

**DISCOVERY OF THE GENUS *LUZONIMYIA* MALLOCH
(INSECTA: DIPTERA: DROSOPHILIDAE)
IN CHINA, WITH DESCRIPTIONS OF TWO NEW SPECIES**

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ABSTRACT. – Two new species of the genus *Luzonimyia* Malloch are described from southern China: *L. flavipedes* and *L. stictogaster*, they closely resemble the African species of *Luzonimyia* in the structure of the male terminalia. This is the first record of the genus *Luzonimyia* from China. The diagnosis of *Luzonimyia* is modified.

KEYWORDS. – Drosophilidae, *Luzonimyia*, new species, China.

INTRODUCTION

The genus *Luzonimyia* has been established by Malloch (1926) for the holotype female of the single species *Luzonimyia nigropuncta* from the Philippines. It was further mentioned by Bock (1982) who added one species from Australia. Tsacas (1990) described two African species of *Luzonimyia*, which differ from the Australian species in the surstylus having strong setae; thus, besides some undescribed Afrotropical ones (Tsacas, 1990), only four species have been described in this genus. Bock (1982) presented the following, now inadequate, diagnosis of *Luzonimyia*: head and thorax with (dense) greyish pollinosity (ch. 1); arista micropubescent (ch. 2); orbital and vertical setae large (ch. 3); carina absent (ch. 4); prescutellar setae large (ch. 5); bm-cu crossvein absent (ch. 6); costa reaching apex of longitudinal vein (ch. 7). These characters are shared with those of some other genera of the subfamily Steganinae (Okada, 1989; Grimaldi, 1990), e.g. ch.1 present in some *Apenthecia* and *Leucophenga* species; ch. 2 present in *Acletoxenus* and *Pseudiasata*; the other characters usually present in many related genera, of course, some of them may be plesiomorphic. In the two new Chinese species, the following important characters have been found: frons glossy with thin pollinosity, lacking interfrontal setulae (Fig. 3); proclinate orbital setae shorter than the reclinate pair (Fig. 3), as found in *L. cineracea* Bock, 1982 from Australia; arista short plumose (Fig.3), also as in *L. cineracea*; R4+5 and M1 distally slightly divergent (Fig. 1); mid femur with a row of strong setae on anterior surface (Fig. 2); epandrium and surstylus entirely fused (Figs. 4, 8), (unknown in *L. nigropuncta*); paramere absent (Figs. 6, 7, 10, 11), (also unknown in *L. nigropuncta*). As stated by Malloch (1926) and Bock (1982), *Luzonimyia* is similar to *Acletoxenus*

von Frauenfeld, 1868 in having very large eyes, absent or very weak (minute) ocellar setae, micropubescent or short plumose (= long micropubescent) arista, narrow and linear gena, clear wing without bm-cu crossvein. Okada (1989) assigned the genus *Luzonimyia* to his tribe Leucophengini, and also considered *Luzonimyia* resembling *Acletoxenus* based on a phenetic analysis with 14 adult morphological characters. Grimaldi (1990) presented a different view, i.e. he did not include *Luzonimyia* in any tribe. The two new species of the genus *Luzonimyia* described here are reported from South China; they are very similar to the two known African species (Tsacas, 1990) in the male morphological characters, which suggests a biogeographical relationship between the Afrotropical and Oriental Regions.

The type specimens are deposited in Department of Entomology, South China Agricultural University, Guangzhou, China (SCAU). For morphological terminology and index definitions, see Chen and Toda (2001).

TAXONOMY

***Luzonimyia* Malloch, 1926**

Luzonimyia Malloch, 1926: 491. Type species: *Luzonimyia nigropuncta* Malloch, 1926.

Diagnosis. – (Bock, 1982, extended). Frons lacking interfrontal setulae; ocellar setae very weak or absent (Fig. 3); proclinate orbital setae shorter than the others (Fig. 3); R4+5 and M1 distally somewhat divergent (Fig. 1); epandrium and surstylus entirely fused (Figs. 4, 8); paramere absent (Figs. 6, 7, 10, 11).

