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Six new species of the genus Pseudostegana (Diptera: Drosophilidae) from the Oriental region

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Six new species of the genus *Pseudostegana* (Diptera: Drosophilidae) from the Oriental region

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Six new species are described from China and Indonesia, belonging to the *latiparma* and *zonaria* species groups: *Pseudostegana acutifoliolata* sp. nov., *Pseudostegana bilobata* sp. nov., *Pseudostegana bipartita* sp. nov., *Pseudostegana insularis* sp. nov., *Pseudostegana minutipalpata* sp. nov. and *Pseudostegana silvana* sp. nov.. Updated keys to the species of the *latiparma* and *zonaria* groups are provided.

Keywords: Diptera; Pseudostegana; new species; China; Indonesia

Introduction

Pseudostegana was established by Okada (1978) as a subgenus in the genus *Stegana* Meigen 1830 and was elevated to the generic rank by Sidorenko (2002). Adult flies of *Pseudostegana* are 2–4 mm in body length and yellow to black in body colour, and often perch on fallen logs and fruits near streams in forest, slowly flapping their wings like some butterflies. A total of 33 species of *Pseudostegana* have been recorded exclusively from the Oriental region (Takada et al. 1973; Takada and Momma 1975; Okada 1978, 1982; Sidorenko 1998; Chen et al. 2005), 17 from Malaysia, seven from China, five from Philippines, three from Papua New Guinea, two from Vietnam and Indonesia. Chen et al. (2005) roundly revised this genus's classification, and established six species groups based on the wing patterns and some other characters. In this report, six new species are added; five from China, the other from Indonesia, belonging to the *latiparma* and *zonaria* groups.

Material and methods

The specimens used for observing and describing the morphology are deposited in the following institutions: Kunming Institute of Zoology, Chinese Academy of Sciences, Kunming, China (KIZ); Museum Zoologicum Bogoriense, Bogor, Indonesia (MZB); Department of Entomology, South China Agricultural University, Guangzhou, China (SCAU).

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Photographs of types were taken with a Canon[®] digital camera (PowerShot A640) attached to an Olympus[®] dissecting microscope (SZH 10, about $8-10 \times$ magnification), and processed using ADOBE PHOTOSHOP CS2[®]. We followed McAlpine (1981) for morphological terminology, and Chen and Toda (2001) for the definitions of measurements, indices and abbreviations.

Pseudostegana Okada, 1978

Stegana (Pseudostegana) Okada 1978: 392; Okada 1982: 39. Type species: Stegana (Parastegana) grandipalpis Takada and Momma 1975: 12.

Pseudostegana: Sidorenko 2002: 14 (as a genus); Chen et al. 2005: 407.

Diagnosis

Postvertical and prescutellar setae absent; ocellar setae outside triangle made by ocelli; arista with one ventral branch except for terminal fork; anterior dorsocentral seta minute; wing hyaline, mostly with dark band(s); all femora, tibiae and first tarsomeres slender; foreleg first tarsomere with four to six black, short, thick setae; abdominal tergites mostly glossy; seventh tergite present in male (Chen et al. 2005).

Description

Head (Figure 1). Eye brownish red. Ocellar triangle mostly, broadly or narrowly elongated to anterior margin of frons. Frons mostly glabrous, lacking minute, interfrontal setulae. Anterior reclinate orbital seta minute; posterior reclinate orbital seta situated nearer to proclinate seta than to inner vertical. Arista with long, dorsal branches. Clypeus brown to black. Subvibrissa mostly longer than half length of vibrissa. Palpus slender in female, variable in male.

Thorax. Scutum and scutellum dorsally convex. Katepisternal setae two or three; medial one shortest. Scutellum usually pale at tip; subscutellum swollen.

Wing (Figure 2). Basal medial-cubital cross-vein absent. Costal vein extending beyond tip of R_{4+5} vein, with five to seven peg-like spinules on ventral surface between veins R_{2+3} and R_{4+5} . R_{2+3} vein slightly curved to costa at tip; M vein strongly convergent to R_{4+5} vein.

Haltere. Stalk greyish; knob white.

Legs. Mostly yellow, slender. Midleg tibia basally without strong, posterodorsal setae.

Abdomen. Sternites usually yellow to brown.

