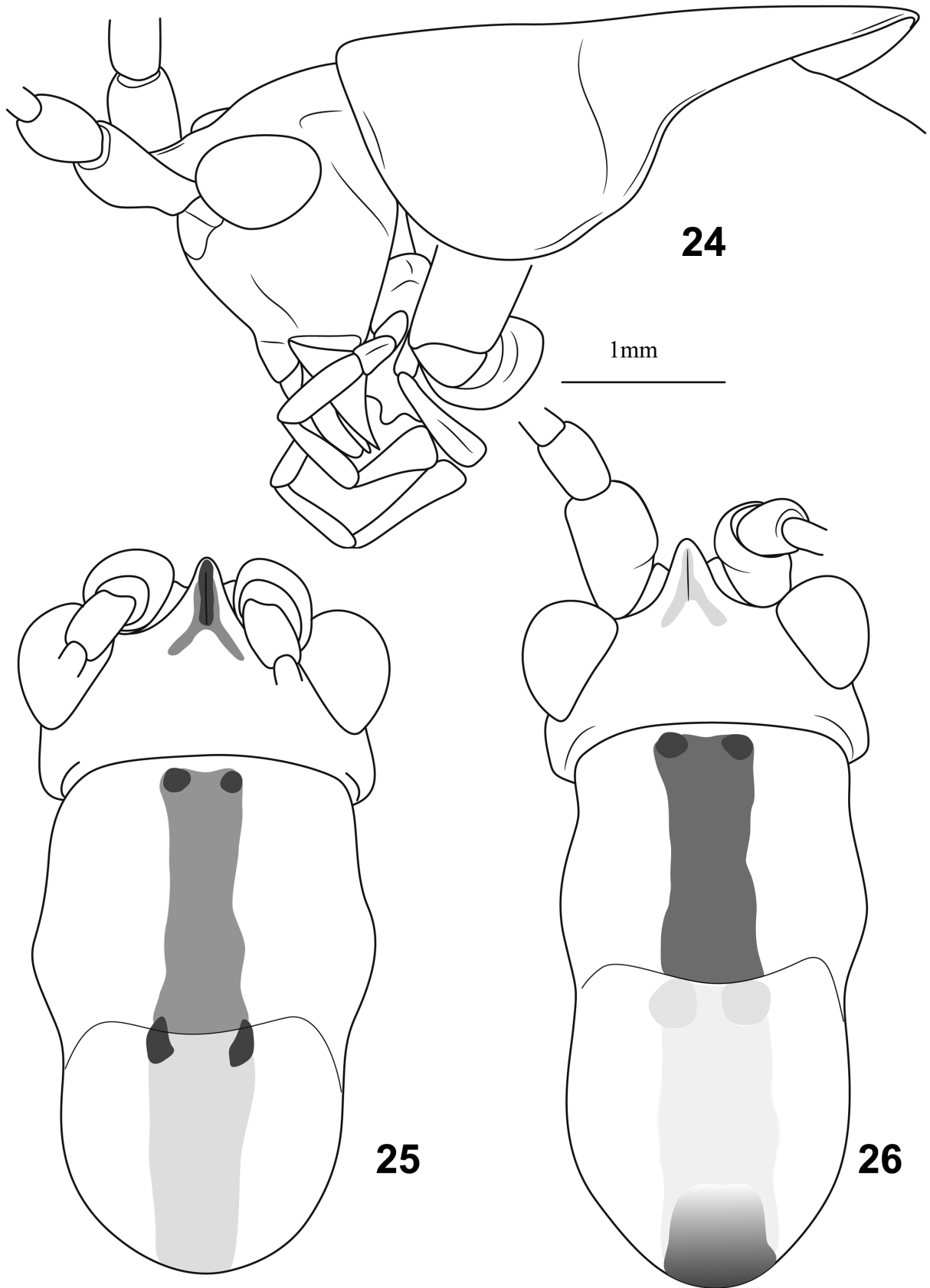
Description. Male. Body form small. Fastigium of vertex conical, apex obtuse, longitudinal furrowed dorsally. Head hypognathous type, terminal and subterminal segments of maxillary palp nearly of equal lengths. Paranota higher, posterior edge distinctly notched. Hind wings longer than tegmina by 0.5mm. Fore tibiae with inner and



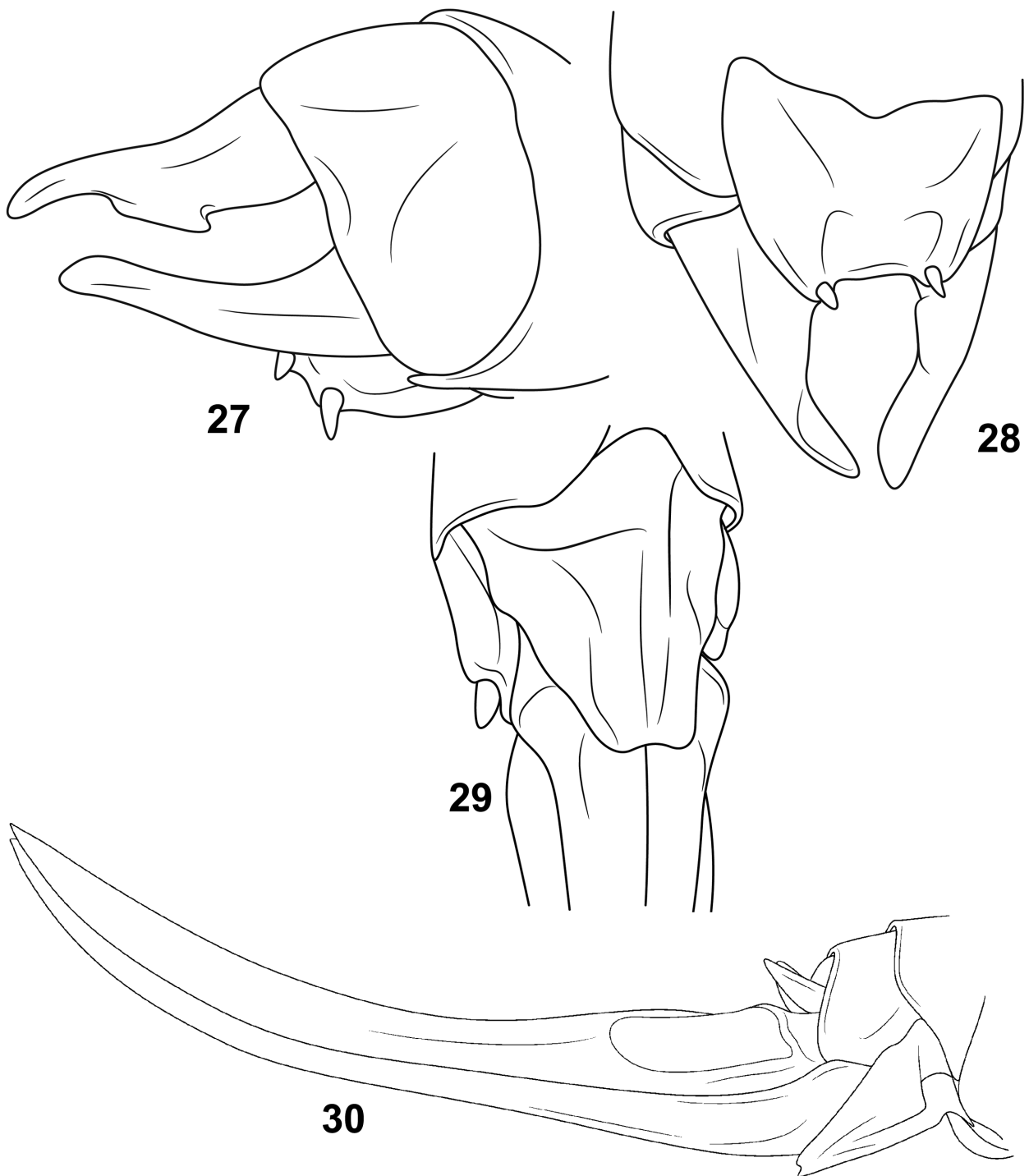
FIGURES 17–21. *Eoxizicus (Eoxizicus) curvicercus* sp. nov. 17. head and pronotum of male, lateral view; 18, 19. male abdomen terminal in rear lateral view and ventral view; 20, 21. female abdomen terminal in ventral view and lateral view.



FIGURES 22–30. *Meconemopsis paraquadrinotata* sp. nov. 22, 23. female in habitats. 24–26. head and pronotum of male in lateral view and dorsal view of two different stripe type; 27, 28. male abdomen terminal in laterally dorsal view and ventral view; 29, 30. female abdomen terminal in ventral view and lateral view.