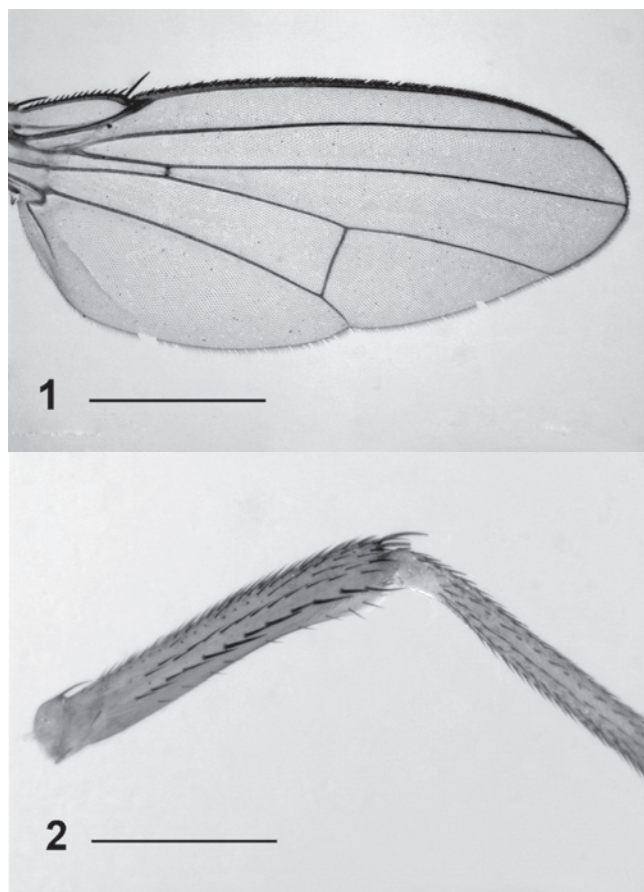
Luzonimyia flavipedes, new species
(Figs. 1–7)

Diagnosis. – Ocellar setae absent; third tergite without dark brown patches; surstylus with ca. 27 strong setae on inner surface (Figs. 4, 5); cercus nearly triangular (Fig. 4); aedeagus (basiphallus) expanded and extroverted in ventral view (Fig. 6), triangular basally in lateral view (Fig. 7).

Material examined. – Holotype: male, CHINA: Jianfengling (18°41'N 108°52'E, alt. 900 m), Hainan, ex. fallen logs, coll. Hongwei Chen, 19 May 2004.

Description. – Head (Fig. 4): Eye red. Postvertical setae long, ca. 0.4 times as long as inner vertical setae, inserted at vertical ridge. Frons narrow, black, with dense grey pollinosity. Ocellar triangle black. Pedicel and first flagellomere brown; arista short plumose with pubescence basally. Face, clypeus, postgena and occiput glossy black. Gena glossy black, narrow and linear. Palpus large, black, lobe-like, with a few short setae on lateral margin. Vibrissa prominent; other orals small.

Thorax: Black with dense grey pollinosity. Postpronotal lobe with 1 long and 3 short thick setae. Acrostichal setulae in ca. 8 irregular rows. Anepisternum lacking setulae. Katepisternal setae 2. Scutellar black, yellow on tip; basal setae divergent; apical setae cruciate. Subscutellum swollen in lateral view.



Figs. 1–2. *Luzonimyia flavipedes*, new species, male, 1, wing (ventral view); 2, midleg (anterior view). Scale bars: wing = 1 mm; leg = 0.5 mm.

Wing (Fig. 1): Hyaline, veins grey yellow. Basal medial-cubital crossvein absent. C_1 setae 2, thick. Costal vein with strong setae on ventral surface between R_{2+3} and R_{4+5} . $C_3F = 0.25$. R_{2+3} straight. Halteres white.

