

REICHENBACHIA

Staatliches Museum für Tierkunde Dresden

Band 31

Ausgegeben: 1. September 1995

Nr. 2

Two new species of genus *Eurystylopsis* REUTER from China (Insecta: Hemiptera: Heteroptera: Miridae)

With 15 Figures

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Abstract. In this paper two new species of genus *Eurystylopsis* REUT. from China (Gansu Province) are described: *Eu. angustatus* spec. nov. and *Eu. hirtipes* spec. nov. The type specimens are deposited in the Department of Biology, Nankai University, P. R. China. Some remarks on female genitalia of several *Eurystylopsis* species are given.

Eurystylopsis angustatus ZHENG et LU spec. nov. (Figs. 1, 3, 5, 7, 10, 13)

Female: Elongately oval, almost parallel-sided. Reddish brown, with mosaic dark patterns. Dorsal surface with short, stout, straight blackish brown setae and pale sericeous hairs, some of the latter slightly squamous, all decumbent and dense, directions of sericeous hairs not uniform. Body length 5.85–6.3 mm, maximal width 2.2 mm, head apex to cuneal suture 5.0 mm.

Head (Fig. 1) brown, clypeus, genae, and bucculae dark brown to blackish brown. Vertex faintly with a short medial groove. Frons somewhat roundly swollen. Area between frons and clypeus shallowly sunken. Clypeus somewhat laterally compressed. Black setae semi-erect, moderately dense, gradually lengthened apicad. Head length (in lateral view) 0.7 mm, height 0.86 mm, width 1.1 mm, vertex width 0.55 mm, eye width 0.33 mm. Antennae reddish brown, segments II, III, and IV gradually darkened apicad respectively, with their apices black and basal $\frac{1}{3}$ pale reddish brown or orange yellow; segment I stout, diameter about eye width in lateral view, densely covered with stout black setae, its length about $\frac{2}{3}$ of segment diameter; segment II gradually thickened apicad, basal diameter about $\frac{1}{2} \times$ that of segment I, largest diameter slightly shorter than that of segment I, pubescence (Fig. 3) brown, setae-like, much more slender than and slightly shorter than those of segment I, shorter and denser at subapical portion of the segment; segment III & IV slender. Antennal segments lengths 1.35:2.9:1.5:0.5 mm. Rostrum (Fig. 1) reaching apex of mesosternum, rostral segments lengths 0.6:0.6:0.35:0.5 mm.

Pronotum faintly rugulose, lateral margin nearly straight, posterior pronotal margin evenly convex, disc with a black medial longitudinal stripe anteriorly slightly widened, lateral area and sublateral area sometimes with a faint blackish brown broad longitudinal stripe. Hind margin of collar laterally black and weakly pruinose. Anterior pronotal angle behind collar with one or two stout erect setae moderate in length. Pronotum length 1.1 mm, collar width 0.8 mm, posterior pronotal margin width 2.15 mm. Scutellum brown, gradually darkened laterad, apex pale yellow; disc tumid, moderately swollen centrally, then gradually and smoothly lowering apicad, apical surface not forming a steep slope (Fig. 1).

Hemelytra reddish brown. Inner half of clavus, middle of exterior half of corium or an oblique band expanding inward, and some irregular large spot at apical margin of corium blackish brown. Cuneus yellow, with basal $\frac{1}{3}$ red and apical $\frac{1}{3}$ black, basal external angle black. Membrane smoky brown, a stripe along hind margin of cuneus in membranal cells and a small spot behind cuneus apex whitish,

a small round spot at central of disc faintly pale. Membranal veins reddish. Costal margin of hemelytra almost straight. Membrane far surpassing apex of abdomen. Corium length 3.5 mm, commissure length 1.5 mm, cuneus length 1.1 mm.

Femora reddish brown, with dense small black spots and numerous reddish minute spots, pubescence black, setae-like. Tibiae unicolorly reddish brown, with black apex; hind tibia with shorter brownish setae (length = 0.7–0.8× tibial diameter), longer black spines (length = 1.1–1.2× tibial diameter) and numerous tiny decumbent black spicules densely and evenly distributed (Fig. 5) which are not found on fore and middle tibiae.

Propleuron reddish brown, marked with a subventral blackish brown broad band and a whitish yellow ventral margin. Mesepisternum, metapleuron and coxae brown, sometimes apparently greyish brown due to pruinosity. Mesepimeron blackish brown, with hind margin and ventral apex yellowish white. Ostiolar peritreme yellowish white. Pubescence on pleura pale and sericeous.