FIGURES 22–30. (Continued)



FIGURES 22–30. (Continued)

outer ventral spines of type 4, 4 (1, 1), 5 outer and 4 inner ventral spine on each mid tibia, hind tibiae bearing 19–23 teeth each margin above also 3 pairs of apical spurs. Posterior edge of 10th abdominal tergite truncated. Ventral margin of cercus of which apex slightly bent bearing an inner tooth. Subgenital plate with posterior edge flat, styli provided. Genitalia completely membranous.

Female. General appearance similar to that of male. Cerci short and conical. Subgenital plate gently narrowing towards apex, posterior edge shallowly notched. Ovipositor and hind femur almost of equal lengths, ventral valve bearing an apical hook.

Coloration. Generally yellowish green. Antennae with darkish brown rings. Fastigium of vertex with black longitudinal strips, disc with reddish brown longitudinal bands which broadening posteriorly stretch to posterior edge of pronotum which spotted 4 darkish patches. Tegmina with darkish spots and anal area with darkish bands. Spines of hind tibia darkish.

Diagnosis. This species similar to type species in male cerci; very similar to *Xiphidiopsis? quadrinotata* Bey-Bienko, 1971 which should also be included in *Meconemopsis* in size, shape of body and coloration (head with black rostrum and reddish brown longitudinal band on occiput, pronotal disc with reddish brown longitudinal band and 2 pairs of darkish brown spots on fore and central part). But differs in the 10th abdominal tergite of male with truncate hind margin (Fig. 27), cerci of male simplex (Figs 27, 28). Subgenital plate of female with broad base and narrowed apically, hind margin concave (Fig. 29).

Measurements. Lengths in millimeter: body ♂7.0–9.0, ♀8.0–10.0; pronotum ♂3.0–3.2, ♀2.5–3.0; tegmina ♂12.0–13.0, ♀12.5–13.0; hind femora ♂6.5–7.0, ♀7.0; ovipositor ♀6.5–7.0.

Etymology. The specific epithet from related specific epithet ‘quadrinotata’ prefix ‘para-’. The gender of the epithet is feminine.

Distribution. Guangxi, Sichuan, Anhui.

***Meconemopsis quadrinotata* (Bey-Bienko, 1971) Wang, Liu, Li comb. nov.**
(Figs 31–36)

Xiphidiopsis quadrinotata Bey-Bienko, 1971, *Ent. Rev.*, 50:475; Liu & Jin, 1994, *Contr. Shanghai Inst. Entomol.*, 11:111; Jin & Xia, 1994, *Jour. Orth. Res.*, 3:27.

Xizicus (Axizicus) xizangensis Jiao, Shi & Gao, 2013, *Zootaxa*, 3694(3):298. (**syn. nov.**)

Material examination. 5♀, Motuo County, Xizang province, alt. 970–1570 m, 1979.IX.10–1980.VIII.14, leg. JIN Gen-Tao & WU Jian-Yi; 2♀, Motuo County, Xizang province, alt. 1000 m, 2010.VIII. 6–8, leg. BI Wen-Xuan; 1♂2♀, Beibeng Village, Motuo County, Xizang province, alt. 850–1200 m, 1983.IV.9–V. 18, leg. HAN Yin-Heng.

Supplemental description. Male. Conical of Fastigium verticis, obtuse apically and furrowed dorsally. Last two segments of maxillary palp about equal in length. Metazona no longer than prozona, with oblique posterior edge of paranota, humeral sinus conspicuous. Tegmina far exceeding apex of hind femora, hind wings longer than tegmina by 2.0 mm. Each femur unarmed. Fore tibiae bearing ventral spurs internal and external of type 4, 4 (1, 1), 5 outer and 4 inner ventral spines of mid tibiae, hind tibiae with 19–21 teeth each margin above and 3 pairs of apical spurs. Posterior edge of 10th abdominal tergite concave in the middle, epiproct small and roundly triangular. Cerci stout, upper inner base occur a digitation, a conical elevation of which dentate in summit beneath; inner margin of apex dentate. Subgenital plate small, nearly circular, shrink in apical one fifth, apex truncate, styli very small.

Coloration. Greenish in life. Dorsum of rostrum black, disc of vertex darkish brown. Disc of pronotum with a pale brown longitudinal band and 4 blackish spots, tip of terminal darkish in some case. Apical half of tegmina with inconspicuous darkish spots.

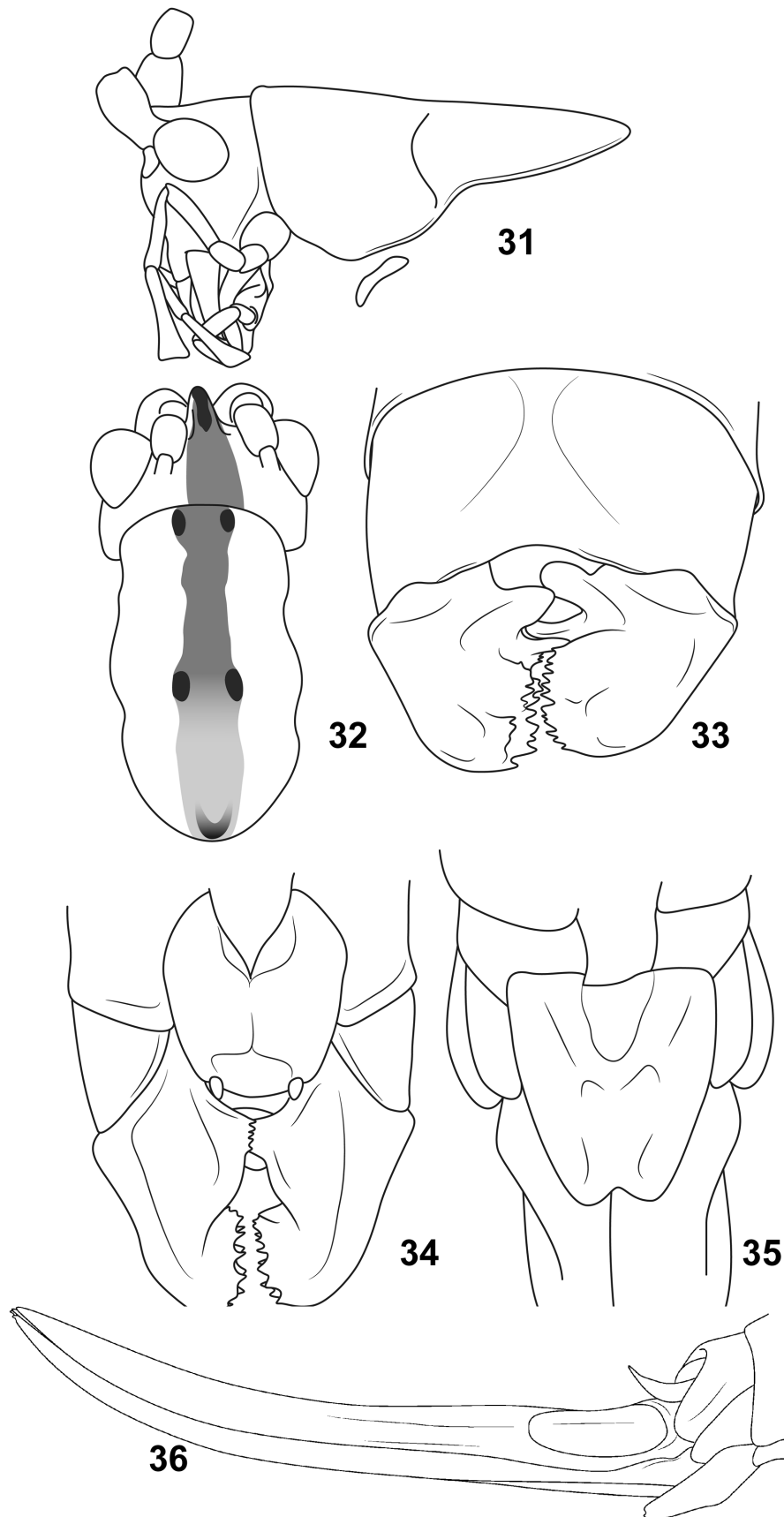
Measurements. Lengths in millimeter: Body ♂8.5, ♀9.0–13.0; pronotum ♂3.5, ♀3.0–3.8; tegmina ♂8.0, ♀16.5–19.0; hind femora ♂7.0, ♀8.0; Ovipositor ♀6.5–7.0.