Male terminalias. Epandrium broad, sometimes slightly constricted middorsally, pubescent except for anterior margin. Surstylus separated from epandrium, mostly lacking pubescence, with several setae on outer and inner surfaces. Cercus separated



Figure 1. Frons and palpus of male. (A, B) *Pseudostegana acutifoliolata* sp. nov.; (C,D) *Pseudostegana bilobata* sp. nov.; (E,F) *Pseudostegana bipartita* sp. nov.; (G,H) *Pseudostegana minu-tipalpata* sp. nov.; (I,J) *Pseudostegana insularis* sp. nov.; (K,L) *Pseudostegana silvana* sp. nov.



Figure 1. (Continued).

from epandrium, pubescent and setigerous. Hypandrium broad, large, laterally mostly with one pair of paramedian setae, midanteriorly connected with apical part of aedeagal apodeme by aedeagal guide. Paramere with two long sensilla distally and several, small sensilla. Gonopods forming posteromedian lobe, basolaterally contiguous to parameres. Aedeagus usually with one pair of flap-like, serrated processes basally. Aedeagal apodeme long, rod-shaped, basally laterally flattened.

The latiparma species group

Diagnosis

Wing basally with distinct, cross band (Figures 2A-D).

Included species

Pseudostegana albinotata (Okada 1982) from Philippines, Pseudostegana angustifasciata Chen and Wang 2005 from China, Pseudostegana bifasciata Chen and Wang 2005 from China, Pseudostegana dactylis Chen and Toda 2005 from Malaysia, Pseudostegana hirta (Okada 1982) from Philippines, Pseudostegana latiparma (Okada 1982) from Philippines and Papua New Guinea, Pseudostegana latizonaria (Okada 1982) from Philippines, Pseudostegana lineoparma (Okada 1982) from Papua New Guinea, Pseudostegana orbicapitata Chen and Toda 2005 from Malaysia, Pseudostegana pallidimaculata Chen and Wang 2005 from China, Pseudostegana philoga Chen and Toda 2005 from Malaysia, Pseudostegana acutifoliolata sp. nov., Pseudostegana bilobata



Figure 2. Wing of male: (A). *Pseudostegana acutifoliolata* sp. nov.; (B) *Pseudostegana bilobata* sp. nov.; (C) *Pseudostegana bipartita* sp. nov.; (D *Pseudostegana minutipalpata* sp. nov.; (E) *Pseudostegana insularis* sp. nov.; (F) *Pseudostegana silvana* sp. nov. Scale bars: 1 mm.

sp. nov. and *Pseudostegana minutipalpata* sp. nov. from China, *Pseudostegana bipartita* sp. nov. from Indonesia.

Key to species of the latiparma group

1.	R-m cross-vein clear
2.	Ocellar triangle narrower than one-sixth of frontal width <i>P. lineoparma</i> Ocellar triangle medially as broad as one-third of frontal width 3
3.	Palpus expanded, medially one-third to half as wide as long

4.	Paramere distally deeply bifurcated, without lobe-like process; aedeagus api- cally roundly expanded in ventral view, broadened on distal half in lateral view, about three times basal width P. bipartita sp. nov. Paramere apically shallowly bifurcated at most, with expanded lobe-like process; aedeagus apically not expanded in ventral view, distally narrowed and curved in lateral view
5.	Paramere apically shallowly bifurcated, subapically lacking small projection, dorsomedially slightly roundly protruded in lateral view P. bifasciata Paramere apically not bifurcated, subapically with one small, acute projection, dorsomedially triangularly protruded in lateral view
6.	Medial band broader than length of dm-cu cross-veins
7.	Paramere apically pointed, without lobe-like process <i>P. hirta</i> Paramere apically with expanded lobe-like process and strongly sclerotized, acute projection <i>P. minutipalpata</i> sp. nov.
8.	Paramere distally narrowed, without expanded part <i>P. latiparma</i> Paramere distally with expanded part
9.	Paramere subapically triangularly expanded in ventral view; basal process of aedeagus membranous, lacking finger-like processes <i>P. angustifasciata</i> Paramere subapically roundly expanded in ventral view; basal process of aedeagus with finger-like processes <i>P. pallidimaculata</i>
10.	Palpus slender, rod-shaped; ocellar triangle distinct, medially broader than a quarter of frontal width
11.	Paramere submedially curved, not expanded in ventral view, apically not shallow split
12.	Medial band confluent with r-m patch P. albinotata Medial band separated from r-m patch
13.	Wing medial band narrower than basal band; paramere apically pointed, subapically with one small projection; distal half of aedeagus expanded in lateral view, about three times basal width <i>P. dactylis</i> Wing medial band broader than basal band
14.	Paramere bifurcated from middle, submedially with two small projections; aedeagus medially slightly broader than apical part in ventral view; basal process slightly sclerotized, with about three finger-like processes
	Paramere apically bifurcated; aedeagus medially broader than two times of apical part in lateral view; basal process of aedeagus membranous, lacking processes