Venter reddish brown, mottled with blackish brown and greyish blue pruinosities; anterior half of each segment sublaterally with a small black oval depression; area in front of ovipositor yellow.

Structures of female genitalia: Ring sclerite oval (Fig. 10). Posterior wall of bursa copulatrix: Inner branch of inter-ramal lobe small, very short, outer branch large and rounded (Fig. 7); dorsal structure large, triangular (Figs. 7 & 13).

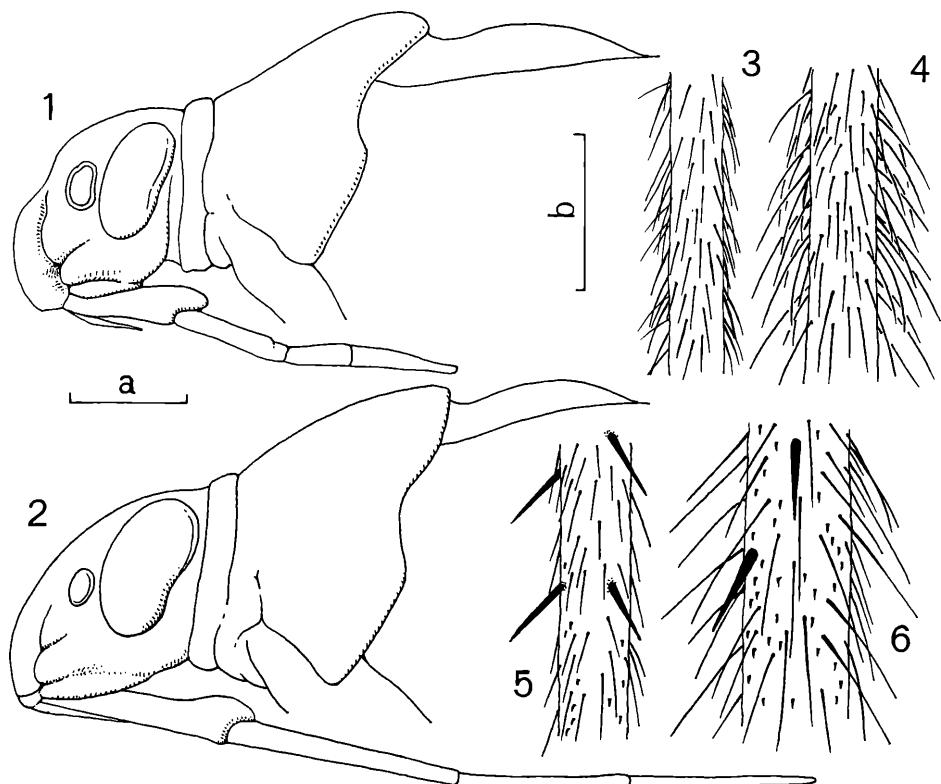
Holotype ♀, paratypes 3 ♀♀, China: Gansu Province (Yu-zhong County: Mt. Xing-long [N 35.8, E 104.0], alt. 2200 m), 4. viii. 1993, N. Lu leg. Paratype 1 ♀, locality as above, 24. viii. 1992.

The narrow and comparatively elongate body form, coloration, comparatively slender antennal segment II, and uniformly colored hind tibia readily distinguish the new species from the other known members of genus *Eurystylopsis*.

***Eurystylopsis hirtipes* ZHENG et LU spec. nov. (Figs. 2, 4, 6, 9, 11, 14)**

Female Elongately oval, body before cuneal suture slightly widened caudad. Dull greyish brown, mottled with dull blackish brown patterns. Dorsal pubescence dense, two-typed: decumbent to declivous black setae and decumbent silvery sericeous hairs, the latter heavily dense and somewhat tomentose, some of which narrowly squamous. Body length 7.75–8.0 mm, maximal width 2.8–2.9 mm, head apex to cuneal suture 5.4–5.7 mm.

