



A taxonomic review of the genus *Clitostethus* Weise (Coleoptera: Coccinellidae), with descriptions of two new species from China

XIU-FENG XIE^{1,4}, XING-MIN WANG^{2,5}, ZHENG-QIANG PENG^{3,6} & XIAO-SHENG CHEN^{2*}

¹Guangdong Agricultural Industry Business Polytechnic College, Guangzhou 510507, China

²College of Forestry and Landscape Architecture, South China Agricultural University; Engineering Research Center of Biological Control, Ministry of Education, Guangzhou 510642, China

³Environment and Plant Protection Institute, Chinese Academy of Tropical Agricultural Science, Haikou 571101, China

⁴[✉ xfxie@gdaib.edu.cn](mailto:xfxie@gdaib.edu.cn); <https://orcid.org/0000-0001-6194-8215>

⁵[✉ wangxmcn@scau.edu.cn](mailto:wangxmcn@scau.edu.cn); <https://orcid.org/0000-0001-9327-9159>

⁶[✉ lypzhq@163.com](mailto:lypzhq@163.com); <https://orcid.org/0000-0003-2955-5475>

*Corresponding author: [✉ xshchen@scau.edu.cn](mailto:xshchen@scau.edu.cn); <https://orcid.org/0000-0001-8253-4943>

Abstract

Nine species of the genus *Clitostethus* Weise, 1885 are revised, including the description of two new species: *Clitostethus conensis* Xie, Wang & Chen, **sp. nov.** and *Clitostethus tongbiguanus* Xie, Wang & Chen, **sp. nov.** *Clitostethus luteoniger* (Canepari, 1997) is recorded from China for the first time. A key to the Chinese species is provided. Nomenclatural history, diagnoses, detailed descriptions, illustrations, and distribution data for each species are presented. A catalogue of all known species in this genus is also included.

Key words: Coccinelloidea, Scymnini, new record, catalogue, whitefly

Introduction

Weise (1885) established the subgenus *Clitostethus* Weise, 1885 within the genus *Scymnus* Kugelann, 1794, based on the distinctive characters of the narrow and highly elevated prosternal process. This taxonomic group was later elevated to generic status by the same author (Weise 1899), although no type species was designated at that time. It was not until 1931 that Korschefsky formally designated *Coccinella arcuata* Rossi, 1794 (= *Clitostethus arcuatus* (Rossi, 1794)) as the type species of the genus (Korschefsky 1931).

Sicard (1912, 1929) reported two species of *Clitostethus* from Southeast Asia: *Clitostethus lividipes* Sicard, 1912 collected from Myanmar, and *Clitostethus fumatus* Sicard, 1929 recorded from Sri Lanka. Poorani (2002) noted that *C. fumatus* likely belongs to the genus *Axinoscymnus* Kamiya, 1963. Subsequent examination of the type and additional specimens deposited at the Natural History Museum, London (BMNH) led to the formal transfer of *C. fumatus* to *Axinoscymnus* by Poorani & Booth (2021).

Mader (1955) described another species, *Clitostethus flavotestaceus* Mader, 1955. However, based on illustrations provided by Fürsch (1987), particularly the lateral view of the tegmen, the shape of the apical antennomere, and the complete postcoxal lines on the first abdominal ventrite, this species should be placed within the genus *Axinoscymnus*. Since the type specimen of this species has not yet been examined directly, its formal reassignment remains pending.

Kamiya (1961) and Araki (1964) described three additional species from Japan: *Clitostethus lewisi* Kamiya, 1961, *Clitostethus nagasakiensis* Kamiya, 1961, and *Clitostethus nakanei* Araki, 1964. However, Kamiya (1966) subsequently transferred these species to the genus *Pseudoscymnus* Chapin, 1962, which is now recognized under the valid name *Sasajiscymnus* Vandenberg, 2004.

Fürsch (1987) identified one more species, *Clitostethus neuenschwanderi* Fürsch, 1987, a predatory natural enemy of African cassava pests. Subsequently, he described another species, *Clitostethus sellatus* Fürsch, 1995 from East Africa (Ukerewe Island in Lake Victoria, Tanzania), based on specimens submitted by Gordon (Fürsch 1995).

Pang & Gordon (1986) conducted the first systematic taxonomic study of the tribe Scymnini in China, documenting eight genera and 27 species, including 13 newly described taxa. In this study, they described a new species within the genus *Pseudoscymnus*, named *Pseudoscymnus sternalis* Pang and Gordon, 1986, which was later reclassified as *Clitostethus sternalis* by Pang & Yu (1991). Canepari (1997) described *Pseudoscymnus luteoniger* Canepari, 1997, collected from subtropical forests in the Arun Valley, Nepal. Yu *et al.* (2000) noted that this species should be assigned to the genus *Clitostethus* based on its external morphology and male genitalia structure, although no formal taxonomic revision was carried out at the time. Poorani (2002), in her comprehensive catalogue of ladybird beetles of the Indian subcontinent, formally transferred this species to *Clitostethus*, designating it as *Clitostethus luteoniger* (Canepari).

Yu (1997) and Yu *et al.* (2000) described two new species: *Clitostethus nigrifrons* Yu, 1997, from Wushan, Sichuan, and *Clitostethus wenbishanus* Yu, 2000, collected from Chinese hemlock in Lijiang, Yunnan. Additionally, Peng *et al.* (1998) described three new species from Hainan Island: *Clitostethus acutisiphonicus* Peng, Ren & Pang, 1998, *Clitostethus bawanglingensis* Peng, Ren & Pang, 1998, and *Clitostethus brachylobus* Peng, Ren & Pang, 1998. To date, a total of 11 species within the genus *Clitostethus* have been documented worldwide, six of which are recorded from China.

Members of the genus *Clitostethus* are primarily predatory on whitefly species, such as *Bemisia tabaci* (Gennadius, 1889) and *Aleurocanthus spiniferus* (Quaintance, 1903) (Hemiptera: Aleyrodidae), which infect a wide range of agricultural crops and ornamental plants. Several species within this genus have been introduced, either intentionally or inadvertently, into various regions worldwide as part of biological control programs targeting whitefly populations. For example, *C. arcuatus*, native to Europe, has been introduced to Mauritius, Réunion Island, and California (USA) to suppress outbreaks of *B. tabaci* (Bellows *et al.* 1992; Booth & Polaszek 1996). In 1988, Israel imported *C. arcuatus* from Germany and Italy for the biological control of the citrus whitefly *Dialeurodes citri* (Ashmead, 1885) (Halperin *et al.* 1995). Gordon & Hilburn (1990) first reported *C. arcuatus* in Bermuda, and subsequent studies indicated that its presence there was not due to intentional release but rather resulted from accidental introduction through imported plant materials and associated commodities. Deng *et al.* (2016) investigated the biological traits of *C. brachylobus*, including life table parameters, developmental duration, and fecundity when reared on *B. tabaci*, providing critical baseline data for its potential deployment in field-based pest management.

In this study, nine species of the genus *Clitostethus* from China are revised, including the description of two new species. All species are illustrated and described in detail. A key to the species from China is provided. Additionally, an updated global catalogue of *Clitostethus* species is also presented.

Material and methods

The specimens examined in this study were collected from various regions of China. Type specimens designated herein are deposited in the Department of Entomology, South China Agricultural University, Guangzhou, China. The following abbreviations are used to indicate the institutions where type specimens are deposited.

SCAU	South China Agricultural University, Guangzhou, China;
BAAF	Beijing Academy of Agricultural and Forestry Science, Beijing, China;
IZCAS	Institute of Zoology, Chinese Academy of Science, Beijing, China.

The morphological terminology follows Ślipiński (2007) and Ślipiński & Tomaszewska (2010). Measurements were carried out using a micrometer mounted on a stereomicroscope (SteREO Discovery V20, ZEISS) and defined as follows: total length (TL), from apical margin of clypeus to apex of elytra; total width (TW), across both elytra at widest part; total height (TH), at highest point of elytra in lateral view; pronotal length (PL), from the middle of anterior margin to the base of pronotum; pronotal width (PW) across widest part of the pronotum; elytral width (EW), equivalent to TW; elytral length (EL), along the suture from base to apex including the scutellar shield; head width (HW), at the widest part, including the eyes.

Male genitalia were dissected, cleared in a 10% NaOH solution by boiling for several minutes, and then mounted on microscope slides for detailed examination. Morphological illustrations were produced from slide preparations using a camera (Coolsnap-Profc & CRI Micro*Color) attached to an Olympus BX51 compound microscope. After observation, the dissected parts were transferred to small cards covered with neutral balsam and pinned beneath the respective specimens. Photographs of entire beetles were captured using digital cameras (AxioCam HRc), and composite images were generated using Axio Vision REL. 4.8 software. Final image plates were assembled and refined in Adobe Photoshop CS 8.0.

Taxonomy

Clitostethus Weise, 1885

Scymnus (*Clitostethus*) Weise, 1885: 65.

Clitostethus Weise, 1899: 375. Type species: *Coccinella arcuata* Rossi, 1794, by subsequent designation of Korschefsky 1931: 114.

Diagnosis. *Clitostethus* closely resembles Western Hemisphere genus *Nephaspis* Casey, 1899 in general appearance, including body length less than 2 mm, antennae composed of 11 antennomeres (Fig. 1c), straplike prosternum, short transversely oval prosternal process (Fig. 1b), and incomplete abdominal postcoxal lines (Figs 1h–i). However, it can be easily distinguished from *Nephaspis* by having tarsi with 3 tarsomeres (Fig. 1g), slightly enlarged basal antennomere (Fig. 1c), hind femora that are not medially enlarged (Fig. 1g), and tegminal strut that is strongly expanded at apex. In contrast, species of *Nephaspis* possess tarsi with 4 tarsomeres, distinctly widened basal antennomere, and hind femora that are medially enlarged (Chen *et al.* 2016).

Description. Body small, short oval, moderately convex, with dense pubescence, widest around middle of elytra.

Head transverse; frons wide (Fig. 1a). Eyes moderately large, finely faceted, inner ocular margin arcuate. Clypeus with anterior margin slightly emarginated, lateral projection of gena broad. Antenna long, composed of 11 antennomeres; antennomere 1 stout, slightly enlarged; apical antennomere obliquely truncated (Fig. 1c). Labrum exposed, transverse, rounded anteriorly (Fig. 1a). Mandible bifid apically with inner tooth shorter than outer one (Fig. 1f). Terminal maxillary palpomere short and stout, moderately securiform (Fig. 1d). Labial palps with 3 palpomeres, terminal palpomere blunt, subcylindrical, shorter than preapical one (Fig. 1e).

Pronotum moderately convex, hind margin wider than anterior one (Fig. 2b). Pronotal hypomeron broad without delimited foveae (Fig. 1b). Prosternum straplike with prosternal process short, transversely oval (Fig. 1b). Scutellar shield tiny, triangular (Fig. 2a). Elytra distinctly wider than pronotum at base, surface finely punctate. Elytral epipleuron narrow and nearly horizontal, terminated at level of hind coxae. Abdomen with six ventrites (Fig. 2h). Abdominal postcoxal lines incomplete (Figs 1h–i). Legs stout and long, femora of hind leg broad and flattened; tibiae without apical spur; tarsi with 3 tarsomeres, tarsal claws bifid with sharp basal teeth (Fig. 1g). Tegminal strut of male genitalia strongly enlarged at apex (Figs 5k, 6h). Female genitalia with rhomboidal coxites, infundibulum absent, spermatheca C-shaped with distinct nodule (Whitehead 1967; Fürsch 1987; Yu 1997).

Distribution. Afrotropical Region, Oriental Region, Palearctic Region.