Pseudostegana acutifoliolata sp. nov.

(Figure 1A,B; 2A; 3)

Diagnosis

Paramere subapically with one small acute projection, dorsomedially triangularly protruded in lateral view (Figure 3D,E); aedeagus apically strongly curved dorsad (Figure 3E).

Description

Only important characters are given here.

Head. Ocellar triangle black on upper part, mostly brown. Frons brown on upper twothirds, brownish yellow on lower one-third. Pedicel yellow; first flagellomere greyish black. Face mostly black, yellow on lower margin. Clypeus black. Palpus brownish black, broad, large, medially half as wide as long in male. Gena dark brown.

Thorax. Scutum yellow on anterior two-thirds, brownish black on posterior onethird. Pleura brown on upper part, black on lower part. Katepisternal setae two. Scutellum mostly brown, yellow at tip.



Figure 3. *Pseudostegana acutifoliolata* sp. nov., male. (A) epandrium (epan), cercus (cerc) and surstylus (sur) (lateral view); (B) surstylus (ventral view); (C) cercus (posterior view); (D,E) hypandrium (hypd), paramere (pm), gonopods (gon), aedeagus (aed) and aedeagal apodeme (aed a): (D) ventral view, (E) lateral view. Scale bars: 0.1 mm.

Legs. Yellow, black on knee joints of mid- and hindlegs.

Abdomen. Tergites glossy, brownish yellow on first and second, black on the rest. Sternites brown to black in male, yellow to brown in female.

Male terminalia. Epandrium broad, sometimes slightly constricted mid-dorsally, roundly protruded on ventral margin, with pubescence except for anterior margin and about 20 setae (Figure 3A). Surstylus lacking pubescence, with several setae on outer surfaces (Figure 3A,B). Cercus protruded ventrally in lateral view (Figure 3A). Paramere with two long sensilla on expanded lobe and several sensilla on dorsomedial projection (Figure 3D,E). Aedeagus submedially concave in lateral view, with several thin projections on basal process (Figure 3E).

Measurements

BL = 2.75 mm in holotype (range in five male paratypes: 2.44–3.4), ThL = 1.28 mm (0.75–1.44), WL = 2.56 mm (2.1–2.88), WW = 1.16 mm (0.94–1.24), arb = 7/1 (7/2–9/1), avd = 0.75 (0.81–0.94), adf = 1.71 (1.8–2.50), flw = 1.71 (1.71–2.75), FW/ HW = 0.38 (0.39–0.46), ch/o = 0.10 (0.08–0.11), prorb = 1.00 (0.89–1.00), vb = 0.60 (0.31–0.78), dcl = 0.26 (0.26–0.31), sctl = 1.00 (1.00–1.25), sterno = damaged (0.64–0.76), orbito = 0.50 (0.45–0.75), dcp = 0.22 (0.18–0.25), sctlp = 1.37 (1.31–1.50), C = 2.24 (1.61–2.07), 4c = 1.70 (1.71–1.91), 4v = 3.40 (3.30–3.70), 5x = 0.89 (1.07–1.14), ac = 8.50 (8.80–15.4), M = 0.80 (0.71–0.75), C3F = 0.76 (0.74–0.83).

Type material

Holotype male (SCAU, No. 120541), China: Mount Diaoluo, Lingshui, Hainan, 18°10' N, 108°52' E, altitude 1000 m, 21 May 2004, swept over fallen logs, HW Chen. Paratypes: China: one male and three females (SCAU, Nos. 120542–45), same data as holotype; nine males, seven females (five males and three females in KIZ; four males and four females in SCAU Nos. 120546–53), 23, 24 May 2008, swept over tussock, J.J. Gao.

