Eight new species of the genus *Episymploce* Bey-Bienko (Blattodea: Blattellinae) from China

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Abstract: The genus *Episymploce* Bey-Bienko, 1950 from China is reviewed. Eight new species are illustrated. The habitus and male genitalia of these new species are described.

Key words: Blaberoidea; Blattellidae; taxonomy

中国拟歪尾蠊属八新种（蜚蠊目：姬蠊亚科）

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摘要：对中国拟歪尾蠊属 *Episymploce* Bey-Bienko, 1950 进行了整理，发现 8 新种，提供了生殖器图，描述了身体外部特征及雄性生殖器特征。

关键词：硕蠊总科；姬蠊科；分类

Introduction

The genus *Episymploce* was erected by Bey-Bienko in 1950, with the type species *Episymploce paradoxura* Bey-Bienko, 1950 (Bey-Bienko, 1950). This genus resembles the genus *Symploce* Hebard, 1916, but differs from the latter in paraprocts, supra-anal plate and subgenital plate, especially the specialization on the male paraprocts (Hebard 1916).

Princis (1969, 1971) listed six species of *Episymploce*, among which five species were known from China and only two of which (*E. paradoxura* and *uncinata*) now belong to *Episymploce*; the others belong to *Symploce*. Asahina (1979) redefined *Episymploce*, comparing it with *Symploce*. He described one new species, *E. taiheizana*, and six known species, among which six species were known from China, mainly from Taiwan. Guo & Feng (1985) established the new genus *Asymploce* with two new species, *A. rubroverticis* and *A. hunanensis*. Roth (1987) redescribed 20 species and two subspecies of *Episymploce* from China. Roth (1987) transferred three species, *S. cheni* (Bey-Bienko, 1957), *S. prima* (Bey-Bienko, 1957), and *S. quarta* (Bey-Bienko, 1969) to *Episymploce*. Roth (1991) described two new combinations, *E. rubroverticis* (Guo & Feng, 1985) and *E. hunanensis* (Guo & Feng, 1985). Wang *et al.* (2005) described a new species, *E. daozheni*, from Guizhou. Guo *et al.* (2011) described two new species, *E. zhengi* and *E. longilamina* from Zhejiang. Liu *et al.*

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(2017) described two new species, *E. xiai* and *E. luoxiaoshanensis* from Southeastern China.

Up to now, 79 species have been included in this genus worldwide, of which 45 species are from China. By examining the specimens kept in the Shanghai Entomological Museum, eight new species from China are described in this paper.

Material and methods

The examined specimens were dipped in 10% NaOH and anatomized under a Leica ZOOM 2000 microscope. Genital segments of the examined specimens were observed in glycerin jelly using a Leica MZ 125 stereomicroscope. Photographs of the specimens were taken using a Canon Olympus E-M5II. All drawings were drawn with Adobe Illustrator CS6 software.

Terminology used in this paper mainly follows Roth (2003). Measurements are based on specimens examined. Body length refers to the distance from apex of head to the end of abdomen. Pronotum length refers to the distance between anterior and posterior side of pronotum; pronotum width refers to the distance between left and right side of pronotum. Tegmen length refers to the distance from base to apex of tegmina. Interocular width refers to the distance between the nearest points of interocular. Ocellus width refers to the distance between the nearest points of ocelli. Antennal width refers to the distance between the nearest points of the antennal base.

The type specimens are deposited in the Shanghai Entomological Museum (SEM), Chinese Academy of Sciences (CAS).

Taxonomy

Episymploce Bey-Bienko, 1950

Episymploce Bey-Bienko, 1950: 157.

Type species. *Episymploce paradoxura* Bey-Bienko, 1950: 157.

Diagnosis. The distinctive characters proposed by Bey-Bienko (1950) and Roth (1986) are as follows. Tegmina and wings fully developed or more or less reduced. Tegmina with irregularly branched R, not forked. The discoidal vein of the hind wing usually is branched before or after the midpoint, cubitus vein weakly to distinctly curved with 1–5 complete and 1–6 incomplete branches, apical triangle small, subobsolete, or absent. Anteroventral margin of front femur usually Type A_3, rarely Type B_3 or intermediate between the two types. Male first abdominal tergum modified, with setae, or unmodified. Seventh abdominal tergum almost always modified, usually with fossae and a medial elevation lacking setae, sometimes with a group of medial setae. The right and left lateral plates of the ninth tergum may be similar or differ distinctly in size and/or shape and spines along their ventral margins may or may not be present. The supra-anal plate when asymmetrical may or may not have spine-like processes on the hind margin; if it is symmetrical, or subsymmetrical, the apex of the hind margin is invaginated, incised, or weakly concave.

Remarks. *Episymploce* can be easily distinguished from *Symploce* by the following characters. The right and the left lateral plates of the male ninth tergum always modified. Male

supra-anal plate asymmetrical and may have spine-like processes on the hind margin. Subgenital plate definitely asymmetrical and hind margin with sharp spine(s) on each side.

Anteroventral margin of front femur type B means that anteroventral margin of front femur armed with heavy spines, succeeded by a series of closely placed piliform spines (B_3: These margins armed distad with three heavy spines, longer in increasing ratio).

In this genus, the first and seventh abdominal terga are always modified; 'modified' meaning with setae, concavities or elevations; 'unmodified' meaning they are normal and do not have the features above.

Distributions. Oriental Region.

1. ***Episymploce carinata* sp. nov.** (Figs. 1–4)

Holotype. ♂, **China,** Guangxi, Mt. Daming, 1250 m, 19–25-VII-2013, Xianwei LIU *et al.* leg. **Paratypes.** 3♀, sam**e** data as the holotype.

Measurements. Male, body length: 20.0 mm, pronotum: length × width: 3.5 × 5.0 mm, tegmen: 19.0 mm. Female, body length: 19.0–20.0 mm, pronotum: length × width: 3.5–4.0 × 5.0 mm, tegmen: 18.0–19.0 mm.

Coloration. Body yellowish brown. Vertex black and ocellus pale brown. Face yellowish brown with one pale yellow macula below each antenna socket. Antenna brown and base of antenna yellowish brown. Labrum pale yellowish brown. Maxillary palpomus yellowish brown. Pronotum yellowish brown with a distinctly dark brown macula on disc. Tegmina and hind wings pale brown. Ventral surface of abdomen and legs yellowish brown, cerci brown.