Key to *Clitostethus* species from China

- | | | |
|---|--|--|
| 1 | Elytra black with apical margin yellowish brown | 2 |
| – | Elytra reddish brown | <i>C. wenbishanus</i> Yu |
| 2 | Lateral portions of abdominal ventrite 2 with densely setose area (Fig. 1h) | 3 |
| – | Lateral portions of abdominal ventrite 2 without densely setose area (Fig. 1i) | <i>C. nigrifrons</i> Yu |
| 3 | Penis capsule with long inner arm and short outer arm | 4 |
| – | Penis capsule with long inner arm and indistinct outer arm | 6 |
| 4 | Parameres stout, strongly curved at base | <i>C. tongbiguanus</i> sp. nov. |
| – | Parameres slender, slightly curved at base | 5 |
| 5 | Abdominal postcoxal lines long, terminal portion curve towards base of abdominal ventrite 1 | |
| – | Abdominal postcoxal lines short, terminal portion not curve towards base of abdominal ventrite 1 | <i>C. acutisiphonicus</i> Peng, Ren & Pang |
| | | <i>C. luteoniger</i> (Canepari) |
| 6 | Penis guide slightly constricted at base in inner view | 7 |
| – | Penis guide not constricted at base in inner view | <i>C. bawanglingensis</i> Peng, Ren & Pang |
| 7 | Apical portion of penis with emargination | 8 |
| – | Apical portion of penis swollen without emargination | <i>C. brachylobus</i> Peng, Ren & Pang |
| 8 | Penis short, with beak-like apex | <i>C. sternalis</i> (Pang & Gordon) |
| – | Penis long, with tube-shaped apex | <i>C. conensis</i> sp. nov. |

Species descriptions and redescriptions

Clitostethus wenbishanus Yu, 2000

(Figs 1h, 2)

Clitostethus wenbishanus Yu in Yu *et al.* 2000: 158.—Pang *et al.* 2004: 91, Kovář 2007: 579, Wang & Chen 2022: 157.

Type material examined. Holotype: male, “Wenbishan, Yunnan, 13. X. 1996, Yu GY leg (handwritten) / No. 970718-3 (handwritten)/ *Clitostethus wenbishanus* Yu, sp. n. (printed, red label)” (BAAF). **Other material examined. Xizang:** 2 males, Chilongzangbu, Linzhi, 2200 m, 19. X. 2011, Huo LZ leg.

Diagnosis. This species can be readily distinguished from other *Clitostethus* species by reddish-brown pronotum with two pale yellow anterolateral angles and uniformly reddish-brown elytra (Figs 2b, c).

Description. TL: 1.63–1.80 mm, TW: 1.22–1.29 mm, TH: 0.89–0.97 mm, TL/TW: 1.33–1.39, PL/PW: 0.44–0.46, EL/EW: 1.05–1.08, HW/PW: 0.54–0.55, PW/EW: 0.77–0.82.

Body rounded oval, moderately convex, dorsum covered with white pubescence (Figs 2a–c). Head pale yellow. Antennae and mouthparts yellowish-brown. Pronotum reddish-brown except two anterolateral angles pale yellow. Scutellar shield and elytra reddish-brown (Figs 2a, b). Prothoracic hypomeron and prosternum yellowish-brown. Mesoventrite and metaventrite dark brown to black. Elytral epipleuron reddish-brown. Legs yellow.

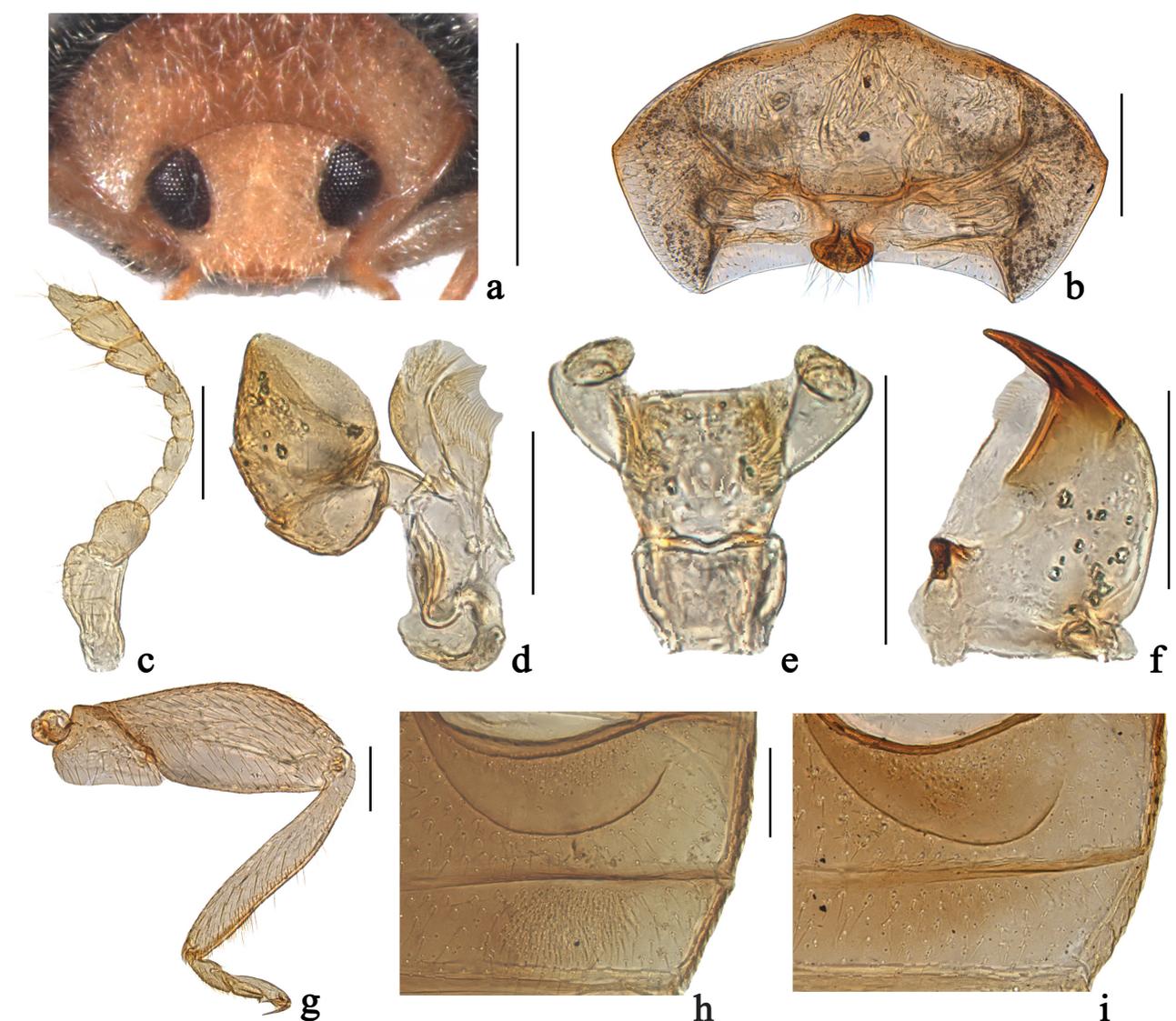


FIGURE 1. Main characters of the genus *Clitostethus* Weise. **a–g.** *Clitostethus brachylobus*. **h.** *Clitostethus wenbishanus*. **i.** *Clitostethus nigrifrons*. **a.** Head. **b.** Prothorax, ventral view. **c.** Antenna. **d.** Maxilla. **e.** Labium. **f.** Mandible. **g.** Hind leg. **h–i.** Part of abdominal ventrite 1 and 2. Scale bars: 0.5 mm in a, b; 0.1 mm in c to i.

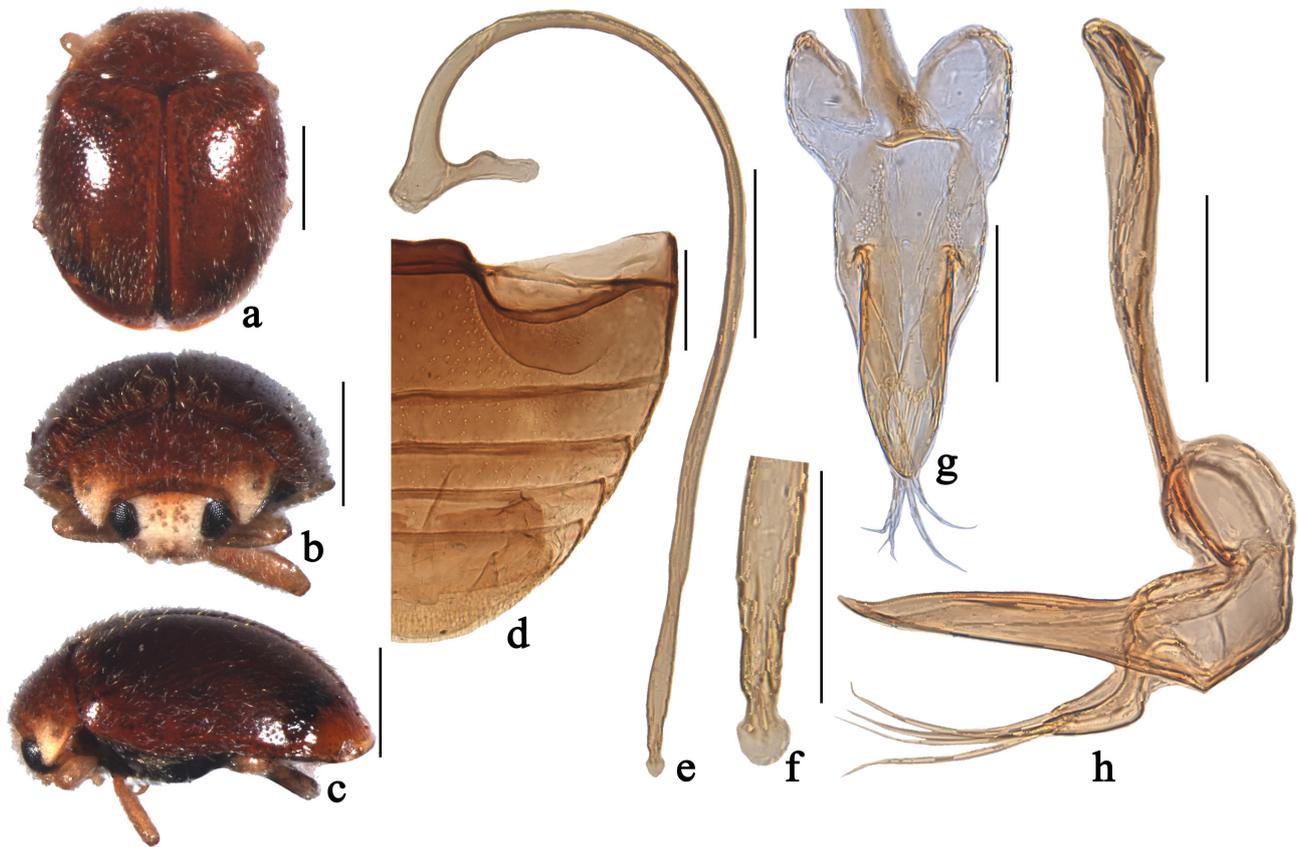


FIGURE 2. Habitus and morphological details of *Clitostethus wenbishanus* Yu, 2000. **a.** Adult, dorsal view. **b.** Adult, frontal view. **c.** Adult, lateral view. **d.** Abdomen. **e.** Penis. **f.** Apex of penis. **g.** Tegmen, inner view. **h.** Tegmen, lateral view. Scale bars: 0.5 mm in a, b, c; 0.2 mm in d, e; 0.1 mm in f, g, h.

