



Taxonomy of the genus *Craspedomerus* Bernhauer, 1911 (Coleoptera: Staphylinidae: Philonthina) from China

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Abstract

Three new species of the genus *Craspedomerus* from China are described and illustrated: *C. giganteus* Li & Zhou **sp. n.** from Sichuan, *C. gongshanus* Li & Zhou **sp. n.** from Yunnan and *C. zhangii* Li & Zhou **sp. n.** from Tibet. Four species are reported for the first time from China: *C. sinetuber* (Coiffait, 1977a) from Tibet, *C. cyanipennis* Scheerpeltz, 1976b, *C. ganeshensis* Coiffait, 1983 and *C. glenoides* (Schubert, 1908) from Yunnan. These four and two additional species previously recorded from China (*C. beckeri* Bernhauer, 1934 and *C. violaceipennis* Cameron, 1928) are redescribed and illustrated. Sensory peg setae located on the underside of the paramere of the aedeagus of all nine Chinese species are compared using scanning electron microscopy (SEM) and the result shows that this character is useful for species identification. A key to the Chinese species of *Craspedomerus* is presented and geographical distribution of all sixteen species of *Craspedomerus* is mapped.

Key words: Coleoptera, Staphylinidae, Staphylininae, Philonthina, *Craspedomerus*, new species, China

Introduction

Bernhauer (1911) established the genus *Craspedomerus* and designated *Philonthus glenoides* Schubert, 1908 from India as the type species. For this genus, he erected the subtribe Craspedomerina (originally spelled as Craspedomeri) in the tribe Staphylinini of the subfamily Staphylininae. The genus, as well as the subtribe, was established based on the presence of an additional oblique line connecting the superior and inferior lines of the pronotal hypomeron (Bernhauer 1911, 1927; Cameron 1932; Moore 1960; Scheerpeltz 1976a; Newton & Thayer 1992; Smetana 1995). This line, however, was considered recently as a ventral-deflected part of the superior line rather than a separate line. Based on that, *Craspedomerus* was moved to the subtribe Philonthina Kirby, 1837 (Smetana & Davies 2000), as originally suggested by Hayashi (1997), and the subtribe Craspedomerina was synonymized with Philonthina (Smetana & Davies 2000). Herman (2001) and Smetana (2004) accepted this taxonomic treatment, which we follow in this paper.

The genus *Craspedomerus* is a poorly studied group and until now a taxonomic revision was lacking. The aedeagi of different species are strikingly similar to each other, often showing only proportional differences (Schillhammer 1998); thus, species identification is very difficult, especially for some closely related species. Until now, 13 species of *Craspedomerus* have been reported from the Palearctic and Oriental Regions (Bernhauer 1911, 1934; Cameron 1926, 1928, 1932; Coiffait 1976, 1977ab, 1982ab, 1983; Scheerpeltz 1965, 1976ab; Schillhammer 1992; Herman 2001; Smetana 2004). Of all the known species, only two have been reported from China: *C. beckeri* Bernhauer, 1934 from Sichuan and *C. violaceipennis* Cameron, 1928 from Tibet.

In this paper, three new species of *Craspedomerus* from China are described and illustrated: *C. giganteus* Li & Zhou **sp. n.** from Sichuan, *C. gongshanus* Li & Zhou **sp. n.** from Yunnan and *C. zhangii* Li & Zhou **sp. n.**

from Tibet. Four species are reported for the first time from China: *C. sinetuber* (Coiffait, 1977a) from Tibet, *C. cyanipennis* Scheerpeltz, 1976b, *C. ganeshensis* Coiffait, 1983 and *C. glenoides* (Schubert, 1908) from Yunnan. Thus, nine species of the genus *Craspedomerus* are known in total from China, and the world fauna of the genus is increased to sixteen species. Six previously described species now known from China: *C. beckeri*, *C. cyanipennis*, *C. ganeshensis*, *C. glenoides*, *C. sinetuber* and *C. violaceipennis* are redescribed and illustrated. Sensory peg setae located on the underside of the paramere of aedeagus are compared for nine Chinese species using scanning electron microscopy (SEM) and the result shows that this character is useful for species identification. A key to the Chinese species of *Craspedomerus* is presented and geographical distribution of all sixteen species of *Craspedomerus* is mapped.

Materials and methods

Specimens were relaxed in warm water (60–70°C) for about 7–10 hours, then cleared in 10% KOH for 5 minutes, and transferred in 75% alcohol. Cleared specimens were dissected to observe morphological details of the 8th–10th abdominal segments and male aedeagus. After examination, the body parts were stored permanently in glycerin for future studies. Observation and drawing were done under a compound microscope (Zeiss). For scanning electron microscopy (SEM) studies, specimens were fixed in 4% formaldehyde, post-fixed in 1% OsO₄, dehydrated through ethanol series and acetone, and dried to critical point. The specimens were coated with gold and examined with a Hitachi S-570 scanning electron microscope at an accelerating voltage of 15 KV.

This study was mainly based on the material deposited in IZ-CAS (Institute of Zoology, Chinese Academy of Sciences, Beijing, China). Additional depositories are listed below:

BMNH	The Natural History Museum, London, UK (R. G. Booth)
CSB	Private collection of M. Schülke, Berlin, Germany
CSO	Private collection of A. Smetana, Ottawa, Canada
FMNH	Field Museum of Natural History, Chicago, USA (A. F. Newton & J. H. Boone)
NMW	Naturhistorisches Museum Wien, Austria (H. Schillhammer)

The following abbreviations are used in the text with the measurement in millimeters (mm):

AW	Abdomen width (the width of the abdomen at its widest point)
BL	Body length (from the anterior margin of the head to the posterior margin of styli of tergite IX)
CEL	Eyes length (from the anterior margin to the posterior margin of the eyes, viewed from above)
EL	Elytron length (from the anterior margin to the posterior margin of the elytron)
EW	Width of both elytra combined (the width of the elytra at their widest point)
HL	Head length (from the anterior margin of the head to the posterior margin of tempora, labrum and mouthparts not included)
HPL	Head and pronotum length, combined (from the anterior margin of the head to the posterior margin of pronotum, neck included)
HW	Head width (the width of the head at its widest point, eyes included)
PL	Pronotum length (from the anterior margin to the posterior margin of the pronotum)
PW	Pronotum width (the width of the pronotum at its widest point)
TL	Tempora length (in dorsal view, from the posterior margin of the eyes to an imaginary line going through the points where the tempora meet the neck)

Species distribution data were compiled in a Microsoft Access database using both published records and specimen labels. Records without geographic coordinates were georeferenced using online gazetteers. Distribution map was produced using ArcView 3.2.

Taxonomy

Genus *Craspedomerus* Bernhauer, 1911

Bernhauer, 1911: 88 (genus description); Bernhauer & Schubert, 1914: 400 (world catalog); Winkler, 1925: 387 (catalog for Palaearctic region); Cameron, 1925: 71 (catalog of Indian species); 1932: 248 (key to species of British India); Scheerpeltz, 1933: 1410 (world catalog supplement); Blackwelder, 1952: 110 (type species); Moore, 1960: 100 (key to genera); Scheerpeltz, 1976b: 148 (key to species of Himalayan region); Schillhammer, 1998: 148 (characters); Hayashi, 2000: 23 (notes on empodial setae); Smetana & Davies, 2000: 13 (characters); Herman, 2001: 2582 (world catalog); Smetana, 2004: 632 (catalog for Palaearctic region); Schillhammer, 2005: 184 (characters).

Type species. *Philonthus glenoides* Schubert, 1908; fixed by monotypy.

Diagnosis. The genus *Craspedomerus* can be easily distinguished from the other genera in the subtribe Philonthina by the combination of the following character states: maxillary palpi long, with 4th segment cylindrical and distinctly longer than penultimate segment (Fig. 1E); labial palpi long, with 3th segment slightly longer than 2nd segment (Fig. 1F); antennae moderately long, basal three segments polished, bearing only sparse strong setae, 3rd segment much longer than 2nd, the following segments gradually decreasing in length, but all longer than wide; first four segments of front tarsus in both sexes at least slightly dilated, with some modified pale setae ventrally (Fig. 1F); pronotum densely and finely punctate, narrowly impunctate along midline; superior line of pronotal hypomeron deflexed under third anterior margin of pronotum and extended (from point where it bends ventrad) into slightly crenulate ridge that forms the additional “fake” lateral line (Fig. 1G); abdomen with tergites III–V bearing two basal lines (Fig. 2H); basal line of sternite III arcuately extended posteriad in middle (Fig. 1J); sternite VIII of male with moderately wide, obtusely triangular medio-apical emargination; sternite IX of male genital segment with basal portion distinctly asymmetrical; aedeagus with median lobe distinctly exceeding paramere, evenly narrowed into subacute apex; paramere bifurcate apically, Y-shaped (Fig. 2F), underside of each branch with group of rather small, irregularly arranged sensory peg setae (Figs. 12 A–I).

Key to the Chinese species of *Craspedomerus*

1. Elytra varied metallic blue, violaceous, purple or dark purple 2
- Elytra fusco-testaceous 7
2. Elytra purple with shoulders, posterior margins and suture markedly yellow *C. zhangi* Li & Zhou **sp. n.**
- Elytra entirely metallic blue, violaceous, purple or dark purple 3
3. Abdomen entirely black; eyes very large, 1.30–1.60 times as long as tempora *C. sinetuber* (Coiffait)
- Abdomen at least partly reddish-yellow; eyes small, 0.67–0.92 times as long as tempora 4
4. Antennae entirely black brown 5
- Antennae black with 8th–10th segments yellow 6
5. Body very large (HPL: 5.47–5.71); pronotum with profound microsculpture of mesh
..... *C. giganteus* Li & Zhou **sp. n.**
- Body small (HPL: 4.08–4.32); pronotum with profound microsculpture of long waves
..... *C. gongshanus* Li & Zhou **sp. n.**
6. Pronotum with strongly violaceous reflex; femora dark *C. cyanipennis* Scheerpeltz
- Pronotum with bronze-green reflex; femora reddish *C. violaceipennis* Cameron
7. Antennae black with 8th–11th segments to various extent yellow *C. beckeri* Bernhauer
- Antennae black with 7th–11th segments yellow 8
8. Elytra with a dark transverse fascia across the middle; tergite VII entirely reddish-yellow *C. glenoides* (Schubert)
- Elytra without a dark transverse fascia across the middle; tergite VII with basal third portion black
..... *C. ganeshensis* Coiffait

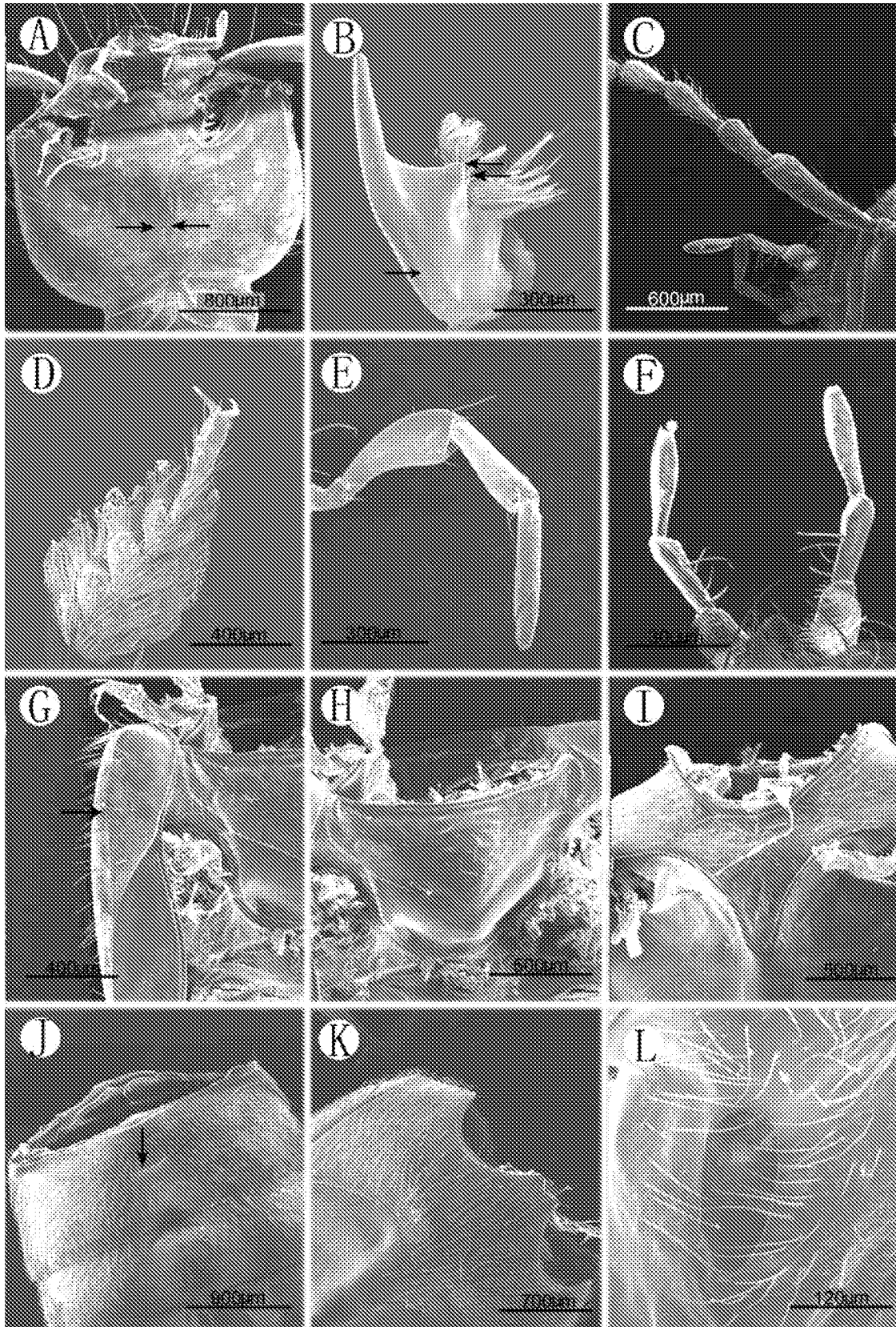


FIGURE 1. Scanning electron micrographs of *Craspedomerus giganteus* Li & Zhou **sp. n.** A, underside of head, showing gula (arrows), ventral view; B, left mandible, showing dorsolateral groove and two large teeth (arrows); C, basal three segments of antennae; D, male protarsus, dorsal view; E, maxillary palpus; F, labial palpi; G, pronotal hypomeron, showing “fake” lateral line (arrow); H, prosternum, ventral view; I, mesoventrite, without transverse ridge, ventral view; J, sternite III, showing basal line (arrow), ventral view; K, metaventricle, ventral view; L, osmeterium, dorsal view.