Description. Male. Body small. Vertex with interocular width slightly wider than space between ocellus and vertex with interocular width about the same as distance between antennal sockets. Third and fourth maxillary palpomus about the same length, both distinctly longer than the fifth. Pronotum more or less trapeziform with shallow U-shaped macula near base, anterior margin nearly truncate and hind margin slightly pronounced in the middle. Tegmina and hind wings well developed, tegmina extending beyond end of abdomen. Tegmen with apical posterior branch of radius vein branched; median vein also bifurcated. CuA of hind wings with 3 complete branches and 4 incomplete branches, triangular apical area small. Anteroventral margin of front femur Type B_3, tarsi of hind legs with many spines and length of the first tarsus longer than the sum of the remaining tarsi. Tarsal claws symmetrical, pulvilli and arolia present. The first abdominal tergum with setae in the middle, the seventh abdominal tergum with a distinct angular elevation anteriorly. Lateral plates of the ninth abdominal tergum modified with some setae (Fig. 3).

Genitalia. Supra-anal plate asymmetrical. Anterior margin of plate nearly straight, left and right side of plate with one little spine separately; hind margin of plate concave in the middle (Fig. 1). The left paraproct with a big process, apex of process blunt; the right paraproct with 2 different processes and both of them with acute apex (Fig. 4). Subgenital plate asymmetrical, a process with some setae in the middle of the hind margin of plate and pointing to the right. Styli dissimilar, left stylus spine-like and pointing to the end of body; right stylus spine-like and pointing to the front of body (Figs. 2, 4). Left phallomere large and slender at hook portion; medial phallomere slender and apex spine-like; right phallomere with many irregular sclerites (Fig. 4).

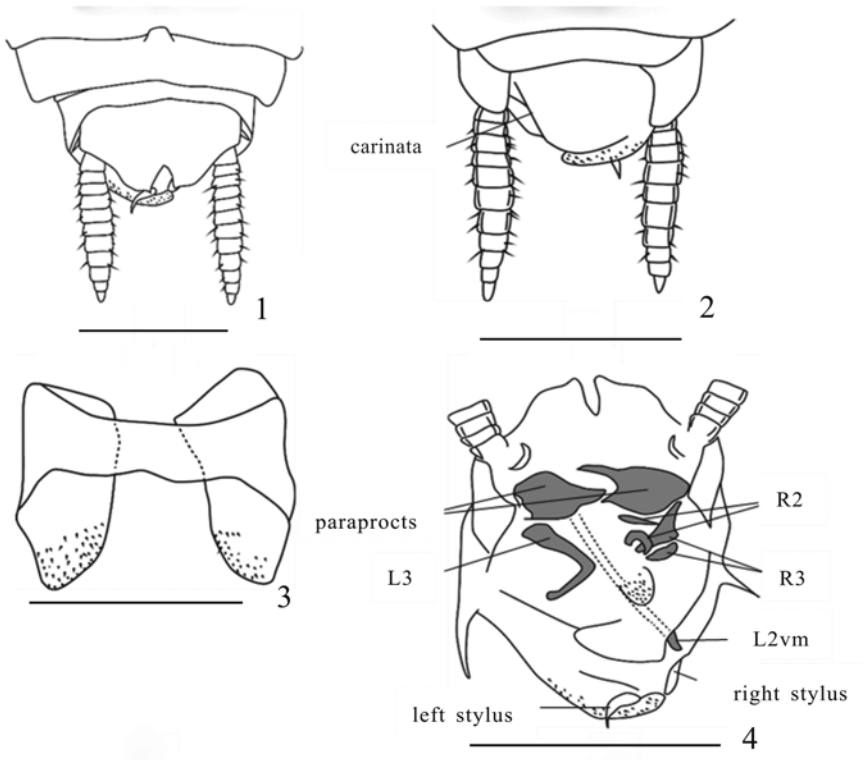
Female is similar to male; supra-anal plate symmetrical and trapeziform; subgenital plate

simple and hind margin round.

Diagnosis. The species is similar to *S. evidens* Wang & Che, 2013. But can be distinguished as follows: 1) pronotum dark brown with yellowish border, 2) subgenital plate with triangular lateral lobes, and 3) left stylus longer than the right one.

Distribution. China (Guangxi).

Etymology. Species epithet *carinata* indicates the subgenital plate with carina.

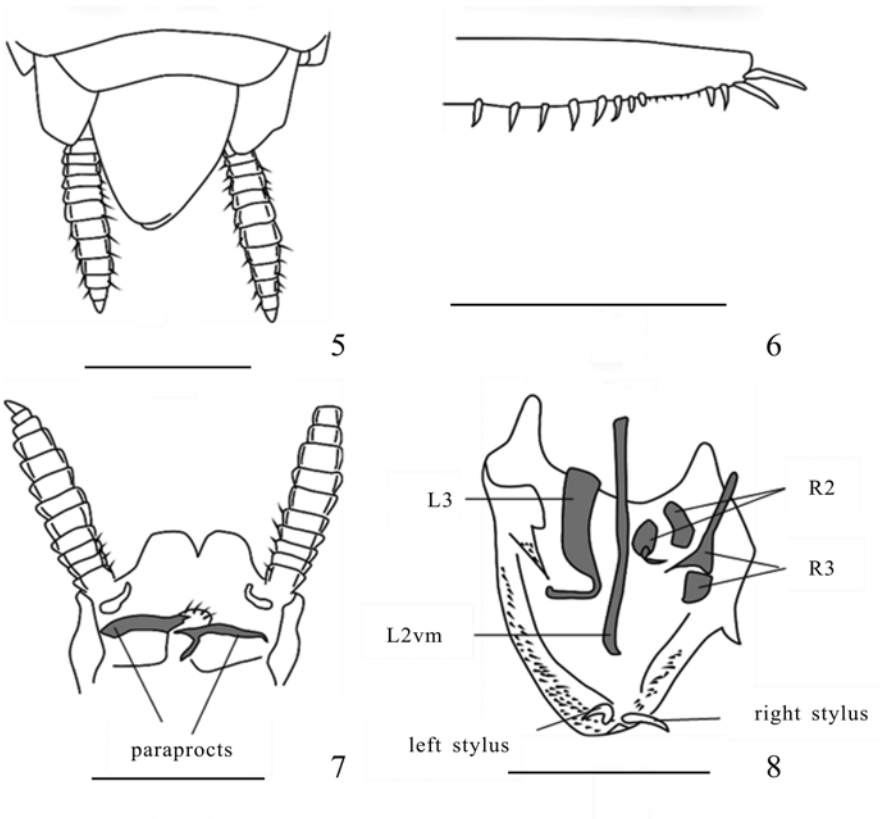


Figures 1–4. *Episymploce carinata* sp. nov., holotype, ♂. 1. End of tergum, dorsal view; 2. End of tergum, ventral view; 3. Lateral plates of 9th tergum, dorsal view; 4. Supra-anal plate and paraprocts, ventral view, subgenital plate, dorsal view, hook-like phallomere (L3); median phallomere (L2vm); right phallomere (R2 and R3). Scale bars = 2.0 mm.