Head with fine frontal punctures, 2.0–3.0 diameter apart. Eyes densely faceted, interocular distance 0.50 times head width. Pronotal punctures similar to those on frons. Surface of elytra with punctures larger than those on frons, separated by 2.0–3.0 diameters. Abdominal postcoxal lines incomplete (Fig. 2d), reaching 4/5 length of abdominal ventrite 1, area enclosed by lines finely punctate, broadly smooth along line. Lateral portions of abdominal ventrite 2 lack densely setose area bearing short setae.

Male genitalia. Penis slender, penis capsule with long inner arm and short outer arm (Fig. 2e), apex of penis spherical shape, with slightly constricted near tip (Fig. 2f). Tegmen stout, penis guide parallel-sided from base to 3/4 length, then gradually tapering to blunt tip in inner view (Fig. 2g); in lateral view, penis guide parallel-sided at basal half, then gradually narrowing to pointed tip (Fig. 2h). Parameres short, strongly curved at base, as long as 1/3 length of penis guide, and apex bears sparse long setae (Fig. 2h).

Distribution. China: Yunnan, Xizang.

Clitostethus nigrifrons Yu, 1997

(Figs 1i, 3)

Clitostethus nigrifrons Yu, 1997: 715.—Pang *et al.* 2004: 91, Kovář 2007: 579.

Type material examined. Holotype: female, “Liziping, Wushan [currently a part of Chongqing Municipality; the same below], Sichuan, 1850 m, 21. IX. 1994, Li Fasheng leg (printed) / HOLOTYPE (printed, red label) / *Clitostethus nigrifrons* Yu, sp. n. (handwritten)” (BAAF). **Paratypes:** 1 female, “Liziping, Wushan, Sichuan, 1850 m, 22. IX. 1994, Yao Jian leg (handwritten) / PARATYPE (printed, yellow label) / PARATYPE (printed, yellow label) / IOZ (E) 215256 (printed, blue label) / *Clitostethus nigrifrons* Yu, sp. n. (handwritten)” (IZCAS). 1 female,

“Liziping, Wushan, Sichuan, 1850 m, 22. IX. 1994, Yao Jian leg (handwritten) / PARATYPE (printed, yellow label) / PARATYPE (printed, yellow label) / IOZ (E) 215257 (printed, blue label)” (IZCAS).

Diagnosis. This species is similar to *Clitostethus luteoniger* (Canepari) in general appearance, but can be separated from latter by absence of densely setose area bearing short setae on lateral portions of abdominal ventrite 2 (Figs 1i, 4d), which is present in *C. luteoniger* (Fig. 6d).

Description. TL: 1.56–1.64 mm, TW: 1.16–1.20 mm. Body rounded oval, moderately convex, dorsum covered with white pubescence (Figs 3a–c). Head black. Antennae and mouthparts yellowish-brown. Pronotum yellowish-brown. Scutellar shield black. Elytra black with apical margin yellowish-brown (Fig. 3c). Prothoracic hypomeron and prosternum yellowish-brown. Mesoventrite, metaventrite and elytral epipleuron black. Legs brown.

Head with fine frontal punctures, 2.0–3.0 diameter apart. Eyes densely faceted, interocular distance 0.53 times head width. Pronotal punctures similar to those on frons. Surface of elytra with punctures larger than those on frons, separated by 2.0–3.0 diameters. Abdominal postcoxal lines incomplete (Fig. 3d), reaching 3/4 length of abdominal ventrite 1, area enclosed by lines finely punctate, broadly smooth along line. Lateral portions of abdominal ventrite 2 lack densely setose area bearing short setae. Abdominal ventrite 6 with apex rounded.

Female genitalia. Coxites rhomboidal with reticulate pattern medially. Styli distinct with two long setae at tip. Male unknown.

Distribution. China: Chongqing.

Remarks. Yu *et al.* (2000) noted that *C. nigrifrons* is highly similar to *C. luteoniger* in external appearance, particularly in the black head of both species. The findings of this study reveal that, within the genus *Clitostethus*, females with black head are not limited to *C. nigrifrons* and *C. luteoniger*, but are also observed in *C. acutisiphonicus* and *C. brachylobus*. However, the former can be distinguished from the above mentioned species by the absence of a densely setose area on the lateral portions of abdominal ventrite 2.

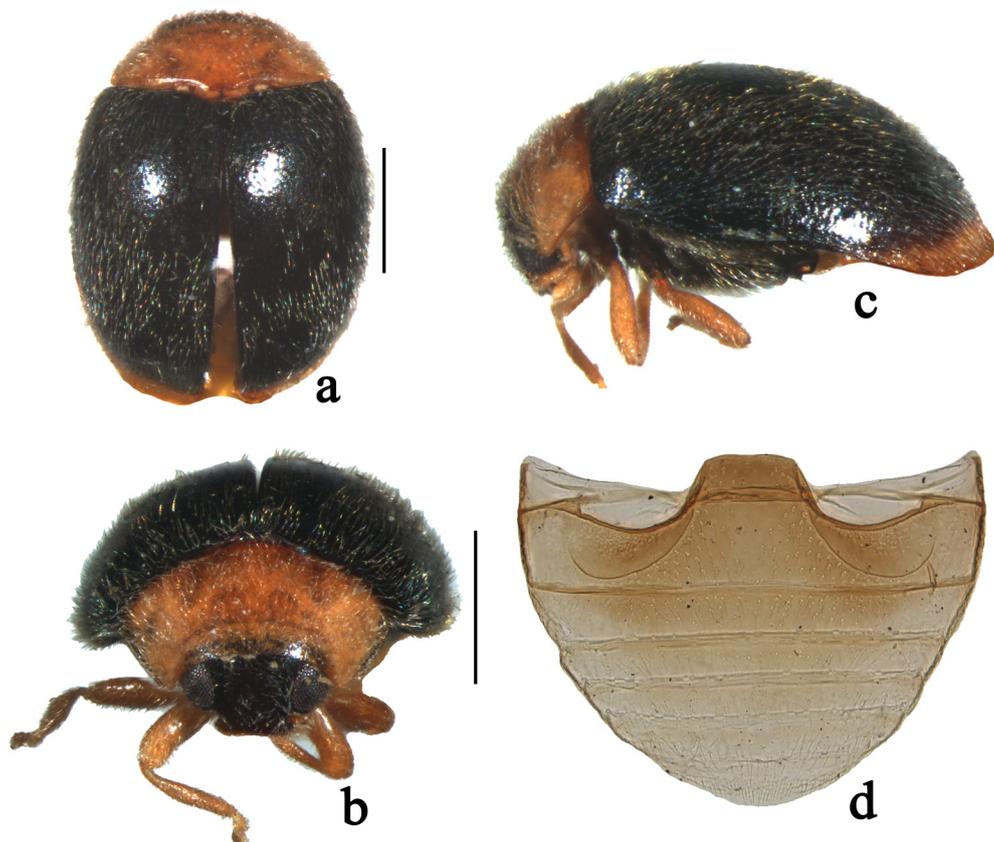


FIGURE 3. Habitus and morphological details of *Clitostethus nigrifrons* Yu, 1997, female, Holotype. **a.** Adult, dorsal view. **b.** Adult, frontal view. **c.** Adult, lateral view. **d.** Abdomen. Scale bars: 0.5 mm in a, b, c; 0.2 mm in d.

Clitostethus tongbiguanus Xie, Wang & Chen, sp. nov.

(Fig. 4)

Type material. HOLOTYPE: CHINA: male, No. SCAU(E)14877, CHINA: Yunnan: Tongbiguan Nature Reserve, Nabang Town, Yingjiang County, 1000 m, 22–23. V. 2008, Hao JY leg (SCAU). **PARATYPES: CHINA:** 2 males, with same data as holotype (one of them bearing the label SCAU(E)11665) (SCAU).

Diagnosis. This species resembles *Clitostethus acutisiphonicus* Peng, Ren & Pang and *Clitostethus luteoniger* (Canepari, 1997) in general appearance and male genitalia, but can be separated from latter by stout tegmen with parameres strongly curved at base (Fig. 4h).

Description. TL: 1.58–1.68 mm, TW: 1.17–1.24 mm, TH: 0.80–0.87 mm, TL/TW: 1.35, PL/PW: 0.46–0.48, EL/EW: 1.02–1.04, HW/PW: 0.57–0.59, PW/EW: 0.73–0.81.

Body rounded oval, moderately convex, dorsum covered with white pubescence (Figs 4a–c). Head, antennae and mouthparts yellowish-brown. Pronotum brown. Scutellar shield black. Elytra black with apical margin yellowish-brown (Figs 4a, b). Prothoracic hypomerone and prosternum brown. Mesoventrite, metaventrite and elytral epipleuron black. Legs brown.

Head with fine frontal punctures, 2.0–3.0 diameter apart. Eyes densely faceted, interocular distance 0.45 times head width. Pronotal punctures similar to those on frons. Surface of elytra with punctures larger than those on frons, separated by 1.0–2.0 diameters. Abdominal postcoxal lines incomplete (Fig. 4d), reaching 3/4 length of abdominal ventrite 1, area enclosed by lines finely punctate, broadly smooth along line. Lateral portions of abdominal ventrite 2 with densely setose area bearing short setae.

Male genitalia. Penis slender, penis capsule with long inner arm and short outer arm (Fig. 4e), apex of penis thread-like (Fig. 4f). Tegmen stout, penis guide asymmetric, parallel-sided from base to 2/3 length, then gradually tapering to blunt tip in inner view (Fig. 4g); in lateral view, penis guide widest at base, gradually narrowing to pointed tip (Fig. 4h). Parameres slender, strongly curved at base, as long as 4/5 length of penis guide, and apex bears sparse long setae (Fig. 4h).