Etymology

A combination of the Latin words: *acutus* plus *foliolatus*, referring to the paramere acute apically.

Distribution

China (Hainan).

Pseudostegana bilobata sp. nov. (Figure 1C,D; 2B; 4)

Diagnosis

Medial, dark band much broadened and with one distinct, protruded part submedially (Figure 2B); paramere shallow split apically in lateral view (Figure 4E).



Figure 4. *Pseudostegana bilobata* sp. nov., male. (A) epandrium, cercus and surstylus; (B) surstylus; (C) cercus; (D,E) hypandrium, paramere, gonopods, aedeagus and aedeagal apodeme. For orientations and organizations see Figure 3. Scale bars: 0.1 mm.

Description

Only important characters are given here.

Head. Ocellar triangle mostly brownish black, brown on lower a quarter. Frons brown. Pedicel greyish brown above, greyish yellow below; first flagellomere greyish yellow on inner one-third, dark brown on outer two-thirds. Face brownish black. Clypeus dark brown. Gena brown. Palpus brown and slender, rod-shaped in male.

Thorax. Scutum yellow on anterior half, brown on posterior half. Pleura brown to black. Katepisternal setae two. Scutellum brown.

Legs. Yellow, black on knee joints of mid- and hindlegs.

Abdomen. Tergites glossy, yellow on first and second, dark brown on the rest. Sternites greyish yellow.

Male terminalia. Epandrium roundly protruded on ventral margin, with about 23 setae (Figure 4A). Surstylus protruded on posteroventral corner (Figure 4A,B).

Cercus ventrally round (Figure 4A,B). Aedeagus apically sclerotized, round in ventral view, pointed in lateral view (Figure 4D,E).

Measurements

BL = 2.87 mm in holotype, ThL = 1.44 mm, WL = 2.63 mm, WW = 1.16 mm, arb = 6/1, avd = 0.86, adf = 1.75, flw = 2.50, FW/HW = 0.39, ch/o = 0.08, prorb = 1.00, vb = 0.71, dcl = 0.22, sctl = damaged, sterno = 0.75, orbito = 0.58, dcp = 0.20, sctlp = 1.00, C = 2.04, 4c = 1.77, 4v = 3.30, 5x = 0.82, ac = 14.4, M = 0.69, C3F = 0.81.

Type material

Holotype male (SCAU, No. 120554), China: Puer, Yunnan, 22°47' N, 101°02' E, altitude 1400 m, 18 September 2007, swept over tussock, J.J. Gao.

Etymology

From the Latin words: *bi*- plus *lobatus*, referring to the paramere apically shallowly bifurcated.

Distribution

China (Yunnan).

Pseudostegana bipartita sp. nov. (Figures 1E,F; 2C; 5A–E)

Diagnosis

Paramere distally deeply bifurcated, with one small projection in ventral view (Figure 5C,D); aedeagus apically roundly expanded (Figure 5C,D).

Description

Only important characters are described here.

Head. Ocellar triangle black on upper two-thirds, brown on lower one-third. Frons brownish yellow. Pedicel yellow; first flagellomere greyish black. Face mostly brown. Clypeus dark brown. Gena brown. Palpus brownish black, broad and large in male.

Thorax. Scutum yellow to yellowish brown. Pleura dark brown to black, broadened in male, medially half as wide as long. Katepisternal setae two. Scutellum brownish yellow.

Legs. Yellow.

Abdomen. Tergites glossy black, except for first and second orange yellow medially. Sternites, first and second yellow, but others dark brown.



Figure 5. *Pseudostegana bipartita* sp. nov., male. (A) epandrium, cercus and surstylus; (B) cercus; (C,D) hypandrium, paramere, gonopods, aedeagus and aedeagal apodeme. For orientations and organizations see Figure 3. Scale bars: 0.1 mm.

Male terminalia. Epandrium slightly roundly protruded on ventral margin, with about 11 setae (Figure 5A). Surstylus protruded on antero- and posteroventral corners, with two setae subbasally (Figure 5A). Cercus ventrally round (Figure 5A,B). Basal process of aedeagus slender, apically slightly bifurcated (Figure 5C,D).