2. ***Episymploce diversa* sp. nov.** (Figs. 5–8)

Holotype. ♂, **China,** Hubei, Luotian, Qingtaiguan, 560–880 m, 03-VII-2014, Weibing ZHU *et al.* leg. **Paratypes.** 1♂, Hubei, Luotian, Qingtaiguan, 560 m, 01-VII-2014, Hanqiang WANG leg. 2♂, Guangxi, Mt. Jiuwan, Yangmeiao, 1200 m, 18–19-VII-2015, Xianwei LIU *et al.* leg. 4♀, Guangxi, Mt. Jiuwan, Yangmeiao, 1200 m, 18–19-VII-2015, Xianwei LIU *et al.* leg. 1♀, Guizhou, Leishan, Mt. Leigong, 1600–2178.8 m, 28-VII-2015, Sun leg.

Measurements. Male, body length: 19.0–21.0 mm, pronotum: length × width: 3.5 × 5.0 mm, tegmen: 19.0 mm. Female, body length: 18.0–21.0 mm, pronotum: length × width: 4.0–4.5 × 5.0 mm, tegmen: 14.0–16.0 mm.



Figures 5–8. *Episymploce diversa* sp. nov., holotype, ♂. 5. End of tergum, ventral view; 6. Anteroventral margin of front femur; 7. Supra-anal plate and paraprocts, ventral view; 8. Subgenital plate, dorsal view, hook-like phallomere (L3); median phallomere (L2vm); right phallomere (R2 and R3). Scale bars = 2.0 mm.

Coloration. Body brown. Vertex black and ocellus pale brown. Face brown with one pale yellow macula below each antenna socket. Antenna brown and base of antenna pale brown. Labrum pale yellowish brown. Maxillary palpomus yellowish brown. Pronotum yellowish brown with brown maculae on disc. Tegmina and hind wings yellowish brown. Ventral surface of abdomen and cerci brown, legs yellowish brown.

Description. Male. Body small. Vertex with interocular width slightly wider than the space between ocellus and vertex with interocular width narrower than the distance between antennal sockets. Third and fourth maxillary palpomus about same length, both distinctly longer than the fifth. Pronotum more or less trapeziform with shallow U-shaped macula near base, anterior margin nearly truncate and hind margin slightly pronounced in the middle. Tegmina and hind wings well developed, tegmina extending beyond end of abdomen. Tegmen with apical posterior branch of radius vein branched; Median vein also bifurcated. CuA of hind wings with 2 complete branches and 6 incomplete branches, triangular apical area small. Anteroventral margin of front femur Type B_4 (Fig. 6), tarsi of hind legs with many spines and length of the first tarsus longer than the sum of the rest. Tarsal claws symmetrical, pulvilli and arolia present. The first abdominal tergum with setae in the middle, the seventh abdominal

tergum with a small angular elevation anteriorly. Lateral plates of the ninth abdominal tergum different, left one is longer than the right one.

Genitalia. Supra-anal plate asymmetrical. Anterior margin of plate nearly straight; hind margin concave in the middle (Fig. 5). The left paraproct with a process, apex of process acute; the right paraproct with 2 different processes; one is blunt and points to front of body and the other is acute and points to the left (Fig. 7). Subgenital plate asymmetrical, a small process in the middle of the hind margin of plate and points to the right. Left side of subgenital plate with many setae thickened and curled inward; right side of subgenital plate with fewer setae. Both sides of plate with a separate spine. Styli dissimilar, left stylus spine-like and curling to the left; right stylus spine-like and pointing to right (Fig. 8). Left phallomere large and slender; medial phallomere slender and apex slightly curled; right phallomere with many irregular sclerites (Fig. 8).

Female is similar to male; supra-anal plate symmetrical and trapeziform; subgenital plate simple and hind margin round.

Distribution. China (Hubei, Guangxi, Guizhou).

Diagnosis. The species is similar to *E. hassenzana* Roth, 1987. It can be distinguished as follows: 1) left side of subgenital plate with many setae thickened and not pronounced, and 2) base of styli closed.

Etymology. Species epithet *diversa* means the subgenital plate is different from the subgenital plate of *E. hassenzana*.

3. ***Episymploce longistylata*** **sp. nov.** (Figs. 9–13)

Holotype. ♂, **China,** Zhejiang, Yuyao, Mt. Siming, 700–830 m, 02-VIII-2016. **Paratype.** 1♂, Guizhou, Mt. Fanjing, 14-VII-1988, Zunao LIU leg.

Measurements. Male, body length: 23.0 mm, pronotum: length × width: 5.0 × 5.5 mm, tegmen: 18.0 mm.

Coloration. Body brown. Vertex brown and ocellus pale brown. Face yellowish brown with one pale yellow macula below each antenna socket. Antenna brown and base of antenna yellowish brown. Labrum pale yellowish brown. Maxillary palpomus yellowish brown. Pronotum yellowish brown and; left and right corner with one brown spot separately. Tegmina and hind wings yellowish brown. Ventral surface of abdomen and cerci brown, legs yellowish brown.

Description. Male. Body small. Vertex with interocular width slightly wider than the space between ocellus and vertex with interocular width narrower than the distance between antennal sockets. Third and fourth maxillary palpomus about same length, both distinctly longer than the fifth. Pronotum more or less trapeziform, anterior margin of plate nearly truncate and left and right corner of plate with one brown spot separately, hind margin slightly pronounced in the middle. Tegmina and hind wings well developed, tegmina extending beyond end of abdomen. Tegmen with apical posterior branch of radius vein branched; median vein also bifurcated. CuA of hind wings with 3–4 complete branches and 6–7 incomplete branches, triangular apical area small. Anteroventral margin of front femur Type B_3, tarsi of hind legs with many spines and length of the first tarsus longer than the sum of the rest. Tarsal claws symmetrical, pulvilli and arolia present. The first abdominal tergum with setae in the middle, the seventh abdominal tergum with a small angular elevation anteriorly.