Head comparatively porrect (Fig. 2), greyish brown tinged with pale blue. Fronto-vertex evenly convex, not roundly swollen in frontal area. Head pubescence dense, pale sericeous hairs abundant, black setae on vertex gradually erected basad. Clypeus, basal portion of mandibular plate, maxillary plates, and upper half of bucculae brown; genae and post-ocular area bluish grey or greyish yellow; most of mandibular plate and lower half of bucculae red; ventral side of head gradually turning into blackish brown. Rostrum dull brown, apex reaching to middle of metatrochanter, rostral segment I reaching middle of prosternum (xyphus). Antennae dull bluish grey, apical half of segment II reddish brown or blackish brown, basal half of segment III and basis of segment IV whitish yellow; diameter of segment I about 0.2 mm, segment II gradually thickened apicad, maximal diameter almost same as that of segment I; pubescence on segments I & II (Fig. 4) setae-like, black, elongate, stout and dense, semi-erect to sub-erect, hirsute, length = diameter of segment I; those on segments III & IV pale, short, slender and much denser than those on segment II. Head length 0.5 mm, width 1.2 mm, vertex width 0.5 mm. Antennal segments lengths 1.0:3.1:1.05:0.8 mm. Rostral segments lengths 0.9:1.0:0.7:1.0 mm. Posterior margin of collar black, calli slightly darkened, pronotal disc weakly rugulose, with a blackish brown medial longitudinal stripe wider at anterior half; lateral and sublateral area of pronotum sometimes with a broad blackish brown longitudinal stripe, usually faintly defined. Black setae on collar erect, pubescence on pronotal disc decumbent, with semi-erect black setae at lateral area. Anterior pronotal margin slightly concave, posterior pronotal margin medially straight, lateral pronotal margin straight. Pronotum length 1.25 mm, collar width 0.85 mm, posterior pronotal margin width 2.2 mm. Scutellum chestnut brown, with a broad blackish brown medial stripe, apex whitish yellow. Disc of scutellum shallowly rugulose, disc swollen, gradually lowering apicad, not forming a steep hind



Figs. 1, 3, 5: *Eurystylopsis angustatus* ZHENG et LU spec. nov.; Figs. 2, 4, 6: *Eurystylopsis hirtipes* ZHENG et LU spec. nov.

1+2: head, lateral view – 3+4: a portion of basal half of 2nd antennal segment showing pubescence – 5+6: a portion of basal half of hind tibia showing pubescence. Scale a=0.50 mm, b=0.20 mm.

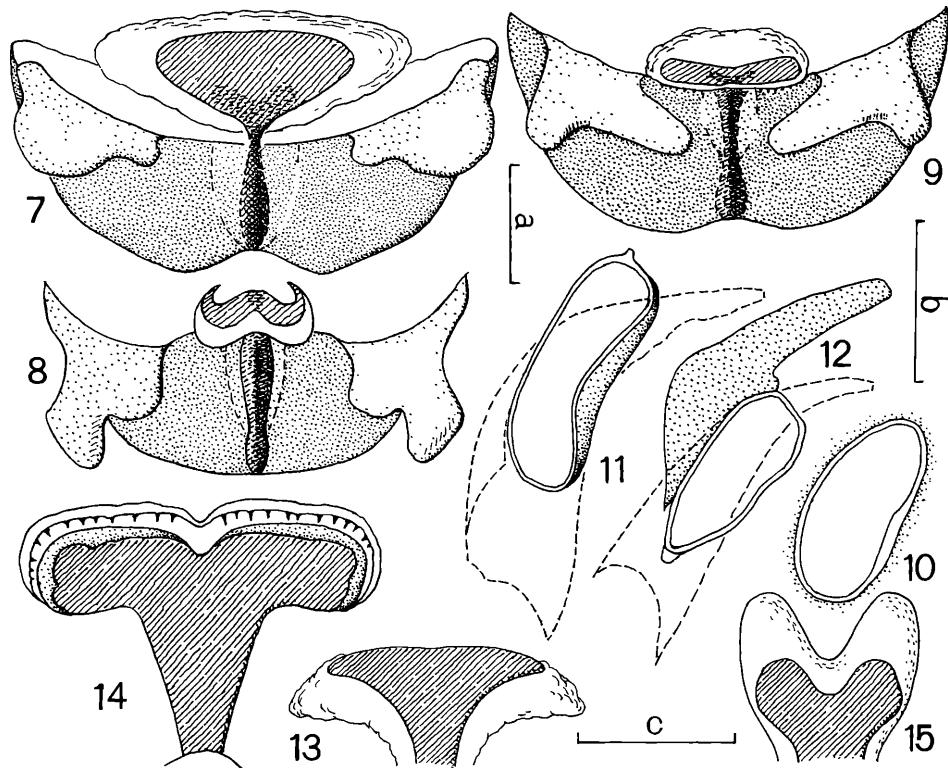
surface. Pubescence on scutellum dense. Exposed part of mesoscutum blackish brown, lateral corner yellowish brown to chestnut brown. Scutellum length 1.38 mm, width 1.5 mm.