Legs: Yellow except for dark brown third to fifth tarsomeres. Fore femur without long setae on posterior surface; mid-femur with a row of strong setae on anterior surface (Fig. 2); apical setae present on fore- and hind tibiae; preapical setae present on mid tibia only. Mid tarsus ventrally with 2 rows of minute cuneiform setulae; hind tarsus lacking minute cuneiform setulae. All first tarsomeres longer than the rest combined.

Abdomen: All tergites yellow; fourth to sixth tergites medially and sublaterally with dark brown patches; six tergite very small, narrowed on lateral margins (Fig. 4). Sternites yellowish except for brown on fifth; sixth sternite (queried) developed (Figs. 6, 7).

Male terminalia: Epandrium not constricted mid-dorsally, with ca. 12 setae and pubescence (Fig. 4). Cercus separated from epandrium, pubescent and setigerous (Fig. 4). Hypandrium anteriorly broadened, with 2–3 pairs of paramedian setae, mid-anteriorly connected with ventral branch of aedeagal apodeme (Figs. 6, 7). Decasternum forming small postero-medial lobe, baso-laterally contiguous to posterior ends of hypandrium and anteroventral corners of epandrium (Figs. 6, 7). Aedeagus sclerotized dorsally, membranous ventrally (Fig. 7). Aedeagal apodeme long, rod-shaped, with a ventral branch submedially (Figs. 6, 7).

Female: Unknown.

Measurements: BL = 3.75 mm; ThL = 2.10 mm; WL = 3.60 mm; WW = 1.55 mm.

Indices: arb = 15/12, avd = 0.80, adf = 0.68, flw = 1.85, FW/HW = 0.31, ch/o = 0.05, pror = 0.41, rcorb = 0.83, vb = 0.44, dcl = 0.41, presctl = 0.57, sctl = 0.82, sterno = 0.76, orbito = 2.14, dcp = 0.27, sctlp = 0.86, C = 5.74, 4c = 0.43, 4v = 1.13, 5x = 0.58, ac = 0.77, M = 0.23, $C_3F = 0.25$.

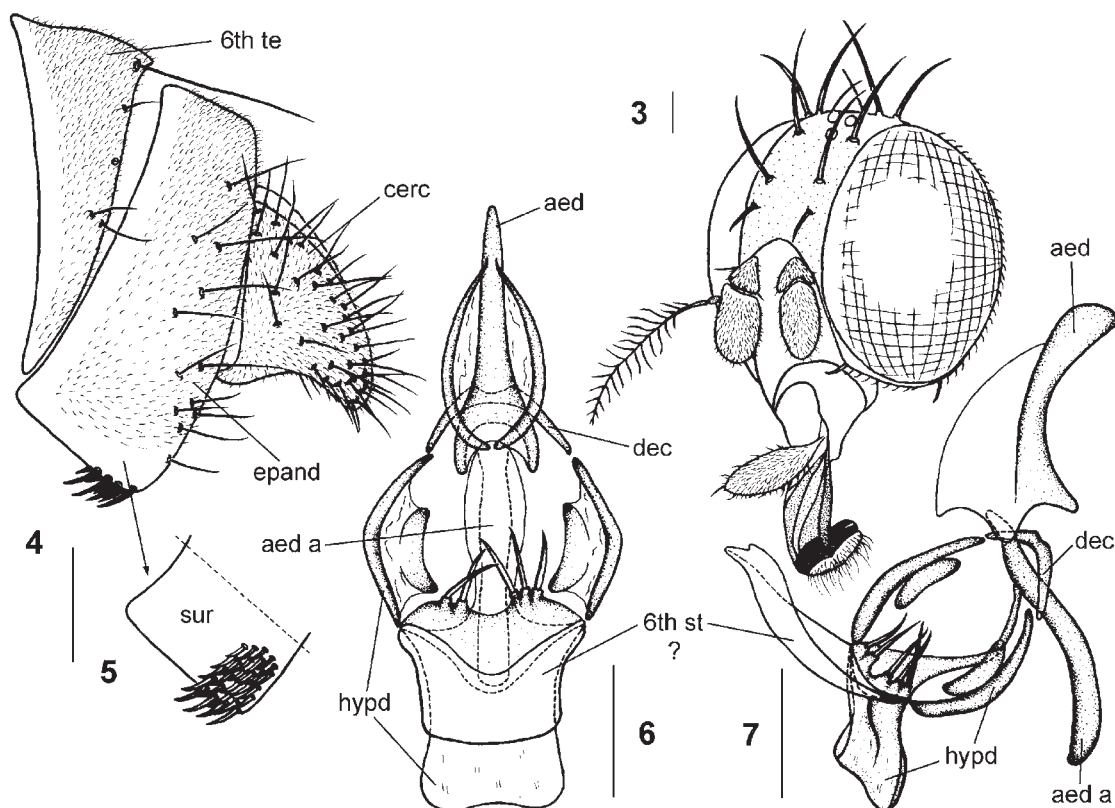
Etymology. – A combination of the Latin words: flavus + pedes, referring to the yellow legs.