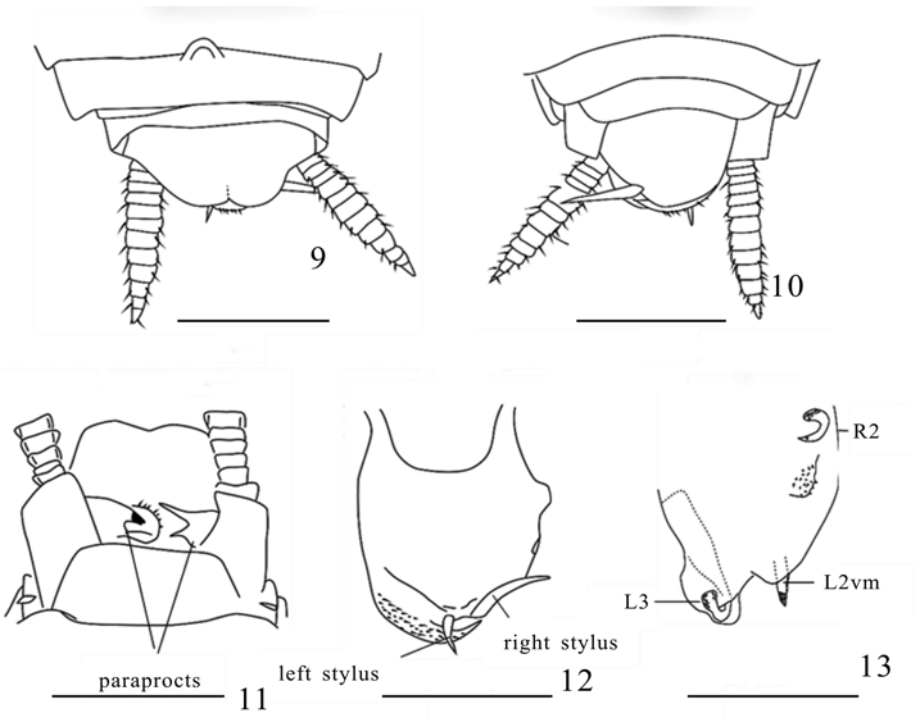
Genitalia. Supra-anal plate asymmetrical. Anterior margin of plate nearly straight; hind margin distinctly concaves in the middle (Fig. 9). The left paraproct with a process, apex of process blunt; the right paraproct with 2 different processes and apex of both of them acute, the longer one points to the end of abdomen; the shorter one points to the front of body (Fig. 11). Subgenital plate asymmetrical, a process with many setae on the left side of plate and points to the right, apex acute; right side of plate pronounced in the middle. Styli dissimilar, left stylus shorter and points to the end of body; right stylus longer and points to the right (Figs. 10, 12). Left phallomere large and apex of hook portion with some setae; medial phallomere slender and apex spine-like with some setae; right phallomere with many irregular sclerites and one C-shaped sclerite with some setae (Fig. 13).

Female unknown.

Distribution. China (Zhejiang, Guizhou).

Diagnosis. The species is similar to *E. luoxiaoshanensis* Liu *et al*., 2017. It can be distinguished as follows: 1) styli distinctly longer than *E. luoxiaoshanensis*, and 2) left phallomere hook-like and apex of hook portion with some setae.

Etymology. Species epithet *longistylata* refers to the styli that are long.



Figures 9–13. *Episymploce longistylata* sp. nov., holotype, ♂. 9. End of tergum, dorsal view; 10. End of tergum, ventral view; 11. Supra-anal plate and paraprocts, ventral view; 12. Subgenital plate, ventral view; 13. Hook-like phallomere (L3); median phallomere (L2vm); right phallomere (R2 and R3). Scale bars = 2.0 mm.

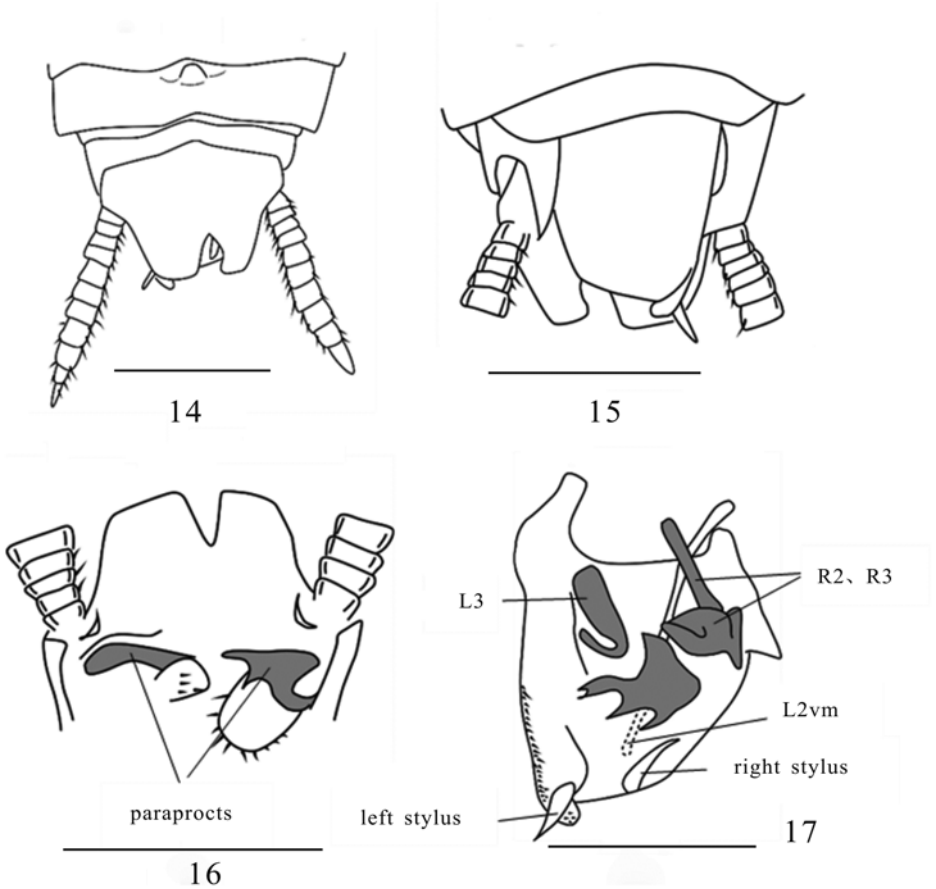
4. ***Episymploce dianxica*** **sp. nov. (**Figs. 14–17)

Holotype. ♂, **China,** Yunnan, Gongshan, Qiqi, 1900 m, 28-VI–03-VII-2010, Wenxuan BI leg. **Paratypes.** 1♂1♀, Yunnan, Gongshan, Qiqi, 1900 m, 28-VI–03-VIII-2010, Wenxuan

BI leg.

Measurements. Male, body length: 18.5–20.0 mm, pronotum: length × width: 3.5 × 4.0–4.5 mm, tegmen: 15.0–17.0 mm. Female, body length: 20.0 mm, pronotum: length × width: 4.0 × 4.5 mm, tegmen: 16.0 mm.