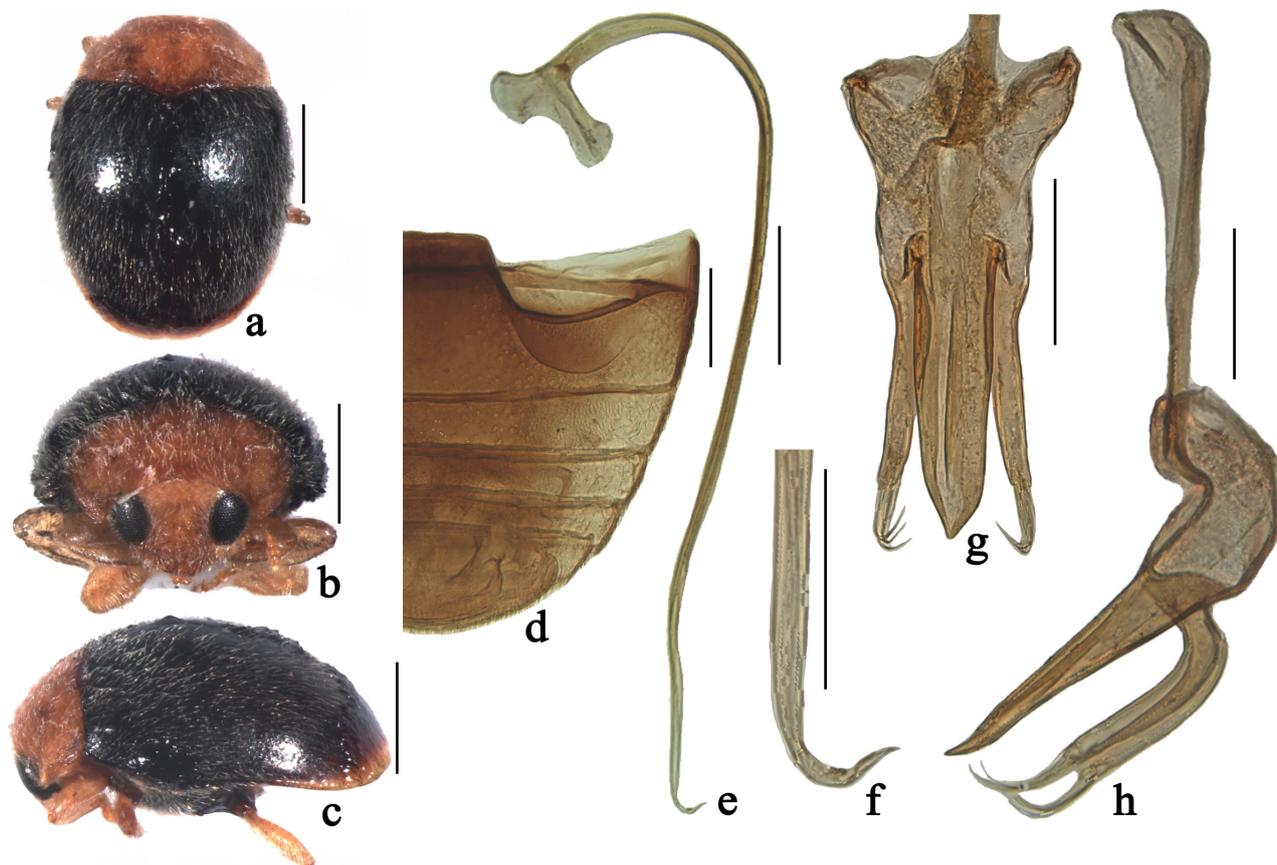


FIGURE 4. Habitus and morphological details of *Clitostethus tongbiguanus* sp. nov. **a.** Adult, dorsal view. **b.** Adult, frontal view. **c.** Adult, lateral view. **d.** Abdomen. **e.** Penis. **f.** Apex of penis. **g.** Tegmen, inner view. **h.** Tegmen, lateral view. Scale bars: 0.5 mm in a, b, c; 0.2 mm in d, e; 0.1 mm in f, g, h.

Distribution. China: Yunnan.

Etymology. The specific epithet refers to its type locality, Tongbiguan Nature Reserve in Yunnan province.

***Clitostethus acutisiphonicus* Peng, Ren & Pang, 1998**

(Fig. 5)

Clitostethus acutisiphonicus Peng, Ren & Pang, 1998: 196.—Pang *et al.* 2004: 91, Kovář 2007: 579, Wang & Chen 2022: 155.

Type material examined. Holotype: male, “Limu Mountains, 10. XI. 1989, Ren SX leg (handwritten) / 891110-149 (handwritten) / holotype (printed, red label) / *Clitostethus acutisiphonicus* sp. nov. (handwritten)” (SCAU). **Paratypes:** 2 males, “Bawangling, Hainan, 21. III. 1996, Peng ZQ leg (printed) / No. 965556, No. 965568 (handwritten) / Paratype (printed, yellow label)” (SCAU). 2 males, “Wufenchang, Limu Mountains, IX. 1995, Peng ZQ leg (printed) / No. 956044, No. 956045 (handwritten) / Paratype (printed, yellow label)” (SCAU). **Other material examined. Guangxi:** 1 male, Pinglongshan, Shiwandashan, 6-8. XI. 2004, ca 160 m, Wang XM leg. 1 male and 1 female, Hongqi Forestry Farm, Shiwandashan, ca 270 m, 10. XI. 2004, Wang XM leg. **Yunnan:** 1 male, Nanping, Mengman, Mengla, 745 m, 10. V. 2009, Chen XS leg. 1 male, Longmen, Mengla, 1027 m, 9. V. 2009, Ren SX leg.

Diagnosis. This species is similar to *Clitostethus luteoniger* (Canepari, 1997) in general appearance and male genitalia, but can be separated from latter by apically recurved abdominal postcoxal lines that curve toward base of abdominal ventrite 1 (Fig. 5g).

Description. TL: 1.46–1.68 mm, TW: 1.04–1.23 mm, TH: 0.75–0.89 mm, TL/TW: 1.31–1.39, PL/PW: 0.48–0.49, EL/EW: 1.01–1.03, HW/PW: 0.54–0.57, PW/EW: 0.80–0.84.

Body short oval, moderately convex, dorsum covered with white pubescence (Figs 5a–f). Head brown in males and black in females. Antennae and mouthparts brown. Pronotum brown to dark brown. Scutellar shield black. Elytra black with apical margin yellowish-brown (Figs 5c–f). Prothoracic hypomeron and prosternum yellowish-brown. Mesoventrite, metaventrite and elytral epipleuron black. Legs brown.

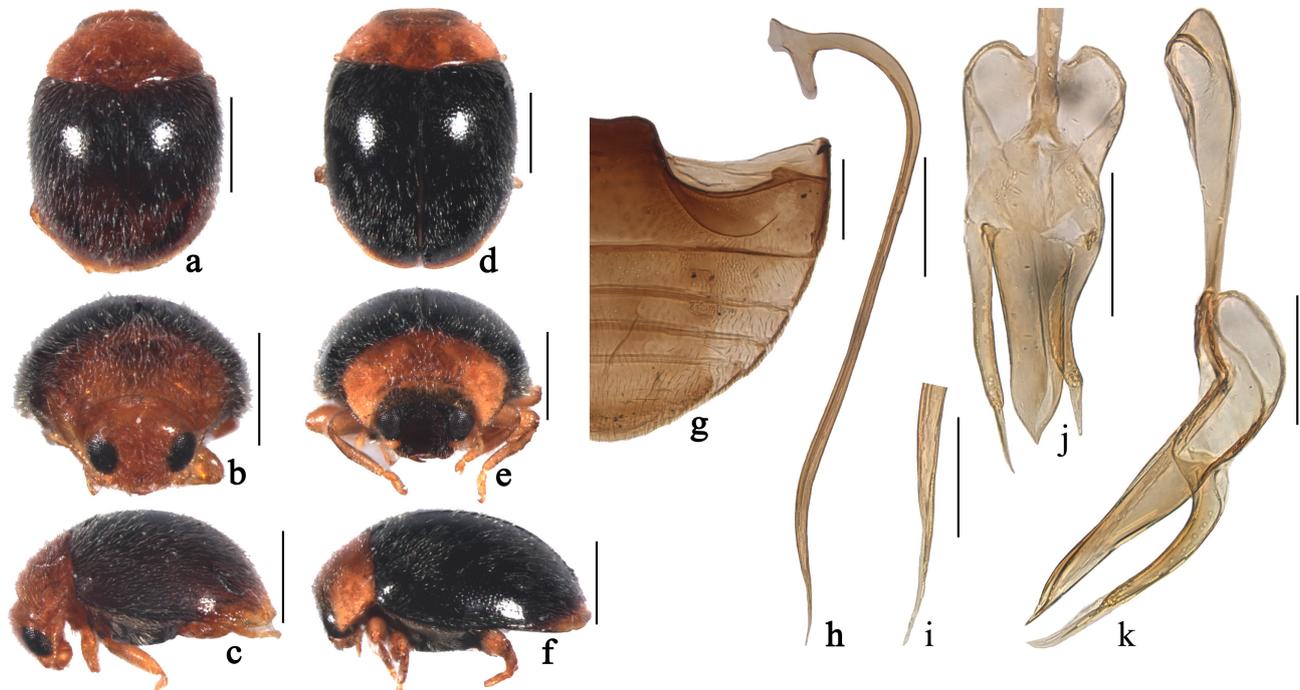


FIGURE 5. Habitus and morphological details of *Clitostethus acutisiphonicus* Peng, Ren & Pang, 1998 (a–c: male; d–f: female). a, d. Adult, dorsal view. b, e. Adult, frontal view. c, f. Adult, lateral view. g. Abdomen. h. Penis. i. Apex of penis. j. Tegmen, inner view. k. Tegmen, lateral view. Scale bars: 0.5 mm in a to f; 0.2 mm in g, h; 0.1 mm in i, j, k.

Head with fine frontal punctures, 1.0–1.5 diameter apart. Eyes densely faceted, interocular distance 0.49 times head width. Pronotal punctures similar to those on frons. Surface of elytra with punctures larger than those on frons, separated by 1.0–2.0 diameters. Abdominal postcoxal lines incomplete (Fig. 5g), reaching 4/5 length of abdominal ventrite 1, area enclosed by lines finely punctate, broadly smooth along line. Lateral portions of abdominal ventrite 2 with densely setose area bearing short setae.

Male genitalia. Penis slender, penis capsule with long inner arm and short outer arm (Fig. 5h), apex of penis simple, with pointed tip (Fig. 5i). Tegmen stout, penis guide widest at base, gradually narrowing to pointed apex in inner view (Fig. 5j); in lateral view, parameres slender, as long as 2/3 length of penis guide, and apex bears several long setae (Fig. 5k).

Distribution. China: Hainan, Guangxi, Yunnan.

Clitostethus luteoniger (Canepari, 1997)

(Fig. 6)

Pseudoscymnus luteoniger Canepari, 1997: 8.

Clitostethus luteoniger: Poorani 2002: 349, Kovář 2007: 579.

Material examined. **Yunnan:** 1 male, Meng'a, Menghai, 1170 m, 12. V. 2009, Chen XS leg. **Xizang:** 2 females, Yarang Village, Mêdog County, 768–1030 m, 24. X. 2007, Chen XS leg.

Diagnosis. This species is similar to *Clitostethus acutisiphonicus* Peng, Ren & Pang in general appearance and male genitalia, but can be separated from latter by apically slightly recurved abdominal postcoxal lines which do not curve toward base of abdominal ventrite 1 (Fig. 6d).

Description. TL: 1.74–1.77 mm, TW: 1.23–1.24 mm, TH: 0.87–0.93 mm, TL/TW: 1.40–1.44, PL/PW: 0.43–0.46, EL/EW: 1.09–1.17, HW/PW: 0.54–0.55, PW/EW: 0.77–0.81.