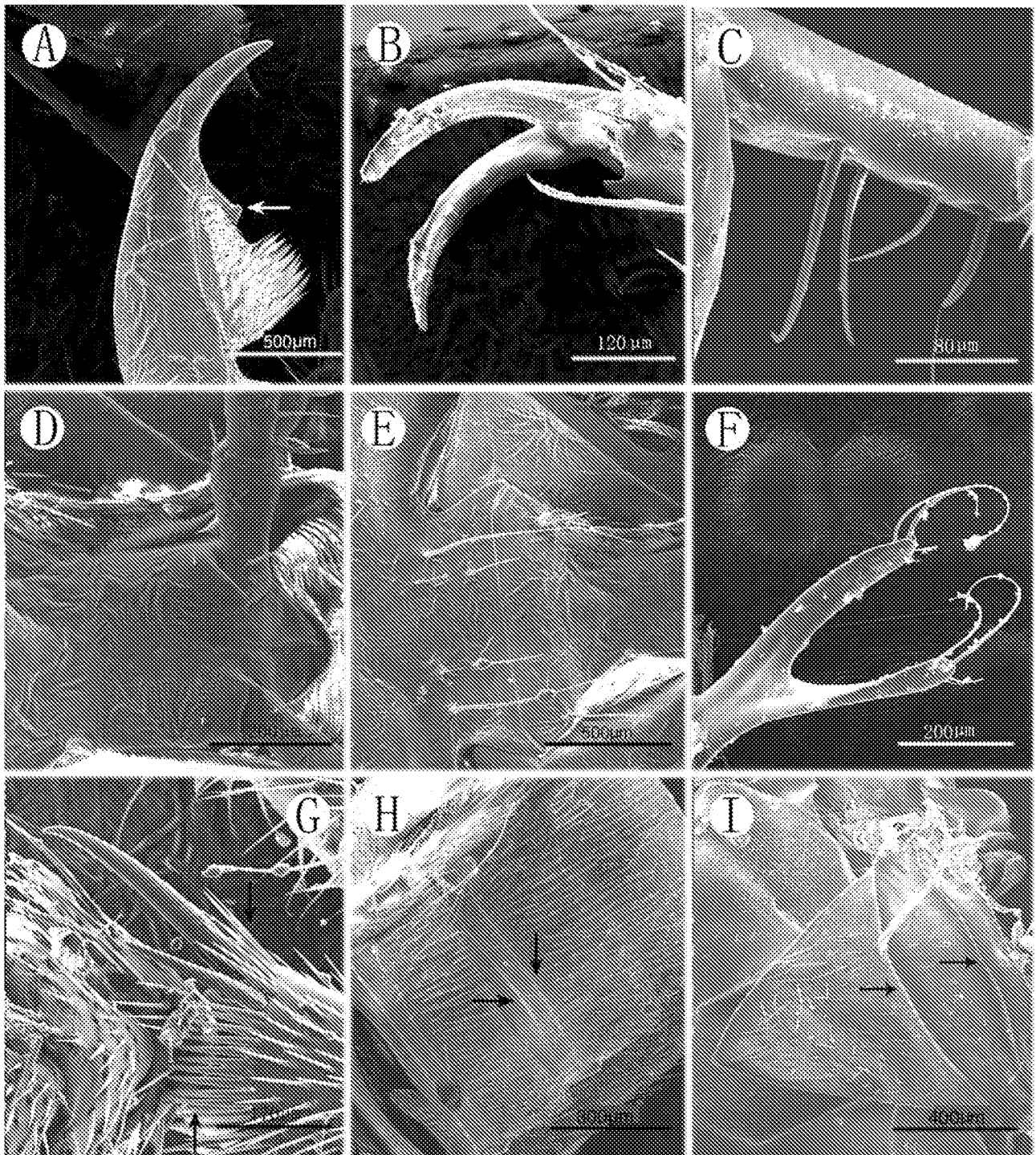


FIGURE 2. Scanning electron micrographs of *Craspedomerus giganteus* Li & Zhou **sp. n.** A, right mandible, showing one large tooth (arrow); B, mesopretarsus, empodial setae absent, ventral view; C, penultimate segment of labial palpus, showing macrosetae arranged at base; D, labium with round ligula, ventral view; E, mentum, ventral view; F, paramere of aedeagus; G, ctenidium on protibia, consisting of one row of stout setae (arrows); H, tergites III–IV, showing two basal lines (arrows), dorsal view; I, mesoscutellum, showing two transverse carinae (arrows), dorsal view.

1. *Craspedomerus giganteus* Li & Zhou sp. n.

(Figs. 1A–L, 2A–I, 3A–F, 12F)

Type material. Holotype: CHINA: Sichuan: ♂, Wolong: Wulitun (31°46'N, 103°36'E), 2180–2650 m, 21–24.VI.2004, Yu Xiaodong collected (IZ-CAS). **Paratypes: CHINA: Sichuan:** 78♂♂, 113♀♀, same data as

holotype (IZ-CAS); 4 ♂♂, 7 ♀♀, road between Yingxiu and Wolong, 1700–1800 m, 24.VII.–4.VIII.2006, A. Puchner collected (NMW).

Description. Head and pronotum black with slightly bronze-green reflex. Antennae entirely black-brown. Elytra dark-purple or violaceous. Scutellum black. Abdomen black with strongly iridescent reflex, posterior third of tergite VII and entire tergites VIII–X reddish-yellow (sometimes tergite VIII and styli of tergite IX dark brown). Mandibles dark. Maxillary and labial palpi and legs reddish-brown.

Body very large, 16.2–19.2 mm long (HPL = 5.47–5.71 mm). Head of rounded quadrangular shape, 2.20–2.45 mm long, 2.45–2.61 mm wide, slightly wider than long (HW:HL = 1.03–1.11). Tempora 0.82–1.06 mm long, almost evenly rounded, densely and coarsely punctate, setiferous; eyes moderately large, slightly protruded, 0.74–0.82 mm long, 0.71–0.92 times as long as tempora. Dorsal surface of head with moderately numerous, large setiferous punctures, becoming sparser toward vertex, vertex largely impunctate; entire head with distinct and profound microsculpture of mesh.

Pronotum subquadrate, slightly narrowed anteriorly, 2.78–3.02 mm long, 2.69–2.86 mm wide, slightly wider than head (PW:HW = 1.07–1.21), sparsely and finely punctate, punctures separated by 5–8 times their diameter, narrowly impunctate along midline; microsculpture fine, similar to that on head.

Elytra 3.18–3.43 mm long, 3.35–3.67 mm wide, 1.11–1.20 times as long as pronotum, densely and finely punctate, punctures separated by 1–2 times their diameter. Scutellum large, triangular, densely and finely punctate.

Abdomen a little narrowed posteriorly, widest 3.20–3.51 mm; tergites densely and finely punctate, at base punctures separated by 2–3 times their diameter, gradually becoming sparser toward apex of each tergite, surface between punctures with dense and fine microsculpture of transverse striae; elevated area between basal lines of tergites III–V with irregular row of sparse punctures.

Male. Sternite VIII with moderately wide, obtusely triangular medio-apical emargination (Fig. 3D). Sternite IX with distinctly asymmetrical basal portion, apex deeply emarginate, each lobe bearing two long apical setae (Fig. 3C). Genital segment with styli of tergite IX simple, densely setose apically. Tergite X simple, triangular, subrounded at apex, with variable number of apical setae (Fig. 3F).

Aedeagus as (Figs. 3A–B); underside of each branch of paramere with very small, flat sensory peg setae sparsely and irregularly arranged at apical portion (Fig. 12F).

Female. Sternite VIII without medio-apical emargination. Genital segment with styli of tergite IX similar to that of male. Gonocoxites moderately developed, second gonocoxites each with minute stylus, bearing two long apical setae (Fig. 3E). Tergite X similar to that of male.

Remarks. *Craspedomerus giganteus* is similar to *C. sinetuber* and *C. gongshanus* in having elytra entirely dark purple or violaceous and antennae black-brown. *Craspedomerus giganteus* can be easily distinguished from *C. sinetuber* by posterior third of tergite VII and entire tergites VIII–X reddish-yellow (abdomen entirely black in the latter one), distinctly smaller eyes (0.71–0.92 times as long as tempora in the new species vs. 1.30–1.60 times as long as tempora in *C. sinetuber*) and different number and arrangement of sensory peg setae on the underside of paramere (Figs. 12A, F). *Craspedomerus giganteus* differs from *C. gongshanus* by much larger body (HPL = 5.47–5.71 mm vs. HPL = 4.08–4.32 mm, respectively), pronotum with profound microsculpture of mesh (pronotum with profound microsculpture of oblique, long waves) and different number and arrangement of sensory peg setae on the underside of paramere (Figs. 12F, H).

Distribution. The species is at present known only from China (Sichuan).

Etymology. The specific epithet is a Latin adjective *giganteus* (large), and refers to the rather large body size of the new species.

2. *Craspedomerus gongshanus* Li & Zhou sp. n.

(Figs. 4A–E, 12H)

Type material. Holotype: CHINA: Yunnan: ♂, Gongshan (27°42'N, 98°30'E), 2770 m, 3.V.2002, Liang Hongbin collected (IZ-CAS). **Paratypes:** CHINA: Yunnan: ♂, same data as holotype (IZ-CAS); 2♂♂, 5♀♀,

same data as holotype, but 2200–2770 m, 12–30.IV.2002 (IZ-CAS); ♂, Gaoligongshan (25°59'N, 98°37'E), 2000 m, 9–14.VII.2000, Liang Hongbin collected (IZ-CAS).