Coloration. Body yellowish brown. Vertex black and ocellus pale brown. Face brown with one pale yellow macula below each antenna socket. Antenna brown and base of antenna pale brown. Labrum pale yellowish brown. Maxillary palpomus yellowish brown. Pronotum yellowish brown with two V-shaped maculae on disc. Tegmina and hind wings yellowish brown. Ventral surface of abdomen and legs yellowish brown, cerci brown.



Figures 14–17. *Episymploce dianxica* sp. nov., holotype, ♂. 14. End of tergum, dorsal view; 15. End of tergum, ventral view; 16. Supra-anal plate and paraprocts, ventral view; 17. Subgenital plate, ventral view, hook-like phallomere (L3); median phallomere (L2vm); right phallomere (R2 and R3). Scale bars = 2.0 mm.

Description. Male. Body small. Vertex with interocular width slightly wider than the space between ocellus and vertex with interocular width narrower than the distance between antennal sockets. Third and fourth maxillary palpomus about same length, both distinctly longer than the fifth. Pronotum more or less trapeziform with two V-shaped maculae on disc, anterior margin nearly truncate and hind margin slightly pronounced in the middle. Tegmina and hind wings well developed, tegmina extending beyond end of abdomen. Tegmen with

apical posterior branch of radius vein branched; median vein also bifurcated. CuA of hind wings with 3 complete branches and 4–6 incomplete branches, triangular apical area small. Anteroventral margin of front femur Type B_3, tarsi of hind legs with many spines and length of the first tarsus longer than the sum of the rest. Tarsal claws symmetrical, pulvilli and arolia present. The first abdominal tergum with setae in the middle, the seventh abdominal tergum with a small angular elevation anteriorly. Lateral plates of the ninth abdominal tergum different, left one big and blunt; right one concave.

Genitalia. Supra-anal plate asymmetrical. Anterior margin of plate slightly pronounced in the middle; hind margin concave in the middle (Fig. 14). The left paraproct with a process, apex of process blunt; the right paraproct bifurcated with apices blunt or tapering (Fig. 16). Subgenital plate asymmetrical, a small process with some setae in the middle of the hind margin of plate and points to the right. Styli dissimilar, left stylus spine-like and curled to left; right stylus spine-like and pointing to right (Figs. 15, 17). Left phallomere large and slender; medial phallomere slender and apex slightly curled; right phallomere with many irregular sclerites (Fig. 17).

Female is similar to male; supra-anal plate symmetrical and trapeziform; subgenital plate simple and hind margin round.

Distribution. China (Yunnan).

Diagnosis. This species is similar to *E. paradoxura* Bey-Bienko, 1951. It can be distinguished as follows: 1) lateral plates of the ninth abdominal tergum without spines, 2) styli shorter than *E. paradoxura* and left stylus thicker, and 3) left phallomere without erose hook portion.

Etymology. Species epithet *dianxica* indicates the place of collection.

5. ***Episymploce maoershanica*** **sp. nov. (**Figs. 18–21)

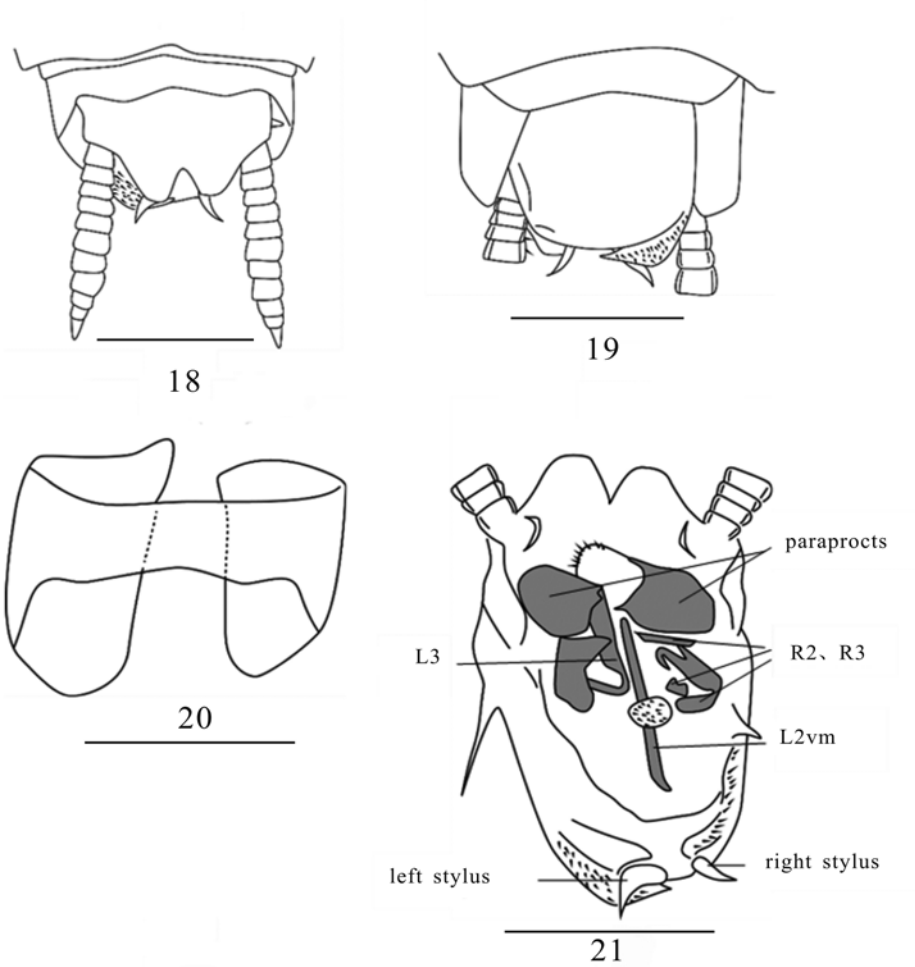
Holotype. ♂, **China,** Yunnan, Guangxi, Mt. Maoer, 500–1100 m, 30-VII–06-VIII-2013, Xianwei LIU *et al.* leg.

Measurements. Male, body length: 19.0 mm, pronotum: length × width: 4.0 × 5.5 mm, tegmen: 16.5 mm.

Coloration. Body yellowish brown. Vertex black and ocellus pale brown. Face brown with one pale yellow macula below each antenna socket. Antenna brown and base of antenna pale brown. Labrum pale yellowish brown. Maxillary palpomus yellowish brown. Pronotum yellowish brown. Tegmina and hind wings yellowish brown. Ventral surface of abdomen and legs yellowish brown, cerci brown.