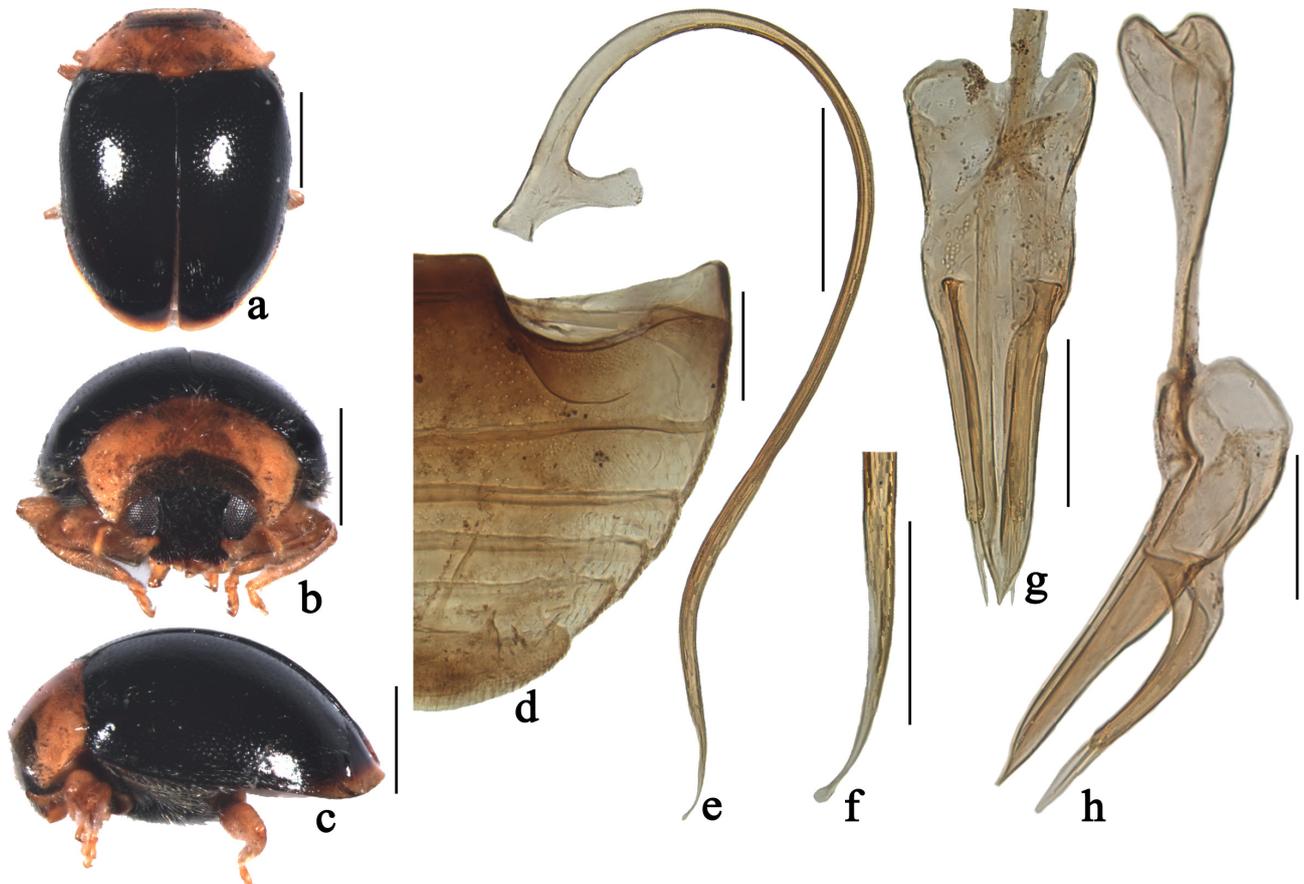


FIGURE 6. Habitus and morphological details of *Clitostethus luteoniger* (Canepari, 1997). **a.** Adult, dorsal view. **b.** Adult, frontal view. **c.** Adult, lateral view. **d.** Abdomen. **e.** Penis. **f.** Apex of penis. **g.** Tegmen, inner view. **h.** Tegmen, lateral view. Scale bars: 0.5 mm in a, b, c; 0.2 mm in d, e; 0.1 mm in f, g, h.

Body rounded oval, moderately convex, dorsum covered with white pubescence (Figs 6a–c). Head black in both sex. Antennae and mouthparts yellowish-brown. Pronotum yellowish-brown. Scutellar shield black. Elytra black with apical margin yellowish-brown (Fig. 6c). Prothoracic hypomerion and prosternum yellowish-brown. Mesoventrite and metaventrite black. Elytral epipleuron black. Legs brown.

Head with sparse frontal punctures, 2.0–3.0 diameter apart. Eyes densely faceted, interocular distance 0.48 times head width. Pronotal punctures similar to those on frons. Surface of elytra with punctures larger than those on frons, separated by 2.0–3.0 diameters. Abdominal postcoxal lines incomplete (Fig. 6d), reaching 4/5 length of abdominal ventrite 1, area enclosed by lines finely punctate, broadly smooth along line. Lateral portions of abdominal ventrite 2 with densely setose area bearing short setae.

Male genitalia. Penis slender, penis capsule with developed inner and outer arms, almost equal in length (Fig. 6e), apex of penis thread-like (Fig. 6f). Tegmen stout, penis guide widest at middle, gradually tapering to pointed tip in inner view (Fig. 6g); in lateral view, penis guide parallel-sided at basal 1/3 length, then gradually narrowing to pointed tip (Fig. 6h). Parameres slender, strongly curved at base, as long as 3/4 length of penis guide, and apex bears sparse long setae (Fig. 6h).

Distribution. China: Yunnan, Xizang; Nepal. **New country record for China.**

Remarks. This species is recorded from China for the first time. The specimens examined are in agreement with the descriptions and illustrations of adult and male genitalia by Canepari (1997).

Clitostethus bawanglingensis Peng, Ren & Pang, 1998

(Fig. 7)

Clitostethus bawanglingensis Peng, Ren & Pang, 1998: 197.—Pang *et al.* 2004: 91, Kovář 2007: 579, Wang & Chen 2022: 155.

Type material examined. Holotype: male, “Bawangling, Hainan Province, 21. III. 1996, Peng ZQ leg (printed), No. 965579 (handwritten) / Holotype (printed, red label) / *Clitostethus bawanglingensis* sp. nov. (handwritten)” (SCAU). **Other material examined. Hainan:** 1 male and 1 female, Bawangling National Nature Reserve, ca 260 m, 5. V. 2005, Wang XM leg. **Guangdong:** 1 male, Qinshuigu, Nanling National Nature Reserve, Shaoguan, ca 560 m, 30. IX. 2004, An XC leg. **Taiwan:** 1 male, Alishan Mountains, 2200–2500 m, 23. X. 2012, Chen XS leg. **Yunnan:** 1 male, Yaoqu, Mengla, 700 m, 7–8. V. 2009, Chen XS leg.

Diagnosis. This species resembles *Clitostethus conensis* sp. nov. in general appearance and male genitalia, but can be distinguished by its entirely yellowish-brown head (Fig. 7b) and penis guide with parallel sides in basal half in inner view (Fig. 7g). In contrast, *C. conensis* sp. nov. has yellowish-brown head with black vertex (Fig. 10b) and penis guide that is constricted at base in inner view (Fig. 10g).

Description. TL: 1.71–1.83 mm, TW: 1.27–1.45 mm, TH: 0.89–0.95 mm, TL/TW: 1.26–1.35, PL/PW: 0.44–0.46, EL/EW: 1.02–1.06, HW/PW: 0.53–0.54, PW/EW: 0.78–0.80.

Body short oval, moderately convex, dorsum covered with white pubescence (Figs 7a–c). Head, antennae and mouthparts yellowish-brown. Pronotum yellowish-brown. Scutellar shield black. Elytra black with apical margin yellowish-brown (Fig. 7c). Prothoracic hypomerion and prosternum yellowish-brown. Mesoventrite and metaventrite black. Elytral epipleuron black. Legs brown.

Head with fine frontal punctures, 1.0–1.5 diameter apart. Eyes densely faceted, interocular distance 0.51 times head width. Pronotal punctures similar to those on frons. Surface of elytra with punctures larger than those on frons, separated by 1.0–2.0 diameters. Abdominal postcoxal lines incomplete (Fig. 7d), reaching 3/4 length of abdominal ventrite 1, area enclosed by lines finely punctate, broadly smooth along line. Lateral portions of abdominal ventrite 2 with densely setose area bearing short setae.

Male genitalia. Penis long and stout, penis capsule with long inner arm and indistinct outer arm (Fig. 7e), apex of penis blunt, with emargination (Fig. 7f). Tegmen stout, penis guide parallel-sided at basal half, then gradually tapering to pointed tip in inner view (Fig. 7g); in lateral view, penis guide triangular with apex slightly curved inward (Fig. 7h). Parameres strongly curved at base, as long as 1/2 length of penis guide, and apex bears several long setae (Fig. 7h).

Distribution. China: Hainan, Guangdong, Taiwan, Yunnan.

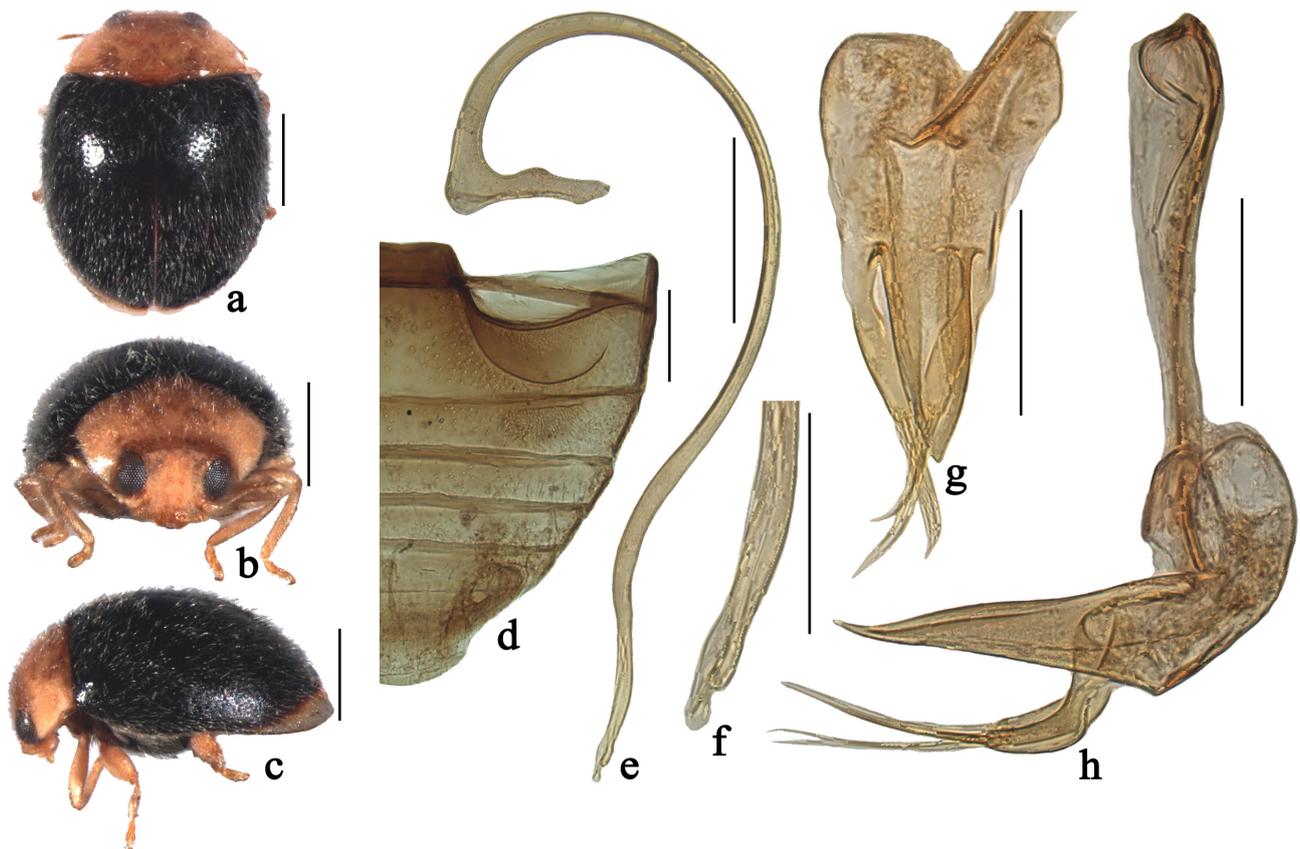


FIGURE 7. Habitus and morphological details of *Clitostethus bawanglingensis* Peng, Ren & Pang, 1998. **a.** Adult, dorsal view. **b.** Adult, frontal view. **c.** Adult, lateral view. **d.** Abdomen. **e.** Penis. **f.** Apex of penis. **g.** Tegmen, inner view. **h.** Tegmen, lateral view. Scale bars: 0.5 mm in a, b, c; 0.2 mm in d, e; 0.1 mm in f, g, h.

Clitostethus brachylobus Peng, Ren & Pang, 1998

(Figs 1a–g, 8)

Clitostethus brachylobus Peng, Ren & Pang, 1998: 198.—Pang *et al.* 2004: 91, Kovář 2007: 579, Ren *et al.* 2009: 56, Wang & Chen 2022: 156.