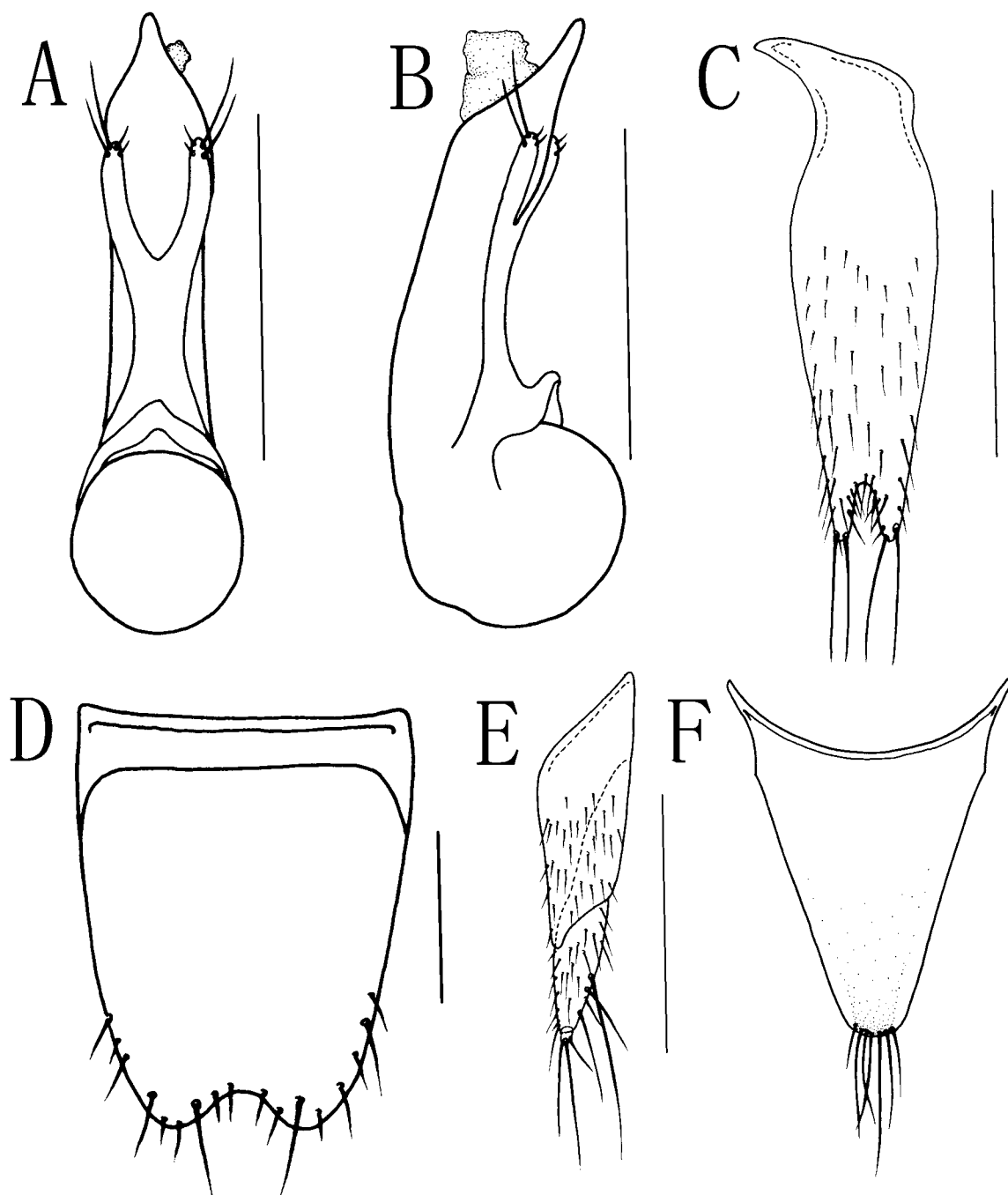


FIGURE 3. *Craspedomerus giganteus* Li & Zhou sp. n. A, aedeagus, ventral view; B, aedeagus, lateral view; C, sternite IX of male; D, sternite VIII of male; E, gonocoxites of female genital segment; F, tergite X of male. Scale bars 1 mm.

Description. Head and pronotum black with bronze-green reflex. Antennae black-brown with last three or four segments sometimes pale. Elytra metallic blue or violaceous. Scutellum black. Abdomen black with strongly iridescent reflex, tergite VII with posterior 1/2–4/5 portion and entire tergites VIII–X reddish-yellow, styli of tergite IX dark-brown. Mandibles dark brown. Maxillary and labial palpi reddish-brown. Femora and tibiae black or black-brown, tarsi reddish-brown.

Body moderately large, 12.4–13.1 mm long (HPL = 4.08–4.32 mm). Head of rounded quadrangular shape, 1.63–1.88 mm long, 1.88–2.12 mm wide, slightly wider than long (HW:HL = 1.13–1.20). Tempora 0.57–0.74 mm long, almost evenly rounded, densely and coarsely punctate, setiferous; eyes moderately large,

slightly protruded, 0.57–0.65 mm long, 0.78–0.89 times as long as tempora. Dorsal surface of head with moderately numerous, large setiferous punctures, becoming sparser toward vertex, vertex largely impunctate; entire head with distinct and profound microsculpture of transverse, long waves.

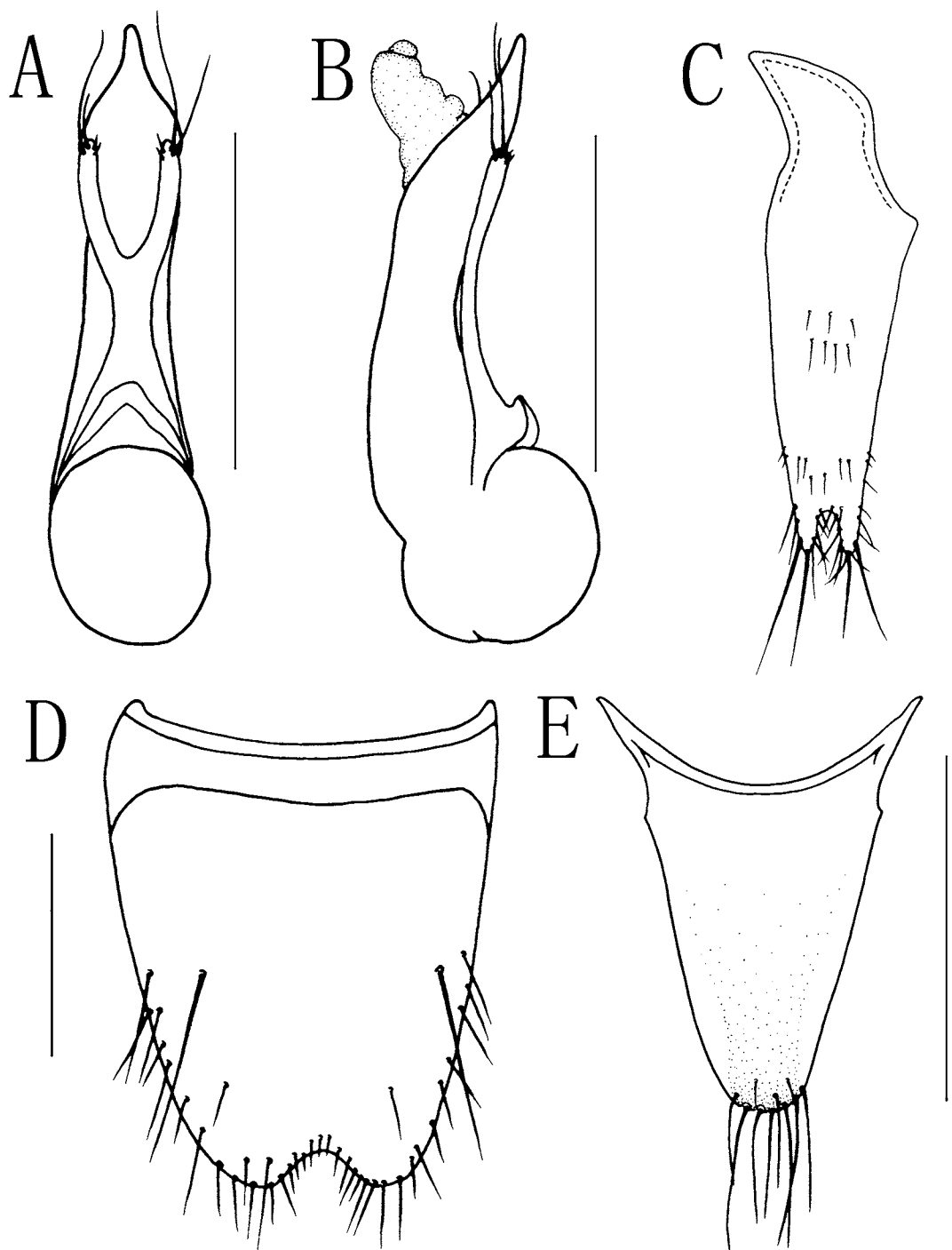


FIGURE 4. *Craspedomerus gongshanus* Li & Zhou **sp. n.** A, aedeagus, ventral view; B, aedeagus, lateral view; C, sternite IX of male; D, sternite VIII of male; E, tergite X of male. Scale bars 1 mm.

Pronotum subquadrate, slightly narrowed anteriorly, 2.12–2.37 mm long, 2.12–2.29 mm wide, slightly wider than head (PW:HW = 1.08–1.17), sparsely and finely punctate, punctures separated by 5–8 times their diameter, narrowly impunctate along midline, surface with distinct and profound microsculpture of oblique, long waves.

Elytra 2.78–3.10 mm long, 2.86–3.27 mm wide, 1.20–1.31 times as long as pronotum, densely and finely punctate, punctures separated by 1–2 times their diameter. Scutellum large, triangular, densely and finely punctate.

Abdomen a little narrowed posteriad, widest 2.45–2.86 mm, tergites sparsely and finely punctate, at base punctures separated by 3–4 times their diameter, gradually becoming sparser toward apex of each tergite, surface between punctures with dense and fine microsculpture of transverse striae; elevated area between basal lines of tergites III–V almost impunctate.

Male. Sternite VIII with moderately wide, obtusely triangular medio-apical emargination (Fig. 4D). Sternite IX with distinctly asymmetrical basal portion, apex deeply emarginate, each lobe bearing two long setae (Fig. 4C). Tergite X simple, triangular, subrounded at apex, with variable number of apical setae (Fig. 4E).

Aedeagus as (Figs. 4A–B); underside of each branch of paramere with flat sensory peg setae more or less regularly arranged into two rows at subapical portion (Fig. 12H).

Female. Sternite VIII without medio-apical emargination. Gonocoxites moderately developed, second gonocoxites each with minute stylus bearing two long apical setae. Tergite X similar to that of male.

Remarks. *Craspedomerus gongshanus* is similar to *C. sinetuber* and *C. giganteus* in having elytra metallic blue or violaceous and antennae black-brown. *Craspedomerus gongshanus* differs from *C. sinetuber* by posterior 1/2–4/5 portion of tergite VII and entire tergites VIII–X reddish-yellow (abdomen entirely black in the latter species), distinctly smaller eyes (0.78–0.89 times as long as tempora in the new species vs. 1.30–1.60 times in *C. sinetuber*) and different arrangement of sensory peg setae on the underside of paramere (Figs. 12A, H). *Craspedomerus gongshanus* is different from *C. giganteus* by distinctly smaller body (HPL = 4.08–4.32 mm vs. HPL = 5.47–5.71 mm, respectively), pronotum with profound microsculpture of oblique, long waves (with profound microsculpture of mesh in *C. giganteus*) and different number and arrangement of the sensory peg setae on the underside of paramere (Figs. 12F, H).

Distribution. The species is at present known only from China (Yunnan).

Etymology. The species name refers to the name of the type locality, Gongshan.

3. *Craspedomerus zhangi* Li & Zhou sp. n.

(Figs. 5A–E, 12E)

Type material. Holotype: CHINA: Tibet: ♂, Mêdog (29°42'N, 95°56'E), 2765 m, 26.VIII.2006, Liang Hongbin collected (IZ-CAS); **Paratypes:** CHINA: Tibet: 2♀♀, same data as holotype (IZ-CAS); ♀, Bomi (29°48'N, 95°41'E), 3650 m, 28.VIII.2006, Liang Hongbin & Bai Ming collected (IZ-CAS).

Description. Head and pronotum black with slightly bronze-green reflex. Antennae black with 8th–10th segments yellow, last segment black-brown. Elytra purple with shoulders, posterior margins and suture markedly reddish-yellow. Scutellum black. Abdomen black with strongly iridescent reflex, posterior half of tergite VII and entire tergites VIII–X reddish-yellow. Mandibles dark brown. Maxillary and labial palpi and legs reddish-brown.

Body moderately large, 10.8–14.8 mm long (HPL = 4.33–4.74 mm). Head of rounded quadrangular shape, 1.88–1.96 mm long, 2.04–2.29 mm wide, slightly wider than long (HW:HL = 1.09–1.13). Tempora 0.65–0.81 mm long, almost evenly rounded, densely and coarsely punctate, setiferous. Eyes moderately large, slightly protruded, 0.57–0.74 mm long, 0.78–0.90 times as long as tempora. Dorsal surface of head with moderately numerous, large setiferous punctures, becoming sparser toward vertex, vertex largely impunctate; entire head with distinct and profound microsculpture of oblique, long waves.

Pronotum subquadrate, slightly narrowed anteriad, 2.29–2.45 mm long, 2.12–2.29 mm wide, slightly wider than head (PW:HW = 1.00–1.10), sparsely and finely punctate, punctures separated by 4–7 times their diameter, narrowly impunctate along midline, microsculpture fine, similar to that on head.

Elytra 2.69–3.02 mm long, 2.94–3.43 mm wide, 1.18–1.30 times as long as pronotum, densely and finely punctate, punctures separated by 2–3 times their diameter. Scutellum large, triangular, densely and finely punctate.