Discussion. The original description of female was accompanied by one drawing of dorsal surface of pronotum. The type specimen photo on OSF not provide the ventral view of subgenital plate. The females collected in Motuo basically matched original description, and considering Motuo is adjacent to type locality, it is reasonable to conclude that material collected in Xizang is *Xiphidiopsis quadrinotata*. The species is definitely not a *Xiphidiopsis*, the black dorsum of rostrum, pronotum with patches and stripes, hind margin of male 10th abdominal tergite without hind process inconsistent with *Meconemopsis*, hence the new combination.

Distribution. China (Xizang), Burma (Nam Tamai valley).

Genus *Neocyrtopsis* Liu & Zhang, 2007

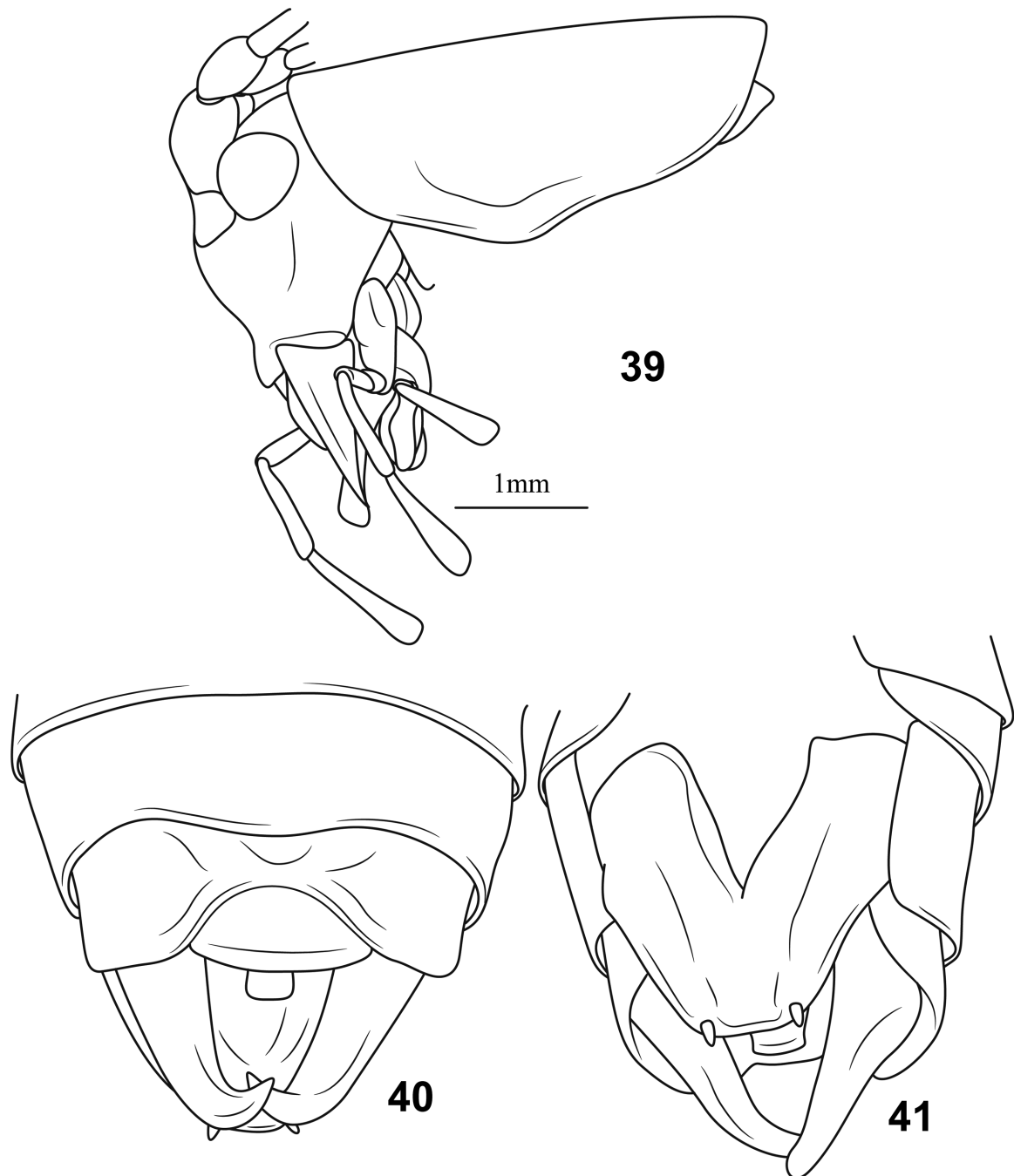
Type species: *Neocyrtopsis (Neocyrtopsis) variabilis* (Xia & Liu, 1993)



FIGURES 31–36. *Meconemopsis quadrinotata* (Bey-Bienko, 1971). 31, 32. head and pronotum of male in lateral and dorsal view; 33, 34. male abdomen terminal in dorsal and ventral view; 35. female subgenital plate, ventral view; 36. female abdomen terminal in lateral view.



FIGURES 37–45. *Neocyrtopsis? unicolor* sp. nov. 37, 38. male and female in habitats; 39. head and pronotum and tegmina of male in lateral view; 40–43. male abdomen terminal in dorsal, ventral, lateral and rear view; 44. female subgenital plate, ventral view; 45. female abdomen terminal in lateral view.



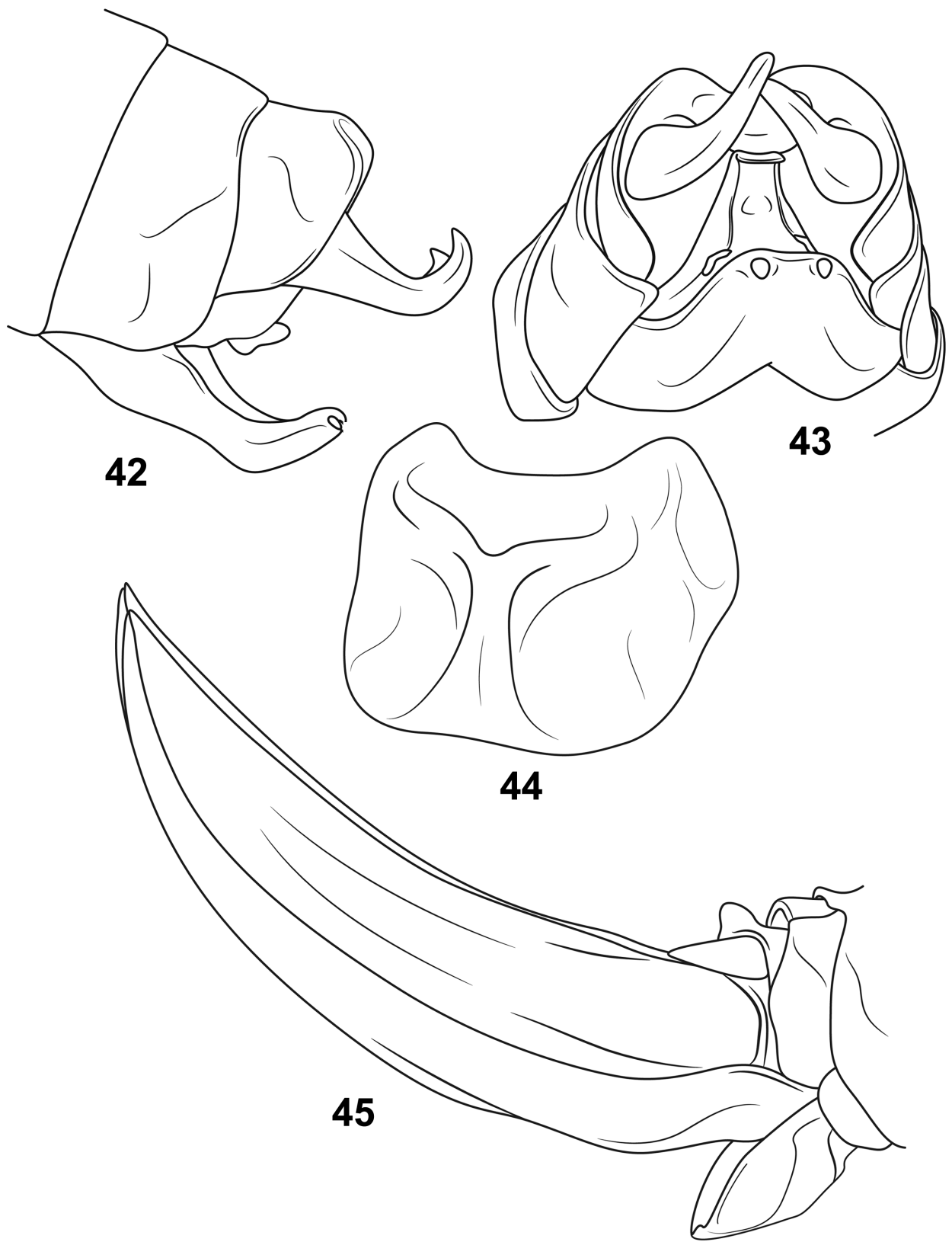
FIGURES 37–45. (Continued)

Neocyrtopsis? unicolor Wang, Liu, Li sp. nov.