Type material examined. Holotype: male, “Bawangling, Hainan Province, 21. III. 1996, Peng ZQ leg (printed), No. 965559 (handwritten) / Holotype (printed, red label) / *Clitostethus brachylobus* sp. nov. (handwritten)” (SCAU). **Paratypes:** 2 males, “Wuzhishan Mountains, Hainan Province, VIII. 1995 (printed), No. 954845, No. 954870 (handwritten) / Paratype (printed, yellow label)” (SCAU). **Other material examined. Hainan:** 1 male, Diaoluoshan Mountains, ca 200 m, 25. VII. 2006, Peng ZQ leg. 1 male, Diaoluoshan Mountains, ca 200 m, 7. V. 2005, Wang XM leg. 1 female, Limushan National Forest Park, ca 280 m, 23. VII. 2006, Peng ZQ leg. **Guangdong:** 1 male, Huangdong, Shimentai National Nature Reserve, Yingde, ca 680 m, 31. X. 2004, Wang XM leg. **Guangxi:** 2 males and 2 females, Hongqi Forestry Farm, Shiwandashan National Nature Reserve, ca 270 m, 9–11. XI. 2004, Wang XM leg. 2 males, Pinglongshan Mountains, Shiwandashan National Nature Reserve, ca 220 m, 6–8. XI. 2004, Wang XM leg. 3 males and 2 females, Shili Great Canyon, Maershan National Natural Reserve, ca 560 m, 19. X. 2004, Wang XM leg. **Yunnan:** 5 males and 5 females, Mengxing, Mengla, Xishuangbanna, 1000 m, 3. V. 2008, Wang XM leg. 23 males and 20 females, Yaoqu, Mengla, 700 m, 7. V. 2009, Chen XS leg. 1 male and 1 female, No. 213 Highway, Mengla, ca 700 m, 12–13. X. 2006, Wang XM leg. 1 male and 1 female, Ainiguzhai, Menglun, Jinghong, ca 660 m, 11. V. 2009, Chen XS leg. 1 female, Dadugang, Pu’er, 950 m, 26. IV. 2008, Hao JY leg. 1 female, Daluo, Menghai, 629 m, 11. VIII. 2013, Chen XS leg. 1 male, Luxi, ca 1000 m, 28. VIII. 2005, Wang XM leg. 1 female, Gongxin, Menglian, 1500 m, 8. V. 2008, Liang JB leg. 1 female, Liuku, Lushui County, ca 1130 m, 14. X. 2000, Peng ZQ leg. **Xizang:** 1 female, Mêdog County, Linzhi City, 17. X. 2009, Chen XS leg. 1 female, Beibeng Village,

Mêdog County, 600–768 m, 25. X. 2007, Chen XS leg. 1 male, 140 km of the Zhamo Highway, Mêdog, 900 m, 27. X. 2007, Chen XS leg. 1 female, 113 km of the Zhamo Highway, Mêdog, 835 m, 30–31. X. 2007, Chen XS leg. 1 male and 1 female, Mêdog, 1200 m, 28. X. 2007, Chen XS leg.

Diagnosis. This species closely resembles *Clitostethus bawanglingensis* Peng, Ren & Pang in external appearance, but can be distinguished by slightly swollen apex of penis, which bears membranous appendages (Fig. 8f), whereas in *C. bawanglingensis*, apex of penis exhibits emargination (Fig. 7f).

Description. TL: 1.60–1.62 mm, TW: 1.16–1.22 mm, TH: 0.81–0.86 mm, TL/TW: 1.31–1.39, PL/PW: 0.47–0.50, EL/EW: 1.01–1.03, HW/PW: 0.54–0.57, PW/EW: 0.79–0.82.

Body short oval, moderately convex, dorsum covered with white pubescence (Figs 8a–c). Head, antennae and mouthparts yellowish-brown. Pronotum yellowish-brown. Scutellar shield black. Elytra black with apical margin yellowish-brown (Fig. 8c). Prothoracic hypomerone and prosternum yellowish-brown. Mesoventrite and metaventrite dark brown to black. Elytral epipleuron black. Legs brown.

Head with fine frontal punctures, 1.0–1.5 diameter apart. Eyes densely faceted, interocular distance 0.46 times head width. Pronotal punctures similar to those on frons. Surface of elytra with punctures larger than those on frons, separated by 1.0–2.0 diameters. Abdominal postcoxal lines incomplete (Fig. 8d), reaching 2/3 length of abdominal ventrite 1, area enclosed by lines finely punctate, broadly smooth along line. Lateral portions of abdominal ventrite 2 with densely setose area bearing short setae.

Male genitalia. Penis long and stout, penis capsule with long inner arm and indistinct outer arm (Fig. 8e), apex of penis slightly swollen with membranous appendages (Fig. 8f). Tegmen stout, penis guide slightly constricted at base, widest at middle, then gradually tapering to pointed tip in inner view (Fig. 8g); in lateral view, penis guide widest at base, gradually narrowing to pointed tip (Fig. 8h). Parameres strongly curved at base, as long as 1/2 length of penis guide, and apex bears sparse long setae (Fig. 8h).

Distribution. China: Hainan, Guangdong, Guangxi, Yunnan, Xizang.



FIGURE 8. Habitus and morphological details of *Clitostethus brachylobus* Peng, Ren & Pang, 1998. **a.** Adult, dorsal view. **b.** Adult, frontal view. **c.** Adult, lateral view. **d.** Abdomen. **e.** Penis. **f.** Apex of penis. **g.** Tegmen, inner view. **h.** Tegmen, lateral view. Scale bars: 0.5 mm in a, b, c; 0.2 mm in d, e; 0.1 mm in f, g, h.

Clitostethus sternalis (Pang & Gordon, 1986)

(Fig. 9)

Pseudoscymnus sternalis Pang & Gordon, 1986: 184.

Clitostethus sternalis: Pang & Yu 1991: 5, Peng *et al.* 1998: 195, Pang *et al.* 2004: 91, Kovář 2007: 579, Wang & Chen 2022: 156.

Type material examined. Holotype: male, “Canton, China (handwritten) / V. 1970, Pang X. leg (handwritten) / HOLOTYPE, *Pseudoscymnus sternalis* Pang & Gordon (printed, red label)” (SCAU). **Other material examined. Hainan:** 2 males and 2 females, Dongping Farm, Qionghai County, 13. IV. 1996, Peng ZQ leg. 1 male, Bawangling National Nature Reserve, 21. III. 1996, Peng ZQ leg. 1 male and 1 female, Sandao Farm, Baoting County, IX. 1996, Peng ZQ leg. 1 male, Changzheng Farm, Qiongzong County, 25. IV. 1996, Peng ZQ leg. 1 female, Maoyang Town, Qiongzong County, 2. V. 1996, Peng ZQ leg. 2 males and 6 females, Nanfang Farm, Qiongzong County, 25. IV. 1996, Peng ZQ leg. 1 male and 1 female, Zhongrui Farm, Ding’an County, 23. IV. 1996, Peng ZQ leg. 1 male and 1 female, Bawangling National Nature Reserve, 5. V. 2005, Wang XM leg. **Guangdong:** 4 males, Nankunshan National Nature Reserve, Huizhou City, 21. X. 2004, Wang XM leg. 1 male, Wushan, Guangzhou, 10. VII. 1985, Pu TS leg. 1 male and 1 female, Wushan, Guangzhou, 23. VII. 1985, Pu TS leg. **Hubei:** 1 male, Laojunshan, Shennongjia, 1230 m, 5. VIII. 2007, Chen XS leg. **Yunnan:** 1 male and 2 females, Yaoqu, Mengla, 700 m, 7. V. 2009, Chen XS leg. 1 male, Banlao, Cangyuan, 1100 m, 16. V. 2008, Wang XM leg. 1 male and 1 female, Ezha, Lvchun County, 1800 m, 6. VIII. 2013, Chen XS leg.

Diagnosis. This species resembles *Clitostethus conensis* **sp. nov.** in general appearance, but can be distinguished by its short penis bearing beak-like apex (Fig. 9f) and entirely brown head (Fig. 9b).

Description. TL: 1.51–1.60 mm, TW: 1.10–1.14 mm, TH: 0.78–0.81 mm, TL/TW: 1.37–1.40, PL/PW: 0.45–0.47, EL/EW: 1.08–1.13, HW/PW: 0.55–0.57, PW/EW: 0.78–0.80.

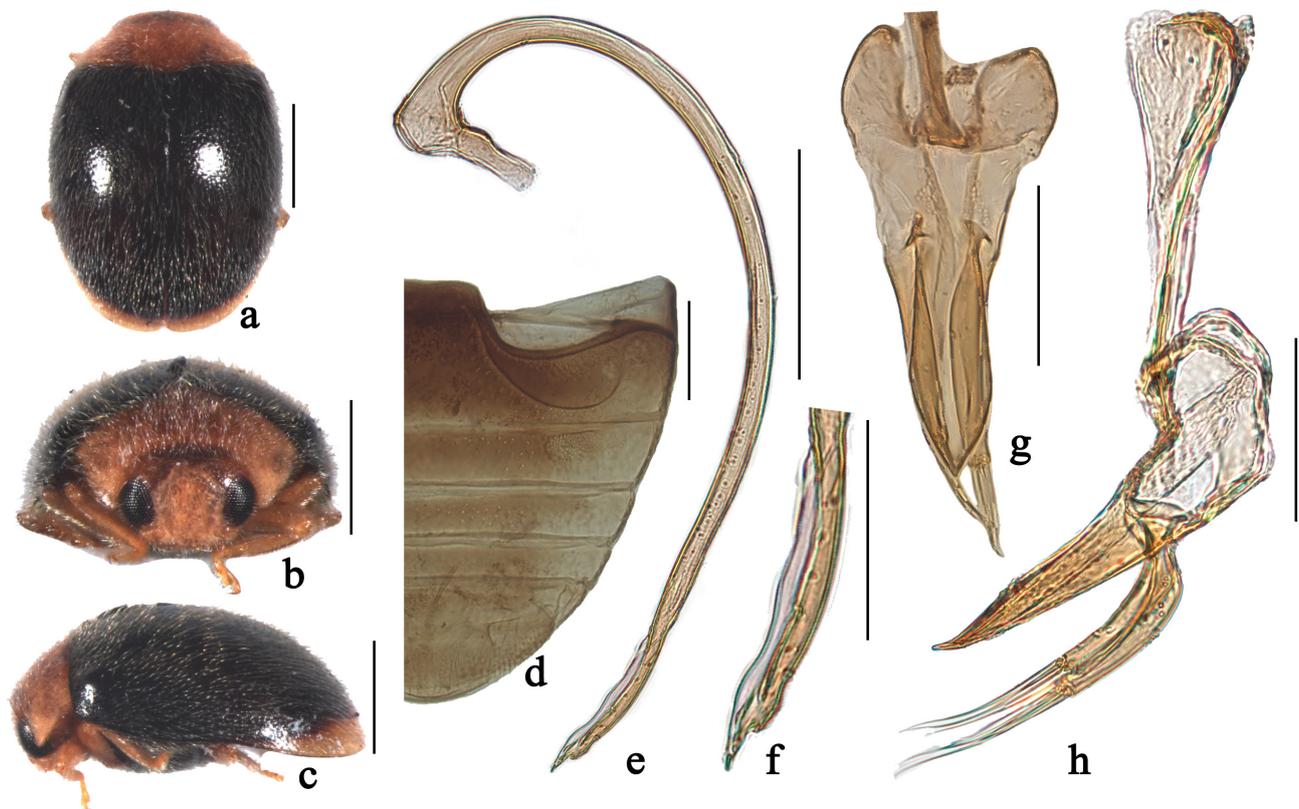


FIGURE 9. Habitus and morphological details of *Clitostethus sternalis* (Pang & Gordon, 1986). **a.** Adult, dorsal view. **b.** Adult, frontal view. **c.** Adult, lateral view. **d.** Abdomen. **e.** Penis. **f.** Apex of penis. **g.** Tegmen, inner view. **h.** Tegmen, lateral view. Scale bars: 0.5 mm in a, b, c; 0.2 mm in d, e; 0.1 mm in f, g, h.