Measurements

BL = damaged, ThL = damaged, WL = 2.10 mm, WW = 0.97 mm, arb = 6/1, avd = 0.78, adf = 2.25, flw = 3.00, FW/HW = 0.41, ch/o = 0.08, prorb = 1.00, vb = 0.50, dcl = damaged, sctl = damaged, sterno = damaged, orbito = 0.50, dcp = damaged, sctlp = damaged, C = 1.29, 4c = 2.18, 4v = 3.40, 5x = 0.87, ac = 14.8, M = 0.64, C3F = 0.70.

Type material

Holotype male (MZB), Indonesia: Padang-Kotagoding, West Sumatra, 0°59' N, 100°22' E, altitude 200 m, 4 January 2004, M.J. Toda.

Etymology

A combination of the Latin words: *bi* plus *partitus*, referring to the paramere deeply bifurcated apically.

Distribution

Indonesia (West Sumatra).

Pseudostegana minutipalpata sp. nov. (Figures 1G,H; 2D; 6)

Diagnosis

Paramere subapically strongly sclerotized, acute projection (Figure 6D,E); aedeagus apically slightly expanded to hammer-shape in lateral view, with lobe-shaped basal processes (Figure 6D,E).

Description

Only important characters are described here.

Head. Ocellar triangle and frons brown. Pedicel yellow; first flagellomere black. Face, clypeus, gena brown. Palpus brown and slender, rod-shaped in male.

Thorax. Scutum yellow on anterior one-third, brown to black on posterior twothirds. Pleura brown on upper part, black on lower part, slender, rod-shaped in male. Katepisternal setae two. Scutellum brown.

Legs. Yellow, black on all knee joints.

Abdomen. Tergites mostly brownish black. Sternites greyish yellow.



Figure 6. *Pseudostegana minutipalpata* sp. nov., male. (A) epandrium, cercus and surstylus; (B) surstylus; (C) cercus; (D,E) hypandrium, paramere, gonopods and aedeagus. For orientations and organizations see Figure 3. Scale bars: 0.1 mm.

Male terminalia. Epandrium roundly protruded on ventral margin, with about 18 setae (Figure 6A). Surstylus protruded on posteroventral corner (Figure 6A,B). Cercus ventrally round in lateral view (Figure 6A), dorsally elongated in posterior view (Figure 6C). Paramere with expanded lobe bearing two long sensilla subapically and several sensilla on dorsomedial projection (Figure 6D,E).

Measurements

BL = 2.98 mm in holotype (3.00 mm in one female paratype), ThL = 1.24 mm (1.46 mm), WL = 2.88 mm (3.40 mm), WW = 1.04 mm (1.28 mm), arb = 8/2(7/2), avd = 0.86 (0.93), adf = 2.33 (2.14), flw = 1.83(1.71), FW/HW = 0.42 (0.42), ch/ o = 0.07 (0.05), prorb = 0.93 (0.94), rcorb = 0.13 (0.19), vb = 0.55 (0.57), dcl = 0.27 (0.35), sctl = 1.09 (1.08), sterno = 0.52 (0.58), orbito = 0.50 (0.50), dcp = 0.12 (0.14), sctlp = 1.00 (1.00), C = 2.06 (2.10), 4c = 1.75 (1.52), 4v = 3.20 (3.08), 5x = 1.00 (1.07), ac = 17.50 (12.67), M = 0.60 (0.60), C3F = 0.78 (0.79).

Type material

Holotype male (SCAU No. 120555), China: Mengla, Xishuangbanna, Yunnan, 21°28' N, 101°38' E, altitude 570 m, 21 April 2007, swept over fallen logs, J.J. Gao.

Etymology

A combination of the Latin words: *minutus* plus *palpus*, referring to the small palpus.

Distribution China (Yunnan).

The zonaria species group

Diagnosis

Wing. Medial band as broad as length of dm-cu cross-vein at least; r-m cross-vein clear; M vein gently curved to R_{4+5} vein after dm-cu cross-vein (Figure 2E,F).