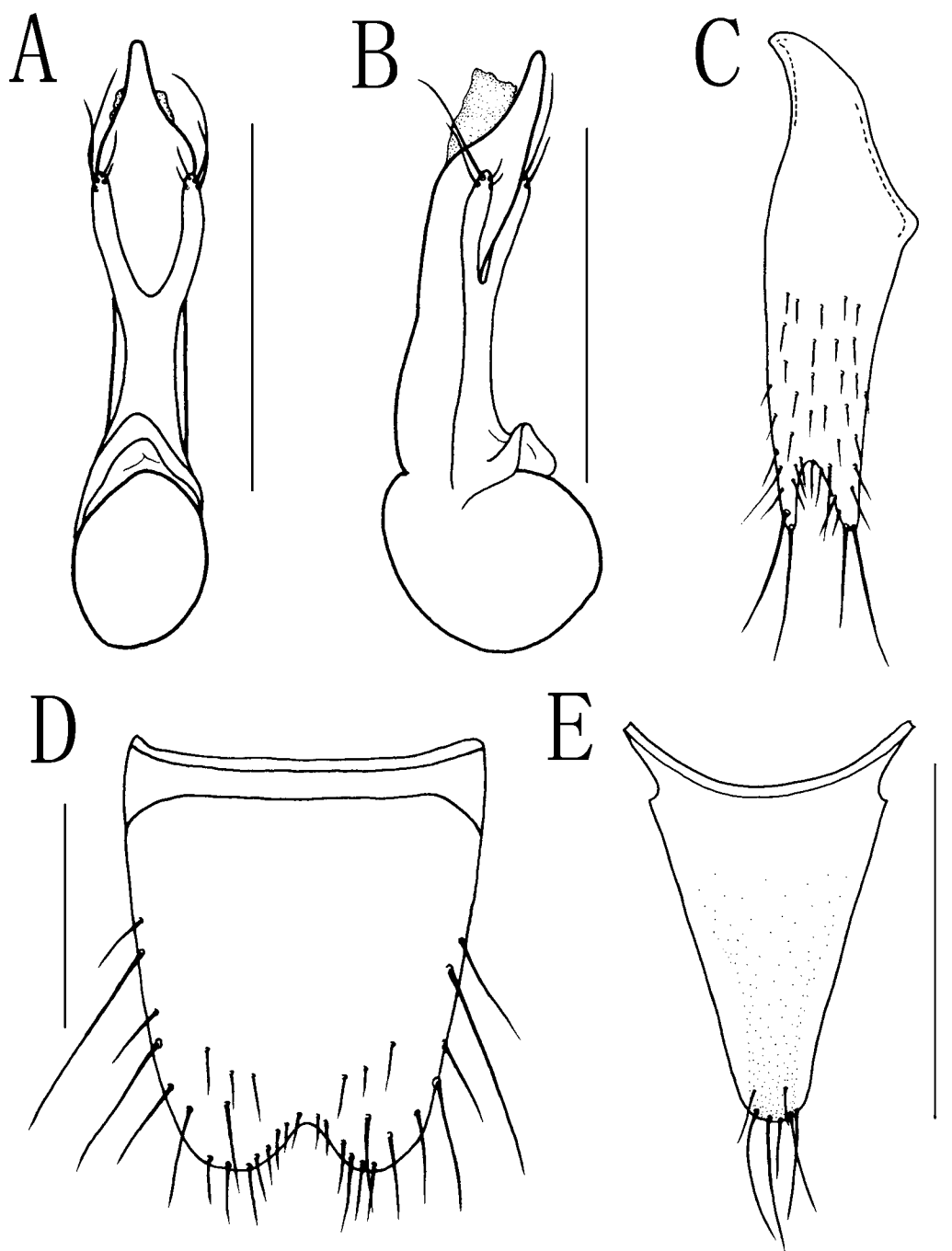


FIGURE 5. *Craspedomerus zhangi* Li & Zhou **sp. n.** A, aedeagus, ventral view; B, aedeagus, lateral view; C, sternite IX of male; D, sternite VIII of male; E, tergite X of male. Scale bars 1 mm.

Abdomen a little narrowed posteriad, widest 2.45–2.69 mm; tergites densely and finely punctate, at base punctures separated by 2–3 times their diameter, gradually becoming sparser toward apex of each tergite, surface between punctures with dense and fine microsculpture of transverse striae; elevated area between basal lines of tergites III–V almost impunctate.

Male. Sternite VIII with moderately wide, obtusely triangular medio-apical emargination (Fig. 5D). Sternite IX with distinctly asymmetrical basal portion, apex deeply emarginate, each lobe bearing two long apical setae (Fig. 5C). Genital segment with styli of tergite IX simple, densely setose apically. Tergite X simple, triangular, subrounded at apex, with variable number of apical setae (Fig. 5E).

Aedeagus as (Figs. 5A–B); underside of each branch of paramere with very small, pointed sensory peg setae arranged at subapical portion (Fig. 12E).

Female. Sternite VIII without medio-apical emargination. Gonocoxites moderately developed, second gonocoxites each with minute stylus bearing two long apical setae. Tergite X similar to that of male.

Remarks. *Craspedomerus zhangii* can be easily distinguished from all congeners by elytra purple with shoulders, posterior margins and suture markedly reddish-yellow and quite characteristic shape of sensory peg setae.

Distribution. The species is at present known only from China (Tibet).

Etymology. The species is named in honor of Dr. Luping Zhang, College of Life Sciences, Hebei Normal University, China.

4. *Craspedomerus beckeri* Bernhauer, 1934

(Figs. 6A–F, 12C)

Bernhauer, 1934: 11 (*Craspedomerus*, type locality: Kinfushan, China); Scheerpeltz, 1976b: 150 (*Craspedomerus*, characters); Herman, 2001: 2582 (*Craspedomerus*, world catalog); Smetana, 2004: 632 (*Craspedomerus*, catalog for Palaearctic region).

Material examined. CHINA: Sichuan: 5♂♂, 3♀♀, Wolong (31°46'N, 103°36'E), 2650 m, 6–9.V.2004, Yu Xiaodong collected (IZ-CAS); 6♂♂, 7♀♀, Baoxing (30°36'N, 102°49'E), 2498 m, 6 June 1997, Zhou Haisheng collected (IZ-CAS); 7♂♂, 9♀♀, Baoxing (30°36'N, 102°49'E), 1796 m, 12.VIII.2003, Wu Jie collected (IZ-CAS); ♀, Jinpo Shan (29°01'N, 107°14'E), 1750 m, 26.VI.1998, A. Smetana collected (CSO).

Description. Head and pronotum black with slightly bronze-greenish reflex. Antennae black-brown with 8th–11th segments yellow, sometimes last segment dark. Elytra fusco-testaceous. Scutellum black. Abdomen black with strongly iridescent reflex, posterior 1/2–4/5 portion of tergite VII and entire tergites VIII–X reddish-yellow. Mandibles dark brown. Maxillary and labial palpi and legs reddish-brown.

Body large, 13.8–16.9 mm long (HPL = 4.82–5.14 mm). Head of rounded quadrangular shape, 1.96–2.20 mm long, 2.20–2.53 mm wide, slightly wider than long (HW:HL = 1.10–1.30). Tempora 0.81–0.98 mm long, almost evenly rounded, densely and coarsely punctate, setiferous. Eyes moderately large, slightly protruded, 0.65–0.74 mm long, 0.67–0.82 times as long as tempora. Dorsal surface of head with moderately numerous, large setiferous punctures, becoming sparser toward vertex, vertex largely impunctate; entire head with distinct and profound microsculpture of transverse waves.

Pronotum subquadrate, slightly narrowed anteriorly, 2.53–2.69 mm long, 2.37–2.53 mm wide, slightly wider than head (PW:HW = 1.03–1.11), densely and finely punctate, punctures separated by 3–5 times their diameter, narrowly impunctate along midline; surface with distinct and profound microsculpture of obliquely, long waves.

Elytra 3.10–3.27 mm long, 3.27–3.51 mm wide, 1.21–1.29 times as long as pronotum, densely and finely punctate, punctures separated by 2–3 times their diameter. Scutellum large, triangular, densely and finely punctate.

Abdomen a little narrowed posteriorly, widest 2.86–2.94 mm, tergites densely and finely punctate, at base punctures separated by 1–2 times their diameter, gradually becoming sparser toward apex of each tergite, surface between punctures with dense and fine microsculpture of transverse striae; elevated area between basal lines of tergites III–V almost without punctures.

Male. Sternite VIII with moderately wide, obtusely triangular medio-apical emargination (Fig. 6D). Sternite IX with distinctly asymmetrical basal portion, apex deeply emarginate, each lobe bearing two long apical setae (Fig. 6C). Tergite X simple, triangular, subrounded at apex, with variable number of apical setae (Fig. 6F).

Aedeagus as (Figs. 6A–B); underside of each branch of paramere with very small, flat sensory peg setae arranged at subapical portion (Fig. 12C).

Female. Sternite VIII without medio-apical emargination. Gonocoxites moderately developed, second gonocoxites each with minute stylus bearing two long apical setae (Fig. 6E). Tergite X similar to that of male.

Remarks. Bernhauer (1934) described this species from Sichuan. *Craspedomerus beckeri* is similar to *C. bernhaueri* Cameron, 1926, *C. glenoides*, *C. nepalensis* Scheerpeltz, 1976b, *C. birmanus* Scheerpeltz, 1965, *C. tricoloricornis* (Coiffait, 1977a) and *C. ganeshensis* in having fusco-testaceous elytra. *Craspedomerus beckeri* can be easily distinguished from those species by antennae with last four segments yellow.

Distribution. China (Sichuan).

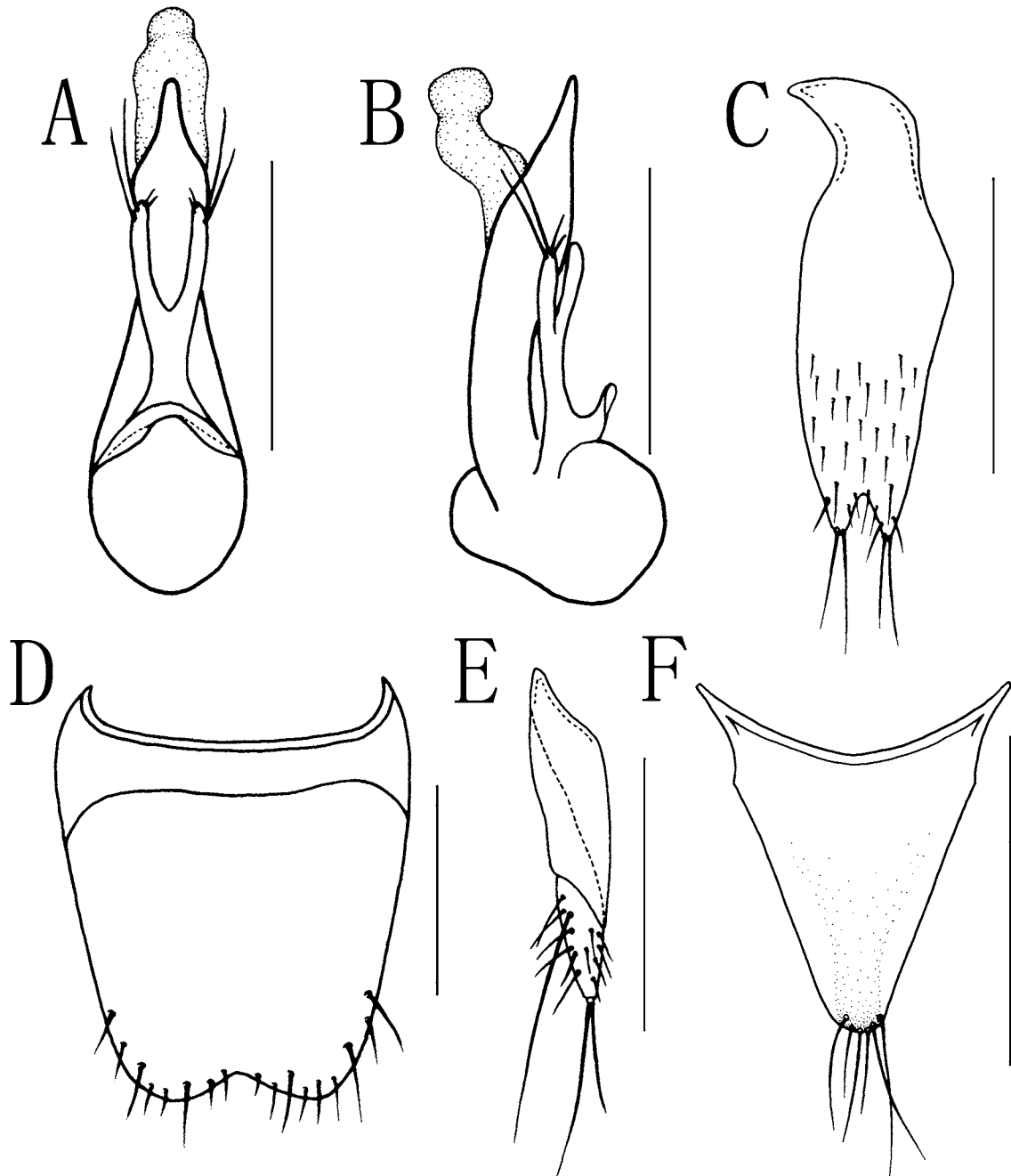


FIGURE 6. *Craspedomerus beckeri* Bernhauer. A, aedeagus, ventral view; B, aedeagus, lateral view; C, sternite IX of male; D, sternite VIII of male; E, gonocoxites of female genital segment; F, tergite X of male. Scale bars 1 mm.