Body short oval, moderately convex, dorsum covered with white pubescence (Figs 9a–c). Head brown in males and black in females. Antennae and mouthparts yellowish-brown. Pronotum yellow to yellowish-brown. Scutellar shield black. Elytra black with apical margin yellowish-brown (Fig. 9c). Prothoracic hypomeron and prosternum yellowish-brown. Mesoventrite, metaventrite and elytral epipleuron black. Legs brown.

Head with sparse frontal punctures, 2.0–3.0 diameter apart. Eyes densely faceted, interocular distance 0.51 times head width. Pronotal punctures similar to those on frons. Surface of elytra with punctures larger than those on frons, separated by 2.0–3.0 diameters. Abdominal postcoxal lines incomplete (Fig. 9d), reaching 3/4 length of abdominal ventrite 1, area enclosed by lines finely punctate, broadly smooth along line. Lateral portions of abdominal ventrite 2 with densely setose area bearing short setae.

Male genitalia. Penis slender, penis capsule with long inner arm and indistinct outer arm (Fig. 9e), apex of penis flat beak-like, with small emargination (Fig. 9f). Tegmen stout, penis guide slightly constricted at base, widest at apical 1/3 length, then gradually tapering to pointed tip in inner view (Fig. 9g); in lateral view, penis guide widest at base, gradually narrowing to pointed tip (Fig. 9h). Parameres slender, strongly curved at base, as long as 2/3 length of penis guide, and apex bears sparse long setae (Fig. 9h).

Distribution. China: Hainan, Guangdong, Hubei, Yunnan.

Clitostethus conensis Xie, Wang & Chen, sp. nov.

(Fig. 10)

Type material. HOLOTYPE: CHINA: male, No. SCAU(E)11659, Xizang: Mama Menba Ethnic Town, Cona City, 2800 m, 25. X. 2011, Li WJ leg (SCAU). PARATYPE: Xizang: 1 female, Le Village, Le Township, Cona City, 2450 m, 5. X. 2009, Chen XS leg (SCAU).

Diagnosis. This species is similar to *Clitostethus sternalis* (Pang & Gordon) in general appearance, but can be separated from latter by its long penis with tubular apex (Fig. 10f) and yellowish-brown head with black vertex (Fig. 10b).

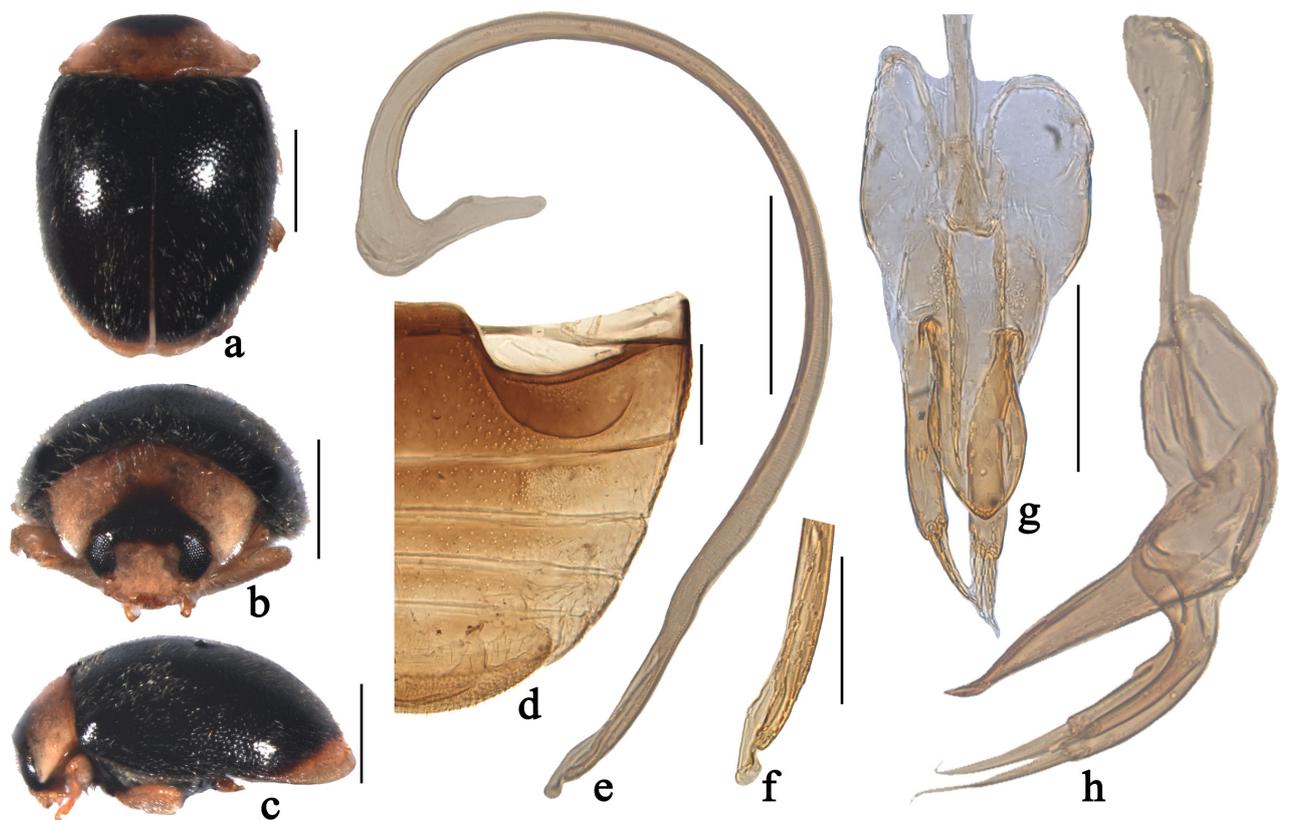


FIGURE 10. Habitus and morphological details of *Clitostethus conensis* sp. nov. **a.** Adult, dorsal view. **b.** Adult, frontal view. **c.** Adult, lateral view. **d.** Abdomen. **e.** Penis. **f.** Apex of penis. **g.** Tegmen, inner view. **h.** Tegmen, lateral view. Scale bars: 0.5 mm in a, b, c; 0.2 mm in d, e; 0.1 mm in f, g, h.

Description. TL: 1.68–1.73 mm, TW: 1.17–1.21 mm, TH: 0.79–0.83 mm, TL/TW: 1.42–1.44, PL/PW: 0.43–0.46, EL/EW: 1.15–1.16, HW/PW: 0.56, PW/EW: 0.77–0.78.

Body rounded oval, moderately convex, dorsum covered with white pubescence (Figs 10a–c). Head yellowish-brown with black vertex. Antennae and mouthparts brown. Pronotum yellowish-brown. Scutellar shield black. Elytra black with apical margin yellowish-brown (Figs 10a, b). Prothoracic hypomerone and prosternum yellowish-brown. Mesoventrite, metaventrite and elytral epipleuron black. Legs brown.

Head with fine frontal punctures, 2.0–3.0 diameter apart. Eyes densely faceted, interocular distance 0.51 times head width. Pronotal punctures similar to those on frons. Surface of elytra with punctures larger than those on frons, separated by 2.0–3.0 diameters. Abdominal postcoxal lines incomplete (Fig. 10d), reaching 4/5 length of abdominal ventrite 1, area enclosed by lines finely punctate, broadly smooth along line. Lateral portions of abdominal ventrite 2 with densely setose area bearing short setae.

Male genitalia. Penis long and stout, penis capsule with long inner arm and indistinct outer arm (Fig. 10e), apex of penis tube-shaped with slight emargination (Fig. 10f). Tegmen stout, penis guide slightly constricted at base, widest at middle, then gradually tapering to blunt tip in inner view (Fig. 10g); in lateral view, penis guide widest at base, gradually narrowing to pointed tip (Fig. 10h). Parameres slender, slightly curved at base, as long as 2/3 length of penis guide, and apex bears sparse long setae (Fig. 10h).

Distribution. China: Xizang.

Etymology. The specific epithet refers to its type locality, Cona City in Xizang Autonomous Region.

Checklist of the species of *Clitostethus* Weise, 1885

Clitostethus acutisiphonicus Peng, Ren & Pang, 1998

Clitostethus acutisiphonicus Peng, Ren & Pang, 1998: 196.—Pang *et al.* 2004: 91, Kovář 2007: 579, Wang & Chen 2022: 155.

Distribution. China: Hainan, Guangxi, Yunnan.

Clitostethus arcuatus (Rossi, 1794)

Coccinella arcuata Rossi, 1794: 88.

Scymnus arcuatus: Mulsant 1846: 245.

Scymnus (Clitostethus) arcuatus: Weise 1885: 73.

Clitostethus arcuatus: Weise 1899: 375, Korschevsky 1931: 114, Gordon 1972: 145, Gordon & Hilburn 1990: 269, Iqbal *et al.* 2019: 343.

Distribution. This species is widely distributed across the Palearctic Region, ranging from most European countries to Morocco, Turkey, Syria, Iran, Iraq, and Pakistan.

Clitostethus bawanglingensis Peng, Ren & Pang, 1998

Clitostethus bawanglingensis Peng, Ren & Pang, 1998: 197.—Pang *et al.* 2004: 91, Kovář 2007: 579, Wang & Chen 2022: 155.

Distribution. China: Hainan, Guangdong, Taiwan, Yunnan.

Clitostethus brachylobus Peng, Ren & Pang, 1998

Clitostethus brachylobus Peng, Ren & Pang, 1998: 198.—Pang *et al.* 2004: 91, Kovář 2007: 579, Ren *et al.* 2009: 56, Wang & Chen 2022: 156.

Distribution. China: Hainan, Guangdong, Guangxi, Yunnan, Xizang.

***Clitostethus conensis* Xie, Wang & Chen, sp. nov.**

Distribution. China: Xizang.

***Clitostethus lividipes* Sicard, 1912**

Clitostethus lividipes Sicard, 1912: 504.—Korschefsky 1931: 115, Poorani 2002: 349.

Distribution. Myanmar.

Remarks. Poorani (2002) mentioned that *C. lividipes* likely belongs to the genus “*Pseudoscymnus* Chapin”. However, in the absence of direct examination of the type specimen of this species, it is currently retained within the genus *Clitostethus* on a provisional basis.

***Clitostethus luteoniger* (Canepari, 1997)**

Pseudoscymnus luteoniger Canepari, 1997: 8.
Clitostethus luteoniger: Poorani 2002: 349, Kovář 2007: 579.

Distribution. China: Yunnan, Xizang; Nepal.

***Clitostethus neuenschwanderi* Fürsch, 1987**

Clitostethus neuenschwanderi Fürsch, 1987: 391.

Distribution. Congo.

***Clitostethus nigrifrons* Yu, 1997**

Clitostethus nigrifrons Yu, 1997: 715.—Pang *et al.* 2004: 91, Kovář 2007: 579.

Distribution. China: Chongqing.

***Clitostethus sellatus* Fürsch, 1995**

Clitostethus sellatus Fürsch, 1995: 19.

Distribution. Tanzania

***Clitostethus sternalis* (Pang & Gordon, 1986)**

Pseudoscymnus sternalis Pang & Gordon, 1986: 184.
Clitostethus sternalis: Pang & Yu 1991: 5, Peng *et al.* 1998: 195, Pang *et al.* 2004: 91, Kovář 2007: 579, Wang & Chen 2022: 156.