Description. Male. Body small. Vertex with interocular width nearly the same as the space between ocellus and vertex with interocular width narrower than the distance between antennal sockets. Third and fourth maxillary palpomus about same length, both distinctly longer than the fifth. Pronotum more or less trapeziform, anterior margin nearly truncate and hind margin slightly pronounced in the middle. Tegmina and hind wings well developed, tegmina extending beyond end of abdomen. Tegmen with apical posterior branch of radius vein branched; median vein also bifurcated. CuA of hind wings with 3 complete branches and 4 incomplete branches, triangular apical area small. Anteroventral margin of front femur Type B_3. The first abdominal tergum with setae in the middle, the seventh abdominal tergum with a small angular elevation anteriorly. Lateral plates of the ninth abdominal tergum asymmetrical

(Fig. 20).



Figures 18–21. *Episymploce maoershanica* sp. nov., holotype, ♂. 18. End of tergum, dorsal view; 19. End of tergum, ventral view; 20. Lateral plates of 9th tergum, dorsal view; 21. Supra-anal plate and paraprocts, ventral view, subgenital plate, dorsal view, hook-like phallomere (L3); median phallomere (L2vm); right phallomere (R2 and R3). Scale bars = 2.0 mm.

Genitalia. Supra-anal plate asymmetrical. Anterior margin of plate slightly straight, left side of plate slightly pronounced and hind margin concave in the middle (Fig. 18). The left paraproct flake-like with two little tips; the right paraproct with two different processes; one is blunt and the other is acute (Fig. 21). Subgenital plate asymmetrical, a process with many setae on the left side of plate and pointing to the right. Styli dissimilar, left stylus spine-like and curling to left; right stylus spine-like and pointing to right (Figs. 19, 21). Left phallomere large and slender; medial phallomere slender and apex slightly curled; right phallomere with many irregular sclerites (Fig. 21).

Female unknown.

Distribution. China (Guangxi).

Diagnosis. This species is similar to *E. daozhenana* Wang *et al*., 2005. It can be distinguished by right side of supra-anal plate without spine-like process in the ventral view.

Etymology. Species epithet *maoershanica* refers to the location of collection.

6. ***Episymploce brevilamina* sp. nov.** (Figs. 22–25)

Holotype. ♂, **China,** Zhejiang, Longquan, Mt. Fengyang, 1920 m, 29-VI-2015, Xianwei LIU *et al.* leg. **Paratypes.** 1♂2♀, Zhejiang, Longquan, Mt. Fengyang, 1461 m, 28-VI-2015, Xianwei LIU *et al.* leg.

Measurements. Male, body length: 18.0–19.0 mm, pronotum: length × width: 3.5–4.0 × 4.0–4.5 mm, tegmen: 14.0–15.0 mm. Female, body length: 17.5–18.0 mm, pronotum: length × width: 3.5 × 4.0 mm, tegmen: 13.5 mm.

Coloration. Body brown. Vertex black and ocellus pale brown. Face brown with one pale yellow macula below each antenna socket. Antenna brown and base of antenna pale brown. Labrum pale yellowish brown. Maxillary palpomus yellowish brown. Pronotum yellowish brown with brown maculae on disc. Tegmina and hind wings yellowish brown. Ventral surface of abdomen and cerci brown, legs yellowish brown.

Description. Male. Body small. Vertex with interocular width slightly wider than the space between ocellus and vertex with interocular width slightly narrower than the distance between antennal sockets. Third and fourth maxillary palpomus about same length, both distinctly longer than the fifth. Pronotum more or less trapeziform, anterior margin nearly truncate and hind margin slightly pronounced in the middle. Tegmina and hind wings well developed, tegmina extending beyond end of abdomen. Tegmen with apical posterior branch of radius vein branched; median vein also bifurcated. CuA of hind wings with 3 complete branches and 4 incomplete branches, triangular apical area small. Anteroventral margin of front femur Type B_3, tarsi of hind legs with lots of spines and length of the first tarsi longer than the sum of the rest. Tarsal claws symmetrical, pulvilli and arolia present. The first abdominal tergum unmodified, the seventh abdominal tergum with a small angular elevation posteriorly. Lateral plates of the ninth abdominal tergum different, left one is longer and bigger than the right one.

Genitalia. Supra-anal plate asymmetrical. Anterior margin of plate pronounced in the middle; hind margin concave in the middle (Fig. 22). The left paraproct flake-like, pronounced in the middle with two little tips; the right one with two processes; both of them pointing to the left and apex acute (Fig. 24). Subgenital plate asymmetrical, a process with many setae on the left side of plate and pointing to the right. Styli dissimilar, left stylus curling to left; right stylus spine-like and pointing to the front of abdomen (Figs. 23, 25). Left phallomere large and slender; medial phallomere slender and apex slightly curled; right phallomere with many irregular sclerites (Fig. 25).

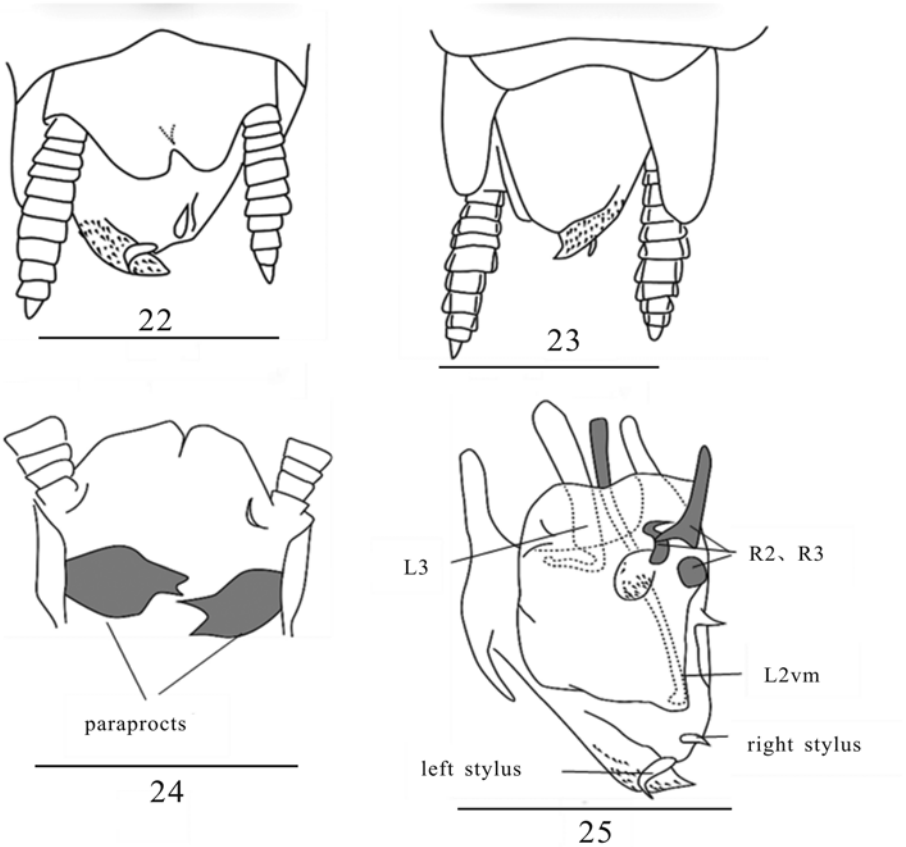
Female is similar to male; supra-anal plate symmetrical and trapeziform; subgenital plate simple and hind margin round.