(Figs 37–45)

Holotype♂, Paratype1♂1♀, Maoer Mountain, Xing'an County, Guangxi province, alt. 1100–1700 m, 2013.VII.30–VIII.6, leg. LIU Xian-Wei *et al.*

Description. Male. Body form small. Fastigium of vertex conical, dorsally furrowed, apex obtuse. Head hypognathous type, last segments of maxillary palp about one third longer than preceding. Pronotum short and broad, anterior edge faintly truncate and posterior edge rounded of disc, paranota much longer than height, lateral angle rounded, hind margin gently convex. Tegmina very short, reaching middle of 1st abdominal tergite, just



FIGURES 37–45. (Continued)

slightly surpassing posterior edge of pronotum (Fig. 39), staggered; hind wings degraded. Each femur unarmed, genicular lobes rounded. Inner and outer spines of fore tibia arranged types are 4, 4 (1, 1); mid tibia with 4 outer and 3 inner ventral spines; hind tibia bearing about 18–21 dorsal teeth either inner or outer margin above, and 3 pair of apical spurs armed. 10th abdominal tergite concaved behind in middle, epiproct broadly rounded and integrate into preceding tergite (Fig. 40). Cerci of male simplex, hook-like of apex incurved (Figs. 40–43). Subgenital plate of male large, with roundly truncate hind margin, styli very small (Fig. 42). Genitalia entirely sclerotized, with elongated rectangle upper part (Fig. 43).

Female. Appearance roughly similar to that of male, but body larger. Tegmina small, not intersecting, wings greatly reduced. Epiproct relatively large. Cerci slender, apical third spiniform. Ovipositor short, stout, tapering to apex, gently upcurved, ventral valve without apical hook (Fig. 45).

Coloration. Generally green. Terminal of legs (tibiae and tarsi) light yellow; paired parallel stripes on disc of pronotum and vertex yellowish, terminal section between stripes of pronotum with a pair of brownish patches; each tergite of abdomen with paired yellowish patches on dorsum, connected into longitudinal line; terminal of ovipositor (most part of dorsal valve) darkish brown.

Diagnosis. This new species is similar to *Neocyrtopsis* (*Neocyrtopsis*) *variabilis* (Xia & Liu, 1993) and *Neocyrtopsis* (*Neocyrtopsis*) *fallax* Wang *et al.*, 2012 in male cerci. But it differs in the body color, 10th abdominal tergite and genitalia of male, general appearance very different from this genus, deposit temporally.

Measurements. Lengths in millimeter: body ♂8.3–8.5, ♀10.3; pronotum ♂3.5–3.8, ♀4.0; tegmina ♂1.0–1.5, ♀0.8; hind femora ♂7.0–8.0, ♀8.7; ovipositor ♀6.0.

Etymology. The specific epithet derives from the color of the dry specimen. The gender of the epithet is feminine.

Distribution. Guangxi (Maoer Mountain).

Genus *Xiphidiopsis* Redtenbacher, 1891

Type species: *Xiphidiopsis* (*Xiphidiopsis*) *fallax* Redtenbacher, 1891

Subgenus *Xiphidiopsis* (*Xiphidiopsis*) Redtenbacher, 1891

Xiphidiopsis (*Xiphidiopsis*) *jinxuensis* Xia & Liu, 1990

(Figs 46–53)

Xiphidiopsis jinxuensis Xia & Liu, 1990[1988]: *Contrib. Shanghai Inst. Entomol.* 8, 226[228]; Liu & Jin, 1994: *Contr. Shanghai Inst. Entomol.*, 11,110; Jin & Xia, 1994: *Jour. Orth. Res.*, 3,27.

Xiphidiopsis? *jinxuensis* Gorochov, 1993: *Zoosystematica Rossica* 2(1), 70; Jin & Xia, 1994: *Jour. Orth. Res.* 3, 15–41.

Xiphidiopsis (*Xiphidiopsis*) *fischerwaldheimi* Gorochov, 1993: *Zoosystematica Rossica* 2(1), 64. (**syn. nov.**)

Material examined. Holotype♀, Shengtang Mountain, Jinxiu County, Guangxi province, 1981.X.14, alt. 1979 m, leg. JIN Gen-Tao & LI Fu-Liang; 36♂8♀, Maoer Mountain, Xing'an County, Guangxi province, 2013.VIII.1–2, alt. 500–2100 m, leg. ZHU Wei-Bin *et al.*; 1♂, Maoer Mountain, Xing'an County, Guangxi province, 2013.VII.30–VIII.6, alt. 500–1100 m, leg. WANG Han-Qiang; 1♀, Mengla County, Xishuangbanna, Yunnan province, 1958.IX.10, alt. 620–650 m, leg. MENG Xu-Wu.

Discussion. This species occurs in Vietnam and adjacent Chinese areas. As for Maoer Mountain National Nature Reserve, it lives mainly in the understorey of bamboos at low altitude in a certain number overlapping with *Decma* (*Decma*) *fissa* (Xia & Liu, 1992), which is the largest Meconematinae population of this area. Both males and females were treated as different species. When large populations occur, wandering females can be found during the day time, but not males. It was difficult for us to capture both genders together.

Distribution. China (Guangxi, Yunnan); Vietnam (Hasonbinh, Hanoi)

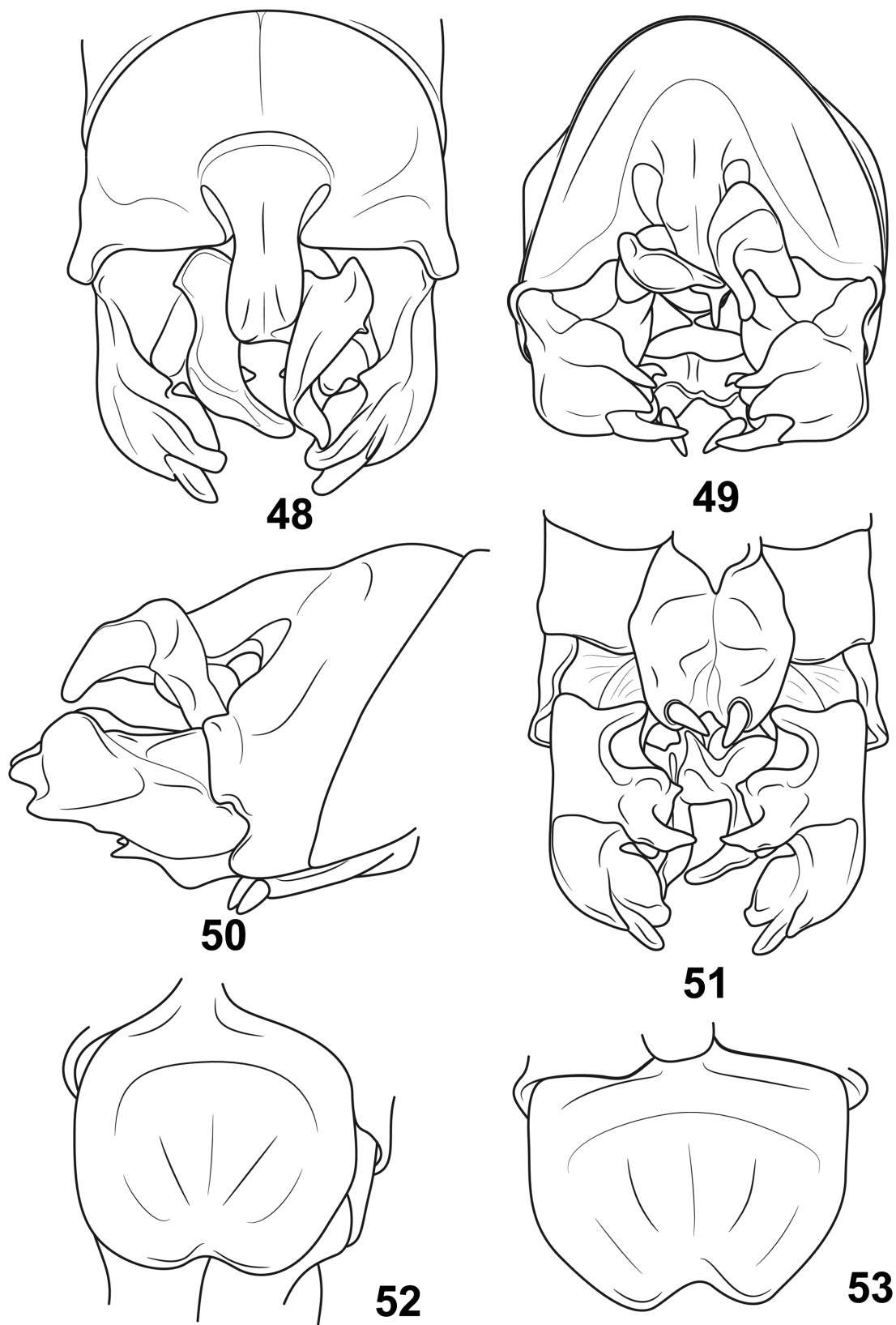
Subgenus *Xiphidiopsis* (*Dinoxiphidiopsis*) Gorochov, 1993