5. *Craspedomerus cyanipennis* Scheerpeltz, 1976b, first record from China

(Figs. 7A–E, 12I)

Scheerpeltz, 1976b: 144 (*Craspedomerus*, type locality: Thodung, Nepal); Coiffait, 1982a: 32 (*Craspedomerus*, Nepal);

1982b: 233 (*Craspedomerus*, Nepal); Herman, 2001: 2582 (*Craspedomerus*, world catalog); Smetana, 2004: 632 (*Craspedomerus*, catalog for Palaearctic region).

Material examined. CHINA: Yunnan: ♂, ♀, Baoshan (24°56'N, 98°45'E), 2300–2440 m, 26–31.X.1998, Liang Hongbin collected (IZ-CAS); ♀, Baoshan (24°56'N, 98°45'E), 2440 m, 15.X.2003, Liang Hongbin collected (IZ-CAS); ♀, Tengchong: Shangying (24°57'N, 98°44'E), 2200 m, 14.X.2003, Liang Hongbin collected (IZ-CAS); ♀, Baoshan: Longyang (24°54'N, 98°45'E), 2350 m, 30.V.2005, Liang Hongbin collected (IZ-CAS); ♀, Baoshan Pref., mountain range 14 km E Tengchong (25°00'N, 98°38'E), 1850 m, 1.VI.2007, secondary mixed forest, litter sifted, M. Schülke collected (CSB).

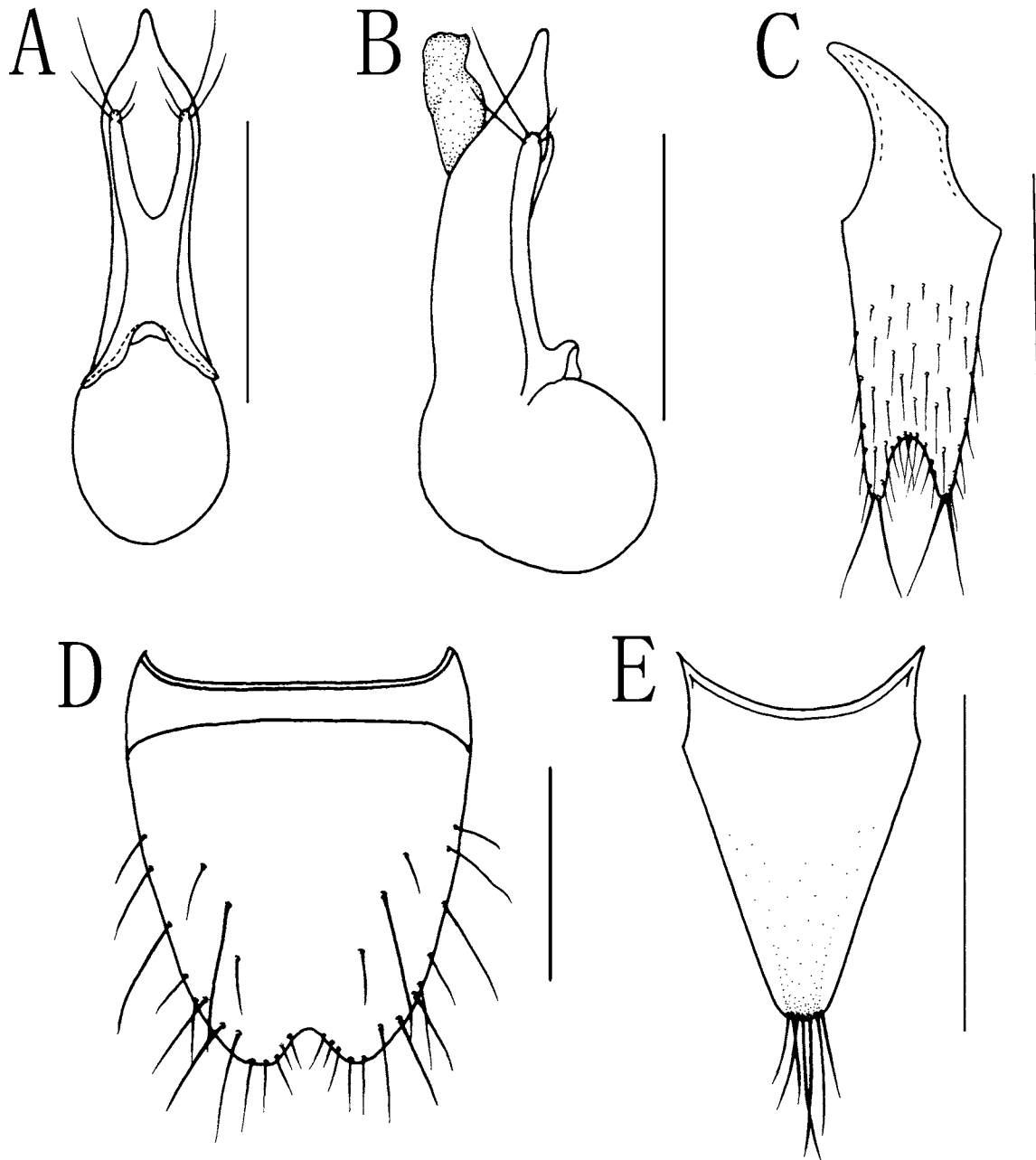


FIGURE 7. *Craspedomerus cyanipennis* Scheerpeltz. A, aedeagus, ventral view; B, aedeagus, lateral view; C, sternite IX of male; D, sternite VIII of male; E, tergite X of male. Scale bars 1 mm.

Description. Head and pronotum black with strongly violaceous reflex. Antennae black with 8th–10th segments yellow. Elytra metallic blue or violaceous. Scutellum black. Abdomen black with strongly iridescent

reflex, posterior 2/5–4/5 portion of tergite VII and entire tergites VIII–X reddish-yellow. Mandibles dark brown. Maxillary and labial palpi reddish-brown. Femora dark, tibiae and tarsi reddish-brown.

Body 11.8–14.0 mm (HPL = 4.82–5.06 mm). Head of rounded quadrangular shape, 1.88–1.96 mm, 2.20–2.37 mm wide, slightly wider than long (HW:HL = 1.13–1.22). Tempora 0.74–0.82 mm long, almost evenly rounded, densely and coarsely punctate, setiferous. Eyes moderately large, slightly protruded, 0.65 mm long, 0.80–0.89 times as long as tempora. Dorsal surface of head with moderately numerous, large setiferous punctures, becoming sparser toward vertex, vertex largely impunctate; entire head with distinct and profound microsculpture of transverse waves.

Pronotum subquadrate, slightly narrowed posteriad, 2.53–2.61 mm long, 2.45–2.61 mm wide, almost as wide as head (PW:HW = 0.97–1.14), sparsely and finely punctate, punctures separated by 4–6 times their diameter, narrowly impunctate along midline, microsculpture fine, similar to that on head.

Elytra 2.94–3.35 mm long, 3.10–3.43 mm wide, 1.13–1.28 times as long as pronotum, densely and finely punctate, punctures separated by 1–2 times their diameter. Scutellum large, triangular, densely and finely punctate.

Abdomen a little narrowed posteriad, widest 3.10–3.27 mm, tergites densely and finely punctate, at base punctures separated by 2–3 times their diameter, gradually becoming slightly sparser toward apex of each tergite, surface between punctures with dense and fine microsculpture of transverse striae; elevated area between basal lines of tergites III–V almost impunctate.

Male. Sternite VIII with moderately wide, obtusely triangular medio-apical emargination (Fig. 7D). Sternite IX with distinctly asymmetrical basal portion, apex deeply emarginate, each lobe bearing two long apical setae (Fig. 7C). Tergite X simple, triangular, subrounded at apex, with variable number of apical setae (Fig. 7E).

Aedeagus as (Figs. 7A–B); underside of each branch of paramere with very small, flat sensory peg setae irregularly arranged at subapical portion (Fig. 12I).

Female. Sternite VIII without medio-apical emargination. Gonocoxites moderately developed, second gonocoxites each with minute stylus bearing two long apical setae. Tergite X similar to that of male.

Remarks. Scheerpeltz (1976b) described *C. cyanipennis* from Nepal. Coiffait (1982ab) also reported it from Nepal. This species is similar to *C. violaceipennis* in having elytra metallic blue or violaceous and antennae black with 8th–10th segments yellow. *Craspedomerus cyanipennis* differs from *C. violaceipennis* by pronotum with distinctly violaceous reflex, femora dark and different number and arrangement of the sensory peg setae on the underside of paramere (Figs. 12D, I) (pronotum with bronze-green reflex and femora reddish-brown in *C. violaceipennis*). This species is recorded from China for the first time.

Distribution. China (Yunnan), Nepal.

6. *Craspedomerus ganeshensis* Coiffait, 1983, first record from China

(Figs. 8A–E, 12G)

Coiffait, 1983: 169 (*Craspedomerus*, type locality: Ganesh Himal, between Salmi and Rupchet, Nepal); Herman, 2001: 2582 (*Craspedomerus*, world catalog); Smetana, 2004: 632 (*Craspedomerus*, catalog for Palaearctic region).

Material examined. CHINA: Yunnan: 2♂♂, 7♀♀, Gongshan (27°37'N, 98°36'E), 2100 m, 10.VII.2000, Liang Hongbin collected (IZ-CAS); ♂, 2♀♀, Lushui (26°37'N, 98°36'E), 2100 m, 14.V.2005, Liang Hongbin collected (IZ-CAS); 3♂♂, Gaoligongshan (25°59'N, 98°37'E), 2450 m, 15–18.X.1998, Long C. L. collected (IZ-CAS).

Description. Head and pronotum black with slightly bronze-greenish reflex. Antennae black with 7th–11th segments yellow. Elytra fusco-testaceous. Scutellum black. Abdomen black with strongly iridescent reflex, posterior half of tergite VII and entire tergites VIII–X reddish-yellow. Mandibles dark brown. Maxillary and labial palpi and legs reddish-brown.

Body 12.7–14.9 mm long (HPL = 4.49–4.90 mm). Head of rounded quadrangular shape, 1.80–1.96 mm long, 1.96–2.20 mm wide, slightly wider than long (HW:HL = 1.04–1.17). Tempora 0.65–0.74 mm long,

almost evenly rounded, densely and coarsely punctate, setiferous; eyes moderately large, slightly protruded, 0.57–0.65 mm long, 0.78–0.88 times as long as tempora. Dorsal surface of head with moderately numerous, large setiferous punctures, becoming sparser toward vertex, vertex largely impunctate; entire head with distinct and profound microsculpture of transverse waves.

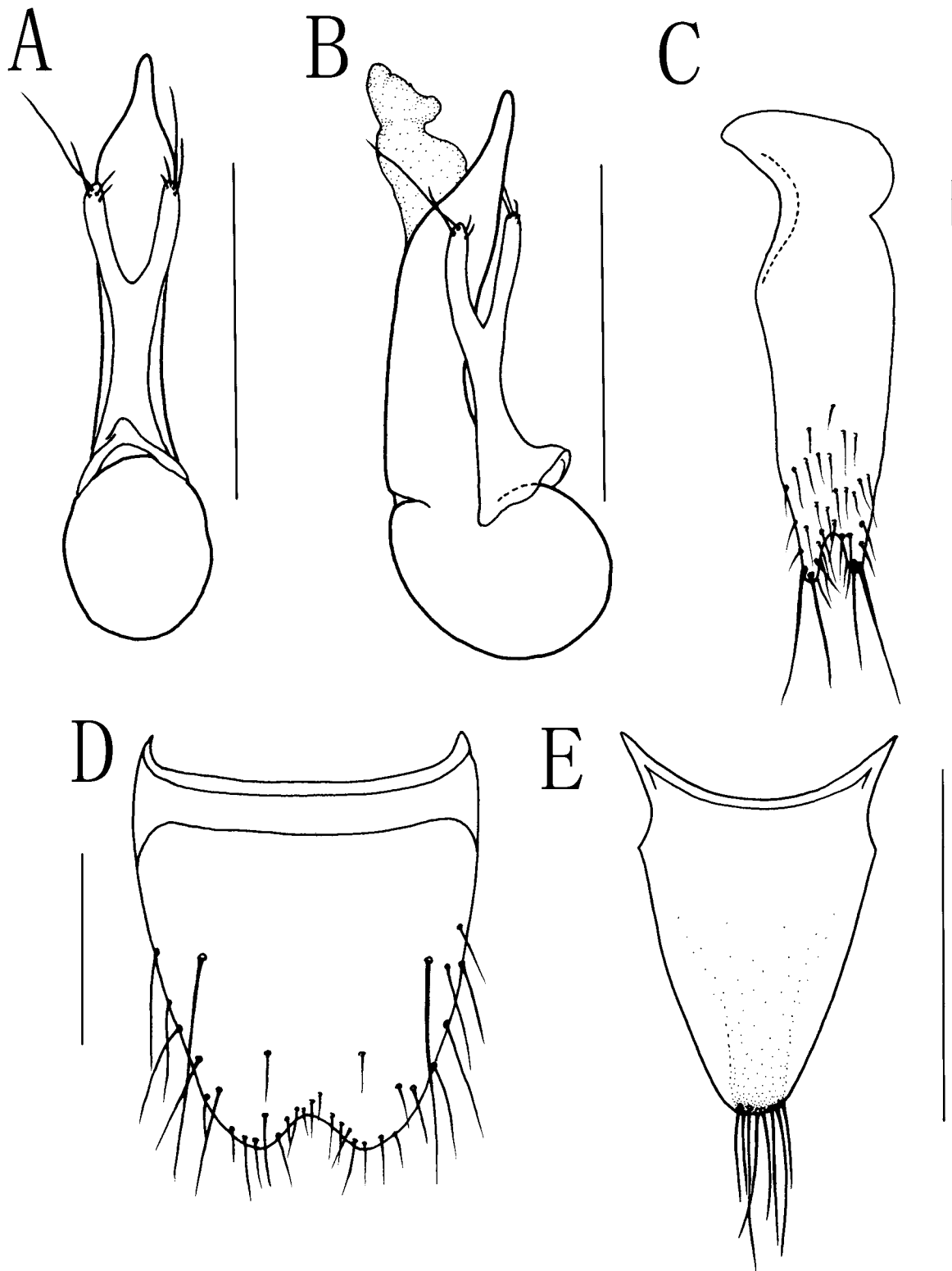


FIGURE 8. *Craspedomerus ganeshensis* Coiffait. A, aedeagus, ventral view; B, aedeagus, lateral view; C, sternite IX of male; D, sternite VIII of male; E, tergite X of male. Scale bars 1 mm.