Distribution. China (Zhejiang).

Diagnosis. The species is similar to *E. longilamina* Guo Liu & Li, 2011. But can be distinguished as follows: 1) lateral plates of 9th tergum not extending to end of abdomen and 2) left side of subgenital plate thickened with spine.

Etymology. Species epithet *brevilamina* refers to the lateral plates of 9th tergum being

short.



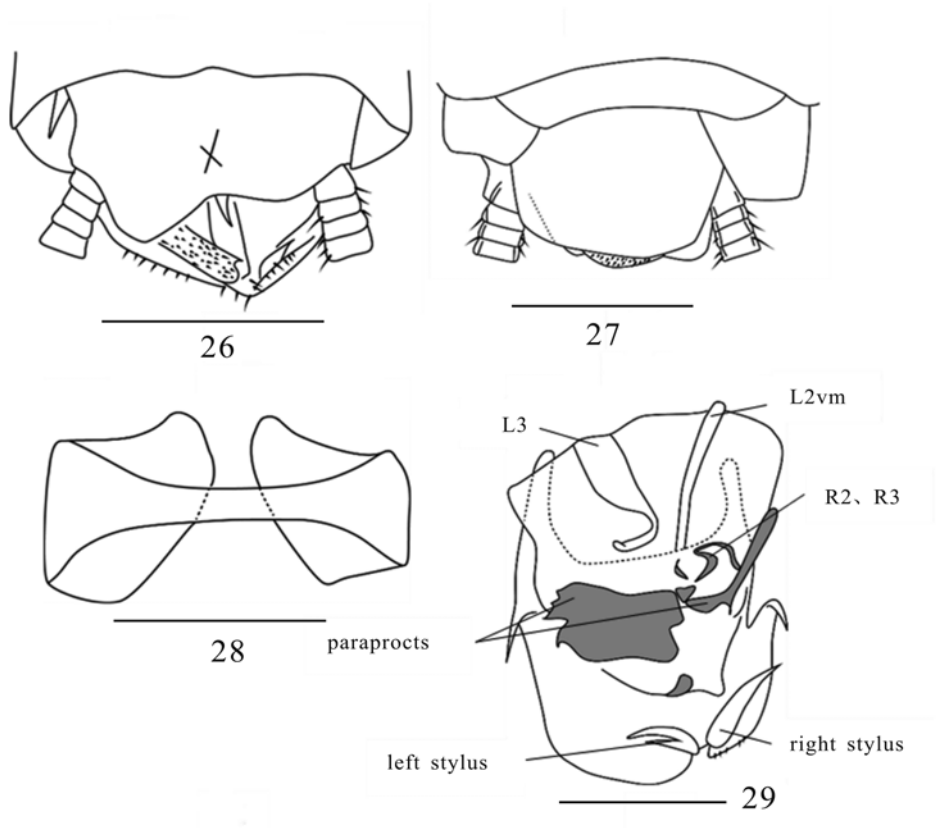
Figures 22–25. *Episymploce brevilamina* sp. nov., holotype, ♂. 22. End of tergum, dorsal view; 23. End of tergum, ventral view; 24. Supra-anal plate and paraprocts, ventral view; 25. Subgenital plate, ventral view, hook-like phallomere (L3); median phallomere (L2vm); right phallomere (R2 and R3). Scale bars = 2.0 mm.

7. ***Episymploce rothi* sp. nov.** (Figs. 26–29)

Holotype. ♂, **China,** Yunnan, Pingbian, Mawei, 900–950 m, 22–23-V-2009, Xianwei LIU *et al.* leg. **Paratype.** 1♀, same data as holotype.

Measurements. Male, body length: 21.0 mm, pronotum: length × width: 4.5 × 5.5 mm, tegmen: 17.0 mm. Female, body length: 20.0 mm, pronotum: length × width: 4.5 × 5.0 mm, tegmen: 18.0 mm.

Coloration. Body brown. Vertex black and ocellus pale brown. Face brown with one pale yellow macula below each antenna socket. Antenna brown and base of antenna pale brown. Labrum pale yellowish brown. Maxillary palpomus yellowish brown. Pronotum yellowish brown with two brown stripes on disc. Tegmina and hind wings yellowish brown. Ventral surface of abdomen, legs and cerci brown.



Figures 26–29. *Episymploce rothi* sp. nov., holotype, ♂. 26. End of tergum, dorsal view; 27. End of tergum, ventral view; 28. Lateral plates of 9th tergum, dorsal view; 29. Supra-anal plate and paraprocts, ventral view, subgenital plate, dorsal view, hook-like phallomere (L3); median phallomere (L2vm); right phallomere (R2 and R3). Scale bars = 2.0 mm.

Description. Male. Body small. Vertex with interocular width slightly wider than the space between ocellus and vertex with interocular width narrower than the distance between antennal sockets. Third and fourth maxillary palpomus about same length, both distinctly longer than the fifth. Pronotum more or less trapeziform, anterior margin nearly truncate and hind margin round. Tegmina and hind wings well developed, tegmina extending beyond end of abdomen. Tegmen with apical posterior branch of radius vein branched; median vein also bifurcated. CuA of hind wings with 4 complete branches and 7 incomplete branches, triangular apical area small. Anteroventral margin of front femur Type B_2, tarsi of hind legs with many spines and length of the first tarsus longer than the sum of the rest. Tarsal claws symmetrical, pulvilli and arolia present. The first abdominal tergum unmodified, the seventh abdominal tergum with a small angular elevation anteriorly. Lateral plates of the ninth abdominal tergum almost symmetrical (Fig. 28).