Type species: *Xiphidiopsis (Dinoxiphidiopsis) jacobsoni* Gorochov, 1993



FIGURES 46–53. *Sinocyrta trunctata* Liu, 2000. 46, 47. male in habitats; 48–51. male abdomen terminal in dorsal, rear,

lateral and ventral view; 52, 53. subgenital plate of type species and recently collected female in Guangxi in ventral view.

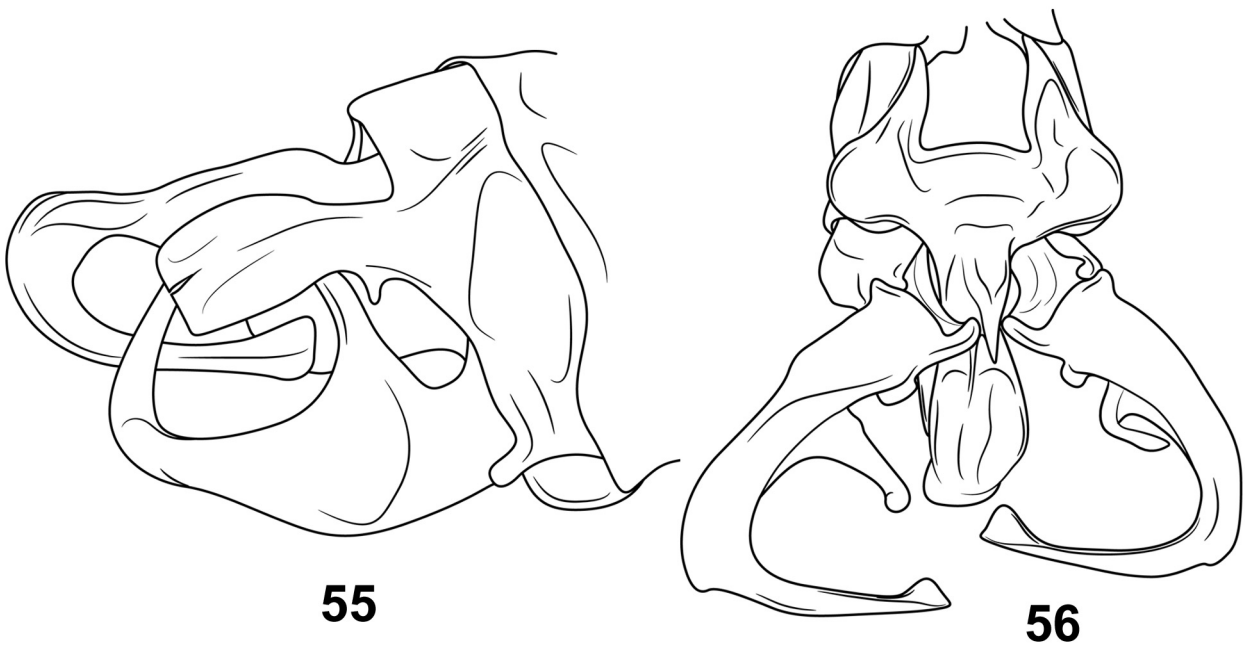


FIGURES 46–53. (Continued)

***Xiphidiopsis (Dinoxiphidiopsis) jacobsoni* Gorochov, 1993**
(Figs 54–56)

Xiphidiopsis (Dinoxiphidiopsis) jacobsoni Gorochov, 1993: *Zoosystematica Rossica*, 2(1):68; Kim & Pham, 2014: *Zootaxa*, 3811(1):71.

Material examined. 2♂, Sanlian village, Longzhou County, Guangxi province, 2013.VII.14–17, alt. 300 m, leg. ZHU Wei-Bin *et al.*



FIGURES 54–56. *Xiphidiopsis (Dinoxiphidiopsis) jacobsoni* Gorochov, 1993. 54. male in life; 55. male abdomen terminal in dorsal view; 56. male abdomen terminal in ventral view.

Discussion. Those 2 males we collected from Sanlian Conservation Station of Nonggang National Nature Reserve are very similar to the line art of Gorochov, but posterior process of 10th abdominal tergite wider, protruding apical part of specialized subgenital plate seems larger, and apex of cerci expanded (fig. 74), but in consideration of geographic variation, varying degrees of graphic distortion and more and more Vietnamese species recorded in Guangxi province, we regarded this Guangxi species *Xiphidiopsis (Dinoxiphidiopsis) jacobsoni*.

Distribution. China (Guangxi); Vietnam (Vinhphu Province, Tan Dao).

***Xiphidiopsis (Dinoxiphidiopsis) expressa* Wang, Liu, Li sp. nov.**

(Figs 57–64)

Holotype♂, Paratype2♀, Maoer Mountain, Xing'an County, Guangxi province, alt. 1100–1700m, 2013.VII.30–VIII.6, leg. LIU Xian-Wei *et al.*; 1♀, Maoer Mountain, Xing'an County, Guangxi province, alt. 900–1500m, 1992.VIII.22–23, leg. LIU Xian-Wei & YIN Hai-Sheng.

Description. Male. Body medium-sized. Fastigium of vertex conical, shallowly furrowed, apex obtuse. Last two segments of maxillary palp about of equal lengths. Pronotum narrow and elongate, anterior edge faintly truncate and posterior edge pointedly rounded of disc, paranota much higher, lateral angle rounded, and humeral sinus inconspicuous. Wings well developed, far exceeding abdominal terminal, hind wings longer than tegmina by 1.0mm. Each femur unarmed. Fore tibiae bearing ventral spines on internal and external edge of type 4, 5 (1, 1); 6 outer and 5 inner ventral spines on mid tibia; hind tibia with 31–34 dorsal teeth on each margin above, and 3 pairs of apical spurs. 10th abdominal tergite concave distad of middle, with a vertically downward middle process which divide into two apically (Fig. 60). Cerci moderately incurved, apex cornuted, dorsal margin sinuated also expanded as a dorsal lobe of which angular at terminal, ventral margin straight and forming a lobe (Figs 60–62). Subgenital plate elongate, base wide tapering towards terminal, apically branched, styli absent (Figs 60, 61). Genitalia entirely membranous.

Female. Appearance roughly similar to that of male. Cerci slender, conical. Ventral edge of 8th abdominal tergite inflated, lateral corner of 9th abdominal tergite backwards extended. Apex wider than base of subgenital plate, posterior edge bearing one middle and two lateral small notches (Fig. 63). Ovipositor shorter than hind femur, straight but upcurved in terminal third, ventral valve bearing an apical hook (Fig. 64).

Coloration. Generally greenish while alive. Disc of pronotum brown and pale fringed. Some cell of tegmina darkish as dark spots. Each genicular lobe with dark apex, each hind tibial spine and tarsus darkish.

Diagnosis. This new species similar to *Xiphidiopsis (Dinoxiphidiopsis) jacobsoni* Gorochov, 1993, and very close to *Xiphidiopsis fanjingshanensis* Shi & Du, 2006 which should be also included in *Xiphidiopsis (Dinoxiphidiopsis)* (deal with it below), but different from latter by weaker dorsal lobe of male cerci, collapsed and wider hind processes of male 10th abdominal tergite (Fig. 43), longer and narrower subgenital plate of male without specialized apical ventral lobe (Fig. 45).

Measurements. Lengths in millimeter: body ♂10.0, ♀10.5; pronotum ♂4.0, ♀4.0; tegmina ♂18.0, ♀19.0; hind femora ♂11.0, ♀12.0; ovipositor ♀9.0.