Included species

Pseudostegana dolichopoda Chen and Wang 2005 from China, *Pseudostegana latifasciata* Chen and Toda 2005 from Vietanam, *Pseudostegana latipalpis* (Sidorenko 1998) from China, *Pseudostegana nitidifrons* Chen and Wang 2005 from China, *Pseudostegana zonaria* (Okada 1982) from Papua New Guinea, *Pseudostegana insularis* sp. nov. and *Pseudostegana silvana* sp. nov. from China.

Key to species of the zonaria group

1.	Palpus expanded, medially wider than one-third of length. 2 Palpus slender, rod-like 6	<u>2</u> 5
2.	Medial band as broad as length of dm-cu cross-vein <i>P. zonaria</i> Medial band broader than length of dm-cu cross-vein	1 3

3.	Paramere apically bifurcated <i>P. insularis</i> sp. nov. Paramere apically not bifurcated 4
4.	Paramere apically smoothly tapering; aedeagus apically slightly pointed
5.	Aedeagus strongly narrowed on distal one-third <i>P. silvana</i> sp. nov. Aedeagus smoothly narrowed on distal half <i>P. latipalpis</i>
6.	Paramere subapically expanded in ventrally, with one triangular process on distal one-third; aedeagus apically slightly pointed in ventral view
	Paramere subapically not expanded, lacking process distally; aedeagus api- cally roundly expanded in ventral view

Pseudostegana insularis sp. nov. (Figures 1I,J; 2E; 7)

Diagnosis

Paramere nearly entirely black, apically slightly bifurcated (Figure 7D,E); aedeagus slender distally, expanded dorsomedially in lateral view (Figure 7E).

Description

Only important characters are described here.

Head. Ocellar and frons brown. Pedicel brown; first flagellomere greyish yellow on basal two-thirds, greyish black on distal one-third. Face brownish yellow. Clypeus black. Gena yellow. Palpus greyish brown, broadened in male, medially one-third as wide as long.

Thorax. Scutum yellow. Pleura glossy brown on upper part, black on lower part. Katepisternal setae two. Scutellum yellow.

Legs

Yellow, black on hind tibia.

Abdomen. Tergites mostly glossy, black. Sternites brown.

Male terminalia. Epandrium slightly roundly protruded on ventral margin, with about 18 setae (Figure 7A). Surstylus slightly protruded on posteroventral corners, with several setae on outer surface (Figure 7A,B). Cercus ventrally elongated in lateral view (Figure 7A). Aedeagus apically round in ventral and lateral views (Figure 7D,E). Basal process of aedeagus slender (Figure 7D,E).



Figure 7. *Pseudostegana insularis* sp. nov., male. (A) epandrium, cercus and surstylus; (B) surstylus; (C) cercus; (D,E) hypandrium, paramere, gonopods, aedeagus and aedeagal apodeme. For orientations and organizations see Figure 3. Scale bars: 0.1 mm.

Measurements

BL = 2.75 mm in holotype (range in three female paratypes: 2.59-3.28 mm), ThL = 1.32 mm (1.05–1.28 mm), WL = 2.56 mm (2.04–2.40 mm), WW = 1.22 mm (0.92–1.16 mm), arb = 8/1 (6/1–7/1), avd = 0.80 (0.71–1.00), adf = 2.50 (1.63–2.13), flw = 2.75 (2.20–2.63), FW/HW = 0.39 (0.41–0.48), ch/o = 0.08 (0.07–0.10), prorb = damaged (0.80–0.92), vb = 0.50 (0.55–0.75), dcl = 0.28 (0.24–0.29), sctl = damaged (0.92–1.36), sterno = 0.75 (0.64–0.74), orbito = 0.75 (0.52–0.60), dcp = 0.21 (0.16–0.25), sctlp = 1.25 (1.16–1.25), C = 1.94 (1.76–1.96), 4c = 1.71 (1.50–1.75), 4v = 3.30 (3.10–3.30), 5x = 1.07 (1.00–1.40), ac = 12.8 (12.4–15.0), M = 0.71 (0.58–0.70), C3F = 0.83 (0.76–0.80).

Type material

Holotype male (SCAU, No. 120556), China: Mount Jianfengling, Ledong, Hainan, 18°41' N, 108°52' E, altitude 800 m, 16 May 2005, swept over fallen logs and fruits, M.F. Xu. Paratypes: two females (SCAU, Nos. 120557, -58), same data as for holotype; one male and one feamle (SCAU, Nos. 120559, -60), Mount Atuoling, Hainan, 18°20' N, 109°22' E, altitude 550 m, 20 April 2007, swept over fallen logs, T. Li.