Hemelytron greyish brown to dull brown, sometimes with reddish brown tinge. An oblique subtriangular band from middle of costal margin extending to inner angle of corium piceus; outer side of corium along embolium darkened, apical portion of corium blackish brown, sometimes fused into black patches or irregular spots; black setose pubescence dominate on these black areas while pale sericeous hairs scarce. M vein reddish. Cuneus whitish yellow in median $\frac{1}{3}$, basal and apical $\frac{1}{3}$ black, with reddish tinge. Membrane smoky blackish brown, with a pale band surrounding membranal cells, membranal veins reddish in part. Corium length 3.6 mm, claval commissure length 1.4 mm.

Mesepisternum, metapleuron and coxae blackish brown, or greyish brown due to pruinosity. Mesepimeron blackish brown, without pruinosity, its hind margin and ventral apex whitish yellow. Ostiolar peritreme whitish yellow. Legs dull greyish, femora with faint brownish oblong spots arranging linearly in a row and numerous tiny spots orange brown in color, pubescence with black semi-erect setae of two different lengths, length of longer setae = $\frac{3}{5} \times$ femoral diameter. Hind tibia slightly curvate, densely covered with minute decumbent black spines, declivous black spines (length = $\frac{1}{2} \times$ tibial diameter), and declivous to sub-erect black setae (length = 1.5–1.7 \times tibial diameter) (Fig. 6).

Venter mottled: anterior half of each abdominal segment bluish grey, laterally with a dark longitudinal stripe containing a small round impression in it; posterior half reddish brown.

Structures of female genitalia: Ring sclerite elongately oval, narrow, somewhat kidney-shaped; lateral sclerite on ventral labiate plate large, apical half bending inward (Fig. 11). Posterior wall of bursa



Figs. 7, 10, 13: *Eurystylopsis angustatus* ZHENG et LU spec. nov.; Figs. 9, 11, 14: *Eurystylopsis hirtipes* ZHENG et LU spec. nov.; Figs. 8, 12, 15: *Eurystylopsis clavicornis* (JAKOVLEV).

7-9: posterior wall of bursa copulatrix, anterior view – 10: ring sclerite – 11+12: lateral sclerites on dorsal & ventral labiate plate – 13-15: dorsal structure of bursa copulatrix posterior wall. Scale a=0.25 mm, b=0.30 mm, c=0.15 mm.

copulatrix: Inner branch of inter-ramal lobe long, pointing inward, outer branch much shorter (Fig. 9); dorsal structure T-shaped, dorsal margin of its membranous envelope with a row of spinulae (Fig. 14).

Holotype ♀, China: Gansu Province (Yu-zhong County: Mt. Xinglong [N 35.8, E 104.0], alt. 2200 m), 30. vii. 1993, N. LU leg. **Paratypes** 11 ♀♀, locality as above, 30-31. vii. 1993, N. LU leg.

The new species is closely allied to *E. angustatus* spec. nov. by the elongate body form and general colour patterns, but can be easily distinguished from the latter on account of its broader and more robust body, greyish coloration more or less tinged with pale blue, longer rostrum, evenly convexed frons, heavier body pubescence, hirsute hairs on antennae and hind tibiae, and details of female genitalia.

Remarks on female genitalia

After POPPIUS's (1911) original description, some complements on the generic characters of *Eurystylopsis* has been made by ZHENG & CHEN (1991). In this paper the structure of the female genital chamber of this genus is described for the first time. Based on the dissection of three species (*Eu. clavicornis* (JAKOVLEV) [Fig. 8, 12, 15], *Eu. angustatus* spec. nov., *Eu. hirtipes* spec. nov.), the common features of this structure in genus *Eurystylopsis* might be as follows: The posterior wall of bursa copulatrix with inter-ramal sclerite transverse, broad, surface devoid of any vestiture; lateral lobe paired,

more or less bifurcate; median process prominent, bottle-shaped, surrounded by a longitudinal cup-like hood; dorsal structure expanded, reflexed, more or less perpendicularly to the inter-ramal sclerite surface, surrounded by a membranous sac (Figs. 7–9, 13–15). Dorsal labiate plate with ring sclerite oval or kidney-shaped, with an anterior sclerite bending inward in some species. Ventral labiate plate with a lateral sub-triangular sclerite lying under the ring sclerite, somewhat curled dorsad, apical half bending inward (Figs. 10–12); on the hind margin there is a pair of narrow transverse sclerite.

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(Received on 1. II. 1994)

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Zeitschrift/Journal: [Reichenbachia](#)

Jahr/Year: 1995-1996

Band/Volume: [31](#)

Autor(en)/Author(s): Zheng Le-Yi, Lu Nan

Artikel/Article: [Two new species of genus Eurystylopsis Reuter from China \(Insecta: Hemiptera: Heteroptera: Miridae\) 7-11](#)