Etymology. The specific epithet from Latin 'expressus', corresponding the feature of male 10th abdomen tergite. The gender of the epithet is masculine.

Distribution. Guangxi (Maoer Mountain).

***Xiphidiopsis (Dinoxiphidiopsis) fanjingshanensis* (Shi & Du, 2006) Wang, Liu, Li comb. nov.**

(Figs 65–67)

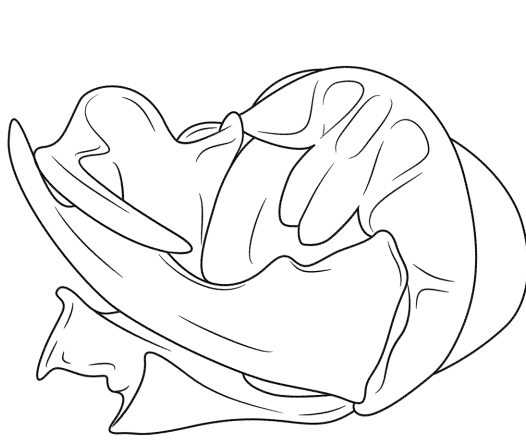
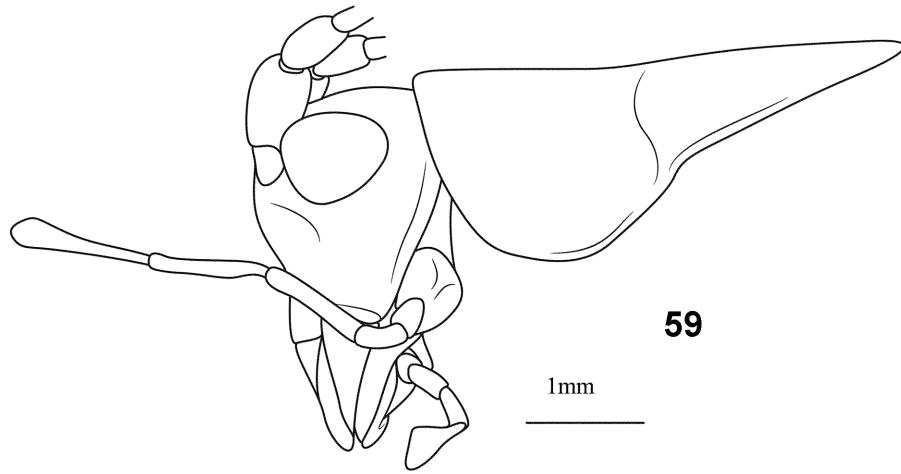
Xiphidiopsis fanjingshanensis Shi & Du, 2006: *Insects from Fanjingshan Landscape*, 125.

Material examined. 1♂1♀(pure alcohol soaked), 2♂2♀, Fanjing Mountain, Jiangkou County, Guizhou province, 2014.VIII.6, alt. 1000–1800 m, leg. SUN Mei-Ling.

Supplemental description. Female (first description). Body generally consistent with male. Fastigium of vertex conical, shorter, dorsally shallowly furrowed and apically obtuse. Compound eyes circular, globularly protruding outwards. Last segment of maxillary palp little longer than preceding. Paranota of pronotum high,



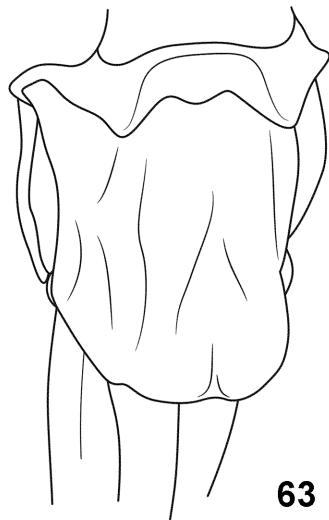
FIGURES 57–64. *Xiphidiopsis (Dinoxiphidiopsis) expressa* sp. nov. 57, 58. male in habitats. 59. head and pronotum of male in lateral view; 60–62. male abdomen terminal in rear dorsal, ventral, lateral view; 63, 64. female abdomen terminal in ventral and lateral view.



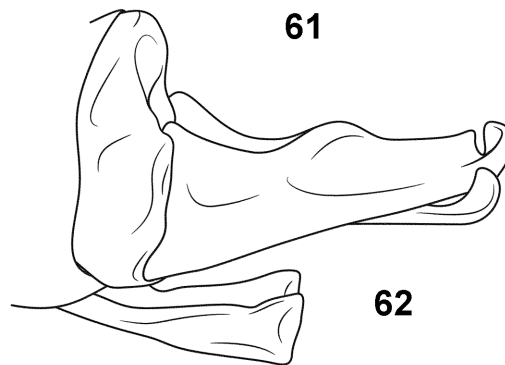
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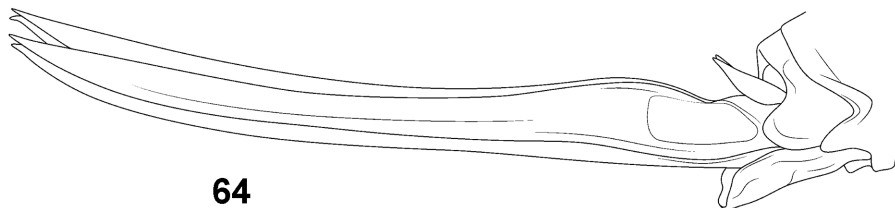
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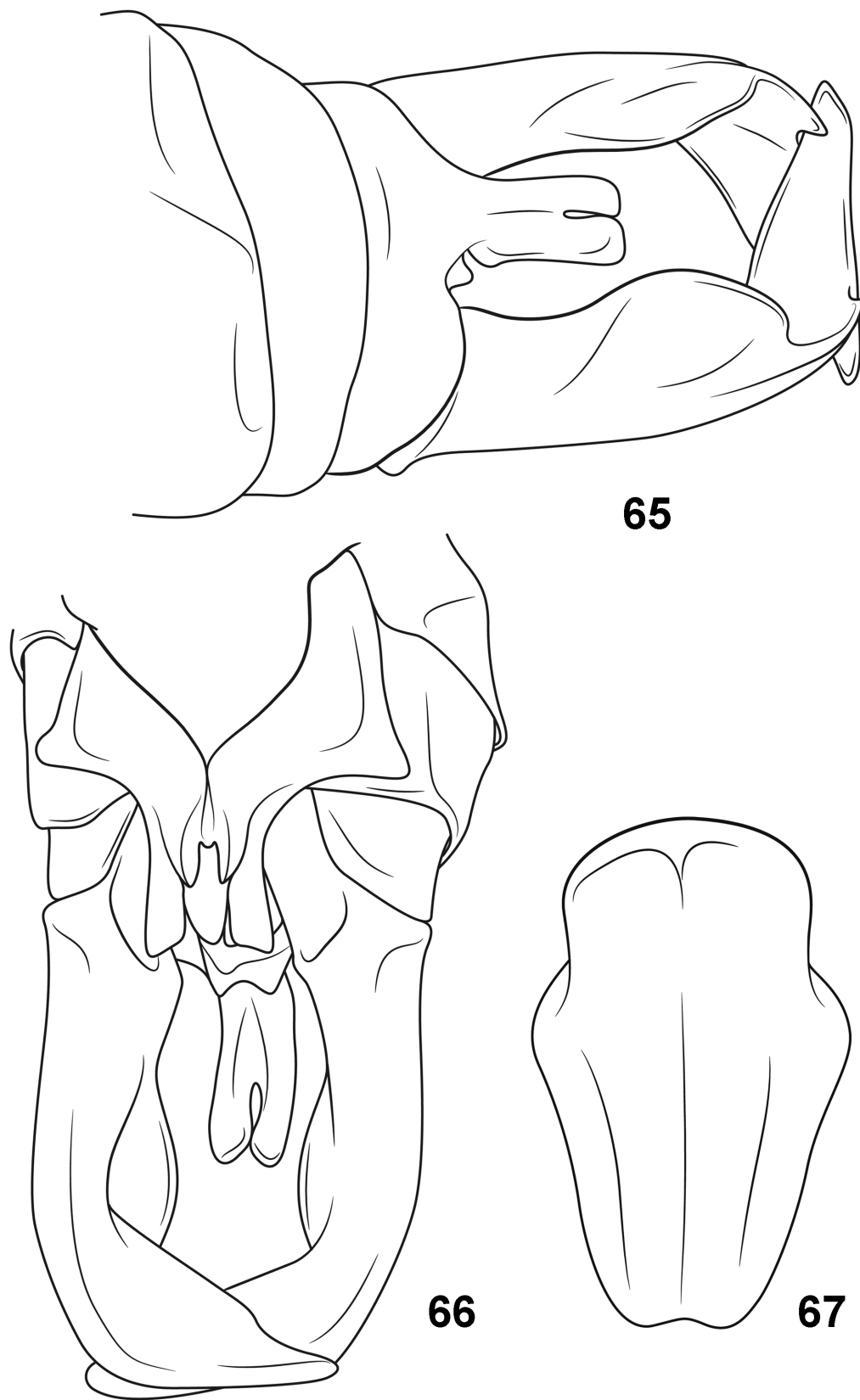