Pronotum subquadrate, slightly narrowed anteriorly, 2.20–2.45 mm long, 2.04–2.20 mm wide, slightly wider than head (PW:HW = 1.04–1.13), densely and finely punctate, punctures separated by 3–5 times their diameter, narrowly impunctate along midline, surface with distinct and profound microsculpture of oblique, long waves.

Elytra 2.69–2.94 mm long, 2.78–2.94 mm wide, 1.20–1.24 times as long as pronotum, densely and finely punctate, punctures separated by 1–2 times their diameter. Scutellum large, triangular, densely and finely punctate.

Abdomen a little narrowed posteriorly, widest 2.45–2.61 mm, tergites densely and finely punctate, at base punctures separated by 2–3 times their diameter, gradually becoming sparser toward apex of each tergite, surface between punctures with dense and fine microsculpture of transverse striae; elevated area between basal lines of tergites III–V almost impunctate.

Male. Sternite VIII with moderately wide, obtusely triangular medio-apical emargination (Fig. 8D). Sternite IX with basal portion distinctly asymmetrical, apex deeply emarginate, each lobe bearing two long apical setae (Fig. 8C). Tergite X simple, triangular, subrounded at apex, with variable number of apical setae (Fig. 8E).

Aedeagus as (Figs. 8A–B); underside of each branch of paramere with very small, flat sensory peg setae arranged at subapical portion (Fig. 12G).

Female. Sternite VIII without medio-apical emargination. Gonocoxites moderately developed, second gonocoxites each with minute stylus bearing two long apical setae. Tergite X similar to that of male.

Remarks. Coiffait (1983) described this species from Nepal. *Craspedomerus ganeshensis* is similar to *C. glenoides* and *C. birmanus* in having elytra fusco-testaceous and antennae black with 7th–11th segments yellow. *Craspedomerus glenoides* differs from *C. ganeshensis* by elytra with a distinctly dark fascia across the middle, tergite VII entirely reddish-yellow (elytra without dark fascia across the middle, basal third of tergite VII black in *C. ganeshensis*) and different number and arrangement of the sensory peg setae on the underside of paramere (Figs. 12B, G). *Craspedomerus ganeshensis* can be easily distinguished from *C. birmanus* by basal third of tergite VII black and legs reddish-brown (tergite VII entirely reddish-yellow and legs dark in the latter species). This species is recorded from China for the first time.

Distribution. China (Yunnan), Nepal.

7. *Craspedomerus glenoides* (Schubert, 1908), first record from China

(Figs. 9A–E, 12B)

Schubert, 1908: 622 (*Philonthus*, type locality: Kulu, Himalaya, India); Bernhauer, 1911: 88 (*Craspedomerus*); Bernhauer & Schubert, 1914: 400 (*Craspedomerus*, catalog); Cameron, 1932: 249 (*Craspedomerus*, characters); Scheerpeltz, 1933: 1410 (*Craspedomerus*, catalog); 1976b: 149 (*Craspedomerus*, characters); Herman, 2001: 2583 (*Craspedomerus*, world catalog); Smetana, 2004: 632 (*Craspedomerus*, catalog for Palaearctic region).

Material examined. CHINA: Yunnan: 7♂♂, 3♀♀, Gaoligongshan (25°59′N, 98°37′E), 2450 m, 15–18.X.1998, Long C. L. collected (IZ-CAS); 2♀♀, Gongshan (27°37′N, 98°36′E), 2100 m, 10.VII.2000, Liang Hongbin collected (IZ-CAS); ♂, 2♀♀, Dali Bai Nat. Aut. Pref. Diancangshan (25°41′N, 100°06′E), 2750–3000 m, 17–23.VI.2005, D. W. Wrase collected (NMW); ♀, Nujiang Lisu. Aut. Pref. Gaoligongshan (25°58′N, 98°41′E), pass 21 km NW Liuku, 3150 m, 9.VI.2007, D. W. Wrase collected (NMW); **Tibet:** 4♂♂, ♀, Nielamu (28°19′N, 85°56′E), 1700–2650 m, 12–15.V.1966, Huang Fusheng collected (IZ-CAS).

Description. Head and pronotum black with slightly bronze-greenish reflex. Antennae black with 7th–11th segments yellow. Elytra fusco-testaceous with a dark transverse fascia across the middle. Scutellum black. Abdomen black with strongly iridescent reflex, entire tergites VII–X reddish-yellow. Mandibles dark-brown. Maxillary and labial palpi and legs reddish-brown.

Body 12.3–13.3 mm long (HPL = 4.73–4.90 mm). Head of rounded quadrangular shape, 1.88–1.96 mm long, 2.04–2.20 mm wide, slightly wider than long (HW:HL = 1.09–1.13). Tempora 0.74–0.82 mm long, almost evenly rounded, densely and coarsely punctate, setiferous; eyes moderately large, slightly protruded,

0.65–0.74 mm long, 0.81–0.89 times as long as tempora. Dorsal surface of head with moderately numerous, large setiferous punctures, becoming sparser toward vertex, vertex largely impunctate; entire head with distinct and profound microsculpture of transverse waves.

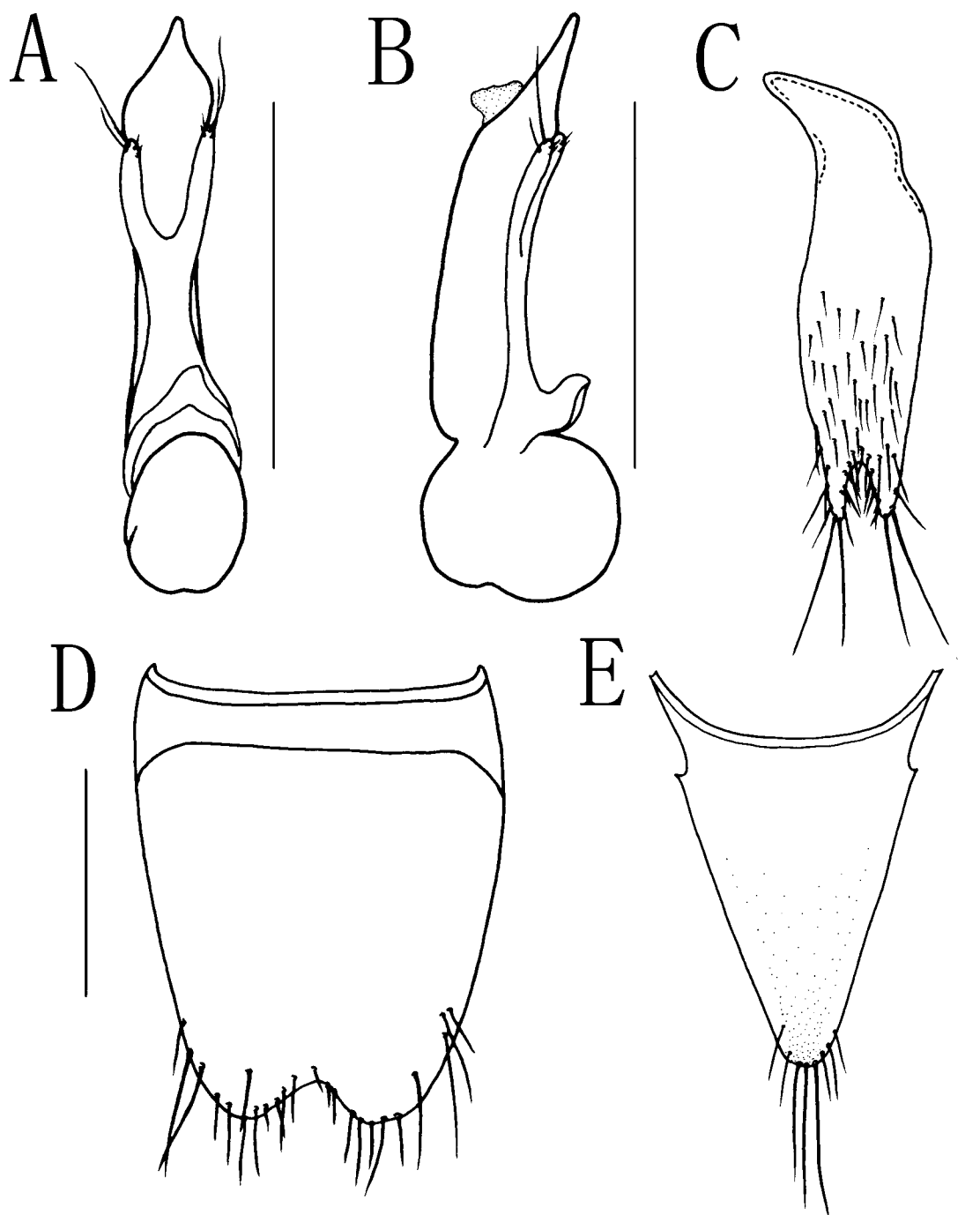


FIGURE 9. *Craspedomerus glenoides* (Schubert). A, aedeagus, ventral view; B, aedeagus, lateral view; C, sternite IX of male; D, sternite VIII of male; E, tergite X of male. Scale bars 1 mm.

Pronotum subquadrate, slightly narrowed anteriad, 2.29–2.53 mm long, 2.12–2.29 mm wide, slightly wider than head (PW:HW = 1.04–1.13), densely and finely punctate, punctures separated by 3–4 times their diameter, narrowly impunctate along midline; surface with distinct and profound microsculpture of oblique, long waves.

Elytra 2.94–3.02 mm long, 2.94–3.10 mm wide, 1.20–1.32:1 times as long as pronotum, densely and finely punctate, punctures separated by 1–2 times their diameter. Scutellum large, triangular, densely and finely punctate.

Abdomen a little narrowed posteriad, widest 2.45–2.69 mm; tergites densely and finely punctate, at base punctures separated by 2–3 times their diameter, gradually becoming sparser toward apex of each tergite; surface between punctures with dense and fine microsculpture of transverse striae; elevated area between basal lines tergites III–V almost impunctate.

Male. Sternite VIII with moderately wide, obtusely triangular medio-apical emargination (Fig. 9D). Sternite IX with distinctly asymmetrical basal portion, apex deeply emarginate, each lobe bearing two long apical setae (Fig. 9C). Tergite X simple, triangular, subrounded at apex, with variable number of apical setae (Fig. 9E).

Aedeagus as (Figs. 9A–B); underside of each branch of paramere with very small, pointed sensory peg setae arranged at lateral side at subapical portion (Fig. 12B).

Female. Sternite VIII without medio-apical emargination. Gonocoxites moderately developed, second gonocoxites each with minute stylus bearing two long apical setae. Tergite X similar to that of male.

Remarks. Schubert (1908) described this species, as *Philonthus glenoides*, from the Himalaya region. Bernhauer (1911) erected the genus *Craspedomerus* based on this species. Later, Cameron (1932) and Scheerpeltz (1976b) redescribed it. *Craspedomerus glenoides* is similar to *C. birmanus* and *C. ganeshensis* in having elytra fusco-testaceous and antennae black with 7th–11th segments yellow. *Craspedomerus glenoides* can be easily distinguished from *C. birmanus* and *C. ganeshensis* by elytra with a dark fascia across the middle. This species is reported from China for the first time.

Distribution. China (Yunnan, Tibet), India.

8. *Craspedomerus sinetuber* (Coiffait, 1977a), first record from China

(Figs. 10A–E, 12A)

Coiffait, 1977a: 223 (*Philonthus*, type locality: Dechhi Paka, Bhutan); 1979: 319 (*Craspedomerus*); Herman, 2001: 2583 (*Craspedomerus*, world catalog); Smetana, 2004: 632 (*Craspedomerus*, catalog for Palaearctic region).

Material examined. CHINA: Tibet: ♂, ♀, Cuona (27°59'N, 91°54'E), 2000 m, 7.VIII.1974, Huang Fusheng collected (IZ-CAS).