Distribution. – China (Hainan).

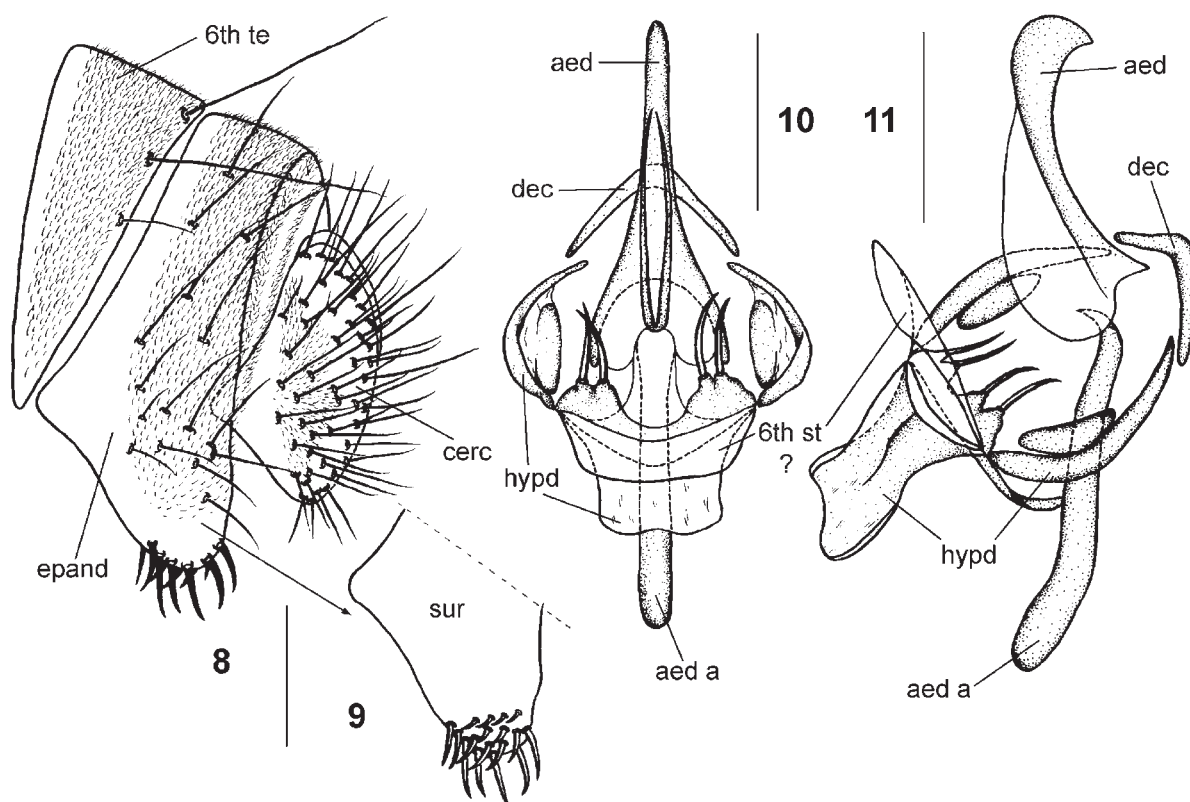
Luzonimyia stictogaster, new species
(Figs. 8–11)