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FIGURES 57–64. (Continued)



FIGURES 65–67. *Xiphidiopsis (Dinoxiphidiopsis) fanjingshanensis* (Shi & Du, 2006) (from alcohol soaked specimen). 65, 66. male abdomen terminal in dorsal and ventral view; 67. female subgenital plate in ventral view.

ventral edge rounded, inconspicuous of humeral sinus, metazona littler longer than prozona, little expanded in dorsal view and slightly elevated in lateral view. Tegmina exceeding apex of hind femora, hind wings longer than tegmina. Inner and outer ventral spine of fore tibiae: 4, 5 (1, 1), mid tibiae each bearing 6 outer and 5 inner ventral spines, each dorsal margin of hind tibia bearing about 33–39 teeth, apex with 3 pairs of apical spurs. Lateral corner of 9th abdominal tergite with carina laterally expanded. Cerci elongate and thin, conical. Subgenital plate elongate, furrowed medially (Fig. 67), little expanded in lateral margin near the middle, hind margin bilobate. Ovipositor long and thin, gently upcurved, apex of ventral valve bearing a hook.

Coloration. Probably lightish green while alive. Dorsal surface of head with lightish brown and thin longitudinal stripe, probably green in accordance of previous species; disc of pronotum with inconspicuous paired lateral brown stripe, probably light yellow when alive; dorsal apex of hind femora and apical half of genicular lobe blackish brown.

Measurement. Lengths in millimeter: body ♂11.0–12.2, ♀12.2–13.1; pronotum ♂4.2–4.7, ♀4.1–4.7; tegmina ♂18.9–19.5, ♀21.8–22.0; hind femora ♂11.0–11.8, ♀12.5–13.0; ovipositor ♀9.2.

Discussion. Type locality of this species is Fanjing Mountain, Guizhou Province, but the Paratype is from Luocheng County, Guangxi province, since this species is very close to the previous taxon, perhaps the paratype is actually *Xiphidiopsis (Dinoxiphidiopsis) expressa*. As a result of the symmetric hind process of 10th abdominal and specialized subgenital plate of male, inflated ventral margin of female 8th abdominal tergite, it should be included in *Xiphidiopsis (Dinoxiphidiopsis)*.

Distribution. Guizhou (Fanjing Mountain), Guangxi (?).

Genus *Abaxinicephora* Gorochov & Kang, 2005

Type species: *Abaxinicephora excellens* Gorochov & Kang, 2005



FIGURE 68. *Abaxinicephora excellens* Gorochov & Kang, 2005. 68. male in habitat.

***Abaxinicephora excellens* Gorochov & Kang, 2005**

(Figs 68–73)

Abaxinicephora excellens Gorochov, Liu & Kang, 2005: *Oriental Insects* 39, 78.

Material examined. 1♂1♀, Daming Mountain, Wuming County, Guangxi province, 2013.VII.19–25, alt. 1250m, leg. ZHU Wei-Bin *et al.*

Description. Female (the first time). Body generally consist with male. Fastigium of vertex conical, dorsally shallowly furrowed and apically obtuse. Compound eyes circular, globularly protruding forward. Last segment of maxillary palp longer than preceding. Paranota of pronotum high, ventral edge truncate, inconspicuous of humeral sinus, metazona not elongate as in male (Figs 69, 70), thoracic auditory spiracle small and entirely exposed, viewable in profile. Wings medium length, reaching the middle of eight abdominal tergite, veins of tegmina strong and conspicuous, hind wings degenerate. Each femur unarmed. Types of inner and outer ventral spine of fore tibiae are 4, 4 (1, 1), mid tibiae each bearing 6 outer and 5 inner ventral spines, each dorsal margin of hind tibia bearing about 25–28 teeth, apex with 3 pairs of spurs. Cerci long and thin, conical. Subgenital plate quite simple, triangular (Fig. 73). Ovipositor no longer than hind femur, gently upcurved in apical half, apex damaged.

Coloration. Generally darkish green while alive. Eyes brownish, disc of pronotum brown posteriorly.

Measurement. Lengths in millimeter: body ♂11.5, ♀11.0; pronotum ♂5.6, ♀4.9; tegmina ♂7.2, ♀6.7; hind femora ♂10.3, ♀12.1; ovipositor ♀8.5.

Distribution. Guangxi (Daming Mountain, Dayao Mountain).

Genus *Sinocyrtaspis* Liu, 2000

Type species: *Sinocyrtaspis lushanensis* Liu, 2000

***Sinocyrtaspis truncate* Liu, 2000**

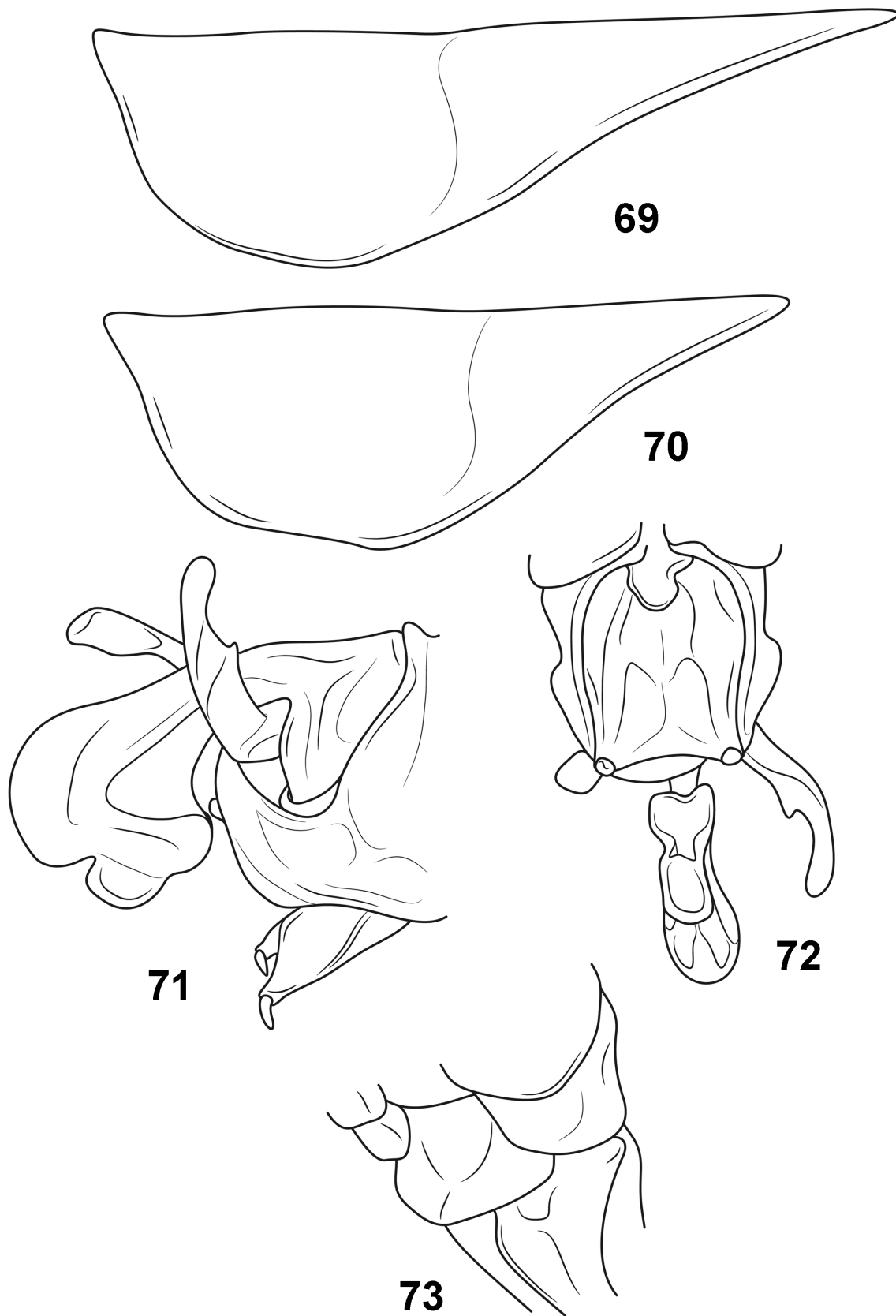
(Figs 74–80)

Sinocyrtaspis truncata Liu, 2000: *Zool. Res.* 21(3), 220; Wang, Pan & Huang, 2011: *J. Guangxi Normal Univ.* 29(4), 124.
Sinocyrtaspis? truncata Chang, Bian & Shi, 2012: *Zootaxa* 3495, 83.