Description. Head and pronotum black with slightly bronze-greenish reflex. Antennae black-brown. Elytra metallic blue. Scutellum black. Abdomen entirely black with slightly iridescent reflex. Mandibles, maxillary and labial palpi dark brown. Femora and tibiae dark, tarsi reddish-brown.

Body 11.9–14.0 mm long (HPL = 4.90–5.06 mm). Head of rounded quadrangular shape, 1.88–1.96 mm long, 2.20–2.29 mm wide, slightly wider than long (HW:HL = 1.17). Tempora 0.41–0.57 mm long, almost evenly rounded, densely and coarsely punctate, setiferous; eyes large, slightly protruded, 0.65–0.74 mm long, 1.30–1.60 times as long as tempora. Dorsal surface of head with moderately numerous, large setiferous punctures, becoming sparser toward vertex, vertex largely impunctate; entire head with distinct and profound microsculpture of transverse waves.

Pronotum subquadrate, slightly narrowed anteriorly, 2.45–2.61 mm long, 2.12–2.45 mm wide, slightly wider than head (PW:HW = 0.96–1.07), sparsely and finely punctate, punctures separated by 5–8 times their diameter, narrowly impunctate along midline, microsculpture fine, similar to that on head.

Elytra 2.86–3.02 mm long, 2.94–3.27 mm wide, 1.17 times as long as pronotum, densely and finely punctate, punctures separated by 2–3 times their diameter. Scutellum large, triangular, densely and finely punctate.

Abdomen a little narrowed posteriad, widest 2.86–3.02 mm, tergites sparsely and finely punctate, at base punctures separated by 4–5 times their diameter, gradually becoming sparser toward apex of each tergite; surface between punctures with dense and fine microsculpture of transverse striae; elevated area between basal lines of tergites III–V almost impunctate.

Male. Sternite VIII with moderately wide, obtusely triangular medio-apical emargination (Fig. 10D). Sternite IX with distinctly asymmetrical basal portion, apex deeply emarginate, each lobe bearing two long

apical setae (Fig. 10C). Tergite X simple, triangular, subrounded at apex, with variable number of apical setae (Fig. 10E).

Aedeagus as (Figs. 10A–B); underside of each branch of paramere with very small, flat sensory peg setae closely arranged at subapical portion (Fig. 12A).

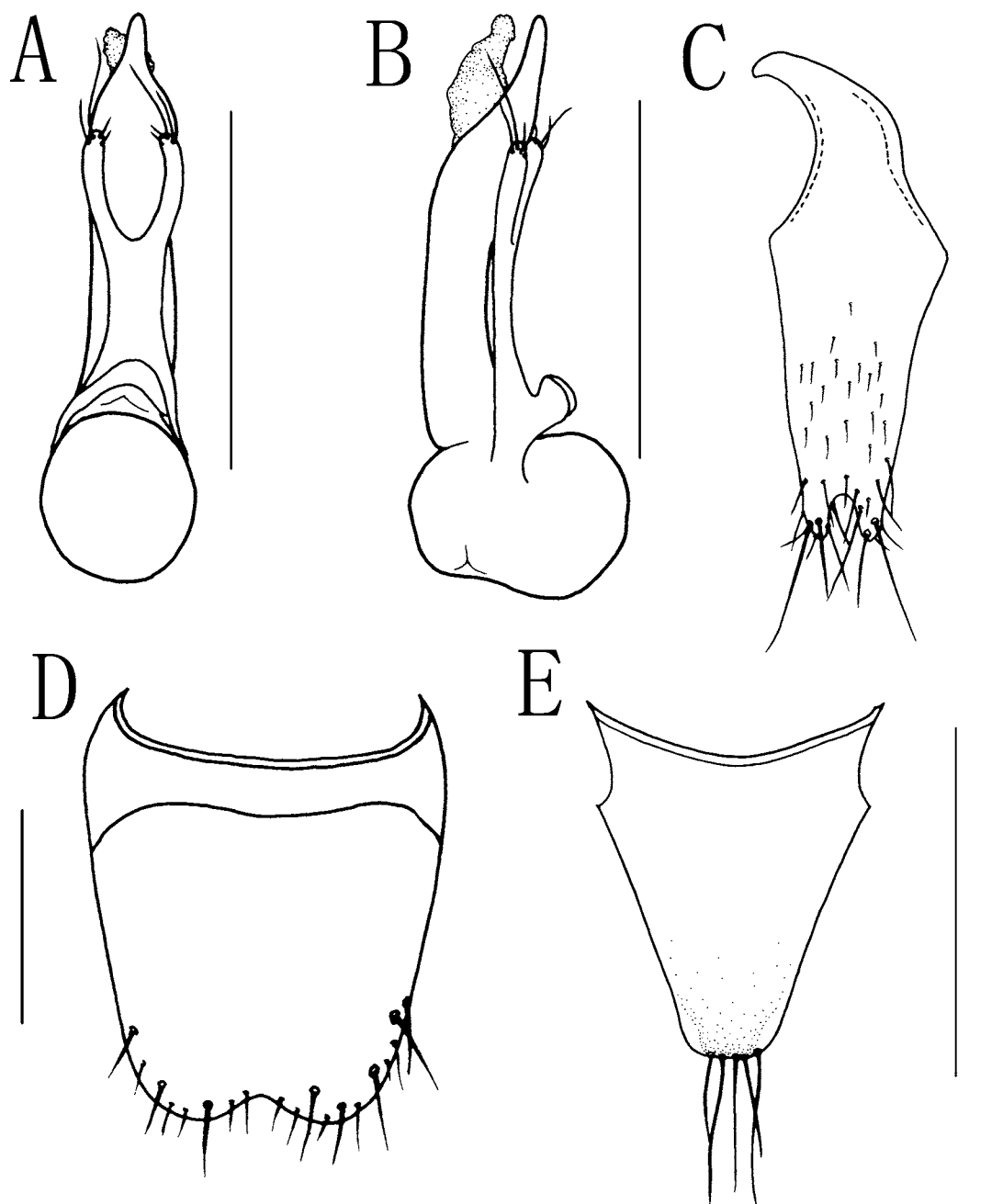


FIGURE 10. *Craspedomerus sinetuber* (Coiffait). A, aedeagus, ventral view; B, aedeagus, lateral view; C, sternite IX of male; D, sternite VIII of male; E, tergite X of male. Scale bars 1 mm.

Female. Sternite VIII without medio-apical emargination. Gonocoxites moderately developed, second gonocoxites each with minute stylus bearing two long apical setae. Tergite X similar to that of male.

Remarks. Coiffait (1977a) described this species, as *Philonthus sinetuber*, from Bhutan. Later, he transferred this species to *Craspedomerus* (Coiffait 1979). *Craspedomerus sinetuber* can be easily distinguished from all other congeners by very large eyes (much longer than tempora), black-brown antennae and entirely black abdomen. This species is reported from China for the first time.

Distribution. China (Tibet), Bhutan.

9. *Craspedomerus violaceipennis* Cameron, 1928

(Figs. 11A–E, 12D)

Cameron, 1928: 566 (*Craspedomerus*, type locality: Karponang and Phadam Chen, India; Chumbi Valley and Yatung, Tibet, China); Cameron, 1932: 250 (*Craspedomerus*, characters; Sikkim and Tibet); Scheerpeltz, 1933: 1410 (*Craspedomerus*, catalog); 1976b: 149 (*Craspedomerus*, characters); Coiffait, 1982a: 32 (*Craspedomerus*, Nepal); Herman, 2001: 2583 (*Craspedomerus*, world catalog); Smetana, 2004: 632 (*Craspedomerus*, catalog for Palaearctic region).

Type material. Syntypes: INDIA: Sikkim: ♂, ♀ (FMNH), ♀ (BMNH), Karponang, 10000 ft, 20.IX.1924, Maj. R. W. G. Hingston collected.

Additional material examined. CHINA: Tibet: 6♂♂, 12♀♀, Yadong (27°32' N, 88°55' E), 2800 m, 5–7.VI.1961, Wang Linyao collected (IZ-CAS); ♂, Yadong (27°33' N, 88° 54' E), 2800 m, 31.V.1975, Huang Fusheng collected (IZ-CAS); INDIA: Arunachal Pradesh: ♂, N Bomdila Chander (27°25' N, 92°22' E), ca. 2700 m, 17–26.VI.2008, C. Reuter collected (NMW).

Description. Head and pronotum black with slightly bronze-greenish reflex. Antennae black with 8th–10th segments yellow. Elytra metallic blue. Scutellum black. Abdomen with strongly iridescent reflex; posterior 1/2–2/3 portion of tergite VII and entire tergites VIII–X reddish-yellow. Mandibles dark-brown. Maxillary and labial palpi and legs reddish-brown.

Body moderately large, 10.5–12.3 mm long (HPL = 4.49–4.57 mm). Head of rounded quadrangular shape, 1.71–1.98 mm long, 1.88–2.29 mm wide, slightly wider than long (HW:HL = 1.09–1.17). Tempora 0.74–0.81 mm long, almost evenly rounded, densely and coarsely punctate, setiferous; eyes moderately large, slightly protruded, 0.57–0.74 mm long, 0.70–0.90 times as long as tempora. Dorsal surface of head with moderately numerous, large setiferous punctures, becoming sparser toward vertex, vertex largely impunctate; entire head with distinct and profound microsculpture of transverse waves.

Pronotum subquadrate, slightly narrowed anteriorly, 2.12–2.45 mm long, 2.04–2.38 mm wide, slightly wider than head (PW:HW = 1.04–1.08), densely and finely punctate, punctures separated by 4–6 times their diameter, narrowly impunctate along midline, microsculpture fine, similar to that on head.

Elytra 2.61–3.02 mm long, 2.78–3.35 mm wide, 1.23–1.26 times as long as pronotum, densely and finely punctate, punctures separated by 2–3 times their diameter. Scutellum large, triangular, densely and finely punctate.

Abdomen a little narrowed posteriorly, widest 2.69–2.86 mm, tergites densely and finely punctate, at base punctures separated by 2–3 times their diameter, gradually becoming sparser toward apex of each tergite; surface between punctures with dense and fine microsculpture of transverse striae; elevated area between basal lines of tergites III–V almost impunctate.

Male. Sternite VIII with moderately wide, obtusely triangular medio-apical emargination (Fig. 11D). Sternite IX with distinctly asymmetrical basal portion, apex deeply emarginate, each lobe bearing two long apical setae (Fig. 11C). Tergite X simple, triangular, subrounded at apex, with variable number of apical setae (Fig. 11E).

Aedeagus as (Figs. 11A–B); underside of each branch with very small, flat sensory peg setae arranged at subapical portion (Fig. 12D).

Female. Sternite VIII without medio-apical emargination. Gonocoxites moderately developed, second gonocoxites each with minute stylus bearing two long apical setae. Tergite X similar to that of male.

Remarks. Cameron (1928) described *C. violaceipennis* from India and China (Tibet). Coiffait (1982a) reported this species from Nepal. *Craspedomerus violaceipennis* is similar to *C. cyanipennis* in having elytra metallic blue or violaceous and antennae black with 8th–10th segments yellow. *Craspedomerus violaceipennis* differs from *C. cyanipennis* by femora reddish-brown (dark in *C. cyanipennis*) and different number and distribution of the peg setae on the underside of the paramere (Figs. 12D, I).

Distribution. China (Tibet), India, Nepal.