Distribution. China: Hainan, Guangdong, Hubei, Yunnan.

Clitostethus tongbiguanus Xie, Wang & Chen, sp. nov.

Distribution. China: Yunnan.

Clitostethus wenbishanus Yu, 2000

Clitostethus wenbishanus Yu in Yu *et al.* 2000: 158.—Pang *et al.* 2004: 91, Kovář 2007: 579, Wang & Chen 2022: 157.

Distribution. China: Yunnan, Xizang.

Acknowledgements

We gratefully acknowledge Dr Guo-Yue Yu (BAAF) and Dr Kui-Yan Zhang (IZCAS) for providing access to the type specimens used in this study. We sincerely thank Dr Karol Szawaryn (Museum and Institute of Zoology, Warszawa, Poland) and the handling editor for their valuable suggestions and constructive comments, which improved the quality of our manuscript. The present study was supported by the Characteristic Innovation Projects of Regular Universities in Guangdong Province (grant no. 2019GKTSCX056), the National Natural Science Foundation of China (grant no. 32370467) and the Project of GDAIB (grant no. 2025XJKYYB05).

References

- Araki, M. (1964) Three new species of the lady beetles of the tribe Scymnini from Japan (Insecta, Coleoptera). *Scientific Reports of Kyoto Prefectural University*, 15, 39–42.
- Bellows, T.S., Paine, T.D. & Gerling, D. (1992) Development, survival, longevity, and fecundity of *Clitostethus arcuatus* (Coleoptera: Coccinellidae) on *Siphoninus phillyreae* (Homoptera: Aleyrodidae) in the laboratory. *Environmental Entomology*, 21 (3), 659–663.
<https://doi.org/10.1093/ee/21.3.659>
- Booth, R.G. & Polaszek, A. (1996) The identities of ladybird beetle predators used for whitefly control, with note on some whitefly parasitoides, in Europe. *Brighton Crop Protection Conference*, 2B, 69–74.
- Canepari, C. (1997) Coccinellidae (Coleoptera) from the Nepal Himalayas. *Stuttgarter Beiträge zur Naturkunde, Serie A (Biologie)*, 565 (65), 1–65.
- Chen, X., Xie, X., Ren, S. & Wang, X. (2016) Discovery of a New World ladybird beetle *Nephaspis indus* Gordon, 1996 (Coleoptera: Coccinellidae: Scymnini) on the Island of Taiwan. *Biodiversity Data Journal*, 4, e10537.
<https://doi.org/10.3897/BDJ.4.e10537>
- Deng, H., Ali, S., Wang, X.M., Chen, X.S. & Ren, S.X. (2016) Temperature dependence for development of *Clitostethus brachylobus* Peng, Ren & Pang 1998 (Coleoptera: Coccinellidae), a predator of *Bemisia tabaci* (Genn.). *Egyptian Journal of Biological Pest Control*, 26 (1), 139–145.
- Fürsch, H. (1987) Neue afrikanische Scymnini-Arten (Coleoptera Coccinellidae) als Freßfeinde von Manihot-Schädlingen. *Revue de Zoologie Africaine*, 100, 387–394.
- Fürsch, H. (1995) A new Scymnini species from Eastern Africa (Col. Coccinellidae). *Nachrichtenblatt der Bayerischen Entomologen*, 44 (1/2), 18–20.
- Gordon, R.D. (1972) A review of the genus *Nephaspis* Casey and a comparison with the genus *Clitostethus* Weise (Coleoptera: Coccinellidae). *Revista de Agricultura Piracicaba*, 47, 145–154.
- Gordon, R.D. & Hilburn, D.J. (1990) The Coccinellidae (Coleoptera) of Bermuda. *Journal of the New York Entomological Society*, 98 (3), 265–309.
- Halperin, J., Merkl, O. & Kehat, M. (1995) An annotated list of the Coccinellidae (Coleoptera) of Israel and adjacent areas. *Phytoparasitica*, 23 (2), 127–137.
<https://doi.org/10.1007/BF02980972>
- Iqbal, Z., Nasir, M.F., Bodlah, I. & Szawaryn, K. (2019) Review of *Clitostethus* Weise, *Parastethorus* Pang et Mao and *Stethorus* Weise (Coleoptera: Coccinellidae) from Pakistan. *Oriental Insects*, 53 (3), 340–355.
<https://doi.org/10.1080/00305316.2018.1492987>
- Kamiya, H. (1961) A revision of the tribe Scymnini from Japan and the Loochoos (Coleoptera: Coccinellidae): Part II. Genus *Scymnus* (Subgenus *Pullus*). *Journal of the Faculty of Agriculture, Kyushu University*, 11 (3), 303–330.
<https://doi.org/10.5109/22689>
- Kamiya, H. (1966) On the Coccinellidae attacking the scale insects and mites in Japan and the Ryukyus. *Mushi*, 39 (7), 65–93.

- Korschefsky, R. (1931) *Coleopterorum Catalogus. Pars 118. Coccinellidae I*. Junk, Berlin, 224 pp.
- Kovář, I. (2007) Coccinellidae. In: Löbl, I. & Smetana, A. (Eds.), *Catalogue of Palaearctic Coleoptera. Vol. 4*. Apollo Books, Stenstrup, pp. 568–631.
- Mader, L. (1955) Westafrikanische Coccinellidae. *Bulletin de l'Institut Fondamental d'Afrique Noire*, 17, 147–160.
- Mulsant, E. (1846) *Histoire Naturelle des Coléoptères de France: Sulcicolles—Sécuiripalpes*. Maisson, Paris, xxiv + 26 + 280 pp.
- Pang, X.-F. & Gordon, R.D. (1986) The Scymnini (Coleoptera: Coccinellidae) of China. *The Coleopterists Bulletin*, 40 (2), 157–199.
- Pang, X.-F. & Yu, G. (1991) Emendations of “The Scymnini (Coleoptera: Coccinellidae) of China”. *Coccinella*, 3 (1), 5.
- Pang, H., Ren, S., Zeng, T. & Pang, X. (2004) *Biodiversity and their utilization of Coccinellidae in China*. Science and Technology Press of Guangdong, Guangzhou, 168 pp.
- Peng, Z., Ren, S. & Pang, X. (1998) The genus *Clitostethus* Weise (Coleoptera: Coccinellidae) of China. *Entomotaxonomia*, 20 (3), 194–200.
- Poorani, J. (2002) An annotated checklist of the Coccinellidae (Coleoptera) (excluding Epilachninae) of the Indian subregion. *Oriental Insects*, 36, 307–383.
<https://doi.org/10.1080/00305316.2002.10417335>
- Poorani, J. & Booth, R.G. (2021) Nomenclatural notes on three species of Scymnini (Coleoptera: Coccinellidae) from Ceylon. *Oriental Insects*, 55 (1), 56–68.
<https://doi.org/10.1080/00305316.2020.1748134>
- Ren, S., Wang, X., Pang, H., Peng, Z. & Zeng, T. (2009) *Colored pictorial handbook of ladybird beetles in China*. Science Press, Beijing, 336 pp.
- Rossi, P. (1792–1794) *Mantissa Insectorum. Exhibens species nuper in Etruria collectas a Petro Rossio*. Pisis, Ex Typographia, Polloni, 154 pp.
<https://doi.org/10.5962/bhl.title.49449>
- Sicard, A. (1912) Notes sur quelques coccinellides de l'Inde et de Birmanie appartenant à la collection de M. Andrewes, de Londres et description d'espèces et de variétés nouvelles. *Annales de la Société Entomologique de France*, 81, 495–506.
<https://doi.org/10.1080/21686351.1912.12279497>
- Sicard, A. (1929) LVIII.—Descriptions d'espèces nouvelles de Coccinellidæ. *Annals and Magazine of Natural History*, Series 10, 4 (23), 515–524.
<https://doi.org/10.1080/00222932908673088>
- Ślipiński, A. (2007) *Australian ladybird beetles (Coleoptera: Coccinellidae): their biology and classification*. ABRS, Canberra, 286 pp.
- Ślipiński, A. & Tomaszewska, W. (2010) Coccinellidae Latreille, 1802. In: Leschen, R.A.B., Beutel, R.G. & Lawrence, J.F. (Eds.), *Handbook of Zoology. Vol. 2. Coleoptera*. Walter de Gruyter GmbH & Co. KG, Berlin/New York, pp. 454–472.
<https://doi.org/10.1515/9783110911213.454>
- Wang, X. & Chen, X. (2022) *Illustrated handbook of ladybird beetles in China*. Straits Publishing House Company Limited, Fuzhou, 528 pp.
- Weise, J. (1885) *Bestimmungs-Tabellen der europäischen Coleopteren. II. Heft. Coccinellidae. II. Auflage. Mit Berücksichtigung der Arten aus dem nördlichen Asien*. H. Büsing, Mödling, 83 pp.
- Weise, J. (1899) Bemerkungen zu den neuesten Bearbeitungen der Coccinelliden. *Deutsche Entomologische Zeitschrift*, 1899, 369–378.
<https://doi.org/10.1002/mmnd.48018990225>
- Whitehead, V.B. (1967) *The validity of the higher taxonomic categories in the tribe Scymnini (Coleoptera: Coccinellidae)*. PhD Thesis, University of California, Berkeley, California, 312 pp.
- Yu, G. (1997) Coleoptera: Coccinellidae: Scymninae. In: Yang, X. (Ed.), *Insects of the Three Gorge Reservoir area of Yangtze River*. Chongqing Press, Chongqing, pp. 714–730.
- Yu, G., Montgomery, M.E. & Yao, D. (2000) Lady beetles (Coleoptera: Coccinellidae) from Chinese hemlocks infested with the hemlock woolly adelgid, *Adelges tsugae* Annand (Homoptera: Adelgidae). *The Coleopterists Bulletin*, 54 (2), 154–199.
[https://doi.org/10.1649/0010-065X\(2000\)054\[0154:LBCFCF\]2.0.CO;2](https://doi.org/10.1649/0010-065X(2000)054[0154:LBCFCF]2.0.CO;2)

中国陡胸瓢虫属 *Clitostethus* 分类研究及二新种描述 (鞘翅目: 瓢虫科)

谢秀凤^{1,4}, 王兴民^{2,5}, 彭正强^{3,6}, 陈晓胜^{2,*}

¹广东农工商职业技术学院, 广州510507, 中国

²华南农业大学, 林学与风景园林学院; 生物防治教育部工程研究中心, 广州510642, 中国

³中国热带农业科学院, 环境与植物保护研究所, 海口571101, 中国

⁴✉ xfxie@gdaib.edu.cn;  <https://orcid.org/0000-0001-6194-8215>

⁵✉ wangxmcn@scau.edu.cn;  <https://orcid.org/0000-0001-9327-9159>

⁶✉ lypzhq@163.com;  <https://orcid.org/0000-0003-2955-5475>

*通讯作者: ✉ xshchen@scau.edu.cn;  <https://orcid.org/0000-0001-8253-4943>

摘要: 对中国陡胸瓢虫属 *Clitostethus* 分类进行修订, 共记录9种, 含2新种即错那陡胸瓢虫 *Clitostethus conensis* **sp. nov.** 和铜壁关陡胸瓢虫 *Clitostethus tongbiguanus* **sp. nov.**, 以及1中国新纪种泥黑陡胸瓢虫 *Clitostethus luteoniger*。提供我国该属分种检索表; 详细阐述各物种命名沿革、鉴别特征、形态描述、关键特征图和地理分布; 并列全球已知种名录。

关键词: 瓢甲总科; 小毛瓢虫族; 新记录; 名录; 粉虱