Material examined. Holotype♀, paratype♀, Maoer Mountain, Xing'an County, Guangxi province, 1992.VIII.22–23, alt. 900–1500 m, leg. LIU Xian-Wei & YIN Hai-Sheng; 1♂, 2♀, Maoer Mountain, Xing'an County, Guangxi province, 2013.VIII.1–2, alt. 1700–2100 m, leg. ZHU Wei-Bin *et al.*

Supplemental description. Male (the first time). Body form large and robust. Fastigium of vertex short and stout, dorsally grooved, compound eyes subglobular and protruding forward, last segment of maxillary palpus longer than preceding. Pronotum almost covering half of body, ventral margin of paranota concave at one third, rest two third rounded convex, humeral sinus absent, posterior transverse sulcus distinct, metazona considerably expanded and elevated, as the prolate ellipsoid (Fig. 76); auditory foramina of thorax small and exposed, posterolateral opened. Tegmina completely sealed beneath the elevated metazona of pronotum, apex truncate; hind wings reduced. Fore tibiae with ventral spines armed of type 4, 4 (1, 1), mid tibiae with 5 outer and 4 inner ventral spines, lower lobe of the hind knee rounded at tip, hind tibiae with 20–25 dorsal teeth either margin above and 3 pairs of apical spurs. Posterior median one-third edge of 10th abdominal tergite concave, a spade-shaped process with apex bilobate attached at the middle (Fig. 77). Cerci with a dorsal branch and curved in- and downwards, inside the hook bearing a thinner expanded lobe (Figs 78, 79). Genitalia sclerotized as in Fig. 77. Subgenital plate nearly rectangular, base broad, hind margin little sunken, styli short (Fig. 78).

Coloration. Body light green. Flagellum of antenna pale brown with darkish annulations. Groove of rostrum darkened. Compound eyes pale yellowish. Dorsum of pronotum light yellow with a pair of brown longitudinal stripes laterally, gradually divergent posteriorly. Each abdomen tergite with a pair of pale brown patches and together joint into two lines. Tarsi, Hind tibiae and genicular lobes pale brown.



FIGURES 69–73. *Abaxinicephora excellens* Gorochov & Kang, 2005. 69, 70. pronotum of male and female in lateral view; 71, 72. male abdomen terminal in lateral and ventral view; 73. female abdomen terminal in laterally ventral view.

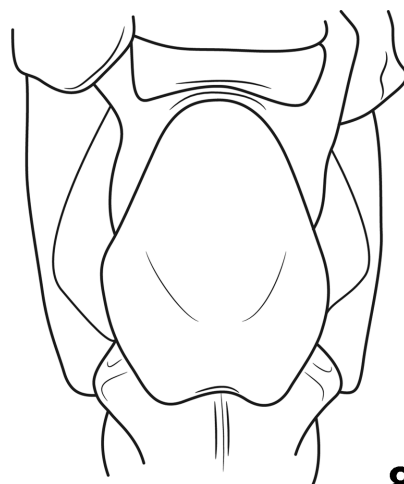
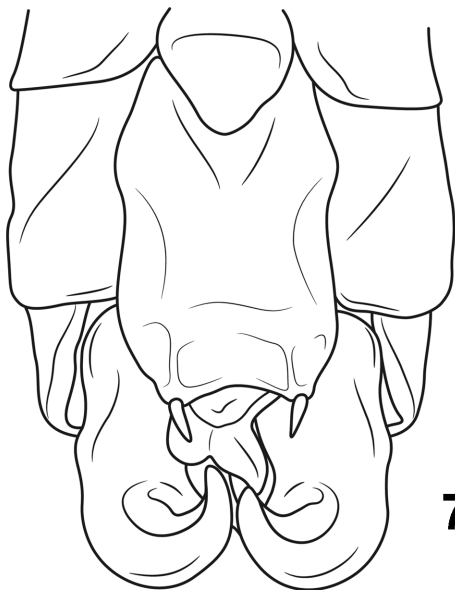
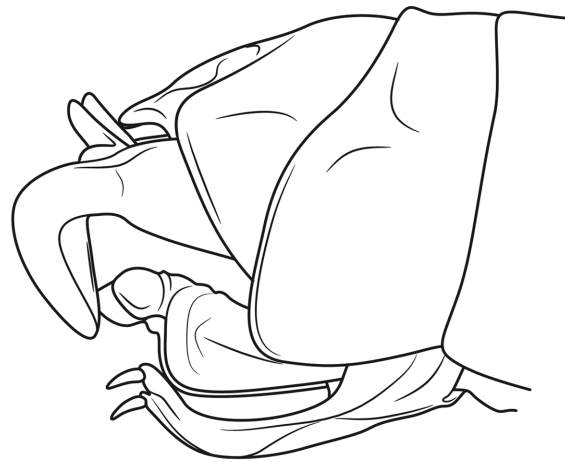
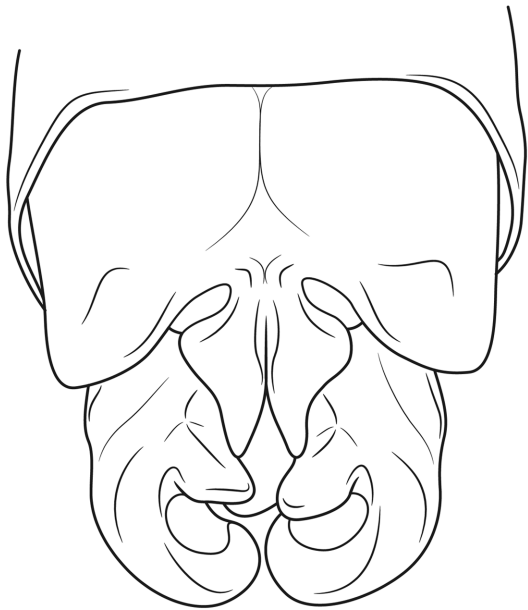
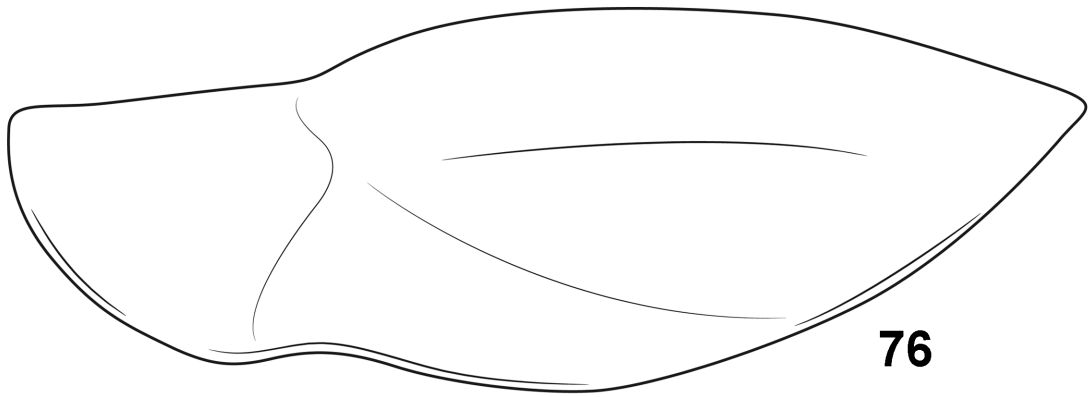


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FIGURES 74–80. *Sinocyrtaspis truncata* Liu, 2000. 74, 75. male and female in habitats; 76. pronotum of male in lateral view; 77–79. male abdomen terminal dorsal, lateral and ventral view; 80. female abdomen terminal in ventral view.



FIGURES 74–80. (Continued)

Measurement. Lengths in millimeter: body ♂12.9, ♀12.2–13.0; pronotum ♂7.9, ♀5.0–5.1; tegmina ♂4.0, ♀1.7–1.8; hind femora ♂10.0, ♀10.1–10.6; ovipositor ♀7.0–7.6.

Distribution. Guangxi (Maoer Mountain).

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