Genitalia. Supra-anal plate asymmetrical. Anterior margin of plate nearly straight; hind margin concave in the middle (Fig. 26). Left paraproct big with a process, apex of process acute; the right one with 2 different processes; one is blunt, pointing to the front of body, and

the other is acute and pointing to the left (Fig. 29). Subgenital plate asymmetrical, hind margin of plate with a small process in the middle which points to the right. Left side of subgenital plate with many setae thickened and curled inward; right side of subgenital plate with less setae. Both sides of plate with a separate spine. Styli dissimilar, left stylus bifurcated and curling to left; right stylus spine-like and pointing to right (Figs. 27, 29). Left phallomere large and slender; medial phallomere slender and apex slightly curled; right phallomere with many irregular sclerites (Fig. 29).

Female is similar to male; supra-anal plate symmetrical and trapeziform; subgenital plate simple and hind margin round.

Distribution. China (Yunnan).

Diagnosis. This species is similar to *E. quarta* Bey-Bienko, 1969. It can be distinguished as follows: 1) the spine-like pronounced on the left side of supra-anal plate cannot be seen in dorsal view and 2) left stylus of subgenital plate bifurcated.

Etymology. The species epithet *rothi* is in memory L. M. Roth.

8. ***Episymploce obscura* sp. nov.** (Figs. 30–35)

Holotype. ♂, **China,** Hunan, Yanling, Nanfengmian, 1380 m, 06–09-VI-2015, Peng Shen Tu & Zhou leg.

Measurements. Male, body length: 21.0 mm, pronotum: length × width: 3.5 × 4.0 mm, tegmen: 17.0 mm.

Coloration. Body brown. Vertex black and ocellus pale brown. Face brown with one pale yellow macula below each antenna socket. Antenna yellowish brown and base of antenna brown. Labrum pale yellowish brown. Maxillary palpomus yellowish brown. Pronotum brown. Tegmina and hind wings yellowish brown. Ventral surface of abdomen and cerci brown, legs yellowish brown.

Description. Male. Body small. Vertex with interocular width slightly the same as the space between ocellus and vertex with interocular width narrower than the distance between antennal sockets. Third and fourth maxillary palpomus about same length, both distinctly longer than the fifth. Pronotum more or less trapeziform, anterior margin nearly truncate and hind margin slightly pronounced in the middle. Tegmina and hind wings well developed, tegmina extending beyond end of abdomen. Tegmen with apical posterior branch of radius vein unbranched; median vein also unbifurcated. CuA of hind wings with 3 complete branches and 6 incomplete branches, triangular apical area small. Anteroventral margin of front femur Type B_3, tarsi of hind legs with many spines and length of the first tarsus longer than the sum of the rest. Tarsal claws symmetrical, pulvilli and arolia present. The first abdominal tergum with setae in the middle, the seventh abdominal tergum with a small angular elevation anteriorly. Lateral plates of the ninth abdominal tergum different, the left one is bigger with some setae, apex blunt; the right one smaller with some sawteeth on the left of plate, apex acute (Fig. 32).

Genitalia. Supra-anal plate in dorsal view asymmetrical. Anterior margin of plate slightly pronounced in the middle; hind margin concave in the middle, both sides concave with a separate spine (Fig. 30). Left paraproct thick with a process, apex acute; the right one with 2 little processes; one pointing to the front of abdomen and the other pointing to the left (Fig. 33). Subgenital plate asymmetrical, left side of subgenital plate thickened with many setae and

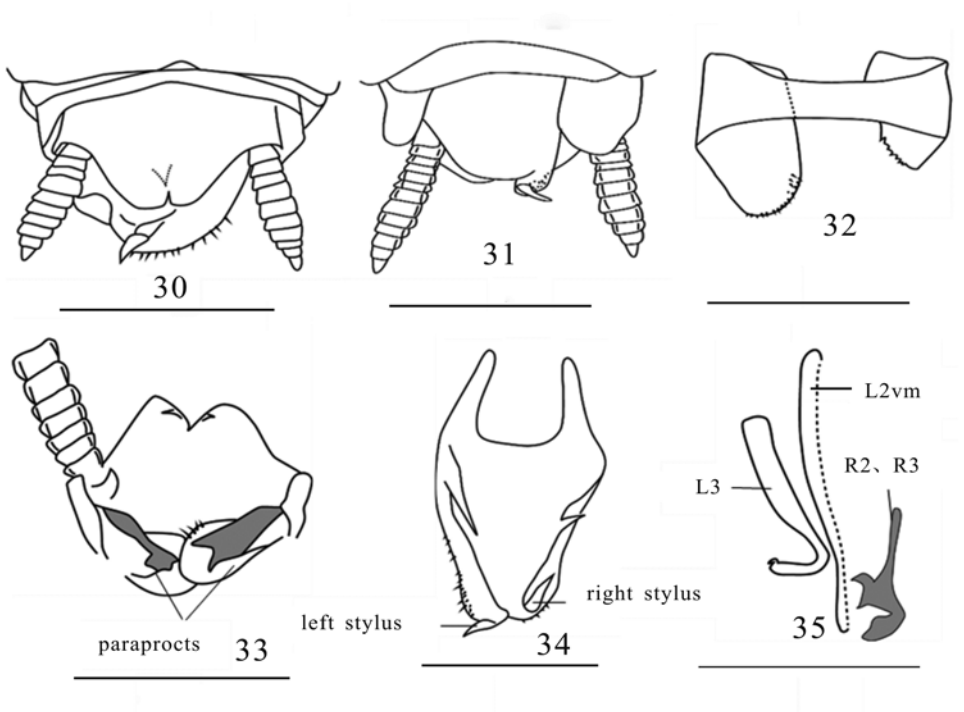
curling inward, right side of subgenital plate also thickened and curled inward, hind margin of plate with some setae. Both sides of plate with a separate spine, the left one pointing to inside and the left one pointing to outside. Styli dissimilar, left stylus spine-like and curled to left; right stylus spine-like and pointing to front of abdomen (Figs. 31, 34). Left phallomere large and apex of hook portion with a spine; medial phallomere slender; right phallomere with many irregular sclerites (Fig. 35).

Female unknown.

Distribution. China (Hunan).

Diagnosis. The species is similar to *E. zhengi* Guo *et al*., 2011. It can be distinguished as follows: 1) pronotum completely dark brown and 2) supra-anal plate with one interior spine.

Etymology. The specific epithet *obscura* refers to the body coloration.



Figures 30–35. *Episymploce obscura* sp. nov., holotype, ♂. 30. End of tergum, dorsal view; 31. End of tergum, ventral view; 32. Lateral plates of 9th tergum, dorsal view; 33. Supra-anal plate and paraprocts, ventral view; 34. Subgenital plate, dorsal view; 35. Hook-like phallomere (L3); median phallomere (L2vm); right phallomere (R2 and R3). Scale bars = 2.0 mm.

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