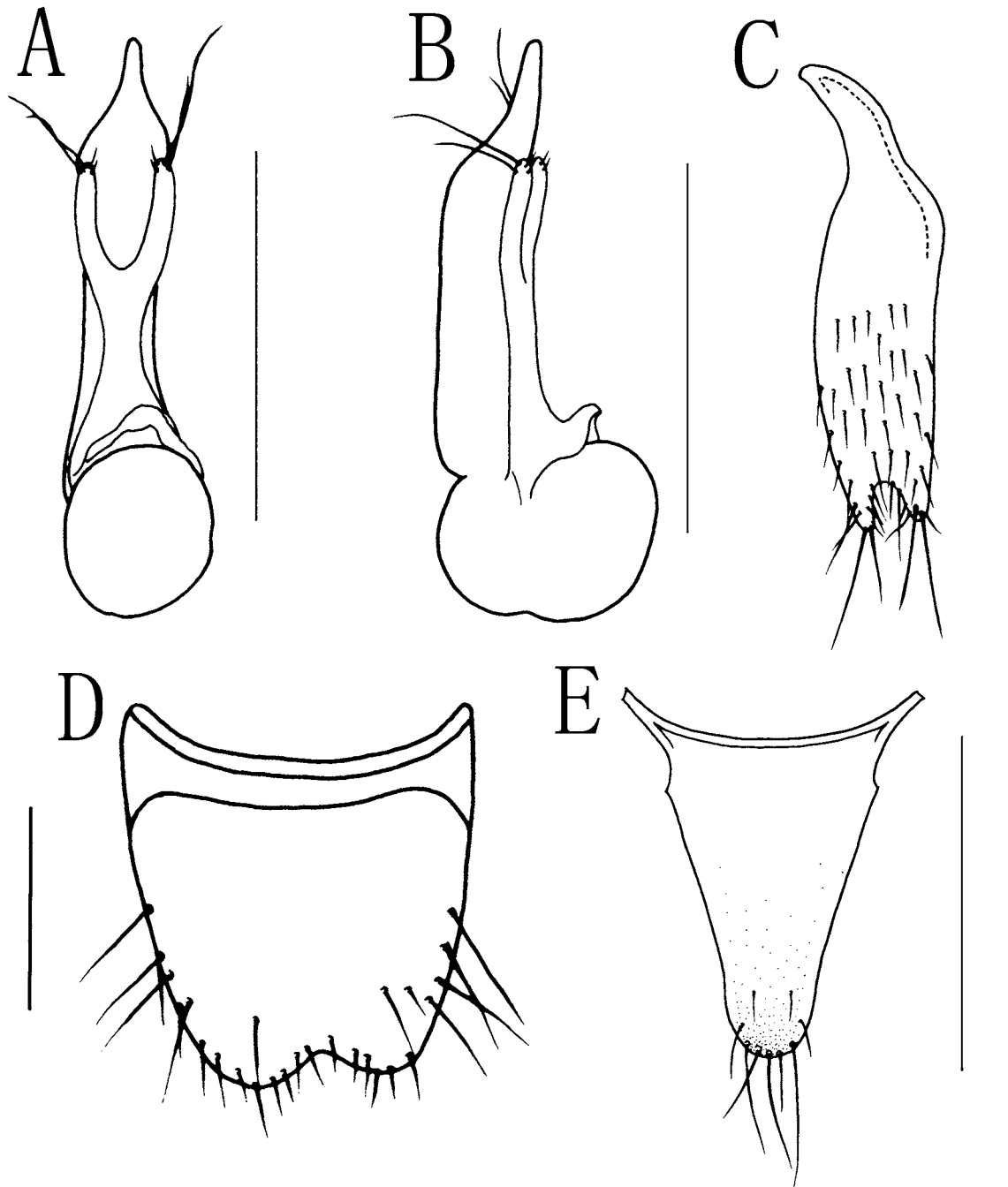


FIGURE 11. *Craspedomerus violaceipennis* Cameron. A, aedeagus, ventral view; B, aedeagus, lateral view; C, sternite IX of male; D, sternite VIII of male; E, tergite X of male. Scale bars 1 mm.

Zoogeography

Fig. 13 shows the general pattern of geographical distribution of all sixteen species of *Craspedomerus*. Thirteen of these species are distributed in a narrow band along the south boundary of the Himalayas (including parts of north-eastern India, eastern Nepal and southern edge of Tibet, north-western Yunnan and north-eastern Myanmar). The other three species are distributed in southwest China (mainly in western Sichuan), which has similar vegetation, climatic conditions and altitudinal ranges to those of the south boundary of the Himalayas. Among these sixteen species, *C. glenoides*, *C. gongshanus*, *C. giganteus*, *C. beckeri*, *C. birmanus* Scheerpeltz, 1965, *C. bernhaueri* Cameron, 1926, *C. montanus* Coiffait, 1982a and *C.*

malaisei Scheerpeltz, 1965 were recorded only at relatively low elevation (from about 1600 to 2800 m), whereas, *C. nepalicus* (Coiffait, 1977b), *C. tricoloricornis* (Coiffait, 1977a), *C. violaceipennis* and *C. zhangii* were found at higher elevation (from about 2800 to 3600 m); *C. cyanipennis*, *C. sinetuber*, *C. nepalensis* Scheerpeltz, 1976b and *C. ganeshensis* were recorded in a wide range of altitudes (from about 1800 to 3400 m).

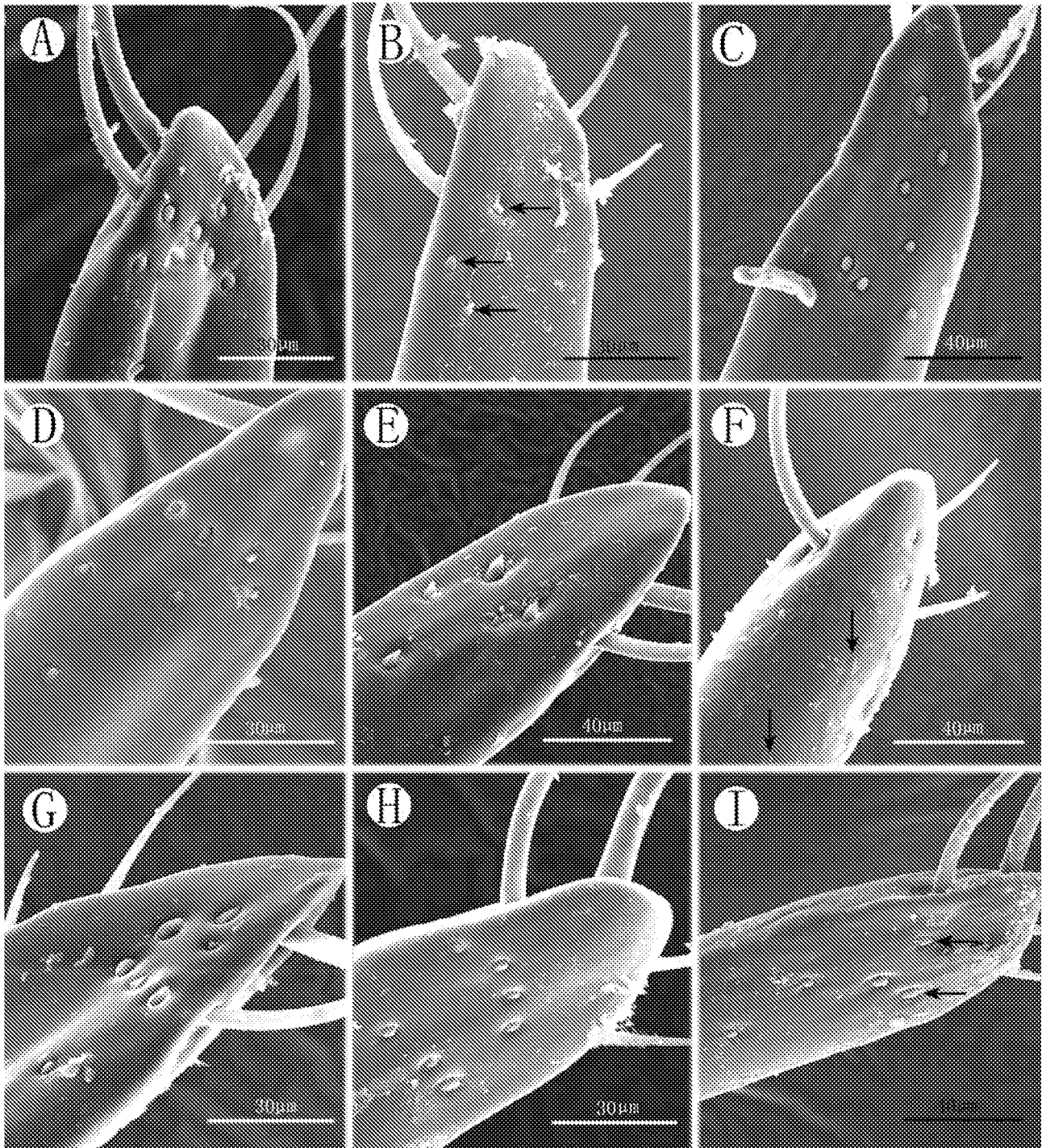


FIGURE 12. Scanning electron micrographs of the underside of one of the branches of the paramere of *Craspedomerus*. A, *C. sinetuber* (Coiffait); B, *C. glenoides* (Schubert); C, *C. beckeri* Bernhauer; D, *C. violaceipennis* Cameron; E, *C. zhangii* Li & Zhou **sp. n.**; F, *C. giganteus* Li & Zhou **sp. n.**; G, *C. ganeshensis* Coiffait; H, *C. gongshanus* Li & Zhou **sp. n.**; I, *C. cyanipennis* Scheerpeltz. Sensory peg setae are indicated with arrows.

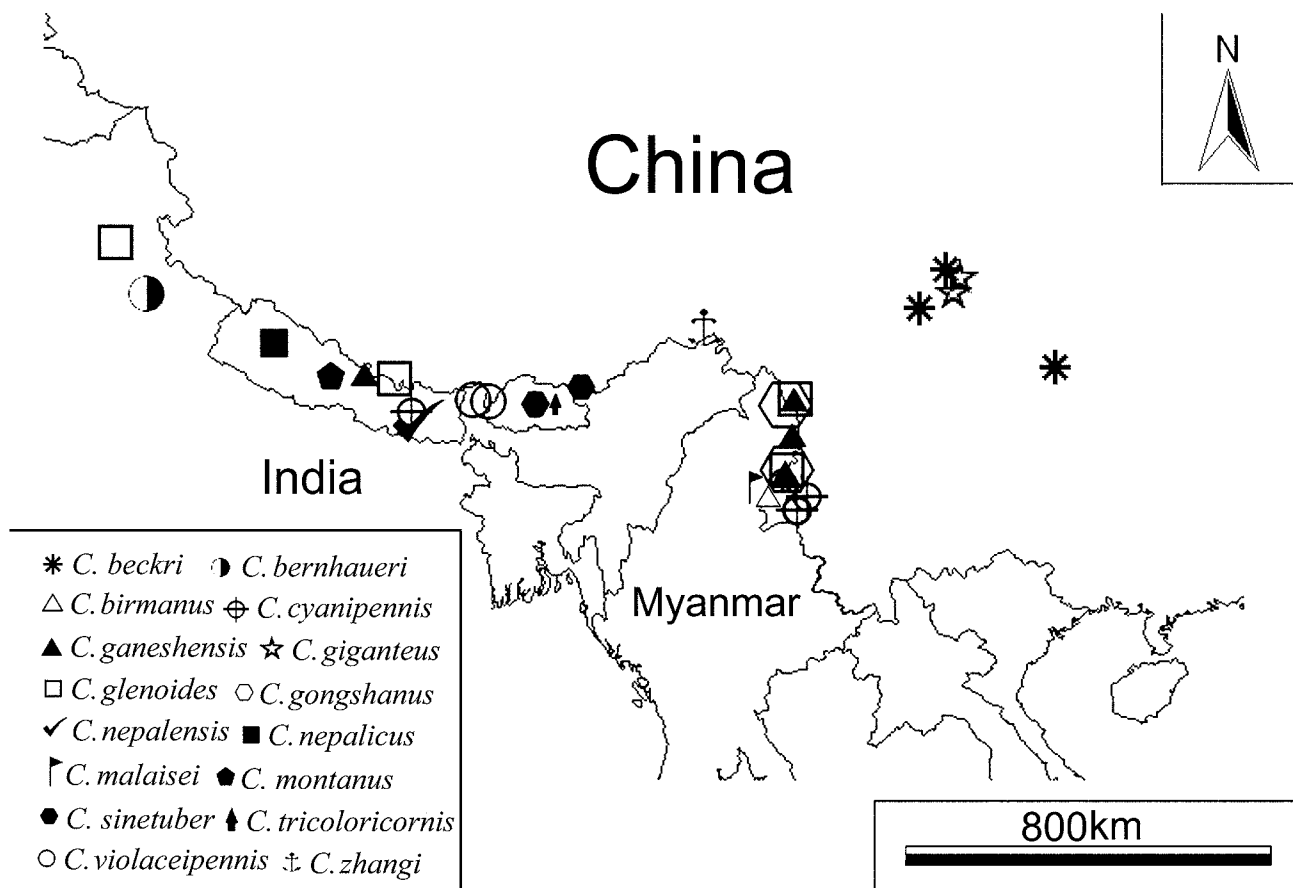


FIGURE 13. Geographical distribution of species of *Craspedomerus* Bernhauer.

Acknowledgments

The authors wish to thank Dr. Alfred F. Newton (Zoology Department/Insect Division, Field Museum of Natural History, Chicago, USA) for the revision of the manuscript. We are indebted to Dr. Harald Schillhammer (Naturhistorisches Museum Wien, Wien, Austria) for his numerous valuable suggestions and hints during this study. The authors are also very grateful to Dr. Roger G. Booth (Department of Entomology, The Natural History Museum, London, UK), Dr. Harald Schillhammer, Dr. Aleš Smetana, (Agriculture and Agri-Food Canada, Biodiversity, Central Experimental Farm, Ottawa, Canada), Mr. Michael Schülke (Berlin, Germany), Dr. Alfred F. Newton and Mr. James H. Boone (Zoology Department/Insect Division, Field Museum of Natural History, Chicago, USA) for sending specimens. This study was supported by the National Key Technology R&D Program (2008BAC39B02), National Natural Science Foundation of China (No. 30670285, No. 30700074), CAS Innovation Program (KSCX2-YW-Z-0910), NSFC program (JO930004) and a grant from the Key Laboratory of Zoological Systematics and Evolution of CAS (No. O529YX5105).

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