Diagnosis. – Third abdominal tergite medially and sublaterally with smaller brown to black patches; surstylus extended below at posterolateral corners, with ca. 17–18 curved, strong setae on edge to inner surface (Figs. 8, 9); membranous part of aedeagus not extroverted in ventral view, round basally in lateral view (Fig. 10).

Material examined. – Holotype: male, CHINA: Park Jiaoye (Qiongzhusi, 25°02'N 102°43'E, alt. 2,100 m), Kunming, Yunnan,



Figs. 3–7. *Luzonimyia flavipedes*, new species, male: 3, head; 4, sixth tergite (6th te), epandrium (epan), cercus (cerc) and surstylus (sur) (lateral view); 5, surstylus (inner view); 6, sixth sternite ? (6th st ?), hypandrium (hypd), decasternum (dec), aedeagus (aed) and aedeagal apodeme (aed a) (ventral view); 7, sixth sternite ? (6th st ?), hypandrium (hypd), decasternum (dec), aedeagus (aed) and aedeagal apodeme (aed a) (lateral view). Scale bars: 0.1 mm.



Figs. 8–11. *Luzonimyia stictogaster*, new species, male: 8, sixth tergite (6th te), epandrium (epan), cercus (cerc) and surstylus (sur) (lateral view); 9, surstylus (inner view); 10, hypandrium (hypd), decasternum (dec), aedeagus (aed) and aedeagal apodeme (aed a) (ventral view); 11, hypandrium (hypd), decasternum (dec), aedeagus (aed) and aedeagal apodeme (aed a) (lateral view). Scale bars: 0.1 mm.

coll. Jian-jun Gao, 5 May 2002. Paratype: CHINA: 1 female, Mt. Wuliang (24°32'N 101°01'E, alt. 1,800 m), Jingdong, Simao, Yunnan, on tree trunk, coll. Huazhi Cao, 4 Aug.2006.

Description. – The most morphological characters are shared with *L. flavipedes*, new species, except for the diagnostic characters mentioned in the following description.

Male terminalia: Epandrium with 3 setae and pubescence (Fig. 8). Cercus slightly ellipse (Fig. 8). Hypandrium with 2 pairs of paramedian setae (Figs. 10, 11).

Female: Sixth tergite and sternite entirely black. Terminalia partially very weak.

Measurements: BL = 3.25 mm in holotype (1 female paratype: 3.37); ThL = 1.70 mm (1.78); WL = 3.25 mm (3.48); WW = 1.35 mm (1.47).

Indices: arb = 14/11 (16/14), avd = 1.00 (0.93), adf = 0.51 (0.58), flw = 1.84 (1.92), FW/HW = 0.32 (0.34), ch/o = 0.06 (0.04), pror = 0.52 (0.56), rcorb = 0.86 (0.97), vb = 0.50 (0.50), dcl = 0.48 (0.49), presctl = 0.56 (0.51), sctl = (damaged) (1.02), sterno = 0.77 (damaged), orbito = 1.89 (1.77), dcp = 0.33 (0.27), sctlp = 0.78 (0.87), C = 5.95 (6.07), 4c = 0.39 (0.39), 4v = 1.06 (1.13), 5x = 0.53 (0.67), ac = 0.84 (0.76), M = 0.19 (0.25), C3F = 0.25 (0.21).

Etymology. – A combination of the Latin words: stictus + gaster, referring to the abdominal tergites with patches.

Distribution. – China (Yunnan).

ACKNOWLEDGEMENTS

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