Etymology

From the Latin word: insularis, referring to the type locality.

Distribution China (Hainan).

> *Pseudostegana silvana* sp. nov. (Figures 1G,H; 20; 8)

Diagnosis

Paramere subapically roundly expanded in lateral view, lacking any projections (Figure 8E); aedeagus smoothly narrowed on distal one-third (Figure 8D,E).

Description

Only important characters are described here.

Head. Ocellar triangle dark brown. Frons brown. Pedicel brown; first flagellomere greyish brown on basal two-thirds, greyish black on distal one-third. Face mostly dark brown, with one small yellow patch. Palpus black, yellow at tip, broad, large in male, medially half as wide as long. Clypeus black. Gena brown.

Thorax. Scutum yellow on anterior two-thirds, dark brown on posterior one-third. Pleura brownish yellow on upper part, black on lower part. Katepisternal setae two. Scutellum brownish yellow, pale at tip.



Figure 8. *Pseudostegana silvana* sp. nov., male. (A) epandrium, cercus and surstylus; (B) surstylus; (C) cercus; (D,E) hypandrium, paramere, gonopods, aedeagus and aedeagal apodeme. For orientations and organizations see Figure 3. Scale bars: 0.1 mm.

Legs. Yellow, black on hind tibia.

Abdomen. Tergites yellow first and second, glossy black on the rest. Sternites brown to black in male; male fifth with a few long setae on posterior margin.

Male terminalia. Epandrium roundly protruded on ventral margin, with about 20 setae (Figure 8A). Surstylus protruded on antero- and posteroventral corners (Figure 8B). Cercus ventrally round (Figure 8A,C). Basal process of aedeagus slender (Figure 8E).

Measurements

BL = 2.68 mm in holotype (range in five male paratypes: 2.28–2.90 mm), ThL = 1.09 mm (1.00–1.31 mm), WL = 2.30 mm (2.15–2.34 mm), WW = 1.00 mm (0.91–1.13 mm), arb = 5/1 (6/1–7/1), avd = 0.93 (0.70–1.50), adf = 1.75 (1.50–2.00), flw = 2.40 (2.00–2.60), FW/HW = 0.44 (0.38–0.42), ch/o = 0.09 (0.09), prorb = 1.00 (0.75–0.89), vb = 0.80 (0.50–0.81), dcl = damaged (0.21–0.29), sctl = 1.36 (1.11–1.36), sterno = 0.75 (0.61–0.64), orbito =0.60 (0.50–0.72), dcp = 0.19 (0.18–0.21), sctlp = 1.30 (1.00–1.50), C = 1.85 (1.67–1.85), 4c = 1.75 (1.64–2.00), 4v = 3.30 (2.90– 3.50), 5x = 0.94 (1.00–1.28), ac = 11.6 (12.70–15.60), M = 0.63 (0.57–0.75), C3F = 0.81 (0.71–0.79).

Type material

Holotype male (SCAU No.120561), Mount Diaoluo, Lingshui, Hainnan, 18°10' N, 108°52' E, altitude 1000 m, 22 May 2004, swept over fallen logs and tussock, H.W. Chen. Paratypes: China: eight males and eight females (four males and four females in KIZ; four males and four females in SCAU, Nos. 120562–69), same data as holotype except 16, 17 May 2005, 23, 24 April 2008, H.L. Cao, H.W. Chen, X.P. Chen, J.J. Gao, M.F. Xu; ten males and five females (five males and three females in KIZ; five males and females in SCAU, Nos. 120573–79), Mount Jianfengling, Ledong, Hainan, 18°41' N, 108°52' E, altitude 800 m, 20 May 2004, 20 April 2008, swept over fallen logs and over tussock, H.W. Chen, X.P. Chen, J.J. Gao; two males, one female (SCAU, Nos. 120570–72), Mount Atuoling, Wuzhishan, Hainan, 18°20' N, 109°22' E, altitude 550 m, 20 April 2007, swept over fallen logs, T. Li.

Etymology

From the Latin word: silvanus, meaning forester god.

Distribution

China (Hainan).

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